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CONTENTS.

PAGE

List of Subscribers ix

In Memoriam—Dr Peter Mere Latham xxv

Art.

I. On the Causes, Diagnosis, Pathology, and Treatment of Missed Labour. By Robert Greenhalgh, M.D. 1

II. The Induction of Premature Labour. By Clement Godson, M.D. 29

III. On Tuberculous Angina Faucium. By Samuel Gee, M.D. 41

IV. On Laryngismus. By Samuel Gee, M.D. . . 47

V. Clinical Contributions to Practical Medicine. Part I. By Dyce Duckworth, M.D. 49

VI. Report from the Post Mortem-Room. By J. Wickham Legg, M.D. 63

VII. The Treatment of Hæmorrhage from the Posterior-Tibial Artery in the Upper Two-Thirds of its Course. By William Harrison Cripps . . 93

VIII. On Uncontrollable Impulse. By T. Claye Shaw, M.D. 107

IX. Some Cases of Congenital Dislocation of the Hip-Joint, with Remarks. By Howard Marsh . 113

X. The Treatment of Stone in the Bladder of Female Children. By W. J. Walsham 127

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Art.		Page
XI.	An Essay on the History of Medicine in Ireland, founded on an Examination of some MSS. in the British Museum. By Norman Moore, M.B.	145
XII.	On Irritants and Counter-Irritants, with Remarks on the Use of Blisters in Rheumatism. By T. Lauder Brunton, M.D., F.R.S.	167
XIII.	Selected Cases of Injury of the Eyes. By Henry Power	181
XIV.	Notes from the Gold Coast. By Thomas Jones	211
XV.	Report on the Treatment of Ruptured Perinæum. By Thomas Smith	215
XVI.	Two Examples of Malformation of the Heart. By Norman Moore, M.B.	225
XVII.	A Case of Femoral Aneurysm cured by Digital Pressure. By W. Morrant Baker	231
XVIII.	Three Cases of Disease of the Lungs, with Remarks. By F. De Havilland Hall, M.D.	235
XIX.	A Case of Erythema Nodosum. By Philip J. Hensley, M.D.	249
XX.	Idiopathic Tetanus. By George Hastings.	251
XXI.	Notes of Three Cases of Air in the Cavity of the Pleura as the Result of Injury. By Henry Trentham Butlin	255
XXII.	Medical Cases. By Vincent D. Harris, M.B.	261
XXIII.	Proceedings of the Abernethian Society for Winter Session 1874-75	271
List of Prizemen		293
Hospital Staff		297

Hospital Statistics.

Index

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LIST OF ILLUSTRATIONS.

	PAGE
Instrument for Placing Tents for inducing Premature Labour	38
Vasomotor Nerves in Rabbit	170
Stoppage of Circulation, and Dilatation of Arteries . .	175
Heart of Thomas Lane (right side)	226
Heart of same (left side)	227
Heart of Kate Rock	229

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WEST, Dr W. C., Yarnton Lodge, Great Malvern
WHARRY, Dr C. J., Civil Hospital, Hong-Kong
WHARRY, R., Park Place, Charlton
WHITFIELD, R. G., St Thomas's Hospital, S.E.
WHITLING, HENRY T., High Street, Croydon
WHITMORE, W. TICKLE, Library, St Bartholomew's Hospital
WILKS, GEORGE, Ashford, Kent
WILLETT, A., 36 Wimpole Street, W.
WILLIAMS, CHARLES, Castleton, Northwich, Cheshire
WILLIAMS, Dr EDWARD, Holt Street House, Wrexham
WILLIAMS, J. M., 48 Micklegate, York
WILLIAMS, J. T., 21 Storey Square, Barrow-in-Furness, Lancashire
WILLIAMS, PETER, Broadly House, near Ferryside, Carmarthenshire, South Wales
WILLIAMS, Dr WYNN, 1 Montagu Square, W.
WILMOT, THOMAS, Library, St Bartholomew's Hospital
WILSON, ERASMUS, 17 Henrietta Street, W.
WILSON, WILLIAM J., Clay-Cross, Chesterfield
WINKFIELD, ALFRED, Beaumont Street, Oxford
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WOTTON, Dr CHARLES, King's Langley, Herts
WRIGHT, THOMAS G., Stilton, Hunts
WYER, Dr OTHO, The Avenue Road, Leamington
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In Memoriam.

DR PETER MERE LATHAM.

BY

SIR THOMAS WATSON, Bart.

Dr Peter Mere Latham was the second of the three sons of Dr John Latham and of Mary, the daughter of the Rev. Peter Mere, Vicar of Prestbury, in Cheshire. Besides their relation of consanguinity, the qualities and fortunes of these two men were in many points so interwoven and similar, that any memoir of the son, in these pages especially, might justly be deemed defective, which did not include some record, however brief, of the father also. Both of them were eminent London physicians in their day; both held in succession the office of physician, first to the Middlesex and then to this great hospital; both were appointed Physicians Extraordinary to the reigning Sovereign; of both of them it may confidently be added that they were men of blameless life and exemplary character. Of the father I had some partial knowledge during my early residence in London; the son, during the whole of my professional life, was my most intimate and familiar friend.

Dr John Latham then, was born on the 29th of December 1761, at Gawsworth, in Cheshire, in the house of his great-uncle, the Rev. William Hall, then rector of that parish. He received his early education in the country. In 1778 he was entered at Brazenose College, Oxford; and in 1788 he was created M.D. of that University. In that year also he settled in London, after having practised for two brief periods at Manchester and Oxford. He became a Fellow of the London College of Physicians in 1789; and in the same year was elected physician to the Middlesex

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Hospital. That office he resigned in 1792, upon his election as physician to St Bartholomew's. From 1813 to 1819, inclusive, he was President of the College of Physicians. His first London residence was in Fenchurch Buildings, where his son, PETER MERE, was born. In 1795 he moved to the house in Bedford Row, which the well-known Dr Reynolds then quitted for Bedford Square. Here he practised his profession with immense repute and success, until, at the early age of forty-six, his health utterly broke down under excessive and incessant toil, and he was compelled to retire into the country, as it was thought, to die. He went to an estate which he had purchased at Sandbach in Cheshire; and there, under the beneficent influence of mental rest and pure air, recovered completely, so as to be able to return to London, where he lived, in Harley Street, for twenty years, in better health and more moderate practice than before. He finally left London for his seat, Bradwall Hall, in 1829, and died there in 1843, from the effects of stone in the bladder, in the eighty-second year of his age.

What I remember of him is chiefly that he was very hospitable; kind and helpful to young physicians; courteous, of winning manners and address; and highly esteemed and popular, both with his patients and with his medical brethren. It has been written of him by the truthful pen of that son who is the chief subject of this memoir, that 'he was singularly temperate when temperance was hardly yet thought to be a virtue, he was most pure in life and conversation when to have been otherwise would have provoked no censure, and he was not ashamed to be religious when religion had yet no recommendation or countenance from the world.'

His son, PETER MERE, was born on the first day of July 1789. He was a very delicate child, and was sent for the first rudiments of his education to Sandbach, where he resided with his paternal grandmother, and attended the free school of that town, of which the clergyman of the parish, the Rev. Charles Lockett, was master. About a year later, in 1796 or 1797, he was transferred to the Grammar School of Macclesfield, at that time under the charge of Mr Davies, the husband of his mother's sister. There he remained until he began to reside at Brazenose College in 1807.

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He took his M.D. degree at Oxford in 1818, and in the same year became a Fellow of the College of Physicians. He had come from Oxford to study medicine at this hospital in 1810. In 1815 he was elected physician to the Middlesex Hospital; and to St Bartholomew's in 1824. Beaten first from this post, and at length from practice, by persistent and severe attacks of asthma, he withdrew in 1865 to Torquay, where he died on the 20th of last July, having just entered his eighty-seventh year.

That he lived so long was a marvel to all who were aware of his bodily constitution. I have said that in childhood his health was delicate. In mature life, when he was living in London, besides a slight twist in his spine, which tilted one shoulder a little upwards, his lungs were known to be extensively emphysematous, and his paroxysms of asthma by night were so extremely violent and exhausting, that many times he fully expected to die before the morning. Had he remained longer in London it is almost certain that some one of such paroxysms would have been fatal.

He had twice been married; first to Diana Clarissa Chetwynd Stapleton, grand-daughter of Lord Chetwynd; she died in 1825, within a year of their marriage: and secondly, to Grace Mary Chambers, third daughter of Commander David Chambers, R.N. By her he had four children, who all survive him; two sons, both married, Weyland Mere and Philip Arderne; and two unmarried daughters, Diana Frances and Mary Grace, by whom, together with Miss Gooch, who lived with them at Torquay, the daughter of his early friend Dr Gooch, he was assiduously and tenderly nursed throughout the whole of his declining years.

As a school-boy he is said to have been idle, and a hater of Latin and Greek. If so, his tastes and habits must have altered greatly in after-life; for in 1809, having made two previous failures, he gained the undergraduate's prize for Latin verse at Oxford. The subject was 'Corinth.' It is worthy of mention, if only in proof that the teaching at Macclesfield had been sound and effective, that his elder brother John and his younger brother Henry, who also were trained in that school, achieved, both of them, while at Brazenose, a similar distinction. One of the unsuccessful competitors for the same prize in 1812, when Henry obtained it, was Arnold, afterwards the famous head-master of

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Rugby. I was told also by a profound classical scholar, who was possessed with the strange curiosity to read all the printed Harveian Orations, that subsequently to the date of Sir George Baker's, that by Dr P. M. LATHAM was one of the very few the Latinity of which he could praise. Indeed, his English style bespoke a master of Latin; slightly quaint, perhaps, it might sometimes be, but stately withal, and always clear, vigorous, and exact.

Of the facility in writing Latin verse acquired by the eldest and the youngest of the three brothers, ample evidence exists in two pleasing little volumes, the one by John Latham, D.C.L., unpublished, containing 'English and Latin poems, original and translated;' the other, published in 1864 by the Rev. Henry Latham, entitled 'Sertum Shaksperianum, subnexis aliquot aliunde excerptis floribus."

The poems of the eldest brother—poems of great beauty, humour, and tenderness—were composed under the sore disadvantage of almost total blindness. At the early age of twenty his hopes and promise of success as a barrister were destroyed by a severe attack of ophthalmia, which left him with only enough of sight to guide his steps, but for ever afterwards unable to read a word of writing or of print.

When Dr LATHAM became a student at this hospital, the three physicians were Doctors Roberts, Powell, and Haworth. It was the custom of that time—before clinical clerks had been heard of in London—for the senior students, especially those who came from the Universities, to attach themselves to some one of the physicians, to watch his practice, and in a certain sense and degree to superintend his patients. Dr LATHAM so waited upon those of Dr Haworth. But, anxious to make his study and knowledge of disease as comprehensive as was possible, and to familiarise himself with the puzzling diseases of the skin among the rest, he began, during this period, to attend also the practice of the celebrated Dr Bateman at the Cary Street Dispensary. There, in 1813, he first met the late still more celebrated Dr Richard Bright, and contracted with him a life-long friendship. The winter of the end of that year and the beginning of 1814 was a very remarkable one. The Thames was frozen over, and a fair was held upon the ice. The amount of misery, destitution, and disease produced by this long inclemency of weather was enormous; the duties of the

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Dispensary physicians increased beyond their strength, and were in part delegated to these two young students; who thus first became actual practisers of their future calling, in the highest and lowest garrets and cellars of St Giles's.

Among Dr LATHAM'S fellow-students and companions at St Bartholomew's were Haviland, afterwards Regius Professor of Physic at Cambridge; Monro from Oxford; William Lawrence, already Demonstrator of Anatomy, Henry Earle, and Edward Stanley, all three surgeons to the hospital in the future; Hodgson, subsequently famous as 'of Birmingham;' and James 'of Exeter.' He found the stimulating plan in vogue, by bark and wine, and the mortality great. A controversy was raging there about the value and propriety of blood-letting in fevers. Upon his election, at the age of twenty-six, to be physician to the Middlesex, he resolved to shut up his books, and to try and judge for himself. He was soon led to use bleeding, not from any doctrine then prevalent, but from his own observation. His work, in his new and responsible position, was carried on with uncommon diligence and energy. Living, as yet unmarried, in Gower Street, and dining usually with his father in Harley Street, it was his custom on his way home at night to turn in at the Middlesex to see some of his patients, especially his fever patients; and he generally did something for them,—gave, perhaps, a few drops of laudanum to one, had the shirt taken off and the body sponged of another, or the feet only sponged with warm water. The result of this kind of special, minute, and unremitting care was a notably smaller amount of mortality among his fever cases than among those of any other of the physicians.

Towards the close of his incumbency at the Middlesex Hospital —from March 1823 to May 1824—Dr LATHAM was employed, in conjunction with Dr Roget, in investigating the nature and source of an obscure epidemic disorder then prevailing in the General Penitentiary at Millbank. In 1825 he published an account of this inquiry—his first professional writing.

The book is pregnant with evidence of acute and patient research, and of clear cogent reasoning. One absolute fact which it records is well worth remembrance in the present sceptical mood of some among us as to the value and the virtue of drugs. The disease, whatever may have been its real nature and origin, was at

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length, after defying almost every other conceivable method of rational treatment, at once arrested in every instance in which mercury was given, and pushed to the extent of producing its well-known specific effect upon the gums.

For four years, dating from the autumn of 1816, Dr LATHAM delivered annually, in association with his colleague Dr Southey, two courses of Lectures on the Practice of Physic. The manuscript of these lectures is still in existence. Tied up with it are the following notices written by his own hand:—

'In looking over these voluminous papers after the lapse of forty-nine years (viz., in my seventy-sixth year), I am amazed at the pains, and care, and time I must have bestowed in putting them together. I would have committed them to the flames—but I shrank from a deed which was painful. So I again locked them up.—June 1, 1865. P. M. LATHAM.'

And again, later—

'Now, in my eighty-fifth year, I encounter again my century of Medical Lectures, with their scrap of paper tied round. I was again tender towards my own offspring, and again shut them up and locked the box.—Nov. 28, 1873. P. M. LATHAM.'

Dr LATHAM'S first project, in the publishing way, after the commencement of his work at St Bartholomew's, proved abortive. For ten years he had been collecting and arranging materials for, and was about to put forth, a book on Continued Fever. His clinical clerks had been chosen with care, his case-books had, by them, been regularly and accurately kept, and their contents analysed and digested by himself. It appeared that he had bled from the arm one in every four of his fever patients, and leeched nearly all of them, with a mortality of seven in the hundred. All that died of the fever were found to have ulcerated bowels. Then, suddenly—it was just after the first invasion of the cholera—a startling change took place. He no longer dared to bleed any of his fever patients; on the contrary, he was obliged to uphold them. Their skins were mottled with an eruption, and often spotted with petechiæ. So numerous became the deaths, that time could not be found for examining many of the dead bodies. I think he told me that the mortality was doubled.

We know now the solution of this perplexing change. The fever which he had been so long watching was Typhoid, or Enteric fever; the new cases belonged to a severe epidemic of Typhus.

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At that time the distinction between these specifically different forms of continued fever had not been recognised. His intended book never saw the light.

When he had been eleven years physician to St Bartholomew's, he began to give those admirable 'Lectures on subjects connected with Clinical Medicine,' of which the first were published in a single small volume in 1836, and which marked an era in the clinical teaching of this country. The conscientious discharge of all his hospital obligations was very remarkable. These lectures were given at an early hour, for a special reason, which may best be stated in his own words:—

'I have desired,' he says, 'to meet the students before their minds were pre-occupied with other things; that, among the interfering demands of other objects which arise in the course of the day, they should not have to catch a moment for that which I consider is the greatest of all—to steal a brief interval between lecture and lecture, and give it to that to which all lectures, and all the knowledge conveyed in all lectures, is but subsidiary and subordinate. I would not thank them for such an irksome, wearied attention; I want them when their minds are fresh; and, therefore, I have always given myself to them when mine is fresh.'

As he always gave these lectures, so also Dr LATHAM visited his patients—in the early morning. One result of this was, that very few of the students, rarely more than ten, went round the wards with him; but these 'few' were also 'fit;' they were always the most studious men of their time, and among them were many of the most distinguished of his successors.

The *spirit* in which he fulfilled his functions as a teacher may also be best shown by some further quotation from this little volume. After stating that the disordered human body must be the study and the continual care of his hearers, he goes on:—

'And is it possible to feel an interest in all this? Ay, indeed it is; a greater, far greater interest than ever painter or sculptor took in the form and beauties of its health.

'Whence comes this interest? At first, perhaps, it seldom comes naturally: a mere sense of duty must engender it; and still, for a while, a mere sense of duty must keep it alive. Presently the quick, curious, restless spirit of science enlivens it; and then it becomes an excitement and a pleasure, and then the deliberate choice of the mind.

'When the interest of attending the sick has reached this point, there arises from it, or has already arisen, a ready discernment of diseases, with a skill in the use of remedies. And the skill may exalt the interest, and the

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interest may improve the skill, until, in process of time, experience forms the consummate practitioner.

'But does the interest of attending the sick necessarily stop here? The question may seem strange. If it has led to the readiest discernment and the highest skill, and formed the consummate practitioner, why need it go further?

'But what if humanity shall warm it? Then this interest, this excitement, this intellectual pleasure, is exalted into a principle, and invested with a moral motive, and passes into the heart. What if it be carried still further? What if religion should animate it? Why, then, happy indeed is that man whose mind, whose moral nature, and whose spiritual being, are all harmoniously engaged in the daily business of his life; with whom the same act has become his own happiness, a dispensation of mercy to his fellow-creatures, and a worship of God.'

That this happiness was the portion of the lecturer himself, we may hold the perfect assurance.

Of the *method* of his clinical teaching I must still make himself the eloquent expositor. He helps the class to learn for themselves:—

'It is *your* present duty to exercise your observation carefully and unremittingly; and it is *my* present duty to point out the fittest objects, and place them in the light in which they can be most profitably seen.

'If ever the desire to view the beauties and sublimities of nature has led you to ascend some lofty eminence, you have probably taken with you one more familiar with the scene than yourselves, as a guide; but you have still trusted to your own eyes, and your own feelings, to fill you with the delight of the prospect, and tell you what to admire and wonder at; and you have required no more from the guide than to point with his finger, and say, "See here, and see there."

'So, in entering this place, even this vast hospital, where there is many a significant, many a wonderful thing, you shall take me along with you, and I will be your guide. But it is by your own eyes, and your own minds, and (may I add) by your own hearts, that you must observe, and learn, and profit: I can only point to the objects, and have little more to say than "See here, and see there."'

Under the same title as before, he published in 1845 two more volumes, full of exact observation and valuable precepts, upon diseases of the heart. He had resigned his office of physician to St Bartholomew's, after seventeen years' tenure, in 1841. In the preface to these lectures he writes:—

'I would have published other lectures, . . . but an enlarged sphere of duty at the Hospital and elsewhere engrossed all my time, and impaired my health, and spoiled my good intention.

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'The duty of physician to a great hospital, unless it can be made easy by indifference to its highest obligations, is incompatible with much care of personal health. Therefore, I relinquish my office at St Bartholomew's, and with it some of the best hopes I had of being useful in my generation.'

It is greatly to be regretted that both series of these very excellent and instructive lectures are, and have long been, out of print.

At this period he stood in the foremost rank of London physicians. I do not well recollect when his cruel malady first began seriously to hamper his practice. For some time, however, before his resignation of the Hospital, a visit to the wards was almost sure to provoke its access. Meanwhile he had never altogether laid aside his pen. There are scattered—I might say buried—in some of our medical newspapers, contributions from him well worthy of perusal and study. I would refer to one paper in particular, on medical education, in the first volume of the *British Medical Journal* for 1864, because it contains an admirable exhibition of the doctrine, always strenuously maintained by him, that we attempt to teach our students too much science, to the displacement of practical knowledge. 'The practice of physic,' I have heard him say, 'is jostled by quacks on the one side, and by science on the other.'

He was a slow, self-critical composer, fastidious in settling his diction, and careful above all things that it should clearly convey his meaning. With what success that object was attained, they who may chance to read this memoir have had some opportunities of judging.

When Dr LATHAM quitted St Bartholomew's, he presented to the Library of the Hospital between fifty and sixty volumes of his completed case-books; rich, no doubt, with the fruit of his thoughtful and well-trained observation. Some years afterwards he expressed his disappointment that they had not been turned to any account. It was explained to him by his friend and successor, Sir George Burrows, that the more correct classification which had been made of continued fevers, and the remarkable change which had come over the professional mind in respect of the proper treatment of acute disease, and especially in respect of the abstraction of blood, had made it very difficult to bring his

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clinical records with advantage before the public. Probably, besides these reasons, there was also the want of an adequate and leisure-gifted *vates sacer*. It cannot be doubted that those volumes contain a mine of precious material, which would amply repay the search of any one who, having the requisite talent, might have the privilege of exploring it.

In the parallel which was drawn in a former part of this memoir between the respective careers of the two LATHAMS, there was one notable breach. The father was for several successive years President of the College of Physicians; that place of honour the son never held. But this, as I believe, was owing to a voluntary abstinence on his part. So long as the President was appointed from among themselves by that irresponsible and self-elected body of eight Fellows, called 'The Elects,' the burdens of the Presidency might well be deemed by a toiling physician to outweigh even its admitted dignity and advantages. At any rate, Dr Peter Mere declined to become an Elect when chosen for that post in 1845, dreading, as I know, lest by accepting it he should encounter, as he almost certainly, sooner or later, would have had to encounter, the cares and distractions, with the then somewhat dubious honour of the Presidential chair.

'Settled by strong conviction in his Christian faith, Dr LATHAM lived a life of unostentatious but habitual piety.' He was withal a charming companion, full of various information, affluent in anecdote, with a keen sense of fun and humour. With this was blended, as is not uncommon, a quick susceptibility of pathetic emotion. I have heard him read Miss Elliott's beautiful hymn, 'Thy will be done,' with a choking voice and tears in his eyes. His letters are treasures of good sense, of lively and epigrammatic comments on men and things, of shrewd and weighty reflections, wise advice, and affectionate greetings.

I find myself writing in terms of unqualified praise; but I am not conscious of wilful exaggeration. If he had faults — as doubtless he had—they refuse to live in my memory. I must paint him as he was to me. I have tried to let him portray himself.

One of the sterling and most prominent features of his character was the same with that of which Sir James Paget, in the ninth volume of these transactions, has drawn so touching a picture as

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exemplified in his nephews, the two Ormerods. His conduct throughout life was governed by an abiding and imperative sense of duty; and as a corollary of this temper of mind must be reckoned his love and his habits of order and method. The letters received by him and kept were all arranged in packets, and the substance of each was noted on the envelope. Even in his extreme feebleness at Torquay no book was ever suffered to be out of its place; if no one was at hand, he would rise from his chair with great exertion and replace it. I am permitted by Miss Latham to quote some words of her most interesting letter to myself descriptive of his later condition:—

'Every winter after his retirement to Torquay he suffered more or less from asthma, but after the first four winters, and as his bodily strength diminished, the attacks became less severe. During summer, even up to 1874, he could drive out, walk a little in the garden, and sit under the trees. It was a constant delight to him to look upon the bay with the fishing-boats, the green fields with the sheep, the garden with the work going on in it. He saw few beyond his own family and his immediate friends. All that interested them interested him, and he watched the progress of his friends and medical pupils with pleasure and pride. His books were his chief companions. Wherever he was, in bed or in his sitting-room, his Greek Testament, with Gresswell's Harmony and Bengel's Commentary, were by his side, and were read and studied over and over again. The Gospel of St John was the Gospel that he especially loved. He knew many chapters by heart in Greek, and would repeat them to himself at night, or before he went to sleep. He did not speak much of holy things, but from words he would let drop one could gather how far he entered into their depth and truth. Arnold's sermons, Keble's, and with others, latterly those of Baldwin Brown, he never tired of having read to him. Any biography of the men he had known, or any account of the times in which he or his father had lived, interested him. And he would often turn to the classics. Shakespeare and Milton were his favourite English poets. He had the articles of the *Times* read to him daily, but his singularly pure, unprejudiced, clear mind shrank from controversy. At last his reading was almost entirely on sacred subjects. He shared all the little pleasures of those about him, and was ready and anxious to help in any good work.

'By nature extremely sensitive, his patience and resignation were very beautiful to witness. In his most acute attacks of asthma no murmur ever escaped him, only touching appeals for strength to bear what it pleased God to lay upon him. He often expressed great thankfulness for all the blessings vouchsafed him, frequently saying "How happy I am."

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'His old age *was* very happy and peaceful, a waiting for the life to come.

'During the last few years he became gradually weaker, and the attack of asthma that came on after Christmas 1874 he never thoroughly shook off. In April he rallied a little, but soon failed again, and became almost helpless. When he was too weak to listen to reading for more than a few minutes at a time, he was not happy without those few minutes' reading from the Bible and the favourite sermons. He talked to his children as well as breathlessness would permit, never losing his interest in every thing that concerned them. Every night and morning they gathered round his bed, and he had read some collects from the "Visitation of the Sick," with the "Gloria in excelsis." At the end of the second collect he always repeated aloud, with uplifted hands, the words "Life everlasting." All these last months was a struggle with weakness and difficulty of breathing. He bore it all with quietness, patience, and courage. On the 20th of July he became rather suddenly faint, and in less than half an hour passed gently away, no one being able to tell when he ceased to breathe. He retained his consciousness to the very last, as he had always prayed he might be permitted to do.'

If I were called upon to sum up his character in the fewest words, I could use none more fitting than those with which he (anonymously) has commemorated his beloved brother John. He was an 'example of that peculiarly English character, the unobtrusive but accomplished and high-minded Christian gentleman.'

He had outlived nearly all his contemporaries. Two yet remain who, next to the persons of his immediate family and beyond all others, were those between whom and himself the ties of ancient friendship and mutual affection were, I have reason to know, the strongest. Sir John Coleridge is one of these. Both of us, indeed, are now stranded—if of him I may presume to say so—upon the fast-narrowing sands of time.

Ripe in years as he was, and ready in spirit for the solemn change, his death must long be the subject of tender and sacred regret among the nearest and dearest of his surviving family and friends; nor will his memory soon cease to be reverently cherished throughout a much wider circle.

'Multis ille bonis flebilis occidit,
Nulli flebilior quam mihi.'

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SAINT BARTHOLOMEW'S HOSPITAL REPORTS.

ON THE CAUSES, DIAGNOSIS, PATHOLOGY, AND TREATMENT OF MISSED LABOUR,

WITH ILLUSTRATIVE CASES.

BY

ROBERT GREENHALGH, M.D.

The subject of Missed Labour is one about which little is known, of which few have had any experience, which has been rarely described, is involved in considerable obscurity, and is, notwithstanding, one of great practical interest.

To Dr Oldham is due the credit of having, in the year 1847, specially directed the attention of the profession to 'a rare case of midwifery,' carefully recorded and ably commented upon, and to which he applied the term 'Missed Labour.' In the year 1864 Dr M'Clintock published two valuable papers containing much additional information on this subject, together with a case that had occurred in his practice, and one is also recorded by Sir J. Simpson. As this class of cases has been, and may be, confounded with certain cases of extra-uterine fœtation, or rupture of the uterus, with escape of the fœtus into the abdominal cavity, with protracted gestation, and with premature labour and expulsion of a decomposing ovum, it is of the greatest importance that the term 'Missed Labour' be accurately defined and appropriately applied.

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Dr M'Clintock (Dublin Quarterly Journal, vol. xxxvii., New Series, Feb. and May 1864, pp. 51 and 307), referring to Dr Oldham's paper, says, 'This term has been applied to a class of cases of uterine pregnancy, in which, through failure of the parturient action, the fœtus is retained for some indefinite period beyond the term of normal gestation.' He adds, 'In every instance the fœtus has apparently been dead at the time when labour should have taken place; and the waters of the ovum have generally been discharged about this epoch, or previously. To such, and such cases alone, should the term "Missed Labour" be restricted. Such, however, has not been the case; thus, under this heading have been grouped Dr Menzies' case of obstructed labour, due to a mechanical impediment in the cervix uteri, giving rise to powerless labour; Dr Cheston's second case, and Mr Morley's case, both cases of extra-uterine pregnancy; Dr Ranson's case of premature labour, with the expulsion of a decomposing fœtus; whereas Dr Wynn Williams' cases are probably instances of protracted gestation, certainly not of "Missed Labour."' (Obstetrical Trans., vol. vi. p. 208). Although more than one author has given references to other cases of so-called Missed Labour, still so scanty are the details supplied, that I shall omit all mention of them, as I do not consider the evidence sufficient to warrant me in deducing any critical conclusions from them. It is obviously of the greatest importance in an essay of this kind, which has to deal with a subject about which little is known, and aims at the elucidation of an obscure accident, that the data upon which such deductions are based should be beyond all question. I have, therefore, deemed it expedient to ground my observations upon the following nine cases, brief abstracts of which are given from the records of trustworthy authorities, and also upon one case which has occurred in my own practice.

Case I.

On the 8th of February 1867, Eliza Fish sought my advice as an out-patient at St Bartholomew's Hospital, on account of an extremely fetid and copious brown discharge from the vagina, with bearing down in the lower parts, and a constant aching pain in the loins, which, she said 'compelled her to lie down the greater part of her time.' Her countenance was somewhat anxious and pale, with a faint flush; pulse 92, full, soft, and regular; skin warm and moist; tongue clean; appetite impaired; sleeps fairly; is losing flesh.

Upon inquiry I learnt that she was 43 years of age, married 12 years, had had ten children at full period, the last, three years ago; good labours and recoveries. The discharge, which had been

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going on since last October, was much increased on exertion; she had never flooded. She stated that a few days ago she consulted a medical man, who informed her that she was suffering from cancer of the womb, and advised her to apply to the Hospital for advice.

On examination, the abdomen was found somewhat distended, the hypogastrium, up to the umbilicus, and towards both iliac regions, being occupied by a well-defined, round, dully tympanitic swelling. The vagina capacious, slight trace of rugæ, cool, and very moist, was wholly occupied and much distended at its upper extremity by a round, firm, globular body, immovable, and very granular to the feel. At this stage of the examination, I and others were so strongly impressed with the idea that the body felt was a pessary, that she was closely catechised as to the existence of previous displacement of the womb, and the introduction of any mechanical supports; she, however, positively asserted that she had never suffered from such an affection. By the speculum this body was brown in colour, and in appearance closely resembled an ordinary boxwood pessary. When seized with a pair of forceps, it readily broke down, giving exit to a copious dirty-brown, offensive discharge. It was not until the finger was passed into the cavity of this body that it was discovered to be a fœtal head about the sixth month of development. The two halves of the frontal and one parietal bone were at once removed, with a view to give exit to the pent-up discharges. Ready impulse was communicated to the head by pressure upon the hypogastric swelling.

The patient was sent up to Martha Ward, placed in bed, and ordered a liberal supply of nutritious food, and stimuli; quinine was prescribed, and the vagina was directed to be well syringed out three times a day with a solution of Condy's fluid.

On the 10th of February the following additional particulars were elicited.

She commenced to menstruate at 17—regularly about every twenty-one days, lasting four days; scanty, without pain—last period fourteen months ago. She says that she weaned her youngest child when fourteen months old, after which she menstruated regularly and healthily for ten months, the last period being about the 9th of December 1866, shortly after which she thinks she became pregnant. She went on 'all right' until she was about four and a half months advanced, when her husband came home intoxicated; a quarrel arose, and he gave her a blow on the cheek, rendering her insensible for ten minutes. He struck her nowhere else, but she was very much frightened and agitated from that time. From this period up to the 9th of last October she went on as usual during her pregnancy, excepting, she says, she

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got no larger, and the swelling in the abdomen felt like a round ball, and never moved, from which she imagined the child was dead. On that date feeble labour pains set in, when she sent for a midwife, who examined her, 'broke the waters,' and said something was wrong; she told her the child was very high up, and then left her for the night. During the following morning the midwife returned, made a vaginal examination, and at once sent for Dr R., who examined her, said he felt the head, that all was right, but that she would not be confined for a day or two. For the three following days matters remained much in the same state, when she was seized with great pain, which brought away a profuse and very offensive discharge, which continued to flow for the two or three succeeding days, when 'the doctor called, pressed her belly, and made her a good deal less.' He then said she was not pregnant, but had 'carried a good deal of wind.' Shortly afterwards she became delirious and quite insensible, in which condition she continued for two days, when she was removed to St Luke's Asylum as a lunatic. On her arrival the doctor of that institution said she was delirious from fever, and had her removed to the sick ward, where she remained for sixteen weeks, leaving on the 27th of January 1868. She again applied to Dr R., who told her that she must be suffering from a tumour, and gave her three bottles of physic. She now went to Hackney for a week; on her return she was advised to apply to the Hospital.

This poor woman's statement is so extraordinary, that I have been induced to give it almost *ipsissima verba* from the notes of my clinical clerk.

February 12.—Chloroform being administered, the patient was placed on the operating table in the lithotomy position, by which the upper part of the vagina was easily reached. On carefully examining the hypogastric swelling, a peculiar grating or crepitant sensation was communicated to the hand. At first I found considerable difficulty in passing any instrument beneath the bones of the skull, which were firmly imbedded in the vaginal walls and cervical canal; at length, however, a free opening was made which enabled me to pass my fingers freely into the uterus, from which, and with the aid of a pair of forceps and Dr Sims' curette, I was enabled to extract bone after bone, together with some nodular fleshy growths about the margin of the os uteri; the operation was greatly facilitated by firm pressure over the uterus. During the removal of the fœtal bones, which were quite denuded of their soft parts, a dark-brown offensive discharge, with more or less dark blood, continued to exude from the vagina. There was no trace of placenta or funis. The uterus being well syringed out, the patient was removed to bed.

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February 14.—Has not had one unfavourable symptom; no pain nor tenderness of the abdomen; can eat and sleep well; skin cool and moist; pulse 88, soft. Some inodorous discharge from the vagina, which is tender, and from which some small bones were removed.

February 18.—Four small bones came away this morning.

February 19.—Two small bones passed. Some fragments of bones and an ilium removed by forceps from the fundus uteri; discharge slightly purulent, without fœtor, and much diminished in quantity.

March 11.—The patient has progressed uninterruptedly well up to this date, and wishes to leave the Hospital; discharge, nearly healthy mucus. On examination, the vagina was found normal; the cervix uteri short, somewhat firm, and enlarged in circumference; lips everted; posterior lip sacculated, freely admitting the upper part of the index finger; margin of os fissured, and very nodulated; uterus movable, and considerably enlarged; sound passed five inches easily, and without pain, into an enlarged cavity, in which, after very careful examination, no trace of fœtal bones could be detected.

It is worthy of remark, that there was no attempt at lacteal secretion during her pregnancy, nor after the extraction of the fœtus.

March 13.—Left the Hospital without one unfavourable symptom, having nearly regained her usual strength.

Case II.—*Dr Oldham's Case.*

Mrs C. was seen by Dr Oldham on the 30th of June 1845. She was 41 years of age, and had been married 22 years. When 20, she had a living child at seven months, then two abortions, followed by a living seven-months' child, and afterwards by twenty abortions. At 32 years of age she had another living seven-months' child, and then miscarried. Four years ago she went her full time, and gave birth to a living child. On the 26th of June, about the full period of her twenty-eighth pregnancy, she lost about a quart of blood; there was 'no active pain;' 'the os uteri was closed;' 'there was no appearance of labour.' On the 30th of June, four days afterwards, 'she complained of diffused tenderness over the abdomen, which was increased by moving or shifting her position: still she bore an abdominal examination without much shrinking. There was no sickness, nor rigor, nor febrile disturbance. The abdomen was evenly distended, and had the ordinary feel of the uterus at the ninth month;' the cervix high up and shortened; 'the os uteri readily admitted the finger;' 'milk could be freely expressed

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from the breasts.' Dr Oldham now 'fully anticipated that there was an extra-uterine conception,' which idea was dispelled by a further examination, and led to the inference that the fœtus was dead. Remedies were prescribed to allay the abdominal pain, &c., and it was determined 'that labour should be waited for.'

Two days afterwards 'a fœtid, coloured discharge came from the vagina, with occasional puffs of gas,' which continued up to the 12th of July, when the discharge became 'very dark and fetid.' Her health was now greatly impaired. 'The abdomen was not so large, but harder, and the parts of the fœtus could be distinguished. The os uteri was lower down and more yielding, admitting two fingers within it, and the head-bones of a decomposing fœtus could be felt; there had been no uterine action.' Attempts were now made 'to excite uterine action by pressure on the cervix, and to enlarge the orifice itself;' 'two fingers could be passed into the os,' but the cervix could not be dilated to any further extent; 'its tissue seemed, when thus stretched, to be dead and unyielding.' Galvanism and other means were now used, 'but the uterus remained perfectly passive.' A great deal of decomposing matter was released from the womb by passing a small hook through the os and breaking up the brain, and injecting a stream of warm water within the cavity, which was frequently repeated.' On the 17th of July 'the placenta, with the umbilical cord in a loose and putrid state,' was removed by the fingers.

From time to time portions of the soft parts and bones of the fœtus were taken away with more or less difficulty, owing to the unyielding state of the os. 'The abdomen daily diminished in size, the discharge lost its fœtor and became puriform.' In the meantime, her powers were kept up by ammonia, bark, opium, and good diet. 'Towards the end of September she was much emaciated, and very feeble;' the abdomen was tender, and she complained of severe pain in passing water,' which led to the conviction that the uterine wall had ulcerated through, and 'the bladder was being implicated. She now began to sink rapidly, there was frequent vomiting, and she died on the 26th of September, three months from the time when labour should have come on.'

A post-mortem examination revealed 'some delicate flakes of recently-formed lymph, with a sparing quantity of serum,' in the abdominal cavity. 'On dividing the central line of the abdomen below the umbilicus, a cyst was opened which contained a number of bones closely set together, with a quantity of thick, dark-coloured putrilage.' 'The cyst, which accurately covered the mass of bones, was formed in front by the lower parts of the abdominal walls and the bladder.' 'The back part of the cyst was formed by the posterior wall of the cavity of the uterus.' 'The whole of the

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anterior wall of the uterus was absent, leaving only the front lip of the cervix to complete the os uteri; and thus the mouth of the womb formed the outlet of the sac which contained the bones. The bladder was so thinned in one part as to be quite translucent, and all but perforated.'

Case III.—*Dr M'Clintock's Case.*

This patient consulted Dr M'Clintock, in the early part of the summer of 1863, for a 'constant discharge from the vagina, very profuse in quantity, and most horribly offensive in its odour,' which had been going on for nearly fifteen months, 'but was unattended by any hæmorrhage or any considerable pain, but with great impairment of her general health.' She was 45 years of age, and had had many children. She stated that she had had 'the best provincial and metropolitan medical advice,' and 'had undergone a prolonged course of treatment, topical and general, but without the least benefit.'

On examination, a globular tumour, about the size of a four-months' gravid uterus, was detected in the hypogastrium. 'On proceeding to touch the os uteri, a gush of thin, sanious matter, most abominably fetid, escaped from the vagina, causing me at once to suspect that she had cancer of the womb; which surmise seemed to be confirmed by the indurated and thickened state of the os uteri. Had no further investigation been made,' says the Doctor, 'I would have pronounced the case to be one of malignant uterine disease.' A sound was now passed into the uterus, and 'came in contact with some hard substance.' The finger was then introduced through the os uteri, 'within the uterine cavity, where it encountered several bony projections and surfaces.' 'Very careful inquiries about the patient's previous history, and especially as to the circumstances of her last labour,' were made, whereupon the following facts were elicited:—'That she had given birth to twelve living children, then a dead child at full term, soon after which she conceived for the fourteenth and last time, when she 'proceeded naturally till about the seventh month, when it is probable the fœtus died. She went on, however, to the end of the ninth month, when pains like those of labour set in, and there 'was some discharge of blood and water.' 'These symptoms soon passed away, and pregnancy went on without any unusual circumstance for five weeks longer.'

'She was then seized with severe pains, that she described as labour pains, which continued for two days without any cessation, accompanied with hæmorrhage. About this period a fœtal rib was removed from the vagina, and 'some other bones came away,

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all of which, she affirmed, were entirely denuded of flesh.' From this epoch to Dr M'Clintock's 'first interview with her, a period of sixty-two weeks had elapsed, and during the greater part of this time the offensive discharge from the vagina was going on, and some few fragments of bone had come away; but there was no hæmorrhage, and she was not aware of the placenta having been expelled.'

She was taken into the Hospital with the view to 'the removal of the débris of the fœtus from the interior of the womb.' Considerable difficulties arose from 'the small and rigid state of the os uteri,' from the severe pain caused by any manipulation, and from the want of a safe and proper instrument wherewith to seize the fragments of bone. 'A large conical tent' was now introduced. Upon its removal under chloroform, a solution of chloride of soda was injected into the uterus, 'so as to wash away all discharge.' Between the 1st of May and the 9th of June she underwent seven operations, after which 'a slight inflammatory attack took place.' On the 18th and 25th of June, and 2d of July, portions of bone, in all 'over sixty,' were removed by means of long curved forceps.'

After the last operation symptoms resembling those of acute pyæmia set in, and she sunk on the 7th of July. 'No post-mortem examination was obtained.'

Case IV.—*Dr Cheston's Case.*

Mrs Cowles became pregnant for the fourth time 'in the third year after the birth of her last child,' passed through a normal pregnancy, 'during which the motions of the child were lively; she had milk in her breasts.' She was taken in labour in December 1738; 'the pains were lingering, and went on for three days, but without any advance towards delivery.' A skilled practitioner, Mr Rogers, was called in, 'who declared that the child offered for the birth, but that he could not deliver it without instruments, as the pains were not sufficient to bring the child into the world.' The patient refused the proffered aid, and 'firmly declared that if she could not be delivered without instruments, she and the child should die together. For some days the pains seemed to return at intervals, but gradually abated, so that by the end of the week all prospect of delivery was over.' 'She continued in a very weak, distressed state for full three months afterwards, when she gradually recovered her strength, and from that time had found but little diminution in her size.' Up to the time of her death, in her 80th year, from 'quick-spreading mortification' of the foot, following 'a slight paralytic stroke,' 'she had not felt any material cause for complaint.'

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Dr Cheston remarks, 'that the usual action of the uterus, and the powers necessary for parturition, were, in the opinion of Mr Rogers, by some means or other so diminished, that nature alone could not accomplish the birth.'

Post-mortem.—A 'bony cyst' was discovered in the abdomen, in which all the parts of the fœtus were most forcibly compressed, and to which it was firmly attached. After a careful dissection, Dr Cheston remarks, 'We can have no reason to doubt that the whole of the substance leading from the vagina to the bony tumour was the uterus originally containing the child, and drawn into this elongated shape by the gradual advance and protrusion of the child through its yielding fundus, till it was received and retained by an extension of the peritoneum, forming a kind of hernial sac.'

'The fœtus was very firm and compact, as if condensed by great pressure; hence it seemed completely deprived of its fluids.'

In this case the membranes probably did not rupture, to which may be attributed the absence of putrefaction. There were no remains of the membranes, placenta, nor funis.

Case V.—*Sir James Simpson's Case.*

This patient was seen by the Professor on the 8th of May 1865. She was 25, had had two labours, the first natural—the second complicated with placenta prævia. She had expected to be confined about the end of January, 'the last menstruation having taken place nine months previous to that period.' 'The anticipated confinement, however, did not take place.' On the 13th of April 'a fleshy and putrid substance' was discharged, without pain, from the vagina, which was 'believed to be placenta, with something like an umbilical cord.' The expulsion of this mass was preceded for eight or ten days by 'a bloody and watery discharge.' On the 8th of May a fœtal tarsal bone was brought away from the vagina, after which a sound was passed 'several inches into the uterus, its top coming in contact with bony matter, and fixing the diagnosis.' 'The os uteri was almost quite closed: an intolerably offensive grumous discharge was coming away from the vagina, and the pulse was very rapid and weak.' Ergot and sponge tents were recommended, but sickness and vomiting supervened in a day or two, and the patient sunk on the 14th of May, the fœtus having been retained in utero more than twelve months. It is worthy of remark that this patient did 'not experience pain throughout the course of her illness.'

The post-mortem revealed firm adhesions between the uterus and intestines; 'An opening rather larger than a half-crown-

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piece connected the transverse colon with the uterine cavity,' the walls of which were 'as thin as parchment, and 'in a state of fatty degeneration.'

'The fœtus was found lying with its nates downwards, and its head doubled in on the chest and abdomen,' and so squeezed that one part could scarcely be distinguished from another: it resembled 'adipocere, and had a highly offensive odour.'

Case VI.—*Dr L. M. Weems' Case (Virginia).*

Payne, a mulatto about 25 years of age, mother of three or four children, labours represented 'as having been severe,' 'in the spring of 1827, having completed the ninth month of her pregnancy, was taken with severe labour pains, which, after continuing two or three days, left her, undelivered.' Dr Thornton, who saw her at this time, 'concluded her pregnancy was extra-uterine.' 'From this time she continued regularly, about every four weeks, to experience a return of the pains, which would generally last for two days, and then leave her, as before. In June 1828 'she was very much emaciated. For several months she had experienced an offensive discharge from the vagina, and had been more harassed by the pains.'

'Between twelve and fifteen months had now elapsed since the commencement of labour, and of course between twenty-one and twenty-four months since conception.' Her patience being 'entirely gone,' the Cæsarean section was performed 'by an empiric,' when the uterus was found to contain the remains of a fœtus in a half-dissolved state, many of its bones being detached and bare; a large proportion of the soft parts had been dissolved by putrefaction, and had been discharged by the vagina. On removing the remains of the fœtus, the internal surface of the uterus for several inches around the os uteri was found lined by a crust of osseous matter, which formed a smooth and perfectly continuous surface, except at the os uteri, where there was an opening sufficiently large to admit the finger. The crust was about half a line thick, possessed considerable strength, and adhered firmly to the uterus, from which it was removed in small flakes, with some difficulty.' Notwithstanding, the uterus, after the operation, 'showed no disposition to contract;' 'not more than one or two ounces of blood were lost, none of which was from the uterus.' 'Two or three stitches were used to close the incision in the uterus.' 'She continued to improve until about the middle of the second week, when she violated the rules of diet,' peritonitis and metritis ensued, of which she died in forty-eight hours. 'The body was not examined; nor would,' continues Dr

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Weems, 'the examination have been interesting, as it had been fully ascertained during the operation that the osseous incrustation was the only obstacle to delivery. That it was a sufficient obstacle cannot be doubted.'

Case VII.—*Dr Montgomery's Case.*

On the 12th of February 1830, Dr Montgomery visited Mrs C., pregnant for the fourth time. 'Up to the seventh month matters went on favourably,' when it is probable the fœtus died; 'she, however, continued to increase in size up to the end of the ninth month, when she was supposed to be in labour of a full-grown child.'

Dr Montgomery was informed that the membranes, which had protruded without pain, had been ruptured a week ago, giving 'issue to a large quantity of dark and fetid fluid, but no labour action succeeded, nor could any presentation be felt.' The ergot was given, but 'no uterine action ensued.' She now suffered from severe fever, tympanites, and abdominal pains, and had a '*horribly offensive*' discharge from the vagina. After a careful abdominal and vaginal examination, Dr M. 'expressed an opinion that there was no child then in the uterus.' The elastic tube of a stomach-pump was now introduced into the uterus, which showed its cavity to be 'greatly distended,' and gave exit to 'foul fluid and great quantities of an abominably fetid gas,' the expulsion of which was greatly aided by firm pressure over the abdomen, which 'subsided very much.' Low down at the left side of the abdomen was felt 'a hard, uneven lump,' which was 'afterwards ascertained to be a heap of fœtal bones in the uterus, which continued to be expelled, from time to time, during the remainder of the lady's life, which lasted only about two years and a half. The placenta and cord came away a few days after the Doctor's first visit.

Case VIII.—*Dr Burden's Case, quoted from Dr M'Clintock.*

'The history she gave of herself was, that at the proper time strong labour came on; but when her medical attendant saw her, the pains had become weaker. He gave her laudanum—how much she could not say—whereupon the pains soon ceased, and never recurred. Some weeks afterwards she was sent into the Hospital, and died there; and on laying open the uterus, a child was found in a dissolved, putrid state.' Dr M'Clintock remarks, 'In the above case parturition was diverted, if I may so speak, by the improper use of opium, and never seems to have been renewed.'

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CASE IX.—*Dr Carson's (Sen.) Case, quoted from Dr M'Clintock.*

In the year 1836 Mrs Byrne came to the Anglesea Lying-in Hospital, Dublin, 'in the first stage of labour with her first child, at the completion of the ninth month of utero-gestation,' when her husband managed to make his way to her bedside in a state of intoxication, 'beat her very severely,' and 'alarmed her very much.' She complained of being injured in the abdominal region, her pains ceased, and the infant no longer exhibited any indications of life. She went home in a few days, returning again to the hospital in two months, 'in strong labour.' 'The presentation was natural, and the dilatation of the os uteri went on most satisfactorily; but the head never made the slightest progress through the outlet of the pelvis, although the expulsive pains were most powerful. The smell of the air which escaped from the vagina was the most oppressive thing I ever felt.' For a time the case was left to the 'natural efforts;' but at the termination of the fifty-third hour from the commencement of labour she was delivered with the forceps of a dead female child, in a 'peculiar state of decomposition.' The size of the child's body, increased to 'an enormous extent,' was 'blown up with air,' and 'was as firm as a drum.' This patient died in less than two hours after delivery, apparently from exhaustion, on the 4th of July 1836.

CASE X.—*Dr Halley's Case.*

E. H., aged 35, married six years, miscarried three months after marriage, followed by hæmorrhage for four or five months. 'In November 1860, again became pregnant, and suffered from constant discharge for six weeks; quickened in March 1861, and was delivered of a dead child in July.' Again 'became pregnant in May 1862, quickened in August, and, over-fatiguing herself, a discharge occurred, which continued for about a month, when the membranes gave way, and fleshy masses and offensive discharges came away daily for two months more, bones occasionally passing.' From this time up to 1866 'the discharges were occasionally offensive, and sometimes portions of bones were passed,' this at last ceasing for several months, when a rib, with much offensive discharge, came away. 'She had had slight shivering on one or two occasions before passing the bones, but otherwise her health had been good. On digital examination, the uterus was found large, anteverted, with shortened neck, the os slightly open, the whole giving the idea that there was some abnormal substance within.'

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On 10th May 1866, the os was dilated by laminaria and sponge tents, when 'a pair of long dressing forceps were introduced, and fifty-nine pieces of bone were removed, the accompanying discharge being very offensive.' On the following day twenty-seven additional pieces were removed, and one came away subsequently, making a total of eighty-seven. Each of the three manipulations took from two to three hours, during which she was kept under chloroform. Since the operation she had gone on perfectly well in every particular, the discharge had ceased, and menstruation was regular.'

It will be seen by the following abstracts (see Table, p. 14) that the ages of six only were recorded; thus, two were 25, one 35, one 41, one 43, and one 45, a number too limited to justify any deductions on the score of age.

In eight, the number of previous pregnancies is stated; thus, two had been pregnant twice; two, three times; one, three or four times; one, ten times; one, thirteen times; and one, no less than twenty-seven times. It is obvious that no inferences can be drawn from these data, inasmuch as five had been pregnant between two and four times, whereas three had been pregnant over ten times. An important fact is here omitted in these records—viz., the interval between each pregnancy.

The date of the last labour is noted in only four cases; thus, in one it was ten months; in two, three; and in one, four years previous to this accident. In eight cases symptoms of the approach or accession of labour manifested themselves at the full period.

As regards the character of the pains, two are noted as 'strong' (in one case arrested by an overdose of laudanum); two, 'severe;' one, 'lingering;' one, 'feeble;' whereas in three there was 'no pain,' and in one 'no active pain.' Thus it is obvious that in the majority of the cases certain, though ineffectual, efforts were made by the uterus to expel its contents.

The duration of the pains is mentioned in only four cases; thus, in two they lasted three days; in one, between two and three days; and in one, two days—in the two latter the pains are stated to have been 'severe.' Little or no inference can be drawn from these statements as to the character and duration of the pains, against the fact that the uterine throes were wholly insufficient to effect the delivery.

The condition of the os uteri has been specified in seven cases; thus, in three, it was 'dilated;' in one, 'almost quite closed;' in one, 'slightly open;' in one, 'closed;' in one, 'indurated.' Here let me guard against a possible source of error: these conditions do not refer, except in one instance, to the state of the soft

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Case	Date.	Author.	Reference.	Age.	Married—years.	No. of previous pregnancies.	Labours at term.	Last labour.	Period of accession of labour.	Character of pains.	Duration of pains.	Condition of soft parts.	State of membranes.	Prominent Symptoms.	Diagnosis.	Period of probable death of the fœtus.	Means employed to effect expulsion.	Period of retension of the fœtus.	Placenta came away.	Hæmorrhage.	Result.	Condition of Uterus.	Condition of Fœtus.	General Remarks.
1	1807	Greenhalgh		43	12	10	10	3 yrs. ago.	9th m.	feeble	3 days	dilated.	R. artif.	Pain, offensive discharge, impairment of health.	Cancer of womb.	4½ ms.	Removal of bones by small forceps and curette.	5 to 6 ms.	No	No	L	...	Denuded bones	Blowonchec at 4½ ms. o pregnancy, fright.
2	1845	Oldham	Guy's Hospital Reports, New Series, vol. v. 1847, pp. 105–112.	41	22	27	1	4 yrs. ago.	9th m.	'no active pain.'	...	os closed	...	Loss of quart of blood, tenderness of abdomen, pain, vomiting, secretion of milk, fetid discharge and puffs of gas, impaired health.	Extra-uterine conception.		Galvanism, ergot, hook.	3 ms.	Yes	Yes	D	Ulceration of anterior wall.	Bones & decomposing soft parts.	...
3	1863	M'Clintock	Dub. Qr. Jour. of Med Scien. vol. xxxvii. p. 51-507, 1864.	45	...	13	13	...	9th m.	severe	2 days	os indurated.	...	Offensive discharge, impairment of health, hæmorrhage, discharge of blood and water.	Malignant uterine disease.	7 ms.	Tents, small forceps.	16 ms.	No	Yes	D	...	Bones denuded of flesh.	Sound passed.
4	1738	Cheston	Medico - Chir. Trans. vol. v., 1814, p. 104.	...	...	3	...	3 yrs. ago.	9th m.	lingering	3 days	dilated.	...	Weak and distressed state, pains, secretion of milk, well in three months, emphysematous crackling within cavity of abdomen.	...	...	No means permitted.	52 yrs.	No	No	L	'Bony cyst.'	Appeared deprived of its fluids.	Died in 80 year.
5	1865	Simpson	Edinr. Med. Journal, 1865, p. 575.	25	...	2	...	...	...	no pain.	...	almost quite closed.	...	Expulsion of fleshy and putrid substances, bloody, watery, and offensive discharge, very weak, sickness and vomiting.	...	...	Ergot, sponge tents.	12 ms.	Yes	...	D	Ulceration thin as parchment, fatty degeneration.	Like adipocere, very offensive.	Sound passed.
6	1827	Weems	...	25	...	3or4	...	...	9th m.	severe	2 or 3 days.	...	...	Much emaciated, pains, offensive discharge.	Extra-uterine.	...	Cæsarean section.	21to24 ms.	...	...	D	Osseous crusts, did not contract, no hæmorrhage.	Bare bones & half dissolved soft parts.	...
7	1830	Montgomery	Signs of Pregnancy, 2d ed. p. 589, 1863, London.	...	...	3	...	...	9th m.	no pain.	...	...	R. artif.	Fever, tympanites, abdominal pains, offensive discharge.	No child in uterus.	7 ms.	Ergot, pressure.	2½ yrs.	Yes	...	D	...	Heap of fœtal bones.	...
8	1863	Burden	...	...	...	...	...	...	9th m.	strong	...	...	...	...	...	...	...	Some weeks	...	...	D	...	Dissolved putrid state	Pains arrested by laudanum
9	1836	Carson, sen.	...	...	...	...	...	...	9th m.	strong	...	dilated	...	Powerful expulsive pains, no advance of presenting head, offensive air.	...	9 ms.	Forceps.	2 ms.	...	...	D	...	Body blown out with air, and decomposed.	Blow on abdomen during labour fright.
10	1867	Halley	Lancet, vol. ii. 1867, p. 72.	35	6	2	...	10 ms.	...	...	...	os slightly open.	R. spont.	Fleshy masses, offensive discharges, shiverings, health good.	...	3 to 4 ms.	Tents.	4 yrs.	...	...	L	...	Portions of bones	Due to ove fatigue.

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parts at the completion of the full term, but to the condition of parts when the cases came under the recorder's notice.

The membranes were ruptured artificially in two cases: in one 'the membranes gave way;' in the remaining seven, no mention is made as to whether they were, and when, ruptured. It is more than probable, judging from the state of the fœtus and the attendant symptoms, that the liquor amnii was discharged in all but one case.

The prominent symptoms are noted in nine cases; thus, in one, 'health good;' in two, the 'health was greatly impaired;' six had 'pain;' one, 'tenderness of the abdomen;' one, 'fever, tympanites, and abdominal pain;' one was in 'a weak and distressed state;' one, 'very weak, had sickness and vomiting;' one, 'much emaciated;' eight, 'offensive discharges;' two, 'offensive air and puffs of gas;' two, 'hæmorrhage;' two, expulsion of 'blood and water;' one, 'expulsion of fleshy and putrid substance;' and two, 'a secretion of milk.' Thus it appears that impairment of the general health, more or less local pain, with discharges of offensive fluids and air from the vagina, were among the most frequent symptoms of this accident.

The diagnosis is said to have been difficult in five cases; thus, two were supposed to be cases of 'extra-uterine fœtation;' one, 'cancer;' and one, 'malignant disease of the womb;' whereas in the fifth it was affirmed by the distinguished Montgomery that there was 'no child in the uterus.'

The period of gestation at which the fœtus is supposed to have perished is noted in four cases: in two it occurred at the seventh month; in one at four and a half months; and in one at the ninth month—in the two latter probably due to violence and fright.

Means were adopted to excite the expulsion and removal of the contents of the uterus in eight cases: in one, removal of the bones by small forceps and curette; in one, galvanism, ergot, and hook; in one, sponge tent and small forceps; in one, laminaria and sponge tents, and long dressing forceps; in one, ergot and sponge tents; in one, Cæsarean section; in one, ergot and pressure; in one, the midwifery forceps.

The date of the retention of the fœtus beyond the full period of utero-gestation is specified in all the ten cases: in one it was retained two months; in one, some weeks; in one, three months; in one, between five and six months; in one, twelve months; in one, sixteen months; in one, from twenty-one to twenty-four months; in one, two and a half years; in one, four years; and in one, fifty-two years.

Reference is made to the placenta in six cases: in three it was expelled, and in three it was not known to have come away.

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The occurrence of hæmorrhage is alluded to in four cases: in two it occurred; in two there was no loss.

The result to the mothers is specified in all the cases: seven died; two recovered after the removal of the fœtal bones; one lived fifty-two years with the fœtus in utero.

The condition of the uterus was noted in four cases: in one it was converted into a 'bony' (calcareous) 'cyst;' in two, ulceration of its walls had taken place, in one of which they were 'as thin as parchment,' and in a state of 'fatty degeneration;' in two, it was uncontracted, one of which contained 'osseous' (calcareous) 'crusts.'

The state of the fœtus is recorded in all the ten cases: in one, 'portions of bones;' in three, 'bones denuded,' 'heap of fœtal bones;' in two, 'bones and decomposing soft parts,' and 'bare bones and half-dissolved soft parts;' in one, the 'fœtus appeared deprived of its fluids;' one, 'like adipocere, very offensive;' in one, 'dissolved putrid state;' and in one, 'body blown out with air, and decomposed.'

The sound was used in two cases, and served 'to fix the diagnosis.'

Remarks of Various Authors upon these Cases.

Remarks by Oldham on his Case.

He speaks of it as a 'great rarity,' 'an instance where a female carries a child in the womb to the full period of gestation, but the process of labour is literally missed, and lactation follows on the completion of gestation. The womb then remains passive, and incapable of being excited to act. It holds the fœtus as an extra-uterine cyst does, shrinking, however, gradually with the lessening of its contents. The anterior wall of the womb then ulcerates, and portions of the fœtal bones, having escaped into the peritoneal cavity, seek an egress through the nearest hollow organ—the bladder—and the patient sinks before the process is accomplished. Dr O. alludes to an observation of Dr Simpson, who saw this patient, 'that he believed the same thing happened in the lower animals, and that from labour not supervening, or being completed, fœtuses were retained within the womb.' Dr O. remarks, 'I have not been fortunate enough to find any example of this accident in the sheep or cow, although I have examined a very large number of the uteri of these animals, especially the former.' He then draws attention to the 'resemblance between the case I' (Dr O.) 'have related, and a variety of extra-uterine fœtation.' He remarks, 'My first impression, on hearing what had occurred in this case, was that it was one of extra-uterine conception, especially in the

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"imperfect labour," followed by the distension of the mammæ.' All doubts, however, were cleared up by an abdominal and vaginal examination.

He directs attention to the thickness of the structures intervening between the examining hand and the fœtus, and the 'yielding, impressible feel, as of the gravid womb normally developed.' All doubt was finally removed by feeling the fœtal head, covered by its membranes, through the os uteri.

Dr O. remarks, 'There is a question connected with this case which is very difficult to answer. What was the primary lesion which thus paralysed the womb and destroyed the forces of parturition? There is nothing in the history of the case, or in the appearance after death, satisfactorily to account for it.'

After enumerating from Burdach the numerous causes which impede labour—as feebleness of the general system and uterus; mechanical obstacles, due to abnormal presentation of the embryo, or absolute or relative narrowness of the genital passages, and principally where the child has escaped into the peritoneal cavity through a rent in the uterine walls, or in cases of extra-uterine fœtation—Dr O. remarks, 'Of these different causes, perhaps the most probable, in this case, was some rupture of the anterior wall of the uterus on the first access of pain, which was immediately followed by hæmorrhage, and subsequently by an entire loss of contractile power.' 'There cannot, however,' he said, 'be any proof of this; and the trifling symptoms, both local and general, which followed, are hardly in keeping with so grave and serious a lesion.'

As regards the treatment, Dr O. says, 'It was of the expectant kind, and varied with the change of circumstances. We hoped for some time, notwithstanding the active state of the mammæ, that the uterus would expel the fœtus.' 'When, however, the fœtus decomposed, and there was no appearance of labour pain, every effort was used to excite uterine action.' Every means to excite the uterus to action, every attempt to dilate the os uteri, and manual endeavours to extract the fœtus, proved fruitless; in short, 'the uterus would give way sooner than dilate.'

'Two methods for emptying the womb now presented themselves—either to open the os freely by incision, or gradually to withdraw the bones through the os. By the time the volume of the womb was much diminished, and the structure of the cervix had become harder and more rigid, and the os itself had contracted,' 'portions of the fœtus were removed bit by bit through the os,' with more or less difficulty, 'care being taken to guard the cervix against laceration,' but the patient sank ere the entire fœtus could be removed.

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Remarks by Dr M'Clintock on his own Case and other Cases.

Dr M. adopts Dr Oldham's definition of 'Missed Labour,' which he defines in the following words:—'A class of cases of uterine pregnancy, in which, through failure of parturient action, the fœtus is retained for some indefinite period beyond the term of normal gestation.' 'In every instance the fœtus has apparently been dead at the time when labour should have taken place, and the waters of the ovum have generally been discharged about this epoch, or previously.' Dr M. remarks, 'Cases of missed labour are among the very rarest in obstetric practice,' some of the cases supposed to have been such seeming on close scrutiny to have more resemblance to extra-uterine fœtation. He then details his interesting case, the diagnosis of which appears to have puzzled the best provincial and metropolitan medical men, and even Dr M. himself was, at one stage of the inquiry, impressed with the belief 'that she had cancer of the womb.' All doubts were, however, dispelled by the introduction of the sound, and the subsequent removal by the finger of an ungual phalanx from the uterus. 'This discovery was very unexpected.' The true nature of the case being revealed, Dr M. remarks, 'The removal of the débris of the fœtus from the interior of the womb seemed clearly the course to be pursued, although likely to be attended with much difficulty and risk.' She died of symptoms resembling acute pyæmia.

Dr M. expressed a regret that no post-mortem was permitted, 'as it would most probably have thrown light on many questions of great interest, which must now remain undecided.' After giving a brief recapitulation of the facts of his case, and alluding to the cases of Drs Montgomery and Oldham, already detailed, Dr M. observes, 'The first question which naturally suggests itself, in regard to cases of the kind we are considering, has reference to the cause of the pretermission of labour. How comes it that the crowning act in the great function of reproduction is omitted, thus destroying the effects of all the wonderful series of antecedent processes and developments?' Most assuredly it cannot be attributed to organic disease of the genital passages, for, with one exception (Dr Menzies' case), there was no evidence of the existence of such in any of the cases; and on the other hand, the number of recorded instances are very great in which a uterus affected with organic disease has become gravid. Alluding to Dr Menzies' case, Dr M. remarks, 'There was an obvious mechanical cause for parturition not taking place—viz., the morbid induration and insuperable rigidity of the uterine orifice. Strictly speaking, then, it can hardly be regarded as an example of *missed labour*;

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it was rather one of difficult labour, never getting beyond the first stage.' He is of opinion 'that in the great majority of instances of missed labour, no adequate cause can be shown why parturition did not take place;' and goes on to say, 'It remains, then, for future observers to discover the etiology of this remarkable lesion.' He adds, 'Not less remarkable is it that the fœtus and secundines should be retained after setting up of putrefaction, without destroying the patient,' remarking, 'in some instances very serious symptoms did arise.' He alludes to the long detention of a dead fœtus in utero without ill effects, especially drawing attention to the fact that in all these cases the membranes of the ovum are unbroken, and consequently, the entrance of atmospheric air is impossible; so that although decomposition of the fœtus be going forward, still it is not of a putrefactive kind. 'And here I must draw attention to the very curious and interesting fact that in some cases of missed labour the fœtus was retained for a period of many months or years without undergoing any decided decomposition,' instancing in proof Drs Cheston's, Caldwell's, and Menzies' cases. He then alludes to the similarity of such cases in their progress, especially drawing attention to the 'very severe constitutional disturbance with some symptoms of abdominal inflammation which have occasionally supervened immediately upon the disappearance of the attempts at labour,' as exemplified in the cases of Drs Montgomery, Oldham, and Menzies. He then directs attention to the reduction of the size of the uterine tumour after the normal period of parturition has passed, which is especially rapid in cases where the membranes have been ruptured, and putrefaction of its contents has taken place; slower where the absorption of the liquor amnii is going on to the subsequent compression of the fœtus; to the early escape of fetid fluids and gas after rupture of the membranes, which may last for months or years, during which inflammation may arise, leading to great constitutional disturbance, and 'septic contamination of the system.' The escape of fragments of bones, the inefficient expulsive power of the uterus, 'not to be reckoned on.' He, however, narrates an exceptional case. He says it may be asked, 'What becomes of the osseous remains of the fœtus which have been sepulchred in the womb?' They may 'become conglomerated together and encysted; the uterus tolerates this tumour, and all further symptoms of its presence cease. In some instances where this state of things had continued for a great length of time, the cyst has seemed to possess an osseous structure, but whether true bone or not, I cannot say,' as in Drs Caldwell's and Cheston's cases. After referring to Nebelius' case, in which the fœtus was reduced to a skeleton in the uterus, 'so that the crackling of the bones

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was heard as often as ever the woman bent her body backwards and forwards,' and to Buldach's case, 'where the fœtal remains were carried in the womb forty years,' clearly proving the tolerance of the uterus in certain cases; he, on the other hand, draws attention to the fact that the uterus 'may endeavour to get rid of them by ulceration, and thus the life of the patient may be compromised,' instancing Dr Oldham's case as a good example. He then refers to Vondorfer's case, which terminated fatally through 'purulent infection of the system, after the lapse of eleven years' from the setting in of labour. He then observes, 'The lengthened period the women have lived in most of the published cases of missed labour is truly surprising.' At the same time he expresses a conviction, 'that but for this circumstance many of these cases would never have been put on record; so that we cannot take them as examples of the ordinary course of events in serotine gestation.' Then he gives the following list. 'We find that, dating from the time when labour should have occurred, Dr Oldham's patient lived three months; M.'s, sixteen months; Cheston's, fifty-two years; Simpson's, about twelve months; Weems', from twenty-one to twenty-four months; Montgomery's, two and a half years; Carson's (sen.), two months.' As regards treatment, Dr M. says, 'I have no hesitation in laying it down as a general precept, subject, of course, to limitation, that this mass of fœtal corruption should, when practicable, be exhumed from its living sepulchre. The sooner the attempt is made, the better chance there will be of succeeding; as with the lapse of time the uterus contracts, and the bones get more massed and conglomerated together, or they may become embedded in the substance of the organ.' He insists upon the observance of this principle, in spite of the ill success in his own and Dr Oldham's cases, remarking 'that these cases do not materially affect the principle laid down. They only show the difficulty and danger in its application.' He recommends that the os uteri should be open enough to admit two fingers, and that, if necessary, sponge or sea-tangle tents should be used, and that it is 'better to be satisfied with bringing away a little at a time, even though this should entail many operations, than to use persevering and bolder attempts, in the hope of accomplishing our purpose by a fewer number of operations.' After expressing a regret that he had not more rigidly followed out that principle in his own case, he briefly alludes to a case recorded by Dan Shulz, by which 'it appears that at the end of ten years from the time when labour was missed, the patient underwent a series of operations, by which no less than 120 pieces of bone were removed from the

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uterine cavity, and with the most successful result.' Dr M. concludes his able essay by stating, that he 'would feel inclined to abstain from any attempts at removing the fœtal remains from the interior of the uterus' if symptoms of acute hysteritis or peritonitis were present, 'if there be reason to suppose that any ulcerative process had been set up in the uterine parietes,' and lastly, 'if the case has been of long standing, and the absence of symptoms justify our belief that the uterus has become reconciled to the presence of the mass.'

In Dr M.'s second communication he records a case by Dr Burden, in which an improper use of opium appears to have 'balked or thwarted' the uterus 'in its normal attempt at parturition,' which 'never seems to have been renewed.' He remarks, 'It has been supposed by some writers that missed labour is of comparatively common occurrence among cows, sheep, and other domestic animals; such, however, is not strictly true.' He then mentions two cases occurring in sheep, communicated to him by Dr Patton, and other two cases in cows, by Mr King, from the 'Veterinarian' for 1834. Then he details the case of Dr Carson, sen., upon which he remarks, 'As parturition did eventually take place, perhaps it might with more propriety be regarded as an example of prolonged or serotine gestation, than one of missed labour.' He observes, 'When the embryo perishes in utero, at however early a period of gestation, there is a physiological necessity for its expulsion; and, practically, we know that such almost invariably takes place at some subsequent period, varying from a few days to several weeks. On very rare occasions the uterus altogether fails to take on or complete this parturient action, and hence the fœtal remains are retained in utero for an indefinite time, and ultimately come away, perhaps in broken, decomposed fragments.' To all such cases Dr M. would apply the term 'Missed Labour.' The word 'labour' being here synonymous with parturition, 'these cases,' he remarks, are by 'no means so rare as the instances of "mature labour" being missed, deeming the term "missed abortion" appropriate, as it might be applied to all cases of pregnancy going on to a natural termination.' Dr M. then relates some interesting cases, with remarks upon them, of early death and retention of the ovum. He urges the importance of clearing away all suspicions of malignant disease, by attending to the previous symptoms, their order of occurrence, and the dates of their appearance, &c. The offensive discharge after the opening and bursting of the sac of the ovum, the augmented bulk of the uterus, its position, the escape of any bones, the use of the sound. He adds 'It is very remarkable, however, that hæmorrhage does

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not seem to be the usual attendant under these circumstances, which is contrary to what we might *à priori* have expected.' In conclusion, he remarks, 'In regard to treatment or measures, that they should consist mainly of palliatives—viz., rest, and hip-baths, to subdue uterine irritation; vaginal injections, to secure cleanliness and prevent excoriation; occasional digital examination, so as to detect any fragments of bone that might be presenting at the os, and to assist in removing them;' dilatation of the neck, to explore and extract pieces of bone if of no great difficulty.

Having placed before my readers this *resumé* of cases, and the comments upon them, I am now in a position to offer some general remarks upon this important and interesting accident. And first as to its frequency. Sir James Simpson is probably correct when he states that missed labour is 'one of the rarest of all the forms of marred parturition in the human female, for not more than perhaps a dozen are to be found in all the records of obstetric medicine.' I could have added some four cases to those I have recorded, and swelled my numbers; but so meagre are the details given, that they would have been utterly useless in the present critical inquiry. I may, however, express my conviction that it is probable that this accident will be found to be more frequent than is imagined, when our knowledge of these cases becomes more clear and precise. The *diagnosis* in most of the cases appears to have been attended with more or less difficulty, notwithstanding some of them were attended by the most distinguished practitioners; thus, Dr Montgomery affirmed in his case 'that there was no child in the uterus;' Drs Oldham and Weems considered that their patients were the subjects of extra-uterine conceptions, and Dr M'Clintock that his case was one of malignant uterine disease. The case that came under my notice was considered to be one of cancer of the uterus; and when she applied to me, I was at first persuaded that she had a boxwood pessary in the vagina; in fact, the true nature of the case was not revealed until the extraction of a cranial bone. It is satisfactory, however, to know that a correct diagnosis was arrived at in each case, after a careful and searching inquiry into the previous history and symptoms. It is manifest, therefore, that considerable difficulty has arisen, and may arise, in the diagnosis of these cases, which I am disposed to think is mainly owing to the great rarity of the affection, so that we are not sufficiently mindful of its possible occurrence. The existence of a hypogastric tumour, the evidence of enlargement of the uterus, obtained by vaginal examination, the previous history pointing to pregnancy, and the probable occurrence of attempts at labour, would lead us to suspect the true nature of the case. The discharge of offensive materials, and

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especially in the absence of the signs of malignant disease, would still further arouse our suspicions, while the extrusion of fœtal bones through the os uteri would be conclusive evidence of missed labour. The introduction of the sound, too, would most likely help considerably towards clearing up any doubts.

One would have imagined, *à priori*, that there could be little or no difficulty about the diagnosis in such cases; but when such eminent accoucheurs as Montgomery and M'Clintock were at fault, it behoves us to be very guarded in expressing a decided opinion upon that point. The *causes* predisposing to and exciting this accident appear to be involved in some obscurity. Here, however, we may derive aid from an attentive consideration of the history of each case; thus, Dr Oldham's patient was 40 years of age, had been pregnant twenty-seven times, having aborted twenty-six times, and had lost a *quart of blood* on the accession of labour; it is more than probable also that the fœtus had been dead some time prior to labour setting in.

Dr Carson's and my own patient had been subjected to *violence* on the part of their husbands, occasioning fright and subsequent *death of the fœtus*, in the former during the process of labour, in the latter at about four and a half months of gestation; moreover, my patient was 43 years of age, and had been pregnant ten times in twelve years. In Dr Burden's case the pains were arrested by *laudanum*, probably an overdose.

Dr M'Clintock's patient was 45 years of age, had been pregnant thirteen times, *the fœtus having died* at the seventh month. In Dr Montgomery's case *the fœtus died* about the seventh month. In Drs Cheston's and Simpson's cases there were marked indications of uterine inertia. In Dr Weems' case there was *no obvious cause;* the patient's previous labour had, however, been severe. Thus it is apparent that in all the cases but one there were one or more causes in existence calculated to impair the functional activity of the uterus, or to paralyse its power, the chief of these being atony and the death of the fœtus.

It is, however, to the uterus, and the changes taking place in that organ, that we must mainly look for an explanation of these anomalous cases, and here we have but very scanty materials, but I think enough upon which to ground a correct pathology.

Upon this point much doubt appears to exist, even in the minds of those to whom we are most indebted for valuable information upon this subject; thus, Dr Oldham observes, 'What was the primary lesion which thus paralysed the womb and destroyed the forces of parturition?' and Dr M'Clintock observes, 'How comes it that the crowning act in the great function of reproduction is

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omitted, thus destroying the effect of all the wonderful series of antecedent processes and developments?' Before attempting to answer this question, so ably put by these two distinguished practitioners, I will briefly allude to the changes taking place in the uterus during normal gestation.

The uterus, small, dense, and undilatable, composed chiefly of fibro-cellular tissue and undeveloped muscular fibre, becomes, under the stimulus of healthy impregnation, wonderfully enlarged, spongy, and distensible.

Although these remarkable changes are best seen in the body and fundus of that viscus, still great and important changes take place also in the neck, by which it becomes enlarged, softened, shortened, and dilatable. Now these are due to changes taking place in the fibro-cellular structure, but chiefly to the development of the glandular structure of which it is largely composed. To what then are these great and important results mainly due? Chiefly to a large determination and influx of blood, to great development of the muscular, and, to a certain extent, of its fibro-cellular, elements; or, in other words, its expulsive powers are constantly increasing, while the resistance to the exit of its contents is in like manner daily diminishing, until a period is reached when the mature fœtus may be, and is, expelled, with safety both to itself and parent.

I may assume, without fear of contradiction, that Nature is always consistent, whether in the performance of her natural functions, or in escaping from emergencies. This great principle being admitted, I would ask, The fœtus *being dead*, and no longer developing, and consequently not requiring supplies, what would be the use of those abundant nutrient materials? As a rule, the uterus, in the plenitude of its power, endeavours, and most frequently succeeds, in getting rid of the inert, and now foreign, body; but every now and then, though surprisingly rarely, she fails, and hence these extraordinary cases. The death of the fœtus puts a stop to the normal interchanges between itself and the uterus. It no longer requires the same supply of blood, and so the nutrition and the development of that organ become impaired; consequently, and more especially if the fœtus have died at some few months from the term of normal parturition, there is not that muscular development of the body, nor that softening of the neck; so that while on the one hand the expulsive power is greatly impaired, on the other the resistance to the exit of the fœtus is materially increased, and the contents of the uterus are then most likely to be retained. Moreover, there is another point to be considered as an element that contributes towards their retention. After the fœtus dies, changes take place within itself very likely to interfere with uterine action. Decom-

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position, and the evolution of gases, distend the organ, and help to render its efforts at expulsion ineffectual.

There is another cause that would largely aid in leading to the retention of the fœtus. The uterus, in its structure and functions, becomes, during pregnancy, practically a muscular organ; but it is well known to most practitioners of midwifery, that, unlike other muscles, it loses instead of gains power by frequent and quickly-repeated work, and the more so if the patient be somewhat advanced in years; hence the greater frequency of hæmorrhages and rupture from atony in multiparæ, as compared with primiparæ. Again, it will not be disputed that it contracts less efficiently upon a dead, especially if decomposed, fœtus, than it does upon a living one, and *cæteris paribus* in the feeble than in the strong, in those who have sustained losses of blood, or have been subjected to other sources of exhaustion, than in those whose powers have not been so impaired. The death of the fœtus, its decomposition, the arrested development of the uterus, atony of this organ from frequent pregnancy, or more general feebleness, its distension by the gases evolved from the fœtus—these may be regarded as so many causes conducing, under favourable circumstances, to 'missed labour,' the essential element of which is indubitably loss of expulsive power in a paralysed state (Oldham) of the uterus.

On referring to my abstract of Dr M'Clintock's views, page 7, and of Dr Weems' case, it will be observed that both these physicians express surprise that hæmorrhage is not a 'usual attendant in these cases,' 'notwithstanding the uterus showed no disposition to contract.' Now if my views of the pathology of these cases be correct, the absence of this symptom can be readily accounted for. First, by the uterus undergoing retrograde changes, and the fœtus being dead, no blood is needed for the development of that organ and its contents, and comparatively little for the nutrition of the uterus itself; again, owing to the organ containing the fœtus and its membranes, although the liquor amnii may have in part or wholly escaped, the mechanism of contraction by which the placenta is mainly detached is prevented; hence there is no exposed surface from which blood could escape.

The quart of blood lost by Dr Oldham's patient about the full period of her twenty-eighth pregnancy, page 5, must be regarded as one among other causes conducing to, but not being a symptom or effect of, that accident.

Dr Churchill has drawn attention to the fact, which has been fully confirmed by my own experience, that in cases of labour in which the fœtus has been dead some time prior to its expulsion, the lochia is considerably lessened in quantity, which I believe may be explained upon similar principles.

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Progress and Termination.—In all the cases quoted in this paper the fœtus died, either gradually or quickly, at some time prior to, or upon the accession of, labour, and the progress of the case appears to have depended upon the changes taking place in the contained fœtus and involucra. If, for example, the membranes remained intact, the liquor amnii gradually became absorbed, the fœtus more or less deprived of its fluids, mummified, compressed, and if long retained, ultimately underwent calcareous—not ossific, as has been erroneously stated—degeneration, and remained a comparatively inert body within the uterus. In such cases it is more than probable that the placentæ were absorbed. Whereas, when the membranes were ruptured, either spontaneously or artificially, and the liquor amnii discharged and air admitted, then the soft parts of the fœtus underwent putrefactive decomposition, and usually were discharged with offensive sanies and air; and in some cases so complete was the destruction, that nothing but a mass of compressed bones was left, or one bone after another was detached and expelled. In such cases the placenta and cord have been expelled in a far-advanced state of decomposition. In cases of this description the fœtus and its involucra become a source of considerable local irritation, septic infection generally takes place, manifested by its usual grave symptoms, and ultimately the bare bones of the fœtus may become encysted or occasion ulceration, absorption or rupture of the uterus, leading to the more or less complete escape of its contents into the adjoining viscera or peritoneum, occasioning the death of the parent either by fatal peritonitis or exhaustion.

Treatment.—From an attentive consideration of the facts connected with the progress and termination of each of the cases referred to, it appears that they may be divided into two classes, viz.—those in which the retention of the fœtus is not, and those in which it is, producing constitutional or local irritation.

With regard to the first, the experience and opinions of the most eminent practitioners are that operative measures should not be resorted to. In this I concur, with a slight reservation upon the point of time.

Where from the history of the case it is clear that but a short time has elapsed since the natural attempt at labour, as in Drs Carson's and Burden's cases, and in Weems' case if it had been seen early, I should have felt disposed to try to induce a recurrence of the uterine action in the usual way by dilating the cervix, using ergot, galvanism, &c.

There is, it must be admitted, some probability of making matters worse by such attempts, although I think they would but hasten what all but one of the cases ended in, the putrefactive decomposition of the fœtus, which is sure to follow when air has

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been admitted into the uterine cavity after the rupture of the membranes. On the other hand, where a long period has elapsed since the time when labour should have taken place, where the constitution does not appear affected, and where the uterus seems tolerant of its contents, it is extremely undesirable to interfere. At all times the dilatation of the cervix and extraction of a fœtus is attended by some risk to the mother, and this would be increased by attempts at the forcible removal of pieces of bone that are not covered by soft parts.

So long as no serious disturbance takes place, so long is interference of this kind unnecessary; and some of the cases referred to are sufficiently convincing upon this point, for in one there was no ill result from the retention of the fœtus for fifty-two years, and in others, until putrefactive decomposition set in, leading to the discharge of offensive fluids and air from the uterus, then, and not till then, did the constitution of the patient appear to suffer. With regard to the second class, I am quite of the opinion of Dr M'Clintock, who says: 'I have no hesitation in laying it down as a general precept, subject of course to limitation, that this mass of fœtal corruption should, when practicable, be exhumed from its living sepulchre. The sooner the attempt is made, the better chance there will be of succeeding, as with the lapse of time the uterus contracts, and the bones get more massed and conglomerated together, or they may become embedded in the substance of the organ.'

I think, too, with him, that it is advisable to remove the uterine contents by degrees rather than by one long-continued operation, whereby the probabilities of inflammation will be lessened, and the uterus will have time to contract. I adopted this course in my own case, and with the best results.

This is a safe plan, and the delay incurred is not of any serious moment, for offensive discharges and constitutional irritation may continue long without exciting alarm, as in Dr M'Clintock's case, where they lasted for sixty-two weeks, and in Weems' several months, before any operative proceeding was had recourse to. And it is well that it may be so, as considerable difficulty has been experienced in getting at the mass owing to an undilatable condition of the cervix; and sometimes the irritation produced by the tents may be so great as to compel the operator to desist.

The course to be adopted in the intervals between the operations is plain; offensive discharges should be corrected by the injection of disinfecting lotions into the vagina; the patient's powers should be supported by generous diet, wine, bark, steel, &c., and constitutional and local irritation allayed by opium by the mouth or rectum or by hypodermic injections of morphia; the patient

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should be kept in bed. Should hysteritis or peritonitis ensue, all operative proceedings should be refrained from until the inflammation is subdued.

There yet remains one other operation, the Cæsarean section, which demands but a brief notice. The fatal character of this operation should, I need hardly remark, make any one hesitate long before taking such a step. There being no child to be saved, the mother's life alone has to be considered, and she must be indeed in great danger before this operation could be at all justifiable. I can hardly conceive a case in which it would be necessary. Unless the uterine contents were exciting such constitutional disturbance as to imperil the patient's life, and they could not be removed per vaginam, it should not even be contemplated. And even in such a case there would in all probability be considerable difficulty in removing through the incision what could not be taken away per cervicem; and moreover, the additional disturbance, the necessary consequence of so serious an operation, would almost certainly be fatal to the patient. I therefore deprecate its performance, as I cannot believe that under any circumstances it could be urgently demanded; or if so, it would prove destructive to life.

In conclusion, let me add, that the number of cases upon record is so small that no absolute rules can be deduced from a consideration of them. We must be guided by general principles, and the exigencies of each case met accordingly.

The remarks I have made seem justified by the histories of the few known instances of this rare accident, and I consider the peculiar features of 'Missed Labour,' as instancing the wonderful natural powers of adaptation and tolerance, are well worthy of attentive consideration.

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THE

INDUCTION OF PREMATURE LABOUR.

BY

CLEMENT GODSON, M.D.

Read before the Abernethian Society, February 25, 1875.

The fact that women had given birth to several dead children after severe parturition, perhaps only completed by embryotomy, and that when subsequently pregnant, labour had set in prematurely, resulting in the birth of a living child, suggested the idea of anticipating labour by artificially inducing it at a period when the child, though viable, would not be too large to pass through the contracted pelvis.

It is a matter of congratulation to us that the introduction of so important a system should have emanated from our own country, and the highest tribute of praise is certainly due to those English practitioners who upheld it, and succeeded in bringing it into general practice against such violent opposition; for no one can deny that it is one of the most important improvements in the practice of midwifery. Denman tells us that 'about the year 1756 there was a consultation of the most eminent men at that time in London to consider the moral rectitude of, and advantages which might be expected from, this practice.' It received their general approval, and it was decided to adopt it in future. The first case in which it was considered necessary was undertaken, with success, by Dr Macaulay, Physician to the British Lying-in Hospital in Brownlow Street, in 1756. Very soon afterwards it was performed by Dr C. Kelly. In France, when it was first suggested, in 1779, its introduction met with the strongest opposition from M. Bandelocque and his followers. The doctors of the Sorbonne declared it a violation of the laws of the Church. Gardien, Carpuron, and Madame La Chapelle firmly resisted it.

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They regarded it as immoral, barbarous, and unjustifiably endangering the life of the mother and her child. As late as 1827 it was stigmatised by the Académie Royale de Médecine as immoral. Professor Stoltz was the first in the country to practise it. He did so four years afterwards, in 1831; and in 1852, so great was the revolution of feeling, that the Académie Royale de Médecine declared the operation not only to be not 'immoral'—the term applied to it twenty-five years previously—but to be justifiable, as being less fatal to the mother, and offering a mode of delivery in contraction of the pelvis, certain hæmorrhages, and tumours which are irreducible and irremovable.

In Germany, the celebrated Carl Wenzel, of Frankfort, was the first to declare himself favourable to the operation. In Italy it met with very little opposition, and now for some time past the practice has been universally accepted.

Denman* states that Dr Savage performed it successfully on a lady of title, who had given birth to four dead children after very difficult labours; and Dr Lee† gives the details respecting a patient with deformed pelvis, in whom he induced labour no less than fourteen times. In one case only was the child born alive. The contraction was too great to admit of the operation being delayed beyond the seventh month. For some years after the recognition of the system, the only plan adopted was that of evacuating the liquor amnii by puncturing the membranes, and this method had been handed down from the ancients, by whom it was practised in the earlier months of pregnancy, in order to prevent disfigurement, as Ovid gives it,‡ or that 'the belly may be without the blemish of wrinkles.' Tertullian§ describes the instrument employed thus—'There is also a probe of bronze, by which the destroying is done in a secret, criminal manner; they call it by the Greek term *εμβρυοσφακτής*, that is to say, the murderer of the living infant.'

This, then, which hitherto had been used but for criminal purposes, was introduced as a legal practice, but only in cases of deformity of the pelvis.

During the present century, however, numerous plans have been proposed, and the reasons for the advisability of bringing on premature labour have been so multiplied, that the consideration of the subject is one that merits the attention of us all. I propose, therefore, to enter upon it at once, first considering the reasons

* Introduction to the Practice of Midwifery, 6th edit., 1824, p. 293.
† Clinical Midwifery, 2d edit., 1848, p. 81.
‡ 'Ut careat rugarum crimine venter.'—*Ovid, Amores*, 2, 14, 7.
§ 'Est etiam æneum speculum,' &c.—*Tertullian, Liber de Anima*, cap. xiii.

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which have been deemed necessary for its performance; and secondly, the different methods which have been adopted.

The reasons—

1. When the bony pelvis is too narrow to allow a child at full time to pass without its life being sacrificed.

2. When dangerous affections exist in the mother, such as disease of the heart, ascites, &c., seriously aggravated by pregnancy.

3. Severe symptoms arising from the pregnant state, such as intractable vomiting, jaundice, albuminuria, chorea, mania, &c.

4. When a mother habitually gives birth to children so abnormally large that their lives are sacrificed during delivery, or when several hydrocephalic infants successively occur.

5. When repeatedly the infant has been found to die in the latter months, from disease of the placenta, or other recognised cause.

6. In cases of tumours impeding the passage, such as fibrous tumours of the uterus, exostosis, &c.

7. When sudden hæmorrhage has occurred, and there is reason to believe that the placenta wholly or partially presents.

8. In cases of dropsy of the amnion, and ovarian tumours, productive of great distress to the mother.

1. The first requires no reasoning; it is so well known that a fœtal head, from the seventh to the eighth month of development, is not only of considerably less dimensions than at the full term, but that it is so much more flexible, and capable of being moulded to the passage. And yet, even a seven-months' child may grow into a fine, strong, intellectual man. Of this we have numerous examples. The generally-accepted degree of deformity, necessitating the employment of premature induction, is when the conjugate diameter measures from $2\frac{1}{2}$ to $3\frac{1}{4}$ inches. If only $2\frac{1}{2}$ inches, the operation should be undertaken at the seventh month; if $2\frac{3}{4}$ inches, at seven and a half months; if 3 inches, at the eighth month. It will be well to reckon as the seventh month 220 days from the last day of menstruation, 235 days as seven and a half months, and 250 days as the eighth month.

2. Whenever a disease known to exist in the mother is so aggravated by the pregnant state as to place her life in jeopardy, there can be no hesitation in relieving her of that which is the immediate cause of danger.

3. So with intractable vomiting, chorea, and other severe complications arising from pregnancy, it may be necessary to evacuate the uterus, in order to get rid of the cause of irritation.

4. Instances have occurred in which a succession of infants have been born so abnormally large, that it has been necessary to have repeated recourse to craniotomy. In such cases it may be justifiable

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to bring on labour before the child has attained its full size. With regard to hydrocephalic infants, Sir James Simpson mentions a case in which, after a lady had given birth to two children in this state, he induced labour with a satisfactory result. A sister of this patient had also been delivered of a child in the same condition. This seems more than a coincidence.

5. There are many diseases of the placenta causing destruction to the fœtus. They may be thus enumerated: Extravasation of blood; inflammation and its consequences; gangrene of portions; general œdema, or dropsy; fatty degeneration; hypertrophy; cartilaginous and calcareous degeneration. These diseases seem frequently to exert their direful influence on the child after it has become viable. I have no experience in such cases, but authors state that, whereas the fœtal pulsations should be regular, and from 120 to 140 beats per minute, when placental disease has set in they become irregular, and either diminished or increased in frequency. If this be so, it is of great importance that abdominal auscultation be practised daily, whenever the previous history of a case gives grounds for suspecting the likelihood of the occurrence of placental disease.

6. In cases of pelvic tumours, incapable of being removed, which would prevent the passage of the fœtus at its full term.

7. It is not uncommon for a sudden attack of hæmorrhage, about the eighth month, to furnish the first indication of placental presentation; and when this has occurred, I am convinced that the proper plan of treatment is to plug the vagina, and bring on labour. Otherwise, though the hæmorrhage may have ceased entirely after the one gush, at any subsequent period it may recur, and to such extent as to cost the patient her life. This is just what happened in a case under my own care, and I shall always regret that I did not then act according to the plan which I am now laying down.

8. Dropsy of the amnion, and ovarian tumours, may occupy so much space as to give rise to very severe pressure effects. In such cases the question of obtaining relief by ridding the uterus of its contents must be considered. If the first condition can be diagnosed, the evacuation of a portion, certainly, of the amniotic fluid, seems to be indicated, and this will probably give rise to premature labour.

With regard to ovarian tumours, it must be borne in mind that Mr Spencer Wells has tapped the ovarian cyst, and even performed ovariotomy during pregnancy, without uterine action having been set up. In his work on 'Diseases of the Ovaries,' Mr Wells* says, 'There is no proof that tapping an ovarian cyst is

* Diseases of the Ovaries, p. 183.

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more dangerous during pregnancy than at any other time; and if there be a large single cyst, tapping will afford immediate relief to distension at a very slight risk to the mother, and lead to the natural termination of pregnancy in the birth of a living child, if proper precautions be taken to prevent the escape of ovarian fluid into the peritoneal cavity, and the entrance of air into this cavity, and into the cavity of the cyst. In cases of multilocular cyst, tapping can be of little use; the rule, therefore, should be to remove the tumour in an early period of pregnancy; and if an ovarian cyst should burst during pregnancy at any period, removal of the cyst, and complete cleansing of the peritoneal cavity, may save the life of the mother, and pregnancy may go on to the full term.'

When, however, multilocular tumours are found associated with advanced pregnancy, the question of induction of labour must arise.

Having given the reasons for having recourse to the process of induction, I now pass on to the consideration of the various plans which have been proposed for its performance.

First, let me enumerate them in succession, and then discuss them separately—

1. Evacuation of the liquor amnii by puncturing the membranes.
2. The administration of certain drugs, particularly ergot of rye.
3. The injection of water into the vagina.
4. The injection of water within the uterus.
5. The injection of atmospheric air or carbonic acid within the uterus.
6. Galvanism.
7. Irritation of the mammæ, by means of cupping-glasses.
8. Separation of the membranes from the uterine wall, as far as is practicable, with the finger.
9. Insertion of a long gum-elastic catheter between the membranes and the wall of the uterus.
10. Dilatation of the vagina by means of air-bags.
11. Dilatation of the os uteri by air-bags.
12. Dilatation of the os uteri by means of sponge tents.

1. The old method of puncturing the membranes is still in favour with a great many. I must say that I am strongly opposed to it as a rule. I perfectly agree with what Baudelocque says when arguing against induction of labour. It is the *plan*, however, which he condemns. Probably, had that been known to him of dilatation by sponge tents, his opinion would have been very different.

He says,* 'If we break the membranes before the orifice of

* Baudelocque, System of Midwifery, translated by John Heath, 1790, vol. iii. p. 230.

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the uterus be sufficiently open for the passage of the child, and the action of that viscus strong enough to expel it, the pains will go off in the same manner for a time, and the labour afterwards will be very long and very fatiguing; the child, deprived of the waters which protected it from the action of the uterus, being then immediately pressed by that organ, will be a victim to its action before things be favourably disposed to its exit, and the fruit of so much labour and anxiety will be lost.' What reasoning can be more sensible than this?

And yet, in the 'British Medical Journal,' during the last few months, a Medical Practitioner in Cornwall has been attempting, in a series of letters, to run down the sponge method, most ably advocated in a paper by Dr Swayne, of Clifton, and claim superiority for the plan of evacuating the liquor amnii, his whole experience of which is confined to a single case occurring in his practice, which happened to result satisfactorily, just as one hears of the waters breaking in the street, and the child being almost born before the patient could reach her house. But, I ask, is it a matter of congratulation, as a rule, when one finds that the membranes have ruptured before the os uteri has hardly commenced to dilate? Does not experience tell us that the consequence, generally, is a long, tedious labour?

2. The system of administering ergot of rye as a means of bringing on labour prematurely has two great objections. First, it is excessively uncertain in its action; my experience is, that it acts much better in increasing the uterine contractions which have already commenced, while most frequently it fails entirely to start them, even when enormous doses have been given. And it is believed that the drug, taken in large quantity, exerts a direful influence upon the fœtus in utero. I think, therefore, that it should never be employed as the *sole* means of inducing labour.

3. The injection of water into the vagina. This has been employed at a temperature of from 95° to 100° F. for half an hour at a time, the douche directed against the os uteri every four or five hours. The late Dr Tyler Smith recommends hot and cold water alternately. Dr Barnes* says the vaginal douche takes one, two, or more days, and is liable to cause congestion of the lower segment of the uterus. For my own part, the inconveniences of the application, and the uncertainty of its action, would preclude my ever having recourse to it.

4. The injection of warm water within the uterus, which is known as Kiwisch's plan, was introduced by Schweighauser in 1825. Cohein, of Hamburg, in 1846, used it with creosote added. Numerous successful cases have been published; but there is one

* Lectures on Obstetric Operations, 2d edit. p. 365.

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objection to it, which should prevent its ever being again attempted. It places the life of the mother in jeopardy. Lazzati has collected 36 cases in which it was employed, and of these, 12 mothers died. Surely no stronger evidence against it need be adduced. Considering that there should be almost perfect immunity to the life of the mother after other methods, no more need be said to utterly condemn the practice. But Tyler Smith, in his Manual,* strongly recommends it; and as this is popular among students, and very deservedly so, for the clear way in which the mechanism of labour is described, care must be taken not to accept his views upon this special subject before us. It has been demonstrated that the water may pass through the fallopian tubes into the peritoneal cavity; air may be injected into the uterine sinuses; the placenta may become detached; the uterus may be so distended as to become ruptured; or the patient may die from simple shock.

5. The same objections apply to the injection of carbonic acid or atmospheric air, though successful cases of the former have been published by Scanzoni, and of the latter by Sir James Simpson; but deaths from both have been recorded.

6. Galvanism was proposed by Herder in 1803, in order to excite uterine action; but it was not applied to the purpose which is before us till 1844, when Dr Radford, of Manchester, commenced to employ it, and did so successfully in four cases. Sir James Simpson and Dr Barnes have also, formerly, advocated it. Having so much more convenient a method at our disposal, I should never employ it, for it must be most objectionable to the patient, and tedious to the medical attendant.

7. Scanzoni proposed, and tried, the effect of a sucking-pump to the mammæ for the space of two hours. He was successful in two cases: one required seven applications, the other but three. It seems to me a very uncertain and disagreeable method, and one likely to interfere with lactation subsequently, from the irritation to the breasts caused by it.

8. Separation of the membranes from the uterine wall, as far as can be reached with the finger, is a very simple method, and one which in some cases may probably be sufficient; but certainly in the majority of instances further means would have to be adopted. There can, however, be no objection to trying it.

9. Inserting a long gum-elastic catheter between the membranes and the wall of the uterus, and leaving it there, coiling up the end in the vagina, has been found very effectual, but certain objections have been raised to it. It is said that the placenta *may* be partially separated by it, and the membranes *may* be accidentally

* Manual of Obstetrics, 1858, p. 552.

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punctured while pressing it. These should be improbable consequences, and I believe it to be one of the best methods which we have; for, should it fail, it may be followed up by the insertion of sponge tents.

10. In America, the term 'colpeurysis' is used to signify dilatation of the vagina, and a vulcanised gum-elastic bag called Braun's colpeurynter has been employed to dilate the vagina, with the view of setting up uterine action. While stretching the vagina, it is supposed to act also upon the os uteri, and Dr Meigs* says it is found that about four hours suffice to dilate the os uteri sufficiently to provoke good labour pains. I do not know that it has ever been carried into practice in this country.

11. Dilatation of the os uteri by elastic bags was proposed by Dr Keiller, and has been brought prominently forward of late years by Dr Barnes, who has introduced an improved form of bag for the purpose.

Speaking of the different methods for provoking the uterus into action, Dr Barnes † says, 'Now, active labour may come to pass in twelve or twenty-four hours, or in two, three, four days, or even later. There is no certainty about it. When labour comes, the child is expelled with little warning, almost suddenly, and before the medical attendant can be fetched. And it has to run the gauntlet of all those perils which especially surround premature labour unaided. It is just as feasible to make an appointment at any distance from home, to carry out at one sitting the induction of labour, as it is to cut for the stone.' Dr Barnes puts in an elastic bougie over-night, which, he says, gives rise to uterine action; next day he introduces his bags. Uterine action has been set up by the bougie, in other words, labour has commenced; why then interfere with a process which, started artificially, may be completed gradually by the efforts of nature? If this argument of carrying out the process of labour 'at one sitting, as one would cut for stone,' applies in premature labour, why should it not in labour at full term? If not likely to be followed by evil consequences, it would be a great boon to the medical attendant. To be kept about by a patient whom one has found in the first stage of labour is extremely trying. How much time and annoyance would be saved if we could proceed at once to 'carry out at the one sitting' the delivery! And I cannot see why it should apply in one case more than in the other. Barnes' bags are of the utmost value when it is desirable to complete the labour in as short a time as possible—for instance, in puerperal convulsions; but in induction of premature labour, for causes not requiring hurry, to my mind their

* Treatise on Obstetrics, Philadelphia, 1863, 4th edit. p. 584.

† Lectures on Obstetric Operations, 2d edit. p. 363.

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employment partakes too much of an operation, when there is no necessity for such discomfort to the patient.

Lastly, we have to consider the method of dilating the os uteri by means of sponge tents. It was proposed and put into practice with great success by Brüninghausen and Kluge; Velpeau strongly advocated it; and finally, Sir James Simpson, who had tried a variety of means, adopted this in preference to any other. I am convinced, with him, that it is by far the most preferable. In 1872 I wrote a paper in the 'Lancet' in favour of it,* describing an instrument which I had designed for facilitating the introduction of the tent. Dr Bedford,† of New York, says, 'It may be found extremely difficult, in consequence either of resistance or malposition of the os, to introduce the sponge, and the abortive attempts made to accomplish the object may induce more or less irritation of the parts.' I found also this difficulty, to overcome which I had the instrument made.

Quoting from my paper in the 'Lancet'—

'The means I advocate operate by surely and safely coaxing the uterus into an action which only differs from natural labour in being artificially initiated, and which is maintained and completed, under all the conditions of labour spontaneously occurring at a corresponding stage of pregnancy. Each of the methods in general use is, according to my experience, more or less formidable, in virtue of the amount and the kind of the manipulation which it involves. Most of them are practised in such a manner as to force on too hurriedly the uterine contractions; and that which consists in the evacuation of the liquor amnii stands self-condemned, as depriving the womb, at the very outset, of the all-important dilator provided by nature.

'My mode of procedure consists in insinuating, night and morning, between the cervix uteri and the membranes, sponge tents of gradually increasing size; the first, and each succeeding one, being as large as the parts will admit. On removing each tent, and before replacing it by another, a warm douche, containing Condy's fluid, is administered. I have found the use of one, two, and three tents to be sufficient, and have never had occasion to employ more than four.

'The instrument by means of which the tent is placed in position is made for me by Messrs Arnold, of West Smithfield. It is shown in the accompanying illustration, and will be found fully described in the 'Lancet' of April 22, 1871.

'It entirely obviates the use of the speculum, and being provided with what is equivalent to a universal joint, it enables the tent to

* Lancet, Nov. 23, 1872.

† Bedford, Principles and Practice of Obstetrics, 4th edit. 1868, p. 676.

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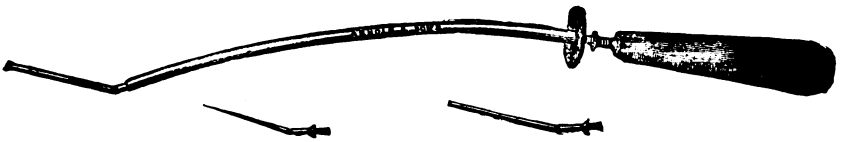
be pushed, without extraneous guidance, between the cervix and the membranes, taking of itself the readiest path presented to it. For the same reason the membranes run no risk of puncture. The



tents themselves are short, rounded at the extremity, and perforated, to facilitate adaptation to the instrument.

'The apparatus, and the mode of its application, are so simple, and so free from inconvenience and danger, that its use causes in practice little or no anxiety on the part of the patient; and until labour sets in, she moves about without pain or inconvenience, regardless of the presence of the tent.'

The plan was introduced by me at the City of London Lying-in Hospital in 1869, when I held the appointment of Surgeon-Accoucheur to that institution, and it is still carried on there by my successor, Dr Burchell.

The following table gives the record of twenty cases in which the practice described was performed, the last thirteen of them by Dr Burchell :—

Case.	Where Performed.	Date of First Tent.	Date of Delivery.	Result to Child.
1	Lying-in Hospital.	1869. Dec. 3.	Dec. 5.	Still-born.
2	,,	1870. Feb. 3.	Feb. 6.	Living.
3	,,	1870. March 16.	March 17.	Putrid.
4	,,	1870. April 12.	April 15.	Still-born.
5	Private Practice.	1870. Aug. 6.	Aug. 8.	Living.
6	Lying-in Hospital.	1871. March 4.	March 6.	Still-born.
7	,,	1871. May 8.	May 10.	Living.
8	,,	1871. Aug. 9.	Aug. 11.	Still-born.
9	,,	1871. Aug. 31.	Sept. 2.	Living.
10	,,	1872. March 28.	April 1.	Still-born.
11	,,	1872. Sept. 7.	Sept. 10.	Living.
12	,,	1873. Jan. 17.	Jan. 19.	Living.
13	,,	1873. March 2.	March 5.	Living.
14	,,	1873. April 16.	April 19.	Still-born.
15	,,	1873. June 24.	June 27.	Living.
16	,,	1873. Dec. 29.	1874. Jan. 1.	Living.
17	,,	1874. April 30.	May 3.	Still-born.
18	,,	1874. May 27.	May 29.	Still-born.
19	,,	1874. July 9.	July 11.	Still-born.
*20	,,	1875. April 29.	May 1.	Living.

* This case has been added since the paper was read, to make the table more complete.

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All the mothers recovered with the exception of one, that in which the child was born putrid, and she died of puerperal fever, which was then raging in the Hospital. The patient had given birth to all her former children in the same state, and that was the reason why labour was induced. From an analysis of this table, it will be seen that half of the children were born living, 1 within 24 hours of the introduction of the first tent, 10 within 48 hours, 8 within 72 hours, and 1 within 96 hours.

In the 'St Bartholomew's Hospital Reports,' vol. v., will be found an analysis by me of the midwifery cases occurring in connection with the Hospital during a space of seven years, from 1862 to 1869:—'Induction of labour was resorted to in seven cases, one in 819·14; four times with head presentation, 57·14 per cent.; once with foot presentation, once with breech, and once with placenta prævia. Four children were born living, 57·14 per cent.; and three were still-born, 42·86 per cent. All the mothers recovered.'

This again will be found a very fair average. Unfortunately no record was made of the presentations occurring in the twenty cases included in the table, but from the St Bartholomew's statistics it will be observed that three out of the seven were abnormal, and this tendency to malpresentations in premature parturition is one of the chief causes of the children not being born living.

Looking at all the statistics which have been published, it appears that rather more than half the children are saved, whatever plan be adopted. In most of the records no one system has been adhered to. The result to the mothers, however, is greatly influenced by the method employed. The danger ought not to be greater than that after ordinary premature labour, but I have already shown that, under certain systems, the mortality has been very large. Such systems, therefore, should be altogether discarded. I have met with several instances of patients who had had more than one plan carried out for procuring induction before the sponge-tent method was adopted; and I feel confident that no one would doubt the superiority of the system which I have advocated were they to hear from the patients' lips what comfort they have derived from the change of treatment, and what great anxiety has been spared them.

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ON

TUBERCULOUS ANGINA FAUCIUM.

BY

SAMUEL GEE, M.D.

In the seventh volume of these Reports I published short notes of two cases of ulcerous angina occurring in general tuberculosis. So far as I knew at that time, the disease had been almost wholly overlooked by nosologists. And so far as I know at present, I may say again that the disease has been almost wholly overlooked. It seems to be referred to by Hippocrates in his description of the phthisical disease which prevailed in the island of Thasos. 'Their fauces, in most cases, were painful from first to last, having redness with inflammation.'* Louis, with respect to one or two cases of acute phthisis, says as much, and no more. The tuberculous angina of which I speak is a part of general tuberculosis. It was so in the two cases already published, and it was so in a third case, which I will now proceed to narrate.

Thomas S., aged 6 years, was admitted into the Hospital for Sick Children on May 18, 1875.

State on Admission.—He was thin. There was a flush on his cheeks suggestive of hectic fever. He complained of his throat. The surface of the uvula was very uneven, with small elevations and intervening depressions: there was probably some loss of substance. The surface of left tonsil distinctly ulcerated. Some thick muco-pus covered the back of the pharynx.

Remarks.—Chronic ulceration of the soft palate, in children as well as in adults, is due so frequently to syphilis, and so seldom to anything else, that at first, hastily perhaps, and in the absence of his family history, I was disposed to consider the angina to be

* Epidem. I. § 1, cap. 2; also III. § 2, case 6.

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syphilitic. More weight ought also to have been given to the following condition.

The lymphatic glands, along both sternomastoid muscles, were enlarged and hard, more so on the right side than on the left. The glands elsewhere were not enlarged.

Remarks.—Enlargement and induration of the lymphatic glands is a condition so uncommon in hereditary syphilis, and so very common in tuberculosis, that this lesion alone, duly weighed, might have set me right. For, of all the tissues, the lymphatic is the most embryonic and the most potential. And, when any part of the body is diseased, the associated lymphatic glands tend to be similarly affected. If the glands in the boy's neck were scrofulous (or tuberculous, which is the same thing), his angina was probably tuberculous also.

There were no signs of hereditary syphilis. His skin was clear, excepting two or three white scars on his chest. There were no scars around his mouth or anus. His corneæ were quite clear. He had not cut any permanent incisors.

There were no local signs of tubercle in the internal viscera. The chest was phthinoid in shape: to percussion and auscultation, the lungs seemed natural. The belly seemed natural: liver and spleen impalpable. Tongue clean. Urine acid, clear, not albuminous.

Previous history of the patient.—He seemed to be a healthy child until twelve months before admission. From that time he had suffered from looseness of the bowels: he had not passed a solid stool for nine months. The motions were pasty, rather light coloured, free from blood or slime. There were two or three stools in the day.

About Christmas 1874, his mother noticed that he had lumps on each side of his neck below the ears. She looked at his throat inside, and saw that it was covered with a white matter. A doctor called it 'diphtheria,' and ordered a local application, but without any benefit. The swallowing of solids became very painful. The boy lost flesh.

Family history.—Dr Barlow took great pains with this important topic. The father's family seemed to be free from scrofulous or tuberculous disposition. The father never had any venereal disease. There were no signs of syphilis discovered in him.

The mother's father died before he was forty years old: he had been ill for four years before his death; he had spit blood once or twice; whether he was consumptive could not be known for certain. The mother's brothers and sisters had not shown any consumptive tendency.

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The patient's parents had been married twelve years. The first two children born were alive and healthy. The third child was Thomas. The next four pregnancies were abortive, at four and a half, three, two, and two months respectively. The eighth and last was an eight-months' child, apparently healthy.

Subsequent course of the disease. — Emaciation progressed, until it became very great.

Hectic fever was a prominent symptom. From the time of the boy's admission until his death he suffered from a quotidian fever, characterised by a complete morning remission and an evening exacerbation. The temperature was taken twice a day in the axilla; 103·2° F. (39·6° C.) was the maximum noted.

The ulceration of the soft palate progressed slowly, until at length the uvula disappeared. But the condition was clearly very different from that quick melting-down of the palate which occurs in the syphilitico-scrofulous or lupiform angina with which everybody is well acquainted.* Slowness was very characteristic of the ulceration in this boy's case. His dysphagia increased: if he tried to swallow liquids quickly, they came back through his nose. At last he refused to swallow at all, on account of pain. His voice acquired a nasal twang. He had a little ozæna.

The glands in the neck continued to enlarge. Other glands, below the ramus of the jaw, slowly inflamed, and took on all the characters of scrofulous glands.

Diarrhœa continued throughout. Towards the end, he suffered from an almost constant desire to defæcate. There was much tenesmus also. He sometimes passed nothing more than dirty mucus.

The abdomen did not swell. Large tender lumps became perceptible to deep palpation: these we could not doubt to be tuberculous mesenteric glands.

A little sharpish rale at the bases of the lungs was the only physical sign of disease in the chest, although it was repeatedly examined from first to last.

The course of the disease wholly removed any suspicion of syphilis, and established the diagnosis of tubercle. The discovery of the mesenteric disease was a great help in arriving at the correct opinion.

Death happened on July 4.

Post-mortem examination thirty-six hours after death.— Weight of body, thirty pounds. Rigor mortis gone. Extreme emaciation.

Whole of pharynx, down to its union with œsophagus, on level of cricoid cartilage, covered with yellow puriform stuff. Mucous

* See Clinical Lectures and Essays, by Sir James Paget, p. 391.

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membrane extensively destroyed: pharyngeal muscles laid bare. Soft palate, back and front, in a similar condition. Uvula destroyed. Mucous membrane of root of tongue, half way up to foramen cæcum, likewise partly destroyed. Right tonsil destroyed: left scarcely distinguishable. Epiglottis and arytæno-epiglottidean folds ulcerated, but not so deeply as the pharyngeal walls. The ulcerated surfaces speckled with opaque spots and streaks, also with points of great vascularity and hæmorrhage. Whether any of these opaque spots are tubercular, cannot be determined by the naked eye. Soft palate greatly thickened, pale. True vocal cords natural, and larynx below them natural. Ulceration extends down the posterior surface of the epiglottis, and involves the false cords. Posterior nares are involved in the ulceration: septum nasi, along its posterior edge, is bare and rough. No other exposed bone detected: base of skull and vertebræ natural.

I was enabled to study the microscopical characters of the ulcerated soft palate in some beautiful sections, which were prepared by Mr R. W. Parker. The tubercular material occupies the wavy connective tissue which lies beneath the epithelial coat, and which also supports the glandular acini. The shape which the tubercles assume is for the most part determined by the bands of connective tissue amongst which they lie. Many tubercles are spherical, but many are elongated and fusiform, whilst in places the morbid growth consists in a diffuse infiltration of the connective tissue. The tubercle has the characters of Virchow's cellular tubercle; or what we may call lymphoid tubercle, in order to distinguish it from the compound and epithelioid tubercle, which has been studied so much of late. It seems to be composed of aggregated corpuscles, which themselves are very minute, and are not much more than nuclei surrounded by a little protoplasma. None of the large epithelioid cells, which are to be found in scrofulous glands, are to be seen; and if there be any giant cells, they are buried in the lymphoid elements, so as to be indistinguishable. The mucous acini, which are close to a tubercular growth, are filled with molecular matter; but in other respects the glands seem to have escaped.

Many of the lymphatic glands, down the neck and below the jaw, are enlarged, cheesy, and in some cases softened.

Right lung: lower lobe consolidated, but only from the dense crowding of tubercles, which are already becoming cheesy. At the base is one part which is denser than the rest, size of a walnut, deep purple colour, wedge-shaped (with base at surface): apparently a hæmorrhagic infarctus. In middle and upper lobes disseminated tubercle, but not so abundant as in lower lobe. Numerous emphysematous acini in upper and middle lobes.

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Left lung: several small cavities in upper lobe, each about size of a pea; no thickening around them, but a little emphysema. Crude yellow tubercle scattered throughout, but not so abundantly as in other lung.

Both pleuræ: natural.

Bronchial glands: neither enlarged nor caseous.

Heart: natural.

Liver: 19½ oz.; portal zone of lobules very pale; no iodine reaction. Three transparent granulations on surface: no tubercle in the substance of the organ.

Spleen: 3¼ oz.; rather enlarged, firm; no iodine reaction. Substance of spleen studded with innumerable minute white tubercles, like white sand. No capsular tubercle.

Right kidney: just above apex of one pyramid is a round caseous mass, like a cherry-stone in size, softening in the centre. Some miliary tubercles radiating from this nodule towards the cortex. Kidneys otherwise natural.

Ureters, bladder, testes: natural.

Pancreas: natural.

Œsophagus and stomach: natural.

Intestines: very numerous ulcers of both solitary and agminated follicles, throughout jejunum and ileum. These ulcers have thickened edges, and many have nothing but peritoneum for their floor. For the most part, the ulcers are deeper in the upper part of the intestine than near the cæcum. Cæcum, appendix cæci, and ascending colon: extensively ulcerated. Rest of large intestine, not ulcerated, except about an inch above the anus, where there is a large oval ulcer with thickened edges.

Numerous peritoneal adhesions over these ulcers: rings of opaque white tubercles in peritoneum corresponding with the edges of the ulcers.

Mesenteric glands: enlarged, cheesy, and many fluidified. Retroperitoneal glands: cheesy, but not softened.

Recent thrombus in superior longitudinal sinus. Membranes of brain: natural. Brain: 43½ oz.; one small crude tubercle in centre of left thalamus opticus.

Remarks.—This case illustrates a fact which may be looked at in two ways. First, there is an angina, which must be called tuberculous, and which forms a part of general tuberculosis. Next, there is a form of general tuberculosis, which may be called anginal, inasmuch as the chief symptoms during life relate to the fauces.

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ON

LARYNGISMUS.

BY

SAMUEL GEE, M.D.

There is a remarkable fact in the etiology of the laryngismus of children which is not generally known, namely, that the disease is very much more prevalent during the former half of the year than during the latter. Thus, from the beginning of January 1866, to the end of December 1868, I saw sixty-three cases of laryngismus, according to the following table:—

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1866	...	2	...	3	4	4	...	1	...	...	...	2	16
1867	3	7	3	7	8	3	...	...	...	1	1	...	33
1868	...	2	4	3	4	1	...	...	...	...	...	...	14
Totals	3	11	7	13	16	8	...	1	...	1	1	2	63

In the former six months of the year there came fifty-eight cases, and in the latter six months only five, a proportion of 11·6 to 1, which arrests attention and provokes inquiry. Gastroenteric disorders (the great exciting causes of general convulsions) would seem to have little to do with laryngismus, for they prevail during the latter six months of the year. Teething, as teething, can have nothing to do with it, for children cut their teeth all the year round. The condition, whatever it be, most likely depends upon the weather. All Englishmen know the chilly dampness of the English winter and spring. And this we may suppose to act in one or both of

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two ways with respect to the production of laryngismus. The weather promotes either the diathesis or the paroxysm. First, of the diathesis. The bad weather causes the infants to be kept very much indoors, in rooms which are warm and close, a condition which begets and increases an erethism of the nervous system, which shows itself in turn as a spasmodic diathesis. The reader will note that there is more laryngismus in May and June than in November and December. This may be interpreted to mean that the confinement of the children, which begins in November, takes time to bring forth the excessive irritability spoken of, and therefore does not show its effects for some weeks. Again, we may suppose that the erethism produced by the bad weather does not exhaust itself so soon as the fair weather begins, but continues throughout May and June. Secondly, with regard to the paroxysm. Damp and chilly air, acting upon the skin and respiratory organs of a predisposed child, no doubt becomes an excitant of the paroxysm.

This doctrine of causes has important relations to hygienics and therapeutics. First, of hygienics. Erethism is often due to deficiency of the stimulus appropriate to the part. That which is antagonistic to the body is necessary, in some degree, to the body's health, by way of stimulus. There is a very great likeness in these respects between the catarrhal diathesis (or disposition to take cold upon changes of temperature) and the spasmodic. Both are increased by keeping the patients in close, warm rooms. Both are to be treated with fresh air, and with cold water to the skin. The dreaded evil disappears by being faced; but not by turning, after the manner of mankind, to the opposite extreme, which also is an evil: *In vitium ducit culpæ fuga, si caret arte.* The reader will easily convert these principles of treatment into details of practice. Secondly, of therapeutics. In nothing is the voice of those who have a right to be heard more consenting than in the prescription of fresh air for children suffering from the spasmodic diathesis in any form. Fresh air will sometimes put an end to a fit of laryngismus, or even of general convulsions. And it is also well known that cold sponging of the skin, in many cases, has power to check a disposition to laryngismus.

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CLINICAL CONTRIBUTIONS

TO

PRACTICAL MEDICINE.

PART I.

BY

DYCE DUCKWORTH, M.D.

I propose to commence a series of papers under the above title, in which I shall embody such clinical experiences as I gather from practice, both in the wards and in the out-patient department of the Hospital. I do not intend to burden the text with details of cases further than is absolutely necessary to elucidate any points under discussion, or to show that no essential factors have been lost sight of.

In this paper I have to offer some remarks upon the following subjects:—

I. On the occurrence of Venous Murmur (*bruit de diable*) in anæmic males.

II. Notes on the pain in Zona and in other forms of Herpes, with remarks on treatment.

III. On the occurrence of Hæmoptysis in cases of Pulmonary Emphysema.

IV. On the employment of Brandy in a certain stage of Rheumatic Fever.

V. On the value of Oxide of Zinc in the Night-sweats of Phthisis.

VI. Does Beaf-tea cause or aggravate tendency to Diarrhœa?

On the Occurrence of Venous Murmur (Bruit de Diable) in Anæmic Males.

It may, I believe, be fairly stated, that no special reference is

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made in works on practical medicine to the occurrence of venous murmurs in the male sex. The frequency of such murmurs in anæmic females is sufficiently known and described.

Dr Herbert Davies has, however, paid especial attention to this subject, and, as will be presently shown, he considers venous murmurs to be very common in the male sex.

Professor Laycock teaches that it is exceedingly rare to meet with these murmurs in males who are the subjects of hæmorrhagic anæmia, whereas they may be almost constantly met with in women who have thus suffered.

I have of late paid some attention to this point, and I have met with the following cases. They are seven in number, and I cannot but believe that in course of time I should be easily able to add others to them. In four of the seven subjoined cases, the anæmia was of the hæmorrhagic variety; in the remaining three, no active source or history of hæmorrhage could be traced; but in one there was great exhaustion consequent upon diarrhœa and vomiting.

CASE I.—T. W., aged 47, subject to gout for ten years. Father and grandfather had gout. Very anæmic. Has had piles for seven years, and has lost much blood from them. *Bruit de diable* well heard in right side of neck, and a soft souffle both at cardiac apex and bases. Slight gouty inflammation in left wrist.

CASE II.—C. D., aged 27, single, a gardener. Had four severe attacks of epistaxis five weeks ago, and lost a good deal of blood. Had plantar pains. No gouty history. *Bruit de diable* audible on right side of neck.

CASE III.—A. G., aged 16, a purse-maker, admitted into Mark Ward under my care in August 1875. Several days before admission he had three or four attacks of hæmatemesis, with pain at epigastrium. The motions were 'tarry' for some days after admission. The boy was blanched. The cardiac apex was just outside left nipple-line, and the radial arteries were unduly hard. No murmur at the heart. *Bruit de diable* well heard in neck on right side. No renal disorder. Abdominal viscera natural as far as could be ascertained. Some gastric erosion had probably occurred, and was connected, no doubt, with the condition of the arterial system generally.

CASE IV.—E. N., aged 45, a harness-maker, of waxy pallor and most cadaverous aspect, came as an out-patient in the summer of 1875. He had been subject to epistaxis, he stated, all his life. Two years ago began to suffer from gout in his feet, and latterly in his hands. The losses of blood have been enormous—in some attacks, he averred, amounting to three pints. The pulse was 108. Soft souffles were heard at the cardiac apex and bases, and

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loud *bruit de diable* on both sides of the neck. The urine was of sp. gr. 1008, acid, and free from albumen.

CASE V.—F. E., aged 44, a second-hand bookseller, came under Dr Andrew's care, having suffered for nearly three months from vomiting and diarrhœa, which had reduced him to a state of great prostration and anæmia. 'Pallor extreme, and weight reduced from 11 st. 8 lbs. to 10 st. 9 lbs. No excess of white corpuscles in blood. No albumen or sugar in urine. No evidence of any coarse structural changes within the abdomen. No physical signs of disease of lungs or heart. In the neck, on each side, a loud, continuous humming murmur (*bruit de diable*) over the jugular veins. When last seen, a week later, the murmur was less loud.

There was no symptom of any disease of the nervous system, unless the diarrhœa or vomiting could be regarded as such. (From notes kindly furnished by Dr Andrew.)

CASE VI.—A. P., aged 14, a small, fair-haired, anæmic boy, with mitral disease following rheumatic fever when nine years old. Pupils large. *Bruit de diable* in neck. His mother, who accompanied him, had gouty tophi on her fingers.

CASE VII.—H. Y., aged 52, a butler, came into Mark Ward in July 1875. He was the subject of extreme anæmia, for which no cause whatever could be found. There was no history of hæmorrhage of any kind. There were no cardiac souffles, but a loud *bruit de diable* was heard on the left side of the neck. There was an excess of white blood-cells, red globules deficient, but formed rouleaux.

In a man the subject of paroxysmal hæmaturia (or hæmatinuria) in a severe form, who was very much blanched, and had a soft souffle at the cardiac base, I could detect no *bruit de diable;* nor could I in the case of a very anæmic Jewish boy, aged 15, who worked in a tobacco manufactory.

In the foregoing cases it will be found that there was a profound condition of anæmia in the majority, and well-marked bloodlessness in the remainder.

The occurrence of gout in two of the cases, and of gouty ancestry in a third, strikes me as a noteworthy point, though I have no remarks to make upon the peculiar coincidence. The existence of piles in connection with gout is sufficiently intelligible.

Dr Herbert Davies'* observations upon cervical and sternal venous murmurs led him to believe that they were very common in healthy young persons of both sexes; that they became less frequent after the prime of life, especially the sternal murmur; and he has never heard the latter in any individual over sixty years of age. He avers, therefore, that these murmurs are not due to

* Diseases of Lungs and Heart, 2d edit. 1854, p. 354.

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anæmia or chlorosis, although they are 'uniformly present in those conditions of the system which are marked by an impoverished condition of the blood,' and that they are 'the *usual accompaniment* of the *most robust* health in persons under twenty-five years of age.' He explains their frequent or almost constant occurrence as being due to (1) a certain (required) velocity of circulation; (2) an elastic condition of the parietes of the veins; and (3) to a good conducting medium between the vein and the surface. Children have the first and second requirements, and chlorotic girls have undue velocity of blood-current, due to increased ventricular irritability, and to the thinness of their blood. Elderly persons, he remarks, have a diminished rapidity of circulation, thickening of parts around the veins, and probably an alteration of elasticity in their walls. Hence the infrequency of the murmur in these individuals. My experience of the venous murmur in healthy males I may state at once to be very limited. I can readily accept Dr Davies' explanations as to the cause of these murmurs in such persons as are manifestly anæmic. In several of the cases I have set forth it will be found that the persons were advanced to middle life, or well beyond it. But my observation of healthy males, so far as it goes, will not allow me to support Dr Davies' averment that a distinct cervical or sternal venous murmur is a 'usual accompaniment of the most robust health in persons under twenty-five years of age.' If by this statement Dr Davies alludes to any murmur that may fairly be called a 'humming-top' murmur, or be clinically recognisable as such, I certainly cannot pretend to hear it.

The result of my observations so far upon this subject may be thus summed up:—

(*α*) That cervical venous murmurs (*bruits de diable*) appear to be audible in most well-marked cases of anæmia in males.

(*β*) That they would be sufficiently often detected if specially sought for; but that inasmuch as males are less frequently than females the subjects of grave anæmia, the opportunities for noting venous murmurs in them are fewer, and thus the subject has hitherto escaped much attention.

(*γ*) That when a distinct cervical venous hum is heard in a male, it certainly betokens such grave disorder as demands a full investigation of the case, and suitable therapeutic efforts for its relief.

Notes on the Pain in Zona and in other forms of Herpes, with Remarks on Treatment.

In the following cases I took notes of the occurrence of the pain in connection with some severe cases of herpes.

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It has been alleged that 'all forms of herpes begin with a sense of burning pain, usually not of a very severe character, in the affected region.' *

This statement is, I think, correct in so far as it relates to the pain strictly due to the herpetic lesion itself, and which is fairly comparable to the itching and burning pain of eczema.

With respect to the more severe and truly neuralgic pain in connection with herpes, the teaching of Sir Thomas Watson and Trousseau is certainly borne out by clinical observation; and it is found that this pain may precede or accompany the eruption, and may likewise persist for some time after its disappearance. The subjoined cases afford proof in support of these statements.

I am not aware that any neuralgia occurs in connection with the simpler forms of herpes, such as herpes labialis, herpes præputialis, &c. The pain or discomfort is due to the lesion itself, as already remarked.

It is further remarkable that the simpler forms of herpes are prone to recur upon slight provocation. This is true of labial and præputial herpes, and of herpes of the buccal and faucial mucous surfaces.

Herpes labialis as a concomitant of pneumonia is regarded as a favourable symptom. Some physicians consider a 'herpetic pneumonia' as the simplest and least grave form of the disease, and I think I have noted the absence of herpes in some of the worst and fatal cases that I have seen.

Zona is rarely met with twice in the same individual. The subjects of it are usually in feeble health, and elderly people suffer more pain than young subjects.

Regarding it as the most extreme trophical manifestation of a neuralgia, I think it conceivable both that a less fully-developed form may give rise to a simple intercostal or other neuralgia, and that a kindred nutritional change in the pleura may simulate, or indeed constitute, a form of dry pleurisy—each giving rise to varieties of pleurodynia.

I think a distinction must be made between the simpler recurrent forms of herpes and such cases as leave deep scars. It is practically not found that any cicatrices result from the former, and they certainly do follow with some frequency attacks of herpes upon the forehead,† limbs, and trunk. The scars resulting from the severer forms of tetter are, so far as I know, permanent. I lately saw a case in Professor Laycock's clinique at Edinburgh,

* Niemeyer.

† Mr Jonathan Hutchinson suggests that scars are more deeply marked in herpes frontalis than in other forms, because the irritation is greater in this region than elsewhere.

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where the cicatrices of an attack of zoster on the left side had become the seat of pink scar keloid. There is found to be anæsthesia of the scars in cases of herpes ophthalmicus, and probably the same would be observed elsewhere if looked for.

Herpes Brachialis, preceded and accompanied by Pain.

CASE I.—Dinah E., aged 70, seamstress. Always a healthy woman. June 30, 1873. Two weeks ago was seized with pain, which she thought was rheumatic, in the right arm. It began in the deltoid muscle, passed along the outer surface of the arm, down the back of the forearm, and affected all the fingers and the thumb, also the palm of the hand. The pain was of a burning character. It remitted and returned again. The more she worked, the more the arm ached. On the 25th, herpetic eruption appeared near the olecranon, and spread along the back of the forearm; more especially was it seen over the ends of the radius and ulna, and a patch occurred over the pisiform bone. The pain continued, and was worse at night.

The tongue was clean, bowels not regular. She thinks she got a chill on the 17th after being heated, and while on a river steamboat. I ordered quinine, and pills of rhubarb and grey powder, and painted the eruption with several coats of flexile collodion.

On the 7th of July she was relieved somewhat, but lost rest at night from pain. Chloral hydrate and spirit of nutmeg draught ordered each night. On the 14th she could use her arm a little. On the 21st, marked improvement; could use the arm, but had still some pain in the little finger. Ceased to attend.

Herpes Femoralis, preceded and accompanied by Pain.

CASE II.—Margaret W., ward-nurse, aged 57, applied for relief of pain in the left thigh, on April 8, 1874. On the 2d inst. she discovered an eruption low down on the thigh, but for several days previously she had complained of aching in the limb. The eruption extended upwards, or rather fresh patches appeared higher and higher on the thigh till the groin was reached. They branched round the limb, more or less, and were very painful. She was in her usual health, and could in no way account for the complaint. Quinine was prescribed, and collodion was painted over the eruption. In a few days the pain and herpes passed away.

Zona of Right Side, preceded by Pain.

CASE III.—Thomas G., aged 39, had severe pain in the right

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side of the chest for four or five days. A patch of herpes, almost the size of the palm of his hand, appeared at this time. This man suffered from chronic bronchitis and weak heart.

Zona of Right Side, followed by Pain.

CASE IV.—Henry W., aged 23, while in his usual health, had a herpetic outbreak on the right side of the chest. The next day began to suffer pain.

Zona of Right Side, preceded and accompanied by Pain.

CASE V.—Elizabeth S., aged 62, greyhaired, ruddy faced, with pale, indented tongue, came for relief of zoster. Pain began just inside the right mamma, and subsequently below right scapula. In about four days the eruption appeared upon the painful spots, and no vesicles are seen between the two patches. The mesial line is not transgressed. Patient is poorly nourished, and eats meat about once a week. Quinine was given, and collodion painted on the eruption. In a week there was still severe pain at the lower angle of the scapula and near the contiguous vertebral spines, also below the right mamma. The herpes was healed and scabbed. Chloral hydrate was ordered each night. In another week the pain was still complained of, but the patient ceased attendance.

Zona of Left Side, preceded by Pain.

CASE VI.—A weakly girl, aged 15, of florid complexion, was brought by her mother with a profuse eruption of herpes extending continuously round the left half of the trunk. Two days before severe pain had come on in the left hypochondrium, from the mesial line in front to the spine behind. The same evening the eruption appeared but the pain passed off, leaving merely the discomfort of the local disorder. She was treated by steel, and in two weeks' time she was in better general health.

Zona of Right Side, followed by severe Pain.

CASE VII.—R. C., a healthy male, aged 72, had a smart attack of shingles in August 1868. The eruption was strictly limited to the right side. Some time afterwards severe neuralgia came on in the parts previously affected. No relief was secured by the ordinary remedies. This distressing condition remained for about three months, when it gradually passed away. Active walking

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exercise was found to afford the most decided benefit, especially if slight fatigue was induced.

Zona of Right Side, no Pain.

CASE VIII.—A sailor, aged about 35, came with zoster of right side. It gave but little annoyance, and was not connected with any pain.

Zona of Left Side, Pain preceding and accompanying Eruption.

CASE IX.—A feeble woman, aged 45, came with zoster of left side. The attack was preceded by pain simulating pleurisy, and which continued while the eruption was out. As the skin healed, the pain gradually passed off.

Herpes of the Left Shoulder and Axilla, preceded and accompanied by Pain.

CASE X.—A woman, aged 37, came to know if she was the subject of scabies. An eruption had appeared in patches over the left deltoid muscle, under the clavicle, and in the axilla. A week before this occurrence she had suffered from severe neuralgia in the left shoulder. The pain continued after the eruption appeared, and was worse at nights in bed. The spleen was enlarged. During the decline of the herpes the pain persisted.

Right Femoro-crural Herpes.

CASE XI.—A gentleman, aged 30, had three patches of herpes in the following situations. Without any premonitory symptoms, a cluster of vesicles was found on the skin over the inner tuberosity of the right tibia.

A smaller patch was found within the inner hamstrings. Later on in the day a third and larger patch began to form at the lower third of the outer femoral region.

These groups occurred in the regions supplied by branches of the anterior crural and external cutaneous nerves respectively. Some glandular irritation in the groin was experienced in connection with them. There was no history of possible cause, except perhaps a general somewhat low tone of body. The only pain experienced was due to the local lesion. No neuralgia and no scars followed.

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Treatment of Herpes.

I am well satisfied to employ flexile collodion in most cases of herpes requiring local treatment. I think I first learned this practice from the writings of the late Dr Anstie. The advantages of this agent are that it is simple in its application, cleanly and efficacious as a protection from irritation.

On contracting, collodion exercises compression upon the dilated vessels of the areolæ, and it prevents rupture of the vesicles. I formerly employed dusting with oxide of zinc, and had a piece of soft cambric bandaged on to the part, but I now prefer painting with collodion. Several coats should be applied, and should the layers peel off or crack, more must be put on. It is important to prevent rupture of vesicles for several reasons: if this happens, severe pain is apt to ensue, and the neuralgia may thereby be aggravated; again, scars are more likely to follow. It seems probable that early application of collodion may prevent the further development of vesicles—Dr Anstie thought so, and I am disposed to agree with his opinion.

In the simpler non-neuralgic forms of herpes, such as occur on the lips, for example, collodion mixed with glycerine may be used in the proportion of five or ten minims of the latter to an ounce of the former.

Internally, in the majority of severe cases, quinine appears to be the best remedy, and any persistent neuralgia must be met by such treatment as will best restore the general health.

On the Occurrence of Hæmoptysis in Cases of Pulmonary Emphysema.

I wish to direct attention to the not infrequent occurrence of hæmoptysis in cases of emphysema of the lungs. This symptom is one which is not usually described in connection with this affection, but it is important both to recognise its occurrence and to ascertain that it does not necessarily betoken the existence of phthisis.

Dr Walshe states that such sputa as are expectorated in cases of uncomplicated emphysema are 'never sanguineous.'* But it must be conceded that in practice it is most rare to meet with cases that are strictly free from some amount of bronchitis or bronchial irritation. Laennec makes no allusion to the occurrence of hæmoptysis in his description of the symptoms of emphysema, yet in his sixth case, one of 'general emphysema of the lungs,' in

* Diseases of the Lungs, 3d edit. p. 330.

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a man of 37, there was hæmoptysis four years before death, and on examination after death, no signs of tubercle were found—only well-marked general emphysema.* Sir William Jenner does not allude to the matter in his exhaustive essay in Reynold's 'System of Medicine.'

That occasional hæmorrhages should occur in the course of emphysema is not surprising. Indeed, it is remarkable that this accident should not oftener accompany the degenerative and coarse changes that constitute this affection.

My attention has been called to this subject more especially in connection with the out-patient practice of the Hospital; and although I have no series of notes upon the numerous cases I have witnessed, I wish to record my strong belief that hæmoptysis is a not infrequent symptom in cases of ordinary bronchitis with emphysema. I have never hastily formed an opinion upon any given case in which the symptom has occurred; and as I carefully examine the chest in every important case of pulmonary disorder which comes before me—not once only, but at occasional intervals—I am enabled to eliminate from the class I now refer to such as are manifestly complicated by phthisis in some of its stages. And even allowing for error of diagnosis in a considerable proportion of these cases, there still remains a residual number, in which I cannot doubt that the hæmoptysis was solely significant of emphysema.

It is to be observed in many instances of well-marked or advanced emphysema, that the fauces and pharyngeal walls are traversed by dilated vessels—venules, I believe—and these are not inapt to rupture during severe paroxysms of cough, and thus give rise to one form of hæmoptysis, trifling, no doubt, in amount. The same condition probably holds good for the bronchial mucous membrane. But the real cause of the more serious bleedings is not far to seek, and the sources of them are furnished by some of the nutritional changes which constitute the disorder.

These relate essentially to the small blood-vessels. In the course of the distension of the alveoli, of the progressive obliteration of their septa, the pulmonary capillaries and arterioles become dilated, and their walls undergo degeneration. The right side of the heart suffers distension and hypertrophy, and the systemic venous system tends to be overloaded. These changes are amongst the earliest to occur, and it is intelligible that occasional ruptures of some of these pulmonary capillaries should take place. In no part of the systemic venous circulation are signs of dilatation more early witnessed than upon the sides of the thorax, and across the

* Treatise on the Diseases of the Chest, Translated by Sir John Forbes, 1827, p. 162.

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præcordial region; and to my colleague Dr Andrew is due the credit of first observing this fact. Professor Laycock of Edinburgh has for long called attention to the vascular lines to which I now allude, but he has not been disposed to connect them in any way with changes correlative to pulmonary emphysema.* These vascular lines seem to follow no very distinct anatomical course. They are best seen about the seventh or eighth intercostal spaces, and they appear to be dilated venules filled with dark blood.

I know of no more constant superficial change than this in cases even of slightly-advanced or commencing emphysema. It is naturally more commonly found in males, because of their smaller amount of integumentary fat, but I have observed it in women who were spare.

The clinical history no less than the physical signs, as noted from time to time, serves to eliminate the suspicion of tuberculosis in cases such as I now allude to, and it is naturally a matter of importance to be able to allay the apprehensions of the patient or of his friends on this head.

On the Employment of Brandy in a certain stage of Rheumatic Fever.

In some cases of rheumatic fever, I care not whether they be treated by the alkaline method strictly so called, by blisters to the joints, by opium, or by *nihilism*, as well as by suitable food, I know that a certain stage is reached in which no measure appears so useful as the addition of a little brandy to the diet.

When any of the above-mentioned methods prove of little value, the patient is apt to become very weak, anæmic and exhausted. The perspirations are profuse, the sweat being often alkaline, and the cardiac action becoming feeble.

It is in such a condition, often after two or even three weeks of ineffectual treatment, that the beneficial influence of brandy is well marked.

I generally begin with an ounce in the course of twenty-four hours, and seldom have to order more than two ounces during the day to secure improvement.

The signs of amendment are improved relish for food, diminished sweating, and relief to the pains. The force of the circulation is increased, and a sense of relief is usually expressed by the patient.

It will at once be obvious that this is no piece of routine prac-

* Dr Laycock considers that these vessels are dilated *arterioles*, and connects them with a class of diathetic vascular degenerations.

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tice, that I am very far from putting in a bald plea for the indiscriminate use of brandy in the treatment of rheumatic fever. I would not, on several accounts, be misunderstood on this point.

Again, the use of this dietetic adjunct has to be considered in the event of cardiac inflammatory processes. If there be active pericarditis, and the patient be young, as would probably be the case, it is well to withhold stimulants as a rule. The quieter the circulation is kept the better; and the same holds good in the case of valvular endocarditis.

Inasmuch as these cardiac symptoms are more urgent about the second week of the illness, they do not consequently press for so much consideration in the stage to which I now specially refer, which is more commonly met with after the third week.

It has appeared to me that this condition is somewhat apt to supervene where the alkaline plan of treatment has been vigorously pursued, and has not proved of much avail to subdue the essential features of the disorder. There is then manifestly additional cause both for the anæmia and the depressed state of the circulation.

Notwithstanding this occasional result of the alkaline method, I feel bound to state here my conviction of its value in the majority of cases of rheumatic fever.

On the Value of Oxide of Zinc in the Night-Sweats of Phthisis.

I can certainly bear testimony to the decided action of oxide of zinc in checking the night-sweats of phthisis. This remedy was first employed by Dr Robert Dickson. The dose may vary from two to four grains. I have generally found two grains sufficient. The sulphate of zinc is more highly esteemed for the same purpose by some physicians, but I am not well satisfied of this myself. The late Dr Theophilus Thompson, who strongly recommended the use of oxide of zinc, expressed his opinion that the sulphate was less efficient,* and he quotes Pereira's statement as to its inefficacy for checking cutaneous exhalation.

My colleague, Dr Andrew, who has a special field for experience in the treatment of phthisis, prefers the sulphate to the oxide of zinc as an anti-sudorific agent.

This action of the salts of zinc is no doubt due to direct influence upon the nervous system. No direct experiments have as yet, I believe, been made to illustrate such effects.

The fear of inducing by this treatment a peculiar form of wasting disorder, which has been described as *tabes sicca*, cannot, I imagine, enter into one's mind, inasmuch as the doses recom-

* Clin. Lectures on Pulmonary Consumption, 1854, p. 193.

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mended are not large, and because ill effects are not usually observed after the employment of the zinc salts in considerable doses for various nervous disorders.

I have not found acetic acid of equal value in checking night-sweats, although I have employed from thirty to sixty minims of it for a dose. Dr Peacock's plan of ordering nourishment to be taken by phthisical patients when they awake early in the morning in a state of profuse perspiration, is, I find, a very excellent one. He recommends a cup of cold tea, made with cream, to be taken with a biscuit, or some water and claret instead.

Does Beef-tea cause or aggravate tendency to Diarrhœa?

This question demands an answer. It is held by some physicians that in any disorders in which there is looseness of the bowels, it is improper to employ beef-tea as an article of diet. Mutton-tea and other flesh-juices are believed to have no tendency to act as laxatives. Now if this be correct, it is manifestly of some importance to be aware of the fact; and the matter would have to be considered, especially in the treatment of typhoid fever and acute and chronic dysentery.

I have paid some attention to this subject, and have to confess that I have obtained no proof whatever that beef-tea increases or aggravates any tendency to diarrhœa either in typhoid fever or chronic dysentery. Proper regard has been paid to suitable diet in the cases I have watched. I am sure that diarrhœa is more likely to be kept up in fevers by the use of starchy and farinaceous food, which, as Dr Wilson Fox has shown, are very ill-digested when there is pyrexia, owing to the inability of the salivary and pancreatic glands to furnish sufficient secretion for this purpose.* While there is fever, the flesh-juices are better dealt with than any other food except milk, which, with ice in it, constitutes the best diet of all in pyretic conditions.

That the patient may not suffer the want of vegetable juices, it is well to adopt Sir William Jenner's suggestion of boiling some vegetables in a bag in the beef-tea, or of mixing some with the meat, and subsequently straining off all particles of it.† Small quantities of lemon-juice may be added to the beef-tea with advantage.

I have no hesitation, therefore, in prescribing beef-tea in any case of typhoid fever or dysentery, provided always that it is properly made, and free from solid particles and from fat. In any case, however, it is well to change the diet, and employ mutton or chicken tea in a similar manner.

* Diagnosis and Treatment of Dyspepsia, 1st edit. p. 101.
† Lancet, Clin. Lect., Nov. 5, 1870.

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REPORT

FROM

THE POST-MORTEM ROOM.

BY

J. WICKHAM LEGG, M.D.

In the following Report I have endeavoured to bring together all the cases of interest that I have met with in the post-mortem room of the Hospital during the past twelve months. Though the number of examinations during the year has been large, yet the cases have been of no very great interest, at least from a morbid anatomy point of view. I wish to express my best thanks to Dr Andrew, Dr Southey, Dr Church, and Dr Gee, for their permission to publish the accounts of the cases which were under their care while in the Hospital.

Purpura.

Robert Baldock, aged 21, a wine-cellar man, was admitted, on May 1, 1875, into Mark Ward, under the care of Dr Andrew.

For the clinical notes I am indebted to Dr Vincent Harris.

He had enjoyed good health up to the present attack. He had never suffered from bleedings before, nor had any of his family. He had been ill for five weeks, but had had 'spots' for nearly seven weeks before admission. For the last four weeks he has had beating of the heart, rigors, and loss of flesh. He has not noticed any vomiting of blood or pain after food.

He is a short man, with brown hair and dark eyes. He is fairly nourished. The skin very pale, not loose. Expression tranquil.

Vision greatly impaired. Eyes examined by Mr Vernon. Large effusions around each disc, and patches of hæmorrhage on

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retina, more on right side. The peripheral parts are free After the use of atropia the right disc is found to be undefined, stellate, and striated. Vessels few and indistinct. Left more distinct. The retinal hæmorrhages are distinct and numerous; some round, some very large.

Lips pale, dry, fissured. Sordes on teeth. Gums very pale, not spongy. Tongue pale, tremulous, moist, furred in central line. Breath offensive. P. 108, weak; temp. 99·8; R. 20.

No unnatural sounds over lungs. Beat of apex of heart is diffused and ill-defined. A systolic murmur at apex and base.

Over chest, belly, and legs are small, livid spots of purpura. Spleen enlarged; liver slightly so. He has some cough, and occasionally spits small lumps of dark blood. He is thirsty; the appetite not good. He vomits food directly after meals if he make any exertion. Bowels regular. Stools dark and liquid. He makes water frequently; urine, sp. gr. 1018; no albumen or sugar. Sleep broken. He dreams much, and sweats at night.

His chief complaint is of a spitting of blood, which comes on after sleep.

May 3.—The legs are quite white; the superficial veins distinct. There is no apparent desquamation. There are numerous small, dark, reddish spots, especially on the outer surface of the left knee. There are no hard larger patches. The spots are not connected with hair follicles. There are a few spots on the lower part of the belly and upper part of the thighs; bruises arise on slight pinching.

May 6.—He is not so well. There is a good deal of bleeding from gums. Mr Vernon finds to-day hæmorrhages in peripheral parts of the eyes. Blood shows no excess of white corpuscles.

The general oozing from the gums, and the epistaxis, continued until he died, after some delirium, at five in the morning of May 15.

He had continuous headache from May 10.

Examination fifty-five hours after death.—Body blanched; two or three small ecchymoses on right shoulder, bruises on knuckles of right hand, and on wrist of left; bloody foam coming out of both nostrils.

Calvaria and sinuses natural. The convolutions of brain much pressed together. The lateral ventricles contain much serum; the membrane lining the lateral ventricle studded with minute ecchymoses, especially abundant in the choroid plexuses, velum interpositum, soft commissure, corpora striata, optic thalami, and posterior horn of ventricle. The membranes of cerebrum and convolutions, with grey and white matter, show scarcely any hæmorrhages. The central parts of brain around ventricles alone show it. The corpora striata, optic thalami, and pons Varolii, show abundance of minute hæmorrhages. The meninges of the posterior lobes of

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brain covering cerebellum, and of the cerebellum itself, show more numerous ecchymoses than any other part of the brain. These hæmorrhages are limited apparently to the meninges, and are not seen in central parts of the cerebellum. The vessels of brain natural to the naked eye.

The thymus is persistent. There are about four to six ounces of a bloody fluid in each pleura. There is a bloody fluid in the pericardium, with flakes of lymph floating in it. There are numerous ecchymoses on visceral pericardium, none on parietal. Heart natural as to size and valves; the left ventricle shows a very plain red-and-yellow mottling, most marked in musculi papillares.

A patent foramen ovale, large enough to admit tip of little finger.

Lungs natural. No hæmorrhages on pleura, or in bronchi.

Liver pale, flabby; acini marked by transparent lines.

Spleen very small; malpighian bodies distinct.

Kidneys very pale; capsule hard to tear off; striation natural; ecchymoses in both pelves.

Stomach shows on mucous membrane a few small ecchymoses and marks of post-mortem digestion. Small intestines highly pigmented. The large intestine shows two or three scars of old ulcers, and contains altered blood.

Aorta natural.

Retinæ show hæmorrhages.

After the stress which has been laid upon a persistent thymus by Virchow,* and a patent foramen ovale by Schönlein,† in the pathology of hæmophilia, it is interesting to note their appearance here in a temporary hæmorrhagic diathesis. It seems likely that these morbid appearances have nothing to do with the nature of the disease in this case.

Leucœmia Hœmorrhagica.

John Bertram, aged 13, admitted, on July 11, 1874, into Matthew Ward, under the care of Dr Church. For the clinical notes I am indebted to Mr Upton.

History.—He had small-pox about three years ago. He first noticed his face to swell and then his belly; he had pains in loins and belly, and vomited after meals; he does not recollect any shivering or headache. His mother says he had a sister who died from 'purpura hæmorrhagica and enlarged liver.'

By occupation a woodcutter. He is a lad with large, swollen, rather pale face; eyelids half closed, restless, drowsy, heavy; the

* Virchow, Canstatt's Jahresb. f. 1859, Bd. iv. p. 267.

† Schönlein, Vorlesungen über Path. u. Ther. 3tte. Auflage, 1837, Bd. ii. p. 63.

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skin is rather dry, and covered with red spots, not raised, and not disappearing on pressure. The pulse is 108. The respirations 48, rather shallow; the temperature 100°. His tongue is rather brown and dry. He is perspiring, and feels thirsty. The chest is well formed, and percussion and auscultation give natural results. There is a short dry cough, and he has once or twice spat up a little blood. His belly is swollen and tense; his legs are slightly œdematous, for they pit on pressure. There is slight tenderness on percussion over liver, and the dulness extends downwards. The urine is very pale, sp. gr. 1008, acid, no albumen. He makes water about every half hour.

July 12.—Pulse to-day is 120; the temperature 99·9°. The tongue brown, moist. He slept fairly, and the bowels were open freely.

July 13.—He feels easier to-day, and does not suffer so much pain in the loins. The legs scarcely pit on pressure.

July 16.—It is noted that the breath stinks, and the gums bleed on slight pressure, and that there is a large ecchymosis over left trochanter, and small purple spots on both legs.

July 24.—There is swelling of the glands under the jaw, and up to front of ear; the glands of the neck also swollen and hard. The feet are now more swollen.

July 25.—The nose now bleeds; the glands more swollen, and tender to touch.

July 27.—There are no fresh ecchymoses, and the gums look natural. There is a systolic murmur at the apex of heart, but no extension of the cardiac dulness.

July 29.—Pulse is 144, very feeble. Temperature 101·5° F. The tongue is nearly clean; breathings 50, deep, noisy. The chest and neck are much swollen, and nearly completely covered with spots and patches of ecchymoses to level of nipples from below the jaw (more, however, on left side than right); the swelling is peculiarly soft and tender on pressure, especially to left of sternum and above nipple. He complains of great pain across the chest, and points to the level of the third costal cartilage on the left side as the worst. There is sibilus on forepart of both lungs. There are many discoloured patches on the left leg. The eyes are of a deep red, and the upper eyelids are discoloured, the right more. The gums and nose bleed. The belly very tender. He passed a very restless night, with frequent groanings and bellowings. The bowels open five times this morning, but no blood was passed. There is no cardiac murmur.

He died at 2·40 P.M.

Examination twenty-two hours after death.—Legs œdematous; upper part of chest and neck œdematous, and here are numerous

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large and small ecchymoses. There are ecchymoses also over belly, and there is blood on the lips and nose.

The head not opened.

On cutting through the skin from the chin to the pubes, a large amount of fluid runs out from the connective tissue of the neck and chest.

There are numerous ecchymoses over the pleura, pericardium, peritoneum, parietal, and that covering liver, and omentum.

Lungs quite natural; so tongue, pharynx, and trachæa. The glandulæ concatenatæ enlarged; when cut into, the section is white, diffluent, and in some parts reddish.

The heart is natural, save a large ecchymosis in the left ventricle under the endocardium. Large white-yellow clots escaped from the right auricle, and also from left, with a reddish serum. This reddish serum showed under microscope innumerable white corpuscles. The clot is made up of white corpuscles.

Liver large, yellow, edges everted; acini distinctly marked out by a whitish tissue, which is most apparent where the part is uppermost, and from which therefore the blood has drained. There are no nodules of whitish tissue.

Spleen 150 millimeters long. The malpighian bodies very prominent, but there are no white nodules.

The stomach and intestines natural; mesenteric glands all enlarged, and of same character as those in neck; so also præ-vertebral glands.

The inferior vena cava holds a chocolate-coloured thick fluid.

The kidneys are very large; capsule separates with too great ease, leaving a white smooth surface marked with many ecchymoses and stellate vessels. On section the cut surface appears generally white. It is hard at first to find any distinction between cortex and medulla; but on careful examination it is seen that the cortex is greatly broadened and the medulla is marked by a plexus of vessels. The medulla is not purple in colour, but whitish.

The aorta is somewhat atheromatous.

Parts of the liver and kidney were hardened in spirit, and examined in the October following. Thin sections were stained with carmine and mounted in glycerine.

With Hartnack (oc. 3, obj. 9) the first appearance in the liver noticed was an immense number of leucocytes. These leucocytes filled the spaces between the liver-cells, being most abundant in the portal zone of the acinus and in the portal canals. There is not merely an immense emigration of leucocytes, but an increase in the connective tissue as well, which is seen to separate the cells widely, sometimes to twice their own diameter, and to be hyaline, transparent, or very faintly granular. The liver-cells themselves

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appear to be natural in size and shape; their arrangement in rays around the hepatic vein is a good deal disturbed, but as far as can be made out, the greatest amount of leucocytes still seems to run parallel with these rays. The nuclei of the liver-cells appear large and well formed. The cells hold large fat-drops in the portal zone of the acinus; their contents generally are finely granular.

With the like preparation and the same powers of the microscope, the kidneys showed a like infiltration of the intertubular connective tissue with leucocytes and the same kind of overgrowth. This increase of the connective tissue was rarely as great as the diameter of the several tubules. The epithelium of the tubules had in most cases fallen out, and nothing was seen but empty holes in a transverse section. Where it could be noticed, the cells seemed shrunken, the nucleus small, and the contents finely granular, appearances which may be due to the hardening in spirit.

Leucæmia.

George Wilcox, aged 16, was admitted, on July 8, 1874, into Mark Ward, under the care of Dr Andrew.

For the clinical notes I am indebted to Mr Strugnell.

Seven months ago he first noticed a swelling of his belly; he had had a cough for six months.

He is fairly nourished, but has lost flesh. Tongue clean; appetite fair. Urine not albuminous; chlorides abundant. The glands in groins, axillæ, and neck are enlarged. The spleen stretches across the middle line. A systolic murmur at apex and base of heart; loudest at left base; almost lost behind. There is excess of white corpuscles in the blood, one to five.

He continued much in the same state till September 8, when five ounces of blood taken from a healthy young man were injected into the median cephalic vein, two ounces of blood having been withdrawn from the median basilic. This blood was very rich in white corpuscles, about one in four.

For the first few days after the transfusion he seemed somewhat better. Matters went on without any great change until November 16, when he died rather suddenly.

Four days before death his eyes were examined with the ophthalmoscope; the fundus of the eye was found rather hazy; white streaks along sides of vessels; some hæmorrhages; discs obscured.

He had bleeding from the nose only three or four times while under notice.

Examination thirty-one hours after death.—Body wasted; no ecchymoses. Feet, ankles, and scrotum œdematous.

Marked roughening and exudation of both pleuræ; the lungs

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are studded with numerous solid bodies, varying from a nut to a walnut or small apple in size. On cutting into them, some of these show a granular red section, others a smooth purple section, while others show appearances more like grey pneumonia. They are as a rule roughly triangular, with the base at the pleura; at the apex of the triangle, in all the cases examined, a thrombus, adherent, very white, and filling the vessel, is found.

The clots filling the heart are of a dull red colour; the valves and texture of the heart to the naked eye appear natural. Weight 220 grammes. Two of the coronary veins near the coronary sinus are plugged with a white material, very like that in the pulmonary arteries; and there are also old white adherent clots near the apex of the endocardium of the right ventricle.

Liver weighs 1650 grammes. No white nodules found; the acini marked out by fine white lines.

Spleen enormous; weight 2420 grammes; it is very hard and tough; on section, a few white nodules near the hilus. Towards the upper end appeared a well-defined band crossing the spleen, looking like an early stage of infarction; but it is not triangular, and does not seem to correspond with any arrangement of the arteries; there is a like appearance in middle of spleen, far away from the capsule, about the size of a walnut.

The stomach and small intestine are quite natural. The large intestine shows very peculiar appearances. In the cœcum, and growing less intense as the rectum is neared, is an immense overgrowth of the solitary glands. These glands are often as big as large filberts, and at the surface most projecting into the intestine the mucous membrane is lost, and the raw surface covered with brown shreddy sloughs. Around the enlarged follicles is a zone of redness. In the sigmoid flexure the glands are only the size of peas, and not ulcerated.

Kidneys are of natural size. The capsule is somewhat troublesome to strip off. The cortex is not much, if at all, broadened, but it is dull white, and the striæ hard to see; the medulla is a pale purple.

The axillary, inguinal, bronchial, and prævertebral glands are not enlarged, but are very hard. The mesenteric glands are slightly enlarged.

The liver and kidneys being hardened in chromic acid, were examined with the microscope on January 5, 1875. Their sections, stained with carmine, were mounted in glycerine.

The liver with low power (Hartnack, oc. 8, obj. 4), showed the rays of liver-cells in most of the acini quite natural; in some, however, there was a confused look. With higher powers (oc. 3, obj. 9), the capillary vessels of the acinus were seen much dilated,

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and filled with white corpuscles. The liver-cells themselves much compressed by the dilatation of the vessels, so that in some cases they measured only a third, or even a fourth of their natural size across. The whole appearance very much recalled what is seen in the centre of the acinus in nutmeg liver. There was not much infiltration of the capsule of Glisson with white corpuscles, much less than in the case of Bertram.

The kidney also showed no change in the intertubular tissue. This was of natural size, and there were scarcely any white corpuscles visible in it.

Pseudo-Leucæmia: Double Pleurisy.

Michael Kelly, aged 50 years, a cooper at a brewery, was admitted in John Ward, under the care of Dr Gee, on September 16, 1874. For the clinical notes I am indebted to Mr Brewer.

He said that he had been ill for a month, but had been much worse for the last three weeks. He gave up work on the 14th.

He first noticed swelling of the neck, then of the scrotum, and a week after that had cough. Sputa not abundant; 'bronchitic' in character. The trouble in breathing was sometimes so great as to threaten almost to choke him. There was no swelling of the legs at that time; he had no shivering, pain in the side, vomiting, or headache. He said he had drunk freely at times, but not lately.

All the lymphatic glands that can be felt are enlarged. The tongue is furred, the appetite bad, bowels costive. The urine is scanty, not more than half a pint in the twenty-four hours. The blood not examined.

Heart's apex beats in nipple-line. The sounds and percussion dulness natural.

Over the right lung there is dulness of base, when lying down, half an inch below the nipple; but when sitting up, an inch above nipple. Behind, dull to angle of scapula, or an inch above. There is weak breathing, loss of vocal vibrations and resonance. The left base is dull four inches behind, with slight friction sound or crepitation, and weak bronchial breathing.

Urine contains no albumen, but gives a slight indican reaction.

The liver dulness is increased downwards. There is œdema of face, neck, and right side of chest; much more than on left side. He has frequently felt sick, but never vomited. Temperature, 100·2°.

September 21.—The dulness now rises on right side to second rib in front, and to spine of scapula behind. The œdema increasing. On left side it is slightly dull for two inches at base.

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September 29.—Dulness reaches to clavicle to-day; no vocal resonance or respiratory murmur.

October 1.—He has ægophony at right base; is no better.

October 4.—He takes no food. He was delirious last night, constantly muttering, with jerking of limbs. He died on October 9.

Examination thirty-seven hours after death.—Body much decomposed. Large swellings in neck. The lymphatic glands of the armpit and groin are enlarged. The legs highly œdematous. Head not opened.

The left pleura holds about three pints of a turbid fluid, and the serous membrane shows roughness and loss of transparency, most marked at base. The right pleura shows a great amount of solid and fluid exudation.

The pericardium holds nearly three or four ounces of fluid, turbid, and with many shreds of lymph. No other evidence of exudation. The heart itself shows nothing worthy of note beyond some general dilatation.

The lungs are collapsed; they sink in water, but can be blown up to a natural appearance.

The trachæa, larynx, palate and œsophagus are natural. The right tonsil is enormously hypertrophied. The left appears to have ulcerated away. The glandulæ concatenatæ much enlarged. The bronchial glands enlarged and pigmented.

The liver shows its acini clearly marked off by narrow bands of whitish tissue. The colour of the acini themselves natural.

The spleen of natural size. The malpighian bodies much enlarged; of the size of a hemp-seed, and so numerous that they almost touch each other. No separate new formations. Stomach and intestines natural.

The capsule of both kidneys comes off with natural ease, and the cortex appears natural in striation and breadth. In the medulla are one or two whitish nodules. There are ecchymoses in the cortex, immediately under the capsule, and running in the direction of the tubules.

The prævertebral glands much enlarged; so those in the porta of the liver. The inguinal glands are as big as walnuts. The mesenteric glands only slightly enlarged. Every lymphatic gland seen was enlarged, and every one showed the same characters: hard, white on section, sometimes with red lines running through the tissue. Nearly every one had a small ecchymosis in some part of it.

The aorta is dilated and atheromatous. The body is already much decomposed; the clots from the heart are of a deep red, and show under microscope no increase of the white corpuscles. The red could only just be made out.

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The liver was examined with the microscope on January 18, 1875, after being hardened in chromic acid. No changes in the liver-cells or their arrangement could be made out, nor in the interlobular tissue. There was no infiltration of this last with white corpuscles.

Lymphoma of the Peritoneum: Pigment Liver.

Charles Wilson, aged 26, was admitted, on November 23, 1874, into Radcliffe Ward, under the care of Dr Southey.

For the clinical notes I am indebted to Dr Southey.

He was a soldier, and had served throughout the Ashantee campaign, having had an attack of African fever. He came home invalided, thin and sallow-looking. He was discharged shortly after. On admission, he had some amount of ascites, but very little anasarca of his legs. The dulness of both liver and spleen was much increased, and there was considerable tenderness on pressure all over the belly, but chiefly over the right lobe of the liver. No distinct tumour could be made out. The heart and lungs seemed natural. His appetite was bad, his tongue always furred, and inclined to be dry. The bowels, habitually constipated, never moved without purgatives. The urine was abundant and high-coloured, not albuminous. It varied, however, much in colour and quantity on different days. His temperature was as high as 101·5° F. in the evening, and sank below 98° in the morning. He had attacks of rigors, and daily profuse perspirations, so that Dr Southey ventured to suggest, among the possible explanations of his dropsy, hepatic abscess, chronic pyæmia, and chronic peritonitis.

The ascites increased, and his legs became very anasarcous, although diuretics and purgatives were freely employed for the first fortnight that he was under observation. Afterwards he took quinine and mineral acids; but he steadily lost strength, and at last sank on December 28.

Examination ten hours after death.—Body much wasted; a few ecchymoses on left side of chest; belly much swollen; legs and feet œdematous.

No excess of fluid in either pleura. There are adhesions only at apex. Pericardium natural.

Heart small, weighs only 230 grammes. Walls look wasted; valves natural.

Lungs show puckering at apices. In both there are spots of solid matter under puckering, calcified or cheesy, about size of filberts; the lower lobes congested in both; no new growths.

The peritoneum contains a large excess of fluid, looking like

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weak coffee. The vessels of the peritoneum are injected, but there is no roughening of the surface. The peritoneum is studded with new growths, varying in size from split-peas to horse-beans. They are most abundant in the neighbourhood of the bladder, in the recto-vesical pouch. Here some are as big as walnuts. The omentum is of a reddish colour, like corned beef, due to the presence of innumerable small new growths. It is adherent to the spleen, liver, and small intestine, where it ends in large tumours.

Spleen small, dense, not unnatural in appearance; weighs 200 grammes. On capsule several small new growths. There are also new growths in the hilus, but they do not penetrate into the organ; they are clearly separated by capsule.

Stomach natural. About a yard from duodenum, on the small intestine, is a tumour the size of a small orange, to which the omentum is adherent, or rather, which seems to grow out of the omentum. On opening the intestine, the tumour is seen to be hollow, and to be ulcerated in continuity with the mucous membrane of the intestine. The walls of the intestine are at this spot much infiltrated with the new growth. The mucous surface of the intestine is throughout natural; the solitary glands throughout enlarged; Peyer's patches natural. There are, all along the attachment of the mesentery to the intestine, numerous small growths, and the mesenteric glands are much enlarged. The large intestine is natural, and shows no signs of a dysenteric process.

The diaphragm on peritoneal surface shows numerous small new growths. Liver weighs about 1200 grammes; is throughout somewhat tough, dark; acini indistinct. No signs of suppuration or new growth anywhere. The omentum is adherent to lower edge of right lobe, and here is a tumour the size of an apple, resembling the other tumours in its whiteness and extreme softness. There are also many spots of hæmorrhage in it. But it is clearly not of the liver, for the capsule can be traced distinctly passing between the liver and the new growth. The gall-bladder is likewise pressed upon by a like growth. Gall-ducts and portal vein natural.

The left supra-renal body natural. On the right it is surrounded by a mass of the new growth, which also presses on the inferior cava. The kidneys together weigh 200 grammes, natural. The pelves and ureters somewhat dilated. Bladder natural on mucous surface.

Aorta somewhat atheromatous.

Scrapings taken on the day of the post-mortem examination from a large gland over the ilium, and looked at with the microscope, showed only nuclei or cells (it could not be said which), without nucleoli or contents, rounded in shape, about the size of a

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white-blood corpuscle, and in immense abundance. No large cells to be seen, except the compound granulation cells of Gluge.

Pieces of the tumours were hardened in weak chromic acid; the sections made were coloured with carmine, and mounted in glycerine. They were examined at the end of January and beginning of February.

The tumours showed all the same characters. The first appearance noted in all was the extreme abundance of bodies all much about the same size, that of a white corpuscle, rounded, and with various contents. Some showed no appreciable contents, others were granular, and others had three or four small points like nucleoli. These rounded bodies are surrounded by delicate fibres and homogeneous or slightly granular tissue. These are again grouped together into round or oval alveoli, surrounded by fibrous walls of varying thickness.

It is to be wished that the details of the examination with the microscope had been fuller. The foregoing are the only notes which I committed to paper at the time of the examination, made just before I was compelled to take a long rest. The impression made upon my mind at that time was that I had certainly to do with a lymphoma, and not with any other kind of new growth.

Part of the liver was hardened in chromic acid, and examined in February. Preparation precisely as the tumours.

With a low power, the arrangement of the acini and vessels seemed quite natural. It was doubtful if there were any increase of the connective tissue; if any, very slightly marked. There is scarcely any fat in the cells. But scattered over the section are patches of pigment, quite black, apparently most abundant around the large blood-vessels. With the high power (Hartnack oc. 3, obj. 9, *à immersion*) the pigment resolves itself into concrete round balls. Some were granules, but the most part about the size of a red or white blood corpuscle. In none of the specimens examined was there any evidence to show that the pigment was contained in the cells of the liver. Even when a solitary ball of pigment was seen amongst the cells, on close examination it was usually found to be in a capillary vessel, not in a cell; and in other cases it was clearly a ball set free by the preparation of the specimen, and adherent to one of the surfaces of the section. As before said, the pigment was most abundant in the wall of the vessels in the capsule of Glisson; and here, although the globular form predominates, yet, by an accumulation of granules, elongated and irregular shapes are seen. Also where the pigment is most abundant are seen many new lymphatic corpuscles. In other places where the pigment is absent these lymphatic bodies are also absent.

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Otitis Interna: Thrombosis of the Cerebral Sinuses: Gangrene of the Lung.

Henry Flude, 15 years of age, was admitted, on December 5, 1874, into John Ward, under the care of Dr Gee.

The friends who brought him said the boy had only been ill about three days. This statement was later found to be quite untrue; the boy had really been ill about three weeks before admission with a pain in the head, and he was brought to the Hospital because he was delirious.

For the clinical notes I am indebted to Mr Benton, the house-physician.

December 6.—He was delirious last night, and would get out of bed. Bowels were open last night, the motion was liquid. There were rigors yesterday afternoon. Food, when taken by mouth, had a tendency to return by the nose.

Morning.—Temperature 101·2°. Pulse 100. Respirations 30.

Evening.—T. 104°. P. 114. R. 35.

December 7.—He slept badly. The tongue dry; bowels open three times, motions of a light-brown colour, and liquid. There is a slight rash on flexor surface of arms, and one or two spots on belly. They do not disappear on pressure, and are not raised.

Food now taken better, not returning by nose.

Morning.—T. 102°. P. 105. R. 32.

Evening.—T. 105°. P. 100. R. 30.

December 8.—Passed a restless night, delirious. Stools liquid, powdery; tongue furred, white, moist. No murmur at heart.

Morning.—T. 103°. P. 100. R. 30.

Evening.—T. 100°. P. 100. R. 24.

In the evening he was sleeping comfortably.

December 9.—Slept well. Tongue dry and brown, moist at edges.

Morning.—T. 101·4°. P. 105. R. 36.

Evening.—T. 103°. P. 120. R. 33.

December 10.—Slept well after a dose of chloral. Tongue unchanged; bowels open three times. Complained of frontal headache and pain in right hypochondriac region. Rash disappeared. Convergent strabismus. Pupils equal. Spleen not felt. Mucous râle at base of right lung.

December 11.—Slept well after two ounces of brandy. Tongue clean and moist. Bowels open twice; no change in character of stools.

Morning.—T. 103°. P. 120. R. 39.

Evening.—T. 102·1°. P. 120. R. 36.

December 12.—Passed a restless night, but was not delirious.

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Complained of pain in right hypochondriac region. Spleen to be felt during inspiration. Dulness of the right base of chest.

Morning.—T. 103·3°. P. 120, small and thready. R. 57.

Evening.—T. 103·4°. P. 123. R. 46.

He died on December 13.

Dr Gee informs me that on the day before death 'the evacuations were loose, powdery, light-brown, copious, and, in fact, possessing all the qualities deemed characteristic of the evacuations in typhoid fever. There was no otorrhœa throughout, and no proof of otalgia.'

Examination twenty-nine hours after death.—Body wasted. No external appearance of disease.

The calvaria is unusually thin, otherwise natural. On slitting up the longitudinal sinus, a clot adherent to the left wall is seen passing up from the torcular Herophili to the vertex; it is grey-brown in colour, and has a coarse granular look, with a laminated disposition. This clot sends a few prolongations into veins by its side, but they do not go far. The brain, on being taken out, is found to be quite natural, both in pia mater and substance. No pus either in meninges or brain. There are no clots in the right lateral sinus, or either of the cavernous sinuses. The left lateral sinus, from the torcular Herophili to part where it passes the mastoid cells, is filled by a clot adherent, but more gelatinous and darker than that in the longitudinal sinus. For about an inch before it passes into the internal jugular the sinus is filled with a puriform matter. The internal jugular is found to be thrombosed for some distance.

On removing the petrous portion of the temporal bone, the outer meatus is found to contain pus; the membrana tympani perforated, and the mastoid cells containing pus. In this part of the examination I was much assisted by Mr Cumberbatch.

The right pleura holds about two pints of a highly turbid fluid, in which float flakes of lymph. The surface of the pleura is universally roughened. At the lower back part of upper lobe of right lung is a slightly crepitant, dark-coloured, distinctly circumscribed, sloughing, stinking, mass of lung tissue as large as a hen's egg. When cut across, it shows a disposition to slip out of its bed, there being a distinct yellow lining membrane about two millimeters thick. Over this sloughing mass, which is only indistinctly triangular, but reaches the circumference of the lung, the exudation on the pleura is most abundant. In the lower lobe are three similar patches, but much smaller and more advanced. These are all about the size of a nut; they lie separated from the pleura four or five millimeters, and their contents are fluid, stinking, but evidently broken-down lung tissue. They show a very distinctly

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circumscribed cavity. The rest of the lung tissue is somewhat œdematous, and in the lower lobe collapsed.

The left lung is universally adherent by old adhesions. The tissue is sound, save at the base, which is somewhat collapsed.

Pericardium natural. Valves of heart natural. The muscular tissue is somewhat pale and flabby.

Liver weighs 1500 grammes; it is flabby and soft. The acini are very distinct, and show a peculiar appearance in both lobes. The outer part of the acinus is as usual paler than the centre. About midway between the circumference and centre the acinus becomes darker in colour, but immediately again becomes of a peculiar pale appearance, quite different from the colour of the circumference.

Spleen very large and soft.

The stomach and intestines are quite natural. Peyer's patches quite natural. The small intestine holds many solid yellow lumps. The mesenteric glands not enlarged.

The kidneys show a small amount of cloudy swelling.

Primary Enchondroma of the Lung.

Charles William Dexter, aged 39, died in St Bartholomew's Hospital, on August 2, 1874.

Examination twenty-six hours after death.—The body generally was œdematous. There was more than a pint of fluid in each pleura, the right containing flakes of lymph, and the back surface of the pleura being roughened. The lungs themselves were œdematous.

A hardness was left near the apex of the left lower lobe. On cutting into the lung for not more than half an inch, a little solid body escaped, without any more pressure upon it than was made by holding the lung. The inside of the cyst from which it escaped was smooth, and highly pigmented, but no opening into it was observed. The body itself was white, about the size of a large pea, oval, but with an irregular nodular surface, elastic, and of cartilaginous hardness. It cut easily with the knife, except in the centre, which was calcified. The section showed a yellow-white surface, apparently uniform, except in the centre, which was of a dead white. Its longest diameter was eight millimeters; its shortest, five.

No other tumour was found in the lungs.

The pericardium was natural, and the valves of the heart were sound, except the mitral, which was slightly atheromatous. There was enormous hypertrophy of the left ventricle. After being opened, the heart weighed 590 grammes.

The liver, spleen, stomach, and intestines were natural.

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The kidneys weighed 200 grammes. The capsule was thickened, and came off with difficulty, leaving a rough surface behind, opening cysts, and tearing away parts of the kidney substance. On the section, the cortex was found to be much diminished, not more than two millimeters in breadth. The colour of the section was red.

Aorta was highly atheromatous.

There was no swelling or hardness of the testicles, or in the parotid region.

The tumour from the lungs was kept in weak chromic acid, and examined in the month of September. With the lower power (Hartnack, oc. 3, obj. 4) the tumour could be seen to be made up of fibres and cells; the cells large, in clusters, and the clusters surrounded by a layer of fibres. The arrangement recalled the appearance of a racemose gland. The surface of the tumour was bounded by a kind of fibrous capsule. There appeared to be no difference between the arrangements in the very centre and in the outer layers of the tumour.

With a higher power (Hartnack, oc. 3, obj. 7) it was seen that in the centre of each group of cells there were none but large oval cell-spaces; the cell itself stained with carmine, and was very little retracted from the cell-space. An oval nucleus could be made out in nearly every one, but nucleoli could not be seen. There were no other contents, even in the cells from the centre of the tumour. Here the lime-salts had probably been removed by the chromic acid. The intercellular matrix did not stain with carmine; it was everywhere markedly fibrillar. In the centre of groups, not one instance of two cells being enclosed in one space was met with. Towards the circumference of the groups of cells the carmine began to act upon the intercellular matrix; the cells became smaller, more oval, and even spindle-shaped, the nuclei almost rectangular. It became common to see two cells in one space. When the fibres predominated, no cartilage cells were seen.

No appearance of ossification could be seen in any part of the tumour.

Two Cases of Aneurysm of the Mitral Valve.

Four Attacks of Acute Rheumatism, Syphilis (?), Endocarditis, Aneurysm of the Mitral Valve, Multiple Infarcts.

George Wale, aged 22, was admitted, on August 21, 1847, into Mark Ward, under the care of Dr Andrew. He was suffering from a fourth attack of rheumatic fever.

He had been ill about five weeks, but with little pain in the joints. Last attack of rheumatic fever was two years ago.

It is noted that he is a sallow, anæmic man, with suffused con-

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junctivæ, and slight herpes on the lip. Pulse 90, jerking. Temperature 103° F. Pulsation in carotids visible. Heart: a double murmur at base, heard at apex. Slight œdema of legs; no albumen in urine.

His temperature varied from 103·4° to 100°. On September 10th it is noted that the spleen was not enlarged.

On October 23d it is noted that there is a double first sound at the right base and a systolic murmur at the apex, accompanied by thrill. On October 28th there is a pain on pressing the bend of the right elbow. The fingers are clubbed, and the skin on hands dark and purple. There is also a small node on temporal bone.

October 30.—The right arm is more swollen. The pulse is felt as far as the elbow, but not at the wrist. The murmur at the base much decreased. On October 31st the pulse in left wrist is full, jerking, and hard; there is a very weak pulsation in right. There is still swelling; and pain on pressing the bend of the elbow. The arm feels quite as warm as the other, and there is no discoloration. Murmur at apex much louder, with very heavy impulse. On November 2d it is noted that there is a systolic murmur at the base of the heart; a systolic and diastolic at the apex, with thrill. There is a slight trace of albumen in the urine.

While eating his dinner on November 8th, he complained that his teeth were loose; he very soon after became insensible, with loss of motion on the right side of his body. The murmur at the apex became much louder. He became again sensible on November 10th; face then drawn to left side; able to take his food well. Tongue protruded to right; but cannot speak.

The man continued to improve to November 26th. On that day it is noted that the second sound at the base is accentuated more than usual. Still a loud double murmur at apex. Still unable to speak. After this date he ceased to improve; he began to sleep much and deeply, and died on November 30, 1874.

The node on the temporal bone was considered by those in attendance to be of syphilitic source, and I believe the patient himself confessed to have had syphilis.

Examination twenty-four hours after death.—Body of great stature, somewhat wasted.

Head long. The left internal carotid, just before its division, is plugged by an old thrombus; the branch to the Sylvian fissure is free. No other disease in vessels of brain. A large part of the left side of the brain is softened into a pulpy diffluent mass. The whole of the corpus striatum, and the brain tissue outside of it, for two inches around, are the parts most affected. There is no disease of the right side of the brain. The sinuses are free.

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The left pleura is covered with fresh exudation; the right is adherent at base by old adhesions.

The pericardium is natural. The heart is much enlarged, and after being opened, weighs 510 grammes. Water slowly trickles through the aortic orifice. On the right side the valves are quite natural, and there is not much dilatation on this side. On opening the left auricle, a body the size of a large marble is seen to project up from the mitral valve. It is attached to the valve, but has a perfectly smooth covering continuous with the endocardium, except at top and one side, from which clots project. On opening the ventricle, the ventricular aspect of the large mitral flap is seen to be covered with vegetations, and in the midst of these vegetations is a small hole which leads up into the body before described. The hole is about the size of a split-pea, with jagged edges. There are a few largish vegetations on the small flap of the mitral. The aortic valves are much thickened along the edges; otherwise they are not markedly diseased. There is well-marked hypertrophy and dilatation of the left ventricle.

There is considerable œdema of both lungs, otherwise there is nothing noteworthy about them.

The liver is natural in size and shape; its edge very slightly fibrous: it shows a well-marked nutmeg appearance.

The spleen is large, and shows two infarcts. One is the size of a small apple, the other of a nut. They have diffluent, pus-like, contents.

Stomach and intestines natural.

The kidneys are of a natural size. The cortex is white and opaque. In the left kidney at cortex a diffluent infarct the size of a nut.

In the right brachial artery there is a nodular swelling about two inches above elbow. It has a diffluent embolus at that spot. No ante-mortem thrombus above or below.

Aneurysm of Mitral Valve: Hœmoptoic Infarcts: Veins of Right Arm filled with a Clot.

Samuel Dands, aged 54 years, was admitted, on December 12, 1874, into Radcliffe Ward, under the care of Dr Andrew. He died on December 15th.

I am unable to give many clinical details. The noise made by the pulmonary catarrh was so great as to mask any murmurs that might otherwise have been heard about the heart. He owned also to having suffered from some kind of syphilis. This, I regret, is all that can be found out about the man before his death.

Examination nineteen hours after death.—The legs œdematous.

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The right arm sloughing, with red patches up to neck, and epidermis coming off. The feet covered with ecchymoses.

The friends forbade the head to be opened.

In the right pleura, there are about two pints of turbid fluid, and lymph floating in it. The surface of the pleura is everywhere roughened. The left pleura is natural.

Pericardium natural. After being opened, the heart weighs 500 grammes. Water slowly trickles through aortic valves. There are some few parietal thrombi in the right auricle. The tricuspid orifice is dilated, valve natural; pulmonary valves natural; right ventricle dilated, and walls tough; no thrombi in left auricle. A body, with vegetations attached to it, projects from the ventricle into the auricle. On examination, it proves to be a part of the smaller flap of the mitral valve, and covered with endocardium. It is about the size of a horse-bean. It is close to the free edge of the mitral, and long vegetations are attached to the free edge. Seen from the ventricular surface, it appears to be only a bulging of the valve, without any distinct opening; the ventricular surface is much roughened and jagged. The large flap is also much diseased. There is a loss of substance and roughening over greater part of its auricular surface. On the ventricular side there is marked atheroma. The aortic valves are tolerably natural. There is great hypertrophy, and some dilatation of the left ventricle.

The upper lobe of the right lung, save a small patch of pulmonary apoplexy at lower border, is natural. The lower lobe swollen, firm to the touch, pit of finger remaining, and abundance of non-aerated fluid escaping on pressure. It sinks in water, and does not crepitate. There is another patch of pulmonary apoplexy at the lower border. The left lung is œdematous.

The spleen is small, not tough; natural. Mucous membrane of stomach and intestines somewhat tough; otherwise natural.

Liver weighs 1400 grammes; edge fibrous and tough. It is shrunken, but on section appears tolerably natural. The centre of the acini are scarcely more deeply coloured than natural.

The supra-renal capsules natural. Kidneys of natural size. The capsule comes off with very slightly-increased difficulty, leaving a mottled white-and-red surface. On section, the tissue is found to be extremely tough. The cortex still shows striation and the malpighian bodies, but it is white mottled with streaks of red. There is a marked contrast between cortex and medulla, which is of a deep purple.

The veins of the right arm dissected. The great vein of the limb is found to be plugged by a large thrombus about the level of the third rib. The artery is free from clot. Arteries throughout the body highly atheromatous.

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Cancer of the Pancreas and Liver: Jaundice.

William King, 46 years of age, was admitted on August 3, 1874, into Radcliffe Ward, under the care of Dr Andrew.

For most of the clinical notes which follow, I am indebted to Mr Strugnell.

On admission, it is noted that he is a poorly-nourished man; jaundiced, but not intensely; expression anxious. Temperature, 98°; pulse, 64. Depression across belly, just below ribs. The heart's apex is a little outside natural place. First sound at apex prolonged. There is no anasarca. The liver is not enlarged, but there is some tenderness over the right lobe. Spleen natural. Urine contains much bile. Bowels open; fæces colourless. Appetite fair.

He said he was quite well until last January, when a sharp, sudden, griping pain seized him in the belly. This has occurred at intervals since. There is pain immediately after food. He has been jaundiced fourteen days, but has never brought up blood.

He felt a little better within a few days of admission, but soon began to grow worse. The pains in the belly became almost continuous; he grew thinner and weaker, and more jaundiced. His feet and legs began to swell about the beginning of October; then dropsy of the belly came on, and he died, after becoming comatose, on November 6.

Examination made eighteen hours after death.—Body much wasted. The legs œdematous. There are groups of ecchymoses on legs, thighs, arms, and trunk; none are bigger than a split-pea. There are no signs of xanthelasma about the eyelids. The jaundice is general and deep.

There is nothing noteworthy in the brain or membranes. The temporal muscles are jelly-like.

There is a complete absence of fat under the skin and in the omentum. The peritoneum holds a large quantity of fluid, in which float flakes of lymph. It is roughened in places, and ecchymosed over the large intestine.

Each pleura holds about half a pint of a jaundiced serum. The pericardium but little; it is not ecchymosed.

The heart's cavities are filled with well-clotted blood; it weighs 230 grammes after being opened. It is wasted, but otherwise natural, saving some atheroma of the mitral. No thrombus is found on the right side.

Both lungs markedly emphysematous, œdematous, and with hypostatic congestion at their bases. Near the apex of the lower lobe of one of them is a cheesy round mass, the size of a small

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marble. In the same lung is, at base, along the narrow free border, a spot of pulmonary apoplexy.

The spleen is large and soft; full of blood.

The small intestine from the duodenum, and the large intestine, show nothing unnatural on their mucous surface; their contents are throughout colourless.

On dissecting the porta of the liver, the common duct is found dilated to the size of a man's middle finger. The hepatic artery is apparently natural; so is the portal vein, except that near the pancreas it seems somewhat narrowed, but there is no clot. The dilatation of the common duct ceases about an inch from the opening into the duodenum, quite abruptly. It is here pressed on by a tumour from the pancreas, and is narrower than natural, though apparently still pervious, and stained yellow. The gall-bladder is greatly dilated, and filled with a viscid, almost black, bile. The fluid in the gall-bladder also contains a jelly-like lump of black matter, apparently inspissated bile. No gall-stone is to be found in any of the bile-passages.

After opening the gall-bladder, the liver weighs just 1300 grammes. It is of a deep-green colour, appears shrunken, and has a fibrous edge. The surface is still smooth. On section, the colour is seen to be mottled, with the greatest amount of pigment in the centre of the acini. It is tough, so that the tissue cannot be broken down without some trouble.

Scattered through different parts of the liver are whitish tumours, none bigger than a small marble. Some appear to be in close relation to the larger portal canals, while others are at the surface. They are not very numerous, not more than a dozen.

The glands in the hilus of the liver are swollen, but apparently there is no new growth in them.

The mesentery is slightly œdematous; some new growths, apparently springing from the peritoneum, are seen on it. None are larger than a split-pea, or thicker than cartridge-paper.

The stomach and duodenum appear natural.

The pancreas is changed into a hard, tough mass, much increased in size, and nodular on surface; on section, it appears chiefly yellow, with streaks of white passing through it. The increase in size is chiefly to be noted at the head of the organ. It involves the aorta and the left side of the vena cava, and has nearly obliterated the left renal vein. Beyond the place of obliteration, near to the kidney, is a thrombus filling the vein.

There is no thrombus in the inferior vena cava. The supra-renal bodies natural.

The kidneys weigh together 220 grammes. Both present the same characters; the capsule comes off with some trouble, but

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leaves a smooth surface. On section, the cortex is narrowed, granular in appearance, and here and there confused in structure. The apex of the cones shows a greenish appearance, in lines, apparently corresponding to the tubules.

The aorta is only slightly atheromatous.

The liver-cells were examined with the microscope the day of the post-mortem examination. Their outline was tolerably distinct; their form seemed remarkably rounded, very many having quite lost the polygonal shape. Their contents were granular, and even fatty; many contained pigment granules, while some cells were uniformly stained a deep yellow. The nucleus, sometimes double, was visible in nearly all.

Kidney epithelium fatty in places.

Parts of the liver, kidneys, and pancreatic tumour were kept for a few days in very weak chromic acid, and then hardened by being put for a couple of days into spirits of wine. The thin sections were stained with carmine and mounted in glycerine.

Sections of the liver seen with a low power (Hartnack, obj. 4, oc. 3) showed very well that in nearly every case the pigment was distributed in the central part of the acinus. In only a few could any doubt be entertained. The arrangement of the cells in the acinus in rays remained tolerably undisturbed. In the portal canals there is an increase of connective tissue. With higher powers (obj. 9 *à im.*) the centre of the acinus is that which shows the greatest amount of disease. The liver-cells are here widely separated from one another. The meshes are as wide as the liver-cells themselves, and these latter are either rounded, lying by themselves, or form long rows with very indistinct outline. The pigment is of a distinctly green colour. In some places it seems in the cells themselves, and is then rounded and globular in form; in others it forms long casts. In these it certainly seems to lie between the cells, and therefore probably fills the intercellular gall-ducts. Such casts as these have been described by Oskar Wyss* and Heinrich Meyer,† but I have never before had an opportunity of seeing them. In the outer parts of the acinus there is little amiss beyond a dilatation of the holes for the capillary blood vessels. There is a distinct increase of the connective tissue in the capsule of Glisson, and there is an abundance of lymphatic corpuscles in the sheaths of the vessels and elsewhere. The increase of the connective tissue does not come within the lobule.

The tumour of the pancreas: sections of this being washed out by a camel's-hair brush showed a very distinct alveolar structure;

* Oskar Wyss, Arch. f. path. Anat. 1866, Bd. xxxv. p. 553.

† Heinrich Meyer, Medicin. Jahrbb. hrsgeg. von der k.k. Gesellsch. d. Aerzte zu Wien, 1872, Heft. ii. p. 133.

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the alveoli themselves small, round, oval, or elongated. The fibres which form the walls of the alveoli are in some places very coarse, in others they show abundance of lymphatic elements, but no cells. In other sections unbrushed out, the cells in the alveoli are seen to be somewhat closely packed. Their shape tends to the polygonal; they are small, with one nucleus and varying contents, some highly fatty, others granular, or with transparent contents. The nuclei are large in comparison with the cells, and do not appear to contain nucleoli.

The secondary new growths in the liver present much the same characters as the tumour of the pancreas, except that the alveoli are wider, and the cells within them not so tightly packed, larger, and the nuclei smaller.

The kidneys show very little change under the microscope. The most noticeable alteration is the filling of the epithelium of some of the straight tubes of the medulla with pigment. For a certain stretch of the tube the epithelium is coloured deepish brown, so that it is hard to make out the margins and outlines of the cells. This stretch of colour begins and ends abruptly. In some tubes the epithelium can no longer be made out, but the tube is filled by a cast of brown pigment, apparently containing organic residue, but no distinct form to be made out. The pigmentation of the epithelium may also be seen in the convoluted and straight tubes of the cortex, but in much less degree than in the medulla.

Ulceration from a Pin (?) in Vermiform Appendix: Abscess of Liver recent and healed (?).

Emily Etherington, aged 5 years, was admitted on September 30, 1874, into Elizabeth Ward, under the care of Dr Gee.

The mother said that the child had had 'bronchitis' when 3 months old. She was ill a week, but soon got quite well. Between 12 and 15 months old she had 'bronchitis' or some other disorder, for the mother said she was 'unconscious' for a week. In the next year she had measles, and soon after scarlet fever; and then an abscess in the right groin, which was first noticed about eighteen months ago. It first appeared like a bruise; there was no known cause, and it was treated by poulticing. When of the size of a plum, not more than a week after it was first noticed, it broke, and then soon healed up. For a short time the child seemed well, but then began to waste and dwindle. The mother thought she had whooping-cough, as the chest was oppressed and wheezy, and there was an abundant coughing up of pus and blood, also noticed when brought to the Hospital for the first time. The child continued to waste; and the mother noticed a lump in the belly

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between the umbilicus and epigastric notch. The lump then seemed small, but it quickly increased; and on June 30th last, the child was admitted into President Ward, under Mr Holden's care. There the abscess was opened, and a great discharge of matter took place. The child was in the Hospital about twelve weeks, and the opening in the belly being then healed, the child was taken home. She remained at home about nine days, during which time she got worse, and was brought back to the Hospital with a greatly swollen belly on September 21, and admitted into President. She was transferred to Elizabeth on September 30th.

She is said to have complained of pain in the belly since last May. Since September 26th she has had vomiting, with confined bowels.

On October 2d it is noted that the child is very emaciated and anæmic. She lies with knees drawn up. Pulse 136, small and feeble. Respirations, 26. The bowels are relaxed; she has had about two motions daily since admission. Heart's sounds are natural. The veins on chest very distinct. Belly is much swollen and tense. It is tympanitic in front, and dull in the flanks. She complains of pain in the belly.

She died on October 4th.

Examination thirty-two hours after death.—The belly swollen. There is a scar about an inch long across the middle line three inches above umbilicus.

The friends forbade the opening of the head.

A turbid fluid escapes from the peritoneum; there is also an immense quantity of thick exudation. The intestines are matted together in front of the spine.

On raising the rib cartilages on the right side, a small abscess about the size of a nut is opened on the level of the seventh cartilage. It appears to be between diaphragm and cartilage.

The right pleura is adherent to the diaphragm by old adhesions; the left is adherent also to diaphragm at a spot close to the pericardium for about the size of half-a-crown. On dissecting through these adhesions, a small abscess is opened, which was also found to communicate with another under the diaphragm. There are about two ounces of fluid in each pleura.

The pericardium is universally adherent by old adhesions; the heart itself natural.

The lungs are natural.

As the intestines are unravelled, many circumscribed collections of pus are opened. There is a very large collection of pus under the diaphragm on the left side, the upper and outer border being the diaphragm; the inner, the spleen and stomach; and the lower, the colon. Where the diaphragm is adherent to the

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left lung, there are four or five small abscesses, the size of peas, in the muscular substance.

The spleen is rather large; the malpighian bodies are not prominent, but the trabeculæ are rather distinct.

The upper surface of the liver is adherent by old adhesions to the diaphragm; some, near the outer parts, are new. On the upper surface of the right lobe is an umbilicated swelling the size of a walnut; cut into, this umbilication, which is the size of a three-penny-piece, is found to correspond to a new formation of connective tissue, a quarter of an inch broad, which has drawn a large hepatic vein to near itself. Otherwise the tissue of the liver in the neighbourhood looks perfectly natural. The adhesions between the left lobe and the diaphragm are very firm; near the suspensory ligament, at the very back of the liver, is a fluctuating prominence; cut into, a large amount of laudable pus escapes, and the cavity is found to be large enough to hold a small apple. Around this large abscess there are in the left lobe many smaller ones, apparently on the point of breaking down and forming larger ones. There are also many dull-yellow spots, solid, except the centres of some, which are purulent, distinctly circumscribed, and looking as if they corresponded in outline to acini.

The portal vein and its larger branches are free from any clots, but a large branch of the hepatic vein of the left lobe which passes close to the abscesses is filled with a clot for about three inches up to its opening into the inferior vena cava. The clot is adherent and decolourised. The vein in the substance of the liver beyond is free.

The kidneys show slight cloudy swelling.

The stomach is natural. As the intestines were being opened by the post-mortem clerk, he cut across the appendix vermiformis cæci, which was adherent to the cæcum, and covered with exudation, as he opened the cæcum itself. Thereupon he noticed a black pin, rusty on its head and upper third, which he thought came out of the gut. On dissecting the appendix, a round hole the size of a split-pea, and black round its edges, is found to open into the peritoneum from the appendix close to the cæcum.

The aorta is not atheromatous.

The parts of the liver which contained the yellow patches and the scar were hardened in spirits of wine and examined within a fortnight. The thin sections were in all cases mounted in glycerine and stained with carmine.

In the sections taken from the yellow patches and their neighbourhood, the first appearance that was noticed was the total loss of ordinary liver tissue in the centre of the yellow patch. Some places, where the tissue had already begun to

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soften, showed nothing but a mass of pus-cells or leucocytes, apparently held together by some fibres of connective tissue. These lymphatic elements showed a great tendency to early fatty degeneration, the centre of the small abscess in many cases being made up of nothing but fat-drops of varying size. These collections seemed to be in close relation to the portal canals, and in only a very few sections was there any appearance which would lead an observer to suspect that the abscess arose in the midst of the acinus. On the contrary, the smaller abscesses appeared to arise between the acini, pushing them to one side, and to have their origin in the portal canals, or its connective tissue. Surrounding these collections of leucocytes there was connective tissue of varying character; sometimes showing well-marked wavy fibres; at other times scarcely fibres, but only a matrix, clear or slightly fibrillar, with numerous cells imbedded in it. Some of these cells were very small, smaller than a leucocyte, and others highly pigmented, probably, therefore, remains of liver-cells. Small branches of the portal vessels, of dichotomous arrangement, were also seen crossing the section. It will be best to describe the changes in the liver-cells as they pass from the lobule into the abscess. The first change that is noticed in the liver-cells is a highly granular state, so that in many cases the nucleus is hidden. Then the cells arrange themselves in parallel layers, and become long, oval, or spindle-formed. They then undergo great division and multiplication, while they become separated from each other by the intrusion of a colourless material, and are at last lost in the advancing connective tissue. These alterations which the cells undergo greatly recall the appearances met with under the same circumstances in cirrhosis.

There were a few spots in which an appearance liable to be confounded with suppuration in the middle of the lobules was observed. The centre of the acinus showed a thickened hepatic vein surrounded by a small collection of leucocytes. As well-marked thrombosis of the hepatic veins was likewise present, such an appearance seems best explained on that ground. In the other cases, in which the suppuration seemed to begin in the portal canals, it was generally easy to make out the hepatic vein in the very centre of the lobule.

On examining the tissue of the scar in the right lobe, it is seen (with Hartnack, obj. 4, oc. 3) to be made up of a highly vascular connective tissue, with vessels branching in all directions. In it are the remains of what appear to be liver acini, some of large size, those near the border of the scar ; and others smaller, in the middle of the scar. The new tissue also (Hartnack, obj. 7, oc. 3) contains abundance of lymphatic elements.

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Sections of the liver, taken from the neighbourhood of this scar, showed a perfectly natural arrangement of the cells in the acinus. The cells themselves had large nuclei, which in nearly all cases were well visible, but the contents of the cells were finely granular. There was no increase of the connective tissue within the acini, but a considerable increase in the portal canals, which in some places showed abundance of lymphatic elements.

Virchow was the first who studied at all minutely the point of departure of secondary abscesses of the liver.* According to his description, the acini first lose their colour in the centre, and the cells are reduced to a granular, finely-molecular detritus, which is for the greater part soluble in acetic acid. Dr R. Quain,† also, basing his opinions upon the microscopical examination of an abscess of the liver made by Mr Marshall, says that the abscess first forms in the centre of the lobule. Frerichs‡ likewise endorses this opinion. Foerster, however, still adhering to the belief that the first changes in the cells take place in the centre of the acinus, yet states that the formation of pus always takes place first in the interstitial tissue.§ It is clear from the context, however, that Foerster does not mean interlobular tissue.

Klebs thinks that writers have spoken too dogmatically about the origin of abscesses of the liver. He regards Virchow's view of their origin in parenchymatous degeneration as unfounded. He gives a drawing which represents the pus as forming both in the central part of the acinus and in the capsule of Glisson.‖ In Thierfelder's atlas, the suppuration is represented as coming first in the capsule of Glisson.

I think Klebs' observation very just, that abscesses of the liver may have several modes of origin; and I would point out that in Virchow's and Klebs' cases the abscesses would seem to have had their origin in some infection conveyed by the hepatic artery; in Thierfelder's and this case, it would seem, through the portal vein. The different distribution of the two vessels in the separate acini must thus be kept in mind.

Was the scar on the upper surface of the right lobe of the liver in any way connected with the abscess which formed and discharged early in the history? It would be highly imprudent to dogmatise upon so hotly-debated a question, but the probabilities in this case seem to be on the side of the view that the scar was

* Virchow, Arch. f. path. Anat. 1852, Bd. iv. p. 314. Cf. Ges. Abh. p. 271.
† Richard Quain, Trans. of the Path. Soc. of London, 1853, vol. iv. p. 171.
‡ Frerichs, Klinik der Leberkrankheiten, Braunschweig, 1861, Bd. ii. p. 97.
§ Aug. Foerster, Handb. der spec. path. Anat., Leipzig, 1863, 2te. Aufl. Bd. ii. p. 184.
‖ Klebs, Handb. d. path. Anat., Berlin, 1869, p. 430.

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caused by a healed abscess of the liver. It is plain that some large abscess had existed in the upper part of the belly from the large discharge of pus; and from the position of the scar on the skin and the scar on the liver, it would seem likely that pus from the liver might escape at the scar in the skin. Besides, no other remains of old abscesses were found in that part of the body. It is unfortunate that no early clinical details exist.

I am unable to offer any opinion as to the nature of the abscess said to have formed in right groin eighteen months before death, but it is a point in the history to be noted.

Hydatid Cyst of the Liver passing into the Bile-Ducts: Jaundice: Xanthopsy: Abscess of Liver.

Mary Ann Wallace, aged 23, was admitted, on April 22, 1875, into Mary Ward, under the care of Dr Andrew.

For the clinical notes I am indebted to Dr Vincent Harris, the house-physician.

She said she had been subject to pains in the right side, and to headache, for months past. About a month ago she noticed her eyes to become yellow, the urine dark coloured, and the motions white. The skin became yellow a fortnight ago. She did not feel ill until about a week ago, when she came to the Hospital complaining of a gnawing pain in the belly, now and then becoming sharp. Before the present illness she had enjoyed good health.

She is well nourished; she has an anxious expression; her eyebrows contracted; conjunctivæ yellow. She lies on the left side, with the knees drawn up and head thrown back, but very restless, and changes posture often. Temperature, 102·6°; respirations, 60; pulse, 132. Skin jaundiced, hot and dry. No appetite, nausea. Headache. Everything looks yellowish; white things look yellow. This symptom was well marked, and attested by several physicians. Stools very white. Urine gives well-marked green reaction with nitric acid.

The right hypochondrium is fuller than the left. There is dulness up to the third rib. The right lobe of the liver stretches down to the navel. Gall-bladder not felt. There is great tenderness. Heart: first sound prolonged.

May 4.—Jaundice much less. Xanthopsy disappearing. There has been well-marked 'shoulder-tip pain' since admission.

May 18. — Jaundice much less; stools coloured. Still 'shoulder-tip pain,' which is most constant. Temperature keeps high; at night not lower than 100° F., and rising sometimes to 104°. Nothing unnatural discovered by ophthalmoscope. She has headache, with unequal pupils.

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June 1.—Tenderness at outer side of liver, in seventh intercostal space in mid-axillary line. Rhonchus over both lungs.

June 6.—Impairment of resonance at base of left lung, with largish râles. It is tender to percussion.

June 7.—Temperature keeps high; râles at bases of both lungs. Spleen not to be felt. Tenderness along left lower ribs. Skin of belly harsh and rough.

June 8.—She is much paler; complains of giddiness; is apathetic. Rhonchus on both sides of chest. Belly smaller; tenderness above umbilicus, and to left of it. Still 'shoulder-tip pain.'

June 10.—About 4 A.M. had a severe sudden pain in the epigastrium, which has continued unrelieved by poultices. Has once or twice vomited some greenish-yellow fluid. Skin cold; lips dry. Tenderness over lower ribs on both sides. In a state of collapse.

Died somewhat suddenly at 3.30 P.M.

Examination twenty-four hours after death.—Body slightly but universally jaundiced; no great wasting.

The right pleura covered with recent exudation, most abundant towards base; the fluid in pleura is much in excess, yellow, turbid. The left pleura shows a firm adhesion to the diaphragm, near the pericardium, covering the space of half-a-crown. On cutting it through, pus escapes from below the diaphragm. No opening into the right pleura can be seen. Substance of lungs themselves natural.

Pericardium much dilated; on opening it, much puriform fluid comes out. It is lined by a thick and somewhat tough exudation which cannot readily be scraped off. The diaphragmatic part of pericardium shows numerous elevations, in size from split-peas to horse-beans. They look as if they held pus, and were ready to burst. The whole of the lungs and heart much pushed up into the chest. Heart itself small; natural, except a line of yellow-white everywhere immediately under pericardium, due to the extension of the inflammation into the muscular walls.

The left lobe of the liver reaches nearly to the umbilicus; it is much swollen. Not so the right lobe, which is almost natural in appearance. The convex surface of liver is adherent by firm adhesions to the diaphragm. This latter cannot be dissected off without opening a large abscess about the size of an orange. It holds laudable pus, and many bands of tissue pass from one wall to the other. It is chiefly in the left lobe, but some of it passes to the right side of the falciform ligament. No opening into this abscess can now be found. On the under surface of the liver, near the vena cava, a puckering of the liver about the size of a crown-piece

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can be seen. It feels hard. On dissecting the porta, the hepatic artery and portal vein are found free from disease. The common duct is still much dilated, to about twice its natural size. It is well stained with bile, and no obstruction can be found in its course. The cystic duct is free from obstruction; gall-bladder small; holds some watery bile and sandy stuff. Both branches of hepatic duct dilated; nothing unnatural found in the left; but a large branch of the right opens directly into a cavity which corresponds with the puckering seen on the lower surface of the liver. The cavity is about the size of a large walnut, with tough walls, as hard as cartilage, here and there calcified. The walls of the cavity are smoothish, encrusted with red, bilious-looking matter.

The liver substance itself is deeply mottled, like a nutmeg liver, only the islets of colour are far larger, so that they cannot be mistaken for acini. The larger branches of the hepatic vein are free from clots.

Spleen large, soft, pulpy. Malpighian bodies well marked.

Stomach and intestines natural; abundance of bile in small intestine.

Kidneys large; natural.

Aorta shows only slight specks of atheroma.

The history of this case, as read by the light of the examination after death, would be as follows:—The intense jaundice at the outset of the illness was due to the escape of the hydatid membranes from the cavity in the right lobe of the liver, and the passage of these membranes into the hepatic ducts. After a while the membranes passed down the common duct into the duodenum, and this would correspond with the disappearance of the jaundice. But while the obstruction of the common duct was at its height, I incline to the belief that a small duct within the liver burst from extreme distension, and that this was followed by the suppuration in the liver, which in the end was the cause of the woman's death.

Had this woman recovered, the cause of her jaundice would very naturally have been set down to gall-stones. It is likely that some cases of presumed gall-stones are nothing more than escape of hydatid into the bile-duct, and its evacuation through the bowel. Dr Murchison mentions a case in which hydatid membranes were discharged with the stools, and apparent recovery took place. During the act of vomiting, some months after, some old adhesions about the liver appear to have been ruptured, and the man died, thus affording an opportunity of finding in the liver an hydatid cyst communicating with the bile-ducts, and still containing hydatid vesicles.*

* Murchison, Clinical Lectures on Diseases of the Liver, London, 1868, p. 94.

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THE

TREATMENT OF HÆMORRHAGE

FROM THE

POSTERIOR-TIBIAL ARTERY

IN THE UPPER TWO-THIRDS OF ITS COURSE.

BY

WILLIAM HARRISON CRIPPS.

Few injuries test more severely the skill and knowledge of the surgeon than those of the arteries. In a situation full of peril, prompt manipulation is essential; selection must be made between different principles of treatment; prolonged consideration aggravates the risk, and may involve the death or mutilation of the patient.

The difficulty encountered in the treatment of such cases is considerably increased when arterial hæmorrhage occurs at a point where, owing to its situation, the vessel is more rarely wounded. The treatment of hæmorrhage at one of these points—the posterior-tibial artery in its upper portion—has been selected as the subject of this article. So comparatively rare is the occurrence, that few surgeons who find this portion of the artery bleeding will be able to rely for assistance on the results of their own experience. So important are the complications in the treatment introduced by life, that the most assiduous practice of dissection may of itself prove an inefficient guide. Where, too, doubt on the part of the operator may destroy a life or limb, while accurate knowledge and skill might save both, it is apparent that careful endeavours should be made to elucidate the subject. In this paper it is proposed to test the current opinion as to the treatment proper to be pursued by reference to the recorded experience of surgeons. With this object in view, the reported cases which

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have been discovered in the English and American, and most of the French works and journals of surgery, have (as in a former article in these reports, on Hæmorrhage from the Femoral) been collected in an appendix.

To conclusions drawn from statistics certain objections are notorious; and it has been argued that those which are drawn from reported surgical cases are especially likely to be erroneous.

> "The evil that men do lives after them;
> The good is oft interred with their bones."

But where, as in surgical cases, the operators are usually their own chroniclers, success is apt to survive in history, failure to pass into oblivion with the bones which it consigns to decay. Such an objection, however, applies with less force to comparisons between various principles of treatment. Whatever principle the statistics may be called upon to support, the proportion of success to failure will be liable to abatement in an equal ratio.

Hæmorrhage from the posterior tibial may occur under two distinct conditions:—

1. Following amputation of the leg.
2. The result of injury in continuity.

Hæmorrhage following amputation is beyond the limits of the present subject. It may be remarked, however, that if the hæmorrhage occurs shortly after the operation, the desirability of opening the flaps may be considered. But from a careful perusal of the reported cases, it does not seem that this operation has been so successful as to be lightly undertaken; in many instances the vessel could not be found; in some, fatal depression followed the opening of so large a wound. On the other hand, some of the most successful cases in the history of ligature of the femoral were those in which it had been tied for hæmorrhage after amputation, while equal success frequently followed the careful application of a bandage to the stump, the femoral artery being at the same time compressed.

There are three causes which may result in hæmorrhage from the posterior-tibial artery in continuity:—

1. Punctured or incised wounds.
2. Rupture of the vessel by blows, or pressure without external lesion.
3. Laceration by fractured bone.

Four methods in which this injury may be treated are possible:—

(*a*) Amputation.

(*b*) Ligature of both ends of the wounded vessel within the original limits, or on enlargement of the wound.

(*c*) Ligature of the femoral artery.

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(*d*) Pressure and bandaging.

(*a*) There may be complications in wounds of the posterior tibial which may demand amputation. The limb may be so severely crushed, or so extensively fractured, as to render unwise any attempt to preserve it.

From whatever cause the hæmorrhage occurs, amputation immediately reduces a highly-complicated case, involved in uncertainty and risk, to one in which the chances for or against life admit of accurate calculation. But that the limb should be immediately amputated whenever the hæmorrhage is complicated by fracture, whether simple or compound, and generally when secondary hæmorrhage occurs, appears hardly to be supported by surgical history, although the first is an axiom of Erichsen,* the second of Lawrence.†

Since death follows amputation of the leg in nearly forty per cent. of the cases in which the operation is performed for 'injury,' and since success means permanent mutilation, it seems that this operation should only be adopted as a desperate alternative; and if by a simpler operation in a large proportion of cases both life and limb have been saved, the surgeon should discard amputation, except as a last resource.

(*b*) The second method of treatment. The ligature of both ends of the wounded vessel, either in the original opening, if an incised wound, or within an enlargement of the wound, if it should be necessary, will at once recall the remarks of Guthrie, who, after the manner of enthusiasts, was too much impressed with his so-called golden rule to allow that it could have any exceptions. Of the operation he states, at a time when it does not appear that he had ever tied the posterior tibial during life,‡ 'The edges of the long incision being easily separated, and to such a distance as to admit of the exposure of the great nerve, artery, and veins, in as distinct a manner as any other nerves, arteries, or veins can be exposed in the human body, the tourniquet is now to be unscrewed, and the bleeding, if the wound did not bleed before, leads to the spot where the artery is injured. The knife may be applied perpendicularly to the fascia, and the artery laid bare three or four inches in extent, *by as common a piece of dissection as any ever practised,* and nothing can interrupt the application of the ligature. The nerve and the fascia cease to be surgical bugbears, and the operation is as simple as any in surgery. No surgeon or anatomist will dispute this statement.' Guthrie was enabled, by the many and striking cases which he had collected, to support the

* Erichsen, Surgery, vol. i. p. 302.
† Clinical Lecture, St Bartholomew Hospital, 1853.
‡ Guthrie on Diseases of the Arteries.

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arguments which have generally recommended his views. But possibly he was not altogether free from the common faculty of adapting facts to desired conclusions.

Recorded cases seem, however, to show that in this particular class of hæmorrhage, not only is it incorrect to assume that the only treatment consists in securing the vessel within the wound, or in amputation, but that ligature of the femoral, or even pressure and bandaging alone, may produce with a less severe operation more satisfactory results.

The firm and unyielding character of the fascia by which the posterior tibial in its upper two-thirds is bound down, the depth at which the artery lies beneath the gastrocnemius and the soleus, the great power of those muscles, the contact of the artery with the nerve, the close juxtaposition of the venæ comites, would lead any mere anatomist to dispute Guthrie's proposition as to the simplicity of opening the calf to reach the wounded vessel. The surgeon who has performed or witnessed the operation will not be the more inclined to accept the statement.

The impossibility in many cases of discovering with certainty from which artery the bleeding proceeds, and, therefore, the necessary direction of the incision, is in itself a formidable obstacle in undertaking the operation.

If it be determined to proceed in order to reach the posterior tibial, a deep wound is made some seven inches in length, which probably has to be prolonged in the course of the operation. The walls of this wound formed by the muscular masses of the soleus and gastrocnemius convert it into a deep gully, with more or less unyielding sides. Muscles and fascia are blended into one indistinguishable livid mass by extravasated blood, in which all the usual anatomical landmarks are obliterated.

At the bottom of this wound the vessel must be sought. Since surgical landmarks cannot be relied upon, the only sure guide to the wounded vessel is the arterial blood. As the tourniquet is released for this purpose, the bottom of the wound fills with blood, entirely obscuring the vessel. As often as the wound is cleansed by the sponge, it will be refilled by blood. If, eventually, the surgeon secure the vessel, the patient has been subject to a prolonged operation, and to a considerable loss of arterial blood. A wound of great extent has been necessarily exposed during the operation to severe handling. In these circumstances it might be expected that the patient's life is in considerable risk, and that a high rate of mortality would follow the procedure.

Lawrence, when speaking of an incision in the calf to search for a wounded vessel, says, 'Such a course seemed to me altogether objectionable, as imminently dangerous to life.'

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Guthrie himself, in describing his well-known case of ligature of the peroneal in a wound, says, 'Having made an incision over seven inches in length, through the gastrocnemius and soleus muscle, I attempted to discover the vessel, but this was more difficult than might be supposed after such an opening had been made. The sloughing matter, mixed with the coagulated blood, readily yielded to the back of the knife, but was not easily dissected out. The spot which the arterial blood came from was distinguished through it, but the artery could not be perceived, the depth of the wound rendering any operation upon it difficult.' He goes on to state 'that, owing to the altered state of the parts, he could not separate the vessel distinctly from the surrounding parts, and was eventually only able to secure the vessel by passing a tenaculum beneath it, and including the tissues thus raised in the ligature.'

It is obvious that no surgeon could have thus treated the posterior tibial, on account of its close connection with its nerve.

This description of what actually took place in the case of the peroneal artery is difficult to reconcile with Guthrie's theory of a similar operation on the posterior tibial.

In another case, where the result of this operation on the posterior tibial was successful (Appendix, Case VI.), Mr Arnott says, in describing his experience of this operation, 'It is not one that should be undertaken inconsiderately; it requires good light and intelligent assistance. The case described occurred in the daytime, and from what was experienced, I am inclined to think that it could not have been successfully performed by artificial light, or, at least, with greatly increased difficulties.'

Dupuytren, in speaking of hæmorrhage from the calf caused by a pistol-ball, thus graphically describes the difficulty:—'Should a ligature be placed on the ends of the divided vessels? But what were those vessels? Was it the anterior or posterior tibial? or the popliteal, or the peroneal? or was it several of them at the same time? How should they be attacked, before or behind, or at both points successively? But to all who know the depth of these vessels, their relations to the bones, nerves, and muscles, this scheme of cutting down upon the vessel appears impracticable. How could we distinguish the vessel from the soft, torn, bruised parts which surround it? or how could a ligature be passed and tied at the bottom of a wound deep between the bones?'

Those who have had the opportunity of observation will recognise that the preceding remarks apply primarily to cases in which the hæmorrhage is the result of a punctured wound, or of injury from a fractured bone; the majority of which cases, except such as demand immediate amputation, require a treatment generally similar. Where the hæmorrhage is caused by an incised wound which

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comes under the surgeon's care shortly after infliction, before sloughing or extensive extravasation of blood has taken place, the searching for the vessel would be expected to present less difficulty, and to be attended with less danger to the patient.

Of the ten cases collected in the Appendix in which the result of this operation is recorded, four were successful, six failed. Of the only successful cases, it will be observed that in two (IV., III.) the vessel was tied in a clean-cut, incised wound; in the other two (V., VI.), a punctured wound was opened by incision immediately after the accident. Of the six cases of failure, three resulted in death (I., II., VII.) In two, the vessel could not be found (VIII., XXI.) In the last case (XV.), after two operations on the wound, profuse hæmorrhage again recurred, and the main vessel of the limb was tied.

(*c*) Ligature of the femoral artery. Five instances in which this treatment met with success, three where it resulted in failure, are recorded in the Appendix. Guthrie's strong condemnation of this method (which seems to have the concurrence of most modern surgeons) appears mainly due to its failure in the two cases referred to in the Appendix (XVI., XVII.) But as these arose from gunshot wounds, and were treated in the immediate vicinity of the battlefield, it may be presumed that the circumstances of the operation and the condition of the patient were alike unfavourable.

According to one of the best authors * on modern surgery, a fracture in the upper part of the leg, complicated with an injury to one of the tibials, is a case for immediate amputation, an attempt to find the vessel or tie the femoral being described as equally futile.

The former, the conversion of a simple into a compound fracture of the worst possible description, would usually be thought inadmissible. If left to itself, and the fracture treated irrespectively of the injured vessel, the result to be expected would probably be similar to what occurred in Dr Black's case (XVIII.); the limb gradually becoming more swollen, and as the pressure from the extravasated blood increases, so will the circulation become more and more embarrassed, till bullæ form and gangrene sets in.

Prolonged search has revealed four cases (X., XI., XII., XIV.) only in which the femoral was tied for fracture accompanied by severe arterial hæmorrhage, two in cases of simple, two in cases of compound fracture. In all these cases the patients recovered with useful limbs. It may be that surgeons have not recorded their unsuccessful cases, or it may be that owing to modern doctrine all such limbs are amputated, and no opportunity is given for testing the value of the Hunterian operation. If such surgeons as

* Erichsen, vol. i. p. 302.

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Dupuytren and Syme had sufficient faith in the operation to put it in practice, and if in their time the proceeding was successful, its condemnation as futile by modern surgeons seems to require support by very cogent reasons.

Direct pressure in case of fracture is hardly possible, but if the femoral artery cannot be controlled by digital pressure, its ligature seems to promise a fair chance of success. If amputation become eventually necessary, the previous ligature will not materially decrease the chance of recovery.

In the case of secondary hæmorrhage occurring in the practice of Lawrence, that surgeon acknowledged the uselessness of any further attempt to find the vessel in the wound, and considered the only alternative to be amputation, and at once removed the limb.

Dupuytren, on the other hand, in a similar case of secondary hæmorrhage, ligatured the femoral artery with complete succese, remarking at the time that he had saved the patient from the "cruel mutilation" of amputation which his colleagues wished to perform.

Billroth, in his letters from the seat of war, draws a graphic picture of the difficulties, and in some cases the impossibility, of tying a vessel in a granulating wound. He concludes by saying, that in most of such cases, after much loss of blood has been incurred in the attempt, the main artery has after all to be tied. Beck and Stromeyer also congratulate themselves on the successful result of ligature of the main vessel.

Reference might also be made to S. Cooper's case, occurring after the battle of Waterloo; and also to an exceedingly interesting and instructive case published at length in the 'Lancet' of 1849, vol. i. p. 614, by Mr Massey of Nottingham. In both of these cases the femoral was successfully tied, in the one case for hæmorrhage from the popliteal, in the other, from the anterior tibial. These cases have been excluded from the Appendix, as not affecting the posterior tibial.

(*d*) Pressure and bandaging.

The value of this method of treatment for hæmorrhage is in direct proportion to the danger and liability to failure consequent on the inaccessibility of the wounded vessel, or the special conditions under which the operation has to be performed. Such treatment would appear particularly applicable in many cases of wound to the posterior tibial.

It is not pretended that treatment by pressure is possible in every case of a wound of this vessel, nor should it be anticipated that success will invariably follow even in cases favourable for its trial; but, without doubt, in the majority of instances such treatment deserves a fair and thorough trial, and no operative proceeding

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should be hastily undertaken until this has been done. Attention is called to Cases XX. and XXI. in the Appendix as especially illustrative of these remarks.

Few proceedings in surgery call forth the ingenuity and patience of the surgeon in a higher degree than the skilful application of pressure, but to lay down any exact rules for its application would be obviously useless. In the history of cases treated by pressure,* it may be remarked, however, one of the chief causes of success appears to be the careful and tight bandaging of the entire limb, and thus diminishing the total quantity of blood circulating through it. Direct pressure over the whole course of the femoral should also be applied. Again, how frequently is a renewed outbreak of hæmorrhage the result of some involuntary movement during sleep or forgetfulness. Certainly much material benefit might be expected to result from the steadying of the limb by a carefully-adjusted splint.

From the foregoing remarks these conclusions seem to follow:—

(1.) Except where rendered impracticable by the character of the injury, pressure and bandaging should be thoroughly tried, until they appear useless, and likely to prejudice the success of any ultimately necessary operation.

(2.) If the abandonment of this method become expedient, either the femoral should be tied, or the wound enlarged for the purpose of securing the bleeding vessel. Between these operations the features of the particular case must determine.

(3.) In all cases of simple, and in some of compound fracture, where the vessel is not readily accessible, ligature of femoral should be tried before resorting to amputation.

(4.) In wounds other than clean-cut incisions, an attempt to tie the vessel at the wounded point involves great difficulty and danger, and the probabilities of success diminish as the interval between the infliction and treatment of the injury increases.

In many of these cases, due consideration being given to the condition of the patient and the circumstances in which the operation has to be performed, ligature of the femoral artery would be less hazardous than any interference with the wound.

* Secondary Hæmorrhage from Femoral, St Bart.'s Hospital Reports, 1874.

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APPENDIX.

CASE I.—'*Lancet*,' 1849, vol. i. p. 226.

Deep wound, not more than half an inch wide, posterior tibial wounded. A bandage placed tight round the leg; removed on the eighth day; on removal, free arterial hæmorrhage took place; wound enlarged; both ends of vessel tied. No more hæmorrhage occurred, but the man died eight days later, delirious, with inflammation of the leg.

CASE II.—'*Lancet*,' 1855 (*July 14th*), vol. ii. p. 30.

A drayman admitted into St Bartholomew's, having squeezed his leg between the dray and a post. No pulsation in posterior tibial, limb tense, swollen, and cold. Mr MacWhinnie, after consultation, anticipated that the posterior tibial was wounded. A free incision was made over the vessel from the popliteal space. After some search a small ragged opening was found in the vessel, and the artery was secured by ligature. Man died, delirious, thirty-two hours later.

CASE III.—'*Lancet*,' 1828, vol. i. p. 716.

At the Royal Glasgow Infirmary, Cowen tied the vessel in a wound (boy, aged 12); bleeding recurred, but on removing dressing, ceased. No recurrence; favourable termination.

CASE IV.—'*Lancet*,' 1850.

Dr Broughton tied both ends of posterior tibial in wound, clean cut, five inches long, made by an axe; recovery.

CASE V.—'*Medical Gazette*,' 1846, p. 233.

The patient was thrown from his horse; half an hour later he was found cold and faint, having lost much blood. A little below the junction of the upper and middle third was a wound in the calf one inch in length, from which blood was still issuing. The wound was enlarged both ways, and after removing a good deal of coagulated blood, the posterior-tibial artery was ligatured in the wound. The patient did well, and perfectly recovered.

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CASE VI.—'*Medical and Chirurgical Society's Transactions*,' 1845.

A robust young man admitted into Middlesex Hospital with a punctured wound in the middle of the calf. Arterial blood flowed in quantity. Taking the wound as the centre, an incision six and a half inches long was made down to the deep fascia; this was opened after considerable difficulty from the bleeding. It was ascertained that, besides the posterior tibial being wounded, both venæ comites were divided. Two ligatures, one above, one below punctured wound of tibial, applied. On the eleventh day some bleeding took place, but was easily checked by compression. The patient did well, and recovered with a perfectly efficient limb.

Arnott experienced considerable difficulty in this operation.

CASE VII.—*St Bartholomew's Hospital*, 1874.

D. R., when working at the Enfield factory, was struck on the back part of the calf, at the junction of the upper with the middle third, by a small piece of metal, which, flying off with great violence, buried itself in the tissue; smart hæmorrhage immediately ensued, but soon ceased.

On the following day, the limb being somewhat swollen, and slight hæmorrhage having taken place, under chloroform an incision was made with a view of removing the foreign body. On the small piece of iron at the bottom of the wound being moved, a sudden and violent gush of blood took place from the posterior-tibial artery. The femoral being compressed, the wound was enlarged each way, with a view to tying the vessel. This, after considerable difficulty, was eventually secured, but the man died two days later.

CASE VIII.—'*St George's Hospital Report*,' 1820.

Punctured wound on outer margin of tibia. Wound enlarged, but bleeding vessel not found in front, nor did ligature of anterior tibial arrest the bleeding. Ligature placed on termination of popliteal. Gangrene of the foot set in, and the limb was amputated.

Cases in which the Femoral was tied.

CASE IX.—'*Lancet*,' 1849.

Sir A. Cooper tied femoral for wound below the knee. Hæmorrhage returned; limb amputated.

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CASE X.—'*Monthly Journal of Medical Science*,' 1842, p. 965.

Woman, aged 62. Simple fracture of tibia and fibula; became compound with a good deal of sloughing. On June 1st sudden gush of blood from posterior tibial, ceasing on application of cold and elevation. On the following night suddenly lost 2 lbs. of blood: slight pressure was merely applied. At nine on the following morning blood gushed out as freely as ever—firm pressure over wound arrested it. The femoral was then tied in Scapa's triangle by Syme. Complete recovery.

The three following cases are from the 'Répertoire Général d'Anatomie et de Physiologie':—

CASE XI., p. 227.

A woman, aged 62, had the left leg broken about the middle. Dupuytren, on examining the patient on the following day, discovered a pulsating swelling in the calf. This he thought was the result of a wound of the posterior tibial.

He tied the femoral artery in the middle of the thigh. On the sixth day the size of the swelling was diminished to one-third. The patient did well, and at the end of the fourth month was discharged with a useful limb.

CASE XII., p. 230.

Jacques Boudet, aged 30, had a comminuted fracture of the leg, caused by being run over by a laden waggon. On being taken to the Hospital St Eloi, the limb was enormously swollen, with distinct pulsation in the calf. Pressure on the femoral stopped the pulsation. The following day M. Delpech tied the femoral. The patient did well, and in less than three months was discharged perfectly cured.

CASE XIII., p. 233.

M. de Gombaut was wounded by a pistol-ball passing between the tibia and fibula in the upper part of the leg. Violent bleeding ensued, but was stopped by compression and bandage. The limb became painful and swollen, with a pulsating swelling in the calf.

On the thirteenth day hæmorrhage occurred; this bleeding was renewed several times, greatly weakening the patient. At this time he was first seen by Dupuytren. He says, 'I found the foot and leg violet coloured, cold, numb, and swollen; on the upper part of the leg was a tense swelling, expanding with each action of the heart. On the tumour were two small openings, one near the back of the fibula, the other on the inner edge of the calf.

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These were the holes of entrance and exit of the bullet. For a few hours these holes had been closed by clots of blood, which each pulsation threatened to force out. Repeated bleedings had reduced the patient to a state of great weakness. I advised a ligature should be placed on the femoral artery. If the ligature did not turn out as I expected, or should prove insufficient, it would be the first part of an amputation, not more dangerous by being performed at two different intervals. I tied the femoral. Great attention was paid to keeping the limb warm. When the ligature came away, the wound rapidly healed, and in three months M. de Gombaut walked as well as he had done before the accident.'

CASE XIV.

Mr Cæsar Hawkins tied the femoral for repeated hæmorrhage after a compound fracture of the leg. The patient recovered.

CASE XV.—'*Lancet*,' 1835, p. 460.

A boy, aged 15. Deep cut through gastrocnemius and soleus; immediate and profuse hæmorrhage to the extent of three or four pints (May 2d). On being taken to the North London Hospital, two large trunks were tied in the wound. On the 14th sudden hæmorrhage from the posterior tibial to the extent of fourteen ounces. Stopped by pressure of finger in the wound. Severe bleeding on the 25th and 26th, wound lengthened, and posterior tibial tied higher up. On the 27th again profuse bleeding. Patient nearly dying. Popliteal tied. No more hæmorrhage. Complete recovery.

CASES XVI AND XVII.

Two cases reported by Guthrie. Femoral tied. Hæmorrhage recurred. Both these were after a battle.

CASE XVIII.—'*Lancet*,' 1861, vol. ii. p. 227.

Simple fracture in upper third, on June 23d, a rupture of posterior tibial artery. Limb much swollen from knee downwards; toes cold; bullæ had arisen on dorsum of foot and back of leg. Amputation for special reasons not performed till July 2d; limb in a state of gangrene; died about an hour later.

CASE XIX.—'*Medical Times*,' 1853, p. 592.

In a clinical lecture by Lawrence, he mentions a case of punctured wound of the posterior tibial. The bleeding having ceased,

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the edges of the trifling wound became adherent; the limb, however, remained painful and greatly swollen. In the third week a puncture was made in the swelling: nothing escaped but a few drops of blood. A week later violent arterial hæmorrhage took place from the puncture. Lawrence immediately amputated.

Cases in which Pressure and Bandaging were relied upon.

CASE XX.—'*Lancet*,' 1861, vol. i. p. 609.

Anterior and posterior tibial wounded by cut five inches long. 'On relaxing the tourniquet, and retracting lips of wound, blood jetted up in several directions. It was found impossible to ligature the vessel without enlarging the wound to a considerable extent; even then it was doubtful whether the posterior-tibial artery could be secured.' Limb bandaged from below upwards, tourniquet on femoral. Complete recovery without further hæmorrhage.

CASE XXI.—'*American Medical Times*,' 1864, p. 3.

A musket-ball passed through the leg of a soldier on July 2d, entering three inches below the knee. On August 2d a fluctuating swelling was found on inner side of leg. Although a traumatic aneurism was suspected, a counter opening was made, and a large quantity of fœtid pus and blood escaped, but no active arterial bleeding. Two days later a profuse arterial hæmorrhage took place, the patient being almost pulseless before it could be arrested by compression and bandage. The surgeon searched for the wounded posterior tibial, but the parts were so much disorganised that it could not be detected. The patient's condition precluded any further attempt at an operation, and to sustain the man, stimulants by the mouth and rectum had to be freely resorted to for some days. Wound dressed with permanganate of potash. Recovery.

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ON

UNCONTROLLABLE IMPULSE.

BY

T. CLAYE SHAW, M.D., M.R.C.P.

No question is more important at the present day, among the many problems of insanity, than that having regard to impulse. The fact that legal edicts do not acknowledge it, that in its application it has been abused, or at least overstrained, that it is an excuse so readily brought forward, that the very conditions of its existence are so obscure that, in attempting to reduce it to rules, science is at fault,—all show that the subject deserves and requires the greatest latitude that actual experience can give it. Two recent trials, that of Michael Murphy before Baron Amphlett, and of Blamfield before Mr Justice Brett, have excited considerable comment with regard to this question of impulsive insanity. Both of these men committed murder, and both have been respited. If typical cases had been wished for clinical illustration, no better could have been desired, and great credit is due to the jury and to the experts who were employed for their successful efforts in preventing a legal blunder. Passing by our legal criteria of criminal responsibility as absurd—and that they are so is shown by the unwillingness of many judges in this country and abroad to acknowledge them—we come to the question of fact, whether there be such a thing as impulsive insanity or not, *i.e.*, whether a man, who has not previously to the commission of a crime shown such symptoms as would authorise his friends (or some superior power in which there is authority to exert force when occasion demands) to place him under restraint, is to be judged insane when, without any ascertainable motive, he commits a great crime, it not being apparent that either at the time, or previously or subsequently, he laboured under any delusion or hallucination. That such a thing is *probable* might be gained from analogy of once-occurring and never-repeated convulsive nervous disorders;

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that it is *true* most asylum physicians of large experience can affirm from instances that have come under their notice.

Most children, whose brains are imperfectly developed, exhibit impulses for which they can give no reason; they will tear their dolls up or break furniture, and then become calm after the act of destruction; also, at the critical periods when the circulation in the brain and other viscera is much deranged, the same thing is seen. When in the various stages of decay in the upper cerebral centres, there comes what Professor Laycock (in his recent able article in the 'Journal of Mental Science') calls the period of 'synetic reversion,' the mind reverts to what it was, impulses become stronger, and at last irresistible. Will may be termed the slowing-power that regulates other cerebral processes; it is not developed till late, sometimes never at all, and in decay it is seen to be the first faculty to go. The knowledge of right and wrong, the knowledge of consequences of any act, are within the compass of brains far inferior to man's in point of development; and even though it may be acknowledged that in some of the lower animals there is a certain amount of will shown, so that, *e.g.*, a dog will not do from will (evoked, perhaps, by terror of the consequences) what he knows is against his precepts, yet here it must be remembered that, so far as it goes, the brain in question is a healthy one. That the will is never in any one a fully perfected faculty is palpable without demonstration. Impulses arise both subjectively and objectively. Instances of the former may be seen any day in the numbers of people who, acting upon subjectively-evoked ideas, rush into print, and write pages of matter, only being satisfied after sheets of paper have been covered and much explosive energy expended. Instances of the latter are those who rush 'madly' into speculations under the stimulus of prospective wealth, matrimonial engagements made under the amatory impulse, vows made under the religious fervour, promises to amend made under the fear of imminent death. Nothing excites men so much as the mention or sight of blood. Soldiers in battle are cool and humane until blood is spilt; and then, in their impulse to avenge it, they lose consciousness of what they do. Most men who emerge from a sanguinary conflict can give no account of it. Savages not only appease themselves by blood, but tender it to their gods. Impulses which tend to small crimes, such as glass-smashing, clothes-tearing, stealing, we punish more or less mildly; impulses which lead to a movement—political, religious, literary, or scientific—we account strokes of genius; impulses which lead to suicide we pity and condone, returning a verdict of 'unsound mind;' but those which lead to murder we hesitate to acknowledge as requiring or deserving any amenity in treatment, and this although in all instances we re-

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cognise an explosive and irresistible state which is to be the death or the exaltation of the doer, according to the motive of the act. Much of what has been called impulse in the insane is merely wickedness. The cause of an impulse arising suddenly is as obscure as that of an epileptic fit; in many instances they are associated states, and none can understand the irresistible driving-power of an impulse who has not witnessed such outbreaks. I am not now alluding to cases where hallucinations or delusions suddenly arise and cause a homicidal or suicidal act, but to persons who feel an irresistible onspurring to do some deed against which they at other times revolt.

Do such conditions ever occur in persons not insane? Certainly, but not to the length of suicide or homicide; though probably, if that impulse did come over them, they would yield to it. A discharging lesion affecting the motor centres is recognised as uncontrollable, and is received as a positive scientific fact; no jury would fail to recognise a well-authenticated epileptic fit as causing any incoherent action committed in it. Why, then, should there be so much difficulty in acknowledging what, judging from all analogy, is a similar process in the higher centres? Scientifically, it is difficult to account for explosions. The cumulative force, which many suppose to be only hypothesis, explains easily certain results. We know that want of bodily exercise is the most predisposing cause to mental irritation, and it seems as if a sudden impulsive act is the irresistible way in which Nature asserts her need of the purifying processes induced by muscular action. It is a fact that attacks of insanity weaken the controlling power of the will; and therefore any person who has been insane at one time is entitled, in an outbreak of uncontrollable impulse, to all the benefits that a weakened will may afford him. I am not now debating the question as to whether, even if an impulse be proved, it should afford extenuating circumstances—most believe that it ought,—but I wish to prove clinically that such a thing as an irresistible impulse to commit acts of violence is a fact in experience, and I adduce the following instance, where an uncontrollable impulse led to self-violence, all delusion, hallucination, and object being absent, the person deploring his condition whilst asserting his inability to help it. E. B., aged 40 years, was admitted into the Leavesden Asylum as being imbecile. Beyond a certain fatuous expression of face, there were no signs of imbecility about him. He could read, get his living out of doors, was active, had good memory, was not epileptic, and had no delusions or hallucinations of any kind; still he confessed to an unconquerable feeling pervading him at times to 'do something.' Accordingly he would at times smash the windows, always *being very pale* before the act, just like a person in the first stage of an epileptic fit. After

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the act he became quiet, and would confess his sorrow for what he had done, protesting his inability to prevent it. On one occasion he came up to the attendant, saying that the feeling was coming on him, and begging to be restrained till it was over; he was then ordered a shower-bath, which, doubtless, on physical principles, cooled his ardour and quenched the impulse. After this he would come up on the access of the impulse and ask for the shower-bath. After a time the baths began to lose their effect, and recourse was had to the continued current (thirty cells), which seemed at first to be of use, but soon failed. The attacks were irregular in their occurrence, so that he required incessant watching. Employment became difficult, because of the uncertainty of aid being always at hand when required; still it was necessary to give him occupation, for experience showed that the attacks became more frequent when his muscular system was idle. One morning, when engaged under the care of an attendant cleaning in the scullery, he seized a knife and attempted to cut his throat, inflicting a slight wound upon it, and was only prevented from carrying out his purpose more effectually by the interference of a person who was standing by. Just before seizing the knife he turned very pale, and the impulse ceased directly after the commission of the act. He expressed great sorrow and penitence for what he had done, and deplored his unfortunate state, saying, 'It came on me so strong all at once; it was something in my head. The knife brought it to my mind. O goodness! however must I stop myself?' &c. He said that there had been a pain in the head one or two days before, but there did not seem to be any immediate connection between this and the impulsive deed. He was at the time in good nutrition, taking food well, and, as far as could be ascertained, was not suffering from any visional complication of any kind. He has never been violent towards others, and the only thing about him necessitating his confinement in an asylum is this uncontrollable impulse. Now here is a record of the pure form of the disease in question, and if by any chance his impulse had taken the homicidal form, the consequences might have been much more serious to him. Without any warning he commits an act of violence on himself, and this solely owing to an incomprehensible feeling. No doubt there is disease of the brain, but no indication of the locality presents itself: there is no paralysis, no defined pain, no muscular convulsion. Supposing that, on the first occurrence of the impulse, the man had committed a murder, he would undoubtedly have been hanged; now that the impulse has been shown to be a recurrent process, and to be attended with painful results to himself, there would be no hesitation in excusing him. Anyhow, he must clearly be incarcerated for life, inasmuch as the conditions of his disease cannot be given with precision, and a fresh outbreak cannot be foretold.

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That there is such a thing as uncontrollable impulse can only be verified by facts, and the above case is my contribution to them: more in the same direction are wanted if the subject is to be scientifically received. The difficult thing is, that whilst an act of destructive impulse in a person already in an asylum, or one who has formerly been under certificate, is allowed for and condoned, a similar act done by a person whose sanity has never been called in question is visited with the extreme penalty of the law. A great step will be gained if the judges can be made to believe in the existence, as a fact, of such a thing as an uncontrollable impulse. Whether it has been the cause of violent action in any particular instance requires careful investigation, and this plea should not be too hastily dragged forward as an excuse. That it has been so brought forward is the cause of the disrepute into which it has fallen. However cruel it may seem, it would still be the proper course to put every epileptic person of excitable temperament under restraint; they are liable to explosions of nerve force, and can never be deemed safe. Deaf to all the entreaties of the friends, and to the man's own requests, a patient who has once shown impulsive insanity of a violent form should never be discharged; for if again he should be hurried into the commission of a violent crime, he would suffer for it, or might do so. The practical but somewhat confounding result is, that if the law remains unchanged, and the judges are unwilling to modify their views as to the acceptance of this fact of uncontrollable impulse, it will be the duty of medical men in charge of persons who have undoubtedly at one time suffered from this affection never to discharge them. I have at the present moment a patient, free from hallucinations and delusions, actively employed in the Asylum, and in all respects well-behaved, but he was at one time the subject of violent uncontrollable impulse; and as in one of these paroxysms he attacked his wife, I hesitate, under the present system of the law, to discharge him, for if ever, under the excitement of having to get his living in the world, he were to become the slave of his emotions, and commit a dire offence, he might be called upon to suffer the extreme penalty of the law—improperly, in my opinion. Thus do the administrators of the law stand in the way of its righteous fulfilment! If the judges allow the *fact* of impulse apart from delusion, hallucination, knowledge of right and wrong, consciousness of the act they are doing, &c., then the law should be altered to meet such cases; if not, then we still must run the chance of occasionally seeing madmen on the scaffold. No one questions the rectitude of our judges, they act according to their light; but it would be unblushing effrontery to say that they are yet sufficiently educated on this important point. In point of moral

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uprightness, our judges are superior to any in any other land; but it must be confessed that on this question of criminal responsibility in 'impulse,' we are behind other countries. No better practice exists than that of Continental courts, which leave the question of a man's sanity to a body of experts, unbiassed, and free from suspicion; to these remains the question of the presence or absence of sanity, to the jury the verdict of guilty or not guilty. It must be very satisfactory to a jury to be relieved of the responsibility of drawing a conclusion from premisses which they cannot understand, and to the public, the feeling of security thus engendered is incalculable.

We have thus seen that both the sane and the insane are liable to impulses; that in the former, when not associated with injury or violence to themselves or others, we applaud or condone them, as the case may be; but that in the latter we hesitate to acknowledge the connection between the insanity and the impulse, and chiefly because, forsooth, there may be no delusion present to bridge over the thought and the deed. The question as to the *insanity* or not (*i.e.*, ultimately the question as to whether the act was prompted by revenge and malice), rests on the presence of motive or its absence, on the fact of hereditary taint, as exhibited not merely by insanity (*i.e.*, the confining of a person in an asylum for his own or others' benefit), but by any nerve lesion of any kind, such as epilepsy, chorea, chronic drunkenness, &c. It may be said that no man's antecedents are free from suspicion in all these ways, or some of them. Precisely; and because this is so, we ought to be very careful how we visit disease with the obligations imposed by an insufficient law on those supposed to be sane. We are to a great extent the victims of sentiment, even in our sane moments. If accurately analysed, the obligation that is felt to hang a man who commits a murder will be found to have its mainspring in a verse written long ago—'Whoso sheddeth man's blood, by man shall his blood be shed.' Do we strictly apply this? Do we sacrifice the authors of unjust and cruel wars, the men who, led on by the lust of power and pseudo-patriotism, shed blood to the point sufficient to compass their ends? No; we rather blazon them in history, and vote statues to them after death. But no words of ours are strong enough to brand the unfortunate person who, yielding to an impulse which he has perhaps warned us of, and tried in his own ineffectual way to battle against, commits what we call a crime, but for which he is really as irresponsible as he is for the fact of his birth.

The end of the law is the security of society. This end will be better attained when science is allowed the authority which she deserves, that she may ward off from justice the blood-stains with which she too frequently bespatters herself in overacting her part.

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SOME CASES

OF

CONGENITAL DISLOCATION OF THE HIP-JOINT.

WITH REMARKS.

BY

HOWARD MARSH.

Congenital dislocation of the hip-joint is a subject of great interest and importance, and one that has challenged the attention of some of the ablest observers of late years. Its origin—involved, as it always has been, in doubt—offers an attractive subject for the student of etiology; while how to deal with it in its practical aspect, and relieve the deformity and lameness by which it is attended, is a difficulty which surgery has often found it impossible to meet.

So much has already been written about it, that it may seem a folly to write more, except with the purpose of setting it finally at rest. In the present paper I cannot hope to gain this end. I will only try to get one step nearer to it, by recording some cases that I have lately met with. They form no unique group, but they may be useful, because they represent a class that has hardly been enough considered in many of the descriptions of congenital dislocation of the hip which have been published. In saying this, reference is made only to Cases VI. to XIV. Nos. I. to V. are placed at the head of the list, not only that all the examples of the defect of which I have notes may stand together, but also because they illustrate very well the cases that are more typical, and may serve as a standard with which to compare those that have been less fully described. In the few remarks

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that follow the relation of the cases, no attempt will be made to discuss the general question of congenital dislocation, which is really a very wide one. Attention will only be drawn to particular points that are suggested by the notes. All the patients, with two exceptions, belonged to the poorer classes, and have been seen during the last five or six years, either at St Bartholomew's or at the Hospital for Sick Children. The dried specimen which heads the list is in the Museum of St Bartholomew's.

Case I.

This preparation is described in the catalogue (Series II. *Subser. B. No.* 48), as 'the pelvis and femora of an adult (female). The head of each femur is dislocated upwards on the dorsum of the ilium: portions of the capsular ligaments remain, but there is no vestige of the ligamentum teres. There has been absorption of the surface of the head of each femur, diminishing its size, and giving it an irregular conical form.' In the position of the acetabulum there is on both sides a shallow, irregular depression, much smaller than the natural joint cavity, and filled to the level of the surrounding bone with fibrous tissue. Above and behind this is an oblong patch, where the bone has evidently been worn down and roughened by the friction of the head of the femur, which, instead of being fixed in a socket, was free to slide on the side of the pelvis. The thigh-bones, which are slender, are adducted, and rotated inwards, so that their long axes intersect each other above the knee, and the lineæ asperæ look almost directly outwards. The lumbar vertebræ, three or four of which are preserved, show from their relation to the sacrum that lordosis must have been extreme. There is no history of the case from which the specimen was taken.

Case II.

M. P. is a girl 9 years old, who was first seen in January 1873.

History.—No defect was suspected till she began to walk at the age of 2, when she was observed to travel slowly and laboriously, and with a peculiar roll from side to side. She now has in walking, and in a still more marked degree in running, the lameness and 'roll' so often described in these cases: there is much lordosis: the limbs are fairly muscular, and their posture is natural, with no tendency to inversion of the feet, or to drawing up of the heels even when she attempts to run; but they look unduly short in proportion to the rest of the body, and her hands, as she stands, reach nearly to her knees. The hips, looked at from behind, are very broad and prominent;

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and the trochanters, which occupy the same relative position on the two sides, are placed above and behind the normal site of the acetabulum, and so high as to be nearly on the level of the anterior superior spines of the ilia. When the limbs are rotated inwards, the heads of the thigh-bones can be easily felt under the integuments and glutei: they appear to be of almost or quite the natural size and shape, and planted on a neck of nearly the usual length. The femora are fixed, so that they do not slide upon the pelvis. Movements are free in all directions, except that abduction and external rotation are both limited.

Case III.

C. R., a girl 4 years old, was first observed to be the subject of some peculiarity at the hips when she began to walk at the age of about 2. On examination the displacement of the thigh-bones is found to be double, and symmetrical. Their upper ends can be felt to consist of a small stunted head, and a short neck resting on the dorsum ilii, above and behind the normal site of the acetabulum. The heads are fixed, so that they cannot be made to slide on the wall of the pelvis. The hips look unnaturally wide and prominent when viewed from behind, and lordosis is well marked. The lower limbs are in fair proportion to the trunk and arms, and fairly muscular; and there is no tendency to knock-knee, or inversion of the feet.

Case IV.

Mrs B. is now 36 years old. She says that she could not walk alone till she was 2½. She was then found to be, as she continued, lame, and to walk with a peculiar 'roll.' When 11 years old, she was taken to Sir Benjamin Brodie, whose opinion was that she had congenital dislocation of both hips, and that she should be treated first by confinement for some months in the horizontal posture, in combination with some means for keeping the limbs extended, and afterwards by the use of instrumental supports. This scheme was never carried out, and she was left to wait for whatever improvement in her walk might come with time and exercise. As she grew up she was gradually able to walk much better, and her lameness troubled her less and less. When she was old enough, she was employed to serve at a counter; and she followed this occupation till a few years ago, when she married. She is now robust, and her limbs are stout and strong. She says she has always been active, and has frequently walked distances

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of ten miles, feeling then, as well as after standing many hours at her counter, only moderate fatigue. At the present time her carriage, though peculiar, would, as she has grown stout, scarcely attract the eye unless particular attention was drawn to it; but then it would be noticed that the shoulders are thrown back, the abdomen is prominent, the loins hollow, and the lower limbs too short to be in proportion with the trunk and arms, so that the hands come nearer than is natural to the knees. Her gait presents little of the rolling movement from side to side that is usually seen; there is no knock-knee; the heels come fairly to the ground as she walks, and the feet are not turned in. As the connection of the lower extremity with the trunk is essentially the same on the two sides of the body, one description will suffice for both. The head and neck of the femur seem to be in great part or wholly absent, so that the upper end of the bone is merely a stump. The femur is so movable that as she stands on one leg, she can, by a muscular effort, shift the opposite femur on the dorsum of the ilium, first drawing it nearly vertically upwards for nearly four inches, and then letting it suddenly drop down again. When she does this, surfaces of bare bone are felt rubbing upon each other. As she stands, the pelvis, weighted with the trunk, sinks down between the two uprights formed by the thigh-bones, till it is suspended; and then the trochanters may be felt about three inches behind the anterior superior iliac spines, and on the same horizontal level with them; in other words, the trochanters are opposite, though standing away from, the dorsum ilii, above, and a little in front of the sacro-sciatic notch. Lordosis is very marked. The glutei, pushed up by the femur, stand out in a mass, which gives the posterior aspect of the pelvis an appearance of remarkable width. As the patient lies recumbent, the femur shifts so readily on the pelvis that the length of the limb may be varied through a range of nearly four inches. The limbs lie in a position of complete extension, and there is no inversion of the feet. The pelvis is of ample size, and the patient's confinements have followed quite a natural course.

Case V.

M. B. is the daughter of the preceding patient. When seen at the Hospital, she was 5 years old. She began to walk at about the age of 16 months. She is very healthy, and able to run and walk as actively as other children. Her carriage is somewhat peculiar, and there is a slight 'roll' from side to side; but this might easily escape attention unless specially looked for. As she stands, the only deformity to be seen is some little lordosis: the

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pelvis and limbs are fairly developed, the heels are flat upon the ground, and there is no inversion of the feet. When she is recumbent, the limbs look natural in every way, except that the right is a trifle longer than the left. On examination of the hips the trochanter is felt on each side on the dorsum ilii level with the anterior superior iliac spine, and about three-quarters of an inch behind it. The neck of the femur is shorter than natural, and the head, which appears to be rudimentary, small and flattened, is closely held down by short and strong bands of ligamentous tissue. Movements at the 'joint' are free in all directions, except that rotation, both internal and external, is somewhat limited. I have lately heard that this child died of scarlet fever in the country soon after I saw her. Unfortunately, no dissection of the parts was made.

Case VI.

M. S. is a well-grown, healthy girl, 7 years of age.

History.—When 4 months old, a large abscess formed in the upper part of the left thigh, which burst, and discharged for five or six weeks, and then healed. When she began to walk, at the age of 18 months, the patient was observed to be lame at the left hip, and the limb was shorter than the right, so that only the toe came to the ground. This lameness has remained, but she has never complained of the hip since the abscess closed, and has always used the limb freely.

Present Condition.—The left limb is smaller, and an inch and a half shorter than the right; she walks on her toe, and with much lameness; there is no inversion of the foot, and very little lordosis. The trochanter major is situated on a level with the spine of the ilium, and in a line directly above the normal position of the acetabulum. The head and neck of the femur appear to be absent, so that the upper end of the bone is a mere stump. This is fixed to the dorsum of the ilium by a false joint, which allows no sliding movement, but at which flexion, extension, and adduction are nearly as free as in a healthy joint, though abduction is very limited. The patient was supplied with a high boot, which very much diminished her lameness.

Case VII.

John B., 6 years of age, was seen in October 1873. When he was 13 weeks old, two large abscesses formed, one in the left hip, and another in the pectoral region and axilla. They soon spontaneously opened, and discharged for nearly four months, leaving scars which still remain. When he was 8 months old, his mother

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first observed that the left knee was 'shorter' than the right, and that the thigh-bone slipped about at its upper end, and produced a grating sound, and that when she let him 'feel his feet,' he would not bring the left fairly down. He could not walk till he was 18 months old, and he had always been very lame. At present the limb looks an inch and three-quarters short, and is smaller and thinner than the right; but it can be easily pulled down, so that it is of nearly its natural length. The upper end of the femur feels like a mere stump, and the head, if it exists, is extremely small. The bone can be freely moved on the side of the pelvis, but no grating can now be felt. As he stands, the upper end of the femur is placed closed to, and just behind, the anterior superior spine of the ilium; that is, in front of and above the normal site of the acetabulum. It may be brought away from the side of the pelvis, so that it projects close beneath the skin. As the child sits, the end of the femur feels almost like a bossed and prominent anterior superior iliac spine. As he stands, there is no appearance of lordosis. He is very lame, and lurches and labours in his walk like a child with infantile paralysis. He is gradually getting worse.

Case VIII.

J. W. is a well-grown straight-limbed boy, 9 years old. At the age of 4 months he had a fall to the ground from a height of about four feet, striking his head and face, and injuring his right thigh, so that a day or two later a considerable ecchymosis appeared around the joint. The pain that followed lasted only a few days, and was not severe; and the injury was forgotten till four months later, when he began to use his limbs in attempts to walk. His mother, finding he could not bring his foot fairly down to the ground, attributed his lameness to his fall. She is convinced the condition she now observed had not existed before the injury. When he was 2 years old, an instrument was applied, which he continued to wear till the time I saw him. He had never, except at the time of his fall, had any pain at the hip. On examination, the limb was found to be somewhat wasted, and three-quarters of an inch shorter than the left. As he stood, the limb was in a position of complete extension; that is, its long axis formed a direct continuation of the long axis of his trunk. The trochanter major was flattened, and drawn up so as to be very nearly level with the anterior superior iliac spine, and situated between this process and the normal site of the acetabulum. At this point a new joint had been formed, consisting apparently of a shallow cavity, in which the truncated upper end of the femur

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(no head or neck seemed to exist) was fixed, and in which it moved, pivot-like, in all directions, abduction only being limited. The boy could walk long distances on the limb; and besides some weakness and shortening, which together made him lame, he was conscious of no defect in it.

Case IX.

Fanny B., aged 3 years. Seen in October 1872. Her history, as her mother gave it, was that she began to walk at 15 months old, when she was found to be affected with a lameness on the left side which proved permanent. She is a strong and healthy child, except that she has chronic eczema, for which she was brought to the Hospital. She can walk or run fast, and has never had pain or any other symptom of defect at her hip besides her lameness. Her gait is like that of a child who has one limb shorter than the other, and flexed on the pelvis, as it might be in the later stage of hip disease. Lordosis is well marked, and her body drops towards the affected side when she bears weight upon the limb. On examining the limb, it is found, when the child is recumbent, to be somewhat wasted, and about three-quarters of an inch shorter than its fellow; and it can, if it is thrust by moderate pressure upwards, be made two inches too short, so that the trochanter is felt above, and a little in front of, the sacro-sciatic foramen. The upper end of the femur appears to have only very loose connections with the pelvis, for it can be brought outwards so that it projects very distinctly beneath the gluteal muscles and the integument. As it moves on the dorsum ilii, grating can be felt, as if rough bony surfaces, imperfectly covered with ligamentous or fibrous tissue, were rubbed together. The usual movements of the hip-joint are quite free in all directions, except that abduction is limited, and the limb cannot be brought into complete extension. The upper end of the femur feels shapeless and knob-like, as if the neck was short and the head flattened and rudimentary. As the child lies, the posture of the limb is quite natural, except for slight flexion on the pelvis; and there is no tendency to inversion of the foot.

June 1875.—The patient has been seen from time to time since the preceding note was made. Her condition has changed but little, except that her walk has been much improved by the use of a boot with an inch of thickness added to its sole.

Case X.

Mary D., 9 years old, is a well-grown child, who first walked at the age of 18 months, when she was discovered to be lame

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at the left hip. The limb is now two inches shorter than the right, and somewhat smaller. The posture of the limb is natural, except that she walks and stands 'on her toe;' but there is no inversion of the foot. The upper end of the femur consists of a normal trochanter; a short neck, which appears to be twisted somewhat backwards in its relation to the shaft of the bone; and a rather small, flattened, and irregularly-shaped head, which is situated almost directly above the proper site of the acetabulum, the trochanter lying just behind, and nearly level with the anterior superior iliac spine. The head of the bone slides perceptibly on the pelvis, moving with some grating, as if partially deficient of cartilage. Movements of the femur are nearly as wide and free as in a healthy joint; but rotation outwards and abduction are limited. The child is very lame, walking as with old hip disease; but she has never complained of her limb, except when she is over-tired. She walks better than she did two or three years ago.

Case XI.

Emily W., who is now 5 years old, was found, when she learnt to walk at the age of 16 months, to have some defect at her right hip-joint which made her lame; but there was no pain in the limb, and till then nothing abnormal had been suspected. The same condition has remained. She is still lame, walking on her toe; the limb is small and weak, and three-quarters of an inch shorter than the left. There is no rotation of the femur, the position of the foot being in this respect quite natural. There is slight lordosis. The trochanter is placed vertically above the usual position of the acetabulum, and nearly level with the anterior superior iliac spine. The head, and all but the base of the neck of the femur, seem to be absent, so that the upper end of the bone is stump-like. This is fixed in a false joint to the pelvis, and does not slide. All the movements natural to a hip-joint are free, except that abduction is somewhat limited. The child has never complained of pain in the limb, which she uses very freely. The lameness was much relieved by the use of a high boot.

Case XII.

S. G., aged 7 years, learned to walk at 18 months old, when she was observed to be lame on the right side, but her lameness was her only symptom. She never had pain in the limb, and her parents knew of no cause for her condition. Her lameness has remained, but has been unaccompanied by any sign of disease. The limb is now nearly an inch and a half shorter than

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the right, and smaller and weaker: lordosis is well marked, and as she walks she 'drops' towards the affected side. On examination, the trochanter is felt above and a little behind the acetabulum, and almost as high as the anterior superior spine of the ilium. It cannot be made to slide. On rotating the femur, the head of the bone, supported by a neck set on at about the natural angle, can be distinctly felt, but it appears to be somewhat undersized, and flattened. Movements of the femur are free and smooth in all directions, except that abduction is very limited. The foot is not inverted.

Case XIII.

C. F. is a girl, aged 6. Her mother states that when the child was 5 months old she had a fall down a flight of four steps. She was apparently in pain for some hours afterwards, but she was well in three or four days, and no marks of bruising were noticed about her hip. She began to walk at the age of 2 years and 3 months, when she was found to be very lame, as she has since continued, at the right hip. There has been no pain about the joint, or any other sign of active disease. On examination, the great trochanter is felt close under, and a little behind the anterior superior spine of the ilium. On rotating the femur, the head and neck can be distinctly felt, but the head is small, and flattened. The upper end of the bone rests apparently in a depression on the surface of the ilium, in which, however, it is so loosely held, that it can be made to slide perceptibly, though very slightly, upwards and backwards. The limb is an inch and a half shorter than the left. There is slight lordosis. The child was supplied with a high boot, but this relieved her lameness only to a very slight extent.

Case XIV.

H. B. is a boy, aged 7. He was not known to have any defect till he began to walk, at the age of about 18 months, when he was found to be lame at his right hip. His parents can assign no cause for this. He has never had pain in the hip, but the lameness, with considerable lordosis, has remained. He uses the limb very freely, walking or running on his toe. There is shortening to the extent of an inch and three-quarters. On examination, the head of the femur can be quite distinctly felt above and a little behind its natural position in the acetabulum, but it is irregular in shape, small, and flattened; it is apparently fastened to the side of the pelvis by ligamentous bands forming a false joint, and allowing it to slide to a limited extent. The troch-

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anter is placed directly above the natural position of the acetabulum, and feels large and prominent.

The first five of these cases afford, as I remarked above, materials for a complete picture of congenital dislocation of the hip in its most typical form, as it has been so well described by Dupuytren,* Carnochan,† Holmes,‡ Hamilton,§ and others. All of them were in the female sex; and in all the displacement existed on both sides of the body. Lameness, and the rolling from side to side, were characteristic in Nos. II. and III. Lordosis was present, though in different degrees, in all. In Nos. II., III., and V. the upper ends of the thigh-bones were held in a false joint, above and behind the proper site of the acetabulum, while in No. IV. they had a wide range of motion on the dorsum ilii, sliding freely for some distance at every step. In some the ends of the femur presented a head and neck, though both were deformed and undersized; in others these parts were apparently absent, so that the shaft of the bone ended above in a mere stump. The dried specimen in Case I. seems complete in itself; for it shows not only the anatomical conditions that may be present—the small, shallow, irregular, empty acetabulum, levelled in and webbed over with dense fibrous tissue, the heads of the femora wasted and small, dislocated upwards and backwards, with no trace of a ligamentum teres, and with such loose connection with the pelvis that during the patient's life they could slide about so freely as to have produced scars on the dorsum of the ilia which still remain, but it also recalls to mind all the main features in the appearance and carriage of these patients as Dupuytren has described them; for the female from whom this preparation was taken must have walked with her toes turned far in, and with extreme knock-knee, for the thigh-bones tend to cross each other, and are rotated far inwards; and they are so small and slender in proportion to the pelvic-bones, that we may believe the whole lower extremities were undersized and short.‖

Before attention is directed to the remaining cases, I may point out that Nos. IV. and V. are interesting when they are read together. These patients were mother and daughter. It will be remembered that many authors have asserted that congenital dislocation of the hip is sometimes hereditary, but the statement seems to rest mainly on the authority of Dupuytren, who quotes from Maissiat the history of a family in Mantua, many members of which, in different

* Clinique Chirurg., 1836, tom. iii. p. 109.
† Congen. Disloc. of Femur. New York, 1850.
‡ Surgical Dis. of Childhood. 1868.
§ Fractures and Dislocations. Philadel. 1866.
‖ *Vide* Dupuytren, *loc. cit.*

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generations, suffered from this defect; but the account reads like a mere local tradition, rather than a well-authenticated fact. But the case of the girl M. B. (No. V.) proves that the deformity may be transmitted from parent to child. It will, however, be noticed that the condition of the daughter was very different from that of her mother. Both her hips were abnormal, but the defect was greatly mitigated, both in its anatomical characters, and in its mechanical results; for while the hip-joints in the mother were wholly absent, those of the child were in a favourable position, almost directly above the normal site of the acetabula, and formed so good an imitation of a natural articulation as to admit of nearly complete movements in all directions.

The mother's case was in itself remarkable for the power she had of shifting the thigh-bones on the pelvis by a voluntary effort; for, as the note states, she could, while standing on one leg, draw up the opposite trochanter to a distance of about four inches upon the side of the pelvis, and then, by relaxing her muscles, let it suddenly fall again. Hers, too, was the only instance I have seen in which a person with this defect could follow an active occupation with apparently little inconvenience. It has been found that persons suffering from this deformity may pass naturally through pregnancy and labour. Mrs B. had done so; and it may be added, in respect to the dried specimen in Case I., although no reference is made to parturition in the history given in the Museum Catalogue, that the pelvis itself is well formed, and of ample size in all its diameters.

I will now pass on to Cases VI.—XIV., hoping their analysis may add something to what is known of that form of dislocation of which they are examples. In all of them the defect was unilateral, being on the right side in five, on the left in four. In other respects they present a general likeness to Cases I.—V. Thus, a large proportion, six of the nine, were in females; and the anatomical conditions observed were in the main similar to those noticed in the first series; for in some the upper end of the thigh-bones appeared nearly normal, while in others both the head and neck were in chief part or wholly absent. In some (Nos. VII., IX.) the femur was so loosely connected with the pelvis that it could slide through a considerable range of movement; in others, it was securely held in a false joint, which in two instances was situated above and behind, and in the remaining seven almost directly above the normal position of the acetabulum, so that the trochanter could be felt near the anterior superior spine of the ilium. There is one point in the history of Cases VI. and VII. that should be noticed: in both there had been a large abscess in the joint during the early weeks of infancy. In their anatomical character they differ in no material respect from

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Cases VIII.—XIV.: and I know of no classification hitherto made that would remove them from the list of congenital dislocations. Yet it seems highly probable that they must be placed under a different heading, and that the defect of the hip resulted directly from the abscess in the joint. An infant, aged 6 weeks, has lately been a patient at the Hospital for Sick Children, for the treatment of a large abscess in the right hip-joint, the capsule of which was so distended that the femur could be moved to a considerable distance in any direction from the acetabulum. The abscess was opened, and the child at length recovered, but it is now evident that the head and neck of the femur have been almost completely absorbed; for the bone can be moved freely upwards and backwards on the dorsum ilii, or in a direction outward, so that it projects close beneath the skin and the still wasted glutei. The limb, when the femur is pushed upward, is more than an inch too short, and is abnormally movable in all directions. In the last volume of the Reports, in a paper on acute arthritis of infants, Mr Thomas Smith has recorded some cases that are very similar to this, and in which the same changes had occurred with the same results, at the hip-joint. In after-life all these patients, unless their history was carefully ascertained, would doubtless be thought the subjects of congenital dislocation. In some of the other cases I have related (VIII. and XIII.) there was a history of severe injury of the joint by a fall, a circumstance which may serve to raise the question whether in some instances the defect is not due to the occurrence of a fracture in early infant life. But the evidence on this point is inconclusive. In the remaining cases nothing that seemed even a probable cause could be ascertained.

Many writers on this subject have referred to the difficulty that appears to attend a correct diagnosis, even when the deformity is double; yet mistakes are still more common in those instances in which only one side is affected. Some of the cases I have related had been recognised, but the majority were sent for consultation either as diseases of the hip (morbus coxarius), or perhaps more commonly as infantile paralysis. But the true condition of things may be easily ascertained if a careful examination is made. Diagnosis must rest on evidence, part of which is positive, and part negative, the latter being quite as important as the former. The positive evidence consists in (*a*) lameness, which is usually very marked: (*b*) shortening of the limb, which is also smaller and weaker than that of the opposite side: (*c*) lordosis; it may be observed that the degree in which this is present depends upon the position of the end of the femur; if the dislocation is upwards and backwards, lordosis will be well marked; while if it is in a direction upwards towards the anterior superior iliac spine, lordosis

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will be very slight, for the inclination of the pelvis is not altered to any material extent: (*d*) an abnormal conformation of the upper end of the femur, the head and neck being small and ill-shapen, or wholly absent; and its abnormal relation to the side of the pelvis, whether it be movable on the dorsum ilii, or held in a false joint more or less removed from the natural position of the acetabulum: (*e*) some defect in the ball-and-socket movements natural to the hip-joint, particularly in abduction and rotation outwards. The negative evidence is that there has been at no time any symptom of morbus coxarius, or of any accident by which dislocation could have been produced. It is usually easy to exclude infantile paralysis; for the limb, though undersized, is under perfect voluntary control; the child can move it freely in all directions, and its temperature is natural. Besides this, in the one case the joint is well formed, while in the other it is plainly abnormal.

In a future communication I shall offer some remarks on the causes of this deformity, and on the means by which its effects may be mitigated.

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THE TREATMENT OF

STONE IN THE BLADDER

OF

FEMALE CHILDREN.

BY

W. J. WALSHAM.

In an admirable article on 'Lithotomy in the Female,' published in the 'Lancet' during 1863, Mr Lane thus prefaces his remarks: 'Calculus in the bladder is a complaint concerning which so much has been written, and to the treatment of which so much attention has been devoted by the leading surgical authorities, from the earliest times down to the present period, that there ought, perhaps, to be little room for further dissertation on the subject. Such, however, is far from being the case. It is not so even as regards the male subject, in whom the greater frequency of the disease, and the greater anatomical complications of the parts implicated, have always caused the operation of lithotomy to be regarded as one of the most important in the whole range of surgery. But still less is it the case as regards the female, in whom, I think, no one will assert that anything approaching to finality in the treatment of this complaint has as yet been reached. Various plans of operation have been at different times proposed, have been adopted with more or less unanimity, have after a time been laid aside, and again after a time been reintroduced. But there has been hitherto, and there is now, no consent on the part of authorities as to which of these various methods is the best, or which of these may be best adapted to one, and which to another, class of cases.' I venture to think that these words are applicable to stone in the female, even at the present day, but more especially

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as to its treatment when occurring in female children; for, on referring to the recent literature of the subject, we find very different opinions still held regarding the best way of dealing with it.

Thus, in favour of extracting the stone through an incision in the vesico-vaginal septum, we have Dr Marion Sims, who is reported to have said that 'vaginal lithotomy is the only justifiable operation in women.' Aveling, also, in a paper read before the Obstetrical Society, strongly advocates this operation in adults; whilst Mr Thomas Smith, at the Ormond Street Hospital, has practised it with success in children.

Mr Bryant again advocates rapid dilatation of the urethra 'as the safest and most expeditious method of removing all average-sized calculi and foreign bodies from the female bladder,' affirming that 'calculi one inch in diameter in children, and even to two inches in adults, have been safely extracted by this practice;' whilst at the same time he remarks that 'slow and tedious dilatation of the urethra by means of tents, or other means, appears to be injurious.'

But a very different impression of slow dilatation is conveyed to us by Professor Humphry of Cambridge. This gentleman, in a paper which appeared in the 'Lancet' for July 1864, as strongly advises the dilatation to be conducted in 'the gentlest and most gradual manner,' by the aid of catgut bougies, maintaining that 'dilatation of the urethra is thus conducted in a safer and less painful manner than by any other device' with which he is acquainted.

Then again the supra-pubic, the lateral operation as practised by Dr Buchanan of Glasgow, lithotrity, and incision of the urethra, with or without dilatation, have each their advocates; incision of the anterior part of the urethra, with dilatation of the neck of the bladder, having indeed the support of no less an authority than Sir William Fergusson. That much difference of opinion, then, still prevails amongst surgeons as to the best mode of proceeding in a case of stone in the female bladder, will, I think, be generally conceded; and that much more exists as regards the best operation to be adopted under like circumstances in female children, the very various methods advocated and practised by the leading authorities, as shown in the tables appended to this paper, prove conclusively. A very forcible illustration of this occurred in the Hospital only a few months ago, when, at a consultation on a case of stone in a little girl, simple dilatation, dilatation, with incision, vaginal lithotomy, and the supra-pubic operation were each in turn recommended as the best operation to be adopted in that particular case.

Being impressed at the time by this want of unanimity, I resolved

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to collect all the published accounts I could find of calculi in little girls, and see if as yet any conclusions could be drawn as to the most successful mode of managing these very embarrassing cases.

Since the publication of Mr Bryant's tables in the 'Royal Medico-Chirurgical Transactions' for 1863, which contain most of the published cases of stone in females up to that date, I have been enabled to collect over one hundred additional cases of calculi in females, some fifty of these being in girls under 15 years of age. These latter, together with about twelve cases in girls taken from Mr Bryant's collection, appear in this paper. After a careful consideration of these tables, it appears evident that a small stone may be safely removed, in children as in adults, by most of the methods before referred to, at the option of the surgeon, without any fear of incontinence of urine following. I shall, therefore, in this paper more especially consider the best means to be adopted for the removal of calculi of moderate or large dimensions.

From the results obtained by the various kinds of treatment resorted to, I have ventured to draw the following conclusions; and I shall endeavour subsequently to justify them by considering each method of treatment *seriatim*:—

1. That for small stones, both rapid and slow dilatation of the urethra, in children as in adults, are good operations.

2. That of these two, rapid dilatation under chloroform is perhaps the better, as causing less annoyance and inconvenience to the patient.

3. That moderate, and even large-sized, stones have been removed by dilatation; but that, as incontinence has frequently followed from over-distension, it is not justifiable to subject the patient to this risk.

4. That, after limited dilatation, should the stone appear larger than was anticipated, it may be crushed with safety; but should crushing be considered unadvisable or impossible, it is better to perform vaginal lithotomy than subject the patient to any risk of incontinence by over-dilatation.

5. That it is not safe to aid the dilatation by incising the urethral walls.

6. That incision of the urethra alone, without dilatation, in whatever direction practised, is frequently attended by incontinence, and should therefore be abandoned.

7. That moderate, and even large, stones can be safely removed from young children by 'vaginal lithotomy, aided if necessary by dilatation of the vagina, incision of the fourchette, and crushing of the stone through the wound made in the septum, without any

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risk of a permanent vesico-vaginal fistula, so long as the edges of the incision are not bruised in the extraction.

8. That the incision in the septum should be very free, but not involve the walls of the urethra; and should that first made be found too small, it should be enlarged before any attempts at extraction are undertaken.

9. That should a fistula remain after this operation, even when carefully performed, it can be readily closed.

10. That after the incision has been prolonged to the limits of safety, the stone still appearing too large for easy removal, and crushing being considered unadvisable or impracticable, it is better to open the bladder above the pubes, than by lacerating the sides of the wound by forcible extraction, to subject the patient to the possible danger of a permanent vesico-vaginal fistula.

11. That the lateral operation, as practised by Dr Buchanan of Glasgow, appears well adapted for children suffering from a small stone, or perhaps one of moderate size; and that as it has been successfully practised in India and Glasgow, it is deserving of trial in this country.

12. That *very* large stones can only be removed by hypogastric or vaginal lithotomy; and that, as the latter proceeding would in this case be probably followed by a permanent vesico-vaginal fistula, it is better to choose the more dangerous operation than subject the patient to this loathesome affection.

13. That the supra-pubic operation, when carefully performed, is possibly much safer than is generally supposed; but that, as it may be followed by death, it should only be undertaken when all other alternatives threaten permanent incontinence.

I shall now make a few remarks on each method of operating separately, and endeavour to justify these conclusions as I proceed.

Simple Dilatation.

Simple dilatation of the urethra is, I believe, now pretty generally acknowledged to be the best operation for the extraction of a stone of small dimensions from the adult female bladder; and it also appears to be well adapted for the removal of one from that of the young female child, provided the calculus be small.

Mr Bryant, in his paper in the 'Medico-Chirurgical Transactions,' has tabulated twenty-eight cases of dilatation of the urethra in females of all ages. He draws a distinction between rapid and slow dilatation, and refers the incontinence of urine which followed the extraction in four of these cases to the latter mode of operating. But the stone in these four women was of large size; and from the success obtained by Professor Humphry by the gradual

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method of extracting small stones, I am inclined to think that the incontinence depended rather on the size of the stone than on the manner of extracting it.

I have collected in Tables A and C twelve cases of rapid urethral dilatation in female children.

In five of these (see Table C) dilatation alone was found insufficient, and an incision of some part of the wall of the urethra had to be resorted to before the stone could be removed.

Incontinence followed this proceeding in cases 1, 2, and 5.

A similar result also occurred in two of the seven cases enumerated in Table A, where dilatation alone was practised.

Thus out of twelve cases of rapid urethral dilatation, no less than five were followed by incontinence of urine, or one in two and a half.

In Table B, fifteen cases of slow dilatation are enumerated.

Of these one was followed by death, one by incontinence, twelve are said to have recovered, and the result in one case is not stated. The success in these cases seems to have depended on the limited amount of dilatation made use of. For where the stone appears to have been large, it was either crushed intentionally, or broke down under the forceps used in extracting it. And in the remaining cases the calculus was of moderate dimensions.

But we must be cautious in drawing conclusions from all the cases published as successful, as many of them are reported a few days only after the operation, whilst the swelling of the parts prevents the incontinence which would otherwise be present from becoming manifest; so that what is published as a successful case, on further inquiry may turn out to be one of lifelong misery.

In one instance (No. 6, Table A) slow dilatation had to be abandoned, from the pain and inconvenience it caused the patient, and the rapid method resorted to. Incontinence followed.

These considerations, then, will, I think, justify the conclusions I have ventured to draw from them—namely, that (1) for a small stone, both slow and rapid urethral dilatation are safe operations; (2) that of these two, rapid dilatation under chloroform is, perhaps, the better operation, as causing less annoyance and inconvenience to the patient; (3) that large stones have been extracted by dilatation, but that, as incontinence has occasionally followed, it is not justifiable to subject the patient to this risk; (4) that, after limited dilatation, should the stone appear larger than was anticipated, it may be crushed with safety; but should this operation be considered unadvisable, it is better to resort to some other than subject the patient to the risk of incontinence by over-dilatation of the urethra.

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Incision of the Urethra.

The walls of the urethra have been incised in nearly every direction in extracting a stone from the female bladder; often with success, but too frequently with incontinence as an after-consequence. In Table D I have tabulated seven cases of incision in various directions. Three had incurable incontinence, and one incontinence for several months after the operation.

In Table D I have collected five cases of incision in an upward direction only. Two of these also were afterwards incontinent. Thus, out of twelve cases of incision in various directions, five were incontinent, or nearly one in two.

These statistics agree with those of Mr Bryant, and point to the same conclusion as formulated by him in women of all ages, namely, that although complete recovery may be *hoped* for after this mode of treatment, still, as there is much risk of incontinence following, it should be abandoned.

Under dilatation I have already referred to the results obtained by a combination of dilatation with incision. I will here merely remark that, although Sir William Fergusson advises this mode of proceeding, still he admits that the statistics on the subject are imperfect, and on the whole does not appear to give it very strong support.

I think, therefore, from the results shown in Table B, that this operation should not be practised in future.

Vaginal Lithotomy.

By vaginal lithotomy I mean the extraction of a stone through an incision in the vesico-vaginal septum, without implicating the walls of the urethra.

As I have before stated, this operation has received very strong support from several undoubted authorities, one going so far as to say that it is the only justifiable operation for the removal of a stone from the female bladder, whilst others maintain that it is only suitable in exceptional cases in the adult, and not at all in children. These latter affirm that in children the parts are too small, and consider the destruction of the hymen a grave objection. Thus Mr Lane, in a paper before referred to, states as one of his conclusions, 'that vaginal lithotomy is not adapted for female children and young unmarried women.' Mr Poland also seems to object to this method of extraction. In some remarks on the removal of a calculus by simple dilatation, he says that, had he failed to extract by the natural passages, he would have performed the supra-pubic operation rather than have resorted to the vaginal section.

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Notwithstanding the objections which have been raised against it, this operation has now been performed many times, and with marked success, not only in adult women, but in young children also.

It is the proceeding generally adopted at the Children's Hospital in Ormond Street, and has been likewise resorted to at St George's Hospital.

With regard to the objection that the parts are too small in young children, Mr Smith, who has performed this operation several times, informs me that he has always secured plenty of room by dividing the fourchette and dilating the vagina; and as to injuring the hymen, surely this should have but little weight when we consider that by preserving it intact we may subject our patient to incontinence for the rest of her life.

On referring to Table E, it will be seen that out of eight cases there operated on, two had incontinence of urine; but it must be remembered that this only depended on the presence of a vesico-vaginal fistula, and we are not told that this was permanently incurable.

In Sir William Fergusson's case, the wound was not closed at the time of publication, because, as he states, he found the parts too small for the application of sutures; but it does not appear that, as the child grew older and the vagina became more capacious, any insuperable difficulty would prevent the permanent closure of the fistula.

Nor in Mr Marsh's patient is any reason given why a cure should not be attempted at some future date.*

Next, as regards the cause of these fistulæ. That in Sir W. Fergusson's patient seems to have been caused by the smallness of the incision compared to the size of the stone, the sides of the wound being much bruised during the extraction, and consequently not healing by the first intention. The absence of sutures would also in some measure account for it; but these are not absolutely necessary, for in Case 7, Table A, none were applied, and perfect union nevertheless resulted.

In Mr Marsh's child the calculus was *very* large, and he was unable to remove it, even after the incision had been enlarged to the utmost limits of safety, without much bruising of the wound; hence the want of adhesion in his case.

The wall of the urethra, also, should if possible not be encroached upon; for although this does not necessarily involve incontinence, as shown in Case 7, Table E, still it is apt to produce this result, especially if it is divided through its whole length, as seen in Case

* Since writing this, Mr Marsh informs me that he intends closing the fistula in this patient, and has every hope of it turning out successful.

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3, Table D, and in Case 6, Table D, where the patient, although not permanently incontinent, nevertheless could not hold her water for several months afterwards. After a free incision in the vesico-vaginal septum, the stone can, as a rule, be easily crushed by a lithotrite or some other instrument introduced into the bladder through the wound, should it appear too large for easy extraction by the incision already made, and with every prospect of success, as the bladder can afterwards be freely washed out, and so cleared of all fragments and after-sources of irritation.

It thus appears that this operation has no special advantages over several others in the case of small stones; for, as already stated, it is well known that a calculus of small size can be extracted by almost any means, without any serious difficulty or danger. But for a moderate-sized stone vaginal lithotomy seems to me the best, if not the only good operation that can be undertaken. For although moderate, and even large-sized, stones have been extracted by other means with success, still incurable incontinence has followed occasionally all these various proceedings. But after vaginal lithotomy, although incontinence has several times occurred from the presence of a vesico-vaginal fistula, still, as this fistula has not been shown to be permanent, but rather the reverse, it cannot be said, as yet, that incurable incontinence has been the result. It follows, therefore, that for a moderate-sized stone vaginal lithotomy is the only operation which has not at times resulted in permanent incontinence of urine, and therefore should be generally adopted in preference to all other methods.

For a stone of very large size, this operation, or hypogastric lithotomy, are the only alternatives. As in very large stones much bruising of the wound must necessarily happen if forcible extraction is attempted through the vaginal septum, it seems preferable to perform the more formidable operation, even though life may be somewhat endangered, than to subject the patient to the risk of a miserable existence hereafter from constant dribbling away of urine through a permanent vesico-vaginal fistula. I wish it, however, to be distinctly understood that the above paragraph refers to very large stones, and to very large ones only, as stones of considerable size have been removed in this way without causing any permanent fistula.

These considerations, then, I believe, justify the conclusions before stated, that large stones can be safely removed from very young children by vaginal, lithotomy, aided, if necessary, by dilatation of the vagina, division of the fourchette, and crushing of the stone through the wound, without any risk of a permanent vesico-vaginal fistula resulting, so long as the edges of the incision in the vaginal septum are not bruised in extracting the stone; that the

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incision in the vesico-vaginal septum should be very free, but not so much so as to involve the wall of the urethra; and that if the incision be found too small, it should be enlarged before any attempts at extraction are made. If after the incision has been thus enlarged to the limits of safety, the stone still appears too large for removal without much bruising of the sides of the wound (crushing being thought unadvisable, or it having been attempted and failed), it is better to open the bladder above the pubes than subject the patient to the risk of a permanent vesico-vaginal fistula for many years, or perhaps for life.

Lithotrity.

This operation, either alone, or when combined with dilatation of the urethra, has been attended hitherto with much success when performed on female children with small calculi. As in males, it appears requisite that the stone be of moderate size, and not of too hard a consistency.

It is well adapted for cases where, after limited dilatation of the urethra, the stone still appears too large for extraction without bruising or over-distension, providing always that it be soft, and not excessive in size.

In Table F eight cases of lithotrity in children are enumerated. All are said to have recovered. In these patients the urethra was either not dilated at all, or only to a very moderate extent. In Table B five cases will be found where crushing and dilatation were combined, viz., Nos. 9, 10, 11, 12, 14. One of these, viz. No. 9, was followed by incontinence.

In Table C one case is mentioned where dilatation and incision were successively resorted to before the stone was crushed. This patient was afterwards incontinent. But although lithotrity is comparatively easy where the calculus is soft and small, it becomes a very difficult operation if the stone is at all large, for the capacity of the bladder in children is so limited that it is nearly filled by a stone of moderate size, leaving hardly any space for the opening of the blades of the lithotrite or other instruments after their introduction into its cavity.

But the case is far different after an incision has been made through the vaginal septum, plenty of room being thus obtained for seizing and crushing the stone.

The Lateral Operation.

By the lateral operation, I mean that proposed by Dr Buchanan

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of Glasgow. It is thus described by Dr Morton.* 'It consists in cutting down upon a director or grooved staff held by an assistant in the urethra, the incision being made with a common scalpel on the left side of the vulva, beginning opposite the clitoris, and cutting obliquely across the left labium minus, in a line with the ramus of the ischium. When the groove in the director is felt by the finger in the wound, a straight bistoury is then passed into the groove, run along into the vesical mouth, and the incision enlarged by cutting outwards and towards the tuberosity of the ischium, care being taken not to penetrate the vaginal wall, after which the finger, guided by the director, easily reaches the interior of the bladder.'

In Table G I have given all the cases of this operation in children I could find recorded. In all the stones appear to have been small. All recovered completely.

In adults this mode of extracting calculi has more frequently been resorted to, and larger stones thus removed.

As the calculi in these cases were all small, we are unable to draw any conclusion as to its comparative merits for removing moderate-sized stones.

The Supra-Pubic Operation.

As the removal of a stone by this operation differs in no respect in females from males, I have not thought it advisable to discuss it.

Langenbeck states that the mortality after it is about the same as after the ordinary lateral operation as practised in this country on young subjects. As it is thus dangerous to life, it should not, I think, be resorted to, except for the extraction of very large stones, when any other operation would be nearly sure to subject the patient to lifelong incontinence.

Four recent cases are tabulated in Table G. Two died and two recovered.

* Glasgow 'Medical Journal,' 1854, vol. ii.

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TABLE A.—CASES OF OPERATION FOR STONE IN THE BLADDER OF FEMALE CHILDREN.

Rapid Urethral Dilatation.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. ——	11 years.	*London Hospital Reports*, 1865, vol. ii. p. 397.	Mr Curling.	Not stated.	Dilated for fifteen minutes with Weir's dilator.	No incontinence.
2. ——	11 years.	*British Medical Journal*, 1871, vol. ii. p. 431.	Mr Christopher Heath.	Two stones, size not stated.	Rapid dilatation to size of little finger; one stone easily extracted. The second stone, of larger size, only extracted after some difficulty, the lower wall of urethra being slightly torn. Second stone was adherent to wall of bladder.	Incontinence.
3. ——	5½ years.	*Lancet*, October 1867. (In Mr Bryant's Tables.)	Hillman.	2 in. by 1¾ in. circumference.	... ...	No incontinence.
4. A.F.	8½ years.	*Medical Times and Gazette*, 1850. (In Mr Bryant's Tables.)	C. Gwinne.	1½ drachms.	... ...	No incontinence.
5. G. B.	3 years.	*Medical Times and Gazette*, 1851. (In Mr Bryant's Tables.)	Davey.	6½ drachms.	... ...	No incontinence.
6. C. S.	6 years.	*Medical Times and Gazette*, 1869, p. 628.	Mr Solly.	Stone size of filbert.	Rapidly dilated with forceps. Slow dilatation was commenced, but this caused pain. Recovered some power over bladder during the day, but could not hold the water during the night.	Incontinence.
7. F.—	6 weeks.	*Lancet*, 1861, 341.	Mr Wakley.	Very small.	Impacted in urethra, removed by forceps.	No incontinence.

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TABLE B.—CASES OF STONE IN FEMALE CHILDREN.—*Slow Dilatation of Urethra.*

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. Susan T.	3 years.	*Lancet*, 1864, vol. ii. p. 114.	Professor Humphry.	2 dr. 12 gr. in weight.	Dilated for 24 hours by catgut bougies.	No incontinence.
2. ——	4 years.	Same.	Same.	3 dr. 30 grains.	... ...	No incontinence.
3. ——	5 years.	Same.	Same.	2 drachms.	... ...	No incontinence.
4. ——	12 years.	Same.	Same.	1 oz. 1 drachm.	... ...	No incontinence.
5. ——	4 years.	Same.	Same.	Bantam's egg.	Urethra dilated gradually to admit forceps. The forceps broke, and stone was not extracted. Kidneys found much diseased after death.	Death.
6. ——	3½ years.	*Lancet*, 1855. (In Mr Bryant's Tables.)	Mr Erichsen.	Size of shilling.	Dilated by sponge tents.	No incontinence.
7. E. N.	11 years.	*Medico-Chir. Trans.*, vol. viii. (In Mr Bryant's Tables.)	Sir A. Cooper.	3½ by 3 inches in circumference.	Dilated for three days by sponge tents.	No incontinence.
8. ——	8 years.	Cooper's *Sur. Dic.* (In Mr Bryant's Tables.)	S. Cooper.	1½ drachms.	No incontinence after a few days.	No incontinence.
9. ——	10 years.	*Lancet*, 1852. (In Mr Bryant's Tables.)	Ward.	Not stated.	Urethra dilated for three weeks; at intervals stone removed by aid of crushing.	No incontinence.
10. C. T.	9 years.	*Lancet*, 1854. (In Mr Bryant's Tables.)	H. Thompson.	¾ inches diameter.	After dilating for three hours one day, and four hours on a second day, the stone was removed by crushing.	No incontinence.
11. ——	6 years.	*Medical Times and Gazette*, 1859. (In Mr Bryant's Tables.)	Humphry.	...	Dilated, and stone removed by two crushing operations.	No incontinence.
12. ——	Between 5 & 15.	*St Thomas' Hos. Rept.* vol. i. New Series, Table for 1869.	...	Stone size of pigeon's egg.	Urethra dilated by laminaria tent, and stone crushed.	No incontinence.
13. Sawal, Hindu.	5 years.	*Indian Medical Gaz.* 1873, p. 97.	F. L. Dickson.	1 drachm, 22 gr.	Dilated with sponge tent for several days. Purulent discharge.	No incontinence.
14. ——	14 years.	*Brit. Med. Jour.* 1860.	Mr Rullen.	7 grains.	Stone broke under forceps, and extracted piecemeal. Could retain her urine next day.	Said to be no incontinence.
15. Girl.	4 years.	Erichsen's *Surgery*, p. 599, 5th edition.	Mr Erichsen.	1½ in. length, ¾ in. breadth.	Urethra gradually dilated. Stone removed unbroken.	Not stated.

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TABLE C.—CASES OF STONE IN FEMALE CHILDREN.

Dilatation with Incision.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. Girl.	10 years.	*London Hospital Reports*, 1867.	Mr Little.	'Large stone.'	Rapid dilatation, and incision of the urethra. Direction of incision not stated.	Incontinence.
2. Little girl.	Age not stated.	*Lancet*, 1858, vol. ii. p. 500.	Mr Moore.	'Large stone.'	Rapid dilatation of urethra. Incision laterally, because stone found too large for dilatation alone.	Incontinence.
3. 'Delicate little girl.'	Age not stated.	*Lancet*, 1861.	Mr Holt.	Size of chestnut.	Rapid dilatation, and incision upwards, because stone found too large for dilatation alone.	No incontinence.
4. Harriet T.	6 years.	*Lancet*, 1860.	Mr Canton.	Circular stone, ½ inch diameter.	Rapid dilatation, and incision of a small part of lower wall of urethra.	No incontinence.
5. E. K.	17 years.	*Dublin Medical Journal*, 1863, p. 476.	Dr Tinulan.	...	Rapid dilatation attempted; the parts found too rigid. Incision then tried; this also failed to make sufficient room for extraction. The stone was then crushed.	Partial incontinence; could only hold her water for a few hours.

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TABLE D.—CASES OF STONE IN FEMALE CHILDREN.

Incision of Urethra.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. E. R.	6 years.	*Lancet*, 1853.*	B. Cooper.	150 grains.	Incision, laterally on left side.	Incontinence.
2. ——	10 years.	*Medical Times and Gazette*, 1859.*	B. Cooper.	Small stone.	Incision, direction not stated.	Incontinence.
3. Eliza Mason.	3½ years.	*British Medical Journal*, 1862, p. 279.	Paget of Leicester.	4½ drachms when dry.	Incision through whole length of urethra, beginning at meatus, and continued in middle line through vaginal septum.	Incontinence.
4. ——	3½ years.	*Medical Times and Gazette*, July 1859.*	Hilton.	Small.	Lateral incision.	No incontinence.
5. ——	6 years.	*Medical Times and Gazette*, 1859.	Cock.	Size of damson.	Lateral incision.	No incontinence.
6. Ootmale.	3½ years.	*Indian Medical Gazette*, 1866, p. 89.	Mr H. P. Johns.	1½ by 1 in. diameter.	Incision downwards and outwards through whole length of urethra and anterior wall of vagina. No dilatation.	No incontinence after several months.
7. Gamgee.	3½ years.	*Indian Medical Gazette*, 1866, p. 89.	Mr H. P. Johns.	48 grains.	Incision downwards and outwards.	No incontinence.

* Also in Mr Bryant's Tables.

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TABLE D 1.—CASES OF STONE IN FEMALE CHILDREN.

Incision of Urethra Upwards.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. ——	10 years.	*Medical Times and Gazette*, 1859.	Bristol Infirmary.	Size of walnut.	Incision of urethra upwards.	Incontinence.
2. ——	15 years.	*Medical Times and Gazette*, 1859.	Bristol Infirmary.	Size of bantam's egg.	Incision of urethra upwards.	Incontinence.
3. ——	5 years.	*Lancet*, October 1857.	Hillman.	3½ by 2½ inches in circumference.	Incision upwards.	No incontinence.
4. E. R.	2½ years.	*Lancet*, 1852.	Poland.	Not stated.	Incision of urethra upwards, and the stone crushed twice, at two different operations.	No incontinence.
5. ——	No age stated.	*Lancet*, 1861.	Hall.	Not stated.	Incision upwards, and stone crushed.	No incontinence.

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TABLE E.—CASES OF STONE IN FEMALE CHILDREN.

Vaginal Lithotomy.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. Annie C.	8 years.	*St George's Hospital Reports*, 1872, vol. ii.	Not stated.	Not stated.	Cured in 43 days completely.	No incontinence.
2. Edith B.	12 years.	Case-Book—St Bartholomew's Hospital, Sitwell Ward.	Mr Thomas Smith.	Stone 1 oz. in weight.	Incision through vesico-vaginal septum 1½ inches long.	No incontinence.
3. Fanny B.	9½ years.	*Lancet*, 1862, vol. ii. p. 387.	Sir W. Fergusson.	Large stone.	Incision ¾ inch long, parts much bruised in extracting stone.	Incontinence, temporary.
4. Elenor F.	7 years.	Mr Smith's Case-Book.	Mr Thomas Smith.	Moderate-sized stone.	Incision closed by five sutures; vesico-vaginal fistula; this was closed at a future operation.	No incontinence.
5. Clara M. A. Clarke.	10 years.	Mr Smith's Case-Book.	Mr Thomas Smith.	½ inch in diameter.	Incision closed by four sutures. Incision also made in the fourchette to make more room.	No incontinence.
6. Emma Macmillan.	7 years.	*British Medical Journal*, p. 467, 1863.	Mr Thomas Smith.	Pear-shaped 3 inches by 2 inches in diameter, 215 grains.	Incision through vesico-vaginal septum. Vesico-vaginal fistula.	No incontinence.
7. M. A. Barkham.	5 years.	Mr Smith's Case-Book.	Mr Thomas Smith.	2½ drachms.	Laceration of posterior part of urethra; fourchette also divided to give more room in vagina. No sutures used.	No incontinence.
8. Girl.	3 years.	*Lancet*, vol. ii. 1870, p. 853.	Mr Howard Marsh.	1½ inch long.	Posterior part of urethra lacerated. Parts much bruised in extracting. Incision in vesico-vaginal septum very free. Vesico-vaginal fistula.	Incontinence, temporary.

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TABLE F.—CASES OF STONE IN FEMALE CHILDREN.

Lithotrity.

	Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Results.
1.	*Martha* Jane B.	*5 years.*	*Lancet*, 1862, vol. ii. p. 388.	Sir W. Fergusson.	Small stone.	*Stone crushed under chloroform*, and several fragments removed by spoon-shaped scoop. Other fragments passed after operation. 14 days afterwards another large piece of stone was removed by the lithotrite.	No incontinence.
2.	——	3 years.	*Lancet*, 1862.	Sir W. Fergusson.	Not stated.	Stone crushed in two sittings. Recovery rapid and complete.	No incontinence.
3.	——	3½ years.	Erichsen's *Surgery.*	Mr Erichsen.	Large size.	Urethra dilated by sponge tent to size of No. 11 or 12 lithotrite.	No incontinence.
4.	C.	12 years.	Unpublished. (Mr Bryant's Tables.)	Mr Birkett.	¾ inch.	... ...	No incontinence.
5.	——	10 years.	*Lancet*, 1859.	Sir W. Fergusson.	...	Two operations.	No incontinence.
6.	Kamon.	10 years.	*Indian Medical Gazette*, 1868, 227.	Not named.	118 grains.	Three operations—the two first under chloroform.	No incontinence.
7.	Female.	7 years.	*Indian Medical Gazette*, 1867, 153.	Not named.	38 grains.	... ...	No incontinence.
8.	Emam Beebee.	5 years.	*Indian Medical Gazette*, 1868, 227.	T. B. Scriven.	Not stated.	Crushed once.	No incontinence.

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Table G.—Cases of Stone in Female Children.

The Lateral Operation, as practised by Dr Buchanan of Glasgow.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. Jessie W.	6 years.	*Medical Times and Gazette*, 1862, vol. i. p. 438.	Dr G. Buchanan.	½ oz. 40 grains.	Wound healed in fourteen days.	No incontinence.
2. ——	4 years.	*Indian Medical Gazette.*	Government Dispensary at Meerut.	16 grains.	Cured.	No incontinence.
3. ——	4 years.	Same.	Same.	76 grains.	Cured.	No incontinence.
4. ——	7 years.	Same.	Same.	38 grains.	Cured.	No incontinence.

Table H.—Cases of Stone in Female Children.

Hypogastric Lithotomy.

Name.	Age.	Reference.	Surgeon.	Size of Stone.	Remarks.	Result.
1. Martha H.	8 years.	*Lancet*, 1873, vol. ii. p. 807.	Sampson Gamgee.	Large stone, 305 grains.	Rapid cure.	No incontinence.
2. ——	4 years.	*Indian Medical Gazette*, 1866, p. 185.	Dr Adam Taylor.	1½ inch in diameter, ¾ inch thick.	Dr Taylor remarks, 'Extraction through the urethra would have subjected the patient to incontinence.' 'The smallness of the vagina rendered vaginal lithotomy impossible.'	No incontinence.
3. Nunno.	4 years.	*Indian Medical Gazette*, 1866, p. 258.	W. P. Dickson.	3 drachms, very friable.	Peritonitis caused death, but Mr Dickson affirms that the peritoneum was not injured. Some difficulty in opening the bladder, and in getting the stone out, as it constantly broke down under forceps.	Death.
4. Child.	6 years.	*Indian Medical Gazette*, 1871, p. 237.	F. W. Higginson.	5½ by 4¾ inch circumference.	Death after 40 hours; cause not stated. Operation very easily performed; peritoneum not mentioned.	Death.

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AN ESSAY

ON THE

HISTORY OF MEDICINE IN IRELAND.

FOUNDED ON AN EXAMINATION OF SOME MSS. IN THE BRITISH MUSEUM.

BY

NORMAN MOORE, M.B.

The history of medicine may be divided into three chief periods —those of Hippocrates, of the Middle Ages, and of Sydenham. In the first, though embarrassed by the poorness of the related sciences, physic reached a high degree of cultivation. Observation of patients was the groundwork of the study. The Greek physician was worthy of his generation. He is not the equal of the Greek metaphysician, or of the Greek poet; but his method is excellent, and his defects are, for the most part, due to the want of accumulated observation. The shore had been discovered, there had not yet been time to travel far into the land. The writings of Sydenham mark the next period. All medicine, since the extinction of the Hippocratic school, may be spoken of as that before and that since Sydenham. The Galenists—the school of Salernum, the Arabians—the school of Montpellier, the Chemists, the Mechanicians, have important differences amongst themselves; but in the plan of proceeding mainly *à priori*, they are agreed, and in this they are altogether separated from Sydenham, and from all valuable physicians since.

Nearly all the important literary works of the Gaelic language had appeared before Sydenham had taken his degree.[1] In his

[1] April 14, 1648. *Dr Munk: Roll of the Royal College of Physicians.* London 1861.

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day, Gaelic[1] was spoken even in the parts of Ireland where there were most English,[2] and by all classes of society; but the ruin of the native interest in the seventeenth century put an end to the progress of literature. There were no more any patrons of the old learning of the country, and literary men were forced to dig or to beg. A few small books were written, but they were no more than the leaves, which, for some years, appear on the surface of a stock long dead at heart.

It is, therefore, to the times before Sydenham that the medical books of the Irish belong. Among the Irish MSS. preserved in the British Museum are several on medicine.[3] They have never been printed, and so far as I know, have not hitherto been examined by physicians. They afford grounds for an estimate of the knowledge of medicine existing in Ireland in the later middle ages.

It is probable that physic had made but little progress in Ireland before foreign writings became known. A few traditions, as old as the earliest writings of the language,[4] fondly repeated as records of fact by Irish historians, deserve notice, as pointing to a practice of physic at a remote but uncertain date. Díancécht, the physician, is one of the heroes whose exploits are told in the ancient stories of the peopling of Ireland. Nuadhat, an invading chieftain, lost his hand at Magh Tuireadh,[5] a battle which won

[1] Gaelic is the native equivalent of the following English words:—Irish, Erysche, Erse, Manx. As even in school-books there is confusion on this point, a few examples may be given.

'The inhabitants speak the Irish tongue only; they express themselves slowly but pertinently, and have the same language with those of Harries, and other isles, who retain the Irish in its purity.'—*Martin: A late Voyage to St Kilda.* London, 1698.

'Ye Irish lords, ye knights and squires,
Wha represent our brughs an' shires.'—*Burns.*

He alludes to the great Highland peers.

Of the converse—Abair i a n'Gaoilig (Say it in Irish). *Donlevy: Catechism.* Dublin, 1848.

O'n Ghreugais chum Gaelic albannaich (from Greek into Scotch Gaelic), *New Test.* London, 1840.

Ayns Gailck (into Manx). *Bible.* London, 1819.

[2] That even Dublin, the seat of the English Government, had inhabitants who could not speak English, is shown by a declaration of the Lord Deputy and Council, dated May 18, 1655. This edict, which is preserved in the British Museum, bound up with other Commonwealth proclamations, orders all Irish Papists, and all Protestants unable to speak the English tongue, to leave Dublin before June 20th.

[3] These MSS. are included in the manuscript catalogue of Irish MSS. in the British Museum, drawn up by Eugene O'Curry.

[4] Some of these traditions appear in the ancient glosses in Zeuss. Grammatica Celtica.

[5] The "Annals of the Kingdom of Ireland," "seeming," as Burke says, "clear-sighted in the obscure affairs of so blind an antiquity," give, as the date of this battle, the year of the world 3303.

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for him the kingdom. A physical defect was a bar to the kingly office, and Nuadhat could not have himself enjoyed the fruits of his victory, but for the skill of Díancécht, who cured the wound, and fitted on a silver hand. Díancécht's result was brilliant, but his method must have been slow, for the king was seven years under treatment.[1] The Irish dictionary attributed to Cormac MacCuilleanáin[2] makes Díancécht the pagan god of health and of healing.[3] He is always described as of profound learning, and his traditional estimation is shown by the fact that a summary of the judgments of authority in one of the ancient lawbooks ends by naming the judgments of Díancécht, the physician, "which were the first."[4] In several accounts of the households of great men, physicians are mentioned as officers of state.[5] It was one of the curious institutions of Irish society[6] that learning in several branches was hereditary. There were families of historians[7] and of lawyers.[8] So also the medical profession descended from father to son. For generations the family of MacDuinntsléibhe cultivated medicine in the north. Dallán Forgaill,[9] writing in the seventh century, alludes to the cure of a physician; and some of the earliest glosses, as those on Leviticus in the library of Corpus Christi College, Cambridge, show that there was a considerable nomenclature of disease.[10] A number of similar evidences might be accumulated, but perhaps enough has been said to show that before A.D. 800 physic in some guise was cultivated in Ireland, and cultivated with sufficient real or supposed success to obtain respect for the order that practised it. The British Museum MSS. show that later in history Ireland shared the general medical culture of Europe. These MSS. are nine in number. They range in date from 1450 to 1590, but in several instances are probably transcripts[11] from earlier MSS. I looked

[1] Annala Rioghachta Eireann ed O'Donovan, i. 16. Dublin, 1851.

[2] Born A.D. 831. Died 903. Stokes: Three Irish Glossaries. London, 1862.

[3] Id. p. 16.

[4] Ocus bretha Denchecht ó legib ce ro batur side i tus. Senchus Mór. "Ancient Laws of Ireland," i. 18. Dublin, 1865.

[5] As in the Aided Chonchobhair quoted from the Book of Leinster, by O'Curry. Lectures on the MS. materials of Ancient Irish History. Dublin, 1873, p. 638, and in the Household of Fionn, I think, in MS. Harleian 5280, fol. 39.

[6] Burke has mentioned this in his short but admirable account of the condition of Ireland in 1171. Abridgment of English History. Works: London, 1812, x. 470.

[7] O'Cleirigh: O'Maelchonaire.

[8] MacŒdhagain.

[9] Annala R.E., i. 216. See also Reeves: Adamnan, pp. 55, 345, for an allusion to the Irish practice of medicine in a MS. of the eighth century.

[10] Mr Bradshaw.

[11] I do not know whether syllabic misplacement is considered evidence of transcription. One would hardly expect an author to join the latter half of one word to the first half of the next, and to leave the extreme syllables as separate words

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into one of these MSS. last year; and finding Montpellier mentioned as the place of its composition, I determined, when an opportunity offered, to search the library of Montpellier in hopes of finding some trace of the author, who I guessed might have been one of the many Irishmen who studied abroad. The opportunity occurred, and at Montpellier I soon found that the Irish MS. was no original but a translation of the Latin medical treatise of one of the most famous men of Montpellier, Bernardus de Gordon.[1] On my return I examined the other Irish medical MSS., and one circumstance led me to the supposition that all were translations of foreign works. They none of them begin in the regular Irish way. An Irish author usually began by stating four things—the place, the time, the author, and the cause of the book. Thus begin those great lawbooks, the Senchus Mór and the Leabhar Aicle; thus that curious metrical tale of saints, the Félire of Oengus. Thus, in later days, wrote MacFirbis.[2] A

A transcriber, whether looking from one MS. to another, or writing from dictation, might easily fall into such blunders. Many examples occur in these MSS.—as

agus isi sobar amhail nandi aghairi

for

agus isi so baramhail na ndiaghairi,

and this is the opinion of the theologians (fol. 23, col. 2). Similar errors are found in transcripts of classical authors, as—

Αλλ' *αὐτὰ πάντα πάλιν ἀναστρέψας ἐγώ.* Αὐτὰ, hic ineptum et otiosum.
Lege sine dubio, 'Αλλ' *αὖ τὰ πάντα.*

Bentley. Letter to Kuster. Epistolæ. Lipsiæ, 1825, p. 24.

[1] So called from a town of France where he was born.

[2] Locc don laidse Teamuir, &c.
Aimser Laeghaire mic Neil, rig Eirenn, &c.
Persa na laidhe imorro Dubhthach Mac ua Lugair, &c.
Tucait a denmu na laidhi imorro, &c.
The place of this poem, Tara.
The time, of Laeghaire, son of Nial, King of Ireland.
The author of the poem, moreover, Dubhthach Mac ua Lugair.
The cause of the making of the poem, moreover, &c.
Senchus Mór, pp. 2, 4.

Loc don luibur so Aicill ar aice Temair ocus aimser do aimsir Coirpri Lifechair, mhic Cormaic ocus persa do Cormac budein ocus tucait a dénma caechad sula Cormaic do Aengus Gabuaidech. The place of this book, Aicill, near Tara; and the time of it, the time of Coirpri Lifechair, son of Cormac; and the author, Cormac himself; and the cause of its making, the blinding of the eye of Cormac by Aengus Gabuaidech. Lebar Aicle: "Ancient Laws of Ireland," iii. 82.

Cethardai condagar da cech elathain édon locc agus aimsir agus persa agus fáth airicc.

Four things appertain to every composition—namely, place, and time, and author, and cause whence it comes. Leabhar Breac. R.I.A. transcript, Pt. 1. Dublin, 1872, p. 75, col. 1.

The place, time, author, and cause of writing this book are: The place of it, the College of St Nicholas in Galway, &c. Firbis: Book of Genealogies in O'Curry, p. 121.

The preface to the Félire uses the word *fáth*, while the other examples have *túcáit*. Four words in Irish may be translated cause—túcáit, siocair, fáth, ádhbhar. The first and the second seem to have almost the same meaning. Bhuail sé mé agus nior thug mé siocair ar bith dhó (he beat me though I

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minute examination confirmed this suspicion, and I have found that all the MSS. are translations of Latin works.

As the authors translated are seldom read, it may be worth while to give some account of them while treating of the several MSS. The manuscript[1] which sent me to Montpellier is of folio size. It is written in the Irish character with numerous contractions, and in one clear hand throughout. On its vellum cover, and here and there on the pages, are trivial annotations[2] in a later hand. Its age is determined by the following passage written in red on leaf 92 :—

Aois an tighearna in tan do scriobadh an leabhar so 1482 agus isi an bliadhan sin do marbh Pilib MacTomais a Baira Pilip MacRisdeart a Baira.

The age of the Lord the time this book was written, 1482, and it is the year that Philip son of Thomas Barry slew Philip son of Richard Barry.[3]

Another note continues the history of the manuscript:—

Or do Ghearóid iarla do ceannuid in leabhar sa. Giúisdis na h-Erinn air fichit bó. Da caithearon agus fichi ata annsa leabhar sa. Cis Urmhúmhan air teacht do chum in h-iarla se fichit bo. In la da scribhadh an comhairéam so. Tomás O Mail Chonaire do thóg in cís sin do h-iarla. Bliadhain na ngras in bliadhain se a fuilim mile. bliadhair agus cúic ced bliadhain ais an Tighearna neamhda in tan sa.

A prayer for Gerald[4] the Earl, Lord Justice of Ireland, who bought this book for twenty cows. Two and twenty skins in this book. The tax of Ormond, one hundred and twenty cows, came to the earl on the day this was written. Thomas O'Maolchonaire lifted that tax for the earl. The year of grace this year in which I am, 1500 of the age of our blessed Lord at this time.

This passage, though in years not very ancient, carries one back

gave him no cause at all). Fáth is difficult to distinguish from túcáid. Ádhbhar may be used of material things, while fáth may not. Is ádhbhar báis agus beatha dhúm é (It is matter of life and death to me—*i.e.*, it is utterly provoking to me).

[1] Egerton 89.

[2] As at p. 149, where *leigis an fluxa* (cure of the flux) seems a marginal note of some reader.

[3] The family of Barry seems to have been divided against itself at this period. I have not found any record in history of this particular crime. Perhaps it was the cause of the killings mentioned in the Annals of Loch Cé, and in the Annals of the Kingdom of Ireland, at the year 1500.

"Barry Mór was slain by his own kinsman, David Barry, archdeacon of Cloyne and Cork. David was slain by Thomas Barry and Muintir Ceallacháin. The Earl of Desmond disinterred the body of David in twenty days, and afterwards burned it."—"Annals of the Kingdom of Ireland," vol. ix. p. 1257.

[4] Gearoit Mór, Gerald the Great, eighth Earl of Kildare. He was made Lord Justice of Ireland in 1478, and though at one time nominally removed, held the office till his death on September 3, 1513.—Mq. of Kildare : The Earls of Kildare. Dublin, 1858.

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into a remote period as regards the constitution of society. Cattle are at once the chief goods and the medium of exchange.

The MS. may be supposed to have lain in the earl's library for some years. It is not included in the list of the next earl's books, made in 1526.[1] Some writing on the last blank leaf, dated January 1616, indicates that the MS. was then owned by Charles Hicky of Clonlohan, in Clare; and it seems to have remained in this family for some time, for at fol. 104 *b* is written, "Charles Hicky is the true possessor of this book, and if it be lost, I pray God restore it home again, 1680." A note on the much darkened outside leaf is the next step in its history:—

Do leabhraibh Mathghamhna mac Mathghamhna Doctúir leighis daithle stuideair cheithre mbliaghan déag a bParis firfholomtha na frainnce.

From the books of Mahon Mac Mahon, doctor of physic, after fourteen years at the University of Paris, a learned man of France, 1728.

The MS. finally became part of the collection formed at the British Museum from the Egerton bequest. It is a translation of the "Lilium Medicinæ" of Bernardus de Gordon. The book begins with the following curious introductory chapter:[2]—

Ar na fiarfaidhe do neach icín do Shocrates cinus do fhedfach ní do rádh co ro mhaith. Do fhreagair gan ní do rádh ar sé acht ní bes agad co ro mhaith agus ní feadamur ní do bheith againn co ro maith acht ní a dubhramur co minic agus bes coitchinn ag cach uile agus o nach fuilingeann bochtaine an intleachta neithe deacracha coimhidheachta. Is uime sin do b' áil limsa ag múiniúgh a tighearna na nealadhan neithi coitchinna urusa tarbhacha do tráchtadh chum tarbha na ndainibh úmhal édhon leabhar do deanamh do praitic na healadan leigis agus os do dainibh umla scriobhaim é dicuirt lucht an dimus and sin oir is comhol ar leith bis acu agus ni hail leo suighi ar an mbord coitcinn maille cach agus bíd tarcaisneac ar na scribheanaibh coitcinna uair is nár leo ní do rádh da ndúbhradh rompa en uair gidheadh a dúbhairt Senica Nunquam nimis dicitur quod satis non dicitur édhon an ni nac abur co lór nil imarcach adur é agus a dúbhairt Oracius Deceis repetita placebunt édhon is blasta ni ar na friotal fa dheich. Mas osa dimbuan cuimne na ndaine ní nár limsa an ní a dubhram ar in praiticeacht a coitcinne friotal do lucht na húmhla oir ni heídir le neach dul nios foicsi do Dhia na ac stuidear anasa bhfirinne agus ar son na firinne do réir Galen seachtmhadh leabhar de ingenio. Acht an anoir an uain neamhdha as dealbradh agus is gloir do Dhia athair do bhirimsí Lili na

[1] Earls of Kildare, p. 317.

[2] The introductory chapters of the early books on physic often give pleasant glimpses of the time in which they were written. Thus Master Gulielmus Placentinus de Salaceto, in the preface to his Liber in scientia medicinali, says that he writes at the constant urging of Ruffinus, prior of St Ambrose, of Placentia, and his brethren, and also from love of his son Leonardinus, whom he hopes to bring up a physician.—Liber in G. P. de Salaceto. Venice, 1489.

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hEaladhan Leigis mar titul ar in leabhar oir is amhlaidh bis an lili agus blath imda uirre agus seacht nduilleóga geala agus seacht ngráine ordha in gach lili díbh agus is mar sin bheas an leabhar oir beid seacht pairthiail and agus biaidh an céd pairt dibh ordha deallrach solusta oir laibheóra sé do na galbraibh uli ac tinnscaint no na fiabhrusaibh. Cuig beidna parthail eli solus taithneamhac deallracht ar a méd bus follus gach ní da laibheoraid agus is and do tinnscnadh an leabhar seo maille fortacht De mhóir a stuidéar solus ghlan tsleibhe phisaláin daithle fichitheadh bliadhan d'ar leighthoiracht ne agus do bhi an dala in tighearna in tan sin mile bliadan agus trí céd agus trí bliadna agus a mi iuil do tinnscnadh é.[1]

A man having asked Socrates how to talk well, Socrates answered. "Say naught," quoth he, "but what you know well, and no thing is well known to us but the thing that we have often said, and that is common to every one." And since the poverty of the intellect is not up to hard, strange things, it therefore pleases me, trusting in the Lord of knowledges, to treat of common, easy, profitable matters for the advantage of humble folk: to wit, to make a book of the practice of the art of healing. And since I write it for lowly men, the race of the proud is not thought of in it. For they like an assembly apart, and it is not pleasing to them to sit at the common board, and they are wont to frown on every-day writings, for to say what was ever said before is shame with them, though Seneca says, "Nunquam nimis dicitur quod satis non dicitur"—that is not said too much that is not said enough; and Horace says, "Decies repetita placebunt," that is, tasty is the thing that is told ten times. Plain is the unlastingness of man's memory. To repeat what has been commonly said on practice is then no shame to me, for one cannot go nearer God than in studying truth and for the sake of truth, according to Galen in the seventh book, De ingenio.

Moreover, in honour of the heavenly lamb that is most shining and is the glory of God the Father, I give Lily of the Art of Healing for title to the book. For the lily has many flowers upon it, and seven white leaves and seven golden grains in each lily of them: and it is thus shall be the book; for there shall be seven parts in it, and the first part of them shall be golden, shining, lucid, and it shall speak of all diseases, beginning with fevers. Five shall be the other parts, and they too shall be light, pleasing, shining, and will make every thing clear of which they speak. It was in the light, clean University of Montpellier that, by the aid of Almighty God, this book was begun after the twentieth year of our reading, and the annals of the Lord

[1] In this, as in the other texts printed in this essay, I have expanded the contractions, and separated the words to the best of my knowledge. For the rest I have kept to the MSS., which in places give, and in other places omit, accents and aspirations. Omissions of eclipsed letters are frequent. I hope to examine on another occasion the terminology of these MSS. As I have had no experience in reading MSS., and have in every difficulty been obliged to judge for myself, I am sure that there are errors.

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were at that time one thousand years and three hundred and three years, and it was in the month of July that it was begun.

Research has added nothing to the facts of Bernard's life, which are to be found scattered through his works. This book was translated into several European languages; and Bernard's Lily was in the fourteenth and fifteenth centuries a work of authority from Italy to Ireland. After the invention of printing it was produced in a French,[1] in a Spanish,[2] and in several Latin editions.[3] The "Lilium Medicinæ" has not been printed in English, but in the Bodleian Library is a large paper MS.[4] containing an English translation.

The following chapter may serve as an example of the Irish style of the translation, and of Bernard's method:—

AN. 23.[5] CAIBIDEAL DINCOBUS.

Incubus edon fantasma in sompnis corpus comprimens et aggravans, motum et loquelam perturbans édon isé is incubus and tarbas bruidhis agus tormaigis an choirp an aimsir na chodalta agus buaidhis an gluaiseacht agus an urlabra.

Cause in incubuis imorro is ainm deamhuin e. Agus is uime sin isail le droing an tan bis an deamhuin comhdireach os cinn an cuirp duine agus cohairithi an tan bis ina codladh faen ar son na dala truailliudh do ní cotromaidhinn ar coirp inus co taibhrightear do combi aca muchad agus dathmath do leanbaib cighi is minic muchtur iat ar son nach feadaid aco mor sin do trailleamh dfhulang agus isi so baramhail na ndiaghairi.

Gidheadh adeirit na tuatha corob cailleach mbis ann ac saltairt ar an corp aga brughadh agus is nefni so. Agus isiat na leagha is fearr baramhail Connacht tic incubus ocus fath imillead no in m.z. aighi ocus fath imillead in. is follus in tan bis neach ina codladh agus tic fuasacht co hobann cul an cind fhaiscus agus duinius e no an tan codlus neach deis linta ro mor bidh agus dighi cause intrinsica imorro mar ata cio truaillidh ar na disc. ona liaibh duinus agus tormaighus an inchinn agus an croidhi inus nach feidir na spioraid do dail co himslan

[1] Cy finist la pratique de tres excellent maïstre et docteur en medecine maistre Bernard de Gordon appellee fleur-de-lys en medecine—et translate de latin en Francois a Rome lan mil ccclxxvii. on temps de pape Gregoire. Et imprime a lyon lan mil cccxcv. le dernier jour daoust. Deo gratias. The edition of which this is the last paragraph is in clear and beautiful black letter.

[2] At Seville in 1494. Hain. Repertorium Bibliographicum.

[3] I have examined the following: 1. Naples, 1480, fol. 2. Ferrara, 1486, fol. 3. Venice, 1494, 8°. 4. Venice, 1498, fol. 5. Venice, 1521, fol. 6. Paris, 1542, 8°. 7. Lyons, 1559, 8°. 8. Lyons, 1574, 8°. 9. Frankfort, 1617, 8°. There are slight differences between these editions. The pleasantest for reading are those of Ferrara, of Paris, and of Lyons, 1574.

[4] Marked Ash. 1505. A note in the MS., dated 1578, says that it was then owned by William Cock.

[5] Pt. ii. cap. 24 of the Paris edition.

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cum an choirp agus osanns na ballaibh fimillā istusca traighit na spiorta is uime sin taidhbrightear don othur corob o na cosaib tinscneas an tadbhas som agus co tachmuigidheam an corp uile cominic asa haithle dorm tromaighnad agus aighi insamo agus is uime sin labrus a gnuiseachtaigh ac iaraidh fortsa da fiádh labairt agus bith a crithnughadh uile ar son an eire thruim sin agus na deachge truaillidh duinis agus dorchaidhus na spiorta agus tic an deathach sin uairibh ann o fuil d. agus uair eli o colera agus uair o flegma agus uair eli o melancholia.

Signa.—Dogabur comtarda na haislinne so tre foillangan otar fen. Comtarda na leanta vero is minic a dubradh iat.

Pronosticacio.—Cibé cum a tīcfa co minic so is h.—inn cōra ac eachtar dibh so edon apoplexia no epilepsia no spasmus no paralis no co fuighi bas oband agus dati do neach ina duiseacht is measa mar sin e agus dati allus fuar de ar na duiseacht agus a beith maille crith croidhi is ro olc.

Curacio.—Àn ti cum a ngnathaighin so teacht artus aigi companach gradhach duiscocus e an tan do cluinfi e ac labairt acosmhailus guil agus coimlidh acosa agus alamha corola ud. agus croith uisce rosa ar a agaidh agus urail tr. sc. rair agus tabairt dianthos cum musco do no diaambra agus is maith f. seacht sacas so aradh semper habi pixittem aliquem qui curet horistem edon bith buxhin do s. agart leaigheosus horistes madh.

Ma o fuacht ro moir an cinn bes comiltear e le holeum luarinum no le holeum ancostus agus na ruibhe con a cosamailibh.

Ma o lind imaraach ingaile bes dentur scathreach agus clistridha agus aibstinensia agus mad o fuil do bes ligthear cuisle agus madh o leanntaibh eli folmaighthear iat mariaraid agus cuirtear ieralogodion agus ierarufim dosin ina cumux agus bith an dieta seim agus bid fen cosubhach fonbaileach do shir agus scarnadh gach uile intuirseacht agus gnathadh le agus lictuaria comfortachta an cridhi mar ata diacameron agus diaairadadon iulii agus a cosamhail no folmaighthear le heuforbium agus le pulpa colloquintida ar nanullad agus ar na s'anugad in. is do.

INCUBUS. Chap. 23.

Incubus vid. fantasma in somnis corpus comprimens et aggravans, motum et loquelam perturbans; that is, incubus is an apparition bruising and weighing upon the body in the time of sleep, and confusing movement and speech.

Causa.—The incubus, moreover, is the name of a demon, and it is therefore that some people hold that when this demon is right upon the body of the person, especially when he is asleep, empty because of the corrupt influence, that he presses upon the body, so that the patient dreams that he is being smothered. And in the case of sucking children they are often smothered because they are unable to suffer so much corruption; and this is the opinion of the theologians.

Although the laity say that it is a hag that is in it a-jumping about

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upon the body bruising it, and this is naught; and physicians have a better opinion.

Incubus either comes from an internal or external cause: if external, for example, when the patient is asleep, coldness comes suddenly upon the back of the head squeezing and shutting it, or when a body sleeps after being filled too much with food and drink. The internal cause, moreover, is corrupt fog arising from the humours closing and oppressing the brain and the heart, so that the spirits are not able to go fully to the body; and thus since it is in the members that they are soonest at an ebb, therefore it appears to the sick that this phantom appears to arise from the feet, and afterwards little by little covers the whole body. . . . . And, therefore, he speaks, grunting, asking help, if he could speak, and he is altogether shivering because of that heavy burden, and in consequence of the shutting up and obscuring of the spirits.

And that sometimes comes from blood, and sometimes from a great cholera, and sometimes from phlegma, and sometimes from melancholia.

Signa.—The symptoms of this dream are indicated through the suffering of the sick man himself.

The symptoms of the humours: it is often they were said before.

Pronostica.—To whoever this often comes, unless relieved, he will fall into one of the following:—Apoplexy, epilepsy, or spasm, or paralysis, or sudden death. And if it come to a person awake, it is worse; and also if it come with a cold sweat while awake, and if it come with palpitation of the heart, it is worst of all.

Cura.—First of all, the person to whom this is wont to come, let him have a beloved companion who will waken him when he hears him speaking like crying, and who will rub his feet and his hands strongly, and will sprinkle his face with rose-water, and will give an emetic and dianthus with musk or diambra, and in such case it may be well said that there is always some Pylades who will cure Orestes.

If the disease come from too great cold of the head, let the head be rubbed with laurel oil, or with costine oil, or with oil of rue, or such like. If the disease come from too great filling of the stomach, let an emetic be given with clysters and fasting; and if the disease come from the blood, let a vein be let; and if from other humours let them be emptied out as they demand, and at the same time give him hierelogodion or hieraruffi. Let the diet be smooth, and let the patient himself be continually merry and cheery, and free from every kind of fatigue, and let him use such electuaries as comfort the heart—as diacameron, diarodon Julii, and such like.

Or let him be emptied out with spurge and colocinth pulp prepared in the proper manner.

Bernard, in his first book, treats of nine kinds of fever, of smallpox, of the bites of snakes, scorpions, bees, and mad dogs, and of a variety of sores and skin diseases.

His second book is occupied with diseases of the head. As

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was usual with authors of his time, he begins with affections of the hair, and goes on to nervous affections. I quote part of his chapter on epilepsy, for it gives us a glimpse of his mind :—

Nevertheless, I say to you about epilepsy, that I have treated many, young, old, poor, rich, men and women, and of almost every kind of epilepsy, and yet I have not myself, nor have I seen any one else, cure any patient who was not young, or one where the disease was due to unhealthy way of life, and had not been long established, though I did my best in every case, and though the patients were obedient. Here I am ignorant, but God has knowledge. And I say this, so that when patients come to you you may avoid disgracing yourselves by empty and untrue promises of curing epilepsy, because every epilepsy is eradicated with great difficulty, if at all.

When the patient is in the fit, if some one puts his mouth over the ear of the patient, and says three times those three verses :—

> " Gaspar fert mirrham thus Melchior Balthasar aurum
> Hæc tria qui secum portabit nomina regum
> Solvitur à morbo Christi pietate caduco."

without doubt he will at once get up. That this is efficacious when repeated in the ear is true, and it has often been proved that he gets up at once. And it is said that the same verses written and worn round the neck cure entirely.

The third book treats of diseases of eyes, ears, nose, teeth, and gums.

The fourth of those of the throat and chest. His test for the existence of ulceration of the lungs is a frothy sanguineous sputum, followed by a purulent.

Book fifth is on diseases of the alimentary canal.

Book sixth on diseases of the liver, spleen, and kidney. Like other writers of his period, he makes three kinds of jaundice—citrina, viridis, nigra ; and he writes at length on the cause of each.

The seventh book treats of a variety of general questions, and of points omitted before.

He ends thus :—

As intuicthi anso gor ordaighmar maille grasaib dhia ceithre h-oibreacha fada o shin arson nahaibri so agus da curlai so ma ceann do budh obair maighudreach foirsi hi agus leabran don follamnugud na neslaintidhe ngear agus leabar faothugadh agus do na laeithibh saothaigthi agus leabar darub tihil clar na niuntleacht agus leabar na cemhinn agus is nefni e ndearnadh ina negnais so.

This is to be understood that we intended, by the grace of God, four long works from this on account of this work, and then would this be the work of a perfect master. And a little book on the regimen of acute diseases, and a book on the crisis, and on the critical days, and a

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book of which the title should be a table of the intellects, and a book about graduation; and without these nothing is done.

The first printed edition of Bernard is that in folio of F. de Tuppo, Naples, 1480. The Irish MS. differs[1] from this, the only precedent edition, and is therefore a translation from some MS. once extant in Ireland. Among the MSS. are translations of some of his other works, which will be mentioned in their places. Enough has been said to show that Bernardus de Gordon deserved his reputation. He was versed in all the medical books of the age. If his observant glance was sometimes obscured by the hypotheses engrained in his mind, one may be sure, from the way in which he speaks of his art and of his patients, that though his skill was often unable to determine or to cure the disease, he never came to a sick bed without bringing comfort to the sufferer in his kind words and manner.

John of Gaddesden was a contemporary of Bernardus. They are celebrated in the same line of Chaucer, and a perusal of the "Rosa Anglica"[2] shows that it is a flower grown in the same Hortus medicus as the "Lilium Medicinæ."

Part of the Rosa Anglica de Regimine Sanitatis begins in one MS.,[3] but it is only continued for a few lines. In another MS.[4] this section is translated at length.

Gaddesden[5] was well read, and it may not be uninteresting to enumerate the authors which are alluded to in the part of his work translated into Irish. It is no slur on the learned society[6] of which he was a member, to suppose that in that age he had read the books he named in Latin only; but of Greeks he cites Hippocrates, Aristotle, Rufus, Galen; and of the Arabians, Haly, Avicenna, Averrhoes, Isaac, Damascenus. He also quotes many lines from the famous work on hygiene, "Regimen Sanitatis Salerni." As Irish is one of the few European tongues in which this book has not been printed, examples may be of use to some future editor:

[1] For example, Part 1 in the MS. has thirty chapters, in the printed book thirty-one. The lily in the printed book is stated to have "tria folia candida et sex genera quasi aurea."

[2] The old medical books have all manner of odd titles, and sometimes their authors are quoted under names derived from these. Thus the preface to an abstract of the "Lily" which I found in a MS. in the Bodleian Library (Laud. 617), talks of its author as Liliator.

[3] Harleian, 546. [4] Additional, 15,582.

[5] There is an accurate and interesting account of Gaddesden in Dr Freind's "History of Physic." Having had occasion to consult several, I found this the best history of physic in English. It contains a vast store of reliable information, and for its period (Galen to 1500), I found no foreign book that surpassed it.

[6] Merton College, Oxford.

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[1] Is moran pian do goile supair na hoidche.
Ma hail leat bidh edrum biot do shuipear co gearr.

Great is the torment to the stomach of supper at night.
If thou wishest to be light, let thy supper be short.

[2] Madh ail beith follam agus madh ail slán do denumh dit.
Tóg uait na h-imsniamh trina agus creid corob dimain duit fearg do denum.
Agus coigil an fín agus scrain an supeir agus na rub dimain lat.
Ceimnug deis bidh agus scrain codlad an meadon lae.

If thou wishest to be sound, and if thou wishest to have health,
Raise from thyself the heavy cares, and believe that it is idle for thee to wax wroth;
And spare the wine and leave the supper, and it is not idle for thee
To arise after meat, and to shun mid-day sleep.

[3] Ase an crídhi do bheir h-ealadhna,
Agus an scamháin labhrus,
Agus an domblas gluaisis an fearg,
Agus in tshealg do ni an gaire,
Agus jecur coimhleanus chum gnidhighthi.

It is the heart that gives knowledge,
And the lungs that speak,
And the gall that moves the wrath,
And the spleen that makes the laughter,
And the liver that gives origin to pleasantness.

The MS.[4] containing this piece of Gaddesden is of octavo size, and of vellum.

Bound up with it are some later writings in English, but written in the Irish character. The initials are illuminated, and the hand is tolerably clear, but there are many contractions.

The next piece is a series of chapters on various diseases and on surgical affections, a translation or abstract of some writer later than the year 1100; for in the chapter on gout, Platearius[5] of Salernum is quoted, and he is counted a writer of the twelfth century. The chapters are short. I have compared the MS. with many writers, but have not found its original. It may, perhaps, be an abstract of some commentator on one of the better known authors. The practice of cramming seems not to have been unknown even in the

[1] Generales regulæ cibationis, l. 27, p. 30. Schola Salernitana (ed. Daremberg). Paris, 1861.
[2] Procemium, p. 2 id.
[3] Organorum vis psychica, p. 140 id.
[4] Additional, 15,582.
[5] His chief work is called "Practica Brevis." There were five physicians of Salernum named Platearius—two named Matthew, and the others all John. John II. and Matthew II. were the most distinguished. See "Collectio Salernitana," edited by Salvatore de Renzi. Naples, 1852. 4 vols. Vol. i. pp. 180, 228, &c.

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infancy of universities. In the Bodleian MSS. which I looked through, there were several of a few pages which contained the substance of some voluminous book. Among early printed books, Dr Ketham's[1] "Fasciculus Medicinæ" is an example of the same, and he has tables of tests, of diseases and of wounds, which forcibly call to mind the sheets and diagrams by which the modern undergraduate tries to save himself the trouble of reading or understanding his author or his work, whether it be Paley, or the relations and anastomoses of arteries. Most modern discoveries are said by critics to have been made centuries ago. It is consoling to find that if we can do no more than our ancestors, they had yet the same failings as we.

The MS. seems to be by more than one hand. The following note on fol. 29 *b* shows how hard the times were:—

Sri uaim duit a eóin agus ní ró maith é dom dhóith agus ni hingnud sin, is corrach ataim ag tethedh roimh thsaxunachuibh ar fud choillid neill agus is ar in coill hein do sgribhus cuid de agus do dhil me an croicinn misi Cairbré.

There it is from me to thee, O John! and I think it is not very good, and that is no wonder; I am tired from hiding from the Saxons in Neill's wood, and it was in the wood I wrote part of it, and prepared the skin. I am Cairbre.

Two other notes are not dated. A third gives us a year:—

Ag sin crioch ar an leabhar sin duit a Eoin! Meg bethaidh o dani o Cearnaig agus na tora buadha agus ratha leis duit agus do bi aois an Tiagerna antann do scribadh an leabar so edon mile bliadhain agus cuig ced agus tri bliadhna agus tri fithid.

I here end that book for you, O John MacBethaidh, of Donnycarney, and may the three virtues and graces be with it to you; and the age of the Lord when this book was written, a thousand years and five hundred and three years and three score.

At the end is a fragment of Bernardus.[2]

The MS.[3] mentioned above as containing a few lines from Gaddesden is the oldest of the collection. It is of vellum, and of octavo size. The pages are dark, and the writing much contracted. The first eleven leaves contain a treatise on medicines. On fol. 11 *a* the following passage gives the date, author, and translator:—

Tairnic an sin libur galteruis do dosib na leann. Cormac Macduinnth-Shlebi do cuir in tsium so a ngaeidheilg do Diarmaid MacDomnaill hi leigin agus gur foghna dosan agus docloind a tarbaighi do comain, etc. In cethrumhadh la do calaind april do crichnaighedh in foircedal so

[1] Printed before 1508.
[2] De Urinis.
[3] Harleian, 546.

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a cluain Namha sa bliadain dar b'annalla don Tigearna in nuimir si do bliadnaib 1450.

There ends the book of Galterus of the doses of the decoctions. Cormac MacDunslevy it was that put this portion into Irish for Dermot, the son of Donell O'Seini; and it may serve him and his children as a profitable gift. The fourth day of the calends of April this work was finished at Cluain-Uama, in the year when the annals of the Lord were this number of years, 1450.

The family of MacDuinnthshleibhe, of which this Cormac was no doubt a member, has produced many physicians, whose fame has been sufficient to secure them a place in history. The "Annals of the Kingdom of Ireland" mention as celebrated no less for their general than for their professional learning, Dr Muiris,[1] who died in 1395; Dr Donnchadh,[2] who died in 1526; and Dr Eoghan,[3] his son, who died in 1586. The MacDuinnthshleibhes were originally, say historians, chiefs of Down. About the year 1200, John de Courcy drove them from their territories, and they settled in the district now called the barony of Kilmacrenan, and became the hereditary physicians of the O'Donnells, chiefs of Tirconnell.

This district, named in Irish Cillmicnenain, is one of the wildest in the island. Its surface is everywhere rugged. Great mountains are to be seen on every side. Some are of quartz, sharp-pointed and with bare peaks, which look white in the sun. Others of granite or of schist form rounded masses, or long ridges. Between these mountains are deep glens and broad tracts of moorland. The view from any of the mountains to landward is of a country of heather and rock, with many lakes; and towards the sea, of a deeply indented coast-line, with lofty cliffs beaten by the unbroken swell of the Atlantic. The Peregrine falcon may be seen any day, and in the more lonely parts I have watched the golden eagle, and the white-tailed eagle, and the raven. A traveller would suppose that such a region could produce only ignorant mountaineers. But these wilds deserve respect throughout Europe, for among them St Columbcille was born and educated; and besides the most celebrated physicians of Ireland, they have produced several famous literary men and chiefs. The barony, formerly called Cinel Luighdhech, was the original possession of the great family of O'Donnell. All the native owners in this district were dispossessed in the reign of James I., and the physicians with the rest. About ten years ago, when in Kilmacrenan, I found that some of the MacDuinnthsleibhes[3] were still living there.

[1] "Annals of the Kingdom of Ireland," iv. p. 742.
[2] Id. v. p. 1389. [3] Id. v. p. 1856.
[3] August 9, 1608. Calendar of State Papers: Ireland (1608–10), p. 570.

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To return to the MS. The nature of each drug is described, with its varieties, the time for gathering it, &c., and lastly, its doses. Scammony,[1] rhubarb (Indian and Pontic), colocynth, turbit, agaricus, hellebore, esula, euphorbium, polipodium, lapis lazuli, lapis aremenicus, senna, black hellebore, violet, prune, cassia fistula, manna, tamarind, and a few other drugs are named. Some remarks on pills, cathartics, and electuaries, and on doses in general, follow; and the treatise ends with a chapter on opiates.

Leaves 12–56 contain short chapters on a variety of diseases, beginning: Do galbraib an chind agus ar tus do tuitim an fuilt. (Of diseases of the head, and, first, of the falling of the hair) Greyness, baldness, vermin, scab, wens, headache, mania, phrensy, apoplexy, lethargy, scotomia,[2] vertigo, epilepsy follow.

Cormac, in his dictionary, distinguishes six kinds of baldness—*Rangc*, where the temples are high; *rach*, brow to crown bare; *romáile*, ear to ear bare; *sal-tri-asa*, bald at top; *buide réid*, absolute bareheadedness; *imspelp*, a patch of baldness on each side, of a median hairy tract.[3] This treatise, however, does not allude to these terms, and as Cormac's work was well known among literary men in Ireland, this is an additional proof that the writer was translating, not composing, an original work.

Fol. 57 contains the lines from Gaddesden.

Fol. 58 is blank.

Fol. 59–69 are on fevers, from what author I did not make out. It is not from any of the treatises on fever contained in the collection printed in folio at Venice in the year 1576.

70–72 contain a piece from Gordon.

On fol. 55 *b* there is a specimen of the kind of question which physicians of that day delighted to discuss.

In the days when there was so much talk *de ente et essentiâ*, words seem to have been often too much for men. One mediæval writer whom I have read puzzles himself with the question of how it is that a man will live longer on bad food than on no food at all. It is quite contrary to logic, he thinks, but yet is asserted on good authority to have been proved experimentally. The custom of arguing out set questions continued, even among great physicians, after the decay of the scholastic system. That able practitioner, Felix Platerus,[4] of Basle, in his "Centuria Quæstionum," debates: Whether the fingers are transparent; whether

[1] The resin is meant, for the MS. says: Sugh gne feadleóigi—Juice of a kind of woodbine.

[2] Seems to have been used for a kind of vertigo, and not in the modern sense of a peculiar defect of vision.

[3] Stokes: Three Irish Glossaries, p. xix.

[4] He wrote shortly before and after the year 1500.

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the spirits are three—vital, animal, natural; whether hunger is better borne than thirst.

Here is the question in the manuscript:—

Cionnas tuicter dias do daoinib darb ionann aois agus oileamain agus naduir agus complesc agus eslainti agus nach ionann leigis doib.

Misi eoin o callanain do graip an ceis sin.

How is it that two men that are of the same age, and nourished alike, and of the same constitution, and of the same temperament, and with the same disease, are yet not cured by the same remedy?

I am John O'Callanan that puts the question.

The most crabbed of all the manuscripts[1] remains to be described. It is partly vellum, partly paper, and is bound of octavo size, but its leaves are of several dimensions; a few are mere strips of parchment. It contains some philosophy and astronomy, and several treatises on medicine.

The philosophy is a bit of Aristotle, and a translation of part of Burlœus. From the style I think it is from his commentary on the ethics of Aristotle; but in a somewhat hasty examination of that work[2] I did not find the passage.

The first treatise on medicine is a translation of Philaretus on the pulse. A few lines at the end are defective. Who this Philaretus was seems doubtful. Freind has nothing to say about him but that his authorship of this piece is uncertain.[3] His treatise[4] is short, and is based upon Galen's on the same subject. Philaretus, however, only describes ten varieties of pulse, while Galen makes twenty-seven kinds of pulse as regards size, and twenty-seven as regards rate.[5]

The next forty-three pages contain translations of Isidorus, of Burlœus,[6] of Averrhoes, of Galen's Microtegni, and of the Aristotle of Albertus Magnus.

Averrhoes is mentioned at length in all histories of medicine. This is a translation of part of his great treatise on medicine

[1] Arundel, 333.

[2] Expositio G.B. super decem libros ethicorum Aristotelis. Venice, 1500.

[3] "History of Physic," i. 250.

[4] This treatise was printed at Lyons in 1519 in an octavo volume, which also contains Hysagoge Joannitii in medicina, Liber-urinarum Theophili; several books of Hippocrates, translated by Arnald de Villa Nova; the Aphorisms of John Damascenus; selections from Celsus; parts of Galen; Liber canonis, translated by Gerard of Cremona; Cantica Avicennæ, translated by Armegandus Blasius of Montpellier; Tractatus noni Almansoris, and Jacobus de Partibus, a work based on Mesue. Several such collections were published at Lyons about this date. The list is interesting as it shows what medical books were then in demand.

[5] Galeni opera de pulsibus Hermanno Cruserio campensi interprete. Paris, 1532.

[6] From the De Urinis of both authors.

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called "Colliget." Of Isidorus I know nothing. His works are named in the catalogue of the library at Canterbury in the year 1300.

What is, I think, some more Galen comes next.

There follow a variety of chapters on disconnected topics—pulse, temperament, fevers.

At p. 83 is an abstract made up from Bernardus and from Isaac, at 98 some Aristotle, and at 112 an incomplete translation of Isaac on Diets. This Isaac is said to have been a Jew, and the adopted son of Sulaiman, King of Arabia. His book on diet is tedious. He describes all varieties of food, but with so much of the jargon of hot and cold, moist and dry, that little is to be learned from him. As illustrating the state of horticulture in his day, it is interesting to note that Isaac mentions nine sorts of apples. Phillips,[1] writing eight hundred years later, names but fourteen. The following passage is a fair example of the style of Isaac:—

Ata smir an droma ro fhuar ro fhleoch anaice feg smeara na cnam eile oir is cosamhail risin inchinn hi gideadh is cruadi isi agus as luga a fleochadh agus condiliaigh tar co mait hi do bher oileadhain is mo agus is mire na do bher an incinn uaithi.

Smir na cnamh eile umorro as fearr a blas na blas an smeara smenntain gidheadh do in fastidium agus oileadhain go mor an tan diliaigh go mait hi.

The marrow of the back is colder and moister than that of the other bones. For it is like the brain, although it is harder and its moisture is less; and if it be well digested, it gives more nutriment than the brain gives.

The marrow of the other bones moreover has a better taste than the marrow ——, although it causes nausea, and when well digested it gives much nutriment.

At the end of this fragment is written "Explicit historia." The same hand has written at the beginning of the MS., "Historia de terra Pictica in lingua pictica conscripta," and the price, and at the foot of the same page, "Wm. Howard, 1596." The price is a little indistinct. It could hardly have been too high had the MS. contained two such important additions to history as a local account of Pictland, and a specimen of the Pictish tongue. The purchaser seems to have been grossly imposed upon, for at p. 17 *b*, as a note to an account of the several complexions of men in which the number *four* is prominent, he has written: "Nomina provincarum terræ picticæ. Terra Pictica in 8 partes divisa quas Angli provincias vocant." One can imagine the impostor who sold, and had very likely first stolen the MS.,

[1] Cyder, Bk. p. i. 29 (ed. London, 1708).

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pointing out to the English antiquary its several parts, and gravely pretending to read bits of history from a treatise on medicine.

Since the parts of animals are different they must have different effects as articles of diet. Since they have different effects each must be useful in a particular disease. As there is a drug effective in each malady and acting on each organ, so there must be an article of food for each organ and for each disease. This is the argument which runs through Isaac, and other works on diet of his age.

Some more Aristotle and a short treatise on the virtues of gems, fill up the remaining leaves.

This MS. affords more than one passage giving its author and its date. At fol. 20 :—

Mice donnchad do sgrib so agus a dtig eoin albanaigh ata fein agus domhnall o leighin.

I am Donoch who wrote this, and it is in the house of John of Scotland that I am myself, and Donal O'Leighin.

At fol. 35 *b* :—

Agus as ann do crichnaidhigh an tex denach dib an la andiaigh lae eile Padraig a cill ingine baeit agus ase dob ais do tigearna an tan sin m Cliadhain agus v ced agus xiiii. bliadna co nodlaig so cugainn.

And the last text of them was finished on the day after the feast of Patrick at Cill Ingheine Baeith,[1] and the age of the Lord at that time was a thousand years and five hundred and fourteen years come Christmas.

At fol. 82 :—

Agus a tig doninaill i throightig do scribhead an beac so anno domini 1519 agus misi donnchadh.

And in the house of Donal O'Troightigh I wrote this book, A.D. 1519, and I am Donoch.

At fol. 113 *b* :—

Tairnic an sin sium trachtad ball nainminntead o isaac in dietis particularibus[2] agus cormac mac duinnleibhe baisiller a fisighecht do cuir an gaideilg agus do sgrib do deinis o eacodearn ansa cairt he.

This treatise on the limbs of animals is extracted from Isaac, In Dietis Particularibus, and Cormac MacDuinntsleibhe, Bachelor of Physic, put it into Irish, and wrote it for Denis Heron upon this parchment.

[1] O'Curry in his catalogue says that this is Kilnaboy, near Corrofin, County Clare.

[2] The name of Part ii. of Isaac's work on diet. This part was printed at Padua in 1487 in black letter. A better edition for reading is that of the whole work, printed at Basle in 1570.

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A small MS.,[1] which has the date 1519,[2] begins with part of Bernardus, and also contains two fragments, one on blood-letting and one on anatomy.

Another MS.[3] is a fragment from the "Lilium Medicinæ." It is on paper, and has twenty-three leaves. The following passage tells its date :—

Finis a.d. 1592, an 30 la do mhi Januarius do scribhad an beacan sin do dereadh in leabuir agus mo daid uilliam do bi aga thabhairt dam agus co ndingnadh dia trocaire air fein agus orainsa. Sin duit maille benachtain a thadhg mic caisin.

Finis A.D. 1592, the 30th day of the month of January, this little bit of the end of the book was written ; and it was my father William that gave it out to me ; and may God have mercy on him and on me. That for thee with a blessing o Tadg MacCaisin.

There is one small vellum MS. without date. It is probably of the end of the fifteenth or beginning of the sixteenth century, and is a short treatise on materia medica, defective at both ends. The scribe seems to have added nothing from his own knowledge, and no more is said on herbs found in Ireland than on those which are foreign.

The names of the drugs are first given in Latin. Often the Irish name is a mere repetition of the Latin, sometimes a vague explanation. Thus assafœtida, balsamum, borax, euphorbium, licium, have for Irish equivalent *gum croind*—gum of a tree. The following Irish names deserve note :—

Carduus benedictus,	an torcan.
Dens leonis,	in searban muc.[4]
Eliborus niger,	in tathabha dubh.
Edera arborea,	eigeand na craun.
Edera teairasteus,	in t-eagenn talman.[5]
Herba sanctipetri,	in sobairgin.
Lactuca,	leatus.
Lanciolata,	in slanlus.[6]
Petrosillinum,	parsilii.

A MS. written on paper by Séamus O'Bróin in 1736 contains a passage on the hare from Isaac, and some notes of medical terms, but is obviously of no authority. A single sentence will show the style :—

[1] Arundel, 313.

[2] Anno domini au tan graifnedh an beac so 1519—A.D. the time was written this book, viz. 1519.

[3] Egerton, 159.

[4] One name used for dandelion at present is Cos searbhán.

[5] In add. 15,582 a bath of ground ivy is recommended for a fever, fol. 40.

[6] Still used by the country people to put on cuts. All-heal, plantain.

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Ainchinn an mhíol do choimilt do charabad na leanabh mbeag agus fásadh na fiacla gan tinneas.

The brain of the hare to be rubbed on the gums of small children, and the teeth will grow without ailment.

The following Table shows roughly the subject, the date, and the title of each MS. :—

TITLE.	DATE.	CONTENTS.
Harleian, 546.	1450.	1. Fragment of Galterus on Materia Medica. 2. Chapters on a variety of diseases. 3. Gaddesden de Regimine. 4. Chapters on Fevers. 5. Fragment of Bernard De Urinis.
Egerton, 89.	1482.	1. Bernardus : Lilium Medicinæ.
Arundel, 333.	1514.	1. Philaretus on the pulse. 2. A variety of fragments : Isidorus, Averrhoes, Aristotle, Burlœus, Galen, some of them abstracts. 3. Isaac In Dietis. 4. Various chapters on Nausea, &c. 5. On the Virtues of Gems.
Arundel, 313.	1519.	1. Bernardus De Urinis. 2. Another fragment of Bernardus. 3. Passage on Stomach and Liver, from some other author. The style is Galenic.
Additional, 15,582	1563.	1. Gaddesden de Regimine. 2. Various chapters on Diseases. 3. On Materia Medica. 4. On Wounds. 5. On Phlebotomy, with a curious diagram. 6. Bernardus De Urinis.
Egerton, 159.	1572.	1. Fragment of Lilium Medicinæ.
Additional, 15,403.	No date.	1. On Plants used in Medicine.
Egerton, 158.	1736 .	Various.

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In the library of the Royal Irish Academy in Dublin, there are numerous MS. treatises on medicine in Irish. These would, no doubt, increase the evidence that the medical authors read in other tongues were not unknown to those who studied in Irish. It has often been assumed by historians ignorant of Gaelic, that after her early period of learning Ireland was outside the circle of European letters. The Irish translation of Marco Polo, and of parts of Aristotle and Burlœus, and these MSS. prove the contrary. They show that Hippocrates, Galen, Averrhoes, Avicenna, Avenzoar, Isaac, John Damascenus, Platearius, Serapion, Haliabbas, Raby Moses, Constantine, Philaretus, Bernardus, Gaddesden, Gilbertus, and others, were known in Ireland. In short, the reading of the Irish physician was that of his day, and may be summed up in the words of Chaucer:—

> "Wel knew he the olde Esculapius,
> And Deiscorides and eek Rufus;
> Old Ypocras, Haly, and Galien;
> Serapyon, Razis, and Avycen;
> Averrois, Damascien, and Constantyn;
> Bernard and Gatesden and Gilbertyn."

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ON

IRRITANTS AND COUNTER-IRRITANTS,

WITH REMARKS ON THE

USE OF BLISTERS IN RHEUMATISM.

BY

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Under the terms irritants and counter-irritants we include those substances which first cause redness and then inflammation, when applied to the surface of the body. When they are used for their effect upon the part to which they are applied, as *e. g.*, a blister to a callous ulcer, they may be termed irritants; when used for their effect on a distant part, *e.g.*, a blister to the chest in pneumonia, they may be termed counter-irritants.

But, before beginning to say a word about their action, it may be advisable to try to clear the way by correcting a common error regarding congestion and its relation to inflammation. Congestion generally means that there is more blood than usual in some part or other of the body; but the blood may be either streaming rapidly through the vessels, or stagnant in them, so that the condition in the two cases is utterly different. When the sympathetic nerve is cut in the neck of a rabbit, the vessels of its ear become dilated, the ear itself becomes rosy-red, and the warm blood coursing rapidly through it raises its temperature. We then say that the ear is congested.[1] If we tie a ligature round a finger, and leave it there for some time, the finger gets swollen, cold, and blue, and we again say the finger is congested. But the different colour of the parts is enough to show us that there is a great and important difference between the congestion in the ear and that in the

[1] In his lectures on Surgical Pathology, Sir James Paget wisely designates what I have here called congestion, as determination of blood to a part, and limits the term congestion to the condition which is present after stasis has begun.

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finger; and as the colour is due to the blood shining through the vessels and tissues, we at once ascribe the rosy colour of the rabbit's ear to bright arterial blood filling the arteries and capillaries, and the dusky hue of the finger-tip to dark venous blood filling the capillaries and veins. But not only is there a difference in the vessels which are distended in these two kinds of congestion, there is also a difference in the current through them. In arterial congestion the blood is streaming rapidly through the vessels, bringing a constant supply of fresh oxygen and fresh nutriment to the tissues, and removing the waste products as rapidly as they are formed, so that the part in which arterial congestion is present is in the best possible conditions for health and growth, and for repair if it should happen to be injured. This arterial congestion is usually distinguished by the term active congestion. In venous congestion there is no doubt more blood than usual in the part, but it is of no service to it, for it is stagnant. Instead of bringing fresh supplies of oxygen and nutriment, it remains in the vessels until its oxygen is entirely consumed, and its colour becomes almost black; the products of waste accumulate in it, and interfere with the nutrition of the tissues, as the ashes in a grate choke the fire. Nor is its injurious action negative only, it is positive as well; for while it does no good itself, it keeps the vessels filled, and prevents any new blood from entering them. This is venous, or as it is often termed, passive congestion. Judging by the pictures I have just drawn of the two sorts of congestion, one would say there could be no doubt which was the better, and yet one would look more alarmed at the news that some organ was in a state of active congestion, than if he were informed that the congestion was passive. The reason of this is, that active congestion is frequently regarded as almost synonymous with inflammation, whereas the two are widely different. Congestion may, and very frequently does, exist without inflammation, and inflammation sometimes exists without congestion, although generally accompanied by it. Nothing is easier than for any one to convince himself of the fact that arterial congestion may exist without inflammation. Let him put his hand into warm water for a little while, and on taking it out he will find the whole skin of a uniform rosy-red, showing that all the capillaries are dilated and filled with bright blood; the veins will swell up, become light-blue in colour, and when emptied by gentle pressure, will fill rapidly, showing that they too are full of bright blood, and that the circulation through them is rapid; the hand will be larger than before, and rings which previously fitted will now be too small for the fingers; the skin will be warmer than before, even when time has been allowed for the warmth due to the water to

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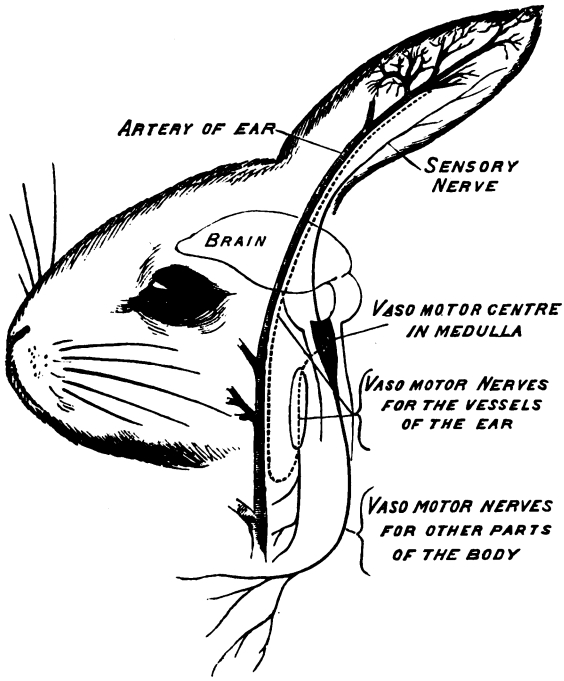

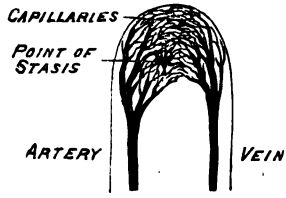

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pass off; in fact, three of the signs of inflammation, *rubor*, *tumor*, *et calor* will be present, but instead of the *dolor* there will be a feeling of great comfort, whereby the hand signifies to its possessor that it is for the time being in superabundant health. Perhaps the experiment is even clearer if, instead of putting his hand into hot water, the observer will take a look either at his own or his neighbour's hands after a good dinner and several glasses of wine. The same redness and swelling is noticeable, and the warmth can also be observed, although no extraneous heat has been applied to the surface, as it had in the other experiment. Nobody would think of calling the hands inflamed in either of these two instances, for we all know that in a short time the redness, &c., will pass off, leaving them in their ordinary condition. Some may think, however, that if active congestion were to continue for weeks and months, instead of for a few minutes or hours, it would lead to inflammation in the part, but such is not the case. What it does lead to is hypertrophy of the part, the increased supply of nutrient material furnished by the full current of blood leading to increased growth. This was well shown in a rabbit exhibited by Dr W. Stirling at the recent meeting of the British Medical Association in Edinburgh. Three months previously, Dr Stirling had divided the sympathetic in the neck of the animal, which was young and growing. The ear at once became red and hot as usual, and instead of the congestion subsiding more or less after some time, as it not unfrequently does, it continued almost unaltered up to the time of the Association's meeting. The ears at the time when the sympathetic was cut were of the same length, but in three months the increased blood-supply had caused the congested ear to grow so much faster than the other, that at the time of the meeting it was quarter of an inch longer than its fellow on the opposite side. It is evident, then, that congestion is not inflammation, and does not cause it even when long continued. That inflammation can take place without congestion, is shown not only by the fact that it occurs in non-vascular tissues, such as the cornea and cartilage, but even more strikingly by the remarkable observation of my friend Dr Ainslie Hollis, that textural changes similar to those produced by inflammation in higher animals, follow the application of irritants to anemones which have no vascular system whatever.[1] The two processes of congestion and inflammation are therefore quite different, and each can exist independently of the other. Nevertheless, congestion accompanies inflammation in the great majority of cases, and modifies its progress. While we carefully bear in mind

[1] St Bartholomew's Hospital Reports, 1874, p. 267. Journal of Anatomy and Physiology, vol. vi. p. 386; vii. p. 80; and viii. p. 124.

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that the two processes are not identical, let us now try to see what the connection is between them, and in doing this, let us begin by inquiring how congestion is produced. From Dr Stirling's experiment, it is evident that a copious supply of blood is beneficial to the tissues, and that if all the vessels throughout the body were dilated, and blood flowing freely through them, the tissues in general would be much better off than they are. But in order to have these dilated vessels sufficiently full, the body would require twice as much blood as it has; to supply the blood, the digestive organs would need to be larger, and the heart must be more powerful in order to propel it; in short, the individual would require to be re-made on a different plan. The arrangement, which has been found by experiment to exist in animals, is much more economical. The quantity of blood in the vessels is not sufficient to fill them even half full if they were all dilated at once,[1] but by means of the vasomotor nerves which have their centre in the medulla oblongata and spinal cord, they are kept in a state of semi-contraction sufficient to enable the blood to fill them. Whenever the vasomotor nerves are divided, the vessels they supply become dilated, so as to offer little or no resistance to the flow of blood, and the current through them consequently becomes rapid. Thus in the rabbit the vasomotor nerves for the

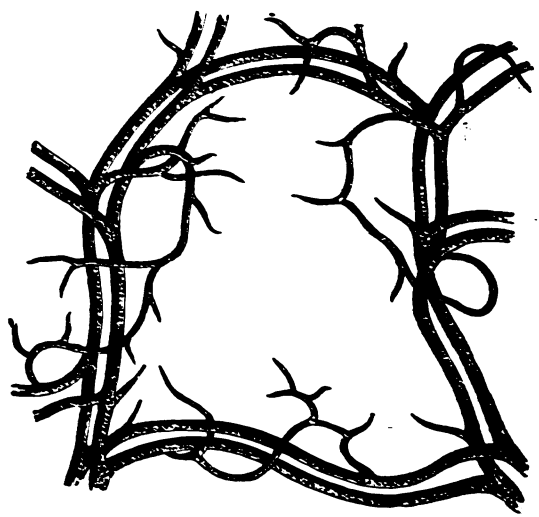

Fig. 1.

ear pass from the medulla along the cervical sympathetic to the arteries, as shown in Fig. 1. When the cervical sympathetic is

[1] Schiff, Lo Sperimentale, 1872, p. 369.

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cut, the vasomotor centre can no longer exercise any influence on the arteries of the ear, and they dilate as already described.

But there is another way of making them dilate, viz., by causing the vasomotor centre to cease to exert its usual influence over these vessels, instead of destroying its means of communication with them by cutting the vasomotor nerves. This can be done by irritating a sensory nerve to the ear. The irritation is conveyed up to the vasomotor centre, and seems to arrest its action over the vessels supplying the part whence the sensation has come, so that they dilate, and the ear gets red and hot. This dilatation, in consequence of irritation applied to a sensory nerve, is not peculiar to the vessels of the ear—it occurs in all probability in every vessel of the body; and the dilatation from irritation is not confined to the capillaries and small arteries—it extends up to the larger branches, so that the artery of the part is not only wider than usual, but it pulsates forcibly. It is indeed so much greater than that produced by division of the vasomotor nerve, that some have supposed it to be due to nerves causing the vessels to dilate actively, and not simply to yield to the pressure of the blood in them. But this hypothesis is unnecessary, for Ludwig has found that irritation of a sensory nerve has a double effect: (1) It causes the vessels of the part to which it is distributed to dilate; (2) it causes the vessels in other parts of the body to contract, so that the general blood-pressure is raised, and the blood driven into those vessels which are relaxed. The part supplied by the irritated nerve consequently gets its supply of blood doubly increased by the dilatation of its own vessels, and the contraction of those in other parts of the body. So constant is this contraction, that Ludwig has employed the increased blood-pressure which it causes as an indication that sensory impressions have been conveyed to the nervous centres,[1] and its great importance in regard to the action of counter-irritants will be hereafter apparent. I ought to say, however, that the contraction really seems to be universal, and to affect more or less the vessels of the part whose nerves have been irritated, as well as those of the rest of the body, but this contraction in them is more than counterbalanced by dilatation. Thus it is that the vessels of this part not unfrequently contract before they dilate, and sometimes the dilatation is transient, and is succeeded by contraction. It may seem strange that the irritation conveyed by a sensory nerve to the vasomotor centre should arrest its action over some vessels and increase it over others; but this idea only occurs when we forget that what we call the vasomotor centre is really a collection of ganglionic cells connected with nerves going to different parts of the body,

[1] Ludwig and Ditmar, Ludwig's Arbeiten, 1870, p. 4.

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just as a telegraph station may contain numerous instruments, by which messages may be sent to different parts of the country. The adaptation of this arrangement to secure a full supply of blood whenever it is wanted is obvious. Now, as I have already said, a copious blood-supply not only enables the tissues to grow rapidly, but to repair themselves rapidly when injured, and a scanty blood-supply, on the contrary, will cause repair to be slow, and will even induce death and destruction of a part without any other lesion; as, for example, when the circulation is stopped by an embolus. The effects of copious blood-supply in accelerating repair have been beautifully shown by the experiments of Sinitzin.[1] When the fifth nerve is divided within the skull, ulcers form on the cornea, eyelids, and lips. If the superior-cervical ganglion is torn out, so that the vasomotor nerves of the vessels of the face are destroyed, and the supply of blood to it increased after these ulcers have formed, they heal up speedily; and if the ganglion is torn out before the fifth nerve is cut, they do not form at all. That the beneficial effect of evulsion of the ganglion is due to the free supply of blood which it produces, is shown by the fact that it has no action whatever if the carotid of the same side is ligatured, so as to prevent the destruction of the vasomotor nerves from increasing the current. As we have already seen, a still greater supply of blood is secured to a part by irritating its sensory nerves than by dividing its vasomotor ones, and the utility of this in repairing injured parts is now obvious. When a grain of sand falls into the eye, it irritates the sensory nerves, and immediately the vessels of the conjunctiva fill, as Sinitzin noticed them to do, after evulsion of the sympathetic ganglion, and the free supply of blood is ready to assist the repair of any damage caused by the sand to the delicate structures of the eye, besides supplying materials to the lachrymal gland for the purpose of washing away the offending body. If the grain of sand is now removed, the vessels contract, and the tears being wiped off, everything looks as before. There has been congestion, but no inflammation. But if the sand remains longer, inflammation occurs, sero-fibrinous exudation takes place under the conjunctiva, or pus may even be formed.

If we examine the process of inflammation more narrowly by using the microscope instead of the unaided eye, we find that irritation, such as a pinch applied to the web of a frog's foot, causes sometimes brief contraction, succeeded by dilatation; at other times, immediate dilatation, first of the arteries, then of the veins, and lastly of the capillaries at the site of irritation, and at the same time, the velocity of the current through them becomes

[1] Centralblatt d. med. Wissenschaften, 1871, p. 161.

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greatly increased.[1] After a while the arteries contract again, the contraction beginning at a distance from the irritated spot, and progressing towards it. This contraction interferes with the current of blood, and its velocity in the arteries beyond becomes reduced to the normal. Next the capillaries contract, but the veins still remain dilated; the current in them becomes slow, and white blood-corpuscles stick to their sides; but after a little they also contract, and the normal circulation becomes completely restored.

If a piece of caustic is applied to the web, similar changes are produced: all the vessels in the neighbourhood, for some distance around, dilate, and the blood streams through them with great velocity. But here a remarkable condition makes its appearance which was not present in the previous experiment. Although the capillaries of the injured part remain dilated, and the blood is streaming with unabated rapidity in the vessels all around, it begins to get slower in them; the red corpuscles seem to find an impediment in their way, and accumulate in these capillaries, like the vehicles in one of the crowded streets of the city during a block. The current in the arteries and veins likewise becomes slow; the so-called lymph-spaces, which, like sidewalks, run along the interior of the arterial walls, and are usually free from blood corpuscles, become invaded; the corpuscles oscillate backwards and forwards, as if in a vain attempt to proceed, and then becoming stationary, seem to form an almost solid mass. By-and-by the vessels in the neighbourhood contract again, and the current in them becomes normal; but those vessels which lead directly into the cauterised part—arteries as well as veins—remain permanently dilated. The stasis in the capillaries extends over a wider area; a few red corpuscles pass through the walls of the capillaries, and colourless corpuscles emigrate in numbers from both the capillaries and the veins, forming in great measure, if not altogether, the pus with which we are familiar as one of the products of inflammation. After the pinch, then, we have had merely congestion; after the caustic, inflammation. But in both we have had a similar dilatation in the calibre of the vessels, a similar increase in the velocity of the circulation. Where, then, are we to draw the line between congestion and inflammation? This question has been well answered by Sir James Paget, who says that the line appears to be crossed 'when the circulation, which was rapid, begins to grow slower without any diminution, but it may be with an increase, in the size of the vessels.' According to Cohnheim, the changes which are observed in the diameter of the vessels are mere accessories, and not integral parts of the inflammatory process; and he also makes the

[1] Lister, Phil. Trans. 1858, p. 645. Cohnheim, Neue Untersuchungen.

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slowing of the circulation and stasis coincide with the commencement of inflammation.[1]

There is no doubt about the fact, but it is difficult to see why the blood corpuscles should stand still in a vessel where there is no apparent obstruction, and many explanations have been advanced to account for the phenomenon. The one which finds most general acceptation at present is that of Cohnheim, who believes that it consists in some alteration in the tissues, which begins in those forming the walls of the blood-vessels, or immediately adjacent to them. This opinion is supported by the observation of Ryneck,[2] that stasis may be noticed in vessels where the blood has been washed out and replaced by milk. The milk globules accumulate in the capillaries of the irritated part in much the same way as the corpuscles usually do. This would seem to show conclusively that it is the vessel, and not the blood it contains, which obstructs circulation, and leads to stasis. Yet it is hard to see how the appearances observed are to be explained thus, and they are exactly those which we should expect from the blood suddenly becoming thicker, and consequently flowing less easily. Both Heule and Wharton Jones have adopted this view, the former supposing that the blood became thicker, both by the plasma losing water by exudation through the walls, and by having the proportion of its albuminous constituents increased. The two brothers Ernest Heinrich and Edward Weber ascribed it, without more ado, to coagulation of the blood in the capillaries; and it seems to me that the view taken by those two wonderful men, although long forgotten, is after all the right one.[3] It does not conflict with that of Cohnheim, for the coagulation, if such be present, no doubt owes its occurrence to changes in the vessels. Brücke[4] has found that, while blood remains fluid in living and healthy vessels, it coagulates in them when they die, so that we would naturally expect any injury which lessened their vitality would tend to cause coagulation within them; and Wharton Jones has actually noticed coagula form in the vessels after pressure upon them. The absence of any fibrinous threads in the interior of the vessels of inflamed parts does not in the least disprove coagulation; for, when experimenting with the plasma from horses' blood, I have seen the contents of a glass tube, from 1 to 2¼ inches in diameter, in which there were three layers, the upper one of pure liquor sanguinis, the middle of liquor sanguinis *plus* white blood-corpuscles, and the third of red corpuscles with

[1] Paget, Surgical Pathology, 1863, p. 227. Cohnheim, Neue Untersuchungen.
[2] Ryneck, Rollett's Untersuchungen, 1870, p. 103.
[3] Virchow's, Archiv, 1857, p. 152.
[4] Brücke, Virchow's Archiv, 1857, p. 183.

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liquor sanguinis, all apparently fluid. It was only when I attempted to turn them out that I found coagulation had occurred. Even when turned out, the soft clots showed no sign of structure, until they had been squeezed in the hand, and then fibrinous threads became perceptible. If coagulation thus failed to become visible in such a large tube, the absence of any easily-recognised sign of it in a small capillary is not astonishing. The chief difficulty in the way of accepting Weber's theory, is the occurrence of stasis when defibrinated blood or milk is made to circulate through the vessels. But defibrinated blood, when made to circulate in this way, takes up something while in the vessels, which re-imparts to it the power to coagulate, so that it may form a clot after it has issued from the veins. So far as I know, no similar experiments have been made with milk, but it is possible that it too acquires so much coagulating power as to cause stasis. In the absence of the requisite data, it is impossible to look upon Weber's explanation of stasis as anything more than an hypothesis; but as I have already said, I am inclined to adopt it, and to consider that inflammation begins in vertebrates when coagulation occurs in the capillaries, and arrests the flow of blood through them.

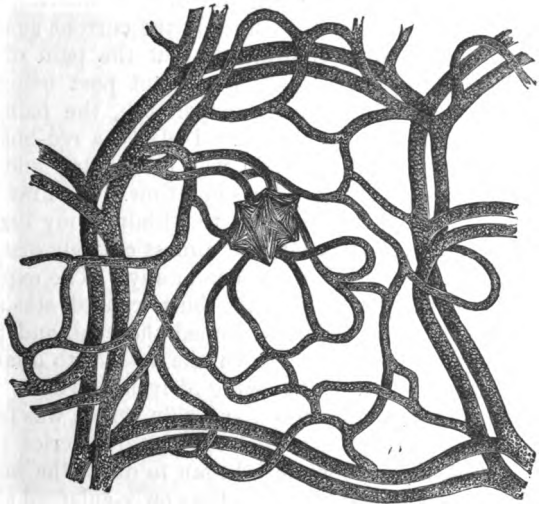

Fig. 2.

But whether this view be taken or not, the facts are certain, that stoppage of the circulation does occur in the irritated capillaries, and that the arteries leading to the part are dilated. What

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the cause of the pain in inflammation is, we do not exactly know; but it seems very probable that it depends to a great extent on the stretching of the vessels, and the nerves surrounding them, at or near the site of stasis, by the blood which is driven into them through the dilated arteries. For, as every one knows, the pain of inflammation is of a throbbing character; it is increased at each time the vessel is distended by a beat of the heart, and relieved by lessening the supply of blood. Now the supply of blood can be lessened in several ways, and several means, apparently of an entirely opposite nature, are used to relieve pain. Supposing that we take as an example an inflammation of the tip of the finger, it is easy to understand how it may be relieved by pressure on the radial artery, or by raising the hand to the level of the shoulder, and may be aggravated by allowing the arm to hang dependent by the side. But how is it that the pain in the finger may be relieved by dipping it in cold water, and also by the application of a warm poultice? I believe the answer to this question to be, that the cold causes the arteries above the point of stasis to contract—for example, at A—and thus lessens the force of the current of blood which is being pumped upon that point. The warm poultice, on the other hand, dilates those capillaries in which circulation is still going on, and by thus offering another channel to the blood, lessens the force of the current against the point of stasis. It is well known, too, that the pain of a burn can be greatly lessened, by holding the burnt part before a fire. But as I can testify from personal experience, the pain is first greatly increased before it is relieved. I placed a red-hot coal on the back of my hand until the skin was corrugated and glazed. I then held it before a brisk fire for some time. At first the pain became so severe that I was tempted to withdraw my hand; but by-and-by the pain became easier, and almost entirely disappeared shortly after I had finally taken my hand away. The explanation of this I fancy to be, that at first the burn caused stasis in the capillaries of the part to which I applied the coal, and that the irritation to the sensory nerves caused the vessels to dilate, as in Loven's experiment. The blood being driven down on the obstructed vessels, produced distension and pain, which was increased when the warmth of the fire caused the larger arteries to dilate still further. But after the warmth began to dilate the capillaries of the hand, the blood passed through the newly-enlarged channels, and its impact on the obstructed vessels being thus removed, the pain ceased.

In the days when blood-letting was much in vogue, it was found to be a matter of every-day experience that the pain of inflammation was removed for a time by opening a vein; and although

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the pain again returned, the abstraction of a further quantity again relieved it. The relief is explained by the general diminution in the blood-pressure after phlebotomy lessening the tension of the vessels of the inflamed part; while the return of the pain is in all probability due to the fact that after the abstraction of blood the vessels contract, so as to accommodate themselves to their diminished contents, and thus raise the pressure again. Unluckily, however, blood-letting does something more than diminish the tension within the vessels of the inflamed part in common with those of the rest of the body; it drains away the vital fluid, and seriously impairs the power of restoration. It is evident, therefore, that if we can lessen the tension in the vessels of an inflamed part, either by causing the arteries to contract or the capillaries to dilate, we shall do more service to the body than if we weaken the whole of it to relieve a part. This, I believe, we can do by means of counter-irritants. I have already mentioned that the application of an irritant causes contraction of the vessels of other parts of the body, at the same time that it induces dilatation in those of the injured part, but this action will not afford us much help, if all the vessels are contracted alike, for then the blood would pour with increased pressure into the dilated vessels of the inflamed part, and the pain would be worse than before. But clinical experience shows that irritation to the surface of the body will relieve internal pain, and a mustard poultice or blister to the side in pleurisy frequently, indeed generally, gives more or less relief. And there are several facts which tend to show that just as irritation applied to different portions of the skin will induce definite reflex movements distinct from each other,[1] so irritation applied to different parts of the surface will induce contraction in different sets of vessels, a definite correspondence existing between the part irritated and the set of vessels which contract. Ludwig and Loven[2] observed that when the sensory nerve of one ear was irritated, dilatation of the vessels was sometimes observed in the other ear also, although it was much less, and generally was replaced by contraction sooner than on the side operated upon; and Callenfels[3] noticed that pinching one ear caused contraction in the vessels of the other. Plunging one hand into cold water has been observed to cause cooling of the opposite hand, an effect which must be due to contraction of the vessels. But the most important experiments on this point are those of Zülzer,[4] who painted cantharides collodion repeatedly

[1] Sanders-Ezn, Ludwig's Arbeiten, 1867, p. 11.
[2] Ludwig's Arbeiten, 1866, p. 11.
[3] Callenfels Zeitsch. f. rat. Med., 1855; Bd. vii. p. 191.
[4] Zülzer, Deutsche Klinik, 1865.

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over a part of the back of a rabbit for fourteen days. At the end of this time he found that the vessels underneath the skin were much dilated and filled with blood, and the superficial muscles were hyperæmic. Those of the deeper layers, on the contrary, as well as the thoracic wall, were much paler than on the uninjured side, and even the lung itself was anæmic. When a hair seton was left in the knee of a rabbit for four weeks, suppuration was induced immediately around it, but the muscles around the joint, and the joint itself, were very anæmic when compared with the corresponding parts on the uninjured limb.

Supposing that the effects of blisters on man are similar to those upon rabbits, we can understand the benefits derived from their use in inflammation of internal organs. If the pericardium, pleura, or lung itself is inflamed, the application of a blister to the chest will cause contraction of the arteries in them, and lessen the pain just as pressure on the radial or brachial would do in inflammation of the finger. Their beneficial action in pericarditis is well illustrated by two cases which, in the absence of Dr Church, I lately had under my care. J. E., a male aged twenty-five, was admitted into John Ward on September 13th, suffering from a first attack of rheumatism. Both wrists and knees were swollen and painful. At eleven o'clock on the morning of admission the heart-sounds were normal. At two P.M. a distinct pericardial friction was heard. A blister was applied over the cardiac region, and blisters to both wrists, poultices to the knees. Next day the friction had entirely gone, and the pain in the wrists disappeared, although it still continued in the knees. On the succeeding day a friction-sound was again audible, but the pain in the wrists never returned. A blister was again applied to the cardiac region. Next day the friction had disappeared, and did not return. No increased dulness in the cardiac region could be detected. E. B., a female aged sixteen, was admitted for scarlatina into Elizabeth Ward, on September 6th. On the 13th an acute attack of rheumatism came on, with swelling and pain in the wrists, and distinct pericardial friction. In this case also a blister was applied to the cardiac region within four hours of the appearance of the friction. Next day the friction had entirely disappeared, the pains in the wrists were less, and on the succeeding day were entirely gone.

In both of these cases, I believe that had we been able to examine the pericardium at the time the blister was applied, we should have found the membrane dry and injected, without any deposit whatever on its surface. The irritation caused by the application of the blister to the thoracic wall acted reflexly through the vasomotor centre in the medulla oblongata, and induced contraction of the pericardial arteries, and a more or less

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complete return to the normal condition. In the case of E. B., it might be said that perhaps the friction would have disappeared even had no blister been applied; but it is improbable that in the case of J. E. it would have reappeared on a succeeding day, had its first disappearance been spontaneous, and not the effect of the blister. The cessation of pain in the joints I also attribute to contraction of the arteries in them, induced by the blister which had thus had an effect similar to that of a hair seton in Zülzer's experiment. Several other cases of acute rheumatism which I have had under my care this autumn have convinced me of the efficacy of blisters to the joints in young persons, especially those suffering from a first attack, and in whom the vessels and tissues are probably normal; but in elderly persons who have suffered from repeated attacks, the benefit derived from blisters has not been great.

Having now considered the action of blisters as counter-irritants, let us turn for an instant to their action as irritants. One of the best means of treating a callous ulcer is to blister it. Here the irritation of the blister dilates the vessels around the ulcer, and by affording a free supply of blood, bringing fresh oxygen and fresh nutriment, the ulcer is healed just like those on the eye in Sinitzin's experiments.

The points which I have tried to show in this paper are—

1. That dilatation of blood-vessels, and a rapid circulation through them, is advantageous for the tissues, and leads to increased growth and more rapid repair. While this arterial or active congestion is beneficial, venous or passive congestion is injurious.

2. The application of an irritant induces dilatation of the vessels, and a free current of blood through them. This will help to repair any injury done to the tissues by the irritant, so that the injury, to a certain extent, brings its own remedy.

3. Arterial congestion and inflammation are entirely different from and independent of each other, although they generally occur together.

4. Arterial congestion passes into inflammation when stasis begins to occur in the capillaries.

5. Stasis is not improbably due, as supposed by the brothers Weber, to coagulation of blood in the capillaries, the coagulation being induced by changes in the tissues composing the walls of the vessels, or immediately surrounding them.

6. Pain in an inflamed part is probably due to distension of vessels and pressure on nerves by the blood being pumped with violence through the dilated arteries against the obstruction in the capillaries.

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7. Pain may be relieved by lessening tension in various ways: by position—by cold—by warmth—by blood-letting—by counter-irritants.

8. Cold probably relieves tension by contraction of the arteries going to the inflamed part, warmth by dilating the capillaries of the surrounding parts, and thus drawing away the blood from the seat of inflammation.

9. At the same time that an irritant causes dilatation of the vessels in the part to which it is applied, it causes contraction of the vessels in other parts of the body.

10. It is probable that it does not cause contraction in all parts alike, but that definite areas of skin correspond to definite sets of internal vessels.

11. The relief of pain produced by a blister in pleurisy, pneumonia, or rheumatic inflammation of a joint, is probably due to reflex contraction of the arteries in these parts.

12. Blisters are useful in lessening congestion in pericarditis, and in relieving the pain of inflamed joints in rheumatism.

13. The benefit derived from their use in young persons, especially those suffering from a first attack, is very great. In elderly persons it is inconsiderable.

14. The beneficial action of a blister in callous ulcer is probably due to the increased supply of blood to the part, induced by its application.

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SELECTED CASES

OF

INJURY OF THE EYES.

BY

HENRY POWER.

THE following cases of accident that have occurred, during the last year, in the practice of the Hospital (some under the care of Mr Vernon, and some under my own), as well as some that have come under my care at St Bartholomew's Hospital, Chatham, have, for the most part, been selected with a view of illustrating the remarks made in my paper in the Reports for 1874, to the effect that in all cases where there are good grounds for believing that a foreign body has entered and lodged in the vitreous, the proper treatment—in the working classes, at least, who cannot afford to remain idle—consists in the immediate or speedy removal of the globe. In such cases the vision of the injured eye is practically lost, and its enucleation spares the patient much suffering from the swelling of the lens and inflammatory tension of the globe, and much loss of time during the period of recovery, if it should, as in rare cases it does happen, that the foreign body becomes encysted; and lastly, all risk of sympathetic ophthalmia.* I am indebted to the Ophthalmic House-Surgeon, Mr Reid, jun., of Canterbury, for the abstracts of the cases from the notebooks of the Hospital, and to Mr R. Cobb of St Bartholomew's Hospital, Chatham, for those from Chatham.

* Other cases, on the other hand, show that recovery may take place from very severe injuries, if the patient be submitted to appropriate treatment immediately after the accident, providing no foreign body has lodged in the interior of the eye. The presence of a foreign body in the eye may in general be determined by consideration of the circumstances of the accident—such, for instance, as the nature of the work on which the patient is engaged; distance from a gun; the existence of a wound traversing the cornea or sclerotic; wounded or prolapsed iris, with indications of inflammation, after a few days traumatic cataract; and generally more or less pain in the injured eye.

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CASE I.—*Wound of Eye with Fragment of Steel—Iritis, limited Hyalitis—Seven weeks after, Sympathetic Ophthalmia—Enucleation of injured Eye—Immediate subsidence of Sympathetic Ophthalmia.*

Frederic Myles, 31, an engraver (die-sinker). Sept. 5th, 1874. —Whilst at work a piece of steel struck inner side of left cornea, producing a large irregular abrasion; it was supposed not to be within the globe. He was treated with a poultice previously to appearing at the Hospital.

On admission, in addition to the superficial nebula, over the inner portion of the cornea, iritis and signs of deep-seated inflammation of the globe were present. There was a small tag of adhesion between the iris and lens at its lower and inner part. On the posterior surface of lens there seemed to be a small deposit of lymph; a well-marked and peculiar greenish-yellow reflex was also observed from fundus. The vision was so far reduced that he could only distinguish light, T.n., though he complained of a sensation of his eye being very full. RE.v=$\frac{2}{200}$. Six leeches were at once applied, and solution of atropine (gr. iv. ad ℥j.) dropped in three times a day, from which he experienced great relief.

On 17th the effusion of lymph behind lens had increased, and the vision became more impaired with T–1.

On 29th, sleep disturbed from pain (pricking) and lachrymation—can just perceive light T–1½. Right eye lachrymates.

Oct. 6.—Left eye very vascular, circum-corneal zone. Iris very irregular, and does not act to light. No anterior chamber, lens and iris pressed forward, T–2, much lachrymation. A circular patch of lymph visible at back of lens, periphery transparent. Right eye looks irritable, and lachrymates, but gives no pain. Sympathetic irritation being clearly established, Mr Power removed left globe under chloroform. On examining this globe, the wound in the cornea could only be recognised as a small abrasion on close inspection with a lens; no anterior chamber; iris rotten, infiltrated with lymph; lens quite transparent but soft; vitreous fluid diminished in quantity; a round patch of lymph at centre of hyaloid membrane and adhering to posterior part of lens, in which a small chip of steel was found about the size of a large pin's head; retina rather thickened and whitish, easily separable from choroid, which latter was healthy, and neither too strongly nor too feebly adherent to sclerotic. This man expressed the relief he felt in his right eye on the next day. On 9th, R.V=$\frac{2}{200}$ T.n., some slight lachrymation and pain still. 13th—got up, right eye quiet. 14th—wore a shell; and on 31st was discharged with a glass eye, having perfect movement in the stump. This case shows several points very

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clearly: First, that severe inflammation, involving all the tissues of the eye, may be established by the entrance of a foreign body into the vitreous, the lens remaining transparent. Secondly, it would seem that the opacity noticed behind the lens, and which was seated in the vitreous, was due to the multiplication of the connective tissue corpuscles, or nuclei, forming part of the vitreous itself, and was not the result of the migration along the track of the wound of the white corpuscles of the blood, since in that case a streak would have been visible, extending from the periphery to the centre; whereas the central white patch was quite sharply defined. Thirdly, it shows well the ordinary period (six to eight weeks) at which the first symptoms of sympathetic ophthalmia commonly make their appearance. The very slight perception of light that commonly exists in cases similar to the foregoing, and the pain and irritation that are felt on the opposite side on contraction of the pupil of the injured side, are circumstances that strongly support the view that the reflex irritation is conducted through the ciliary fibres of the fifth, supplying the iris and choroid, and connected with the ciliary ganglion. The complete relief afforded by the operation, and the permanent recovery afterwards, are satisfactory evidence, if evidence were required, that it is not too late to resort to enucleation even when the symptoms of irritation have become fairly established in the uninjured eye.

CASE II.—*Gunshot Wound in Left Eye—Traumatic Cataract.* (*Only one No.* 6 *shot entered.*)

Walter Sayers, 30 years, labourer, from Horsham, injured December 1st. *December 8th.—Iridectomy. December 15th.—Lens extracted. January 5th.—Sympathetic Irritation. January 7th.—Excision of Eyeball—Recovery of sympathetically-affected eye.*

One week before admission was shot in left eye with No. 6 shot; then suffered much pain for twenty-four hours, which has recurred at intervals since, though not in a severe form.

On admission, December 7th.—Shot had evidently entered cornea at upper part, midway between pupil and corneo-sclerotic margin, in the vertical line a little outside it; in front of iris, near pupillary margin, below centre of pupil, is an irregularly shaped body of a dark colour, with small patches of lymph on it; above situation of this, on cornea, is a white, roughened patch, extending into conjunctiva, of effused lymph. Cornea is clear in other parts. Lens opaque. Pupil is irregular and drawn to outer side. Fundus cannot be lighted up. Iris muddy and immovable. Ciliary congestion. T + 1. L.V. = "Perception of hand waved before eye." Leeches to left temple.

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December 8.—Mr Vernon performed an iridectomy over iris wounded by shot; and with a scoop removed a shot and a small portion of lens matter.

December 10.—Wound nearly healed. Swollen lens bulging against cornea, T + 1. No pain.

December 15.—No pain. Mr Vernon performed a linear extraction, and removed lens matter with curette and spoon.

December 22.—Up last two days. No pain. Cornea clearing. Perception of light. Counter-irritation by Folia sinapis.

December 31.—Eye less vascular. Cornea with its inner two-thirds clear; outer one-third opaque. Pupil blocked up by lymph. Fundus cannot be lighted up. L.V. = "Perception of light."

January 5.—Slight pain; lachrymation, photophobia and dimness of vision in right eye, symptoms that were regarded as indicating the commencement of sympathetic irritation.

January 7.—Sclerotic of right eye full of pink vessels, and as the other symptoms were steadily increasing, the left eye was removed.

January 13.—Right eye still suffers from flashes after exposure to light. Sclerotic injection less. Pupil widely dilated by atropine. No pain.

January 23.—Right eye quiet; some mistiness experienced on looking at an object for some minutes. R.V. = $\frac{20}{30}$. Left socket healed and healthy. Discharged.

In six months he wore a glass eye, and did well; seeing perfectly with his right eye.

Examination of extirpated Globe.—Walter Sayers' left eye removed January 7th, and kept in spirit till 12th. Corneal wound healed; situation marked by an opacity the size of a split-pea. Eyeball firm, no evidence of wound elsewhere. Eye divided transversely through equator. Three-fourths of entire globe, especially on lower and inner aspects filled with a well-defined blood-clot, the upper half of which is quite unaltered, its lower half being converted into a gelatinous grumous mass. Neither retina nor choroid detached anywhere. Clot seems to have been confined solely to vitreous humour. On anterior half of eyeball being divided vertically, it was seen that a clot originated from ciliary processes, and had bulged backwards to posterior pole of eye. No other shot found.

CASE III.—*Gunshot Wound of Left Eye on December 22—Traumatic Cataract—Incipient Symptoms of Sympathetic Inflammation—Enucleation—Recovery.*

January 9.—Sympathetic irritation in right eye.

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January 19.—*Excision of left eyeball.*

Henry Porter, 42, labourer, from Essex, on December 22 out partridge shooting; a shot entered his left eye from a person who was on the other side of hedge on lower ground, and at least 100 yards off him; he was in the act of turning to the left, the shot coming from the right.

His eye was in great pain at the time, ran with fluid which, from his own description, appears to have been vitreous; has been unable to see since. For last week has had pain, lachrymation, and photophobia in right eye.

January 16.—Left eye. *Conjunctiva* congested. There is on sclerotic a deep furrowed *cicatrix* running from cornea to inner canthus, on a level with lower margin of pupil. *Sclerotic* is slightly injected. *Iris* muddy, striæ indistinct, bulging very much forward, and in contact with cornea but not adherent. *Cornea* clear. *Pupil* immovable, irregularly tied to lens by numerous adhesions. Lying behind lower margin of pupil there seems to be a small round opaque body. *Lens* margins opaque, centre much clearer. Fundus can be illuminated, on inner side is a yellowish opaque substance with retinal vessels running over it. L.v.="perception of light." T–2. Eyeball diminished in size, square and pointed. *Right eye* slight injection of vessels. Pupil clear; acts well; no pain. R.v.=(Can tell time by watch at 12 inches) $\frac{20}{200}$.—12 gives $\frac{20}{70}$. Media clear. A large myopic crescent around R. disc, most marked at upper and outer border. Though the symptoms of sympathetic irritation were here very slight, it was considered expedient to remove the injured eye, which was accordingly excised on January 19.

January 21.—Circum-corneal zone still present in right eye.

January 24–30.—Attack of cynanche tonsillaris.

February 1.—Went out. Right eye safe. Left eye wound healed. Description of left globe removed, January 19, "Eyeball soft, misshapen. Distinct equatorial bulging at lower part. On section, retina detached completely; space between it and choroid full of greenish yellow fluid. Lens clear, adherent to iris. Behind and below lens was a mass of opaque lymph, in centre of which was a No. 6 shot.

CASE IV.—*Incision in Cornea—Traumatic Cataract—Foreign body in Lens—Removal of Lens—Recovery.*

James Perry, aged 46, engineer.

November 21, 1873.—The patient was admitted about 7 P.M. with an injury to the right eye from a piece of iron.

An hour previously he was working at the anvil, when a small

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chip of steel from the end of his chisel struck the right eye, followed by a rush of fluid.

There was an incised wound of the cornea, extending from its outer margin across the middle to the inner side of the pupil; no anterior chamber; iris bulged forwards by pressure of the lens, which was swelling and becoming opaque; a small piece of steel was removed from the conjunctiva, on the outer side of cornea. No foreign body to be seen in the eye.

Always been a healthy man; drinks a good deal of beer. Ordered—D.C. porter, ℥vj.; pil. cal. c. jal., gr. x. statim; atropine, gr. ij. ad. ℥j., 4th horis app.; hydrat chloral, gr. xx., h.s.s.

November 22.—Slept well. Lens swelling, and becoming more opaque; iris will not dilate with atropine; slight œdema of lids. Ordered—Fotus belladonnæ.

November 23.—Œdema of upper lid much increased. Extensive chemosis of conjunctiva, which protrudes through lids. Pupil inactive; some pain in eye, and around the brow.

November 24.—More congestion of conjunctival vessels. Lens almost entirely opaque; pressing the iris still further forwards. More pain in and around eye. Artificial leech applied (℥j.) Bowels not open since 22d. Tongue pale, flabby, furred. Ordered—D.L. Hst. senna, co., ℥j. statim; beef-tea, ℥vj.; two eggs; milk, ℥vj.; arrowroot.

November 25.—Mr Power was sent for yesterday afternoon, as the man was in much pain. When seen, chloroform was ordered, and an iridectomy performed upwards.

On careful examination by oblique light, and on ophthalmoscopic examination, a small black speck was observed on the lens, which was supposed to be a foreign body. On attempting to extract the lens, the spoon grated against the foreign body, and it was extracted with forceps afterwards.

It proved to be a piece of steel, which had penetrated the eye to a considerable depth. Cold compress ordered, and morphia gr. ⅛; injected subcutaneously. Pulse 80; temp. 100·2.

November 26.—This morning the lids are more œdematous; still great chemosis; the pupil blocked up by a yellowish-white mass; some blood in anterior chamber; aqueous fluid exudes from wound. General condition good. Ordered—Rum, ℥ij.; Quinæ, gr. x. statim; H. Quinæ, gr. v., t.d.s.

November 27.—Since operation has had much less pain in eye. Lately there has been some feeling of tension; and this afternoon a Taylor's knife was passed through original wound, and a fair quantity of aqueous let out. Much relieved.

November 28.—Taylor's knife again used, being passed well

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back into vitreous. Ordered—H.M.S. c. M.S. Hirudines, ij.; temp. dext.; quinæ sulph., gr. iij. ter.

November 29.—Has complained of more pain in the eye. Tongue furred, and breath foul. Eye again tapped. Ordered—Hirudines, ij.; glycerine and belladonna to brow; morphia, gr. $\frac{1}{6}$.

December 2.—Original wound entirely healed. Lymph and pus blocking up both old and artificial pupils. Less pain and chemosis.

December 9.—Condition of eye gradually improving, the mass of lymph and pus being absorbed. No pain in eye. Chemosis almost absent.

December 16.—L.v. = $\frac{20}{40}$. Can distinguish a bright light with the right eye. Right eye—mass of lymph much less; chemosis somewhat increased; no pain; eye very tender.

December 18.—Right eye still very irritable. Both wounds (the one across the cornea, and the iridectomy incision) healed, but puckered in; the tension of the eye minus 1. Mass of lymph much less; some redness of conjunctiva and sclerotic, especially that part covered by centre of upper lid; colour of iris altered, especially on the inner side, where it is bulged forwards.

December 23.—Eye gradually but slowly improving.

December 31.—Still some congestion of ciliary region. Eye much smaller and shrunken. No pain.

January 6.—Eye free from pain but tender. Some slight congestion, but altogether quieting down again. Lachrymation continues. No sympathetic ophthalmia.*

CASE V.—*Blow on Eye with Stick—Sympathetic Ophthalmia of opposite Eye—Vision of both Eyes lost.*

Owen Jones, aged 10, was sent up from Wales (Dolgelly), with post. synechia and sequelæ of sympathetic ophthalmia in his left eye. His history was, that on January 1st, 1873, a boy struck his right eye with a stick; some time after, his left eye became affected, and in consequence his right globe was extirpated; his left eye was for the time a little better; however, it soon again began to fail, and he has since been liable to recurrent attacks of inflammation and lachrymation, accompanied with flashes of light.

On admission, September 10, 1874, he had scarcely any perception of light. The left eye appeared somewhat large and pro-

* Here the early removal of the foreign body converted a complicated into a comparatively simple case of traumatic cataract. The patient escaped sympathetic ophthalmia, but the eye was lost, and recovery much more protracted than it would have been if enucleation had been practised in the first instance, and the patient still not perfectly free from risk.

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minent, T + 3; a few large blood-vessels passed across sclerotic, and disappeared in ciliary region; cornea was clear; anterior chamber irregular in depth, and shallow; striæ of iris visible; pupil small, irregular, bound down by numerous adhesions to capsule of lens, did not act to light; lens apparently opaque; no pain.

September 15.—Under chloroform, iridectomy performed downwards. Iris rotten, and adherent to capsule; parts of it excised.

September 28.—Darting pain at times in eye; sees flashes of light. Artificial pupil is entirely occluded by lymph. T−2.

September 29.—A large iridectomy upwards.

October 13.—Good perception of light, but cannot distinguish objects. Has had strychnia $\frac{1}{25}$ gr. injected daily subcutaneously since the 8th; this was then increased to $\frac{1}{15}$; on 28th he suffered giddiness and headache.

October 30.—Discharged. The upper artificial pupil is slightly blocked at the top by lymph; the lower pupil is entirely occluded. There is practically no anterior chamber; and a large opaque patch of lymph on centre of lens. His vision is merely perception of light, though more acute than on admission.

The four following cases, illustrating the same points, have fallen under my care at St Bartholomew's Hospital, Chatham. The brief extracts from the notes have been kindly made for me by the Assistant House-Surgeon, Mr Robert Cobb.

CASE VI.—*Wound of Eye with Fragment of Steel, September 3—Protrusion of Iris—Traumatic Cataract—Sympathetic Inflammation of opposite Eye Nine Months after Accident—Enucleation of wounded Eye—Recovery of sympathetically-irritated Eye.*

John Martin, aged 35.—Whilst the patient was at work cutting a steel rail on September 3, 1873, a piece flew off and struck him in the right eye. There was a wound extending from about the centre of the cornea directly downwards to about a line and a half into the sclerotic; the vitreous was penetrated, and a large portion of the iris protruded; this was snipped off. The lens was wounded and partially dislocated, and some vitreous escaped. The eye then quieted down, but vision in it was entirely lost. On June 1st, 1875, sympathetic irritation began in the left eye, the sight becoming rapidly impaired. The right globe was removed on June 4th, and a piece of iron about half the size of the finger-nail was found embedded in the posterior and upper part of the globe on the outer side. After the operation, the sight of the left eye became perfectly normal.

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CASE VII.—*Wound of Eye with Chip of Metal in* 1863—*Sympathetic Irritation Nine Years afterwards—Enucleation —Recovery of Eye sympathetically irritated.*

Frederick Gibson, aged 27.—In 1863 the patient was cutting an iron plate in the dockyard, when a small piece flew off and penetrated the inner side of the right eye. The eye quieted down after a time, and became squared and atrophied, but vision was totally lost. He was admitted into the Hospital on September 3, 1872, with sympathetic irritation of the left eye. The injured eye was removed with some difficulty, owing to its being atrophied. On examination of the eye, a piece of iron about the size of a pea was found embedded in pigmentary substance resembling the choroid. It was lying over the position of the optic disc, the outline of which was totally lost from effusion of lymph. The sympathetically-irritated eye was materially relieved by the operation, vision being almost normal.

CASE VIII.—*Wound of Eye with Chip of Metal, March* 1874 *—Protrusion of Iris—Traumatic Cataract—After Ten Weeks, sympathetic Irritation of opposite Eye—Enucleation —Serious Impairment of sympathetically-inflamed Eye.*

Edward Willey, aged 24.—On the 20th March 1874 the patient was struck by a piece of iron from a rivet in the left eye, causing a clean and straight wound of the upper part of the cornea, cutting off a portion of the iris, and forming an accidental iridectomy. The eye became hard, painful, with a generally dull and congested aspect—in fact, glaucomatous—and an iridectomy was performed on March 23. The lens was also removed, and found to be softer, and pus welled up from behind the iris, some parts of which were adherent to the cornea. After this the eye gradually quieted down, and he could see the hand before the eye at ten inches. He was discharged from the Hospital on May 2d, but was readmitted on June 3d with sympathetic ophthalmia of the right eye. The left eyeball was immediately excised, the eye was examined, and lying on the fundus was found a piece of steel about five-eighths of an inch long and one line in thickness. The eye gradually became quiet, and he was discharged from the Hospital on August 12th, vision being $\frac{6}{100}$.

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CASE IX.—*Wound of Eye with Chip of Metal—Traumatic Cataract—After Four Weeks, sympathetic Irritation of opposite Eye—Enucleation—Partial Recovery of sympathetically-irritated Eye.*

William Ansell, aged 40.—When at work in the dockyard on September 7th, 1875, the patient was struck in the left eye by a piece of iron. He came to the Hospital about three hours after the accident, when it was found that he had a wound about three lines in length in the centre of the cornea, and there was also a traumatic cataract. Acute inflammation of the eye followed.

September 12.—The pain being severe, leeches to temple were ordered, which relieved him, but there was considerable chemosis of the conjunctiva, and the iris was of a dirty green colour.

October 16.—Sympathetic irritation of the right eye became distinctly marked. V. = $\frac{12}{100}$. The injured one was consequently removed; the conjunctiva was everywhere thickened, tough, and firmly adherent to the globe. The eye was opened, and was found to be filled with pus, and a piece of iron about the size of a pea was found in the back of the globe.

Vision now, November 6, rapidly improving (= $\frac{20}{40}$) in the sympathetically-irritated eye.

CASE X.—*Lacerated Wound of Left Eye with piece of China in June—Sympathetic Ophthalmia in November—Both Eyes lost.*

William Haine, age 6½, was sent up from Hertfordshire on January 19, 1875, with iridochoroiditis of his left eye, the result of sympathetic ophthalmia. He gave the following history:—'In the middle of last summer, while hammering a piece of china, a chip struck him in his right eye, whether it remained within the globe or not he knew not. He lost most of his vision immediately the eye became inflamed, and he gradually became totally blind in it. About two months ago his left eye became painful, lachrymated, and finally inflamed.'

On admission, right eye, cornea clear; pupil contracted; post-synechia; iris infiltrated with lymph; scarcely any anterior chamber; anterior capsule of lens covered with lymph; conjunctiva injected; circum-corneal zone. T.—2.

January 19.—The right eye extirpated.

Examined—Posterior half of globe healthy; anterior and posterior layers of capsule united together; thickened and enclosing remains of lens converted into a kind of fibrous tissue; iris rotten, infiltrated with lymph, firmly adherent to anterior capsule of

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lens, which is covered with lymph; ciliary processes covered with lymph.

January 22.—Photophobia; circum-corneal zone much less; no pain. L.V. = $\frac{3}{40}$.

February 5.—Vascularity of sclerotic much diminished; circum-corneal zone nearly gone; pupil not dilated; eye flashes up on least exposure to light. L.V. is now $\frac{3}{20}$ (on admission, merely perception of light).

CASE XI.—*Injury with Fragment of Steel to Right Iris and Lens—Cataract—Removal of Lens Substance—Partial Recovery—Opaque Capsule being left.*

George Pullen, 32.—One month previous to admission a small piece flew off a steel chisel he was using, and wounded his right cornea, iris, and lens; the eye had been inflamed and painful for a fortnight, he had no vision with it.

When he came in there was a fine semi-opaque cicatrix running across centre of cornea downwards and inwards for about one line in extent. The pupil was elongated from above downwards and inwards, was irregular and immovable, and was blocked up by opaque lens and lacerated capsule. The iris was muddy, appearing to have been cut at its lower and inner part. Leeches and atropine ordered.

On 19th.—Mr Power introduced a broad needle, and divided the thickened and opaque capsule, allowing the aqueous to permeate lens matter thoroughly (both of which escaped freely).

21.—Ordered calomel, opium, and quinine. Severe Iritis followed. R.V. = Shadow of finger near eye.

28.—Can just distinguish light. Two leeches. Iris rather pushed forwards.

February 1.—Lens matter steadily undergoing absorption. No pain. Circum-corneal zone strongly defined.

3.—Discharged. Good perception of light. Eye quiet.

June 29.—Reappeared. R.V. = Counts fingers at 2 feet. L.V. = $\frac{20}{20}$. A small strip of dense white capsule stretches across pupil from lower and inner to upper and outer part, in which latter situation it is broadest; iris is adherent to it. All lens matter absorbed. Wound of iris at lower part still apparent, and the central linear cicatrix on cornea is just perceptible.

Refuses to have his eye touched; so returns to farm work. In this instance, whilst there was good reason for believing that the chip had entered the eye and was lodged in it, there was so little irritation that it was not thought justifiable to recommend enucleation. If present, the particle may have lodged in the

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lens, and escaped with the lens substance during the operation on the 19th. It is to be noticed that the eye remained a useless one.

If the patient had been willing to give his consent, it is probable that laceration of the capsule with two needles, and the subsequent use of an appropriate glass, would, in this case, have given fair vision. This proceeding, however, though its results are sufficiently favourable in patients who have secondary capsular cataracts after extraction or discission of lens, is by no means unattended with danger when the cataract is the result of an accident. Violent inflammation often supervenes, even when very little apparent injury is inflicted by the needles. The difference is perhaps due to the much more general and severe inflammatory mischief that is occasioned by an accident, as compared with the clean incisions of surgical instruments, and the consequent firmer union between the capsule and adjoining tissues, so that any traction that is exerted upon the opaque capsule is more likely to separate the retina from the choroid, or the choroid from the sclerotic. Perhaps a better mode of treating such opaque capsules consists in performing an iridectomy, and then simply dividing the capsule with a pair of scissors; or the division may sometimes be effected without the iridectomy, by means of a bent narrow knife (Taylor's knife) and a pair of Wecker's iridectomy or cannula scissors.

Case XII.—*Wound of Eye from a piece of Iron—Traumatic Cataract.*

James Turner, 23 years, an iron moulder.

On April 19, while at work, a piece of iron, 1½ inches long, flew up and struck him in left eye; there was much pain afterwards, which was quieted by belladonna lotion.

On admission, April 22.—There is an incised wound in left cornea about ¼ inch long, extending from about centre downwards and inwards in a curved direction (with the convexity upwards); the edges of the wound are opaque and bulging. Whole sclerotic pink. Iris of a greenish colour, its striæ distinct; it is pushed forward against cornea by opaque milky swollen lens behind; is adherent to wound. L.V.=perception of light. R.V.=$\frac{20}{20}$. Complains of much pain. L.E. a little soft.

April 25.—L.T.–1. Pain severe. Under chloroform, Mr Vernon removed much of the softened lens matter with a curette, at the same time setting the iris free from its connections with cornea by means of a sharp broad needle.

April 26.—Pupil well dilated by atropine and regular.

April 28.—Some anterior synechia again at outer part of

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wound. Lens matter still occludes most of pupil, especially upper part. T. a little increased. V.=can see his hand at 1 ft.

April 30.—Cornea bulges at site of wound, to the outer part of which a small strip of capsule is attached, being adherent to the iris by its other end, thus the irregularity of the pupil is increased.

May 3.—Pupil was well dilated again.

May 5.—Atropine was stopped.

Eye kept very irritable and painful, requiring constant leeching and absolute rest in bed, with protection from light up to May 17, when he was allowed to get up and use his right eye. The pupil contracted somewhat, and iris formed some fresh adhesions to remains of capsule.

May 19.—Fresh pain returned, and he had to keep in bed.

May 25.—A blister was applied on 22d, and kept open, which lessened his pain and quieted the eye.

May 31.—Blister was healed.

June 7.—Discharged.

Eye quiet; pupil irregular, and occluded in parts by remains of capsule. Iris is not adherent to wound. Good anterior chamber. Position of wound on cornea very prominent. Good perception of light; can discern objects at a foot or so passing in front of his eye. T.n.

To return in a few months' time and have remains of capsule removed from centre of pupil, when there is every prospect of his having good sight with a glass.

CASE XIII.—*Injury to Eye with Iron Wire—Traumatic Cataract—Sympathetic Irritation One Month after Accident.*

William Atherton, age 57.

July 13.—Ran a piece of clean bird-cage wire into upper part of right cornea; he pulled the wire out himself; the eye bled much; he suffered great pain.

July 15.—Anterior chamber one-third full of pus.

July 16.—On admission, right eyelids swollen. Hypopyon has cleared up. *Conjunctiva* intensely chemosed and congested. There is a punctiform wound in upper part of *cornea;* the tissue here is raised at the edges of the depression so as to give 'a rough feeling to the upper lid;' and from this an opacity extends to centre of cornea. *Iris* is adherent to wound; pupil thus irregular. *Lens* opaque, T+1. V.=perception of light. Complains of severe right hemicrania. *Left eye* lachrymates slightly; more vessels on sclerotic than natural. Diarrhœa since accident. Flashes of light constant in right eye.

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July 23.—Wound filling up. Lens swelling and projecting into anterior chamber.

July 26.—Hemicrania still intense; flashes of light less frequent; no pain in globe itself; left eye much quieter.

July 28.—Anterior chamber shallower; iris pushed forward by lens swelling; T+1; hemicrania intense; whole globe inflamed. Left eye; pink vessels on sclerotic do not disappear; eye lachrymates on exposure to light; V. is perfect; will not take chloroform or ether, and will not consent to any operation; an iridectomy was to have been done.

This man always complains of pain in his head and not in his eye, and always on same side as the injured eye. This patient was discharged, at his own request, in a decidedly dangerous state.

CASE XIV.—*Wound of Eye from a Fork—Traumatic Cataract—Protrusion of Iris—Iridectomy—Removal of Lens—Loss of Vision.*

William Backman, 12 years.

February 24.—While boring a hole in his gaiters with a fork, his hand slipped and he wounded his left eye. Admitted with a punctured wound about one line in length at inner margin of left cornea, prolapse of iris, and wounded lens.

House-surgeon snipped off prolapsed iris. Atropine, leeches, pad, and bandage.

February 27.—Still some iris in contact with wound; pupil dilated; lens swollen, pushing iris forward.

March 1.—Lying in anterior chamber with its longest diameter downwards and inwards appears to be the capsule of the lens; at inner and lower part is a tear in the capsule, apparently from the prick of the fork. Pupil well dilated; lens opaque; no pain.

March 2.—Mr Vernon introduced a keratome through wound, and removed much lens matter with suction syringe.

March 18.—Iris drawn from outer side to centre of pupil and from adhesion it has formed with capsule. L.V.=perception of light.

March 22.—Mr Vernon divided adhesions of iris by a broad bent needle, and removed capsule with canula forceps.

March 31.—Pain. T.—1. V.=$\frac{6}{20}$.

April 8.—Pupil contracted and drawn towards wound; iris atrophied, showing uvea; is against cornea.

April 17.—Pupil entirely obliterated; in inner third of cornea, lymph hides iris; outer two-thirds black atrophied iris; iridectomy from above and outwards; iris divided right across from above downwards, with iridectomy scissors.

April 22.—L.V.=can see window at 20 ft.

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April 27.—Perception of light.
April 29.—Globe square, and soft.
May 4.—Discharged. No vision in left eye.

CASE XV.—*Wound of Right Eye—Traumatic Cataract.*

John Cope, 57, labourer.

Three weeks ago hit his right eye with a "pick," which caused much pain and photophobia, but no great inconvenience at that time. Afterwards he imagined he 'caught a cold' in it, so kept it covered for four or five days, at end of which time it became very hot and painful, he could not bear the least light. He attended an hospital, then became too ill to go, and was sent here by his parish doctor. Vision has been absent for last week.

December 29.—On admission, lens appeared to be bulging into anterior chamber and in contact with cornea; pupil blocked up by lens and lymph; upper part of cornea necrosed and filled with lymph and vitreous, lower part dark and hazy; lids swollen, slightly; conjunctiva chemosed and conjested.

January 7.—Much discharge from eye. Central portion of cornea sloughed, membrane of Decemet being pushed forward by mass of lymph and opaque lens; rest of cornea hazy. Iris muddy, fixed; no anterior chamber. V.=perception of light. Left eye normal. No operation advised to be performed on right eye except removal, which was not consented to.

January 14.—Ulcer healing; two small secondary ulcers, upper plugged with lymph, lower transparent.

January 24.—Ulcers healed. V.=$\frac{2}{3\,0}$, can distinguish faces.

CASE XVI.—*Wound of Right Cornea and Sclerotic—Recovery.*

Charles Moore, 38 years, labourer.

February 12.—Struck in right eye this morning with a glass tumbler. A clean cut wound at lower and inner portion of corneo-sclerotic margin, through which protruded a portion of iris which was cut off by house-surgeon, an iridectomy thus being performed downwards and inwards. Lens not injured. No glass to be seen in eye. Left eye uninjured.

February 18.—Discharged. Eye quiet. R.V.=$\frac{2\,0}{7\,0}$; L.V.=$\frac{2\,0}{2\,0}$.

CASE XVII.—*Wound of Eye with Fragment of China—Escape of Lens—Persistent Irritability of injured Eye—Enucleation.*

Jane Barton, 18 months. On the evening of June 22d was playing with a toy 'china dog,' when she fell on the floor, break-

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ing the china dog into a few large pieces with her head; one of these wounded her right globe, which bled freely.

On admission the globe (under chloroform) was found collapsed, a deep irregular wound extending across upper part of right cornea into ciliary region, iris, lens matter, and vitreous, with blood-clot protruding between its edges; no fragment was seen. The wound was cleared of its contents, and then firm pressure applied with a pad (wet) and bandage. The whole healed well, the child was cheerful, and did not complain of pain; but the globe, though it filled out somewhat in size, remained always a little pink. After a few days in Hospital, she attended as an out-patient. The eye continued so long irritable, however, the child rubbing it, &c., that it was resolved to remove it. It was not, however, till July 27th that the parents could be persuaded to consent. Mr Vernon then did an enucleation, from which the child quickly made a good recovery. No foreign body was found in the globe.

Description of Jane Barton's Eye.—July 27.—The *iris* was found to be very disorganised, and adherent throughout greater part of its extent to the adjacent structures. The *lens*, as also the parts generally comprising the anterior portion of the globe, were found to have undergone extensive changes, and a considerable quantity of altered vitreous humour escaped, together with blood and serum. No fragment of china found.

On examining the front of the eye which was removed, the cornea was seen to be *semi-transparent*, showing disorganised iris at its lower two-thirds; the upper one-third was opaque and contracted, the wounded sclerotic here being all puckered up, and entangling the ciliary processes and upper part of lens capsule, the lens matter having mostly escaped. No anterior chamber.

Case XVIII.

James Godfrey, 39 years, a turner.

March 13.—At work this morning with a circular saw, when a splinter of wood hit his right eye.

Right eye.—There is a clean cut wound at inner side of cornea, of some size; several abrasions of conjunctiva, with slight ecchymosis. (Leeches and atropine.) Anterior chamber full of blood, obstructing view of deeper parts. No pain. V. = perception of light.

March 15.—Edges of wound quite united. Anterior chamber much deepened. Most of the blood has disappeared. Pupil dilated. R.V. = can count fingers at a few inches.

March 17.—On getting up, some of the blood reappeared in

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anterior chamber. Lens (by direct O.E.) tolerably clear; some opaque striæ radiating from inner margin towards centre.

March 19. — All blood absorbed; eye quiet; no pain. R.V. $= \frac{20}{100}$. L.V. $= \frac{20}{20}$.

March 20.—Discharged. Was cautioned to reappear if any return of pain occurred.

CASE XIX.—*Injury to Eye from Brad-awl—Traumatic Cataract —Extraction of Lens—Recovery.*

William Sapsed, age eleven, shoemaker's apprentice, Wilton, Herefordshire.

March 13.—Whilst playing with a finely-pointed shoemaker's awl three days ago, he thrust the point of it into his right eye. The point pierced the upper and outer part of the cornea, and lacerated the capsule of the lens at the upper and inner part.

Present Condition.—Conjunctiva slightly congested, circum-corneal zone well marked, cornea clear except at upper part where wound was, and at that situation there is slight synechia; anterior chamber shallow, the iris being bulged forwards by opaque and swollen lens, slight pain. R.v.=perception of light, L.=$\frac{20}{40}$.

Ordered—D.L., milk ʒvj., hirudines, ij. temp. dext.; pulv. jalapæ, co., gr. iv.; hyd., subchlor, gr. ij., statim; guttæ atropiæ, gr. iv.; ad ʒj. aq.

March 18.—The pupil dilated freely except at point of synechia, and he remained for a time free from pain, but on the eye becoming irritated, Mr Power passed a bent needle through synechia, lacerated the capsule, and extracted the soft lens, with a grooved curette. This has been partially successful, but there is still some lens matter remaining; no pain; chamber restored; still slight synechia.

March 28.—To-day he is perfectly free from pain, and can see better, but there is still some opaque capsule and lens substance blocking up the pupil. Pupil well dilated, slight synechia continues.

April 2d.—No pain. Eye quiet, sees and distinguishes objects within a few feet. Left eye, uncovered on 3d.

April 7.—V.R $\frac{9}{200}$. V.L. $\frac{20}{40}$. R.T.n.

CASE XX.—*Contused Wound of Right Eye in Corneo-Sclerotic Junction—Loss of Lens and Vitreous.*

John Collins, age 25, Lyden Villa, Stoke-Newington.

November 28.—This afternoon, 3.30, as the patient was raising

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up a piece of work, weighing about 40 lbs, with a burnisher, an instrument like a steel, the weight slipped off the burnisher, and the instrument starting up, struck him in the eye. Immediately he felt some water run from his eye, and the foreman noticed that the fluid was sticky.

He was immediately brought to the hospital and admitted. Mr Vernon was sent for in the evening, the man being in great pain. The instrument had torn the cornea on the inner side, opaque lens to be seen, very little prolapse of iris, no anterior chamber, eye very soft. Can distinguish light. The anterior chamber was thoroughly explored with a scoop, a small portion only of the lens could be discovered; it was removed. The edges of the wound were cleansed of some vitreous and pigment, and a firm compress applied. D.C., milk vj., wine ʒij., t.d. W. H. gr. x., statim.

November 29.—No œdema of lids; ecchymosis of conjunctiva; edges of wound nebulous; iris hardly to be seen, looks as if a portion had been torn away at the time of the accident. Slept pretty well.

December 1.—Wound apparently healed; a little blood in anterior chamber; some conjunctivitis.

December 4.—Still a great deal of pain and conjunctivitis; two leeches were ordered to right temple; slight protrusion of vitreous from lower part of wound.

December 8.—Patient in much the same condition; pain rather greater, and somewhat more inflammation; blood still in anterior chamber.

December 10.—Yesterday there was some œdema of the lids, the pain had increased, and vitreous was more protruded; anterior chamber was tapped with a broad needle, and three leeches applied to the temple. H.M.S., c. M.S. Quinæ sulph., gr. j., t.d.s.

December 11.—Pain much relieved by the operation; still a great deal of lachrymation; lids more œdematous; some chemosis and congestion of conjunctival vessels; some fresh protrusion of vitreous (a small portion was snipped off yesterday); pain continues; T. = + 2; anterior chamber tapped again at night-time, and wet compress applied.

December 12.—Œdema of lids rather less; no fresh protrusion of vitreous; conjunctival inflammation diminished; no pain.

December 17.—Eye gradually improving; much less œdema of lids; chemosis of conjunctiva less marked; still some lachrymation; no irritation of left eye.

December 23.—V. L. = $\frac{20}{50}$. V.R. = perception of light. Eye much quieter, though conjunctival vessels are still congested, the protrusion of vitreous has sloughed off and no more has appeared;

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an opaque body (lymph, blood, and capsule), is to be seen deep in anterior chamber; no pain in eye, but much lachrymation.

December 31.—Eye much quieter; does not wear a pad and bandage now; much less lachrymation. This patient was discharged on January 6.

CASE XXI.—*Rupture of Globe—Protrusion of Iris—Union of Edges of Wound—Partial Recovery.*

William Syme, 40 years, porter at a large warehouse.

At 1.40 P.M., May 16, while leaving the doorway, he came into contact with a heavy wooden box, which was being thrown from one man to another. At 2.15 was admitted. His right is a full and very prominent eye. *Left eye has collapsed.* There is a wound running almost completely round the inner half of the corneal circumference; at the upper part it is wholly in the sclerotic, but lower down implicates the corneo-sclerotic margin, extending through the ciliary region; the wound gapes; there is much hæmorrhage; vitreous is escaping in some quantity; the lens has apparently gone; and the iris is completely torn from its attachment along the inner half of its circumference, and is hanging out of lower portion of wound.

3 P.M.—Under chloroform, Mr Reid cut away all the iris, and some protruding choroid, cleared away all blood-clot and protruding vitreous, instilled atropine, and applied firm pressure with pad and bandage.

N.B.—In the wound was found, loose, a small piece of sclerotic, with ciliary processes attached entire. This had evidently been chipped completely out from the violence of the injury.

The patient was faint and giddy after the accident, and had diarrhœa immediately after it happened, which lasted for about ten days, and was difficult to arrest. (There was no other cause whatever for the diarrhœa.) He suffered scarcely any pain after the operation, complaining only of some slight dull aching that night.

May 17.—Lower and outer one-third of cornea is hazy; there is some blood-clot at bottom of anterior chamber and about wound; edges apparently united.

May 24.—His right eye was uncovered.

May 25.—T.—3 of left eye.

May 29.—Left eye uncovered, and the patient allowed to go into square.

The wound has healed up without pain or any bad symptom.

June 11.—Discharged to Convalescent Home at Highgate.

Present Condition.—Right eye—perfect sight. Left eye—

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remains of small wound in centre of upper lid. The corneo-sclerotic wound has contracted much in healing, so that cornea is rather flattened and misshapened; it is clear, showing good anterior chamber, healthy iris, and large artificial pupil inwards, and downwards, which is occluded by yellowish lymph and organised blood-clot. T.—3. V. = *nil* (not even perception of light). He can open his eye well; a strong light or exposure makes it lachrymate freely. A thin vertical linear leucoma is to be seen running across cornea, and dividing it nearly into two halves, the inner of which is the larger. On touching inner half of cornea with a probe it indents readily, and patient does not feel it at all; outer half is sensitive. Conjunctiva and sclerotic about wound are insensible, while same structures at outer part of globe are sensitive. The whole globe is much flatter than its fellow.

July 12.—Reappeared at Hospital, after twenty-six days of (in his own words) 'supreme happiness' at Highgate. Left eye—The cornea is perfectly clear, and has regained its natural curve, but its inner half has still its sensation very greatly impaired, and near wound is absolutely insensible. Conjunctiva and sclerotic about wound have regained much of their lost sensitiveness. Palpebral conjunctiva perfect.

The cornea is a little misshapen at wound. Anterior chamber is very deep. The organised blood-clot at its lower part seems to have acquired adhesions with the iris, and then to have contracted, thus diminishing the size of the formerly large artificial pupil; the pupil is now more nearly round, and displaced inwards and downwards, but slightly. The clot appears as a small yellowish mass to inner part of anterior chamber.

The eye is quite quiet, merely one large vessel running from inner canthus to supply cicatrix of wound the linear leucoma over centre of cornea is still apparent; T.—3, V. = *nil;* but globe has a very presentable appearance, being almost as prominent as its fellow, and having perfect movements. Can read well with his right eye, and stand the sunlight (this eye has never troubled him throughout).

This patient is extremely grateful for treatment, and expresses the advantage of a presentable though blind eye over an empty socket or artificial shell.

Case XXII.—*Abrasion of Cornea—Recovery.*

Henry Crockford, 48 years, an ostler.

On February 26, was hit in right eye with a whip; this was followed by violent pain and inflammation; vision scarcely more than perception of light.

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March 1.—Admitted. Globe injected. A superficial ulcer of cornea reaching from pupil to inner margin of cornea; there is slight haziness about this, and dotted opacities throughout the cornea. Complains of severe pain. Fotus belladonnæ, leeches. He suffers from a bad cough. Is a great gin-drinker.

March 4.—Pil. saponis Co. gr. 2½ night and morning.

March 11.—Posterior synechia at lower border of iris just noticed.

March 18.—Was discharged with R.V. = $\frac{20}{30}$ (L.V. being $\frac{20}{30}$); the corneal opacities having cleared up.

Case XXIII.—*Lacerated Wound of Cornea extending into Ciliary Region.*

Albert Cambrasi, age 6½, 3 Landon Place, London Fields, Hackney.

January 9.—Whilst playing with his sister last Saturday, 3d, he ran against a cane she was holding, the point entering his eye. There is now slight ecchymosis of lid, slight lachrymation, no photophobia or pain, conjunctiva congested. A laceration extends from upper and outer margin of cornea for one line into sclerotic upwards, and across cornea downwards to its inner margin.

A friend of patient states there was an escape of clear viscid fluid after accident, and a great deal of blood. The anterior chamber is filled with blood, and at upper part of wound there is a protrusion of lens substance. Apparent laceration of iris at upper part. V.R. *nil.* T.—2. No pain in left eye. Ordered—D.D. milk, pad to be applied, guttæ atropiæ.

January 12.—All inflammation subsiding, and the other eye remaining quiet, he was discharged; but symptoms of irritation showing themselves, he was readmitted on

January 22.—Abscission was done; the needles, with both ends protruding, one above, the other below the margins of the cornea were left till the anterior part of the globe was removed, and then drawn through; three sutures being used of fine black silk. Pad of lint applied. D.D. milk, vj.

January 30.—The day after the operation he had slight pain. On the sixth day one of the sutures ulcerated through, and the following day the other two were removed. The wound is now healed, and the eye speedily quieted down after separation of the sutures.

Case XXIV.—*Injury to Globe from Blow—Iritis—Recovery.*

Joseph Hepburn, age 45, a compositor for *Bradshaw's Guide.* Three months ago was struck in the left eye by a wooden letter

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type covered with ink; eye was inflamed for a short time, but recovered soon. Three weeks afterwards, however, after working all night, was suddenly attacked with iritis and swelling of lids; he attended then as out-patient here, but not improving, was admitted, October 2, 1874, with much congestion of left globe and swelling of lids, a large superficial ulcer on centre and inner portion of cornea, iritis, and considerable hypopyon, L.V.=fingers at 2 feet, T.+1. Kept in bed, fed well, and ordered atropine, blister, and quinine. He rapidly improved; by 20th, after calomel and opium had been administered, the hypopyon was gone.

October 27.—Discharged; being again made out-patient; a patch of lymph on centre of capsule remains; L.V.=$\frac{2}{70}$; striæ of iris recognisable again; no adhesion; ulcer nearly healed; cornea only opaque, slightly about ulcer.

Case XXV.—*Rupture of the Globe—Violent Inflammation—Enucleation.*

John Johnson, age 63.

On May 31st, at 10 A.M., while feeding a threshing-machine, a stone flew out from the drum with considerable force, knocking him over, and wounding his left globe, which bled freely. He walked home five miles, kept in bed for three days, during which time he suffered acute pain, and applied a cold water bandage constantly.

Was admitted June 5 in following condition:—Whole left *globe* intensely injected. *Cornea* semi-opaque; a vertical incision extending right through its substance to ciliary region, above and below. *Iris* inflamed and prolapsed into wound. Centre of pupil occupied by apparently softened lens matter. Vitreous protruding between edges of wound, and some purulent matter smeared over globe and beneath lids. Suffers great pain. Eye lachrymates much.

Protruding iris was cut away by house-surgeon, and all vitreous and capsule of lens between edges of wound removed. Pad, bandage, and leeches applied.

June 7 and 11.—More iris and vitreous had to be removed from wound, which would not unite, but constantly allowed aqueous to dribble from it. The pain was greatly relieved by treatment, but the bowels continued obstinately confined while pain lasted.

June 17.—The wound appeared to have united, there being some anterior chamber.

June 18.—Sympathetic irritation commenced in right eye with the usual symptoms of lachrymation; general congestion of the eye, subacute iritis, and impaired vision.

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June 19.—Four P.M., left globe removed.

No foreign body was found in globe, but a large blood-clot amid suppurating vitreous. The retina and choroid appeared healthy.

July 2.—Discharged. R.V.=normal. Left orbit nicely healed.

CASE XXVI.—*Superficial Burn of Cornea—Recovery.*

William Gray, age 17.

Last night, walking across a room, came into contact with the hot swing gas-pipe.

January 1.—Conjunctiva, seared and cornea burnt at lower and inner part; sclerotic greatly injected; iris natural; lids swollen; much purulent discharge.

The patient was kept in bed, with cold poultices applied to the lids, and atropinised oil instilled into the eye. No irritation followed, and on January 4th he was discharged.

This was merely a superficial injury.

CASE XXVII.—*Burn with Gunpowder—Persistent Inflammation—Recovery.*

Joseph Webb, aged 32. A 'Roman candle' discharged its contents into his face on evening of November 5. Right upper lid much burnt. Conjunctiva burnt off down to sclerotic, at upper part of globe, and upper half of cornea abraded and burnt. Numerous grains of gunpowder adhering to conjunctiva; surface of lids removed.

Bed, Ol. Ricini, wet pad, and bandage, followed by leeches, atropine, carbonate of ammonia, and cinchona internally, was the chief treatment. This patient suffered intense pain; his lids became red and œdematous; there was much photophobia and lachrymation. Though all visible gunpowder was carefully removed at the time, on the 7th some grains appeared in the opaque, and superficially sloughing upper half of cornea.

November 10.—Last remaining grains sloughed off cornea.

November 19.—R.V.=fingers at 6 feet. Pain has at last left him.

November 30.—The destroyed conjunctiva nearly repaired; cornea healed, though still hazy at its upper part; decided internal squint.

December 1.—Discharged, and made out-patient.

The long duration of severe pain, the pertinacity with which the grains adhered, and amount of damage produced by an injury that did not at first seem more than superficial, were remarkable.

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The following case shows the terribly destructive action of lime, or carbonate of lime, in the form of mortar, on the eye; and teaches the great caution that should be exercised in giving a prognosis even when the patient is seen very shortly after the accident, and when the injury inflicted seems to be comparatively slight.

CASE XXVIII.—*Burn with Lime—Gradually increasing Opacity, ending in Sloughing of Cornea—Loss of Eye.*

Robert Chinery, age 39, labourer.

On May 17 came to hospital three-quarters of an hour after accident. Some 'freshly made mortar' fell from top of a scaffold into his right eye. Under chloroform, house-surgeon removed all the lime that was visible, from his eye; (it adhered very firmly to the conjunctiva) afterwards syringing it out with weak acetic acid (1 in 8). Castor oil was dropped in and patient sent up to ward to bed.

Conjunctiva severely burnt; lower half of cornea deprived of its epithelium, but transparent. D.C., milk, beef-tea, arrowroot. In much pain, leeches applied to right temple. Lower half of cornea became hazy, and a superficial ulcer formed; mucopurulent discharge from eye; pain much relieved by leech.

April 1.—Right eye; upper lid red, margin thickened; under surface granular, but no extravasation now; lower lid, inner surface, villous and red; ocular conjunctiva fleshy and chemosed; lower part dark purple, and slightly overlapping cornea; lower half of cornea ulcerated, margin being sharply defined, shreds of the membrane adhering; pus in anterior chamber 2 m.m. in height. Spt. quiniæ, t.d.s.; cat. lini oculo dextro; hirudines ij., temp. dext.; to keep his bed. Bowels obstinate, H.M.S. c. M.S. + quinine; panophthalmitis supervening. Much pain in back of head. Opii gr. j., 6th horis.

April 5.—Pain severe; is restless and 'jerky' in his movements; at midday, hypopyon discharged itself spontaneously. (The eye had been supported by pad and bandage all along.) Pain relieved.

April 6.—Nearly whole cornea opaque, except upper fourth, which is buried in fleshy chemotic conjunctiva; lower part of cornea has given way during last twenty-four hours, and is sloughy and prominent; lids not much swollen; iris discoloured; great pain in back of head, and along right side of head, in course of auriculo-temporal branch of 5th nerve. 6 P.M.—Sudden pain in right eye, made him struggle; lens shot out upon his cheek, and some vitreous escaped; lens found to be perfectly transparent; stop opium pill. Morphia, gr. $\frac{1}{3}$, to be subcutaneously injected bis die.

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April 7.—Corneal wound healed; anterior chamber half full of pus; much purulent discharge from eye; pain in eye again; that at back of head severe, and only removed by morphia injections.

April 8.—Morphia and chloral both required to subdue pain; cornea very prominent; lids more swollen; tension of eye increased greatly; pain has become more severe, cornea more bulging; discharge more profuse and purulent; so on

April 10.—Globe was laid open anteriorly by a horizontal incision with a scalpel; a stream of yellowish, thin matter shot into air to some height, from relieved tension. Poultice applied. Pain relieved. Wine ʒvj.

April 12.—Pain only relieved by chloral hydrate gr. xx. More œdema of lids; more pain; more discharge. Ocular conjunctiva intensely injected and chemosed, protruding between lids. Remains of corneal tissue ragged and covered with pus, very prominent. Feels ill in himself. Globe tense again. Wound healed. Bowels obstinately confined. Quiniæ gr. ij. t.d.s. Has had four leeches to right temple.

April 13.—Globe reopened by Gräfe's knife. 11 P.M.—Lids less swollen; free discharge from globe.

April 17.—No pain. Requires no sedative at night. Bowels became regular again as soon as pain left him.

April 19.—Up. Globe now suppurated freely, and by 24th was considerably diminished in size.

April 29.—Allowed to walk in the square.

May 1.—Poultice stopped.

May 3.—Upper (R.) lid red, and still a little swollen. Conjunctiva chemosed and red. Granulations sprouting from site of cornea, showing on outer side of central opening some of the choroidal pigment. Still some purulent discharge. Globe is shrinking yet, presents appearance of being filled with granulations within. Left eye healthy. V. = $\frac{20}{20}$. Discharged.

Case XXIX.—*Cut across Cornea with Glass—Protruding Iris removed—Vision Lost.*

W. G., aged 41, a shoemaker, received a cut across the left cornea two months previously to his admission, July 7th. The iris was prolapsed at the upper and inner part of the cornea, through the wound, which involved the whole breadth of the cornea. He stated that the medical man who attended him at first removed the lens, and there is every probability that this was the case. On admission, the whole eye was considerably inflamed, and it was thought that an extirpation was inevitable; but the eye quieted

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down so much with the simple application of lin. glycerini c. belladonna, that it was agreed to keep him in the Hospital a short time and watch the result. Tension, + 2. Two days after admission, the prolapse of the iris still considerable. V.=quantitative perception of light. At the end of a month the cornea had cleared considerably, the protrusion was vascular, and covered with a coating of lymph. All irritation had subsided, but the tension remained increased. He was advised to let it remain as it was for the present, but if at any time the opposite eye should become dim, to have the left extirpated without delay. On August 5th he was discharged.

Case XXX.—*Abrasion of Cornea—Recovery.*

J. West, aged 59, male. Admitted November 30, 1869. Four days before admission, was struck on left eye by flint whilst at work. Suffered great pain. On admission, an opaque white spot was found at centre of left cornea, nearer lower than upper margin; general inflammation of eye and hypopyon. Ordered calomel and opium pills, belladon. lot., with pad and bandage. Two leeches to temple.

December 1.—Inflammatory action lessened. Hypopyon greater. Pills of quinine, iron, and mercury substituted for cal. c. opio.

December 8.—Hypopyon cured. Omit pills.

December 18.—Eye quiet. Cicatrix of cornea shows a depression, but is not opaque.

December 30.—Discharged, cured. Right eye not affected at any time.

Case XXXI.

J. Harvey, aged 7, male. Admitted December 2, 1869. About a week before admission patient was hit and kicked in left eye. Was seen four days before admission, and found suffering from erysipelas and œdema of left lids. On admission, there was exophthalmia and great pain in eye, with tension of orbit and globe. To poultice, and take pulv. ipecac. co., gr. 4; hyde. cretæ, gr. 3, h. n.

December 3.—Exophthalmia greater. Vision impaired.

December 4.—Hypopyon. Conjunctiva bulged, sanious discharge from outer side. Lids scarified. Mr Power then saw the patient, and passed a narrow knife between globe and inner wall, and slit up the conjunctiva, discharging a quantity of pus. Poultices.

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December 5.—Exophthalmia less. Keratitis considerable. Health good.

December 6.—Free discharge. Tension less.

December 8.—Eye restored to position. Vision improving.

December 15.—No discharge. Keratitis of lower part of cornea. Omit poultices. Use lot. alum.

December 22.—Pupil irregular. To use L. atropiæ sulph.

December 28.—Pupil dilated and globe normal, except as to an opacity of cornea.

January 6.—Discharged cured. Right eye not affected.

Case XXXII.

E. Kennard, aged 7, female. Admitted January 26, 1870. Nineteen days before admission hit her eye against corner of table. Has been under a surgeon. There is now photophobia. On opening lids there is found a wound of upper and outer part of left cornea, extending in an oblique direction for ¼ inch across cornea. Iris prolapsed, pupil small and oval, cornea inflamed. No pain when eye is closed. Pad and bandage and atropine to eye.

January 28.—Pupil slightly dilated, but very irregular. Less photophobia.

February 3.—Pupil more regular.

5th.—White mass at lower part of wound. Anterior chamber very flat. Vascularity of upper part of wound.

20th.—Pupil dilated, but very irregular.

23d.—Pupil elongated transversely, half only being visible, remainder obscured by corneal wound.

March 25.—Reads L. of Snellen's types at 5 feet.

Case XXXIII.

J. Tassell, aged 64, male. Admitted January 31, 1870. Four days ago was struck on right eye by piece of fagot. Cornea divided horizontally from one side to other; upper margin of pupil visible. Cornea opaque. Considerable chemosis. To use L. alum and take M. ferri aper.

February 2.—Protruding iris touched with argenti nit., and ol. olivæ applied. Poultices.

9th.—Slight pseudo-membranous discharge. Prolapse of iris less. L. atropiæ sulph.

12th.—No discharge; omit poultices. Belladon. lotion, and pad and bandage; also Liq. hyd. bichlor. ℥i., and Mist. pot. iod. ter die.

18th.—More discharge; omit hyd. bichlor.

March 9.—No discharge.

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25th.—Wound of cornea healed; lower half of cornea quite opaque.

30th.—No vision of right eye. Left eye not affected.

Case XXXIV.

J. Smith, aged 11, male. Admitted March 12, 1870. Just before admission was cutting a piece of rope yarn, knife slipped and struck him on left eye. A wound extends perpendicularly from the middle of cornea to its lower edge and on to the sclerotic. Vitreous escapes; tension of globe slight. Iris prolapsed, and pupil vertically oval.

March 12.—Mr Power excised the globe.

April 2.—Cured. Right eye healthy.

Case XXXV.

A. Fordham, aged 20, male. Admitted June 8, 1870. Ten days before admission was hit by a piece of a cap from a rifle he was firing. No treatment. On admission, right eye, great congestion of lids, eversion of lower lid, chemosis, cornea sloughing at outer part. Anterior chamber filled up with blood and pus. Pupil invisible. The left lids were œdematous and granular, come on since accident. Mr Power made a free horizontal incision into globe. Pus evacuated. Ammon. carb. and bark t. d. s. Poultices.

June 16.—Has progressed favourably; no discharge; omit poultices. Apply cupri. sulph. to the granular lids.

July 20.—Discharged. Globe atrophied. Left globe now healthy.

Case XXXVI.

J. Rogers, aged 16, male. Admitted January 9, 1871. Twenty-four hours before admission was firing a gun, which kicked and hit him on the eye and cheekbone. Left eye, ecchymosed, chemosis, wound of cornea, radiating from lower edge of cornea down and slightly outwards, and continuous with a wound of cornea, vertical, and almost reaching opposite edge. Blood in anterior chamber, iris apparently uninjured. Two leeches applied and poultices.

January 14.—Intra-ocular suppuration having occurred, Mr Power made a free incision horizontally across globe.

16th.—Poultices. Copious purulent discharge. No pain.

Fracture of zygoma discovered, which caused abscess discharging by orbit.

February 22.—Globe is collapsed. Discharged. Right eye healthy.

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Case XXXVII.

H. Freeman, aged 5, male. Admitted May 10, 1871. Four days ago, patient poked a pair of small scissors into left eye. Wound of cornea was transverse, and crossed pupillary aperture. Iris healthy, lens opaque at centre of wound. Slight sclerotitis, no other inflammatory action. Pad and bandage, and L. atropiæ sulph.

June 4.—Opacity of lens extended. Cornea healed. Eye quiet.

To return in a few months for cataract operation.

Cases XXXVIII.

W. A. Fooks, aged 9, male. Admitted July 12, 1871. Twenty-four hours ago patient was hit on left eye by a piece of iron wire, about one foot long, rebounding from a wall which it had hit. The wound of cornea separated its lower half from the sclerotic, as in lower section for cataract. Iris discoloured. Pain excessive. Mr Power removed the globe, which showed a torn state of iris, absence of lens and vitreous, and the interior of globe lined with clotted blood ¼ inch thick. Pain was gone half hour after operation.

July 20.—Discharged. Right eye not affected.

Case XXXIX.

E. Pankhurst, aged 9, female. Admitted June 10, 1871. Five days before admission, patient was peeping round a corner, and was struck on right eye by a small cube of wood. Medical attendant ordered rest and darkness for seven days. There was a wound of outer edge of right cornea, the wound was small, but penetrated the iris, and touched the lens, which was partially dislocated. Mr Power removed the lens by a scoop under chloroform, and applied a pad and bandage. To use bellad. and take cal. c. opio.

July 3.—Omit pills and lot. Eye quiet.

16th.—The eye is quiet. There is a dense leucoma at seat of wound, and pupil is drawn towards it and contracted to the size of a pin-head. There is no vision, but appreciates light.

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NOTES FROM THE GOLD COAST.

BY

THOMAS JONES.

A residence of all but five years on the Gold Coast gave me great opportunities of observing some of the most virulent of tropical diseases. Indeed, during my stay on the Coast the majority of the European population was four times changed, either by death or by being invalided home; and when I left the Coast there was not one left of the same standing as myself. My own ability to remain at my post so long I attribute to my having plenty of work, and this not only in my medical capacity, but also because from time to time, through the invaliding or death of other Government officials, numbers of acting appointments fell to my lot, and among others those of Colonial Treasurer, Colonial Secretary, Collector of Customs, Postmaster-General, and Coroner; and for a time, on two occasions, I administered the Government of the colony. In this way my working hours invariably extended from six o'clock in the morning till four or even six o'clock in the evening.

My experience was not only, for that climate, unusually prolonged, but was also very extensive, some four thousand cases of sickness coming annually under my care, and of these, on an average, fifty-three were cases of dysentery.

One or two facts came under my notice which may be not without interest, and especially as to the coincidence of dysentery and hepatic abscess. My experience is decidedly opposed to the theory advanced by Dr G. Budd of King's College, namely, that dysentery is a frequent cause of hepatic abscess. He says, "that in all the cases, or most of the cases in which abscess of the liver and dysentery are associated, the former disease is the consequence of the latter." *

So far from dysentery on the Gold Coast being a frequent cause or concomitant of abscess of the liver, out of about two hundred

* On Diseases of the Liver, by Dr George Budd, M.D., F.R.S. 3d edit. p. 89.

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and sixty-five cases of the former disease seen by me, in not one single case was abscess of the liver present.

Now, from any point of view this non-occurrence of abscess of the liver on the Gold Coast is remarkable, for be it remembered, I did not meet with a single case either during life, or in post-mortem examinations; and yet there are many observations which prove the very frequent coincidence of the two diseases,—thus, of twenty-two cases of abscess of the liver occurring on board the "Dreadnought," Dr Stephen Ward * found dysentery present in fourteen. And again, out of fifteen hundred post-mortem examinations at St Thomas' Hospital, Dr Bristowe † met with thirty-one cases of abscess of the liver from all causes, and only sixteen cases of dysenteric ulceration; but of these sixteen, no less than four, or twenty-five per cent. were complicated by hepatic abscess. And again, according to Cambay,‡ *only* one out of twenty cases of dysentery in Oran is complicated with hepatitis.

I am unable to suggest any explanation of the great rarity of suppurative disease of the liver in a country where dysentery is so prevalent as it is on the Gold Coast. So far as Europeans are concerned, it might be attributed to the climate being so deadly that they are unable to live there long enough for the development of an abscess secondary to the dysentery. This supposition, however, fails to explain the non-coincidence of the two diseases among the coloured population, for very many chronic cases of dysentery in natives came under my care in which the disease lasted for several months, and yet in these too abscess of the liver was equally unknown. The cause must lie in some peculiarity of climate or of the conditions of life in the district, for in view of the mixed character of the population it can scarcely be due to the influence of race. Notwithstanding my own personal experience, abscess of the liver, however, is not unknown in Africa, though I believe it to be very much rarer there than in India or China.

The only return I have by me from any Asiatic station is that of the Hong-Kong Civil Hospital for 1873, in which I observe eight admissions for dysentery, and two for abscess of the liver; but the return does not indicate any coincidence between these two diseases.

The forms of liver disease which I found most common among the native population, especially the wealthier classes, such as kings, chiefs, and merchants, were congestion and cirrhosis; and these could invariably be traced to the excessive use of alcohol. With reference to the occurrence of hepatic disease in tropical

* Lancet, 1868, vol. i. pp. 143, 306, and 474.
† Transactions of Pathological Society of London, vol. ix. p. 241.
‡ Frerichs On Diseases of the Liver, New Syd. Soc. Trans., vol. ii. p. 115, *note*.

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countries, I am disposed to believe that too much importance has been given to climatic, and too little to dietetic conditions.

The climate of the Gold Coast resembles that of other tropical countries in the absence of almost all diseases of the respiratory organs; to this, however, there is one remarkable exception, for phthisis is of frequent occurrence among the West Indian soldiers and their families, although I am told that in their own country they possess an almost complete immunity from that disease.

Judging from the results of numerous post-mortem examinations upon natives, West Indians, and Europeans, I came to the conclusion that the effect of the climate was shown chiefly in the spleen and in the mucous membrane of the large intestine, and that when intemperance was added then the liver became the seat, frequently the chief seat, of disease.

Finally, with regard to the treatment of acute dysentery, I found the usual one by large doses of ipecacuanha in powder (ʒss. to ℈ ii) so successful, that it might almost be termed specific. The exhibition of the powder was preceded, of course when needed, by a dose of castor oil. If, however, three or four doses of the drug did no good, it was useless to persevere with it. Before administering the powder, it is always necessary to give the patient a full dose of some sedative—I generally gave Battley's Liquor Opii Sedativus—and for two or three hours after each dose of the medicine the patient should abstain from taking food or drink of any kind whatever.

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REPORT

ON THE

TREATMENT OF RUPTURED PERINÆUM.

BY

THOMAS SMITH.

As surgeon, for the time being,* to the ward for diseases of women under Dr Greenhalgh's care, my object in this paper is to give the result of the experience I have gained in the treatment of ruptured perinæum.

It may be thought that one has little right to draw on an experience of an operation which, according to last year's statistical tables, was performed in the Hospital but three times in the course of the year.

In justice, therefore, to my colleagues and myself, let me state that in this respect the Hospital statistical tables are in error, and that we have a good supply of cases of this nature.† Since the 1st of last October I have kept notes of my own operations for ruptured perinæum, and I find that in the year I have operated on nine patients for this lesion, and I have no doubt that my colleagues have also had their share of these cases.

It may be that I cannot add much that is useful to the general literature of the subject, as it can be gathered from various sources; but I shall be content if I can bring together from the practice of others, and my own experience, trustworthy information to guide those who are either undertaking the operation for the first time, or who possess but a limited acquaintance with its details.

In dealing with cases of ruptured perinæum, the first question that arises is, At what period after the occurrence of the laceration

* The surgeons are, in turn, on duty in this ward.

† It is right to state that hitherto the obstetric operations have not been included in the Hospital statistical tables.

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should an operation be undertaken for its cure? To this there can be but one answer, namely, that the rupture should be closed as soon as may be after the birth of the child and the removal of the placenta, hæmorrhage having ceased, and there being nothing in the patient's bodily or mental condition to render the proceeding unadvisable.

It is more than probable, that immediately after labour the most suitable, or even the necessary, instruments would not be at hand, or possibly at that time no one might be present who would be likely to use them most to the patient's advantage. Under such circumstances, the delay of a day or two in closing the rent would be more prudent than an immediate operation. A delay of one, two, or even three days is certainly not unfavourable to success. I have closed pretty severe ruptures on the fourth and fifth day after labour with the best result.

It is certain that, as a general rule, too much reliance is placed on the sufficiency of the treatment of perinæal ruptures by mere position, the patient being placed on her side, with her knees tied together. Doubtless by these means the chances of spontaneous cure are increased; and it is certain that, under this treatment alone, many slight cases, and a few severe ones, recover. But I have not, to my knowledge, operated on a single case of long-standing rupture in which the above-mentioned measures had not been previously adopted. Not a few of these patients would have been cured at once, and no little discredit would have been avoided, if, in addition to the postural treatment, sutures had been employed.

Where for any reason the rent remains unclosed after recovery from childbed, the operation should certainly be postponed until the process of uterine involution is complete, and normal health has been regained. It is prudent to delay operating until the cicatrisation of the torn surfaces has taken place, for without doubt the freshly-pared mucous surfaces would be more likely to unite quickly and soundly than surfaces formed of the deeper layers of granulations, where possibly the new tissue had scarcely completed its perfect organisation. Though it is certainly an advantage that all vaginal and uterine discharge should have ceased before any operation is performed, yet the presence of leucorrhœa is no bar to success should other circumstances be favourable.

In a case under my own care, in which the leucorrhœal discharge could not be arrested by treatment, the operation was performed with a good result, though the discharge gave some trouble during convalescence.

It need only be mentioned that no operation should be per-

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formed during lactation; while, as a rule, it may be left to the patient to decide whether she will wean her infant, and submit to an early operation, or bear her troubles until the natural termination of lactation. The only reason that can be urged against this course is the possibility that during the postponement of the operation prolapsus uteri may occur. This consideration, I think, should have some weight in determining the date of operation. I have recently cured a patient of a rent perinæum who suffered from complete procidentia uteri. She was only twenty-four years of age, and the rupture had existed a year and nine months. In her case, at least, one would think that the uterus had begun to descend before the period when lactation usually terminates.

The treatment of ruptured perinæum, when undertaken immediately after delivery, resolves itself simply into readapting the opposite surfaces of a wound which are in a condition most suitable for union: they are freshly torn, they exactly fit one another, and the parts are so lax that there is no tension on the sutures. The only point for consideration is the selection of the best material to use for sutures, and the best means of introducing the sutures. Soft silver wire is, as I believe, the very best material, on account of its cleanliness, the very slight irritation it causes in the tissues through which it passes, its inelasticity, and the ease with which it is withdrawn.

Soft iron wire is only inferior to silver on account of its tendency to become hard and corroded when left for some time in a wound, and thereby giving some pain in its withdrawal. Silk and twine are less suitable as materials for suture, as they cannot be long retained without exciting suppuration.

Catgut, whether carbolised or not, is to be rejected altogether for the operation under consideration. If carbolised, it is liable to undergo solution in the secretions of the wound; while ordinary catgut is uncleanly, and irritating to the tissues.

Any form of suture-needle may be employed that will carry the suture through the whole depth of the wound, entering the skin a full inch from one margin, and emerging at the same distance from the opposite. Least painful to the patient is some kind of tubular needle, through which the wire may be pushed, such as Startin's or Matthieu's needle. Just as efficient, though causing more pain, is the large sickle-shaped needle, fixed in a handle, having an eye at the point. If such an one be used, it should be thrust through the soft parts without the suture, the latter being threaded when the needle-point emerges from the skin, having completely transfixed both sides of the rent: the needle, as it is withdrawn, will leave the suture in position.

For very slight ruptures no such formidable instrument is

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required as the one above mentioned, since the curved needles that are ordinarily carried in a pocket-case will suffice.

In operations performed within a few days of delivery, unless the rent lay open the rectum, the sutures may be fastened by simple twisting; and unless they excite irritation, these may remain *in situ* for a fortnight. When the rectum is laid open, it is more prudent to fasten the sutures to leaden plates, buttons, or pieces of bougie, so as to bring the parts together after the manner of quilled sutures, two or three superficial interrupted sutures being also inserted.

It will be convenient to consider here two questions of great importance in the after-treatment of operations for ruptured perinæum—

1st, When should the sutures be removed?

2dly, How should the bowels be managed?

With regard to the removal of the sutures, Mr Baker Brown (to whom belongs the credit of introducing the essential details of the operation now generally adopted) makes the following statement:*—"The deep sutures should be removed on the second day; in about forty-two hours is the best time. On the sixth or seventh day, the interrupted sutures may be taken away."

Mr Erichsen† states as his opinion "that the deep sutures should be left in for three days; in some cases they may even be retained for ninety-six hours. If any suppuration occur along their track, they must at once be withdrawn. The superficial sutures should be left in as long as they produce no irritation."

Mr Bryant‡ on this point remarks—"The deep sutures should be removed on the third or fourth day, the superficial on the seventh."

Mr Hutchinson,§ on the other hand, says—"The sutures should not be removed until the sixth or seventh day."

My own experience quite agrees with all the above-mentioned opinions, it being remembered that the three first-named surgeons are speaking of quilled sutures made of silk or twine, and fastened to pieces of bougie, stick, or thin ivory rods, while Mr Hutchinson refers to wire sutures fastened to metallic plates.

There can be no doubt that quilled sutures of twine or silk, fastened to pieces of cane or bougie, cannot be left in longer than forty-eight hours without running a risk of exciting sup-

* Surgical Diseases of Women, 3d edit. p. 39.
† Science and Art of Surgery, 4th edit. p. 413.
‡ The Practice of Surgery, p. 655.
§ Holmes's System of Surgery, vol. v. p. 40.

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puration in the suture tracks, and causing sloughing of the integuments beneath the quills or bougies.

It is, on the other hand, quite certain that, as a rule—if the deep sutures be metallic, and if they be fastened to flat plates, very wide bars, or large studs or buttons—they can be allowed to remain in for a week or more without injury to the soft parts, either from sloughing of the integuments or from suppuration in the suture tracks.

The deep sutures should not, as a rule, be left in more than a week, since the tendency of this kind of suture is to cut its way out from the deepest part of the wound towards the surface; and in this way, doubtless, a cavity may be formed between the rectum and vagina which may give rise to a recto-vaginal fistula.

The management of the bowels after operation. — As is well known, Mr Baker Brown introduced the plan of producing artificial constipation, and maintaining it for two or three weeks after the operation, by means of the systematic administration of solid opium. This plan has been generally adopted by others. Mr Bryant recommends that the bowels should be locked up for at least a fortnight by opium, and in some cases for a longer period. Mr Erichsen advises that constipation should be kept up at least for ten or twelve days. All, however, agree that no large solid masses should be allowed to pass when the bowels are unloaded at the end of this constipation.

It is easy to carry out this plan of treatment—that is, to keep up constipation; but it is impossible to prevent the passage of "large solid masses" of fæcal matter at the end of a constipation which has been maintained for a fortnight or three weeks. My own experience of this system is, that towards the end of the second, or at the beginning of the third week, the patient experiences griping pains, often followed by severe colic, and that finally the bowels are relieved of large hard masses of fæcal matter, after much suffering; castor oil by the mouth, enemata, and the use of a scoop, being required before the desired object is attained. In the wards of a hospital these affairs come but little under the cognisance of the surgeon, as they are within the province of the house-surgeon and the sister of the ward. But in private practice he may become, to his great discomfort, aware of the possible inconvenience of a too prolonged constipation. Though I have never seen the new perinæum give way under this process, yet I have seen so much suffering, and have experienced enough personal inconvenience, to induce me to adopt, in most cases, a different plan of management.

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It is quite possible that the maintenance of prolonged constipation is necessary to a successful result when the deep sutures have to be removed on the second or third day after operation. It is not so, however, if the deep sutures can be allowed to remain in position for a longer time. During the last year I have given no opium to produce constipation, though I have frequently prescribed a saline aperient within a week after the operation. In eleven cases operated on by myself in the course of the last year, the average time during which the deep sutures were allowed to remain in position was rather more than six days; and I have been in the habit of giving a simple aperient just before the deep sutures are removed, if the bowels have not previously acted spontaneously.

I venture to draw attention to a point of importance in the management of these patients that does not seem to have been mentioned by those that have written on the subject. It is the following:—Either before or immediately after the operation, the patient should be cautioned that, under no circumstances should she attempt to exercise any control over the sphincter ani. She must be told to allow both fæces and flatus to pass whenever an inclination may arise; and no sense of delicacy or false shame should induce her to put into requisition the newly-restored power of the sphincter ani: neither should she use any effort to expel the contents of the rectum, but she must remain, as far as possible, passive.

I have known a strong effort to prevent the escape of flatus from the anus in the presence of a medical attendant lead to the air bursting through into the vagina, giving rise to pretty smart hæmorrhage at the time, and spoiling the completeness of the cure; and this occurred a week after the operation, when the wound seemed to be united.

The passage of water.—Doubtless the plan most conducive to success is to have the water drawn off with a catheter by a skilled nurse, as often as may be necessary. But nurses are not all skilful; and in some cases, when there is swelling of the soft parts, the use of the catheter will cause great pain. To avoid this, I have been used to fasten into the bladder an indiarubber Coalbank's catheter, tying it with fine silk to a small tuft of the pubic hair, and connecting it with an indiarubber tube, which conveys the urine into a receptacle beneath the bed.

This catheter may remain in the bladder so long as it answers its purpose, and causes no irritation; and on its removal the patient may be allowed to pass her own water on her hands and knees. When the catheter is in the bladder, it is well to syringe some warm water and Condy through the tubing into the bladder

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once a day, to clear the eye of the catheter, and remove any mucus that may accumulate.

On the method of closing the rupture after recovery from childbed.—We are certainly indebted to the late Mr Baker Brown for our knowledge of the right principles of treatment in these cases. His operation owes its success to the fact that it keeps the whole surface of the wound in absolute contact, and that the parts are, after the operation, kept for a sufficient time absolutely at rest. The first is secured by the use of deep quilled sutures and superficial interrupted sutures, and the second by the double division of the sphincter ani, and the maintenance of constipation by the use of opium. To Mr Baker Brown's personal teaching I am indebted for what I believe to be a knowledge of the proper principles of treatment; and if I have deviated somewhat from Mr Brown's practice, it is only in the endeavour to carry out his views by more suitable means.

In the choice of an anæsthetic for the operation, the preference should certainly be given to ether, since it is far less likely to cause serious vomiting after the operation than chloroform. Indeed, since I have used ether, I have never been troubled by this accident.

It is scarcely necessary to mention that the patient's bowels should be cleared before the operation by an aperient, followed by an enema, that the lithotomy position should be adopted, and that the paring of the edges of the rent should be free enough to give a good thickness of perinæum, especially towards the anus. Indeed, the denudation should be carried up the vagina rather farther in the middle line than at the sides, so that the new perinæum on its vaginal aspect may be an inclined plane, and wedge-shaped, the base of the wedge being turned backwards.

By some, the flaps formed by reflecting the vaginal mucous membrane are preserved, and before the close of the operation are stitched together in the middle line, and are then fastened by sutures to the anterior edge of the new perinæum. The object of this proceeding is to prevent the vaginal secretions from gravitating into the wound. It is doubtful if this advantage is not more than counterbalanced by the retention of the wound-secretions beneath the flaps, which may lead to the formation of matter in the recto-vaginal septum, and occasion a recto-vaginal fistula. I have carried out this plan on two or three occasions with success, but in two instances with the result of a small recto-vaginal fistula.

Arrest of hæmorrhage.—Carbolised catgut ligatures can be freely used to such vessels as bleed freely, both ends of the ligature being cut off short. Moderate oozing is best controlled by

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the pressure exerted on the surface of the wound by the sutures, provided that the latter are properly adjusted.

For reasons before stated, I venture to think that soft thick silver wire is the best material for the deep sutures, and these should enter and come out on the surface at least an inch from the margins of the wound. It is a matter for observation whether they had best be passed through the whole thickness of the edges of the wound, and be made to come out into the vagina, or whether they should stop short of perforating the vaginal mucous membrane; in the former case, they certainly keep the whole surface of the wound more firmly in contact, though they tend to pucker up and narrow the wound-surface. I usually pass one or more through the mucous membrane of the vagina, especially should the rectum be at all seriously torn.

Before fastening the deep sutures, and after they are passed, it is well to make such incisions as may be necessary to relieve tension and keep the parts at rest. One of the essential features of Mr Baker Brown's operation was the division of the sphincter ani on both sides of the coccyx. Mr Brown's object in this was to free the wound from the disturbing influence of the sphincter, and his plan certainly accomplishes thus much; but it does little to relax the parts, and nothing in the way of letting the new perinæum recede from the surface towards the recto-vaginal septum. For these purposes, I am certain that lateral incisions, two inches or more in length, parallel to the line of the wound, and made deep into the fat of the buttock, are most useful.

The incisions should be made an inch or more outside the deep suture-holes, and any vessels in these wounds that may need attention should be at once ligatured.

In very severe cases, where the anus is extensively torn, and the soft parts are very scanty, it may be prudent to divide the sphincter ani in addition to making the lateral incisions; but I have very rarely been obliged to adopt so severe a measure.

The requisite incisions having been made, the deep sutures should be fastened. For this purpose, I have found it most advantageous at the time of the operation to shape two pieces of sheet-lead the length of the new perinæum, and a full half-inch in width. These should be pierced with holes to receive the ends of the deep sutures. The edges should be rounded off by scraping with the edge of a knife, and the plate should be bent, so that it becomes gutter-shaped, the surface that presses against the skin being rather convex.

On one side of the wound the free ends of the deep sutures may be passed through the holes in the leaden plates, and the wires may be twisted together; on the other side the wires

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should be clamped down to the plate with perforated shot. The sutures, before clamping, should be drawn tight, the leaden plates being pushed together, so as to obliterate all cavity between the rectum and vagina, and to press the surfaces of the wound firmly in contact. Before clamping the shot down, it will be found an advantage to thread on the wire between the shot and the plate one of Dr Aveling's little spiral tubes, about three-quarters of an inch long. This keeps the shot some distance from the plate, and thereby greatly facilitates the removal of the sutures when this becomes necessary.* When the plates are clamped down into proper position, the cutaneous edges of the wound should be somewhat everted, while the deeper parts are closely in contact.

In addition to the interrupted sutures of fine wire which are used to bring together the superficial parts of the wound, it is prudent, when the rectum has been torn, to pass two or three sutures through the mucous membrane of the latter so as to close the wound completely towards the bowel. These sutures should be of fine silk, as silver-wire sutures are somewhat painful in the cavity of the rectum, and they are somewhat difficult to withdraw, whereas silk may be allowed to cut its way out.

If the above-described method of fastening the deep sutures be adopted, they may be left undisturbed for a week or more without causing any sloughing of the integuments under the leaden plates; and the bowels may be allowed to act spontaneously, or they may be relieved by an aperient—a plan which saves the patient much suffering, and relieves the surgeon from the possibility of a disgusting manipulation, while it does not endanger the integrity of the new perineum.

* Dr Aveling's spiral tubes are made by winding a piece of iron wire spirally round a stout pin.

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TWO EXAMPLES

OF

MALFORMATION OF THE HEART.

BY

NORMAN MOORE, M.B.

The patients whose hearts are described in this paper were both under observation in this hospital for some time.

The first, Thomas Lane, æt. 21, was a patient in Mark Ward, in January 1873, and he remained under Dr Andrew's care, in or out of the hospital, till his death in the following year. He died at his home in the Bethnal Green district, and was there examined after death by Dr Andrew and myself. I am permitted by Dr Andrew to describe his heart.

The layers of the pericardium are adherent and thickened at two points near the apex. The aorta and the pulmonary artery are both somewhat narrow where they are joined by the ductus arteriosus, but at their origins they seem externally of the normal calibre. The arteries of the aortic arch are of the usual proportions. The only other external feature requiring remarks is a greater degree of roundness at the apex than is usual. On opening the heart its ventricular part is seen to consist of one large cavity, occupying the position of the right ventricle, but extending considerably to left of the middle line, and of a small cavity on the left side, which is little more than an appendix to the large one. The auricles are of the normal proportions and appearance. A well-marked muscular ridge separates the insignificant representative of the left ventricle from the large right ventricle. Below the base of this ridge a transverse section of the heart would include only the right ventricle. The opening between the ventricles is larger than a shilling. Immediately to the left of its upper edge is the orifice of the aorta, and to its right the orifice of the pul-

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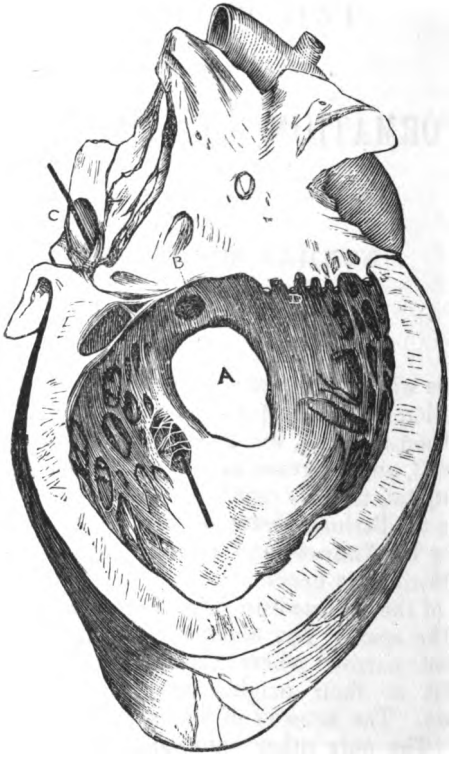
monary artery. The aortic orifice is of the normal size, and has the usual valves. The aorta becomes considerably reduced in calibre at the point of junction of the ductus arteriosus. The ductus arteriosus is closed throughout. It is to be observed that, while the aorta opens distinctly into the left ventricle, the opening



I. HEART OF THOMAS LANE *(right side.)*
A. Communication between ventricles. B. Pulmonary artery.
C. Rod passed through mitral orifice.

between the ventricles is so situate that the stream of blood may have passed almost without obstruction into the aorta from the right ventricle. The orifice of the pulmonary artery is without valves, and is bounded by a thickened ring in the centre of a small tract of membrane. This is probably the product of the adhesion of the pulmonary valves. Above the orifice the artery is of normal width, but is slightly narrowed at the junction of the ductus arteriosus. Immediately below it, and close to the edge of the opening between the ventricles, the mitral valve opens into the right ventricle. The tricuspid valve opens into

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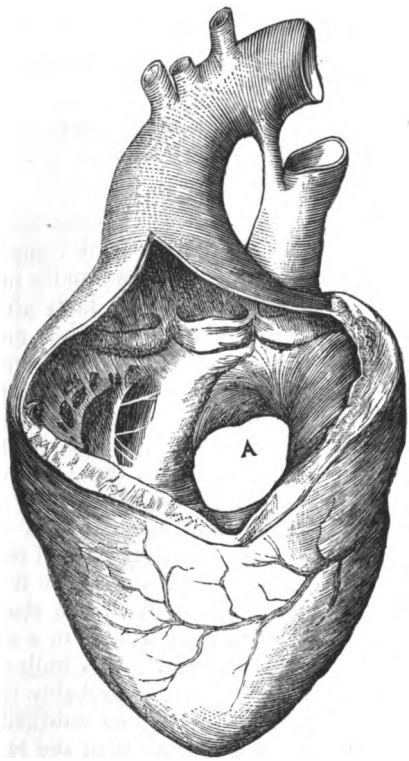
the same ventricle, in front of the mitral, and a little above it. The mitral orifice is a very little less wide than normally. Both valves are normal as to their flaps. The vessels on the surface of the heart follow the groove between the actual right and left ventricle, and do not at the upper part of their course run independently of it.



II. HEART OF SAME (*left side.*)
A. Communication between ventricles.

The lungs of this patient were excavated by numerous cavities. There was a general dropsy. When alive, the patient was intensely cyanotic. His fingers and toes were clubbed. I mean by this a lateral expansion, and not a mere bending down of the nail. His breath was always very short. The physical signs which I made out when he was in the hospital, were a loud systolic murmur, as loud at the base as at the apex of the heart; a distinct systolic thrill and a somewhat irregular impulse. His history was, that he had always been blue and short of breath, and had always had clubbed

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fingers. He was born in London, and had worked in a printing office. The following table shows the proportions of the several parts of this heart:—

Part measured.	Inches and tenths of an inch.
Length of heart from root of pulmonary artery to apex,	3·5
Depth of left ventricle from its lowest point to beneath the aortic semilunar valves,	1·5
Vertical diameter of opening between the ventricles,	1·1
Transverse diameter of opening between the ventricles,	1
Width of orifice of pulmonary artery,	0·25
Width of aorta at origin,	1·1
Width of aorta at junction of ductus arteriosus,	0·6

The second patient was named Kate Rock; she was eight years old at the time of her death. She was under my care for two years, and I made an examination of her body after death at her home. Her heart is large for her age. It has no external peculiarity. The ductus arteriosus is closed. The auricles are of the usual proportions, and their septum is complete. The left ventricle occupies its normal position with regard to the apex, but the right ventricle is somewhat more capacious than it usually is, and its walls are a little thicker than those of the left ventricle. The infundibulum of the right ventricle is very narrow above. The pulmonary orifice is less than one-eighth of an inch across. Externally the base of the pulmonary artery is of the normal width. Looking into the artery from above, the orifice from the heart is seen to be at the apex of a small bulb, which rises from a membranous plane, which occupies what would, in a normal heart, be the position of the pulmonary valves. This bulb is hollow on the ventricular side, and, with the plane, is probably the result of the adhesion of the pulmonary valves to one another. The edge of the orifice is fimbriated, and is thicker than the rest of the membrane, and in one-third of its circuit is calcified. The septum ventriculorum is not complete. There is a communication between the ventricle at its upper and anterior part. The opening has a muscular edge, and is large enough to admit the little finger. The child died of general dropsy. Her lungs were sound. Her liver, spleen, and kidneys, were engorged, but not diseased. During life she was of a cyanotic complexion. This was most marked in the face, feet, and hands, but extended over the whole body. The cyanosis became much deeper on the least exertion. Her nose was clubbed, but her fingers and toes were not so. Her tongue was always of a deep purplish hue. Her feet and hands

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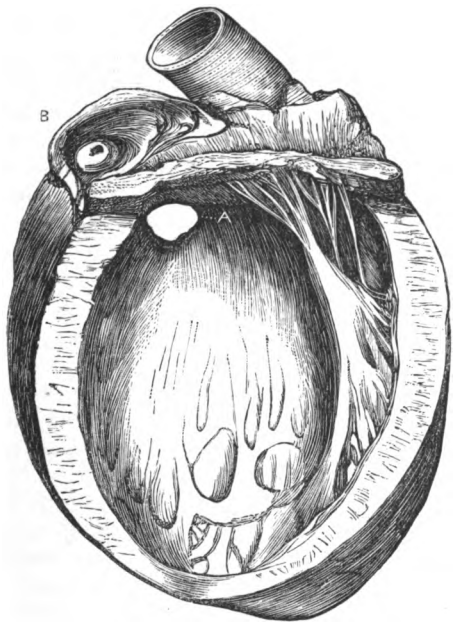
were always cold. On auscultation of her heart, a harsh systolic murmur was to be heard. This varied slightly from time to time in character of sound, but was constant in position and period. It was best heard on the sternum at the level of the second intercostal space. It was audible, though less loud, at the apex. It was not audible at the angle of the scapula, nor at any other point of the back. There was no thrill. The im-



III. HEART OF KATE ROCK.

A. Communication between ventricles. B. Pulmonary orifice.

pulse was somewhat irregular, and not heaving. She was pigeon-breasted.

The following table shows the proportions of the heart :—

Part measured.	Inches and tenths of an inch.
Length of heart from root of pulmonary artery to apex,	2·75
Greatest thickness of right ventricle, ...	0·62
Greatest thickness of left ventricle, ...	0·38
Diameter of aorta before branches, ...	0·6
Diameter of orifice of pulmonary artery, . . .	0·12
Diameter of pulmonary artery above orifice, . .	0·6
Transverse diameter of orifice between ventricles, .	0·43
Vertical diameter of orifice between ventricles, . . .	0·25

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On post-mortem examination of such cases as these, astonishment is often expressed that the patient has lived so long. This is a notion which ought to be discouraged. It rests rather upon anatomical considerations than upon clinical observation. In Thomas Lane, the direct cause of death was to be found in the lungs. His pulmonary disease probably dated from a pneumonic attack, which occurred about eighteen months before his death. Kate Rock's pigeon-breast showed that she had suffered from severe coughs, and an attack of bronchitis led to her fatal dropsy. Although persons with malformed hearts are very liable to catch cold, it may yet be avoided in them by an extension of common precautions. The way in which these two cases and others which I have observed end, convinces me that by strict regimen, a patient with malformed heart may often be kept alive longer than statistics would lead one to expect. The patient will never be fit for hard physical exertion, but may have health enough to be useful in life.

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A CASE

OF

FEMORAL ANEURYSM CURED BY DIGITAL PRESSURE.

BY

W. MORRANT BAKER.

For the greater part of the notes of the following case, I am indebted to the dresser, Mr A. G. Williams, to whom, with Mr Clubbe, acting under the direction of Mr Jepson, house-surgeon, the good result of the case is mainly due. I take this opportunity of recording my thanks also to others among the students, without whose help the method of digital compression could not have been carried out.

A man, 35 years old, was admitted into the Hospital, under my care, October 2, 1874, on account of a large and well-marked aneurysm of the left femoral artery, at the apex of Scarpa's triangle. He was a strongly-built man, short and ruddy, and, he said, generally healthy. According to his own account, about six months before admission into the Hospital, whilst carrying a heavy weight, he 'strained himself,' and at the time felt a shooting pain along the whole length of the left leg, from the thigh downwards. A day or two afterwards he noticed a swelling the size of a walnut in the upper and inner part of the thigh, which gave him but little trouble, however, until about a week before admission, when, again straining himself, there came much more pain in the leg. The tumour became larger, and the pulsation, which had attracted his attention for only three weeks previously, increased. He continued working until two days before admission, when the pain obliged him to lay up.

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The aneurysm was well marked and well defined at the apex of Scarpa's triangle, measuring about three inches in diameter. It pulsated strongly, but the pulsation was readily controlled by pressure on the femoral artery at the groin.

The radial pulse was full and regular (56), the temperature of the axilla 98° F., the respirations 18. The general health was excellent; no indication of disease was found in any internal organ, and the patient seemed blessed with a calm and equable temper. Altogether, the case appeared eminently fit for treatment either by ligature or some form of compression. It was determined to make trial of the latter.

On October 12th the leg was flexed on the thigh, and bandaged in this position, with a pad over the femoral artery in the groin, and another in the popliteal space. At the same time the thigh was kept rather firmly flexed on the pelvis. By this position the pulsation of the aneurysm was a good deal lessened; and after four days' treatment, not very rigidly pursued, it was noted that on taking off the bandages the aneurysm seemed rather smaller and harder, with less forcible pulsation.

It had become necessary to take off the apparatus, on account of the pain and general distress which were caused by the constrained posture. Three days afterwards the bandages were applied again in a similar fashion during the day, and taken off at night; but at the end of four days, there being no manifest improvement, it was determined to try the effect of compression of the femoral artery by a tourniquet.

On October 26th a Carte's tourniquet was applied to the femoral artery in the groin, so as to stop the pulsation of the aneurysm; and the pressure was maintained, with some intervals of relief on account of pain at the seat of pressure, from 3 P.M. to 11 P.M.

The same treatment was carried out, as far as it was practicable, until October 30th (four days), when it was discontinued, the patient being unable to bear longer the pain produced in the thigh and leg.

It was noted at this time that the aneurysm was rather larger, and its pulsation not at all diminished. It was determined, therefore, to substitute digital pressure for the tourniquet.

The plan pursued was that recommended by Mr Holden, and carried out by him successfully in a case, the particulars of which were published in a former volume of the Hospital Reports.*

A finger, or two fingers, were placed on the femoral artery at the groin, and for the muscular exertion which would have been required was substituted the pressure of a cylindrical bag of shot, weighing 10½ lb., this weight having been found by experiment

* Vol. viii. 1872.

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sufficient to stop the current of blood through the vessel. One end of the bag was placed on the finger-ends, a pad of lint being interposed, and it was supported vertically by strings extended to the top of the bedstead. The patient steadied the bag with his hand when required.

This method, it was found, was easy to the patient, and but little wearisome to those who applied the pressure. The fingers could be kept easily on the artery by each dresser for half an hour, or even more.

As it was determined to carry out the plan of digital pressure, if possible, so as not to interfere materially with the patient's comfort either by day or night, the pressure was, on the first day, maintained continuously only from 5 P.M. to 8 P.M., when the patient was left for the night, having experienced no pain or discomfort.

November 5th (second day of digital pressure).—He had slept well, and had suffered no pain.

Digital pressure was continued, after the same manner as yesterday, from 10.30 A.M. to 1 P.M. (dinner-time), and from 3 P.M. to 8 P.M. In the evening the patient was rather restless, and complained of some pain and soreness where the fingers had been applied.

November 6th (third day of pressure).—He did not sleep very well, on account of pain in the leg. The pulsation of the aneurysm seems less strong, and the aneurysm somewhat smaller. Pressure was applied on this day from 10 A.M. to 1 P.M., and from 4 P.M. to 8 P.M.

November 7th.—Last night the patient slept well.

Pressure was applied to-day from 10.30 A.M. until 1 P.M., and from 3 P.M. until 8 P.M. He bears the pressure much better than at first. The pulsation seems a little less than yesterday.

November 8th (fifth day of pressure).—He slept well last night, and is in no pain.

The pulsation, the patient believed, ceased altogether for about an hour early this morning; but at 10.30 A.M. it could be felt distinctly by the dresser.

Pressure was applied as before, from 10.30 A.M. until 1 P.M., at the end of which time no pulsation could be felt in the aneurysm. The cessation of pulsation was accompanied neither by pain nor uneasiness. No difference in the temperature of the two legs could be discovered.

November 9th.—The patient feels quite well, and has no pain, nor has he had any since the aneurysm ceased beating. The aneurysm feels now smaller and harder.

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Nothing worthy of special notice occurred after this date, and the patient left the Hospital a few days later perfectly well.

The whole time occupied by the digital pressure was twenty-seven hours and a half, a short period under the circumstances, even for a case so favourable in all respects for this method of treatment.

Without doubt the month's rest in bed in the Hospital, and the application, though it proved unsuccessful, of the bandage and tourniquet, had prepared to some extent for the favourable issue; but so far as it was possible to estimate it, the effect of these had not been very great.

The diet of the patient throughout was the half-meat diet of the Hospital, and he was allowed half a pint of porter with his dinner.

As a contribution to the statistics of treatment of Femoral Aneurysm by Digital Pressure, I have thought the foregoing case worthy of record in the Hospital Reports.

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THREE CASES

OF

DISEASE OF THE LUNGS.

WITH REMARKS

BY

F. De HAVILLAND HALL, M.D.

The three patients, the notes of whose cases are given below, were admitted into Dr Harris' ward during the time I was his house-physician, and as they are of rather more than usual interest, I have thought it worth while to put them on record, especially as I have recently had an opportunity of making a careful physical examination as to the present condition of these patients. I have also ventured to draw some general conclusions based on these cases, and others I have seen at the Westminster Hospital and elsewhere, and on cases published in the 'Lancet' during the last three years.

The first case is that of C. W., aged 40, a knifemaker, admitted into John Ward on December 30, 1871.

As there are full notes of this case in the 'Lancet' for January 4, 1873, I will only give a *resumé*.

The duration of the pleural effusion before admission was doubtful.

On February 8th the dulness posteriorly extended an inch above spine of scapula, and in front up to the third rib, dulness stopping at right edge of sternum. Bulging of lower part of right side in front, with slight œdema, and great tenderness. Heart's apex in fifth interspace, three-quarter inch to left of nipple.

February 10.—Thoracentesis to half a pint.

February 17.—Incision made above and inside of former puncture, letting out a pint of thick, healthy pus.

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May 21.—Has been discharging ever since the last note. Pleural cavity to be washed out with liq. iod. ʒj., ad aquæ ℥j.

July 13.—It was noted that the discharge was offensive.

August 28.—More than half a pint of discharge in the twenty-four hours.

September 5.—Same amount of discharge as in last note. Drainage-tube introduced, and a counter-opening made at the back.

September 16.—Not much discharge. Appears considerably better.

September 19.—No discharge for two days.

October 3.—Drainage-tube removed.

October 8.—No discharge. Gaining flesh.

The treatment during the time he was in the Hospital consisted of tonics and cod-liver oil, with a very liberal diet.

On July 29, 1875, physical examination gave the following result:—

Left chest much rounded and prominent. On taking a deep inspiration, the whole of the left side is greatly raised, while there is hardly any movement on the right side. Great flattening under the right clavicle, and below the nipple. Hyper-resonance all over the left chest, excepting the supra-spinous fossa, where the percussion-note is impaired. Good resonance over the right chest, with the same exception as on the left side; the resonance in front extends down to fifth rib. Exaggerated breathing all over the left chest; expiration somewhat prolonged; no abnormal sounds. On the right side there is breathing to be heard all over, but the respiratory murmur is feeble. Over both supra-spinous fossæ the breathing is of a bronchial character; but this is very faint on the right side. Heart's impulse in epigastrium. The patient has the same kind of cough he has had for the last twenty-three years; if anything, it is rather less than it was before he had the empyema. His general health has been very good since he left the Hospital, and he has been at hard work the whole time. He has more flesh on him now than he has had for years.

It would have been impossible to select a more unfavourable case for operation than this man appeared to be, because, in addition to the empyema, he had signs of pulmonary phthisis, and he had suffered for many years from empyema. When it was decided to make the counter-opening, and pass a drainage-tube through, he had had a constant purulent discharge for seven months, frequently to the amount of more than half a pint in the twenty-four hours, and he was reduced to a shadow from the constant pain, irritation, and loss of sleep; and yet in twelve days after the introduction of the tube there was an entire cessa-

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tion to the discharge, and the tube was removed exactly a month after the operation.

The examination of his chest, which was made nearly three years afterwards, showed that in spite of the length of time the lung had been pressed upon, it had nevertheless expanded to a certain extent, and was capable of doing some work; so that the patient is at present in an infinitely better condition than it was ever conceived he would be, as his general health seems as good, if not better, than before his illness.

In a lecture by Mr Wood, published in the 'Lancet' for May 9, 1874, a somewhat similar case is recorded. The chief points are these:—

On September 7, 1873, the pneumatic aspirator was employed, and 70 oz. of thick pus evacuated.

September 22.—Tap-trochar and indiarubber tube used; 76 oz. of fetid pus let out.

November 8.—Continued discharge up to this time. 36 oz. of very fetid pus drawn off.

November 22.—An opening made behind on account of pointing, and a like quantity let out.

November 29.—Drainage-tube passed through.

By December 5th the discharge had ceased; he was getting stronger, looking well, and laying on flesh in a most surprising manner.

This case is so similar to the one I have reported, that I have taken the liberty of giving the above brief notes, as I wish to insist on the advisability of the early employment of the drainage-tube. In both these cases the purulent discharge—which in mine had lasted seven months, and in Mr Wood's case over two months—ceased within a few days after the counter-opening was made; and I have little doubt but that if recourse had been had to this plan earlier, a like result would have taken place, and many weeks of tedious illness spared to the patients. So convinced am I on this point, that a fortnight ago, on being called in consultation to see a child of 6, on whom thoracentesis had been done ten days previously, and 12 oz. of pus evacuated, I had no hesitation in strongly advising that a counter-opening should be made, as there was evidence of the pus burrowing; and on visiting the patient ten days later, I was pleased to discover that there was hardly a teaspoonful of pus in the twenty-four hours. In the majority of cases of this character which I have seen, a like success has attended this mode of procedure; but in a boy whom I saw in consultation last November, and in whom thoracentesis had been performed, 77 oz. of pus let out, and a drainage-tube introduced, when I last heard of him in April, there were still 2 or 3 oz.

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of discharge daily, but it was gradually getting less, and the boy's general condition was good, there being no hectic, as so often happens where matter is pent up with only a single opening, and that rather high up.

In the 'Lancet' for May 3, 1873, there is a report of a case under the care of Dr Russell at the Birmingham General Hospital, in which there was persistent fever temperature, with quickened pulse, kept up for 106 days, apparently by the mere presence of pus within the chest, which ceased within four days after the drainage-tube was introduced.

In the 'Lancet' for February 22, 1873, there is an account of a case read before the Medical Society. The patient was admitted into Brompton, under the care of Dr C. J. B. Williams, on July 4, 1871, suffering from pleurisy of 4½ months standing.

July 10.—4 pints of purulent fluid were evacuated. Later on, an abscess was opened in the mammary region, and this was found to communicate with the pleural cavity.

August 21.—Counter-opening made, and seton passed through, with the result of increasing the discharge and the offensive odour.

August 24.—Drainage-tube introduced, and cavity washed out with carbolic acid. The effect of this was that the discharge became serous, small in amount, and free from smell. The pyrexia immediately disappeared and the man made a rapid recovery.

Similar cases might be multiplied almost without number, but those that I have adduced will, I think, demonstrate the fact I wished to prove, namely, that the best treatment of empyemata of some standing is to make a counter-opening, and pass a drainage-tube through; and in order that I may make myself clear as to when it is advisable to adopt this plan, I will briefly detail the treatment of chronic pleural effusion that most commends itself to me from the experience of others and my own—that is to say, the treatment after diuretics, absorbents, and counter-irritants, &c., has been tried and failed. Walshe, in his third edition of 'Diseases of the Lungs,' does not mention the plan of making a counter-opening; and Niemeyer refers the inquirer to the hand-books of surgery. Dr Anstie, however, in his article on Pleurisy,* gives some very good rules as to when paracentesis should be performed, laying down the law that, "if at the end of fourteen to twenty days for a child, or three weeks to a month for an adult, from the initial symptoms, the fluid does not show real signs of diminution, paracentesis should be performed." This appears a very good and safe rule for the majority of cases. And the next consideration, after paracentesis has been decided upon, is, how is it to be done? From my experience, I certainly should most

* Reynolds' System of Medicine.

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strongly advocate Dieulafoy's apparatus. Supposing the fluid is serum, it is best to close up the puncture with lint and collodion, so as to prevent the entrance of air, and to continue the same plan as often as paracentesis is required, and the fluid continue serous. If the fluid be purulent, I would do the same, unless it were fetid. In the event of a second paracentesis being required, I would again close the opening. Should, however, a third paracentesis be necessary, then I would advise a counter-opening to be made, and a drainage-tube to be passed through, and this should be done at once, whenever the fluid is fetid. If the fluid be serum, it is not necessary to drain off the whole; over-anxiety to do so often occasions mischief. If it be purulent, however, the less pus there is left behind the better. In some few instances a single thoracentesis, in cases of empyema, has resulted in the complete cure of the patient; but this is exceptional. In passing a drainage-tube through the chest, it is advisable to get the posterior opening at the most depending portion of the pleural cavity; and this is best done by passing a long probe through the anterior-opening along the floor of the diaphragm, and pressing it so as to make it appear at an intercostal space. Mr Wood, in his lecture before referred to, mentions the difficulty which often arises from the falling-in of the chest-wall, and consequent over-lapping of the ribs. In a case I saw last November, this caused a delay of more than half an hour during the operation.

Some amount of care is required in passing the drainage-tube through, and still more in withdrawing it, especially after iodine and other lotions have been used, as it is then so liable to break. Mr Wood gives a very clever plan to avoid leaving a portion of the tube behind: this he effects by passing a piece of twine stiffly waxed through the tube, making a noose above and below, and then exercising traction on the lower end. When the tube is left in, it is important to secure the two ends to one another, as I know of one instance in which the tube disappeared entirely into the pleural cavity, and was not recovered.

After the tube has been properly adjusted, all the dressing requisite is a little piece of lint, soaked in carbolic oil, to be placed over the openings, and the whole side enveloped in a thick padding of picked oakum, carefully bandaged on, to prevent it slipping down. The oakum has a twofold advantage: in the first place, it absorbs any discharge that there may be; and secondly, if the discharge is fetid, it deodorises it. It is advisable to leave the tube in as long as there is any escape of pus; but when it amounts to only a few drops in the course of the twenty-four hours, the tube may be altogether withdrawn; or some authorities advise that the upper opening should be allowed to close, but that the tube should be

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kept in the lower opening some time longer, by strapping it to the sides.

Before leaving this subject, I would call attention to Dr Ringer's ingenious suggestion to use the ordinary morphia subcutaneous syringe for the purpose of diagnosis, as the presence or absence of fluid in the pleural cavity, and also its nature, can be readily demonstrated by it; moreover, patients and their friends are not likely to object to the employment of so simple an instrument, and it is quite incapable of doing harm, even if there be no fluid present.

Case II.

J. B., aged 21, a marine, admitted into John Ward under the care of Dr Harris, on August 26, 1872. The patient states that he was quite well until thirteen months ago, when he caught cold, and had a violent pain in the left side, and was said to have pleurisy. Cough began about six weeks later, attended with occasional attacks of profuse fetid expectoration, with only a little bronchial sputum in the intervals, and accompanied by hæmoptysis, sometimes to the amount of a pint, the blood being almost always of a bright colour, occurring about every five or six weeks. He has lost much flesh, but he soon picks it up again after the attacks of hæmorrhage have ceased for a time. No family history of phthisis.

Pulse 96, fair volume; heart's impulse in third intercostal space; prolongation of first sound at base; right chest good resonance and vesicular breathing. Left chest good resonance, and vesicular breathing above the third rib; boxy resonance in infra-axillary region, with very feeble breathing and sibilus. Between the angle and spine of the scapula there is dulness, amphoric breathing, well-marked pectoriloquy, and occasional râles. Higher up in the interscapular region there is bronchial breathing and bronchophony. Cough exceedingly troublesome; sputa very fetid, stained with blood; appetite good; tongue clean; bowels regular; urine does not contain albumen.

His temperature was taken morning and evening for three days after admission, and was never above normal, more often slightly below.

September 3.—Sputa stained with dark blood, some masses consisting almost entirely of blood.

September 4.—Hæmoptysis ceased last night, and recommenced this morning; he has expectorated about three-quarters of a pint of rather bright blood; pulse 108.

Ordered—Pulv. ipecac. gr. x., ter die.

September 5.—The patient was very sick after taking the first

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powder; five grains were given after an hour's interval, and this dose he kept down. Not a trace of blood since; pulse 76.

Ordered—Hst. terebinth. ʒij., ter die.

September 7.—Sputa tinged with blood.

September 8.—At 5.45 P.M. hæmoptysis commenced, and in the course of ten minutes he spat up quite a pint of blood. At 5.48 pulv. ipecac. gr. x. was given, and this was repeated at 6.2, together with ice; neither dose made him feel sick, and after the second dose the quantity of blood greatly diminished. At 6.12 he had a third dose, which caused him to vomit; but he brought up no more bright blood, and he appeared tolerably comfortable during the night, only expectorating a little altered blood.

September 9.—At 8.20 A.M. hæmoptysis returned, and in a few minutes he expectorated upwards of a pint of bright blood. At 8.28 he had pulv. ipecac. gr. x., which was repeated at 8.38. After the second dose he was sick, and felt very faint; skin covered with a cold sweat. To have ice.

11.30 A.M.—He has only expectorated a small quantity of dark-brown blood.

Ordered—Hst. terebinth. ʒj. ter die (contains 20 minims of oil of turpentine).

September 10, 2 A.M.—Hæmoptysis has commenced again; coughed up nearly three-quarters of a pint of blood.

Ordered—Pulv. ipecac. gr. v., to be repeated in six minutes. The second powder made him sick, but the hæmorrhage almost ceased.

10.45 A.M.—Still spitting up a little dark blood; pulse 108.

Ordered—Hst. plumbi, ʒj., 4tis horis.

12.30 P.M.—Return of hæmoptysis, about a quarter of a pint of blood.

10 P.M.—Has expectorated a small quantity of dark blood. Sleeping quietly.

September 11.—Pulse 104. Sputa dark-brown colour.

September 12.—Pulse 132. At 10 A.M. had another attack of hæmoptysis, about half a pint. Had two ten-grain doses of ipecacuan; very sick after second one.

10 P.M.—Pulse 100. A very little bloody expectoration since the morning.

September 13.—Pulse 104. No fresh hæmorrhage.

September 14.—Pulse 100. Slight return of hæmoptysis. Bowels not acted for three days. Marked blue line along the gums. To discontinue the lead mixture, and have a purge.

September 15.—Pulse 112. Tongue moist, furred. Bowels acted freely. Sputa very fetid, dark brownish-red.

September 16.—Pulse 92. Large quantity of sputa quite free from blood.

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From this date up till November 7th, when he was discharged, he continued to improve, the sputa being only slightly stained with blood on two occasions, and he left the Hospital in tolerably good health.

On July 22, 1875, the following note was taken:—

Since he left the Hospital, nearly three years ago, he has had no return of hæmoptysis. He has had occasional attacks of cough, but has not expectorated so large an amount of sputa as he formerly did. During the last week he has had a slight cough. He weighs 11 stone, which is three or four stone more than he weighed before he was in St Bartholomew's, and is still putting on flesh. He plays cricket, and is able to run 150 yards at a good rate; beyond that his breath gets rather short. General health excellent. Heart-sounds normal.

Anterior part of the chest, good resonance, and healthy vesicular breathing; and the same over both supra-spinous fossæ, between the spine and angle of the scapula on the left side; the percussion-note is slightly heightened, as compared with the right side; the breathing-sounds are also feebler, and the voice-sounds are heard more direct; there is likewise a suspicion of crepitation on coughing. In left infra-axillary region the resonance is slightly impaired, with feeble breathing and slight creaking. All the rest of the lungs, good resonance and healthy breathing. In this case the points to be made out are—What was the nature of the patient's first attack? and, secondly, What was the condition of the lung on his admission? The patient had always enjoyed good health till, after being exposed on deck while in the East Indies, he caught cold, and the symptoms he described quite coincide with the diagnosis which was made at the time, namely, pleurisy. But, when this has been agreed upon, comes the difficulty of explaining to what the profuse hæmoptysis was due which began about six weeks after the commencement of his illness. One can hardly believe that by that time a bronchiectatic cavity had been formed; but this is the only explanation I am prepared to give on the subject, and I look on the profuse hæmorrhage as being due to ulceration extending from the cavity to some blood-vessel of considerable size.

On his return to England invalided, he was examined several times by some of the leading naval physicians, and his case was considered to be one of hæmoptysis due to pulmonary consumption. A most unfavourable prognosis was given, and he was awarded a handsome pension, considering the short time he had been in the service. For two or three months prior to his admission into the Hospital, he was under the care of my father at Tottenham, and during this time he suffered from the most

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alarming attacks of hæmorrhage, coming on at intervals of three or four weeks. He also had attacks of profuse expectoration of a most fetid character, bringing up half a pint at a time; and then he would go for days with a cough, but with hardly any expectoration. On his admission, there were most unmistakable signs of a large cavity between the angle and the spine of the scapula. Now the difficulty to be settled was this: whether the cavity was due to the dilatation of a bronchus, or to destructive disease of the lung. Niemeyer* says that the following points are to be taken into consideration in the diagnosis:—'1. Patients with bronchiectasis are generally free from fever, and hence often long retain a tolerable degree of strength, and suffer but little emaciation. 2. Secondary disease of the larynx and intestine is of rare occurrence in cases of bronchial dilatation; hence hoarseness and diarrhœa, in a doubtful case, would indicate the tuberculous nature of the disease, although the co-existence of bronchiectasis is by no means excluded. 3. Saccular dilatation of the bronchi is so often accompanied by emphysema, that in forming a differential diagnosis, between bronchiectasis and tubercular excavation, the evidence of the existence of emphysema would turn the scale in favour of the former.' If we exclude the last of these divisions, as there was no suspicion of emphysema in the case before us, all the distinctions for bronchiectasis as against tuberculous excavation were well marked in the patient under consideration. He had no fever, the temperature being rather below normal; and though he lost flesh after an attack of hæmoptysis, he soon picked it up again. Moreover, at no time did he suffer from hoarseness or diarrhœa. The position of the cavity has also something to do with determining its nature. Tuberculous cavities are almost always to be found at the apex; or, at all events, according to Dr Walshe,† 'the percussion-sound is invariably morbid above the clavicle in cases of phthisis of the ordinary class; not necessarily so in those of dilated bronchi.' Bronchiectatic cavities are most commonly found at the union of the upper with the middle third of the chest, in the neighbourhood of the larger bronchi, and this was just the position of the cavity in the case. Then again, the nature of the sputa, and the way in which they were discharged, were very characteristic of bronchiectasis. Owing to the unyielding nature of the tissue surrounding these cavities, they are imperfectly emptied; and the contents being kept at a high temperature, with free access of air, undergo decomposition. As soon as the cavity gets full it excites a paroxysm of cough, in which a large quantity of fetid expectoration is discharged; and then the patient

* Text-book of Practical Medicine.
† Diseases of the Lungs, 3d edit.

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has an interval of freedom from expectoration, or at most he brings up a little bronchial sputum, till the cavity refills, and the same process is repeated from time to time. Niemeyer* lays so much stress upon this symptom that he gives the following summary:—'We may therefore assert that violent coughing-fits, which recur at long intervals, and during which large quantities of putrid sputa are expelled, are pathognomonic of the existence of a bronchiectatic cavity.' The only other marked symptom in this case which has not been considered, is the enormous hæmorrhage he had at various times. Niemeyer says that it is not uncommon for severe hæmorrhage to take place from sloughing of the walls of the cavity. Walshe,† on the contrary, says that he has never observed hæmoptysis unless where there was co-existent mitral disease or pulmonary tubercle; and he goes so far as to say—'If hæmoptysis exist, and there be no evidence of mitral disease, the inference that the excavation is tuberculous becomes matter of necessity.'

In forty-three cases of bronchiectasis collected by Barth,‡ hæmoptysis occurred in only seven, and of these no less than four were also suffering from phthisis.

My chief difficulties in admitting this to be a case of dilated bronchus are, in the first place, the exceedingly rapid manner in which the symptoms followed the attack of pleurisy, the absence of any of the usual exciting causes of bronchiectasis, and the age of the patient; for on again referring to Barth's list of cases, we find only seven were met with between the ages of fifteen and forty, and more than half of the cases were in individuals over sixty years of age. The difficulties, however, in taking pulmonary phthisis as the explanation, seem to me even greater. The combination of a cavity situated in the interscapular region, the absence of any signs of disease affecting the apices, the entire exemption from all laryngeal, intestinal, and other complications, the enormous and frequent attacks of hæmoptysis, together with the peculiar way in which the sputa were expectorated, are so seldom met with as a combination in pulmonary phthisis, that one would have great hesitation in giving a diagnosis in favour of a tuberculous cavity; in addition to which must be taken into consideration the rapid and perfect recovery the patient made after his last attack of hæmoptysis, there being at the present time hardly any signs of the old lung-mischief. The case being of so doubtful a nature, and the prognosis at one time having been

* Op. cit. † Op. cit.

‡ Rech. sur la Dilatat. des Bronches, Mém. de la Soc. Méd. d'Observat. de Paris, tome iii. (1856), p. 469.

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so unfavourable, has induced me to enter into it thus fully, in the hopes that other cases of a similar character may be published.

There is but one more remark to be made, and that is in reference to the treatment adopted. The hæmorrhage was of so alarming a character, and had before persisted in spite of the usual hæmostatics, that Dr Gee, under whose care the patient was in the absence of Dr Harris, was induced to try the effect of Trousseau's plan of giving ipecacuan in ten-grain doses every ten minutes for three doses, vomiting being no counter-indication. Dr Duckworth has given a full account of this mode of treatment in the seventh volume of the Hospital Reports, so that it is needless for me to enter into further details. In the intervals between the attacks of hæmorrhage the patient was ordered various astringents, of which the Hst. plumbi * was certainly the most efficacious, and the one in which, at the present time, I place the most reliance in cases of obstinate hæmorrhage.

Case III.

W. C., aged 3; a fine boy for his age.

February 5, 1873.—Has had about six or eight fits since the age of six months. Had two yesterday. Subject to a discharge from the ears, but there has not been any for six weeks. Appears to be afraid of falling.

Ordered—Potass. bromid., gr. iij.; aq. anisi., ʒj., ter die.

February 8.—Slight discharge from right ear. Delirious last night. Very thirsty. Has not been sick. Bowels regular. Pulse 140. No lung-mischief discoverable.

Ordered—Potass. iodidi, gr. ij.; aq. carui, ʒj., 6tis.

February 12.—T. 104·8° F. Pulse very frequent, almost imperceptible. Dull on the left front from apex down to third rib. Loud bronchial breathing. Short hacking cough. Discharge from ear ceased.

Ordered—Sp. ammon. arom., tr. cinch., a. am. ♏ x.; aqua, ad ʒij. 4tis.; cat. lini.

February 13.—T. 105·1° F. P. 164, better volume. Bowels have not acted. Slept from 11 P.M. till 6 A.M. quietly. Still coughs. Dull in front to fourth intercostal space, and behind to within one inch of angle of scapula, with bronchial breathing and bronchophony; crepitant râle at lower part. Left pupil rather larger than right. No strabismus. Patient is quite unconscious; cries out. Right cheek flushed. Tongue moist. Bowels have just acted.

* Containing five grains of acetate of lead to the ounce.

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February 14.—T. 103° F. P. 156. R. 60. Restless night. Bowels have not acted. Left cheek flushed. Cough more troublesome. Slightly conscious for a few minutes.

February 15.—T. 104·8° F. P. about 168. Conscious for two or three hours this morning. Very restless night. Cough very troublesome. Bowels acted twice. Exceedingly ravenous. Cheeks flushed.

February 16.—T. 104° F. P. 168. Lies in just the same state as yesterday.

February 17.—After a copious, fetid motion, he became conscious.

February 18.—T. 98° F. P. 120. Quite conscious. Râles all over apex.

February 22.—T. 99·4° F. P. 120. Sleeps better. Eats well. Bowels rather loose, acting two or three times a day. Cough better. Resonance slightly impaired at left apex. Râles all over left chest.

Ordered—Cod-liver oil, bark, and acid.

February 26.—T. 98·8° F. P. 132. Still cough, and occasionally brings up phlegm. No impairment of resonance. Râles all over left chest and at right base. Appetite fair. Sleeps well. From this date his progress towards recovery was uninterrupted, and he continued perfectly well for three weeks, when, on March 23d, he was convulsed, and began to cough.

On March 27th he was admitted into Elizabeth Ward, under the care of Dr Harris, with signs of pneumonia undergoing resolution—that is to say, there was dulness extending to spine of scapula, and to fourth intercostal space in front. Feeble breathing, with medium crepitation all over dull region. Left side healthy, except crepitation at base. P. 156. T. 100·4° F.

March 28.—P. 140. T. 98°. Physical signs unaltered. He was then removed from the Hospital by his mother, as he fretted so much when he saw her.

July 23, 1875.—The boy has not had a day's illness of any account since his last attack of pneumonia. On careful examination, his lungs were discovered to be perfectly healthy.

The notes of this case, taken during the first attack of pneumonia, are of a fragmentary nature, as the boy was then an outpatient of mine at the Metropolitan Dispensary. The diagnosis being involved in considerable obscurity on the two occasions on which I saw him at the Dispensary, I determined to follow up the case by seeing the boy at his own home, and I certainly was rewarded for the trouble, as I was more than ever impressed with the necessity of careful examination of the chest in all cases of convulsions in children.

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In the first place, I wish to direct attention to the long period of incubation, if I may so term it, of the disease. The child had two fits on February 4th, and when I saw him the next day, his symptoms pointed to cerebral mischief, and I was under the impression that I had to deal with a case of tubercular meningitis at the commencement of the invasion stage. On his next visit I was confirmed in my idea of cerebral mischief by the delirium, the presence of a discharge from the right ear, and the absence of all lung-disease, or of anything else capable of causing so great mental disturbance. The diagnosis being so uncertain, I gladly acceded to the mother's request when she asked me to see the child at home; and then it was that I first discovered the pneumonia, though I had carefully examined the chest when I last saw the child. The duration of the initial stage must have been at least four days, as the fits happened on the fourth, and on the eighth there were no signs of lung-mischief; and this quite agrees with what Dr Wilson Fox states in his article on Pneumonia:*—'The physical signs indicative of the disease commonly make their appearance within twenty-four or forty-eight hours from the symptoms of invasion, but they may be undiscoverable for three or even four days, though probably when their appearance is thus delayed the pneumonia may be central.' To this I should like to add the following rider, that late appearance of the physical signs of pneumonia is more often met with in apex pneumonia than in pneumonia affecting other parts of the lung. In writing on the transition from the first to the second stage, Dr Wilson Fox makes the statement that bronchial breathing and distinct percussion dulness may not appear until the second or even the fourth day after the commencement of the stage of congestion, and that this appears to be more commonly the case with pneumonia of the apex. In the 'Lancet' for July 17, 1875, I have published the notes of a patient who was admitted into the Westminster Hospital, under the care of Dr Basham. In this case the patient was in a state of great pyrexia, his temperature on one occasion being 105·8° F. for four days before any physical signs of pneumonia were to be detected; and to make the diagnosis more difficult, he was very drowsy, very delirious at night, and had contracted pupils, so that at first it was suggested that he was suffering from typhus fever. Two other patients, who have been recently in the same Hospital with pneumonia of the apex, have had violent delirium; and a boy, aged 11, who was admitted into John Ward on July 27, 1872, with pneumonia of the left apex, had a like symptom, and was constantly trying to get out of bed; so that in all these five cases of apex-pneumonia delirium of a violent character was a marked symptom,

* Reynolds' System of Medicine, vol. iii.

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which quite coincides with the observation of Heintze,* who says that it is much more frequent in cases of pneumonia of the upper lobe than in that of the lower, in the proportion of 40·17 per cent. of the former to 25·5 of the latter. In the few cases I have seen of apex-pneumonia, the five I have given being the only ones I have taken notes of, delirium was present in all. Huss, however, remarks that delirium is not especially common in pneumonia of the upper lobes. With regard to prognosis, pneumonia of the apex is said to have a graver import than pneumonia of the base. Barthez and Rilliet† allude to its being associated in children with severe cerebral symptoms, as in my case. Out of the five cases of which I have notes, only one died; and in this patient, besides the right apex, the lower lobe on the same side was also affected, the middle lobe being curiously enough exempt from the disease. One patient went out of the Hospital with the following physical signs:—'Impaired resonance above the right clavicle; feeble breathing at right apex; no abnormal sounds.' These signs being present nearly a month after the establishment of convalescence, would raise the suspicion of the possible existence of a tubercular element in this case. The other three patients made a perfect recovery; but the only case I have had the opportunity of examining after any interval is the child, the note of whose illness I gave in full. Here, as I have before stated, the health has been perfectly good since the attack.

* Arch. der Heilk., 1868.

† Mal. des Enfants.

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A

CASE OF ERYTHEMA NODOSUM.

BY

PHILIP J. HENSLEY, M.D.

The comparative rarity of erythema nodosum in males, and especially adult males, and the high temperature observed in this case, appear to render it worthy of record.

The patient, Alfred Y., aged 34, a copperplate printer, a man of middle height and moderately strongly built, of temperate habits, first noticed some heat and smarting above the ankles on Saturday, April 24. It was not sufficient to prevent him continuing his work that day, nor does he even appear to have examined the condition of his legs. On the Monday morning, however, he was obliged to discontinue his work after a short time on account of the great increase in the sensation of heat, with much smarting pain about the ankles and the lower parts of the legs; and he then first noticed the existence of a rash about the painful parts. The pain continued, and caused sleeplessness for the two nights preceding his admission to the Hospital on Wednesday, April 28. When seen on admission, there was found some very slight general swelling of the legs and dorsum of the foot, with numerous tolerably regularly oval raised and knotty erythematous patches, varying from about the diameter of a pea to that of a halfpenny, and irregularly distributed from the dorsum of the foot to near the knee; these were widely distributed above, but more closely below, and for a space about 2 inches broad, a little above the ankle, were so numerous as to become confluent. There was some tenderness not very marked, and the pain and smarting generally were said by the patient to be much less on this day than the two previous ones.

The skin generally felt pungently hot and dry. Temperature 103·6°, pulse 120, respirations 24. There had been loss of appetite for two days, during which time the bowels had been somewhat

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relaxed. The tongue was much furred. The condition of the chest in all respects natural. The urine natural. No pain or swelling of any of the joints.

It may suffice to give shortly the progress of the case, the chief interest of which lies in the course of the temperature, of which a diagram is given.

After the first day in Hospital the patient complained of no pain or tenderness; indeed, every day after this he spoke of himself as feeling quite well, with the exception of slight thirst, want of appetite for any solid food, and that he was content simply to lie in bed.

Fresh patches were observed daily on the legs for the first five or six days after his admission, those first observed growing slightly more prominent and darker, then of a bluish tinge, and gradually beginning to fade. The last patch of the lower limbs was observed on the dorsum of the right foot on May 4, and the same day there appeared one on the outer aspect of one of the forearms, which was followed by several others on both forearms in the course of the next three or four days. No fresh ones appeared after May 8.

The duration of each patch before it was completely faded was from seven to twelve days, and for two or three days after its disappearance there was a slight desquamation. Throughout the time that the rash remained the tongue was somewhat furred, but never dry; the bowels were somewhat relaxed, being usually open two or three times daily, but there was never any abdominal pain or tenderness. For part of this time there was considerable injection of the conjunctivæ. The pulse was always of good volume, and ranged from 100 to 120. Convalescence was slow, and it was not until the 18th of June that the patient was able to go to Highgate.

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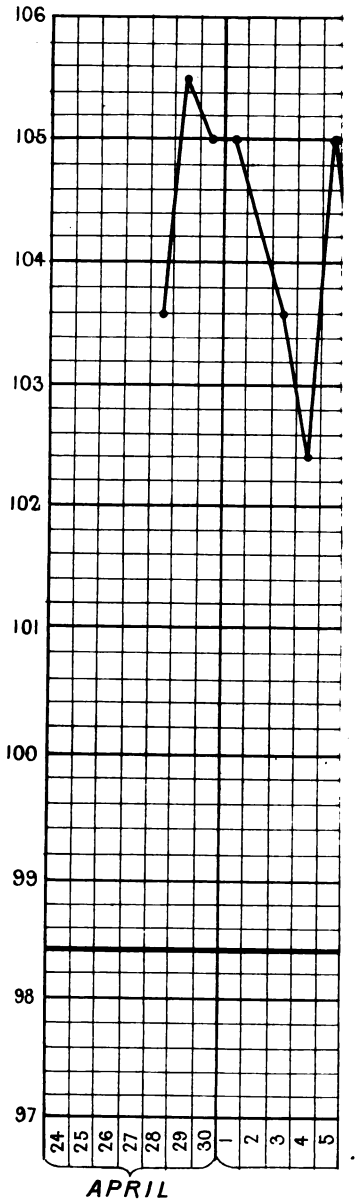

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IDIOPATHIC TETANUS.

(*Under the care of Dr Southey.*)

BY

GEORGE HASTINGS.

Charles L., aged 20, a ticket-collector on Great Eastern Railway, was admitted into Radcliffe Ward on June 28th, at 7 P.M., with the following history:—On June 14th he got very wet coming home from the Alexandra Palace. Not having time to change his clothes before coming on duty, he soon began to shiver, and in a few hours a severe cold set in, with which he felt ill for two days.

Was awakened on the morning of June 16th with aching pains in the back and stiffness about the neck. On getting out of bed, found he could not stand; and trying to yawn, discovered that he could not open his mouth. He then attempted to drink some water, sucking it through the nearly-fixed teeth, and found he had pain and difficulty in swallowing, and that the attempt was performed with an effort.

For the last fourteen days the patient has had two or three spasms of his back and legs each day, accompanied by the most excruciating pain in the back, causing him to call out; so much so, that the annoyance he gave to the neighbours by the cries was one reason for his removal to the Hospital.

Condition on examination.—Is a finely-built, well-nourished man, lying upon his back, with limbs rigid and extended. Countenance anxious, and very aged-looking. Skin soft, and covered with perspiration; marks of recent blister upon nape of neck. Great tenderness along whole of spinal column, most marked on either side of spinous processes; also great tenderness, with more or less rigidity, about muscles of neck. The mouth can be opened to extent of $\frac{1}{8}$ inch, but the tongue cannot be protruded.

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Articulation is altered, the voice is soft, and interrupted with each inspiration. Is perfectly conscious, and answers questions in a most rational manner. All movements cause the patient great pain. Swallowing is performed with difficulty, and the fluid is gulped down. Much suffering is caused by an action of the bowels; urine, however, is passed with comparative comfort.

There is no paralysis anywhere, and sensation remains perfect.

A wound was carefully looked for on the extremities, and in every region, but not the slightest scratch was to be found.

Has had scarcely any sleep since commencement of illness.

Bowels were open yesterday after medicine.

P. 120, sharp. T. 100°. R. 40, chiefly thoracic.

Was ordered—

Hydr. Subchlor. gr. v.
Extr. Opii, gr. j. Statim.

Succus Conii, ℥ij.
Pot. Bromidi, gr. xx.
Aquæ des, ℥j. 3tiis horis.

As much beef-essence and milk as he would take. A tepid bath at 96° F. was directed to be given, and to be repeated if the pain was relieved by its use. The strictest quietude was enjoined.

June 29, A.M.—Has had no sleep, and has suffered fearful pain in the back all night, during which time he has had several slight, but no severe spasms. Continual jactitations of limbs have been noticed since early morning.

Bowels have not acted.

P. 94, softer than last evening. T. 99·2°. R. 26.

Has passed half a pint of urine in the night. It is clear, but dark in colour. Specific gravity 1040; acid; no albumen or sugar; a very marked increase of phosphates on the addition of ammonia; and upon boiling it at a reduced specific gravity of 1020 there was a copious spontaneous deposit of phosphates.

8.30 P.M.—Five paroxysms since 3 P.M., the third being most severe. Suddenly calling out for help, a most terrible expression over the face, the eyes being fixed and staring, corners of mouth drawn downwards, the teeth clenched and exposed, strongly characteristic of "risus sardonicus." The brow and whole body were bathed in perspiration. Respiration irregular and hurried. His trunk was raised some distance off the bed, in opisthotonic spasm, nearly every muscle in the body being rigid, and the weight supported by the heels and occiput.

This lasted for about five minutes. The patient then begged to be turned over on his side, and seemed to obtain relief from that position. In a few more minutes the limbs relaxed, the

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back became straight, and drawing a few deep breaths and sighs, he lapsed into sleep, from which, however, he was awakened by the slightest touch, and had a flitting spasm across the face. No *marked* rise in pulse or temperature was observed after the paroxysm.

11 P.M.—Was very drowsy, and did not answer questions in his usual manner. Bowels not having acted, a simple enema was ordered.

No urine passed since morning.

June 30, 9 A.M.—A very restless night, without any sleep. Frequent spasms and pains in back caused him to call out, though they were not so severe as before. Opisthotonos was present three times. Bowels not open. Passed a pint of urine in the night. Specific gravity 1037; no albumen; great excess of phosphates. P. 102, soft. T. 98·4°. R. 30.

10.30 A.M.—Experienced a very severe attack of spasm, and for the first time complained of greatest pain in legs. Relief was obtained by turning him over upon his side. Muscles of legs rigid.

2 P.M.—Had three violent paroxysms during morning. The muscles of arms and hands were powerfully contracted. Had very great difficulty in breathing, the muscles of neck and throat being fixed and rigid for a considerable time, and he became cyanotic. The superficial veins of neck and face stood out in strong relief. Bit his tongue very sharply in one of these spasms. The bowels having been only slightly open since enema, and the abdomen being full and distended, was ordered—

> Pulv. Jalapæ Comp., ℥j.
> Mucilaginis, ℥j.
> In aqua. 2dis horis, si opus sit.

9 P.M.—Mr Holden having suggested for his relief the application of flannel soaked in hot poppy fomentations, the whole body was bandaged with flannel, as suggested, and then covered with gutta percha tissue. This operation, though done as gently as circumstances would allow, caused the patient great pain. After he had been wrapped up in this manner for about three hours, during which time he had two paroxysms, he begged to have the coverings removed, as he could no longer stand the heat. P. 116. T. 99°. R. 36.

July 1.—No sleep during night, as the pain and cramp in legs were very severe and frequent. Trismus well-marked, but jaws not so fixed. Tongue seen between the teeth thickly coated with yellow fur. Bowels freely open. Urine still contains an abnormal amount of phosphates.

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July 2.—The attacks fewer, and much less severe. Pain not so great, and mainly confined to legs. Muscles more or less rigid. The jaws could be opened sufficiently for tip of tongue to be protruded. P. 90. T. 98·4°. R. 26.

July 9.—The patient, since note of 2d, has steadily improved, the pain in his back having disappeared, and he now suffers only from occasional cramping sensations in the legs. The jaws are freely movable, and he can masticate solid food. The urine, in proportion to its quantity, decreases in specific gravity, and the excess of phosphates perceptibly diminishes, being now almost normal. A crop of boils have appeared upon the back, shoulders, and arms. The pulse is quiet, and of good volume; and the temperature, which throughout has not been much elevated, is normal. Medicine changed to—

Quiniæ Sulphat. gr. ij.
Acid. Sulph. dil. ℥x.
Aquæ des ʒj., ter.

July 19.—He has now convalesced, and is up and about the ward, only feeling somewhat weak about the legs.

No attack of spasm has occurred since 4th inst.

July 27.—Discharged quite well.

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NOTES

OF

THREE CASES OF AIR IN THE CAVITY OF THE PLEURA AS THE RESULT OF INJURY.

BY

HENRY TRENTHAM BUTLIN.

It is my intention not to write a paper, but merely to publish the following cases. For permission to do so, I am much indebted to Mr Holden, in whose wards they occurred. Although the subjects contained in them are spoken of in some of the leading works and text-books on surgery, they are only slightly mentioned; and in looking through the literature referring to the subject, I have been struck by the small number of cases which appear to have been published. The close resemblance of symptoms in all three cases, the consequent difficulty of diagnosis, the comparative harmlessness in the first two cases of what might seem to be a very severe injury, and the rapidly fatal result in the last case, are all worthy of notice.

CASE I.—*Severe Fall, followed by symptoms of Pneumo-thorax, and later of Hydro-pneumo-thorax. No fracture of sternum or ribs detected. Good recovery.*

William S., aged 22 years, a bricklayer, was at work on a scaffold about thirty feet high, when he lost his footing, and fell to the ground, pitching upon his head and back. He was picked up in a semi-conscious condition, and brought to the Hospital, where he was admitted May 18, 1874. The following note of his condition was taken May 19:—"Has a small contused scalp-wound over the posterior portion of the left parietal-bone. No

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fracture detected. No hæmorrhage from nose, ear, or mouth. Is conscious, and quite rational. Complains of pain and tenderness over middle of dorsal spine, but nothing abnormal is detected. Moves lower extremities well. No loss of sensation. Complains of pain in the epigastrium. Is very restless. Skin hot and dry. Temperature 99·6°. Pulse 144, regular. Breathes very quickly, moving the abdomen chiefly during respiration." The chest was then examined, when the whole of the left side was found to be hyper-resonant. It was also more barrel-shaped than the right. The breath-sounds were very feeble. The heart was pushed over to the right side, and could be seen beating in the right fourth interspace.

The patient was put on low diet; the left side of the chest was covered with strapping. On the 20th the temperature was 100·4°; on the 21st, 101·2°; on the 22d it declined to 99·6°, after which it gradually fell to normal. On the 24th he had two violent convulsive fits. On May the 25th the heart's impulse was visible in the epigastrium. The general condition was much improved. Hyper-resonance of the left side was still well marked. By the 28th the percussion-note was not so resonant; whilst at the lower part of the chest there was dulness, and a well-marked splashing-sound could be obtained on succussion. On the 18th June the chest was again examined. The apex-beat of the heart was in the epigastrium; there was dulness on percussion up to the nipple-line, below which scarcely any respiratory sound could be heard. The splashing-sound was still faintly audible. The splashing-sound ceased to be heard by July 1st. The patient had by this time so much improved that he was up and dressed every day. There had been no cough throughout. On the 24th he was so much better that he was sent to the Convalescent Hospital at Highgate. The note made at that time was to the effect that there was slight contraction of the left side of the chest. The heart's impulse was visible about one inch to the left of the sternum in the fifth interspace. The percussion-note was dull over the greater part of the left side, but only slightly more dull than normal. The breathing was very feeble.

CASE II.—*Signs of Pneumo-thorax, following the passage of a heavy vehicle over the Chest. No fracture of bones detected. Good recovery.*

On the 13th of July 1874, Francis J., 6 years old, is said to have been knocked down and run over by a heavy vehicle, the wheels of which passed over the lower part of

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his chest. He was at once admitted into the Hospital, when he was sick, and brought up a good deal of blood, mingled with the contents of the stomach. On examination the day after admission, there was found a small wound on the left side of the forehead, just above the outer corner of the eyebrow. There was no mark of injury over the chest or abdomen, save a bruise in the left loin. He lay on his back with his eyes closed, moaning and breathing very quickly. His skin was very hot, and slightly dusky. Temperature 102·4°. Pulse 172. He was conscious, but did not like to speak or to be spoken to. He complained of pain over the sternum, and of general tenderness over the whole of the chest, but especially over the sternal region. The chest moved very little during respiration, the breathing being chiefly diaphragmatic. No fracture of the ribs could be detected. The left side of the chest was generally hyper-resonant, except at the lower part behind, where there was marked dulness on percussion. The breathing was bronchial at the lower and back part of the left side, very feeble over the front. On the right side the resonance was normal, the breathing compensatory. The heart's impulse was most evident in the epigastrium, and was not seen at all in its normal position. The normal precordial region was hyper-resonant, as was the rest of the left side.

The child was put upon low diet, and no other treatment was adopted than the occasional administration of five minims of the liquid extract of opium to relieve pain. No change was noticed until July 18th, when his breathing became less quick, and his skin was less dusky and hot. By the 24th July there was a great improvement. There was no marked acceleration of the respiration, no fever. He coughed slightly at occasional intervals, but there was no expectoration. There was not any alteration in the physical signs. On July 29th, the temperature rose to 102°, and he complained of pain below the left axilla, but by the 4th of August the temperature had again diminished to below 100°, and the pain had entirely passed off. No friction-sound had been heard. He breathed easily, and the only alteration noticed on examination of the chest was that the dulness had extended over the greater part of the left back. By August 10th the hyper-resonance was becoming less marked in front, whilst crepitant and subcrepitant râles were plainly audible over the back, below the angle of the scapula. The heart's impulse was now noticed to be in its normal position. By the 17th of August there was no perceptible difference in the percussion-note below the two clavicles. The respiratory-sounds of the left side had much improved; the moist-sounds were much fewer and less loud.

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On the 1st of September he was so well that he was able to leave the Hospital.

CASE III.—*Signs of Pneumo-thorax due to the escape of the distended stomach through a rupture of the diaphragm into the left pleural cavity. Death on the third day.*

On the 27th January 1875, William K., a carriage-shunter, 28 years old, was employed in shunting some heavily-laden coal-waggons, when he got caught between the buffers of two of them in such a manner that the left side of his chest was severely crushed. The carriages are said to have been moving with such force towards each other, that after they had met upon his body they jumped apart a yard or more. The patient was immediately brought to the Hospital.

A thorough examination was made the day after admission. There were slight contusions and abrasions about, and for some distance around the left nipple. The whole of this region was painful, and excessively tender. He complained of pain, too, over the lower ribs on the left side behind. No deformity of the chest was noticed; no fracture detected in front, but fracture of several of the lower ribs in the mid-axillary line. There was no emphysema, no bulging of the intercostal spaces. The heart was beating in the fourth interspace on the right side. On percussing the chest, there was marked hyper-resonance over almost the whole of the left side. Diminution of vocal vibration, and an almost total absence of respiratory sound. The patient had vomited some blood. He breathed quickly, and seemed distressed. His water was drawn off, and was found to contain blood.

Low diet was ordered, and a roller was placed carefully around the chest.

On the following day he was breathing more quickly, and with much greater difficulty. His expression was anxious, his face dusky. He was frequently distressed by cough, and was once sick, bringing up a small quantity of bloodstained fluid. He complained of great pain over the left side of the chest, was very restless, and kept rolling about in the bed. The bandage had already been taken off, as he could not bear its pressure. In the course of the morning he brought up some more clotted blood. The water was again drawn off, and was bloody.

Towards the afternoon the breathing became quicker and still more laboured, whilst the face and lips became pallid. A consultation was held by Mr Holden and Dr Andrew, when it was

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decided that if the respiration became worse, the left side of the chest should be tapped, in order to let out some of the air which appeared to fill the cavity of the pleura.

About 5 P.M. he became rapidly worse; his skin was cold, his face covered with clammy perspiration, his pulse fluttering. The house-surgeon was sent for, and finding him *in extremis*, he thrust a trocar between the sixth and seventh ribs in the anterior axillary line on the left side. Little or no air passed through the trocar. The patient was dead.

The autopsy was made twenty hours after death.

Fractures were discovered of the fifth, sixth, and seventh ribs on the left side, about the mid-axillary line; of the seventh and eighth ribs, about their angles; of the eleventh rib, about one inch from the spine. The costal pleura was torn in several places. There was a small quantity of blood and gas in the pleural cavity.

But whereas we expected to find the lung compressed by pneumo-thorax, we were much surprised at the condition which presented itself on opening thoroughly the chest. Through a wide transverse rupture of the left side of the diaphragm, the stomach was protruded into the pleural cavity, carrying with it the spleen and a large portion of the transverse colon. The stomach, enormously distended with gas, reached higher than the third rib, thrusting the heart over into the right side of the chest, and compressing and hiding the lung, so that only its apex was visible high up in the pleural cavity. We traced the line along which the trocar had passed into the colon, instead of into the stomach. The spleen was literally torn to pieces. The abdomen contained a large quantity of blood, both fluid and clotted. This lay in the peritoneal cavity, and behind it. The left kidney was surrounded by blood; it was swollen, and almost black from intense congestion. There were several rents in its capsule and in its substance. The bladder was uninjured.

It will be noticed that there was an absence of emphysema in the first two cases, a symptom which is said very frequently to accompany traumatic pneumo-thorax. The fact that no rib was fractured in either case will, however, account for this. But the absence of fracture of the ribs makes it rather more difficult to explain the occurrence of pneumo-thorax. Nevertheless, that the lung may be ruptured without any fracture of the chest-wall, there is sufficient evidence to show. Sée* has published a case of pneumo-thorax, in which the wall of the chest was unhurt. There are many cases on record in which post-mortem examina-

* Thèse de Strasbourg, 1869.

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tion has shown the lung to be severely lacerated without the fracture of a rib. Indeed, I have myself made an autopsy in which this had happened. Demarquay* has shown that the presence of air in the pleura does not necessarily give rise to inflammation; but the symptoms in these cases make one rather suspicious of the occurrence of pleurisy.

I do not see, after careful consideration of the symptoms in the third case, how the diagnosis could have been made. Possibly, if the upper part of the chest had been very carefully examined, there might have been some slight doubt as to the nature of the case. There were no symptoms pointing especially to injury of the diaphragm, so that the attention was never drawn in that direction.

* Gazette Médicale, 1865, No. 32.

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MEDICAL CASES.

BY

VINCENT D. HARRIS, M.B.

Diabetes Mellitus—Enlarged Spleen—Death by Coma, preceded by Sickness, but without Suppression of Urine.

G. B., a lad, aged 17, was admitted into Mark Ward on January 16, 1875, presenting the usual symptoms of diabetes mellitus. From the account he gave of himself, it appeared that he had suffered from the affection for a month or six weeks only, and had been able to work at his trade, that of gold-cutting, up to the time of admission.

Condition on admission.—Pale, and very thin; skin fairly moist; breath sweet; tongue clean, red, and dry; appetite very great; thirst constant; eyes and vision not abnormal. Is deaf, and very stupid. Chest presents no marked physical sign of disease. Abdomen—the spleen is considerably enlarged, and may be felt about two inches below left costal arch.

Urine passed, about four pints in twenty-four hours, clear, light amber-coloured, sp. gr. 1044, containing abundance of sugar.

Ordered.—Chop, bacon, greens, milk Oij., bran cakes.

Haust. ammon. acet. c. camph. ter, and afterwards, Haust. quin. gr. iij. ter.

Course.—During the month after admission, the patient made some little improvement. He passed less water, of a lower specific gravity, and gained somewhat in weight. The spleen continued more or less enlarged until February 15th. About the middle of March it was discovered that he had been eating bread and other things which had been forbidden, and he was discharged.

Readmitted on June 23d, in a very weak and emaciated condition. His mother states that for the last fortnight he has rapidly become worse, and has hardly eaten anything. He has been, moreover, listless and drowsy.

Condition on readmission.—Lies on his back, in a state of

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semi-consciousness, very restless, and to all appearance not comprehending questions. In other ways is in much the same state as during his former stay in the Hospital, except that his appetite is very bad, and that he vomits after taking food. Urine passed in twenty-four hours amounted to two and a quarter pints, sp. gr. 1035, containing abundant sugar.

Liver felt slightly below ribs. Spleen not enlarged.

Course and termination.—For the two following days there was no change for the better. Semi-consciousness had deepened into coma by the midday of 25th, and he lay on his back, breathing heavily.

The temperature and pulse were not above normal until the morning of the 26th. About 1 P.M. on the same day he died. During the twenty-four hours preceding his death the amount of urine passed was 5 pints, sp. gr. 1035, containing a trace of albumen, abundant sugar, and (by calculation) 1·2 per cent. of urea.

Autopsy.—Liver enlarged and deeply congested. Spleen congested, but not markedly increased in size. Brain tough and pale. In all other respects, to the naked eye, there were no pathological changes.

Remarks.—Two things are noteworthy in this case: 1. *The enlargement of the spleen noticed at its beginning.* This might be taken as an index of the engorgement of the portal circulation, and is important, therefore, in support of the theory that the immediate cause of diabetes in some cases is active hyperæmia of the liver itself, however produced. 2. *The mode of death,* different as it was from the usual sudden termination of diabetes by coma. In this case, the death was lingering, without suppression of urine or retention of urea in the blood to account for it. The rejection of the little food he took, and his general appearance for the two or three days previously, point to starvation from inability of the organism to assimilate food, as the not improbable cause of his death.

Diabetes Mellitus—Sudden Death by Coma, unpreceded by Suppression of Urine.

E. K., aged 19, a married woman, was admitted into Mary Ward on June 5, 1875, from the out-patients' room.

History.—She states that she has not been strong for three months, although previously quite healthy; has been languid, and has rapidly wasted. Between two and three months ago began to pass a large quantity of urine, and then became an out-patient at this Hospital. Can give no cause for her illness, but suggests that it might have arisen from her drinking a great deal of cold water. Has suffered much mental anxiety lately.

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No family history of consumption or diabetes.

Condition.—Thin, good complexion; skin rough in places; pupils dilated; sweet breath; several recently decayed teeth; tongue red, glazed, and dry. Sweet taste; not thirsty, but always hungry. Suffers from toothache, indigestion, and constipated bowels. Catamenia irregular. About five pints of urine in twenty-four hours, sp. gr. 1036, acid, sweet, amber-coloured, containing sugar in large quantity.

No marked pulmonary, cardiac, or abdominal signs.

Ordered.—Ordinary diabetic diet and drugs.

Course.—There was a marked improvement in the patient's condition at first. After a few weeks, the state varied very much from day to day, the appetite gradually diminishing.

The bowels were very irregular throughout.

On July 25th, seven weeks after admission, she complained of a pain in her shoulder, and seeming unwell, was advised to remain in bed. By the same evening she was comatose, and died about 5 A.M. on 26th. During twenty-four hours preceding her death she passed four and a half pints of water, sp. gr. 1026.

Autopsy.—There was nothing abnormal seen by naked eye in the heart, lungs, brain, or ganglia of sympathetic in neck. The liver and pancreas were congested. Spleen enlarged and congested, as were also the kidneys, but their structure appeared normal.

Other organs healthy.

Remarks.—1. The sudden death by coma in this case is a contrast to the lingering one in the first case. Nearly all the urgent symptoms came on less than twelve hours before death. Indeed, up to the day of her death, there seemed to be more or less improvement in her condition. 2. The spleen, pancreas, and liver were congested, showing abnormal fulness of portal circulation, and again giving support to theory quoted under head of last case.

Malignant Tumour of Thyroid Gland, involving Glands of the Neck—Cancer of Œsophagus, causing Obstruction—Death from Asthenia.

William H., aged 39, cabinetmaker, admitted into Mark Ward on May 3, 1875. He is a largely-made man, with dusky complexion, and presenting a more or less cachectic appearance.

Description of tumour.—His neck is enlarged, especially on the right side, and the veins in the neighbourhood are swollen and tortuous. The enlargement of the neck, which the patient first noticed only three weeks before admission, is due to a hard, more or less firmly fixed tumour, springing up on a level with the right clavicle, at the posterior border of sterno-mastoid muscle, and

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extending forwards and upwards to the hyoid bone. It stretches across the front of the neck above the episternal notch to the left side, reaching upwards as high as the cricoid cartilage. On the left side, the tumour, though similar in character, is hardly as large as on the other side. The skin over the mass is œdematous, but non-adherent.

Symptoms under which the patient principally suffers are: A sense of weight in the tumour, not amounting to pain, but sufficient to cause discomfort; dyspnœa, occasionally very troublesome, and requiring him to sit up in bed constantly; a short spasmodic cough, with frothy expectoration, often disturbing his night's rest; and dysphagia, which has been coming on for the past five months, and has gradually increased so as now to be almost absolute for solids.

Condition.—Very thin, has rapidly become so lately; tongue pale, large, and moist; appetite bad; bowels constipated; pulse 96, temp. 97·4° F.; voice husky and weak. No enlargement of glands, except in neck. Physical signs in the chest show some impairment of resonance at apices of the lungs, especially on the left side, with feeble breathing, and sibilant and sonorous rhonchi throughout.

The urine contains a little albumen.

There is no marked increase of leucocytes in the blood on microscopical examination.

Course.—After a few days' rest in bed, some of the more urgent symptoms were relieved. The dysphagia was less, although the size of the neck was not diminished, and the dyspnœa and cough were certainly less distressing. Towards the end of May, however, all the symptoms increased, and in addition he became more or less delirious at night, and his legs began to swell. He died on June 3, having been unable to swallow even liquid food for about forty hours previously, during which time also the dyspnœa was painful to witness.

Autopsy, twenty-five hours after death.

Neck much enlarged on both sides. On the right was a large irregularly-shaped mass of cancer, connected with the lower part of the right lobe of the thyroid body. The upper part of the same lobe was unaffected. The cancerous mass was pale, and in some of its nodules of a creamy consistence. All the cervical and submaxillary, supra-clavicular and infra-clavicular and thoracic lymphatics were involved on both sides.

The entire left lobe of the thyroid body was cancerous. The left common carotid was somewhat diminished in calibre by the mass.

The trachea, larynx, and vagi nerves, though surrounded by the mass, showed no signs of disease.

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The œsophagus was unaffected for half an inch above the diaphragm, and for its upper half. In the lower half it was impervious, and on being laid open, showed a nodulated, ulcerating, cancerous surface.

Liver contained five nodules of medullary cancer, two of them softened in the middle.

Kidneys somewhat cirrhosed.

Other organs natural.

Secondary Syphilis—Eruption ushered in by Paroxysm of High Temperature, and Symptoms as of an Ague Fit—Similar Paroxysms accompanying or preceding each Increase of the Syphilitic Manifestations.

W. R., an able-bodied labourer, aged 24, was admitted into Mark Ward on April 19, 1875. He stated that he had been ailing for a fortnight with headache, flying pains, loss of appetite, occasional vomiting, and looseness of the bowels. On the morning of admission, feeling better, he left home with the intention of going to work, but on the way felt so weak and languid that he changed his mind and came to the Hospital.

On admission he presented symptoms of considerable pyrexia. His skin was hot and dry, his cheeks red, stretched, and shining, and his alæ nasi dilating. The conjunctivæ were somewhat suffused; the vessels of the neck pulsated visibly. There were abundant sordes on teeth, gums, and lips, which were dry and rough. The tongue tremulous, furred on dorsum, and moist. Temp. 105·2° F.; pulse 132, full and bounding. The patient complained much of thirst, frontal headache, and pain in the back; but though troubled with nausea, did not actually vomit.

The bowels were somewhat loose; the urine contained no albumen.

No marked physical signs in chest.

The spleen was somewhat enlarged.

A few indistinctly red, non-elevated, irregularly-shaped spots were observed on lower part of thorax and upper part of abdomen.

Course.—The fever continued from the time of admission (about ten o'clock in the morning) until two o'clock in the afternoon, when it terminated in a critical sweat, and the temperature fell. By 10 P.M. the thermometer registered 100° F., and on the following day 98° F. All other symptoms of fever had also disappeared except persistent frontal headache, which remained for a day or two. The patient remained in a quiet state for more than a week after.

On the 26th inst. it was noticed that the spots on abdomen

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and chest mentioned above were enlarged, and looked like psoriasis; and that in addition there were some, less distinct but similar in character, on both arms, back, and shoulders. In consequence of the increase in these spots, which were more or less fawn-coloured, it was thought advisable to inquire more fully into the patient's history for evidence to justify the diagnosis of syphilis, as before the increase in the number of the spots and their peculiarities had been observed, the case was thought to be one of relapsing fever.

It was now ascertained that the patient had had a sore on the penis in December 1874, accompanied by phimosis and gonorrhœa, and again at end of March 1875, without these accompaniments. In both instances the signs had appeared four or five days after connection.

During the next four days (April 27th to 30th) the signs of syphilis increased. More spots arose, the throat became sore and the voice husky, and there was complaint of muscular pains more severe at night.

On May 1st the temperature, which in the morning was 97·2° F., rose by midday to 98·5°, and in evening to 100·8°. Pulse and Resp. were increased in proportion. Headache and aching pains as before, and other symptoms of a milder attack similar to one on admission. The spots became more conspicuous, besides increasing in number. The patient remained in bed during the day, and by May 3d had, to all appearance, recovered.

Between May 3d and 10th, except that spots appeared on the face, there was nothing noteworthy; and by the 13th the spots were almost faded, and he was ordered to be discharged.

On May 15th the note is: Went into Hospital Square this morning, and while there began to shiver; walked up-stairs into the ward with difficulty, and went to bed. Has since become very hot, and almost exactly in same state as on admission, April 19th. Very irritable, deaf, has severe headache. Face is flushed and pupils contracted. Sordes on lips and teeth. Tongue furred on dorsum. Some small pustular spots with inflamed bases on cheeks and lower jaw. At 10 A.M., temp. 105°, P. 156, R. 32. Spleen very greatly enlarged. The temperature fell when skin began to sweat, and was by the evening as low as 97° F. An entire remission of symptoms on May 16th, the next day, and again an accession of fever, with all former symptoms, on the 17th, with second remission on 18th (*see* Chart). The spleen continued enlarged for several days.

For the next ten days the patient had no further return of the fever. There was a fresh crop of larger, more defined, and distinct spots on 21st all over the body, which on 24th presented fine

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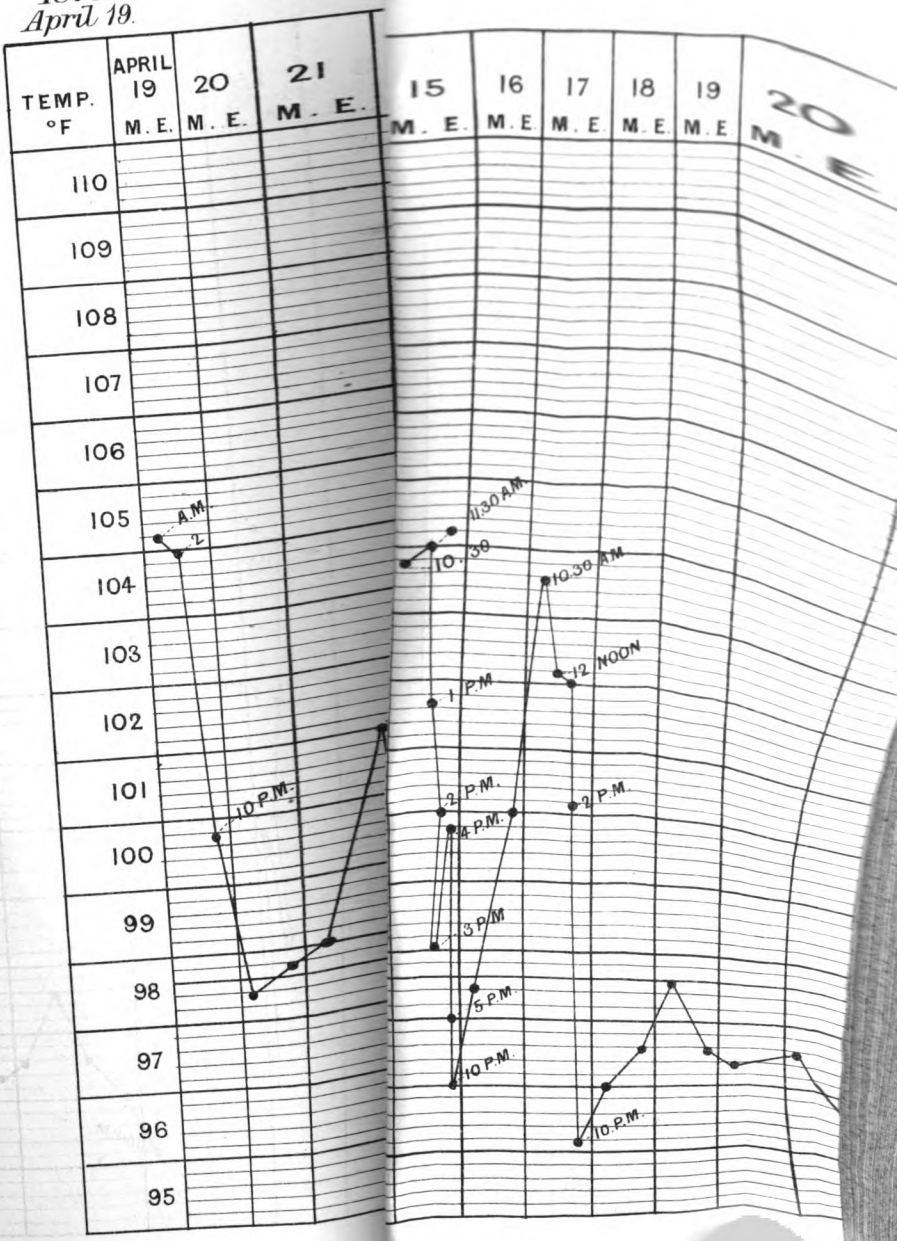
Date of Admission
1875
April 19.

Willi



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epidermal scales. The face was blotched with them. Several hard, movable, rounded, smooth lumps on vertex of head, with sympathetic enlargement of occipital lymphatic glands, were also noticed.

From May 29th to June 1st there was a succession of rises and falls in the temperature, with corresponding symptoms. Up to this time the attacks had been fairly regular, occurring once a fortnight; the next was on June 8th, leaving only a week's interval. It lasted, as usual, two days, with twenty-four hours of quiet between them, and was accompanied, as in former cases, by enlargement of the spleen, lasting several days, and followed by an increase in the plainness and extent of the rash. The patient's face was now quite covered with raised scaly blotches.

On June 14th several small vesicles appeared on the glans penis, on site of old scar; and on 16th two or three ulcers were noticed on the tongue; but by the 28th there was a marked improvement in syphilitic symptoms.

On July 2d, after three weeks' quiet, a relapse occurred, the symptoms of which were more severe. The hot stage was of longer duration, and the temperature, which fell slightly in the evening, did not reach the normal point until July 6th. The spleen was larger than it had been before, and continued so for a longer time. All the syphilitic symptoms increased, moreover, and in addition the throat became sore.

The next rise of temperature occurred on the 12th, and remitted on 13th, and rose again on 14th, and again fell on 15th, to rise on 16th. This was the most severe attack of all. The temperature reached 106·3° F., and the spleen was enlarged until August 2d.

No further relapse occurred, and the patient was discharged from Hospital, August 14th.

Note.—When last seen (September 21st), the syphilitic rash and sore throat were still more marked, but there had been no further attack of fever.

Treatment.—The mode of treatment pursued was simple. At first he was ordered quinine, gr. ii., every three hours; then the same dose less frequently. After this he was ordered anti-syphilitic drugs; and he took mercury in form of hyd. c. cret., gr., ii. ss. every night; and potassii iod., gr. v., three times a day; and a lotion of hydrarg. bicyanid. (gr. xv. to ℥j) locally to tongue.

Remarks.—On admission, this case closely resembled one of relapsing fever, and the diagnosis seemed to be confirmed by the rapid defervescence attended by profuse perspiration; and yet it is difficult to believe it to have been really of this character. If so, as far as could be learned, it must have been an isolated case, for the patient had almost certainly not been exposed to infection

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from any one suffering from that disease; and again, the late attacks of pyrexia became very irregular, both in duration and in the intervals between them. No real amendment took place until the effect of the mercury and iodide of potassium on the syphilitic symptoms became clearly visible, so that, on the whole, it seems possible that the attacks of pyrexia depended upon the changes in the spleen, and that those, again, were in some way brought about by the syphilitic infection. Changes in the spleen, in their origin even mechanical, such as embolism, are not infrequently attended by alternations of temperature, simulating those due to various forms of intermittent fever. The pyrexia, when once set up, would increase the size of the spleen.

Osteo-arthritis, with Osteoid Cancer affecting the Sternum, Ribs, Right Clavicle, Glands of Neck, and Mediastinum and the Liver, and causing Fracture of Sternum and Right Clavicle.

G. B., grocer, aged 48, was admitted into Mark Ward, suffering from chronic deforming rheumatism, on July 17, 1875. From the history which he gave it appeared that the affection first showed itself after a fall, twelve years before, by which he injured the right knee. Almost immediately after the accident, the knee began to enlarge, and after a time became deformed. Other joints followed. He was in the enjoyment of fairly good health, however, until April 1875, when he caught cold. One day after a severe fit of coughing, he noticed a swelling on the chest, which has since increased. About this time, too, he first noticed some lumps in the neck. Lately, the clavicles, innominate and other bones, have become thickened and enlarged.

Except that the patient complained somewhat of pain in the left arm, he was comfortable, and the functions of the body were performed naturally. He was not markedly thin.

The knees, ankles, finger and toe joints, the elbows, wrists, and shoulders, were deformed and impaired in usefulness. The glands of the neck were enlarged and very hard, as were also the thyroid bodie and the inguinal glands to a less degree. Occupying the front of the chest was a large uneven swelling, extending for about one and a half inches below episternal notch to ensiform cartilage, more to right than left of sternum.

The measurements taken were—

From nipple to nipple, over the swelling, 9¼ inches.

From upper limit to junction of sternum with ensiform cartilage, 6 inches.

The skin over the swelling was slightly hot, freely movable, and covered with small white spots. The tumour was hard,

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except at the upper part, where it was somewhat softened, and pulsation was felt, apparently synchronous with heart's impulse. The tumour was quite fixed and immovable, and the intercostal spaces could be made out. It was fairly resonant on percussion, and the heart-sounds were heard over it.

No marked abnormal pulmonary sounds. There was a systolic murmur at apex of heart, which organ was natural as regards apex beat and dulness. The murmur was not heard at the base.

During the time which elapsed before his death, on September 7th, he gradually became weaker, and at last succumbed to an intercurrent pneumonia of the base of the right lung.

(Casts of the tumour of the sternum, and of some of the deformed joints, were taken for the Museum of St Bartholomew's Hospital.)

Autopsy (twenty-four hours after death).—Body much emaciated. Both knees enlarged, and presenting usual appearances of osteo-arthritis to a marked degree.

Chest.—An extreme pigeon-breast, with unusual protuberance of the sternum, and fracture about the middle joint, with small cancerous masses on the front and back, near the seat of fracture. The fractured bone was more or less infiltrated with the new growth. Costal cartilages ossified. The third, sixth, and seventh ribs of left side, and intercostal spaces, had upon them anteriorly three reddish smooth masses of osteoid cancer projecting towards lung. A similar mass lay behind the most protuberant part of the sternum; and there were two more on the inner and back part of the chest, on the third and fourth left ribs, and intercostal spaces.

When cut into, these tumours were dense throughout, with a little juicy matter, and here and there parts as hard as bone.

The right lung, where it lay against the tumours, was solidified, with a granular appearance (that of pneumonia, 2nd stage) on section. In these parts the lung contained no air, and sank in water. There were small yellowish-white granules, probably cancerous, scattered over the surface of the lungs, and others in the substance. These were not limited to the hepatised portion of the lung. The mediastinal glands were enlarged and hardened. The glands at the root of the neck were also enlarged and hardened, as was also the thyroid body.

There was a cancerous mass on the clavicle about the junction of middle and outer third, where the clavicle was also fractured.

Liver contained two masses of the same nature as those of the chest.

Spleen somewhat enlarged.

Other organs healthy.

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PROCEEDINGS

OF

THE ABERNETHIAN SOCIETY,

FOR WINTER SESSION 1874–75.

October 8, 1874.

Dr Southey delivered the introductory address.

October 15.

Dr Moore showed two sets of specimens illustrating the results of atheroma—

1st Patient: woman, aged 32 years. Hope Ward. August 1874.

Heart, aorta, and œsophagus, and dorsal vertebræ.

Heart: mitral valve contracted so as to admit but one finger; edge of the valve greatly thickened; no great hypertrophy of the heart.

Aorta: highly atheromatous throughout. At a point a quarter of an inch below the orifice of the left sub-clavian artery there is a sacculate aneurism three inches long. It rested upon the third, fourth, and fifth dorsal vertebræ; and their bodies are considerably eroded. The aneurism opens into the œsophagus by an orifice as large as a florin. A firm mass of fibrin protruded through this orifice into the œsophagus.

Death was due to hæmorrhage. The stomach contained a firm, dark cast of bloodclot, and there was much dark blood in the intestines. The skin was blanched, and the kidneys, liver, and spleen were remarkably bloodless.

2d Patient: man, aged 57 years. Luke Ward. October 1874.

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Heart, aorta, kidney. Piece of small intestine with atheromatous ulcer.

Heart: all cavities greatly dilated, and with them the aur.-ventr. valvular orifices, but no growths on the valves, and no thickening of their edges.

Aorta: enormously dilated; highly atheromatous from origin to bifurcation. In parts calcareous plates laid bare.

Kidney: shows an old infarct.

Death was the result of the general condition. The right lung showed a large recent patch of pulmonary apoplexy at its base. There was also an infarct in the spleen.

In the first case, the condition of the mitral valve showed that there had been endocarditis, while in the second there was nothing to indicate endocarditis. From the general features he thought it probable that in each case atheromatous disease of the arterial wall was the primary disease. In the woman, the aortic wall gave way, an aneurism was formed, and death occurred before the heart was much affected. In the man, no aneurism bringing the case to an end, the diseased condition of the aorta had time to tell upon the heart, and led to the great dilatation, with hypertrophy, which the specimen shows.

The emboli which led to the infarctions found in lung, kidney, intestines, and spleen were probably small pieces of the exposed calcareous atheromatous patches in the aorta.

In the first case, blood was vomited at intervals for several days. Its bright colour, and the fact that in the intervals there was a cough with bloody sputa, made this an instance in which it was not easy to decide whether the hæmorrhage should be classed as hæmoptysis or as hæmatemesis.

I did not see the second patient during life, but I am informed that he had frequent and severe attacks of angina pectoris. The coronary arteries are not diseased. Such pains are common in cases of extensive aortic disease.

Dr Hall read a paper on 'The Therapeutic Action of Certain Drugs.'

Ipecacuan was first considered, and its therapeutics were divided into the following classes:—

(1.) As an emetic.
(2.) As a nauseant, relaxant, expectorant, and diaphoretic.
(3.) In dysentery and the dysenteric diarrhœa of children.
(4.) In assisting the action of purgatives.
(5.) In various kinds of sickness, especially that of pregnancy.
(6.) In hæmorrhages.
(7.) As a local application.

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The first and second divisions were dismissed in a few words, as ipecacuan is universally employed for these purposes. In the treatment of the dysenteric diarrhœa of children, one or two grains of ipecacuan were ordered three times a day, and though sickness may at first be produced, tolerance is soon established. Notes on ten cases were read, all of which were cured except one doubtful case. Marked improvement was noted from two to four days after commencing the treatment, and usually a perfect cure within the week.

The effect of ipecacuan in assisting the action of other purgatives was ascribed to its power of increasing the secretion of mucus by the intestine.

Under the fifth head some of the most brilliant effects of ipecacuan are seen. Dr Ringer's recommendation of minim doses of vinum ipecacuanhæ every hour was tried, and found to answer admirably, especially in the sickness of pregnancy. Three cases were cited, the last being an exceedingly severe one. They all yielded to this plan of treatment. The hæmostatic action was next mentioned, and notes of two cases read in support of it—the second one being an alarming attack of hæmoptysis, probably from a bronchiectatic cavity. In both these instances a satisfactory result was achieved. The mode of exhibiting the drug was ten grains every ten minutes for three doses, vomiting not being a contra-indication.

The remarks on ipecacuan ended with an allusion to the use of the spray in cases of winter cough and bronchitic asthma.

Belladonna was the next drug considered, but only in the treatment of nocturnal incontinence of urine, whooping-cough, and excessive perspiration. As regards the first of these three diseases, belladonna was described as being the most efficacious of all remedies, rarely failing to effect a perfect cure, and cases were adduced to prove this. Trousseau's plan of treatment of whooping-cough by minute dose of the sulphate of atropia, commencing with the $\frac{1}{200}$th of a grain given daily before breakfast, was then commented upon, but no decided opinion expressed as to its utility, the cases alluded to being still under treatment.

To check excessive sweating, the linimentum belladonnæ was advised to be painted over the affected part.

After mentioning the almost specific effect of guaiacum in cases of quinsy, if given within twenty-four hours from the commencement of the attack, the paper concluded with a reference to the use of equal parts of camphor and chloral as a local application in cases of neuralgia.

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October 22.

Dr Gee read a paper on 'Difficulties in the Diagnosis of some Kinds of Pleurisy.'

The paper consisted of two parts: the first part treated of the diagnosis of pleurisy from phthisis; the second part referred to difficulties arising in the diagnosis of pleurisy which are caused by concurrent enteritis.

1. In the first part of the paper an exemplary case was narrated, and the following general propositions were laid down:—(1.) That pleurisy may simulate phthisis in all respects; (2.) That pleurisy may be accompanied by the highest degree of emaciation and hectic fever, even when there is no discharge of matter from the side, and indeed no reason to suspect the existence of an empyema; (3.) That cavernous breathing and pectoriloquy are no proof of a cavity within the chest; (4.) That some kinds of friction-sound are (as Thomas Addison pointed out*) indistinguishable from phthisical râles. These friction-râles (as they are called by Damoiseau) are described in the second book of the Hippocratic treatise on diseases; † (5.) That in a doubtful case it may be well to try to gain the means of diagnosis from microscopical examination of the sputa.

2. In the second part of the paper several cases were narrated to prove that catarrhal enteritis is a constant companion of many, if not of most, cases of local empyema; at least in children. And the local empyema often being hard to detect, such cases may be mistaken for typhoid fever or chronic enteritis (simple or tuberculous). The paper concluded with the following remarks:—'Some lessons which we may draw from these cases are the following:—Not to be too ready to assign all the physical signs we make out in a chest to the lung; but always to remember that the pleura is nearer to the surface of the chest than the lung is, and that pleural diseases are very common. That the quantity of fluid present in pleural effusion is always greater than the physical signs might lead us to expect. And beware of that sound which Hippocrates described, the sound of boiling vinegar (the friction-râle). In the last case I heard that sound, and called it a subcrepitant râle, when it was indeed a friction-sound. Beware of those friction-râles. They seem destined to lead to a multitude of mistakes. Laennec, for example, who knew but little about friction-sounds, must always have considered those doubtful friction-râles to be râles produced in the lung. I say it is impossible, from the characters of the sound itself, to make out whether it be

* Works, p. 63, 1863.

† Cap. 61, edit. Littré.

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a pleural or a pulmonary sound. But forewarned is forearmed. In a doubtful case, repeated examination and careful meditation over the signs and symptoms will mostly lead us right.

'Now if, with the best judgment we have, we come to the opinion that possibly there may be a small collection of pus, I think it is our duty to try to evacuate the pus. I can truly say that, for my own part, I never saw any harm from puncturing the chest, even when there has been no pus to evacuate. Usually there has been pus to evacuate: but I am not ashamed of a dry tapping. And when a small empyema is reached, and perhaps less than an ounce of pus drawn off, the discovery of the presence of that small quantity of fluid being made by the help of one sense alone, the sense of hearing, the paraceutesis may seem to some to be a small affair, but to my mind there are few opera tions which require anything like the same amount of thought, or which, when successful, fill us with more satisfaction.'

October 29.

Dr Moore showed two specimens.

1. Part of right auricle, showing fatty degeneration of heart. The patient was a man who died hemiplegic, and whose brain was extensively softened. Such striation, resembling the marking on the feathers of some birds, is perhaps more often seen on the musculi papillares of the ventricle than, as in this example, on the musculi pectinati of the auricle.

2. Piece of ileum, inflated and dried, showing a diverticulum. This was situated about a yard above the ileo-cæcal valve.

Diverticula such as this are remains of the primitive connection between the umbilical vesicle and the intestine.

Meckel remarks that such abnormalities may be as follows:—

1. Persistence of umbilical vesicle.
2. Complete canal from umbilicus to intestine, but no external vesicle.
3. Diverticulum.
   (1.) Attached to umbilicus.
   (2.) To other part of the abdominal wall.
   (3.) To the intestine.
   (4.) Free.

Of the last kind this specimen is an example. Others have maintained that these diverticula are produced by distension, or are chance abnormalities without relation to development. Meckel, who was the originator of the other theory, investigated the subject at length, and has refuted his adversaries' and established his own view.

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Mr Watts showed a liver which had been removed from the body of a child, the subject of 'congenital hepatic hernia.'

Mr Adams read a paper on the 'Application of Forceps in Labour.'

The author first pointed out how necessary it was to become well acquainted with the application of forceps in cases of difficult labour, and how certain it was that every one in active general practice would be called upon to perform such operations on their own responsibility.

The aim of their use was said to be entirely conservative, both as regards the mother and child. The history of midwifery forceps was said to be uncertain, and the account of Roueffe of Zurich, in 1554, was stated to be the first known description of them.

In 1630, the brothers Chamberlain first introduced this instrument into England, with the great improvement of separating the blades; the principle of the lock being the same as that in use at the present day, with some modifications.

Some very old instruments, exact copies of those belonging to the Obstetrical Society, were exhibited, both with fixed and separate blades, the former resembling those described by Roueffe in 1554.

Modern instruments were also shown, and those of Barnes strongly recommended, as being of the greatest service in almost all cases. Short forceps were considered much inferior to those with long double-curved blades, and as likely to be a source of mischief rather than good, being successfully used when instrumental interference was not required.

Next, forceps were spoken of with regard to their mechanical action. First, as a tractor; secondly, as a lever; and lastly, as a compressor.

The cases in which their application was recommended were mentioned, and an illustration given, especially showing what great good can be done by their use in long labours.

The manner of applying forceps was then fully considered, laying great stress on doing so with as little force as possible.

Dr Ramsbotham's direction of feeling for the ears and embracing the head laterally was stated to be totally unnecessary, the fact of the vertex presenting, and the parts in a proper condition, being all that was required. The lower blade should be slightly towards the perineum, and the upper one towards the pubes. In most instances the head was grasped obliquely, but the position of the blades on the head need not be taken into account.

Tying the handles together was said to be both unwise and unscientific, and the extraction should take place only at intervals, so as to imitate the natural labour-pains as much as possible.

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The indiscriminate use of ergot was strongly blamed, being likely to lead to serious consequences, as its action cannot be depended on, and at times it sets up such inordinate contraction, especially if the resisting power be unusually great, as might lead to rupturing the uterus.

The long delay in the use of forceps was considered to be a source of great mischief, as patients did much better after their early application than when protracted labour had exhausted the strength that would be so necessary to a successful operation. The serious complications, such as ruptured perinea, fistulous openings, floodings, &c., were likely to follow as a result of the long labour, and not from the use of instruments. Cases to illustrate the above facts were given.

Fixed and fast laws as to what particular time a patient should be delivered, as is often stated in books, were condemned, and the circumstances of each case should be taken as the only indication when and how to interfere; and such symptoms as were likely to be of practical use were then enumerated.

In conclusion, it was urged on those present to make themselves as familiar with the use of forceps as possible. The fact that the great majority of men had to go into practice without ever having had the opportunity of either seeing or performing the operation of delivery by forceps, was thought to be bad, both for medical men and their patients. The advantages of a lying-in hospital, such as the Rotunda in Dublin, were considered to be very great, both to the poor who go there, and to the attendants, who have such a field for observation; for we are legally bound to bring a fair amount of skill and knowledge into our practice, and in this case many of us are unable to perform, or see performed, a most important surgical operation.

November 5.

Mr Vernon read a paper on 'The Ophthalmoscope in Medicine.'

The object of this paper was to draw attention to the value of the ophthalmoscope in the hands of the physician, and to define in what cases and to what extent its use might be relied upon in the diagnosis of cerebral disease.

The pathological conditions of the optic discs which are met with under such circumstances were said to be hyperæmia and anæmia, as well as a swollen condition of the nerve, which has been described as 'choked disc,' inasmuch as the appearances are very much as though the circulation in the vessels had been obstructed, and the parts around had in consequence

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become œdematous and infiltrated. To draw a line which would strictly define where such a condition of parts could be distinguished from that of optic neuritis—where an active inflammatory process is supposed to be at work—would be very difficult, although the distinction is often made.

The various diseases in which one or another of these morbid conditions of the optic disc may be looked for are intracranial tumours of all kinds, cerebral disease of any kind, and diseases of the upper portion of the spinal cord and its membranes.

Irrespective of the optic discs, the fundus oculi is well worthy of examination in all cases of acute tuberculosis, in cases of spinal disease, and in many instances of anæmia. It is probable, also, that in all cases of well-marked mitral and aortic disease, the circulation within the vessels upon the disc will be materially affected, so that the phenomenon of a visible pulsation will result.

In diabetes, also, and in many cases of lead-poisoning, the ophthalmoscope may be of great use. So that it may fairly be said that, in very many and various diseases, no clinical report can be complete which does not contain some note of the condition of the fundus oculi.

November 12.

Dr Moore showed the mesenteric glands, intestine, suprarenal capsules, liver, and spleen, all studded with tubercle, from a child who died with double empyema and tuberculous disease of both lungs.

Dr Moore then read a paper on 'Quinsy.'

The group of diseases included by Latin writers under the heading *Angina*, by the Greeks under the terms *Lycanche* and *Kynanche*, and by the English under *Quinsy*, has been contracted or extended in various degrees in nearly every important treatise on medicine. Diseases differing in pathological nature, but agreeing in the common symptoms of difficulty of swallowing and difficulty of breathing, have, with a strict adherence to symptomatic classification, been placed under one generic title. It was only necessary that this difficulty should be present, and that it should not be due to lung disease or to stomach disease, for the disorder to be called a quinsy. The old records of cases show the thoroughness with which the definition was applied.* Laryngeal phthisis, polypus of the nose, cancer of the œsophagus, œdema glottidis, are added to the varieties which we now associate with the name *quinsy*. The last was called a watery quinsy. Lower, after whom the elevation between the auricular orifices of the superior

* See the cases in Van Swieten's Commentaries.

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and inferior vena cava is named, made an experiment which was supposed to illustrate the causation of watery quinsy. He tied the veins of a dog's neck. The dog, on the second day, died suffocated with œdema glottidis. Lower dissected the swollen head and neck, expecting to find the swelling due to extravasated blood. He was astonished to see that the muscles and other tissues were infiltrated, not with blood, but with serum. He made an advance in knowledge, but later writers drew too wide a conclusion when they declared a watery quinsy, or œdema glottidis, to be always due to pressure of enlarged glands or other tumour on the veins of the neck.

The most useful classification of disease is that which is partly based upon symptoms and partly anatomical.

On this principle *quinsy* may be used as a name for all acute disorders of the upper region of swallowing, which directly prevent or render painful that act. Such may affect the most forward of the parts used in swallowing, the root of the tongue, or they may attack the fauces, or the upper part of the pharynx. These disorders are all of them inflammatory in their nature, and all have a tendency to end in suppuration. All seem idiopathic.

The first-named is perhaps the rarest. An example was to be seen in John Ward about a year ago. The patient was a muscular man, 20 years old. The day but one before admission he fell into a canal, and was chilled after the wetting. The next day he felt some slight difficulty in swallowing, and this increased towards evening. When he came to the Hospital he was unable to swallow, and he could not speak. His tongue, especially at the root, was enormously swelled, but underneath it no abcess could be felt, and there was neither ragged tooth nor external wound that could be looked upon as cause of the swelling. The inflammation seemed a consequence of the wetting. The man's temperature and pulse were considerably raised. His general aspect was one of extreme distress. Ten leeches were put on the outer surface of the floor of his mouth; the bites were allowed to bleed freely into a linseed poultice, and he was given a purge of senna. The next morning the swelling had diminished, and he was able to take a little food, but not to speak clearly. By the next day but one, the swelling had completely subsided without suppuration, and as he was anxious to get home, he soon left the Hospital. Cases of inflammatory swelling of the tongue are not rare, but they differ from this case in that they are due to some traumatic cause, or to inflammation spreading from a pre-existing abscess. This first kind of quinsy, though rare of occurrence, is easy of diagnosis. The third of the forms I have named is perhaps somewhat more common, but its diagnosis is a matter of difficulty. There was a

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good example in Matthew Ward three years ago. The patient was a painter, 40 years of age. He was admitted with an ill-defined external swelling of the neck, accompanied by considerable difficulty of swallowing. The finger could detect no internal swelling about the fauces. His pulse and temperature were high. The swelling increased. Not one part, but the whole neck swelled. It did not enlarge uniformly all round, but most at the sides, giving the neck a broad, flat appearance. The patient had a very painful sense of distension. He spent day and night sitting up in bed, holding his neck with his hands, and swaying his body to and fro. He could only swallow a small quantity of liquid, and that with great pain. He spoke distinctly, but with some huskiness. He was carefully examined several times, and the general opinion was that he was dying of aneurism. A few days passed, till one night he suddenly felt relieved, and the next day could swallow liquids freely. He had had an acute swelling of the upper part of the posterior wall of the pharynx and adjacent tissues, ending in suppuration, bursting of an abscess, and relief. For several days his pain had been so great that he often said he wished to die; but he left the Hospital quite well. Similar symptoms may sometimes be caused by abscesses connected with disease of the bodies of the cervical vertebræ; but there was no sign of such cause in this case, nor had there been any blow. Its sudden onset, short duration, and rapid termination showed it a case of acute inflammation, ending in suppuration.

Quinsy in these rarer forms is a painful, distressing disorder. It is so in its best-known variety. Its onset is often tremendous. It advances with all the fury of the most dangerous fevers. The temperature is raised to 104°, perhaps to 106°. The pulse is rapid in proportion. The patient's face is flushed. The tongue is furred, and may be dry. There are pains in the loins, vomiting, severe frontal headache. Small-pox, pneumonia, typhus fever, typhoid fever, acute tuberculosis, are perhaps suggested to the anxious interpreter of the symptoms. But 'parturiunt montes.' None of these dire foes of mankind appear. The next day the patient cannot swallow. The fauces are examined. The tonsils and uvula are seen to be greatly enlarged. The latter is often adherent to one of the tonsils. The fever abates, but does not pass off till resolution or suppuration takes place. The following case is an example:—Catherine Ni Maelconaire, aged 18, a domestic servant, was admitted into Faith Ward on December 31, 1872. She had had an attack of vomiting the evening before. She was admitted in the evening. The apothecary who sent her thought she might be going to have typhoid fever. She had lumbar pains and frontal headache. Some one suggested small-pox, which was

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then about. She had, however, a good vaccination mark. Her tongue was clean at the edges, covered in the middle with white fur. Her skin was without rash: physical examination showed absence of disease in the chest. She said that she had felt soreness about the throat since December 29th. Her tonsils were enlarged and red. T. 104·1°. P. 120. Her bowels had not then been opened for four days. She was given a senna draught. Next morning early her T. was 101·8°, P. 120, and later in the day her temperature was 100·6°. The tonsils were diminished in size. The next day they were still less swollen. On January 3, 1873, the tonsils looked free from inflammation, and her temperature was normal.

She afterwards stated that she had had a similar attack three months before. This was a mild case, except as to its onset. It ended without suppuration. One remark may be made as to the onset. The enlargement of the tonsils, as well when it is acute as when it is chronic, may cause deafness. This gives rise to a seeming dulness on the part of the patient, which, combined with the headache and high temperature, makes the attack look very like the beginning of some grave fever. In most, if not all cases, the bowels have been confined for some days. The quinsy is often relieved by purging. Still the constipation cannot be taken as the cause of the swelled throat, for in the more prolonged constipation of chronic lead-poisoning enlargement of the tonsils is not found. It must also be borne in mind, that not only scarlet fever, but typhoid fever and acute rheumatism, are often preceded by slight sore throat. The prevalence of scarlet fever and the appearance of the rash are perhaps the only certain means of distinguishing its angina from simple quinsy. It is important to think of typhoid fever as now and then beginning with sore throat; for if in the slightest doubt, the physician must withhold his purge till the thermometer has assured him that the lesser disease only is present. The temperature may continue high for a week. Charles Mabbs, aged 10 years, an out-patient at the Children's Hospital, had on the eighth day a temperature of 102·4°; and a Sister of this Hospital, whom I once had to prescribe for, had at the end of a week a temperature of 102°. And this does not directly depend on suppuration; for while in the Sister's case the disease ended by suppuration, in the boy's there was resolution. Nor is the kind which ends by suppuration always accompanied by high temperature. Emma Trollope, a domestic servant, aged 15 years, whose quinsy ended by suppuration on both sides, never had a higher temperature than 100·8°; and James Palmer, aged 18, a patient in John Ward, whose disease ended in the same way, had the same degree of maximum tem-

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perature. I am inclined to think that the temperature is in some degree dependent on the constipation; for in all the cases, however ending, which have been freely purged, I have noticed that the temperature was less high. However big the tonsils, dyspnœa is rare in this quinsy.

The rules of treatment are simple. External applications rarely cause resolution. Leeches, therefore, are to be avoided. Purges of senna, with a low diet till the inflammation subsides, sum up all that need be done. If the pain shoot up to the ear and down the neck, it is relieved by a linseed poultice. Gargles are more painful than useful. Dover's powder at night while there is pain, and after resolution or suppuration decoction of bark, are the only other remedies I can recommend from my own observation.

The most important point for us about quinsy is its diagnosis. It may easily be mistaken for some more dangerous disease; at the same time every febrile condition, without rash and with sore throat, must not be hastily assumed to be mere quinsy.

November 26.

Mr Baker read a paper on 'Some of the Diseases of the Tongue.'

He began by remarking that he had chosen the subject chiefly because a better subject could scarcely be found for discussion, both on account of its intrinsic interest, and of the fact that all must be more or less familiar with it, and therefore in a position to take part in the debate. His object, too, was not to treat of all the diseases of the tongue, or of any one completely, but rather to draw the attention of the Society to certain diseases, and certain points in these, which seemed especially worthy of notice.

The diseases of the tongue may be divided, Mr Baker said, for purposes of discussion, into the malignant and non-malignant, and the latter into the syphilitic and non-syphilitic.

He first briefly described the symptoms of the more common form of cancer of the tongue, and proceeded to speak afterwards of the diagnosis from other diseases which were most apt to be confounded with it; mentioning, as diagnostic signs of special value, the pain and extreme tenderness to firm pressure, at all stages of the disease; and, at the later stages, the evident tendency to fixity of the organ by infiltration of neighbouring textures, and the salivation which was the consequence of extreme reflex irritation. Syphilitic gumma is the disease most likely to be mistaken for cancer; and the difference, in respect of the above-named symptoms, in the two cases, is commonly very marked, and forms, as a rule,

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a better means of diagnosis than the general aspect of the disease, which, in this form of syphilis of the tongue, may in the worst cases mislead. Cases were related and drawings exhibited in illustration of these facts. Other means of diagnosis were referred to, as the position of the tumour, its being single, its consistence, duration, &c.

The treatment of cancer of the tongue was then referred to, especial stress being laid on its removal being early and complete, the completeness being only secured by cutting wide of the part which seemed diseased. Local recurrence, as shown by statistics, has extremely wide variations in point of time in cases of cancer of the tongue; some of the best and some of the worst cases being found in malignant disease of this organ. In the latter cases, however, it is nearly certain that recurrence, so-called, is merely continuance of the disease on account of incomplete removal, which may or may not be the fault of the operator. To cut just outside the margin of the part which to the naked eye seems diseased, is commonly almost useless for preventing the return of the disease, though in many cases, when no more can be done, it is useful for the relief of pain for a period.

The various modes of operating were referred to. Reference was also made to the treatment of those cancers of the tongue which, from some circumstance, could not be removed; and the various means of relief were mentioned, as division of the gustatory nerve, the application of tannin lotion, &c.

Regarding the syphilitic diseases of the tongue, Mr Baker said confusion had arisen, because no distinction was made between the different manifestations of syphilis to which the tongue was liable. There are at least four, and, excepting the first-named, which is exceedingly rare, they are all met with commonly enough in the out-patient room to admit of being properly distinguished and studied. They are—(1.) Primary disease, or chancre; (2.) Psoriasis; (3.) Condylomata, or mucous patches; (4.) Gumma.

These different forms were described, and illustrated by drawings, and attention was drawn to the different stages of the disease in which they commonly occurred, and the symptoms in other parts of the body with which they were mostly accompanied. The difficulties in treatment and the causes of these were referred to, and reference made also to the inutility of treating all cases alike—of treating old syphilitic scars as if they could be removed more easily than scars elsewhere—of treating simple ulcers of tongues damaged of old by syphilis as if the present disease were syphilis, and not, as it really is, the result of irritation by teeth or otherwise, which, to a healthy tongue, would do no harm. The treatment proper for the different kinds

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of syphilitic disease was mentioned, and special stress laid on the relief which could be given by local treatment, as well as by remedies administered internally. The diagnosis was referred to, and the subject finished by noticing what may be called the spurious syphilitic affections of the tongue.

The paper was concluded by a reference to some of the rarer diseases of the tongue, which were illustrated by drawings,—as icthyosis, fibrous tumour, papillary disease, cysts, &c.

December 3.

Mr Brewer read some 'Cases.'

December 10.

Mr Adams showed a specimen of carcinoma of the liver.

Mr Keetley read a paper on the 'Treatment of Simple Incised Wounds.'

As an introduction, it was remarked that this being a subject concerning which the facts known were so numerous, and the ingenuity often displayed so great, while the ignorance was chiefly that shown by the disciples of one school of the real principles and methods of the others, therefore it was a subject peculiarly fitted for debate. A short sketch of the surgery of wounds in the Middle Ages was then given; and the direction of the improvements by and since Ambroise Parés stated to have been towards simplicity, and a leaving Nature trustfully alone, after removing stumbling blocks (sources of local and constitutional irritation) from her path. 'Of this removing sources of irritation there cannot be too much; *of simplicity there easily can be.*' 'Results like those published by Mr Callender and Mr Lister will rarely be attained without there being taken, as those gentlemen took, a great deal of trouble.'

The indications for treating simple incised wounds were then given, under the heads—

1. Hæmorrhage.
2. Cleaning.
3. Adjusting.
4. Rest (including position, ease from pain, from trouble of the mind, and from local irritation, such as putrefying discharges or cold air).
5. Diet and surroundings.

The reef-knot was declared to be the best for catgut as for silk; and catgut ligatures were preferred to other modes of securing vessels of any size (torsion being recommended for small vessels,

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though further experience has changed the author's opinion about this).

The great arena of debate—viz., the question of immediate dressing and after-treatment—was now entered.

Three postulates were first stated:—

1. Subcutaneous wounds are of much less consequence than open ones.

2. That pus and dead animal tissues rarely putrefy till they are exposed to the air.

3. That there are conclusive experimental proofs that the absorption of putrid pus is very much more injurious than that of fresh pus.

4. That absorption of even the freshest dead pus will cause some fever, and that of putrid pus an affection almost or quite the same as pyæmia.

5. That putrid green pus owes its greenness to microscopic and probably vegetable organisms.

6. That all kinds of true putrefaction and fermentation are accompanied by the development of low forms of life.

7. That the germs of such forms exist in considerable numbers in the air, more especially in that of hospitals and crowded dwellings.

Those who grant all this will then be committed to adopt one of two plans, viz.—Either they must take care that all discharge, all dead and moist pus, shall drain away from the wound, *and even be removed from the ward or sick-room as fast as possible*, or they must so act upon the air which reaches the wound as to kill the germs it contains, and in that way render it innocuous.

In conclusion, the practice of carrying cases out of doors in fine, sunny weather for an hour or two in the afternoon was strongly advocated.

December 17.

Dr Moore showed—(1.) A heart, and large, pale kidney, from a girl, aged 22 years. She died of peritonitis. (2.) Microscopic section of a thickened pylorus, from a gouty old man who died of bronchitis. There was slight narrowing of the pyloric orifice, but this had not been shown by symptoms.

Mr Doran read a paper on 'Wounds and other Injuries of the Urinary Organs.'

The author confined his remarks chiefly to the more important questions of injuries to the kidney and extravasation of urine.

The symptoms of trifling and indirect damage inflicted on the kidney by sprains of the lumbar region, of severe direct wounds

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and contusions, and the morbid processes they excite, were severally detailed; and some cases were read of extravasation of urine into abscesses around the kidney after injury or following operations on more external portions of the genito-urinary tract.

Mr Doran gave at full length the general and local symptoms of extravasation of urine from all causes, pathological as well as traumatic, and cited rare examples, chiefly to be found in the works of old authors, where recovery had ensued after the extravasated fluid had found its way out through sloughing of the integument before surgical relief could be obtained. Besides relating the very frequent cases of escape of urine into the surrounding tissues by ulceration behind a tight stricture, several instances were read, mostly from the author's experience, where the fluid escaped through a urethral abscess formed during gonorrhœa without a trace of stricture existing, the abscess being not unfrequently due, especially when unilateral, to suppuration in Cowper's glands.

The paper concluded with quotations from the standard works of several modern surgeons, and from clinical lectures on the treatment of rupture of the urethra and extravasation of urine, to show the great difference of opinion among these authorities on the desirability of introducing and retaining a catheter immediately after making incisions.

January 14, 1875.

Dr Church read a paper on the 'History of the Tapeworms found in Man.'

The author first drew attention to the state of knowledge on this subject possessed by the old Greek physicians, and read a translation of Hippocrates' remarks on the *Ἕλμινθες πλατεῖαι*, to be found in the fourth book about Diseases, which showed that Hippocrates was perfectly well acquainted with the animal nature of tapeworm, and that the proglottides, or melon-seed-like bodies, broke off from the lower end; and that their passage from the bowel was the only trustworthy symptom diagnostic of the presence of tapeworm. Hippocrates imagined that all worms had their origin within the intestines by spontaneous generation, being produced either by too long a retention of fæcal matter in the gut or from corrupting pus. Subsequently the idea arose that they were developed from mucus caused by crude humours in the body; and this theory, which was adopted warmly by the Arabian physicians, was the prevalent one held until the end of the sixteenth century.

Even so late as the year 1844, Dr Wanruct, in a monograph on the subject of tapeworm and its treatment, says—'The origin of a

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worm, and the coming into existence of a world, excel in like degree the capacity of human understanding.' It was reserved for the present century to see the mystery unravelled, though glimmerings of the truth are to be found in the writings of some of the naturalists of the last century.

The author then went on to speak of the experiments of Küchenmeister, Haubner, and others, more especially those of Leuckhart and Cobbold, with regard to the development of tænia mediocanellata.

Bothriocephalus had been separated from the true tæniadæ as long ago as the early part of the seventeenth century by Felix Plater, Spieggel, and others, but to Küchenmeister belongs the credit of demonstrating the difference between the two common tæniadæ.

A brief allusion was then made to the development of the tæniadæ, and to the number of cases the author had met with in the practice of the Hospital, and he concluded his paper with some remarks on treatment; calling attention to the fact that the remedies we now most rely on for the expulsion of this loathsome guest were identically the same as those which were held in most repute by the ancients, especially the liquid extract of male fern, the bark of pomegranate root, and turpentine. Of these, the author preferred the extract of male fern; and concluded by stating his opinion that tænia mediocanellata was more easily expelled than tænia solium.

January 21.

Mr Milner read a paper on 'Tetanus, with Original Suggestions for a New Method of Treatment by Nerve-Stretching.'

Prefacing his paper by the remark that our knowledge of traumatic tetanus was so limited, and the results of treatment so bad, as to justify any plan of action which seemed to offer a reasonable prospect of success, he proceeded to discuss the subject of treatment—

1*st*, By operation.
2*d*, By medicinal agents.

After alluding to the importance of examining the wound for foreign bodies, and any visible cause of irritation about the periphery of the nerves in wounds, he next considered the advantages of—

1. Amputation.
2. Actual cautery.
3. Anodynes.
4. Division of nerve-trunks.
5. Nerve stretching.

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Of these methods, after quoting many cases, and the expressed opinions of Cooper, Abernethy, M'Grigor, Larrey, Murray, Maunder, and others, he concluded amputation to be utterly useless; the results of the application of the actual cautery and the division of nerve-trunks gave more hopeful statistics, and evidence seemed to warrant their further trial. After stating his opinion that the manifestations of traumatic tetanus were due to changes in the cord, produced by irritation of the periphery of the nerve in the wound, and in support of his belief of such a possibility referring to Mr Callender's case of nerve-stretching,* and the experiments of Brown-Sequard, Mr Milner next proceeded to quote at length the cases of nerve-stretching collected and published by Mr Callender, in the 7th vol. of 'Clinical Society's Transactions,' pointing out in each case the close analogy which many of them bore to the phenomena of tetanus. Mr Milner said, that in all the cases quoted by Mr Callender, good had followed the free handling and stretching of the nerve-trunks; and he believed that there was so close a relation between many of the cases quoted and the phenomena of tetanus, that he should not hesitate, should a case of traumatic tetanus come under his care, to freely stretch the nerve-trunks.

The author next passed to the second part of his subject, namely, the treatment by medicinal agents. These he divided into—(1.) General remedies, given with the object of stopping the progress of the disease; (2.) Special remedies, given with the object of controlling the spasms. Of the former class, such as bleeding, mercury, and baths, all seemed equally valueless, tetanus running a definite course unarrested.

Of the latter—namely, those medicinal agents given with the object of controlling the frequency and force of the spasms—he briefly discussed the success which had attended the exhibition of—

1. Nitrite of amyl.
2. Opium and its preparations.
3. Nicotine.
4. Tobacco.
5. Calabar bean.
6. Hydrate of chloral.
7. Chloroform.

Of these, though all had failed, and all had been given, in successful cases, opium and its preparations, Calabar bean (which, however, seemed hardly ever to be given in sufficient doses), hydrate of chloral and chloroform, appeared to have been followed by the best results. Nitrite of amyl had been given with marked good result in relaxing the pain and spasm about the heart.

* Clinical Society's Transactions, vol. vii. p. 100.

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January 28.

Mr Shuter read a case of croup.
Mr Sheehy read a case of hydrophobia.
Mr Sawtell read a case of pericarditis.

February 4.

Mr Wharry read a paper on chorea.

Chorea, interesting alike in its historical features and clinical phenomena, may, judging from accumulated evidence, be safely said to be due to an instability of the corpus striatum, or of adjacent nerve centres; not that the mere fact of these centres being in an unstable condition will produce automatic movements, but the nerve-cells being in a hyper-impressible state, receiving impressions that in health would be imperceptible or arrested in the centres, transmit confused and irregular motor impulses in all directions.

Starting with this assumption, and using the symptoms as indications, we have a fair plan upon which to base our treatment. The marked signs of cardiac depression contra-indicate hydrate chloral and other depressants. Quinine, being a drug which markedly lessens reflex-excitability, strongly recommends itself, though its alleged tendency to produce cerebral anæmia must be considered: the effect of quinine in ague will be recognised as similar, by those who believe an ague fit to be a reflex expression of visceral irritation; arsenic is indicated where quinine fails. The general anæmia suggests iron in combination with the quinine, and good diet. The abeyance of the sympathetic function, evidenced by the feeble heart, scanty urine, deficient secretion of bile, constipation, &c., imperatively calls for stimulation; and this may be had in the application of a constant current, which should be applied to the trunk and limbs, but especially should a current be passed through the seat of lesion, the corpus striatum, by placing one pole over the supra-orbital artery, and the other over the occipital artery; the current then traverses the sympathetic between these points, passing *en route* along the sympathetic to the corpus striatum; that the sympathetic is thus influenced is proved by the dilatation of the pupil, which must guide the administration, and the sympathetic nerve presides over nutrition.

February 11.

Dr Brunton read a paper on the 'Pathology and Treatment of Albuminuria.'

The author began by observing, that as all the processes of life

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depend on oxidation taking place in the tissues, any deficiency in the conveyance of oxygen from the lungs to them must necessarily interfere with the vital functions. The oxygen is carried by the red-blood corpuscles, and consequently a diminution in their number, or anæmia, has a somewhat similar effect upon the tissues as want of breathing space in the lungs would produce. It occasions muscular weakness, shortness of breath on exertion, imperfect secretion from the glands connected with the intestinal canal, and consequent dyspepsia, nervousness, palpitation, and œdema. The anæmic condition which has all these unpleasant consequences is frequently induced by the drain of albumen from the system in albuminuria; and this disease is characterised by the symptoms just mentioned, as well as by the presence of albumen in the urine.

Albuminuria is most readily produced by interference with the circulation through the renal veins. This occurs in consequence of tumours pressing on these veins, pregnancy, cardiac disease, especially disease of the mitral valves, obstruction to the passage of blood through the lungs, as in some cases of pneumonia, cholera, and probably by reflex spasm of the pulmonary vessels after cold bathing. Another important cause of albuminuria is denudation of the epithelial lining of the uriniferous tubules, which allows the lymph by which they are surrounded to filter into them. The indications for treatment are, firstly, to remove venous obstruction, if possible; secondly, to lessen the flow of blood to the kidneys, by drawing some of it elsewhere; and thirdly, to diminish anæmia.

February 25.

Dr Godson read a paper on the 'Induction of Premature Labour,' which will be found at page 29 of this volume.

March 4.

Mr Taylor showed a specimen of disease of the pulmonary valves in a fœtus.

Mr Darbishire read a paper on 'Tumours in the Scrotum.'

March 11.

Mr Reid showed a specimen of melanotic sarcoma of the eyeball.

Mr Hart showed—(1.) An umbilical cord 52 inches long, which had two knots in its course, and had been found coiled five times

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round the neck of the child; (2.) Twins, the result of an abortion, at 5½ months.

Mr Cumberbatch read a paper on the 'Examination of Aural Cases.'

Mr Cumberbatch divided the cases into—

1st. Those depending on some obstruction in the external meatus.

2d. Those depending on disease of the tympanum or middle ear.

3d. Those depending on disease of the labyrinth.

He next enumerated the instruments required for the examination of deaf patients.

The diagnosis depends on—(1.) Examination of the external meatus, tympanum, and Eustachian tubes; (2.) On certain tests applied to the auditory nerve; (3.) On the history of the case.

The normal appearance of the meatus and membrana tympani was next given, and then the chief abnormal appearances presented by each; then the methods of examining the Eustachian tubes, and the information to be gathered therefrom.

The diagnosis of the disease of the labyrinth by means of the tuning-fork, double and interference otoscope, was next fully explained; and, lastly, the value of the history was discussed.

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EXAMINATIONS, 1872-73.

Senior Scholarships in Medicine, Surgery, Materia Medica, and Therapeutics—

1. A. F. Stevens.
2. C. S. W. Cobbold.

Senior Scholarship in Anatomy, Physiology, and Chemistry—

1. E. Crétin.
2. { G. H. Hames. / F. H. Spooner.

Junior Scholarships—

1. W. A. Shoolbred.
2. F. S. Eve.
3. C. W. M. Moulin.

Jeaffreson Exhibition—

H. F. Chapman.

Kirkes Gold Medal—

{ H. J. Ilott, / C. S. W. Cobbold, } Equal

Wix Prize—

J. C. Verco.

2d Prize—H. M. Barker.

Hichens Prize—

C. S. W. Cobbold.

Bentley Prize--

A. J. Sturmer.

PRACTICAL ANATOMY.

Senior.	Junior.
Foster Prize—{ G. H. Hames. / J. Ranking.	*Treasurer's Prize*—F. S. Edwards.
	Examiner's Prize—F. S. Eve.
3. F. H. Spooner.	3. T. J. Verrall.
4. W. H. Briggs.	4. A. Upton.
5. H. G. Cumming.	5. F. E. Woodward.
6. F. Watts.	6. A. G. Williams.
7. W. Kebbell.	7. J. H. Simpson.
8. F. H. Carter.	8. W. A. Shoolbred.
9. J. Spark.	9. W. R. Pearless.
10. J. K. Barton.	10. L. B. Calcott.

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EXAMINATIONS, 1873-74.

Lawrence Scholarship and Gold Medal—
E. CRÉTIN.

Brackenbury Medical Scholarship—
A. J. STURMER.

Brackenbury Surgical Scholarship —
E. CRÉTIN.

Senior Scholarship in Anatomy, Physiology, and Chemistry—
F. S. EVE.

Junior Scholarships—
T. E. HAYWARD.
R. H. A. SCHOFIELD.
H. T. STEELE.

Open Scholarship in Science—
R. H. A. SCHOFIELD.

Preliminary Scientific Exhibition—
T. E. HAYWARD.

Jeaffreson Exhibition—
F. H. CRADDOCK.

Kirkes Gold Medal—
J. MACREADY.

Bentley Prize—
J. K. BARTON.

Hichens Prize—
S. M. SMITH.

Wix Prize—
A. S. EOCLES.

PRACTICAL ANATOMY.

SENIOR.

Foster Prize—F. S. EDWARDS.
2. F. S. EVE.
3. T. J. VERRALL.
4. W. A. SHOOLBRED.
5. A. UPTON.
6. W. R. PEARLESS.
7. H. A. GLYN.
8. A. G. WILLIAMS.
9. J. W. R UGHTON. H. SLOMAN.
11. L. B. CALCOTT.

JUNIOR.

Treasurer's Prize—P. A. STEEDMAN.
2. A. R. ANDERSON. T. G. DAVEY.
4. H. T. STEELE.
5. G. O. MEAD.
6. H. J. CAPON.
7. J. WILMOT.
8. R. H. A. SCHOFIELD.
9. A. J. BATHE.
10. R. F. CUMMING.

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EXAMINATIONS, 1874-75.

Lawrence Scholarship and Gold Medal—

(Not awarded).

Brackenbury Medical Scholarship—

G. H. HAMES.

Brackenbury Surgical Scholarship—

M. VERNON.

Senior Scholarship in Anatomy, Physiology, and Chemistry—

R. H. A. SCHOFIELD.

Junior Scholarships—

G. COATES,
M. PRICKETT,
R. GILL.

Open Scholarship in Science—

G. COATES, } Equal.
J. C. SAUNDERS. }

Preliminary Scientific Exhibition—

R. GILL.

Jeaffreson Exhibition—

T. W. H. GARSTANG.

Kirkes Gold Medal—

J. MACREADY.

Bentley Prize—

F. W. EVANS.

Hichens Prize—

A. UPTON.

Wix Prize—

(Not awarded.)

PRACTICAL ANATOMY.

SENIOR.	JUNIOR.
Foster Prize—R. A. STEEDMAN.	*Treasurer's Prize*—C. J. BAMBER.
2. H. J. STEELES.	2. C. B. LOCKWOOD,
3. R. H. A. SCHOFIELD.	3. M. PRICKETT.
4. W. J. HAMES, G. O. MEAD.	4. D. A. COLES.
6. A. R. ANDERSON.	5. C. A. D. CLARKE.
7. T. WILMOT.	6. G. COATES.
	7. E. C. BOUSFIELD.
	8. R. J. COLENSO.
	9. N. W. BOURNS.

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ST BARTHOLOMEW'S HOSPITAL & COLLEGE.

THE MEDICAL AND SURGICAL STAFF.

Consulting Physicians — Sir G. Burrows, Bart., D.C.L., F.R.S., Dr Farre, Dr Harris.

Consulting Surgeon—Sir J. Paget, Bart., D.C.L., F.R.S.

Physicians—Dr Black, Dr Andrew, Dr Southey, Dr Church.

Surgeons—Mr Holden, Mr Savory, F.R.S., Mr Callender, F.R.S., Mr Thomas Smith.

Assistant-Physicians—Dr Gee, Dr Duckworth, Dr Hensley, Dr Brunton, F.R.S.

Assistant-Surgeons—Mr Willett, Mr Langton, Mr Morrant Baker, Mr Marsh.

Physician-Accoucheur—Dr Greenhalgh.

Assistant-Physician-Accoucheur—Dr Godson.

Ophthalmic Surgeons—Mr Power, Mr Vernon.

Dental Surgeon—Mr Coleman.

Administrator of Chloroform—Mr Mills.

Casualty Physicians—Dr Wickham Legg, Dr Hall, Dr Moore.

Medical Registrar—Mr Champneys.

Surgical Registrars—Mr Butlin, Mr Milner.

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LECTURES.

Medicine—Dr Black, Dr Andrew.

Clinical Medicine—Dr Black, Dr Andrew, Dr Southey, Dr Church.

Surgery—Mr Savory, F.R.S., Mr Callender, F.R.S.

Clinical Surgery—Sir J. Paget, Bart., D.C.L., F.R.S., Mr Holden, Mr Savory, F.R.S., Mr Callender, F.R.S., Mr Thomas Smith.

Descriptive and Surgical Anatomy—Mr Thomas Smith, Mr Langton.

General Anatomy and Physiology—Mr Morrant Baker.

Histology—Dr Klein, F.R.S.

Chemistry and Practical Chemistry—Dr Russell, F.R.S.

Materia Medica—Dr Farre, Dr Brunton, F.R.S.

Forensic Medicine and Hygiene—Dr Southey.

Midwifery and the Diseases of Women and Children—Dr Greenhalgh.

Botany—Rev. George Henslow.

Pathological Anatomy—Dr Gee.

Comparative Anatomy—Dr Moore.

Ophthalmic Medicine and Surgery—Mr Power.

Dental Anatomy and Surgery—Mr Coleman.

Mental Diseases—Dr Claye Shaw.

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DEMONSTRATIONS.

Morbid Anatomy—Dr Wickham Legg.

Diseases of the Skin—Mr Morrant Baker.

Orthopædic Surgery—Mr Willett.

Diseases of the Ear—Mr Langton.

Diseases of the Eye—Mr Vernon.

Practical Surgery—Mr Willett.

Practical Anatomy and Operative Surgery—Mr Cumberbatch, Mr Walsham.

Assistant Demonstrators—Mr Cripps, Mr Keetley.

Mechanical and Natural Philosophy—Mr Graham.

Practical Physiology—Mr Symons.

Medical Tutor—Dr Moore.

COLLEGIATE ESTABLISHMENT.

Warden—Dr Norman Moore.

Students can reside within the Hospital walls, subject to the College regulations.

Ten Scholarships, varying in value from £20 to £100, are awarded annually.

Further information respecting Scholarships, Pupils' Appointments, and other details, may be obtained from Mr Morrant Baker, Dr Norman Moore, and at the Museum or Library.

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STATISTICAL TABLES

OF THE

Patients under Treatment

IN THE WARDS OF

ST. BARTHOLOMEW'S HOSPITAL

DURING 1874.

BY

THE MEDICAL REGISTRAR,

W. AINSLIE HOLLIS, M.D.;

AND

THE SURGICAL REGISTRARS,

HENRY T. BUTLIN, F.R.C.S.,

AND

EDWARD MILNER, M.R.C.S.

LONDON:

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

1875.

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PREFACE.

No alteration has been made this year in the form of the Medical Report.

The Medical Cases treated in Surgical Wards are this year placed in Table III.

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CONTENTS.

PAGE

PREFACE iii

Number of Beds vii

General Statement of the Patients under Treatment during the year . . . . . ib.

Patients brought in Dead . . . . . ib.

Number of Post-mortem Examinations . . . . . ib.

Occupations of the Male Patients viii

Occupations of the Female Patients ix

MEDICAL REPORT—

TABLE I.—Showing the Total Number of Cases of each Disease under Treatment during the year 1874, with the Results . . . . . 2—7

Abstract of Table I 8

Appendix to Table I . . . . . 9—11

TABLE II. — Showing the Comparative Frequency and Mortality of each Disease at different Ages . . . 12—19

Table showing the Average Stay of the Medical Cases in Hospital, &c. 20

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SURGICAL REPORT—

PAGE

TABLE I.—Showing the Total Number of Cases of each Disease under Treatment during the Year 1874, with the Results . . . . . 22—37

Abstract of Tables II and III 38

Appendix to Table I . . . . . 39—48

TABLE II.—Showing the comparative Frequency and Mortality of each Disease at different Ages . . . . 49—70

TABLE III.—Showing the Number of Medical Cases under Treatment during the year 1874 in the Surgical Wards, with the Results . . . . . 71—72

Table showing the Surgical Operations performed . . . 73—79

Appendix to Table of Surgical Operations performed . . 80—83

Total number of Cases of Erysipelas, Pyæmia, &c. . . 84

Table of Amputations with the Percentage of Deaths during the Ten Years from 1865 to 1874 . . . 85—86

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ST. BARTHOLOMEW'S HOSPITAL.

1874.

Number of Beds in Medical Wards (including 14 for Diseases of Women)		230
„ „ „ Surgical „	including 7 for Diseases of Women and 26 for Ophthalmic Cases	428
„ „ „ Unassigned...		18
		676

GENERAL STATEMENT OF THE PATIENTS UNDER TREATMENT DURING THE YEAR.

Patients remaining January 1st, 1874:			
Medical	234		
Surgical	329	... 563	
Admitted during the year:			... 6342
Medical	2262		
Surgical	3517	... 5779	
Discharged Cured and Relieved:			
Medical	1831		
Surgical	3069	... 4900	
Discharged Unrelieved:			
Medical	88		
Surgical	220	... 308	
Died:			... 6342
Medical	387		
Surgical	182	... 569	
Remaining January 1st, 1875:			
Medical	190		
Surgical	375	... 565	

Patients brought in dead	33
Number of Post-mortem Examinations	346

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OCCUPATIONS OF THE MALE PATIENTS.

Actors	3	Cord and fringemaker	1	Lead-workers	2
Agents and collectors	9	Cork-cutters	5	Letter-carriers and sorters	15
Apprentices	17	Corndealer	1	Lightermen	8
Artificial flower makers	5	Costermongers	38	Looking-glass silverers	2
Artists	2	Cricketer	1	Maltsters	3
Artist's model	1	Crossing-sweepers	2	Masons	28
Asphalte worker	1	Curriers and saddlers	23	Matmaker	1
Attendants at asylums	2	Custom-house officer	1	Medical students	3
Ditto at theatre	1	Cutler	1	Mercurial thermometer-maker	1
Auctioneer	1	Dairymen	9	Messengers	12
Bagmakers	2	Detective	1	Millers	2
Bakers	11	Diver	1	Millwrights	2
Barbers	9	Drapers	9	Miners	3
Barge- and boatmen	16	Drovers	5	Mineral-water factor	1
Barmen	21	Dyers	7	Musical string makers	2
Basketmakers	3	Engineers	63	Musicians	8
Beggars	2	Errand boys	18	News-vendors	5
Billiard markers	2	Factory lads	7	Newspaper editor	1
Blacksmiths	20	Farmers	6	Ostlers and grooms	39
Bone-cutter	1	Farriers	5	Painters and plumbers	74
Bookbinders	21	Firemen	27	Paperhangers and stainers	17
Booksellers	5	Fishmongers and curers	12	Pensioners	12
Bootmakers and clickers	76	Firewood-cutters	5	Photographers	2
Bottlewashers	6	Foremen	2	Pianomakers	2
Boxmakers	11	Framemakers	6	Picklemaker	1
Brass-finishers	17	French-polishers	14	Pipemakers	4
Brewers	5	Furriers	3	Plasterers	11
Bricklayers	51	Gamekeepers	3	Policemen	18
Brickmaker	1	Gardeners	23	Porters	115
Brushmakers	10	Gasfitters	19	Potmen	18
Builders	11	Gauze-workers	2	Poulterers	3
Butchers	29	General dealers	10	Publicans	9
Cabinetmakers and carpenters	124	Gentleman	1	Pugilists	2
Cab, coach, and car drivers	192	Glaziers and glassblowers	14	Rag-sorter	1
Cardmakers	4	Gluemaker	1	Railway servants	24
Carvers and gilders	13	Gold-lace embroiderer	1	Relieving officer	1
Cats'-meat man	1	Greengrocers	2	Sail and ropemakers	5
Chaff-cutter	1	Grocers	7	Sailors	40
Chair-stuffers	2	Gunsmiths	3	Sawyers	12
Cheesemongers	3	Hair-sorter	1	Scavengers	3
Chemists	6	Hatters	6	Scene-shifters	2
Clergymen	3	Hospital servant	1	Schoolboys	87
Clerks	62	Housekeeper	1	Servants	27
Clockmakers	12	Inspector of meat	1	Ship-stewards	5
Coal-whippers	8	Instrument-makers	4	Shipwrights	6
Collarmaker	1	Ironmongers	5	Shoeblacks	6
Colour-grinders	4	Ivory-cutters	2	Showman	1
Combmaker	1	Japanners	2	Shopmen and boys	38
Compositors and printers	96	Jewellers and goldsmiths	28	Silversmiths	4
Conductors (omnibus)	2	Labourers	483	Soapboilers	2
Cooks and confectioners	15	Lamplighters	2	Soldiers	17
Coopers	32	Lapidary	1	Stationers	5
		Laundryman	1	Stevedores	7
		Lawyer	1		

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OCCUPATIONS OF THE MALE PATIENTS (*continued*).

Stokers	9	Travellers	22	Waiters	25
Surgeons	2	Tripe-dresser	1	Warder	1
Sweeps	8	Turners	14	Warehousemen	43
Swimming master	1	Tutors	5	Washing-blue maker	1
Tailors	35	Typefounders	3	Watchmen	10
Tar distiller	1	Umbrellamakers	9	Waterman	1
Telegraphists	3	Undertakers	4	Weavers	8
Ticket-writers	2	Upholsterers	9	Whalebone-cutters	2
Tobacconists	9	Verger	1	Wheelwrights	19
Toolmaker	1	Veterinary surgeon	1	Whitesmiths	10

OCCUPATIONS OF THE FEMALE PATIENTS.

Actresses	4	Factory girls	5	Nurses (hospital)	44
Artificial flower makers	9	Flower-girl	1	„ (domestic)	22
Attendant at an asylum	1	French polisher	1	Packer	1
Bagmakers	4	Fur and feather-workers	10	Paper-colourers	2
Barmaids	3	Governesses	17	Parchment-maker	1
Bonnet-shape makers	2	Hair-workers	2	Prostitutes	396
Book and paper folders	20	Hawkers	12	Servants	312
Bootmakers	2	Hop-picker	1	Shopwomen	13
Boxmakers	15	Housekeepers	3	Straw-plaiter	1
Brushdrawers	5	Isinglass-cleaner	1	Tentmaker	1
Buttonmaker	1	Labelmaker	1	Toymaker	1
Capsule-colourer	1	Laundresses	26	Umbrellamakers	2
Cartridge makers	2	Lead-workers	3	Upholsteress	1
Charwomen	41	Leather-cutters	7	Valentinemaker	1
Collarmakers	4	Lucifermakers	2	Wardrobe-keeper	1
Cooks	21	Machinists	34	Watchmaker	1
Domestic (married)	904	Milkmaid	1	Weaveresses	8
Drapers	2	Milliners and sempstresses	96		

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MEDICAL REPORT.

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TABLE I,

Showing the Total Number of Cases of each Disease under Treatment during the Year 1874, *with the Results.*

N.B.—The numbers after the names of the Diseases refer to the Appendix at the end of the Table.

DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases, A.										
Chicken pox	1	...	1	...	...	...	...	...	...	...
Measles	11	5	10	5	...	...	1	...	...	...
Ditto, *Sequelæ of*	2	...	2	...	...	...	...	...	...	...
Scarlet Fever (1)	9	21	6	14	1	2	1	4	1	1
Ditto, *Sequelæ of* (2)	21	23	16	20	...	...	5	3	...	...
Rotheln	...	1	...	1	...	...	...	...	...	...
Typhus (3)	9	13	5	10	...	...	2	1	2	2
Enteric Fever (4)	49	38	43	29	...	...	5	6	1	3
Continued Fever	1	2	1	2	...	...	...	...	...	...
Febricula	15	19	15	17	...	1	...	...	...	1
Ague (5)	9	1	9	1	...	...	...	...	...	...
Choleraic Diarrhœa	1	...	1	...	...	...	...	...	...	...
Diphtheria	2	1	2	...	...	...	...	1	...	...
Hooping-cough	1	3	1	2	...	...	...	1	...	...
Erysipelas (6)	19	28	17	23	...	...	1	1	1	4
Pyæmia (7)	4	3	...	1	...	...	3	2	1	...
Septicæmia (8)	...	2	...	1	...	...	...	1	...	...
General Diseases, B.										
Acute Rheumatism	94	90	85	82	...	...	...	...	9	8
Ditto, *with Pericarditis* (9)	41	21	34	17	...	...	2	1	5	3
Ditto, *with Endocarditis* (10)	27	32	24	26	...	...	1	3	2	3
Ditto, *with Lung Complications* (11)	3	3	1	1	...	...	1	...	1	2
Subacute Rheumatism (12)	64	62	55	53	1	...	...	...	8	9
Gonorrhœal Rheumatism (13)	10	...	9	...	...	...	1	...	...	...
Synovial Rheumatism	4	2	4	2	...	...	...	...	...	...
Muscular Rheumatism	3	5	3	3	...	...	...	...	...	2
Lumbago	4	1	4	1	...	...	...	...	...	...
Chronic Rheumatism (14)	12	8	9	8	...	...	...	...	3	...
Acute Gout	11	...	10	...	...	...	...	...	1	...
Chronic Gout (15)	3	1	2	1	...	...	...	...	1	...
Gouty Synovitis	...	2	...	2	...	...	...	...	...	...
Chronic Osteo-arthritis	7	5	6	4	...	...	...	...	1	1
Cancer (16)	19	21	5	9	4	5	10	7	...	...
Lupus	2	1	1	...	...	...	...	...	1	1
Scrofula	2	1	1	1	...	...	1	...	...	...
Tubercular Meningitis	3	2	...	...	...	...	3	2	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases, B (*continued*).										
Phthisis Pulmonalis (17)	81	43	34	22	3	3	37	16	7	2
Acute Tuberculosis (18)	10	1	...	1	...	...	10	...	...	...
Rickets	...	1	...	1	...	...	...	...	...	...
Diabetes (19)	5	9	3	7	...	...	2	2	...	...
Purpura	3	2	3	2	...	...	...	...	...	...
Anæmia	1	13	1	12	...	...	...	...	...	1
Chlorosis	...	5	...	5	...	...	...	...	...	...
General Dropsy	8	4	6	3	...	1	2	...	...	...
Diseases of Nervous System.										
Meningitis (20)	5	2	4	1	...	...	1	...	...	1
Softening of Brain	3	1	...	1	1	...	2	...	...	...
Abscess of Brain (21)	1	...	...	...	...	...	1	...	...	...
Sanguineous Apoplexy	9	1	1	1	...	...	8	...	...	...
Atrophy of Brain	...	1	...	...	...	...	...	1	...	...
Cerebral Tumours (22)	2	...	...	...	...	...	2	...	...	...
Congenital Disease of Cord (23)	1	...	...	...	...	...	...	...	1	...
Paralysis	...	2	...	1	...	...	...	1	...	...
Hemiplegia—*Right side* (24)	15	4	11	3	2	...	1	...	1	1
Ditto, *Left side* (25)	9	5	6	4	2	...	1	...	...	1
Paraplegia	9	3	7	3	1	...	1	...	...	...
Locomotor Ataxy	12	1	7	1	1	...	1	...	3	...
Local Paralysis (26)	6	2	4	2	1	...	...	...	1	...
Facial Palsy	...	2	...	1	...	...	...	...	...	1
Hydrophobia (27)	...	1	...	...	...	...	...	1	...	...
Epilepsy (28)	20	12	15	12	1	...	2	...	2	...
Vertigo	2	1	2	1	...	...	...	...	...	...
Laryngismus Stridulus	...	1	...	1	...	...	...	...	...	...
Chorea (29)	10	36	9	31	...	1	1	1	...	3
Hysteria	...	28	...	26	...	1	...	...	...	1
Neuromimesis	...	3	...	3	...	...	...	...	...	...
Facial Neuralgia	6	6	6	5	...	1	...	...	...	...
Sciatica	3	4	3	4	...	...	...	...	...	...
Pleurodynia	3	1	2	1	1	...	...	...	...	...
Hypochondriasis	2	...	2	...	...	...	...	...	...	...
Mania	1	2	...	2	...	...	1	...	...	...
Melancholia	1	1	...	...	...	1	...	...	1	...
Dementia (30)	2	2	2	1	...	...	...	...	...	1
Epistaxis	...	1	...	1	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Circulatory System.										
Pericarditis (31)	4	3	1	1	...	...	2	2	1	...
Adherent Pericardium (32)	...	1	...	1	...	...	...	...	...	...
Cardiac Dropsy	1	7	1	1	...	2	...	3	...	1
Valvular Disease (33)	31	29	14	9	1	3	16	17	...	...
Aortic Disease (34)	18	6	9	2	2	...	6	3	1	1
Mitral Disease (35)	10	17	6	9	...	5	2	3	2	...
Fatty Heart	1	...	...	...	...	...	1	...	...	...
Hypertrophy of Heart	...	1	...	...	...	...	...	1	...	...
Aneurysm of Heart	1	...	...	...	...	...	1	...	...	...
Congenital Malformation of Heart (36)	...	3	...	3	...	...	...	...	...	...
Angina Pectoris	2	...	2	...	...	...	...	...	...	...
Aneurysm of Aorta (37)	14	3	5	1	6	...	3	2	...	...
Atheroma of Arteries	2	...	2	...	...	...	...	...	...	...
Phlebitis (38)	...	1	...	1	...	...	...	...	...	...
Thrombosis of Veins (39)	2	2	2	2	...	...	...	...	...	...
Phlegmasia Dolens	...	2	...	1	...	...	...	1	...	...
Enlarged Glands	1	4	...	2	1	...	...	1	...	1
Exophthalmic Goitre	...	1	...	...	...	...	...	...	...	1
Addison's Disease (40)	...	2	...	...	...	...	...	2	...	...
Diseases of Respiratory System.										
Croup (41)	4	3	1	1	...	...	3	2	...	...
Laryngitis	5	6	3	3	...	1	...	2	2	...
Bronchial Catarrh	5	10	5	5	...	1	...	2	...	2
Acute Bronchitis	10	9	6	8	...	...	3	1	1	...
Chronic ditto, with *Emphysema* (42)	40	43	22	26	3	2	12	10	3	5
Asthma	...	2	...	2	...	...	...	...	...	...
Pneumonia (43)	45	26	33	21	...	...	10	4	2	1
Lobular Pneumonia (44)	6	9	3	5	...	2	3	2	...	...
Hæmoptysis (45)	7	4	7	3	...	...	...	...	...	1
Pulmonary Hæmorrhage	2	...	1	...	...	...	1	...	...	...
Œdema of Lungs	1	...	...	...	...	...	1	...	...	...
Collapse of Lung	1	...	1	...	...	...	...	...	...	...
Pneumonic Phthisis	4	...	2	...	...	...	1	...	1	...
Pleurisy (46)	21	4	13	3	1	...	6	1	1	...
Pleuro-pneumonia (47)	21	9	16	8	...	...	4	1	1	...
Empyema (48)	8	3	6	1	1	...	...	1	1	1
Hydrothorax (49)	17	3	14	3	2	...	1	...	...	...
Hydro-pneumothorax	1	...	1	...	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases, B (*continued*).										
Phthisis Pulmonalis (17)	81	43	34	22	3	3	37	16	7	2
Acute Tuberculosis (18)	10	1	...	1	...	...	10	...	...	...
Rickets	...	1	...	1	...	...	...	...	...	...
Diabetes (19)	5	9	3	7	...	...	2	2	...	...
Purpura	3	2	3	2	...	...	...	...	...	...
Anæmia	1	13	1	12	...	...	...	...	...	1
Chlorosis	...	5	...	5	...	...	...	...	...	...
General Dropsy	8	4	6	3	...	1	2	...	...	...
Diseases of Nervous System.										
Meningitis (20)	5	2	4	1	...	...	1	...	...	1
Softening of Brain	3	1	...	1	1	...	2	...	...	...
Abscess of Brain (21)	1	...	...	...	...	...	1	...	...	...
Sanguineous Apoplexy	9	1	1	1	...	...	8	...	...	...
Atrophy of Brain	...	1	...	...	...	...	...	1	...	...
Cerebral Tumours (22)	2	...	...	...	...	...	2	...	...	...
Congenital Disease of Cord (23)	1	...	...	...	...	...	...	...	1	...
Paralysis	...	2	...	1	...	...	...	1	...	...
Hemiplegia—*Right side* (24)	15	4	11	3	2	...	1	...	1	1
Ditto, *Left side* (25)	9	5	6	4	2	...	1	...	...	1
Paraplegia	9	3	7	3	1	...	1	...	...	...
Locomotor Ataxy	12	1	7	1	1	...	1	...	3	...
Local Paralysis (26)	6	2	4	2	1	...	...	...	1	...
Facial Palsy	...	2	...	1	...	...	...	...	...	1
Hydrophobia (27)	...	1	...	...	...	...	...	1	...	...
Epilepsy (28)	20	12	15	12	1	...	2	...	2	...
Vertigo	2	1	2	1	...	...	...	...	...	...
Laryngismus Stridulus	...	1	...	1	...	...	...	...	...	...
Chorea (29)	10	36	9	31	...	1	1	1	...	3
Hysteria	...	28	...	26	...	1	...	...	...	1
Neuromimesis	...	3	...	3	...	...	...	...	...	...
Facial Neuralgia	6	6	6	5	...	1	...	...	...	...
Sciatica	3	4	3	4	...	...	...	...	...	...
Pleurodynia	3	1	2	1	1	...	...	...	...	...
Hypochondriasis	2	...	2	...	...	...	...	...	...	...
Mania	1	2	...	2	...	...	1	...	...	...
Melancholia	1	1	...	...	...	1	...	...	1	...
Dementia (30)	2	2	2	1	...	...	...	...	...	1
Epistaxis	...	1	...	1	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Urinary System (*continued*).										
Paroxysmal Hæmaturia	2	...	2	...	...	...	...	...	...	...
Cystitis	1	1	1	1	...	...	...	...	...	...
Enlarged Prostate	1	...	...	...	...	...	1	...	...	...
Diseases of Female Organs of Generation.										
Ovarian Dropsy (68)	...	9	...	5	...	4	...	...	...	...
Ditto Irritation	...	1	...	1	...	...	...	...	...	...
Pelvic Cellulitis	...	16	...	15	...	...	...	...	...	1
Ditto Hæmatocele	...	10	...	10	...	...	...	...	...	...
Chronic Metritis	...	19	...	15	...	2	...	...	...	2
Ulceration of Uterine Orifice	...	2	...	2	...	...	...	...	...	...
Fibroid Tumour	...	10	...	8	...	1	...	...	...	1
Retroversion	...	4	...	4	...	...	...	...	...	...
Anteflexion (69)	...	8	...	7	...	...	...	...	...	1
Retroflexion	...	6	...	5	...	1	...	...	...	...
Subinvolution	...	25	...	23	...	...	...	...	...	2
Prolapsus Uteri	...	2	...	2	...	...	...	...	...	...
Procidentia Uteri	...	2	...	2	...	...	...	...	...	...
Uterine Hæmorrhage	...	3	...	2	...	...	...	...	...	1
Ditto Disease	...	1	...	1	...	...	...	...	...	...
Leucorrhœa	...	1	...	1	...	...	...	...	...	...
Atresia Vaginæ (70)	...	4	...	4	...	...	...	...	...	...
Hypertrophy of Right Nympha	...	1	...	1	...	...	...	...	...	...
Amenorrhœa	...	3	...	3	...	...	...	...	...	...
Dysmenorrhœa	...	3	...	3	...	...	...	...	...	...
Miscarriage (71)	...	1	...	1	...	...	...	..	...	...
Extra-uterine Fœtation (72)	...	2	...	1	...	...	...	1	...	...
Pregnancy	...	2	...	2	...	...	...	...	...	...
Hyperlactation	...	1	...	1	...	...	...	...	...	...
Periostitis	1	1	1	1	...	...	...	...	...	...
Tonic Muscular Spasm	...	2	...	2	...	...	...	...	...	...
Progressive Muscular Atrophy	3	2	2	2	...	...	...	...	1	...
Lumbar Abscess	1	...	...	...	...	...	1	...	...	...
Obesity	...	3	...	3	...	...	...	...	...	...
Skin Diseases.										
Erythema	1	3	1	3	...	...	...	...	...	...
Ditto *Nodosum*	1	5	1	5	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Digestive System.										
Stomatitis	...	1	...	1	...	...	...	...	...	...
Glossitis	1	...	1	...	...	...	...	...	...	...
Tonsillitis (50)	10	12	10	11	...	...	...	...	...	1
Quinsy (51)	2	3	2	3	...	...	...	...	...	...
Ulcerated Sore Throat	...	1	...	1	...	...	...	...	...	...
Stricture of Œsophagus	2	1	2	1	...	...	...	...	...	...
Dilatation of Stomach	1	...	1	...	...	...	...	...	...	...
Chronic Gastritis (52)	1	3	1	3	...	...	...	...	...	...
Chronic Ulcer	1	4	...	1	...	1	1	1	...	1
Hæmatemesis	3	8	2	8	...	...	...	...	1	...
Stricture of Pylorus (53)	...	1	...	...	...	...	...	1	...	...
Dyspepsia	4	8	4	8	...	...	...	...	...	...
Pyrosis and Vomiting (54)	3	4	1	3	...	...	...	1	2	...
Typhlitis and Colonitis	3	2	3	2	...	...	...	...	...	...
Dysentery	2	...	1	...	...	...	1	...	...	...
Intestinal Ulceration (55)	...	2	...	1	...	...	...	1	...	...
Ditto Obstruction (56)	3	2	3	1	...	...	...	1	...	...
Stricture of Bowel	1	1	...	1	...	...	1	...	...	...
Diarrhœa (57)	4	6	3	5	...	...	1	1	...	...
Colic and Constipation	9	15	9	15	...	...	...	...	...	...
Hepatitis	...	1	...	...	...	...	...	1	...	...
Hepatic Abscess (58)	2	2	1	...	...	...	1	2	...	...
Enlarged Liver (59)	6	6	5	6	...	...	1	...	...	...
Cirrhosis of Liver	12	5	2	4	...	...	6	1	4	...
Amyloid Liver	...	1	...	...	...	...	...	...	...	1
Hydatid Disease (60)	4	4	3	3	...	...	1	...	...	1
Jaundice (61)	10	8	8	6	2	...	...	1	...	1
Gall-stones (62)	4	1	2	1	...	...	1	...	1	...
Abscess in Abdominal Walls	2	...	2	...	...	...	...	...	...	...
Abdominal Tumours	2	12	...	10	2	2	...	...	...	...
Enlarged Spleen	1	...	1	...	...	...	...	...	...	...
Leukæmia (63)	3	...	1	...	...	...	2	...	...	...
Peritonitis (64)	4	8	4	6	...	...	...	2	...	...
Ascites	4	8	4	6	...	...	...	2	...	...
Diseases of Urinary System.										
Acute Albuminuria	31	8	21	5	...	...	5	1	5	2
Chronic ditto (65)	60	36	32	16	1	3	24	13	3	4
Uræmic Poisoning	1	...	...	...	...	...	1	...	...	...
Pyelitis	3	1	...	...	...	...	2	1	1	...
Renal Calculus (66)	3	5	3	2	...	...	...	3	...	...
Nephritic Abscess (67)	2	2	2	1	...	...	...	...	...	1
Renal Tumour	...	1	...	1	...	...	...	...	...	...
Diuresis	...	1	...	1	...	...	...	...	...	...
Hæmaturia renalis	2	...	2	...	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Urinary System (*continued*).										
Paroxysmal Hæmaturia	2	...	2	...	...	...	...	...	...	...
Cystitis	1	1	1	1	...	...	...	...	...	...
Enlarged Prostate	1	...	...	...	...	...	1	...	...	...
Diseases of Female Organs of Generation.										
Ovarian Dropsy ([68])	...	9	...	5	...	4	...	...	...	...
Ditto Irritation	...	1	...	1	...	...	...	...	...	...
Pelvic Cellulitis	...	16	...	15	...	...	...	...	...	1
Ditto Hæmatocele	...	10	...	10	...	...	...	...	...	...
Chronic Metritis	...	19	...	15	...	2	...	...	...	2
Ulceration of Uterine Orifice	...	2	...	2	...	...	...	...	...	...
Fibroid Tumour	...	10	...	8	...	1	...	...	...	1
Retroversion	...	4	...	4	...	...	...	...	...	...
Anteflexion ([69])	...	8	...	7	...	...	...	...	...	1
Retroflexion	...	6	...	5	...	1	...	...	...	...
Subinvolution	...	25	...	23	...	...	...	...	...	2
Prolapsus Uteri	...	2	...	2	...	...	...	...	...	...
Procidentia Uteri	...	2	...	2	...	...	...	...	...	...
Uterine Hæmorrhage	...	3	...	2	...	...	...	...	...	1
Ditto Disease	...	1	...	1	...	...	...	...	...	...
Leucorrhœa	...	1	...	1	...	...	...	...	...	...
Atresia Vaginæ ([70])	...	4	...	4	...	...	...	...	...	...
Hypertrophy of Right Nympha	...	1	...	1	...	...	...	...	...	...
Amenorrhœa	...	3	...	3	...	...	...	...	...	...
Dysmenorrhœa	...	3	...	3	...	...	...	...	...	...
Miscarriage ([71])	...	1	...	1	...	...	...	..	...	...
Extra-uterine Fœtation ([72])	...	2	...	1	...	...	...	1	...	...
Pregnancy	...	2	...	2	...	...	...	...	...	...
Hyperlactation	...	1	...	1	...	...	...	...	...	...
Periostitis	1	1	1	1	...	...	...	...	...	...
Tonic Muscular Spasm	...	2	...	2	...	...	...	...	...	...
Progressive Muscular Atrophy	3	2	2	2	...	...	...	...	1	...
Lumbar Abscess	1	...	...	...	...	...	1	...	...	...
Obesity	...	3	...	3	...	...	...	...	...	...
Skin Diseases.										
Erythema	1	3	1	3	...	...	...	...	...	...
Ditto *Nodosum*	1	5	1	5	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Skin Diseases (*continued*).										
Urticaria	...	2	...	2	...	...	...	...	...	...
Psoriasis	1	2	...	2	...	...	...	...	1	...
Lepra Anæsthetica	1	...	...	...	...	...	...	...	1	...
Pemphigus	...	2	..	1	...	...	...	...	...	1
Eczema	3	1	3	1	...	...	...	...	...	...
Ditto Rubrum (73)	1	...	1	...	...	...	...	...	...	...
Impetigo	2	...	2	...	...	...	...	...	...	...
Sclerema	...	1	...	1	...	...	...	...	...	...
Elephantiasis Græcorum (74)	1	...	1	...	...	...	...	...	...	...
Morbus Pedicularis	...	1	...	1	...	...	...	...	...	...
Debility	12	27	11	25	...	...	...	...	1	2
Poisons.										
Mercurial Tremor	3	...	2	...	1	...	...	...	...	...
Lead Palsy (75)	3	2	3	1	...	...	...	...	...	1
Ditto Colic	5	...	5	...	...	...	...	...	...	...
Hydrochloric Acid	1	...	...	...	...	...	1	...	...	...
Carbolic Acid	1	...	1	...	...	...	...	...	...	...
Iodine	1	...	1	...	...	...	...	...	...	...
Ammonia	...	1	...	1	...	...	...	...	...	...
Phosphorus	...	1	...	1	...	...	...	...	...	...
Aconite	1	...	1	...	...	...	...	...	...	...
Opium	...	1	...	1	...	...	...	...	...	...
Alcohol—Delirium Tremens	9	3	9	3	...	...	...	...	...	...
Ditto—Inebriety	8	3	8	3	...	...	...	...	...	...
Poison (76)	1	...	1	...	...	...	...	...	...	...
Unclassed	20	12	14	9	...	...	...	...	6	3

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ABSTRACT OF TABLE I.

	Total number of cases under treatment during the year 1874.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in the hospital at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases A	154	160	129	126	1	3	18	20	6	11
Do. Do. B	417	335	300	263	8	9	70	31	39	32
Diseases of the—										
Nervous System	122	122	81	105	10	4	22	4	9	9
Circulatory System	86	76	42	32	9	10	31	32	4	2
Glandular System	1	7	...	2	1	...	...	3	...	2
Respiratory System	198	131	134	89	7	6	45	26	12	10
Digestive System	104	130	76	107	4	3	16	15	8	5
Urinary System	106	55	63	27	1	3	33	18	9	7
Female Organs	...	136	...	119	...	8	...	1	...	8
Muscular System, &c.	5	8	3	8	...	...	1	...	1	...
Skin	11	17	9	16	...	...	...	...	2	1
Debility	12	27	11	25	...	...	...	...	1	2
Poisons	33	11	31	10	1	...	1	...	...	1
Unclassified	20	12	14	9	...	...	...	...	6	3
	1269	1227	893	938	42	46	237	150	97	93
	2496		1831		88		387		190	
			2496							

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APPENDIX TO TABLE I.

1.—A fatal case of scarlet fever was complicated with pleuro-pneumonia; another case, also fatal, was termed "scarlatina rheumatica."

2.—Empyema subsequent to scarlatina in a girl. Eighteen ounces of pus removed from left pleura.

3.—A medical student and two hospital nurses contracted typhus; in the case of the first and of one of the last the disease proved fatal.

4.—A surgical nurse died of peritonitis and umbilical fistula following enteric fever.

5.—Enlargement of spleen in two cases of ague.

6.—In one fatal case of erysipelas the disease involved the leg and arm, in the other the face and the meninges of the brain ('St. Barth. Hosp. Rep.,' ix, p. 227).

7.—In the case of two youths the pyæmia followed otitis interna; in a woman it was subsequent to parturition.

8.—Chronic septicæmia in a girl, a fur-worker.

9.—In fourteen patients suffering from pericardial rheumatism, endocarditis was noted. Three died.

10.—The acute rheumatism was complicated with purpura in the fatal male case.

11.—The man died with rheumatic pneumonia, peri- and endo-carditis.

12.—Two hospital nurses had subacute rheumatism.

13.—The fatal case of gonorrheal rheumatism complicated with bed-sores.

14.—One case of chronic rheumatism was complicated with keratitis; one with eczema.

15.—Chronic gout, with ulceration of toe-nails.

16.—The deaths of males from cancer were as follows:—One, cancer of brain, with hemiplegia and cerebral hæmorrhage. Six, cancer of stomach, one of kidney, one of mediastinum, one of peritoneum. The deaths of females were—one of stomach, two of liver, one of kidneys, one of ovaries, two of uterus.

17.—A patient with pulmonary consumption had symptoms of locomotor ataxy. After death there was found a tuberculous mass involving the cerebellum.

18.—Acute tuberculosis of mesentery in a boy.

19.—A woman died of diabetes complicated with exophthalmos. A girl was re-admitted during the year.

20.—In two youths the meningitis was subsequent to otitis interna. A case proved fatal with abscesses of brain and lungs.

21.—Abscess of brain subsequent to necrosis of temporal bone.

22.—One tumour of cerebellum; one tumour of brain, complicated with epilepsy during life.

23.—Congenital disease of cord, with spasm of muscles.

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24.—Hemiplegia of the right side was in six men complicated with aphasia; two others had "an affection of the speech." A patient also suffered from diabetes.

25.—There was ptosis in one case of left hemiplegia; the paralysis was due to cerebral paresis in another.

26.—A schoolmaster suffered from "dropped wrists." There was no history of lead-poisoning.

27.—The woman died with well-marked symptoms of hydrophobia within twenty-four hours of admission. She had been bitten previously by a dog.

28.—An epileptic man suffered from a temporary aphasia after each fit.

29.—Both the fatal cases of chorea had heart complications. A girl contracted scarlatina in the hospital.

30.—A case of dementia admitted, with pulmonary catarrh.

31.—A case of pericarditis terminated fatally, with purulent effusion into the serous cavity. A girl convalescent from rheumatism was readmitted suffering from pericarditis and double pneumonia. She was relieved.

32.—Adherent pericardium, involving mitral incompetence.

33.—The valves not specified. A woman had softening of the brain.

34.—All the fatal cases of aortic disease among the women were complicated with mitral disease.

35.—Both the men who died of mitral disease had dropsy. The valves were constricted in all the fatal female cases.

36.—This case of imperfect septum ventriculare was readmitted during the year.

37.—Ten aneurysms of the aorta were thoracic, five of the arch. Three were abdominal, one of which burst into the peritoneal cavity. In four the position of the tumour was not exactly defined.

38.—Phlebitis, with intercurrent pericarditis.

39.—Both men suffered from thrombosis of vena cava superior. A woman had the thrombosis in left femoral vein.

40.—In a case of Addison's disease there was no right supra-renal body and extreme fibrous degeneration of left ('St. Barth. Hosp. Rep.,' ix, 225).

41.—Three cases of croup, two of which were boys, died after tracheotomy.

42.—A fatal case of chronic bronchitis was complicated with delirium tremens.

43.—Three cases of double pneumonia occurred amongst the men, all of which were fatal. In sixteen cases the right lung was affected, and in eighteen the left; the remainder were unclassed. Amongst the women there were four cases of double pneumonia—thirteen of the left side and five of the right. The remainder were unclassed.

44.—The liver was enlarged in two cases of lobular pneumonia.

45.—A woman admitted with hæmoptysis was found to be pregnant.

46.—Two men died of pleurisy of the right side, two of the left, and two of both sides. A case of double pleurisy was complicated with pericarditis and pneumonia. The woman died of double pleurisy.

47.—The deaths were in two cases from pleuro-pneumonia of the right side, in two others of the left side, and in one man both sides were affected by the disease.

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48.—The fatal case of empyema was tapped. A girl was relieved after the withdrawal of twenty-two ounces of pus from the right pleural cavity.

49.—The man died with hydrothorax of right side.

50.—Two hospital nurses were attacked with tonsillitis.

51.—All the women admitted with quinsy were hospital nurses.

52.—An hospital nurse was affected with chronic gastritis.

53.—Fibrous stricture of pylorus.

54.—Chronic vomiting, with anorexia hysterica in the fatal case.

55.—In both cases the ulcer was situated in the duodenum.

56.—The obstruction was about the ileo-cæcal valve in the fatal case.

57.—A fatal case of diarrhœa had contracted kidneys.

58.—For the details of a fatal case of hepatic abscess see Dr. Legg's article ('St. Barth. Hosp. Rep.,' ix, 240). A man was also affected with leukæmia.

59.—In two cases the enlargement was probably due to malignant disease. In another there was xanthelasma palpebrarum.

60.—The fatal case of hydatid disease of the liver was complicated with hydatids of omentum and recto-vesical pouch, jaundice, xanthelasma of the tongue, eyelids, and skin ('St. Barth. Hosp. Rep.,' ix, 244).

61.—The jaundice was possibly due in one woman to obstruction of the cystic duct by gummata.

62.—Occlusion of cystic duct by gall-stones in a man. The fatal case was complicated by a pancreatic tumour.

63.—A man died of leukæmia lieno-lymphatica.

64.—A girl with peritonitis contracted scarlatina in the hospital.

65.—Amongst the deaths from Bright's disease was that of a patient with ulcer of stomach and perforation; another man had also ecchymoses on the brain, a third suffered from hemiplegia, and a fourth had disease of the heart.

66.—Nephrolithotomy performed in two fatal cases. One patient was an hospital nurse. The calculus was in the left kidney in the three men.

67.—The abscess due to impaction of stone in right ureter.

68.—Four cases of ovarian dropsy tapped.

69.—Peritonitis followed the use of the sound in one case of anteflexion.

70.—Complete absence of uterus in one girl.

71.—Miscarriage, with retained placenta.

72.—The diagnosis of extra-uterine fœtation somewhat doubtful in one case.

73.—This case of eczema was complicated by an attack of delirium tremens.

74.—This case has been fully reported by Drs. Liveing ('Gulston Lect.,' 1873) and Duckworth ('St. Barth. Hosp. Rep.,' ix, 281).

75.—Both women were workers in a white-lead factory.

76.—The poison unknown.

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TABLE II.

Showing the comparative Frequency and Mortality of each Disease at different Ages.

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–6				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Chickenpox	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Measles	6	2	1	...	2	...	...	...	...	1	...	...	1	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	5	1	...
Ditto, Sequelæ of	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Scarlet Fever	1	2	1	2	2	9	...	1	1	3	...	...	3	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	16	1	4
Ditto, Sequelæ of	5	8	...	1	8	9	3	2	3	...	2	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	20	5	3
Rotheln	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Typhus	...	...	...	...	...	...	...	...	...	4	...	...	2	3	...	...	3	2	1	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	5	10	2	1
Enteric Fever	2	...	...	...	3	2	...	...	9	6	1	2	19	16	3	3	7	4	1	...	3	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	43	29	5	6
Continued Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...
Febricula	...	2	...	...	4	2	...	...	3	3	...	...	6	5	...	...	1	3	...	...	...	...	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	15	18	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	5	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	1	...	...
Choleraic Diarrhœa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Diphtheria	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1
Hooping-cough	1	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1
Erysipelas	...	...	...	...	1	2	...	...	...	1	...	...	4	10	...	1	5	2	...	...	5	1	1	...	2	2	...	...	...	2	...	...	...	3	...	...	...	...	17	23	1	1
Pyæmia	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	2
Septicæmia	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Acute Rheumatism	...	...	...	...	2	1	...	...	7	4	...	...	27	42	...	...	29	19	...	...	19	11	...	...	1	3	...	...	...	2	...	...	...	...	...	...	...	...	85	82	...	...
Ditto, with Pericarditis	...	...	...	...	1	1	1	...	1	3	1	...	20	9	...	1	9	2	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	17	2	1

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Acute Rheumatism, with Endocarditis	...	...	...	...	...	2	...	...	3	8	...	1	12	11	1	2	6	3	...	...	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	26	1	3
Ditto, with Lung Complications	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...
Subacute Rheumatism	...	...	...	...	...	...	...	...	7	7	...	...	12	24	...	...	15	12	...	...	11	6	...	...	10	3	...	...	1	...	...	...	...	1	...	...	...	...	...	...	56	53	...	...
Gonorrhœal Rheumatism	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	1	...
Synovial Rheumatism	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	...	...
Muscular Rheumatism	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...
Lumbago	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	...	...
Chronic Rheumatism	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	4	1	...	...	3	1	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	8	...	...
Acute Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	3	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	10	...	...	...
Chronic Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
Gouty Synovitis	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Chronic Osteo-arthritis	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	2	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	...	...
Cancer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	7	5	4	4	3	1	2	3	3	1	1	...	...	2	...	...	...	...	...	9	14	10	7
Lupus	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Scrofula	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Tubercular Meningitis	...	...	2	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2
Phthisis Pulmonalis	...	...	1	...	1	1	...	...	1	...	1	1	7	6	6	6	11	7	10	2	10	7	9	4	6	3	8	2	1	1	2	1	...	...	...	...	...	...	...	...	37	25	37	16
Acute Tuberculosis	...	...	1	...	...	...	2	...	...	...	...	...	...	1	2	...	...	...	2	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	10	...
Rickets	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Diabetes	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	...	3	1	...	2	1	...	...	...	2	1	...	...	...	1	...	...	...	...	...	...	...	...	...	3	7	2	2
Purpura	...	...	...	...	1	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...
Anæmia	...	...	...	...	1	...	...	...	...	...	...	...	...	9	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	12	...	...
Chlorosis	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...
General Dropsy	3	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	2	...	...	1	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6	4	2	...
Meningitis	...	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	1	...
Softening of Brain	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	2	...

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TABLE II (*continued*).

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Abscess of Brain																			1																						1			
Sanguineous Apoplexy																	1					2				1	1				4				1						1	1	8	
Atrophy of Brain																			1																									1
Cerebral Tumours														1								1																				2	
Congenital Disease of Cord																																												
Paralysis																			1													1									1		1
Hemiplegia													3				4	1			3	2			6	2	2		3				2	2							21	7	2	
Paraplegia									1					1			6					1				1	1						1								8	3	1	
Locomotor Ataxy																	1	1			1				5		1		1												8	1	1	
Local Paralysis						1							1				1								1				2	1											5	2		
Facial Palsy										1																																1		
Hydrophobia																											1																1
Epilepsy	1				1	3				1				2	1		5	3			4	2			4	1						1		1						16	12	2	
Vertigo																					2								1												2	1		
Laryngismus Stridulus						1																																				1		
Chorea					2	5	1	1	4	16			1	10				1			2																				9	32	1	1
Hysteria														12				11				2				2															27		
Neuromimesis														3																											3		
Facial Neuralgia													2	2			1	1				3			3																6	6		
Sciatica														1				1							2	2			1												3	4		
Pleurodynia									1					1			1				1																				3	1		
Hypochondriasis																					1				1																2			
Mania																		2									1															2	1	
Melancholia																													1													1		
Dementia																	1				1	1																			2	1		
Epistaxis																										1															1		
Pericarditis	1										1			1	1	1				1																					1	1	2	2
Adherent Pericardium										1																																1		

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Cardiac Dropsy	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	4	...	3
Valvular Disease	...	...	...	...	1	1	...	...	3	...	1	3	2	3	5	1	3	3	2	3	3	1	4	7	1	3	1	2	2	1	3	1	...	...	...	...	...	...	15	12	16	17
Aortic Disease	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	2	5	...	2	...	3	...	2	...	...	...	...	1	2	...	1	...	1	...	...	...	...	...	...	11	2	6	3
Mitral Disease	...	...	...	...	...	1	...	...	3	3	...	...	...	6	...	1	2	1	...	...	...	3	2	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	6	14	2	3
Fatty Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Hypertrophy of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Aneurysm of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Congenital Malformation	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Angina Pectoris	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Aneurysm of Aorta	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1	4	1	1	...	4	...	1	...	1	...	...	1	...	...	...	...	...	...	11	1	3	2
Atheroma of Arteries	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Phlebitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Thrombosis of Veins	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Phlegmasia Dolens	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Enlarged Glands	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1
Exophthalmic Goitre	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Addison's Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Croup	1	...	3	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	3	2
Laryngitis	1	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	2	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	4	...	2
Bronchial Catarrh	1	1	...	1	1	3	...	...	...	...	...	...	1	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	5	6	...	2
Acute Bronchitis	1	...	...	...	1	...	...	...	...	...	...	...	2	2	1	...	2	3	1	1	...	2	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	6	8	3	1
Chronic ditto	...	...	...	...	...	...	1	...	...	...	...	...	4	2	...	...	2	6	3	1	6	7	5	1	8	5	2	6	4	4	...	1	1	4	1	1	...	...	...	...	25	28	12	10
Asthma	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Pneumonia	1	2	1	1	1	...	...	1	3	1	1	...	11	10	...	...	8	3	2	1	5	2	3	1	1	1	2	...	1	2	...	...	2	...	1	...	...	...	...	33	21	10	4
Lobular Pneumonia	1	2	2	1	...	1	...	...	1	1	...	1	1	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	7	3	2
Hæmoptysis	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...	3	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	7	3	...	...
Pulmonary Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Œdema of Lungs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Collapse of Lung	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Pneumonic Phthisis	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...
Pleurisy	1	...	...	...	...	...	...	...	...	...	...	...	4	1	1	...	8	1	2	1	1	...	...	...	...	1	2	...	...	...	1	...	...	...	...	...	...	...	14	4	6	1
Pleuro-pneumonia	...	1	...	...	1	1	...	...	1	1	...	...	5	2	...	...	6	1	2	...	1	...	...	...	1	1	1	1	1	1	1	...	...	...	...	...	...	...	16	8	4	1
Empyema	2	1	...	1	2	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1	...	1
Hydrothorax	...	...	...	...	2	...	...	...	...	...	...	...	5	1	...	...	3	1	...	...	3	...	1	...	1	1	...	...	2	...	...	...	...	...	...	...	...	...	16	3	1	...
Hydro-pneumothorax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Stomatitis	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Glossitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Tonsillitis	1	...	...	...	1	1	...	...	1	...	...	...	5	7	...	...	2	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	11	...	...
Quinsy	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...
Ulcerated Sore Throat	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Stricture of Œsophagus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
Dilatation of Stomach	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Chronic Gastritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	...
Chronic Ulcer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1
Hæmatemesis	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	1	...	...	...	2	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	8	...	...
Stricture of Pylorus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Dyspepsia	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	3	...	...	...	3	...	...	...	...	2	...	...	...	1	...	...	...	4	8	...	...
Pyrosis and Vomiting	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	1
Typhlitis	...	...	...	...	...	...	...	...	...	1	...	...	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Intestinal Ulceration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1
Ditto Obstruction	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3	1	...	1
Stricture of Bowel	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...
Diarrhœa	...	...	...	...	...	...	...	1	1	...	...	...	1	3	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	3	5	1	1
Colic and Constipation	...	...	...	...	...	3	...	...	1	...	...	...	2	5	...	...	3	6	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	9	15	...	...
Hepatitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Hepatic Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	2
Enlarged Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...	1	2	1	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	6	1	...
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	3	...	...	1	1	...	...	2	1	1	...	...	1	...	...	...	...	...	2	4	6	1
Hydatid Disease	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	3	1	...
Jaundice	...	...	...	...	...	...	...	...	...	1	...	...	2	1	...	...	2	...	...	...	4	3	...	...	...	1	...	1	1	...	...	...	...	...	1	...	...	...	...	...	10	6	...	1
Gall-Stones	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	2	1	1	...
Abscess in Abdomen	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Abdominal Tumours	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	3	...	...	...	4	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	12	...	...
Enlarged Spleen	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Leukæmia	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...
Peritonitis	...	...	...	...	...	...	...	...	1	...	...	...	3	3	...	...	...	1	...	1	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	4	6	...	2
Ascites	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	...	1	1	2	...	...	1	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	6	...	2
Acute Albuminuria	...	1	...	...	2	1	...	...	1	...	...	...	10	2	2	1	4	1	1	...	4	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	21	5	5	1
Chronic ditto	...	2	1	...	...	...	...	1	...	...	...	...	7	6	4	2	9	4	2	4	10	3	4	2	4	4	7	4	3	...	5	...	...	...	...	...	...	...	1	...	33	19	24	13
Uræmic Poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Pyelitis	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	1
Renal Calculus	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	...	1	...	...	1	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	3
Nephritic Abscess	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
Renal Tumour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Diuresis	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hæmaturia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	4	...	...	...
Cystitis	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Enlarged Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Ovarian Dropsy	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	9	...	...
Ditto Irritation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Pelvic Cellulitis	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	5	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	...
Ditto Hæmatocele	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...	...
Chronic Metritis	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	9	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	...	...

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	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Ulcerated Os Uteri	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Fibroid Tumour	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	2	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...
Retroversion	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...
Retro- and Anteflexion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...
Subinvolution	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	8	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	...	...
Prolapsus Uteri	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Procidentia Uteri	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Uterine Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Uterine Disease	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hypertrophy of Nymphæ	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Atresia Vaginæ	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...
Leucorrhœa	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Amenorrhœa	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Dysmenorrhœa	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Miscarriage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Extra-uterine Fœtation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Pregnancy	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Hyperlactation	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Periostitis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Tonic Spasm of Muscles	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Progressive Muscular Atrophy	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Lumbar Abscess	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Obesity	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erythema	...	...	...	...	1	...	...	...	...	...	...	...	4	...	...	...	2	...	...	...	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Urticaria	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8	...	...
Psoriasis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Pemphigus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...

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	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Eczema	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	1	...	...
Impetigo	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Sclerema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Elephantiasis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Debility	2	2	...	...	1	...	...	...	1	1	...	...	...	9	...	...	2	5	...	...	2	6	...	...	...	2	...	...	3	1	...	...	...	...	...	...	...	...	11	26	...	...
Mercurial Tremor	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	...	...	...
Lead Poisoning	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	1	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	1	...	...
Carbolic Acid	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Iodine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Ammonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Phosphorus	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Aconite	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Opium	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Alcohol–Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	6	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	9	3	...	...
Ditto—Inebriety	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	2	1	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	8	3	...	...
Poison	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...

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Table showing the Average Stay of Medical Cases in Hospital, &c.

Within — Weeks of admission.	No. of Patients discharged.		Died.	
	M.	F.	M.	F.
1	78	84	80	51
2	130	124	48	27
3	145	159	29	19
4	158	134	18	9
5	128	139	17	11
6	84	81	11	5
7	55	68	7	4
8	55	56	7	5
9	38	32	4	2
10	14	22	4	3
11	13	20	...	...
12	11	18	3	2
13	6	11	...	3
14	3	7	3	3
15	4	7	1	...
16	2	5	3	1
17	...	4	...	...
18	2	6	...	...
19	2	2	1	1
20	2	2	...	...
22	1	...	...	1
23	1	...	1	...
24	1	...	...	1
25	1	1	...	...
26	...	...	...	1
27	...	...	...	1
28	1	...	...	...
29	...	1	...	...
32	...	1	...	...

The deaths which took place within one week of admission were on the days as shown to the right, No. 1 being the day of admission.

	M.	F.
1	19	23
2	14	9
3	11	5
4	9	2
5	11	5
6	8	4
7	8	3

The total number of deaths during the year was..... 387

Of these there occurred within 24 hours of admission ..... 42, or nearly $\frac{1}{9}$

Within one week of admission ... 131, above $\frac{1}{3}$

„ a fortnight „ ... 206, „ $\frac{1}{2}$

„ a month „ ... 281, nearly $\frac{3}{4}$

The average time of fatal cases in Hospital was in days { Males, 21·9 / Females, 26·2 } 23·6

The total number of patients discharged during the year was 1919

Of these the number whose stay in Hospital did not exceed a fortnight was ..... 416 ..... nearly $\frac{1}{4}$

Those whose stay did not exceed three weeks ..... 720 ..... about $\frac{3}{8}$

„ „ „ four „ ..... 1112 ..... above $\frac{1}{2}$

„ „ „ six „ ..... 1544 ..... „ $\frac{2}{3}$

The average stay in Hospital of patients discharged was in days ..... { Males, 31·5 / Females, 33·58 } 32·52

There are 230 beds in the medical wards, giving the number of possible pernoctations for the year, 230 × 365, or 83,950

The actual number of pernoctations has been as follows:

Of cases admitted in 1873 or 1874 and discharged in 1874	55,718	
Of cases remaining in at the end of the year 1874	6,015	
Of fatal cases	9,138	
		70,871
Giving a difference of		13,079

This gives a nightly average of 35·83 empty beds — about 15 for males and 20 for females—and the time between successive occupants about 134 hours on an average, or about 4·7 days a month.

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SURGICAL REPORT.

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TABLE I,

Showing the total Number of Cases of each Disease under Treatment during the year 1874, *with the Results.*

DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES.										
Phagedæna	3	...	2	...	...	...	1	...	...	...
Erysipelas—										
a. Simple	25	24	18	20	...	...	5	3	2	1
b. Phlegmonous	51	28	40	24	...	...	3	3	8	1
c. Diffuse Inflammation	15	16	13	11	...	...	...	1	2	4
Pyæmia	3	3	1	2	...	...	2	1	...	...
Farcy	1	...	1	...	...	...	...	...	...	...
Syphilis—										
A. Primary Syphilis—										
Hard Chancre	18	26	14	24	1	1	...	...	3	1
Indurated Bubo	...	15	...	13	...	1	...	...	...	1
Soft Chancre	39	76	33	67	1	4	...	...	5	5
Phagedænic Sore	16	1	15	1	...	...	...	...	1	...
B. Hereditary Syphilis	1	4	1	3	...	...	...	...	...	1
C. Secondary Syphilis—										
Local Syphilitic Affections—										
Tongue	3	1	3	1	...	...	...	...	...	...
Palate and Pharynx	5	16	5	12	...	...	...	...	...	4
Larynx	4	2	4	2	...	...	...	...	...	...
Rectum	...	7	...	5	...	1	...	1	...	...
Anus	8	13	8	11	...	2	...	...	...	...
Testicle	7	...	7	...	...	...	...	...	...	...
Bone	9	2	6	2	2	...	...	...	1	...
Skin	69	111	65	93	...	3	...	...	4	15
Cancer—										
A. Scirrhous—										
Rectum	2	1	...	...	1	1	...	...	1	...
Female Breast	...	30	...	12	...	13	...	2	...	3
Lymphatic Glands	6	3	...	...	3	2	3	1	...	...
Cheek	1	...	...	...	...	...	1	...	...	...
Upper Jaw	1	...	...	...	1	...	...	...	...	...
General	...	1	...	...	...	...	...	1	...	...

Digitized by Google

DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES (*continued*).										
B. Medullary Cancer—										
Prostate	1	...	...	...	...	...	1	...	...	...
Vertex of Skull	...	1	...	...	...	1	...	...	...	...
Orbit	1	...	1	...	...	...	...	...	...	...
Perineum	1	...	...	...	1	...	...	...	...	...
Female Breast	...	1	...	...	...	...	...	...	...	1
Superior Maxilla	1	1	...	...	...	1	1	...	...	...
Testis	1	...	1	...	...	...	...	...	...	...
Axilla	1	...	1	...	...	...	...	...	...	...
Bladder	2	...	...	...	1	...	1	...	...	...
Clavicle	1	...	1	...	...	...	...	...	...	...
Metacarpal	1	...	1	...	...	...	...	...	...	...
C. Epithelial Cancer—										
Lip	10	...	9	...	1	...	...	...	...	...
Tongue	14	2	12	1	2	1	...	...	...	...
Mouth	5	...	2	...	3	...	...	...	...	...
Ear	1	...	...	...	1	...	...	...	...	...
Hand	...	2	...	2	...	...	...	...	...	...
Face	1	2	1	1	...	1	...	...	...	...
Scrotum	5	...	5	...	...	...	...	...	...	...
Penis	3	...	2	...	1	...	...	...	...	...
Rectum	...	1	...	...	...	1	...	...	...	...
Œsophagus	1	...	...	...	...	...	1	...	...	...
Lupus	1	3	1	3	...	...	...	...	...	...
Scrofula—										
Lymphatic Glands	2	5	1	4	1	...	...	1	...	...
Testicle	5	...	5	...	...	...	...	...	...	...
Bone	2	...	1	...	...	...	...	...	1	...
Joints	75	53	50	26	10	10	4	5	11	12
Skin	4	9	4	7	...	...	...	...	...	2
Chronic Rheumatic Arthritis	1	...	...	...	1	...	...	...	...	...
DISEASES OF THE NERVOUS SYSTEM.										
Abscess of Brain (Traumatic)	1	...	...	...	...	...	1	...	...	...
Malingering	1	...	1	...	...	...	...	...	...	...
Neuralgia	3	1	2	1	1	...	...	...	...	...
Neuralgic Scars	1	...	1	...	...	...	...	...	...	...
Hysteria	1	8	1	7	...	1	...	...	...	...
Tetanus, Traumatic	2	...	1	...	...	...	1	...	...	...
Hydrophobia	1	...	...	...	...	...	1	...	...	...
Tic Douloureux	1	...	1	...	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Eye.										
A. Conjunctiva—										
Ophthalmia	1	...	1	...	...	...	...	...	...	...
Catarrhal Ophthalmia	6	3	5	3	...	...	...	...	1	...
Phlyctenular „	...	2	...	2	...	...	...	...	...	...
Purulent „	...	2	...	1	...	...	...	...	...	1
Strumous „	...	1	...	1	...	...	...	...	...	...
Gonorrhœal „	1	...	1	...	...	...	...	...	...	...
Rheumatic „	6	...	3	...	1	...	...	...	2	...
Trachoma	...	3	...	2	...	1	...	...	...	...
Neonatorum	...	2	...	2	...	...	...	...	...	...
B. Cornea—										
Keratitis	11	15	8	12	...	...	...	...	3	3
Do. Interstitial	1	...	...	...	...	...	...	...	1	...
Hypopyon	2	2	2	2	...	...	...	...	...	...
Ulcers	6	6	6	6	...	...	...	...	...	...
Opacity	12	8	11	7	1	1	...	...	...	...
Staphyloma	3	8	3	8	...	...	...	...	...	...
C. Iris—										
Iritis	2	2	2	2	...	...	...	...	...	...
Rheumatic Iritis	3	2	3	2	...	...	...	...	...	...
Syphilitic	11	4	11	4	...	...	...	...	...	...
Irido-choroiditis	1	...	1	...	...	...	...	...	...	...
Synechia	8	8	7	7	1	1	...	...	...	...
Occlusion of Pupil	1	1	1	1	...	...	...	...	...	...
D. Crystalline Lens—										
Cataract—										
Hard	15	5	10	5	4	...	...	...	1	...
Soft	4	4	3	4	1	...	...	...	...	...
Traumatic	2	...	2	...	...	...	...	...	...	...
Opacities of Capsule	3	1	3	...	...	1	...	...	...	...
Dislocation of Lens	...	2	...	2	...	...	...	...	...	...
E. Diseases of Retina and Optic Nerve—										
Detached Retina	2	2	...	1	2	1	...	...	...	...
Optic Neuritis	6	2	2	...	4	2	...	...	...	...
White Atrophy of Optic Discs	6	1	2	...	3	1	...	...	1	...
Retino-Choroiditis	2	3	...	3	2	...	...	...	...	...
F. Diseases of the Choroid—										
Choroiditis	2	2	2	...	...	1	...	...	...	1
Atrophy	1	...	1	...	...	...	...	...	...	...
G. General Affections of the Eye—										
Glaucoma	...	2	...	2	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE EYE (*continued*).										
General Affections of the Eye (*continued*)—										
Sympathetic Ophthalmia ...	3	1	1	1	...	...	...	...	2	...
Sarcoma of Eyeball.....	2	...	...	...	...	...	1	...	1	...
Total Disorganization of Eye	3	...	2	...	1	...	...	...	...	...
Defective Stump after Extirpation	...	1	...	...	...	1	...	...	...	...
H. Strabismus—										
Internal	1	4	1	3	1	...	...	...	...	1
External	1	1	1	1	...	...	...	...	...	...
Double.....	1	2	...	2	1	...	...	...	...	...
I. Myopia and Asthenopia	...	1	...	1	...	...	...	...	...	...
J. Diseases of the Lachrymal Apparatus—										
Lachrymal Obstruction	1	2	1	2	...	...	...	...	...	...
Abscess and Fistula.....	2	6	2	5	...	...	...	...	...	1
Cartilaginous Tumour.....	1	...	1	...	...	...	...	...	...	...
K. Diseases of the Eyelids—										
Entropion	1	4	1	3	...	1	...	...	...	...
Ectropion.....	3	...	3	...	...	...	...	...	...	...
Cyst	1	...	1	...	...	...	...	...	...	...
L. Diseases of Orbit—										
Fibrous Tumour	...	2	...	1	...	1	...	...	...	...
Abscess	1	...	1	...	...	...	...	...	...	...
M. Diseases of Cranial Nerves ...	1	1	1	...	...	...	...	...	...	1
DISEASES OF THE EAR.										
Otorrhœa	2	1	2	...	...	1	...	...	...	...
DISEASES OF THE NOSE.										
Congenital Malformations	1	...	1	...	...	...	...	...	...	...
Epistaxis	4	4	4	3	...	...	...	...	...	1
Polypus	...	1	...	1	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE CIRCULATORY AND ABSORBENT SYSTEMS.										
Aneurism—										
Thoracic Aorta	1	1	...	...	1	1	...	...	...	...
Temporal Artery	...	1	...	1	...	...	...	...	...	...
Femoral Artery	5	...	4	...	1	...	...	...	...	...
Popliteal Artery	1	...	1	...	...	...	...	...	...	...
Traumatic Aneurism	2	...	2	...	...	...	...	...	...	...
Thrombosis	3	1	2	1	...	...	...	...	1	...
Secondary Hemorrhage	1	...	...	...	...	...	1	...	...	...
Varicose Veins	4	6	4	5	...	...	...	...	...	1
Blood Cysts	3	2	2	2	1	...	...	...	...	...
Lymphatic Glands—										
Abscess	9	3	7	1	...	...	...	...	2	2
Lympho-sarcoma	2	...	...	...	2	...	...	...	...	...
DISEASES OF THE LIPS.										
Malformations—										
Single Harelip	8	6	7	5	...	1	1	...	...	...
Double ,,	1	1	...	1	1	...	...	...	...	...
Fissure	...	1	...	1	...	...	...	...	...	...
DISEASES OF MOUTH AND CHEEK.										
Ranula	...	1	...	1	...	...	...	...	...	...
Cancrum Oris	...	1	...	...	...	...	...	1	...	...
DISEASES OF GUMS AND JAWS.										
Phosphorus Necrosis of Jaw	2	...	1	...	...	...	1	...	...	...
Epulis	...	3	...	2	...	1	...	...	...	...
Suppuration in Antrum	3	...	3	...	...	...	...	...	...	...
DISEASES OF TONGUE.										
Hypertrophy	1	...	...	...	...	...	1	...	...	...
Abscess of Tongue	...	1	...	1	...	...	...	...	..	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Palate and Fauces.										
Œdema	1	...	1	...	...	...	...	...	...	...
Enlarged Tonsils	1	8	1	8	...	...	...	...	...	...
Abscess	1	...	1	...	...	...	...	...	...	...
Cleft Palate	9	5	4	4	4	1	...	...	1	...
Naso-pharyngeal Polypus	1	...	1	...	...	...	...	...	...	...
Diseases of Salivary Glands.										
Parotid Enchondroma	2	...	2	...	...	...	...	...	...	...
Parotid Cysts	...	1	...	...	...	...	...	...	...	1
Diseases of Œsophagus and Larynx.										
Laryngitis	1	...	1	...	...	...	...	...	...	...
Diseases of the Intestines.										
Hernia—										
Umbilical	3	9	3	7	...	1	...	1	...	...
Inguinal	27	2	25	1	...	...	1	1	1	...
Femoral	6	20	4	11	...	...	2	8	...	1
Abdominal	...	1	...	1	...	...	...	...	...	...
Ventral	...	1	...	1	...	...	...	...	...	...
Fæcal Fistula	1	...	...	...	...	...	...	...	1	...
Hydrocele of hernial sac	1	1	...	1	1	...	...	...	...	...
Peritonitis	...	1	...	...	...	...	...	1	...	...
Diseases of Rectum and Anus.										
Fistula in Ano	11	3	9	3	...	...	...	...	2	...
Hæmorrhoids	9	9	8	7	...	1	...	...	1	1
Fissure of Anus	1	4	...	3	...	...	...	...	1	1
Fibrous Stricture	1	11	1	7	...	2	...	...	...	1
Imperforate Anus	2	...	1	...	1	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF RECTUM AND ANUS (*continued*).										
Recto-vesical Fistula	2	...	...	...	2	...	...	...	...	...
Prolapsus Ani	3	1	2	1	...	...	...	...	1	...
Ischio-rectal Abscess	4	3	4	3	...	...	...	...	...	...
DISEASES OF URINARY SYSTEM.										
Malformation—										
Extroversion of Bladder	1	...	...	...	1	...	...	...	...	...
Cystitis—										
Chronic	3	...	1	...	1	...	...	...	1	...
Renal Calculus	2	1	1	...	1	...	...	1	...	...
Calculus vesicæ—										
a. Uric Acid	12	1	8	1	...	...	2	...	2	...
b. Oxalate of Lime	1	...	...	...	...	...	...	...	1	...
c. Phosphatic	1	1	1	1	...	...	...	...	...	...
Urethral Calculus	4	...	4	...	...	...	...	...	...	...
Symptoms of Calculus	6	...	4	...	2	...	...	...	...	...
Foreign Body in Bladder	1	2	...	2	...	...	1	...	...	...
Diseases of Prostate Gland.										
Inflammation & Suppuration	1	...	1	...	...	...	...	...	...	...
Enlarged Prostate	4	...	2	...	...	...	2	...	...	...
Calculus	1	...	...	...	1	...	...	...	...	...
Gonorrhœa and its Complications.										
Condylomata	...	43	...	43	...	...	...	...	...	...
Gonorrhœa	11	157	7	141	2	9	...	...	2	7
Lacunar Abscess	2	...	2	...	...	...	...	...	...	...
Phimosis	17	...	16	...	...	...	...	...	1	...
Paraphimosis	3	...	3	...	...	...	...	...	...	...
Bubo	18	29	17	26	...	...	1	...	...	3
Verrucæ	4	19	4	19	...	...	...	...	...	...
Abscess in Labium	...	8	...	7	...	1	...	...	...	...
Hypertrophy of Labium	...	2	...	2	...	...	...	...	...	...
Rheumatism	4	...	3	...	...	...	...	...	1	...
Orchitis	11	...	11	...	...	...	...	...	...	...
Perineal Abscess	3	...	3	...	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of Urinary System (*continued*).										
Diseases of Urethra.										
Stricture—										
a. Organic	38	...	29	...	1	...	5	...	3	...
b. Inflammatory	4	...	4	...	...	...	...	...	...	...
c. Traumatic	5	...	3	...	...	...	...	...	2	...
d. Spasmodic	1	...	1	...	...	...	...	...	...	...
Urinary Fistula	13	...	10	...	1	...	...	...	2	...
Extravasation of Urine	4	...	...	...	...	...	4	...	...	...
Incontinence of Urine	1	2	1	1	...	...	...	...	...	1
Retention of Urine	...	3	...	3	...	...	...	...	...	...
Tubercular Disease of Urinary Mucous Membrane	3	...	1	...	1	...	...	...	1	...
Diseases of the Penis and Testis.										
Malformation—										
Hypospadias	1	...	...	...	1	...	...	...	...	...
Phimosis	31	...	28	...	2	...	...	...	1	...
Paraphimosis	2	...	1	...	...	...	1	...	...	...
Orchitis	2	...	2	...	...	...	...	...	...	...
Hematocele	2	...	...	...	1	...	...	...	1	...
Hydrocele	15	...	15	...	...	...	...	...	...	...
Varicocele	5	...	3	...	1	...	...	...	1	...
Cyst of the Cord	2	...	1	...	...	...	...	...	1	...
Diseases of Female Organs of Generation.										
Diseases of the Ovary	...	7	...	5	...	1	...	1	...	...
Diseases of Round Ligament.										
Cyst	...	1	...	1	...	...	...	...	...	...
Diseases of the Uterus.										
Polypus	...	5	...	5	...	...	...	...	...	...

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF FEMALE ORGANS OF GENERATION (*continued*).										
Diseases of the Vagina.										
Vaginitis	...	2	...	1	...	1	...	...	...	...
Vesico-vaginal Fistula	...	6	...	2	...	2	...	1	...	1
Atresia Vagina	...	1	...	1	...	...	...	...	...	...
Diseases of Vulva.										
Vascular Tumour at Orifice of Urethra	...	3	...	1	...	2	...	...	...	...
Noma	...	1	...	1	...	...	...	...	...	...
Affections connected with Parturition.										
Ruptured Perinæum	...	4	...	3	...	...	...	...	...	1
DISEASES OF THE FEMALE BREAST.										
Abscess	...	18	...	17	...	...	...	...	...	1
Non-Malignant Tumours—										
Fibro-adenoma	...	5	...	4	...	...	...	1	...	...
Adenoma	...	6	...	5	...	1	...	...	...	...
Cystic Adenoma	...	2	...	2	...	...	...	...	...	...
Gangrene of Breast	...	1	...	...	...	...	...	1	...	...
DISEASES OF THE ORGANS OF LOCOMOTION.										
Diseases of Bones.										
Ostitis	2	...	2	...	...	...	...	...	...	...
Periostitis	9	11	6	9	2	...	1	2	...	...
Chronic Abscess	1	...	1	...	...	...	...	...	...	...
Diffuse Periostitis—										
Acute Necrosis	5	2	4	2	...	...	...	...	1	...
Caries	20	8	17	7	...	...	...	...	3	1
Necrosis	43	14	31	8	3	3	4	...	5	3

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Organs of Locomotion (*continued*).										
Diseases of Bones (continued).										
Tumours—										
a. Exostosis	3	7	3	5	...	1	...	...	...	1
b. Enchondroma	2	2	1	1	...	1	...	...	1	...
c. Sarcoma	3	1	2	1	...	...	...	...	1	...
Cyst in Humerus	1	...	1	...	...	...	...	...	...	...
Old Amputation	3	1	3	1	...	...	...	...	...	...
Conical Stump	3	...	3	...	...	...	...	...	...	...
Diseases of Joints.										
Acute Synovitis	18	7	17	6	...	...	...	...	1	1
Chronic do.	17	27	14	20	...	1	...	...	3	6
Ulceration of Cartilage	7	2	4	2	...	...	...	...	3	...
Ankylosis (Fibrous)	2	2	...	2	2	...	...	...	...	...
Loose Cartilage	8	2	2	1	3	1	...	...	3	...
Knock-knee	8	6	6	4	1	1	...	...	1	1
Weak Ankles	1	1	1	1	...	...	...	...	...	...
Disease of Sacro-iliac Synchondrosis	1	1	1	1	...	...	...	...	...	...
Acute Arthritis of Infants	3	...	1	...	...	...	1	...	1	...
Foreign body in Knee-joint	1	...	...	...	...	...	...	...	1	...
Weak Knee	1	...	...	1	...	...	...	...	...	...
Diseases of Spine.										
Caries	...	1	...	...	...	1	...	...	...	...
Psoas, Lumbar, and other Abscesses	12	8	11	4	...	1	...	1	1	2
Angular Curvature	17	13	15	12	1	1	...	...	1	...
Lateral Curvature	2	2	2	2	...	...	...	...	...	...
Spina Bifida	1	4	...	2	1	2	...	...	...	...
Diseases of Muscles, Tendons, &c.										
Contraction of Tendons, Fasciæ, or Muscles	6	5	5	5	...	...	...	...	1	...
Club-Foot—										
a. Talipes Equinus	1	5	1	4	...	...	...	...	...	1

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Organs of Locomotion (*continued*).										
Diseases of Muscles, Tendons, &c. (continued).										
Club-foot (*continued*)—										
b. Talipes Valgus	2	1	2	1	...	...	...	...	...	...
c. Do. Equino-varus	21	13	17	11	2	...	...	...	2	2
d. Do. Varus	...	1	...	...	...	...	...	...	...	1
e. Do. Calcaneo Valgus	...	1	...	1	...	...	...	...	...	...
Wry-neck	4	3	2	2	1	...	...	...	1	1
Enlarged Bursa Patellæ	...	5	...	4	...	...	...	...	...	1
Enlargement of other Bursæ	5	1	4	1	1	...	...	...	...	...
Inflammation and Suppuration of Bursa Patellæ	10	19	8	19	...	...	...	...	2	...
Bursal Tumour—										
a. Of Bursa Patellæ	...	1	...	1	...	...	...	...	...	...
Bunion	1	...	1	...	...	...	...	...	...	...
Ganglion	...	5	...	4	...	1	...	...	...	...
Diffuse Palmar Ganglion	1	1	1	...	...	...	...	...	...	1
Diseases of the Cellular Tissue.										
Abscess	75	34	64	30	1	...	2	3	8	1
Connective Tissue Tumours—										
a. Fatty	6	8	5	6	1	...	...	...	...	2
b. Fibro-cellular	5	2	3	2	...	...	1	...	1	...
c. Sarcoma	8	1	6	...	1	1	...	...	1	...
d. Cystic	...	2	...	2	...	...	...	...	...	...
e. Painful Subcutaneous Tumours	...	2	...	2	...	...	...	...	...	...
Sebaceous Cysts	6	9	6	9	...	...	...	...	...	...
Dermoid Cysts	2	2	2	2	...	...	...	...	...	...
Hypertrophy	2	...	1	...	1	...	...	...	...	...
Diseases of the Cutaneous System.										
Ulcer	46	35	45	26	...	2	...	1	1	6

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Cutaneous System (*continued*).										
Carbuncle	11	2	11	2	...	...	...	...	...	...
Bed-sores	...	3	...	...	...	...	...	1	...	2
Whitlow—										
Thecal Abscess	3	2	3	2	...	...	...	...	...	...
Keloid Tumour	...	1	...	1	...	...	...	...	...	...
Gangrene	6	3	3	1	1	...	2	1	...	1
Mole	...	1	...	1	...	...	...	...	...	...
Nævus	2	8	2	8	...	...	...	...	...	...
In-growing Toe-nail	8	2	8	2	...	...	...	...	...	...
Fistulous Tracts	2	1	2	1	...	...	...	...	...	...
Boil	1	...	1	...	...	...	...	...	...	...
Cicatrix	2	4	...	4	...	...	...	...	2	...
Erythema Nodosum	...	1	...	1	...	...	...	...	...	...
Pemphigus	1	1	...	1	...	...	...	...	1	...
Acute Eczema	2	3	2	2	...	...	...	...	...	1
Chronic Eczema	2	...	2	...	...	...	...	...	...	...
Impetigo	...	1	...	1	...	...	...	...	...	...
Ecthyma	1	...	1	...	...	...	...	...	...	...
Purpura	1	...	1	...	...	...	...	...	...	...
„ Hæmorrhagica	2	...	2	...	...	...	...	...	...	...
General Injuries.										
Burns and Scalds	45	36	32	22	...	...	6	8	7	6
Contusions	12	2	12	2	...	...	...	...	...	...
Local Injuries.										
Injuries of the Head.										
Contusion	4	1	4	1	...	...	...	...	...	...
Scalp Wound	42	15	40	12	...	...	...	1	2	2
Concussion of Brain	37	8	36	8	...	...	1	...	...	...
Fracture of Vault of Skull—										
Simple	4	3	1	2	...	1	3	...	...	...
Compound	4	3	2	3	...	...	2	...	...	...
Fracture of Base of Skull	11	3	3	1	...	...	7	2	1	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).										
Of the Face.										
Contusion	3	...	2	...	...	...	...	...	1	...
Wound	6	3	6	3	...	...	...	...	...	...
Fracture of Facial Bones	2	...	2	...	...	...	...	...	...	...
Do. Lower Jaw	9	6	9	5	...	...	...	...	...	1
Injuries of the Ear.										
Foreign Body in Meatus	1	...	...	...	1	...	...	...	...	...
Wound	3	...	2	...	...	...	...	...	1	...
Injuries of the Eye.										
Foreign Body in Eye	1	...	1	...	...	...	...	...	...	...
Contusion of Globe	4	...	4	...	...	...	...	...	...	...
Burns	2	...	2	...	...	...	...	...	...	...
Wound of Eye	8	3	8	1	...	2	...	...	...	...
Dislocation of Globe	1	...	1	...	...	...	...	...	...	...
Injuries of the Tongue.										
Wound	1	...	1	...	...	...	...	...	...	...
Injuries of the Neck.										
Contusion	1	1	1	...	...	...	...	...	...	1
Cut Throat	6	1	5	1	...	...	...	...	1	...
Sprain	...	1	...	1	...	...	...	...	...	...
Foreign Body in Air-passages	...	1	...	1	...	...	...	...	...	...
Injuries of the Chest.										
Contusions	11	2	11	2	...	...	...	...	...	...
Fractured Ribs and Sternum										
a. Lung not Wounded	16	1	13	1	...	...	1	...	2	...
b. Lung Wounded	6	...	2	...	...	...	4	...	...	...
Contusion, with Wound of Lung	1	...	...	...	...	...	1	...	...	...
Incised Wound (Stab)	...	2	...	2	...	...	...	...	...	...
Punctured Wound	2	...	2	...	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).										
Injuries of the Back.										
Contusions	14	1	13	1	...	...	...	...	1	...
Contusions, with Hæmaturia	2	...	2	...	...	...	...	...	...	...
Fracture of the Spine	1	...	...	...	...	...	1	...	...	...
Injury to Spine, without Fracture	4	2	3	1	...	...	1	...	...	1
Injuries of the Abdomen.										
Contusion	8	3	8	2	...	...	...	1	...	...
Do., with Rupture of Viscera	2	...	...	...	...	...	2	...	...	...
Do., with Wound of Viscera	1	...	...	...	...	...	1	...	...	...
Injuries of the Pelvis.										
Contusion	6	...	6	...	...	...	...	...	...	...
Wound of Scrotum	2	...	2	...	...	...	...	...	...	...
Wound of Vulva	...	1	...	1	...	...	...	...	...	...
Wound of Labium	...	2	...	2	...	...	...	...	...	...
Contused Labium	...	2	...	2	...	...	...	...	...	...
Fracture of Pelvis	4	...	2	...	...	...	...	...	2	...
Do. do., with Injury to Viscera	1	...	...	...	...	...	1	...	...	...
Wound of Perinæum	4	...	4	...	...	...	...	...	...	...
String round Penis	1	...	1	...	...	...	...	...	...	...
Injuries of the Upper Extremity.										
Contusion	8	...	7	...	...	...	...	...	1	...
Wound—										
Of Arm	5	...	4	...	...	...	1	...	...	...
Of Elbow	1	...	...	...	...	...	...	...	1	...
Of Forearm	9	1	9	1	...	...	...	...	...	...
Of Hand	14	4	14	4	...	...	...	...	...	...
Injuries of Vessels	4	1	4	1	...	...	...	...	...	...
Fracture of—										
Clavicle	5	5	5	4	...	...	...	...	...	1
Scapula	3	...	3	...	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).										
Injuries of the Upper Extremity (continued).										
Humerus—										
Simple	19	7	15	4	...	...	2	1	2	2
Compound	7	1	5	...	...	...	1	...	1	1
Forearm—										
Simple	7	7	6	5	...	...	...	...	1	2
Compound	3	1	...	1	...	...	...	...	3	...
Bones of Hand—										
Compound	13	2	9	2	...	...	...	...	4	...
Simple	1	...	1	...	...	...	...	...	...	...
Dislocation of—										
Clavicle	2	2	1	2	...	...	...	...	1	...
Humerus	2	3	2	2	...	1	...	...	...	...
Radius and Ulna	1	1	...	1	1	...	...	...	...	...
Thumb	1	...	1	...	...	...	...	...	...	...
Foreign Body in Hand	...	2	...	2	...	...	...	...	...	...
Do. do., Forearm	...	1	...	1	...	...	...	...	...	...
Injuries of Lower Extremities.										
Contusions	32	15	26	13	...	...	1	...	5	2
Sprained Ankle	14	7	13	6	...	...	...	...	1	1
Do. Knee	1	1	1	1	...	...	...	...	...	...
Wounds—										
Of Buttock	1	...	...	...	...	...	...	...	1	...
Of Thigh	6	2	3	1	...	...	1	1	2	...
Over Knee	6	3	6	3	...	...	...	...	...	...
Of Leg	12	2	8	2	...	...	3	...	1	...
Of Foot	5	...	5	...	...	...	...	...	...	...
Of Knee-joint	2	...	2	...	...	...	...	...	...	...
Foreign Bodies removed	...	2	...	2	...	...	...	...	...	...
Fracture of Femur—										
Of both	3	...	2	...	...	...	...	...	1	...
Simple	66	16	56	14	...	...	4	1	6	1
Compound	7	...	2	...	...	...	4	...	1	...
Fracture of Cervix Femoris—										
a. Intracapsular	4	9	4	9	...	...	...	...	...	...
b. Extracapsular	5	4	3	2	1	...	1	...	...	2

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining in at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).										
Injuries of Lower Extremities (*continued*).										
Fracture of Patella—										
By indirect violence	24	12	20	8	...	...	...	...	4	4
direct do.	1	...	1	...	...	...	...	...	...	...
Fracture of both Bones of the Leg—										
Simple	76	25	63	18	...	...	...	...	13	7
Compound	16	3	10	2	...	...	2	...	4	1
Fracture of Tibia alone—										
Simple	25	5	20	3	...	...	...	1	5	1
Compound	1	1	...	1	...	...	...	...	1	...
Fracture of Fibula alone—										
Simple	36	8	31	6	...	...	...	...	5	2
Compound	1	...	1	...	...	...	...	...	...	...
Fracture of Bones of Foot—										
Simple	2	...	2	...	...	...	...	...	...	...
Compound	6	1	5	1	1	...	...	...	...	...
"Pott's Fracture" of Leg	18	6	15	3	...	...	...	...	3	3
Gunshot Wound of Foot..... ...	1	...	1	...	...	...	...	...	...	...
Dislocations of—										
Hip	6	1	6	...	...	1	...	...	...	...
Do. Congenital	1	...	1	...	...	...	...	...	...	...
Foot	...	1	...	1	...	...	...	...	...	...
Knee	2	...	2	...	...	...	...	...	...	...
Do. Semilunar Cartilages...	...	1	...	1	...	...	...	...	...	...
Diseases and Injuries not classified.										
Rupture of Muscle and Tendon	2	...	2	...	...	...	...	...	...	...
Do. Muscular Sheath	1	...	...	...	1	...	...	...	...	...

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ABSTRACT OF TABLES I & III,

With Average Duration of Surgical Patients in the Hospital.

Discharged Cured or Relieved	M. = 1764	
	F. = 1305	
Discharged Unrelieved	M. = 115	
	F. = 105	
Died	M. = 120	
	F. = 62	
Remaining in at the end of the year 1874	M. = 215	
	F. = 160	
Average stay in the Hospital	M. = 34·7	days.
	F. = 31·8	„

Average stay in the Hospital of all Surgical Patients = 33·25 days.

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APPENDIX TO TABLE I.

GENERAL DISEASES:

Pyæmia.—A boy, æt. 17, a month before admission, got wet through at a school feast; he remained several hours in his wet clothes, and dried them before the fire. Next morning he had pain in the shoulder, and soon after abscesses appeared beneath scapula and on buttock. He was admitted in a very feeble condition, rallied at first, but gradually sank from chronic peritonitis and exhaustion three months after admission. He had twenty-one large abscesses opened.

A female child, æt. 5 months, was admitted with pneumonia of right lung and abscesses all over its body. It had been vaccinated "arm to arm" six weeks before. Child's arm was much inflamed, but doing well up to ninth day after vaccination, when child had erysipelas all over the body except the head. A fortnight before admission an abscess appeared upon the wrist. This was opened, and was quickly followed by abscesses all over the body. The difficulty of breathing was of five days' duration. Many abscesses were opened in the hospital, and the pneumonia gradually cleared up. The child was discharged much improved, but still with several small collections of pus in different parts of the body.

A female child, æt. 2½, admitted for supposed fracture of the right femur, died suddenly four days after admission. On examination the pericardium was found full of pus, and the periosteum separated from right femur and surrounded with pus.

Farcy.—A horse-slaughterer, æt. 27, who had cut his right forefinger while making a post-mortem examination for a veterinary surgeon on a glandered horse, was admitted three months after the accident with unhealthy sinuses, and much undermining of the skin from the finger to the elbow-joint on the radial side still remaining. He had been an in-patient at the London Hospital for two months immediately after the accident.

Secondary Syphilis: Rectum.—A woman, æt. 49, who had suffered from syphilitic ulceration of rectum and difficulty of defæcation, died suddenly from the bursting of an abscess, which had formed behind the rectum, into the peritoneal cavity.

Cancer: A. Scirrhous—Female breast.—A woman, æt. 32, while suckling, was attacked by acute scirrhus of both breasts and secondary deposits in internal organs, and died exhausted by the disease ten weeks after the first appearance of the tumours.

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General.—A woman, æt. 40, died from exhaustion following the growth of numerous scirrhous tumours in various parts of the body, beneath the skin, and in internal organs. All the tumours made their appearance at or about the same time.

B. Medullary cancer.—A man, æt. 18, the subject of medullary disease, of nine months' duration, of the clavicle, had the sternal end removed with the attached tumour. He recovered with a thoroughly useful arm. The subclavian vein was opened in the course of the operation.

Perinæum.—A child, 18 months, was admitted with what was believed to be a medullary tumour of the perinæum. The tumour was of three months' growth, as large as a big orange, and rapidly increasing in size. It appeared to give no inconvenience.

Scrofula: Joints.—A girl, æt. 9, suffering from chronic strumous disease of knee-joint, with much contraction of knee, had the biceps tendon divided with the object of getting the leg into better position. The operation was followed on third day by swelling and cellulitis of the whole limb, and death on the sixth day after the operation.

A girl, æt. 17, admitted for chronic strumous disease of knee-joint, was attacked by tubercular meningitis, and died.

Diseases of Nervous System:

Malingering.—A man, the subject of incomplete inguinal hernia, simulated so well the symptoms of strangulated hernia that a consultation was held as to the advisability of an operation.

Neuralgic Scars.—A man, æt. 47, who, for neuralgia of a stump after amputation, had suffered re-amputation, and for whom a neuroma and a portion of median nerve had at different times been removed without any relief of his pain, completely recovered after free handling and stretching of the median nerve. (See Clinical Society's 'Transactions,' p. 150, vol. vii.)

Tetanus.—Both cases in men, æt. 18 and 56 respectively. One before and the other after admission into the hospital. In the patient æt. 18 the disease followed a blow from an open hand on the small of the back. Two days after injury patient complained of pain in the back. On the third day he was attacked by trismus, and on the fourth day the disease was completely established. He was admitted to hospital on the sixth day of the disease, and the disease ran a favorable course to recovery of one calendar month, during which time the patient was kept under the influence of chloroform, morphia, and chloral-hydrate. In the man æt. 56 the disease followed a lacerated wound of the left lower eyelid; facial paralysis and trismus occurred simultaneously on the sixth day after injury and the second after admission, and death followed on the sixteenth day after the onset of the symptoms.

Hydrophobia.—A postman, æt. 47, was bitten on the front of the middle finger of the right hand by a small bulldog on the 4th of June. The wound was not cauterised, healed up, and gave him no trouble of any kind until the 19th of December, when he noticed slight irritation and redness at the seat of injury. This

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was quickly followed by pain up his arm and round the body, with general feeling of "malaise." The general "malaise" increased until December 28th, when, on a cup of tea being brought to him, he was unable to swallow, and he manifested the symptoms of hydrophobia. He got gradually worse, and died on the last day of the year. The patient's son was bitten by the same dog about the same time, but he suffered no ill-effects, and the dog was killed as being "bad-tempered."

DISEASES OF EYE:

General Affections: Sarcoma of Eyeball.—The right eye of a man, æt. 57, which had been blind for ten years, became the seat of melanotic sarcoma two months before admission. The eye was removed, but the disease was found to extend through the optic foramen. The patient after the operation gradually became unconscious, and died comatose.

DISEASES OF THE CIRCULATORY SYSTEM:

A woman, æt. 30, had an aneurism of the right temporal artery, extending from the front of meatus auditorius externus nearly to vertex of skull. Interrupted pressure on temporal artery and most inferior part of tumour by means of a light steel spring and pad, during fifteen weeks, with rather spare diet, caused much improvement, the walls being much more solid and thick, but the pulsation and a bruit still remained.

Femoral Aneurism.—A man, æt. 35, the subject of femoral aneurism in Hunter's canal, was completely cured by 27½ hours' digital compression; the pressure extended over five days, and was never applied for longer than 5 hours, or for a shorter time than 2½ hours. The average was 3⅜ hours of continuous pressure.

Harelip.—A weakly child, æt. 7 months, died in convulsions while waiting for the operation for harelip, the premaxillary bone having been previously turned back.

Fissure of Lip.—In a woman, æt. 24, who had suffered for years from deep and painful fissure of the lower lip; the edges of the fissure were pared and brought together, as in the operation for harelip, with complete success.

DISEASES OF GUMS AND JAWS:

An undersized youth, æt. 18, engaged in making matches for many years, from whom the lower jaw had been previously removed, died from exhaustion consequent upon the spreading of the disease to both superior maxillæ and other bones of the face. (See 'Medical and Chirurgical Trans.,' vol. xlvii, p. 187.)

DISEASES OF TONGUE:

A child, æt. 2, suffering from congenital hypertrophy of the papillæ of the tongue died somewhat suddenly, on seventh day after admission, from diarrhœa.

Abscess of Tongue.—A woman, æt. 20, was admitted with a hard, circumscribed, apparently non-fluctuating tumour of the tongue, half-inch from tip; it was noticed five months before as large as a pea, and had gradually increased up to admission.

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On being punctured two or three drops of well-formed pus escaped, and she was discharged well four days afterwards. There was no pain throughout.

DISEASES OF PALATE AND FAUCES:

A man, æt. 30, was admitted with acute dyspnœa, the only cause for which was much œdema of the palate and fauces, which subsided, as it had arisen, of itself, within twenty-four hours of admission, and gave no further trouble.

DISEASES OF THE INTESTINES:

Femoral Hernia.—A woman, æt. 40, who had suffered for 8 days with very severe symptoms of strangulation, and on whom very many violent attempts at reduction had been practised, suddenly, after a further attempt at reduction and an enema of olive oil, experienced relief of all her symptoms except constipation. Partial subsidence of tumour in the groin occurred at same time. She came to the hospital 2 days after the last attempt at reduction with a soft, indistinctly fluctuating tumour of the right groin, just below Poupart's ligament, but with no symptoms of strangulation except constipation. She was ill, but had no great anxiety of expression, and said she felt quite comfortable. The skin over tumour gradually became red and inflamed, and the tumour more distinctly fluctuating, and the patient became heavy, with a tendency to coma; the bowels did not act, the swelling was therefore freely opened on the 5th day after admission. Intestine was found ruptured, and fæces flowed freely from the wound. Patient, however, gradually sank, and died of starvation 24 days after the opening of the fæcal abscess. The rupture had taken place only six feet from the pylorus.

Hydrocele of Hernial Sac.—A woman, æt. 50, the subject of a huge hydrocele of the sac of a femoral hernia, was successfully treated by means of a seton and incision. The hydrocele was of three years' duration, and the mouth of sac had become completely shut off from peritoneal cavity by a piece of adherent omentum. (See 'St. B. H. Reports,' vol. x, p. 180.)

DISEASES OF URINARY SYSTEM:

Foreign Body in Bladder.—Two women, æt. 17 and 31 respectively, had hair-pins removed from the bladder per urethram.

Paraphymosis.—A married man, æt. 39, was admitted with paraphymosis of 24 hours' duration on 2nd of March. All attempts to reduce the condition having failed, the stricture was divided on superior surface of the penis. This failing to bring the parts to their normal position, and there being much œdema, several pricks were made into the skin and ice applied for 12 hours, the penis being placed against the surface of the abdomen. A rigor occurred the same night, followed by erysipelas of the penis and scrotum, with slight sloughing of the skin. The patient rapidly sank, and died 4 days after the supervention of the erysipelas.

Orchitis.—In a man, æt. 54, orchitis followed the tapping of a hydrocele.

Retention of urine.—A man, æt. 63, in whom the whole penis had been removed 12 months before for epithelioma, was admitted with retention. The suprapubic operation of paracentesis vesicæ was performed, but the patient died of exhaustion following the return of the original disease 3 months afterwards.

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DISEASES OF FEMALE ORGANS OF GENERATION:

Atresia Vaginæ.—A girl, æt. 14, suffering from atresia vaginæ, dependent upon imperforate hymen, was cured by free incision.

DISEASES OF FEMALE BREAST:

Gangrene.—A woman, æt. 62, admitted *in extremis*, died 2 hours after admission, with the whole of the right breast in a state of slough and gangrene, rapidly spreading to the left. No history could be obtained.

DISEASES OF THE ORGANS OF LOCOMOTION:

Periostitis.—Two women, æt. 44 and 54, died from the exhaustion following profuse suppuration about the femur, consequent upon chronic periostitis of that bone. In the latter fracture of the femur suddenly occurred whilst crossing a medical ward six weeks before admission.

Abscess of Bone.—A man, æt. 21, was struck 7 years before admission by a cricket ball immediately below the tubercle of the left tibia. 3 years afterwards he began to have pain in the situation of the injury, which, during the last 3 months, had become so severe as to undermine his general health. An incision was made down to the bone through the periosteum, and an abscess cavity opened by means of a Hey's saw. The anterior wall of abscess cavity was then removed with a trephine. Complete recovery followed. (See 'Lancet,' June 6, 1874.)

Necrosis of Bone.—A youth, æt. 16, died from meningitis, following repeated removal of small portions of dead bone from a necrosed os planum of the ethmoid bone.

A boy, æt. 11, had the acromial end of the clavicle removed, that portion of bone being loose and necrosed. There was no history of injury; but the line of clavicle had become inflamed spontaneously 10 weeks before the operation.

Cyst in humerus.—A man, æt. 39, was attacked when 5 years old with severe pain, with some swelling, in the humerus; this subsided and became quite quiet and painless after 6 months. He had similar attacks at the ages of 17 and 28, lasting 6 and 9 months each. 3 months before admission he was again attacked. On admission he was suffering intense pain in the arm, and some enlargement about the junction of middle and upper third of humerus. There was no discoloration of the skin. An incision was made through the periosteum down to the bone, and a trephine applied, when some clear serous fluid escaped from a small, rough-walled cavity in the substance of the humerus. This was followed by complete disappearance of the pain.

Conical Stump.—Three males, æt. 6, 14, and 20, suffered reamputation of thigh, arm, and leg, respectively, for conical stump.

DISEASES OF JOINTS:

Loose Cartilage.—In a man, æt. 35, a loose cartilage was removed from the knee-joint by direct incision. At the time of the operation there was very free hæmorrhage externally, and also into the joint, some small artery being divided;

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nevertheless recovery took place without a bad symptom. The patient was a healthy navvy, and the origin of the cartilage was clearly traced to a severe injury.

Acute Arthritis of Children.—Three cases of this disease were treated in the hospital, two being followed by recovery and one being fatal. (See 'St. B. H. Reports,' Case v, p. 195; Case xviii, p. 202; and Case xx, p. 203.)

Foreign Body in Knee-joint.—A woman, æt. 23, was admitted, saying that while kneeling she had run the half of a needle into the left knee-joint. There was some effusion into joint, and on moving the patella slight grating could be detected. As all swelling had subsided, and no needle could be felt, the patient was discharged 5 days afterwards. She returned 1 month afterwards, saying that in the interval she had suffered no pain, with the point of needle distinctly to be felt on inner side of patella beneath the skin; a small incision was made through the skin, and half a blackened needle removed, point first, from the direction of the joint. No bad symptoms followed.

Iliac Abscess.—A woman, æt. 19, in whom inflammation of bursa patellæ had been followed by suppuration of femoral glands, had also an iliac abscess, which, bursting into the peritoneal cavity, caused peritonitis and death.

Spina bifida (?).—A female, æt. 18, stated that she had had nothing the matter with her back until 6 years before admission, when she noticed a small swelling exactly in the middle line over the spine of the third lumbar vertebra. It had increased slowly, and been quite painless until 18 months before admission, when, after a fall down stairs, it began to enlarge more rapidly and give her considerable pain about both buttocks and down the back of thighs. There was no irregularity of the spine to be detected, and no loss of power in lower extremities. The tumour was tapped on two occasions, and clear limpid fluid let out containing much chloride of sodium, but no hooklets or sugar. The fluid rapidly, on each occasion, recollected, but no further ill-effects followed, and after the second tapping the fluid gradually subsided and the swelling disappeared. The patient had previously been in Guy's Hospital, where the tumour was believed to be a spina bifida.

DISEASES OF THE CELLULAR TISSUE:

Fibro-cellular Tumour.—A child, æt. 11 months, suffering from a large fibro-cellular tumour of thigh, had threads tipped in Tœ. Ferri Perchl. passed through it. This was followed by rapid increase of size of tumour, signs of inflammation, and very severe constitutional disturbance, and death on 22nd day after the operation.

DISEASES OF THE CUTANEOUS SYSTEM:

Ulcer.—A woman, æt. 54, died from exhaustion following pain and profuse suppuration from an ulcer extending nearly from ankle to knee, with superficial exfoliation of bone.

Nevus.—A girl, æt. 12, was admitted with congenital nevoid elephantiasis of the whole of the lower extremity.

INJURIES OF THE HEAD:

Fracture.—A painter fell from a ladder on August 22nd and sustained a

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fracture of base and vertex of skull, with severe scalp wound. On September 7th he was attacked by erysipelas of the head and face, followed on September 12th by a purulent discharge from ear. He died, September 22nd, from pyæmia, pus being found in both shoulder-joints and abscesses in the lungs.

Fracture of Base of Skull.—A child, æt. 5, was attacked within four hours of the receipt of a fracture of base of skull with acute meningitis.

A man, æt. 18, admitted with supposed fracture of base of skull from a fall on the back of his head on the pavement, after remaining in a state of unconsciousness for several days, suddenly passed into a state of furious mania, followed later by harmless insanity, for which he had to be removed to an asylum.

INJURIES OF CHEST:

Fractured Ribs, Lung wounded.—A man, æt. 32, who had fallen thirty-six feet across a wall, on his abdomen and his left side, was admitted in a state of profound collapse, and died 1½ hours afterwards. After death, in addition to the fracture of several ribs, the bladder, left kidney, diaphragm, left lung, and pericardium, were found ruptured. The stomach, which was not ruptured, had been driven through the diaphragm, and completely filled the left pleural cavity; the lung lying behind completely collapsed. The peritoneal surface of the stomach was in contact with the heart, the pericardium having been torn from end to end.

Contusion, with Wound of Lung.—A lad, æt. 17, while riding upon a bicycle, came in contact with a brick-cart, and was thrown on his face under the wheel, the wheel passing diagonally over his chest from above downwards. He was admitted at 9 a.m. in a state of extreme collapse, but got much better until 12.30 p.m., when his breathing became much embarrassed, and he got much worse, until at 1.30 p.m. the respirations were only six in the minute, the whole surface of the body being cold and blue, with the superficial veins distended and the patient comatose. On examination the chest was found to be tympanitic on both sides, and the liver much displaced downwards. The patient was at once bled to eight ounces from the arm without the least relief being afforded; the right side of chest was next tapped in the eighth intercostal space (that being the most tympanitic spot), and this was at once followed by the escape of a large quantity of air. A finger was placed over the trocar during inspiration and removed during expiration. This operation was followed by great and immediate relief, and as the left side was also tympanitic, it was also tapped, and much air and a very small quantity of blood let out. Within half an hour of the operation the respirations increased from six to thirty-six, the surface of body became natural in colour, and the patient perfectly conscious. The patient did fairly well until the eighth day, when a pint and a half of pus was let out from the left pleural cavity by means of a large trocar. The trocar was left in, and through it about half a pint of pus was discharged daily. Patient gradually sank, and died nineteen days after admission. After death the left bronchus was found cut completely through just as it entered the lung; the left lung itself was completely collapsed, sinking in water, and coated all over by a thick layer of lymph; there was a considerable quantity of pus in the left pleural cavity. The right lung completely filled the right pleural cavity; it had been wounded, but was adherent to the chest-walls at the point of injury. A very careful examination failed to find any broken ribs on either side.

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INJURIES OF BACK:

Injury to Spine without Fracture.—A man died from dislocation of the seventh cervical vertebra, caused by falling seven feet directly upon the back of his head and neck. He had sustained no fracture of body or outstanding processes of the vertebræ.

INJURIES OF ABDOMEN:

With Wound of Viscera.—A youth, æt. 17, while "larking" with his fellow-clerks, was pushed through a plate-glass door, and received a wound about 1½ inches long in the left lumbar region immediately over the left kidney. He was admitted somewhat collapsed, and immediately afterwards had a desire to pass water; on attempting to do so he passed in its place about a pint of pure blood per urethram. This was followed by continuous hæmorrhage from the urethra until death, which occurred three hours after admission. On examination the wound in loin led down to the kidney, which was deeply wounded.

INJURIES OF UPPER EXTREMITY:

Wounds.—The injuries of vessels were all of the ulnar or radial arteries. None of note.

FRACTURES:

Simple Fracture of Humerus.—Two males, æt. 76 and 59, and one female, æt. 85, died after simple fracture of the humerus. The woman died of shock within twelve hours of admission. In the man æt. 59 death was due to an attack of acute bronchitis, to which in a chronic form the patient had long been subject. In the male æt. 76 death was due to exhaustion and senile decay. The patient was a feeble old man, the subject of right hemiplegia, from which he had partly recovered. He had been knocked down by a cab while crossing the road, and was said to have fallen directly upon his left shoulder. After death he was found to have sustained a fracture of the anatomical neck of the humerus. The symptoms during life were pain, inability to move arm, and general swelling of the shoulder.

Compound Fracture of Humerus.—A man, æt. 71, admitted with compound fracture of the humerus, had also an old-standing stricture. He suffered from retention of urine, for which instruments had to be passed. He died comatose forty-eight hours after admission.

INJURIES OF LOWER EXTREMITY:

Wounds.—Two males, æt. 6 and 7, died from severe lacerated wounds of the lower extremity. The boy æt. 6 had the skin stripped from knee to ankle, and died one week after admission from the combined effects of shock and exhaustion. In the second case gangrene of the whole of right lower extremity followed a lacerated wound of inner side of thigh, extending from scrotum to upper third of leg, opening the knee-joint, and exposing extensively the muscles of inner side of thigh and popliteal space.

Simple Fracture of Femur.—A smith, æt. 65, on whom a building had fallen, was admitted with simple fracture of both femora and a simple fracture of both bones

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of left leg. He recovered, with all the fractures in excellent position, without a bad symptom.

A man, æt. 24, who had fallen fifteen feet upon his bent knees and fractured both femora, also made a good recovery.

A fatal result followed simple fracture of the thigh in five cases. In a woman, æt. 55, and a man, æt. 72, death was due to exhaustion; in the latter the fracture, owing to the movements of the patient, became compound after his admission.

An habitual drunkard, æt. 58, while leading a horse at the Lord Mayor's Show, was kicked by one of the other horses. He was attacked with severe sickness four days after admission, and died comatose on fifth day. After death very advanced disease of both kidneys was found.

A man, æt. 60, was admitted, after being run over on lower third of both thighs. Fracture of right thigh was diagnosed and some swelling of left thigh noticed, but no importance was attached to it. The patient died suddenly nine hours after admission, and on examination was found to have ruptured his left popliteal artery; blood had escaped into the surrounding parts in some quantity, the skin of lower third of left thigh was natural, and there was no fracture of the left femur.

A man, æt. 72, died of shock, following a very severely comminuted fracture of the femur.

Compound Fracture of Femur.—Three of the four fatal cases of compound fracture of femur died within twelve hours of admission. All the cases were complicated by other severe injuries. In the fourth case patient, æt. 29, died of septicæmia, following erysipelas, three months and a half after admission.

Fractured Patella.—An old man, while endeavouring to avoid an omnibus, slipped up, and, in trying to recover himself, sustained simultaneously a fracture of both patellæ.

Simple Fracture of the Tibia.—An old woman, æt. 76, died a fortnight after admission from exhaustion after simple fracture of tibia.

Compound Fracture of both Bones of the Leg.—Both the fatal cases died from shock within a few hours of admission, being in each case complicated by other severe injuries, one patient having, in addition to the complete separation of the limb from the trunk by the passage of an engine, lost the sight of both eyes, and been burnt all over by lime at the time of the accident.

A man, æt. 47, while jumping on to the back step of an omnibus, missed the step and came down with all his weight upon the left foot. He was admitted with a compound fracture of both bones of the left leg, the tibia being split from end to end longitudinally, and the fracture extending into both knee- and ankle-joints; the lower end of the tibia was also much comminuted, and there was free hæmorrhage from the wound. This patient, nevertheless, made an excellent recovery, and walked out of ward well three months after receipt of injury.

Dislocations.—In two males, æt. 4 and 40 respectively, the femur was dislocated into the dorsum ilii.

In one male, æt. 46, the head of the bone was in the obturator foramen.

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In three cases, two males, æt. 54 and 46, and one female, æt. 45, the head of the bone was displaced upwards on to the pubes, and in one male, æt. 20, directly upwards beneath the anterior inferior spine of the ilium. All the cases were easily reduced under chloroform, either by manipulation or extension, except two.

In a female, æt. 45, in whom the head of the femur could be distinctly felt upon the pubes, reduction could not be effected. Attempts at reduction were made on three separate occasions by manipulation and extension with and without pulleys, but the bone could not be got into position, and it had to be left. The patient was seen, and the first attempt at reduction made within twenty-four hours of the accident.

In a male, æt. 20, suffering from subspinous dislocation, the first attempt a reduction failed, but on the second occasion, eleven days afterwards, the bone was readily under chloroform "manipulated" into its normal position. (See 'St. B. H. R.,' p. 316, vol. x.)

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TABLE II.

Showing the comparative Frequency and Mortality of each Disease at different Ages.

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES.																																											
Phagedæna	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...
Erysipelas—																																											
a. Simple	...	2	...	...	1	...	...	...	...	...	...	...	2	6	1	...	4	2	1	1	5	3	2	1	3	4	...	1	3	2	1	...	...	1	...	...	...	...	...	...	18	20	5	3
b. Phlegmonous	...	...	...	...	...	...	...	...	...	...	...	...	11	1	...	...	4	9	...	1	10	7	2	2	10	6	1	...	5	...	...	...	...	1	...	...	...	...	...	40	24	3	3
c. Diffuse Inflammation	...	1	...	...	...	1	...	...	2	2	...	...	1	...	...	...	...	2	...	1	5	3	...	...	3	1	...	...	2	...	...	...	...	1	...	...	...	...	...	13	11	...	1
Pyæmia	...	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	2	1
Farcy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Syphilis—																																											
A. Primary Syphilis—																																											
Hard Chancre	...	...	...	...	...	...	...	...	...	...	...	...	12	25	...	...	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	26	...	...
Indurated Bubo	...	...	...	...	...	...	...	...	...	...	...	...	..	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...
Soft Chancre	...	...	...	...	...	...	...	...	...	...	...	...	28	68	...	...	5	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	34	71	...	...
Phagedænic Sore	...	...	...	...	...	...	...	...	...	...	...	...	6	1	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	1	...	...
B. Hereditary Syphilis	...	...	...	...	...	1	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	...
C. Secondary Syphilis																																											

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES (*continued*).																																												
Syphilis (*continued*)—																																												
Local Syphilitic Affections—																																												
Tongue	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...
Palate and Pharynx	...	...	...	...	...	...	...	...	...	...	...	...	3	12	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	12	...	...
Larynx	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	...	...
Rectum	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	4	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	1
Anus	...	...	...	...	...	...	...	...	...	...	...	...	2	11	...	...	4	1	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	13	...	...
Testicle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...
Bone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	3	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	8	2	...	...
Skin	...	...	...	...	...	...	...	...	...	...	...	...	31	58	...	...	18	26	...	...	10	6	...	...	5	4	...	...	1	...	...	...	...	...	...	...	...	...	...	65	94	...	...
Cancer—																																												
A. Scirrhous—																																												
Rectum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Female Breast	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	7	...	1	...	11	...	...	...	4	...	...	...	2	...	...	...	...	...	...	25	...	2
Lymphatic Glands	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	...	1	...	1	1	1	...	1	...	...	...	...	...	...	3	2	3	1
Cheek	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Upper Jaw	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
General	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.
General Diseases (*continued*).																																											
Cancer (*continued*)—																																											
B. Medullary—																																											
Superior Maxilla	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Testis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...
Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Vertex of Skull	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Perineum	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Axilla	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Bladder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Clavicle	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Metacarpal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Orbit	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
C. Epithelial Cancer—																																											
Lip	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	5	...	...	...	...	...	...	...	2	...	...	...	...	...	...	10	...	...	...
Tongue	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	3	1	...	...	6	1	...	...	1	...	...	...	...	...	...	14	2	...	...
Mouth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	...	...	5	...	...	...
Ear	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Face	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	1	2	...	...
Penis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Scrotum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	1	...	...	...	...	...	...	5	...	...	...
Rectum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Œsophagus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hand	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...

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TABLE II (*continued*).

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				66–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES (*continued*).																																												
Lupus	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	3	...	...
Scrofula—																																												
Lymphatic Glands	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	1	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4	...	1
Testicle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...
Bone	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1
Joints	5	6	1	...	14	12	...	1	13	10	...	2	13	5	1	2	8	1	2	...	5	...	...	...	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	60	36	4	5
Skin	1	1	...	...	...	...	...	...	...	3	...	...	3	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	7	...	...
Chronic Rheumatic Arthritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
DISEASES OF NERVOUS SYSTEM.																																												
Abscess of Brain, Traumatic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Malingering	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Neuralgia	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...
Neuralgic Scar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Hysteria	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	3	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8	...	...
Tetanus, Traumatic	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Hydrophobia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Tic Douloureux	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE EYE.																																												
Conjunctiva	2	5	...	...	1	1	...	...	1	2	...	...	1	5	...	...	1	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	11	13	...	...
Cornea	...	5	...	...	5	6	...	...	5	8	...	...	8	9	...	...	4	2	...	...	4	3	...	...	4	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	31	36	...	...
Iris	...	...	...	...	1	2	...	...	2	...	...	...	7	7	...	...	8	2	...	...	5	1	...	...	...	1	...	...	2	1	...	...	1	3	...	...	...	...	...	...	26	17	...	...
Crystalline Lens	...	...	...	...	...	1	...	...	3	...	...	...	1	3	...	...	2	...	...	...	2	2	...	...	5	2	...	...	3	1	...	...	6	3	...	...	1	...	...	...	23	12	...	...
General Affections of the Eye	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	4	3	...	...
Strabismus	1	2	...	...	1	2	...	...	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	7	...	...
Lachrymal Apparatus	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	2	4	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	7	...	...
Eyelids	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	1	...	...	...	2	...	...	1	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	6	4	...	...
Cranial Nerves	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Retina and Optic Nerve	...	...	...	...	1	...	...	...	2	...	...	...	9	2	...	...	...	...	...	...	...	2	...	...	1	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	15	5	...	...
Choroid	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	4	...	...
Diseases of Orbit	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...
Defective Stump after Extirpation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Sarcoma of Eyeball	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
DISEASES OF THE EAR.																																												
Otorrhœa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
DISEASES OF THE NOSE.																																												
Congenital Malformation	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Epistaxis	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	4	3	...	...
Polypus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE CIRCULATORY SYSTEM.																																												
Temporal Artery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Thoracic Aorta	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Femoral Artery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...
Popliteal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Traumatic Aneurism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Thrombosis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
Secondary Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Lymphatic Glands	...	...	...	...	2	...	...	...	...	...	...	...	6	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	1	...	...
Varicose Veins	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1	...	...	1	1	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	5	...	...
Blood Cysts	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
DISEASES OF THE LIPS.																																												
Single Harelip	7	4	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	6	1	...
Double Harelip	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Fissure of Lip	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
DISEASES OF MOUTH AND CHEEK.																																												
Ranula	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...

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TABLE II (*continued*).

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF GUMS AND JAWS.																																												
Phosphorus Necrosis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Epulis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
DISEASES OF TONGUE.																																											
Hypertrophy	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
DISEASES OF PALATE AND FAUCES.																																											
Œdema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Enlarged Tonsils	...	...	...	...	...	1	...	...	1	...	...	...	...	5	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8	...	...
Abscess	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Cleft Palate	3	1	...	...	2	3	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	5	...	...
Naso-pharyngeal Polypus	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
DISEASES OF SALIVARY GLANDS.																																											
Parotid Enchondroma	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF ŒSOPHAGUS AND LARYNX.																																												
Laryngitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
DISEASES OF THE INTESTINES.																																												
Hernia—																																												
Umbilical	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	2	2	...	...	...	1	...	...	...	1	2	...	...	...	...	...	...	3	8	...	1
Inguinal	...	...	...	...	1	...	...	...	...	...	...	...	4	...	1	...	3	...	...	...	5	...	...	3	...	...	1	5	1	...	...	2	...	...	...	2	...	...	...	...	25	1	1	1
Femoral	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	5	2	...	2	...	1	2	2	1	3	...	1	...	2	1	...	1	...	4	11	2	8
Abdominal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Ventral	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hydrocele of Sac	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Peritonitis	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
DISEASES OF RECTUM AND ANUS.																																												
Fistula in Ano	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	4	2	...	...	2	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	3	...	...
Hæmorrhoids	...	...	...	...	...	...	...	...	...	...	...	...	1	4	...	...	2	1	...	...	...	2	...	2	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	8	7	...	...
Fissure of Anus	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Fibrous Stricture	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	9	...	...
Imperforate Anus	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Recto-vesical Fistula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Prolapsus Ani	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Ischio-rectal Abscess	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF URINARY SYSTEM.																																												
Malformation—																																											
Ectopia	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Cystitis—																																												
Chronic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Renal Calculus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1
Calculus Vesicæ—																																												
a. Uric Acid	3	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	8	1	2	...
b. Phosphatic	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Urethral Calculus	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
Symptoms of Calculus	1	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	6	...	...	...
Foreign Body in Bladder	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...
Diseases of Prostate Gland.																																												
Enlarged Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	...	2	...	2	...
Inflammation and Suppuration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Prostatic Calculus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Gonorrhœa and its Complications.																																												
Condylomata	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42	...	...
Gonorrhœa	...	...	...	...	...	...	...	...	...	...	...	...	6	146	...	...	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	150	...	1
Lacunar Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF URINARY SYSTEM (*continued*).																																											
Gonorrhœa and its Complications (*continued*).																																											
Phimosis	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...	...	...
Paraphimosis	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...
Bubo	...	...	...	...	...	...	...	...	...	...	...	...	12	25	...	...	4	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	27	...	...
Verrucæ	...	...	...	...	...	...	...	...	...	...	...	...	2	18	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	19	...	...
Abscess in Labium	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...
Hypertrophy of Labium	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Rheumatism	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Orchitis	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...	...	...
Perinæal Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Diseases of Urethra.																																											
Stricture—																																											
a. Organic	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	6	...	...	...	15	...	1	...	4	...	1	...	2	...	3	...	1	...	...	...	...	...	...	...	30	...	5	...
b. Inflammatory	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
c. Traumatic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
d. Spasmodic	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Urinary Fistula	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	5	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	11	...	...	...
Extravasation of Urine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...
Incontinence of Urine	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Retention of Urine	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Tubercular Disease of Urinary Mucous Membrane	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF URINARY SYSTEM (*continued.*)																																											
Diseases of Penis and Testis.																																											
Malformations—																																											
Hypospadias	1																																								1			
Phimosis	9				5				7				5				1				2				1														30			
Paraphimosis	1																																								1			
Orchitis (Traumatic)																					1								1										2			
Hæmatocele													1												1														2			
Hydrocele													5				3				1				5								1						15			
Varicocele									1				3																										4			
Cyst of the Cord													1																										1			
DISEASES OF FEMALE ORGANS OF GENERATION.																																											
Diseases of the Ovary														1				1		1		2				1				2										7			1
Disease of Round Ligament.																																											
Cyst																		1																						1			
Diseases of the Uterus.																																											
Polypus																						2				1				1				1						5			

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF FEMALE ORGANS OF GENERATION (*continued*).																																											
Diseases of Vagina.																																											
Vaginitis	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Vesico-Vaginal Fistula	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	1
Atresia Vagina	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Diseases of Vulva.																																											
Vascular Tumour of Urethra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	..	...
Noma	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Ruptured Perinæum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
DISEASES OF THE FEMALE BREAST.																																											
Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	3	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	...	...
Non-Malignant Tumours—																																											
Fibro-adenoma	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...
Cystic-adenoma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Adenoma	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	6	...	1
Gangrene of Breast	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE ORGANS OF LOCOMOTION.																																											
Periostitis	1	...	...	...	...	...	...	...	2	1	...	...	1	2	...	...	3	1	...	...	...	4	...	1	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	8	9	1	2
Ostitis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Chronic Abscess	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Diffuse Periostitis—																																											
Acute Necrosis	2	...	...	...	...	1	...	...	1	1	...	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	5	...	...
Caries	2	...	...	...	...	...	...	...	3	1	...	...	6	6	...	...	3	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	7	...	...
Necrosis	...	1	...	...	4	3	...	...	5	1	...	...	10	2	4	...	4	1	...	...	5	...	...	...	3	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	34	8	4	...
Tumours—																																											
a. Exostosis	...	...	...	...	...	...	...	...	1	...	...	...	1	2	...	...	1	2	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	6	...	...
b. Enchondroma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...
c. Sarcoma	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...
Cyst of Bone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Old Amputation	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...
Conical Stump	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Diseases of Joints.																																											
Chronic Synovitis	...	...	...	...	...	2	...	...	...	...	...	...	6	10	...	...	7	2	...	...	3	4	...	...	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	17	21	...	...
Acute do.	...	...	...	...	1	...	...	...	1	...	...	...	4	3	...	...	5	1	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	14	6	...	...
Ulceration of Cartilage	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	...	...
Ankylosis	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Knock-knee	2	...	...	...	1	...	...	...	...	3	...	...	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	5	...	...
Weak Ankles	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE ORGANS OF LOCOMOTION (*cont.*)																																											
Diseases of Joints (*cont.*)																																											
Loose Cartilage	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2	...	...
Weak Knee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Acute Arthritis of Infants.	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...
Disease of Sacro-iliac Synchondrosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Diseases of the Spine.																																											
Caries	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Psoas, Lumbar, and other Abscesses	...	...	...	...	2	1	...	...	3	...	...	...	2	2	...	1	3	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	11	5	2	1
Angular Curvature	6	3	...	...	6	2	...	...	1	2	...	...	3	2	...	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	13	...	...
Lateral Curvature	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Spina Bifida	1	2	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	...	...
Diseases of Muscles, Tendons, &c.																																											
Contraction of Tendons, Fasciæ, or Muscles	...	1	...	...	3	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	5	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE ORGANS OF LOCOMOTION (*cont.*)																																											
Diseases of Muscles Tendons, &c. (*continued*).																																											
Club-Foot—																																											
a. Talipes Equinus	1									3				1																										1	4		
b. Do. Valgus									1				1					1																						2	1		
c. Do. Equino-Varus	7	2			6	4			5	3			1	2																									19	11		
d. Do. Calcaneo Valgus										1																														1		
Wry Neck					1	1			1					1			1																						3	2		
Enlarged Bursa Patellæ														2				1				1																	4		
Enlargement of other Bursæ						1			2				1				1								1														5	1		
Inflammation and Suppuration of Bursa Patellæ									1	2			2	11			2	3			2	1			1	2													8	19		
Bursal Tumour—																																										
a. Of Bursa Patellæ																		1																						1		
Bunion																									1														1			
Ganglion		1												3				1																						5		
Diffuse Palmar Ganglion																													1										1			
DISEASES OF THE CELLULAR TISSUE.																																										
Abscess	2	3		1	8	2			7	5			19	9			12	5		1	7	5		1	6	3			3				1						65	32		3

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TABLE II (*continued*).

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE CELLULAR TISSUE (*continued*).																																												
Connective Tissue Tumours—																																												
a. Fatty	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	2	...	...	2	2	...	...	1	1	...	...	...	...	...	...	1	...	...	...	6	6	...	...
b. Fibro-cellular	...	...	1	...	...	...	...	...	...	...	...	...	3	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	1	...
c. Sarcoma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...
d. Cystic	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Painful subcutaneous tumours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Sebaceous Cysts	...	...	...	...	...	...	...	...	...	1	...	...	2	1	...	...	1	3	...	...	2	2	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	6	9	...	...
Dermoid Cysts	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Hypertrophy	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
DISEASES OF THE CUTANEOUS SYSTEM.																																												
Boil	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Ulcer	...	...	...	...	...	...	...	...	2	...	...	...	8	7	...	...	6	3	...	...	13	5	...	...	7	9	...	1	4	3	...	...	5	1	...	...	...	...	...	...	45	28	...	1
Carbuncle	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	3	1	...	...	1	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	11	3	...	...
Thecal Abscess	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	3	2	...	...
Gangrene	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	1	1	...	...	1	...	...	1	...	...	1	...	...	...	...	4	1	2	1
Mole	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Nævus	2	6	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	8	...	...
In-growing Toe-nail	...	...	...	...	...	...	...	...	2	...	...	...	6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	2	...	...
Keloid Tumour	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE CUTANEOUS SYSTEM (*cont.*)																																											
Cicatrix	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...
Papilloma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Fistulous tracks	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Bed-sores	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Erythema Nodosum	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Pemphigus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Acute Eczema	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Chronic do.	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Impetigo	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Ecthyma	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Purpura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
„ Hæmorrhagica	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
GENERAL INJURIES.																																											
Burns and Scalds	9	9	3	3	4	3	2	3	4	1	1	1	6	4	...	1	3	3	...	...	6	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	22	6	8
Contusions	1	1	...	...	...	...	...	...	3	...	...	...	2	...	...	...	1	...	...	...	3	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	2	...	...

Digitized by Google

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES.																																											
Injuries of the Head.																																											
Contusions	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	1	...	...
Scalp Wounds	...	3	...	...	4	...	...	...	6	1	...	...	7	...	...	...	9	2	...	...	7	1	...	...	3	2	...	...	...	1	...	1	3	1	...	...	1	1	...	...	40	12	...	1
Concussion of Brain	1	...	...	...	6	1	...	...	7	...	...	...	8	3	...	...	4	1	...	...	3	1	...	...	3	...	1	...	2	...	...	...	2	2	...	...	...	...	...	...	36	8	1	...
Fractures of Skull	1	2	1	...	1	1	...	1	2	1	...	...	1	...	2	...	...	...	3	...	1	1	1	...	...	...	2	...	...	1	1	...	...	...	1	1	...	...	1	...	6	6	12	2
Injuries of the Face.																																											
Contusions	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Wounds	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	6	3	...	...
Fractures	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	5	3	...	...	2	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	5	...	...
Injuries of the Ear.																																											
Wounds	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Foreign Body	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Injuries of the Eye	...	1	...	...	3	...	...	...	1	...	...	...	3	...	...	...	6	1	...	...	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	2	...	...
Injuries of the Tongue.																																											
Wounds	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...

Digitized by Google

DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).																																											
Injuries of the Neck.																																											
Cut Throat	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	5	1	...	...
Other Injuries	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...
Injuries of the Chest.																																											
Contusion, with Rupture of Lung	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Contusions	...	...	...	...	3	...	...	...	1	1	...	...	1	1	...	...	1	...	...	...	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	2	...	...
Wounds	...	...	...	...	1	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...
Fractured Ribs	...	...	...	...	...	...	...	...	1	...	...	...	4	1	1	...	4	...	1	...	1	...	1	...	4	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	15	1	5	...
Injuries of the Back.																																											
Contusions	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	...	4	...	...	...	3	...	...	...	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	14	1	...	...
Fracture of Spine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Other Injuries	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	...
Injuries of the Abdomen.																																											
Contusions	...	...	...	...	...	...	...	...	4	...	...	...	2	2	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	2	...	1

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).																																												
Injuries of the Abdomen (continued).																																												
Contusions, with Rupture of Viscera	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Wound, with wound of Viscera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Injuries of the Pelvis.																																												
Contusions	...	...	...	...	...	...	...	...	2	...	...	...	3	1	...	...	2	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	3	...	...
Wounds	...	...	...	...	3	1	...	...	3	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	2	...	...
Fractures	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...
Injuries of the Upper Extremity.																																												
Contusions	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	7	...	...	...
Wound—																																												
Of Arm	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	1	...
Of Forearm	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	...	5	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	2	...	...
Of Hand	...	...	...	...	...	1	...	...	3	...	...	...	4	2	...	...	4	2	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	14	6	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES (*continued*).																																											
Injuries of the Upper Extremity (continued).																																											
Injuries of Vessels	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	...	...
Fracture of Clavicle	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	1	...	...	1	...	...	...	1	...	...	...	...	2	...	...	5	4	...	...
Scapula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Humerus	...	...	...	...	1	...	...	...	3	...	...	...	6	...	...	...	2	...	...	...	2	1	...	...	3	2	...	...	1	...	1	...	2	1	1	...	...	...	1	1	20	4	3	1
Forearm and Hand	...	...	...	...	2	...	...	...	5	1	...	...	4	1	...	...	2	...	...	...	1	1	...	...	1	...	...	...	...	3	...	...	...	2	...	...	1	...	...	...	16	8	...	...
Dislocations	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	1	1	...	...	1	2	...	...	...	1	...	...	1	...	...	...	5	6	...	...
Injuries of Lower Extremities.																																											
Contusions	2	1	...	...	2	2	...	...	4	...	...	...	3	1	...	...	5	1	...	...	3	1	...	...	3	3	...	...	4	2	1	...	...	1	...	...	...	1	...	...	26	13	1	...
Sprained Ankle	...	...	...	...	1	...	...	...	3	...	...	...	3	2	...	...	3	4	...	...	...	...	...	...	2	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	14	7	...	...
„ Knee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Wounds—																																											
Of Thigh	...	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	1	1	1
Over Knee	...	...	...	...	2	...	...	...	...	1	...	...	2	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	3	...	...
Of Leg	...	1	...	...	...	...	1	...	2	...	...	...	2	...	...	...	1	...	...	...	1	1	1	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	8	2	3	...
Of Foot	...	...	...	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...
Of Knee-Joint	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Foreign Body removed	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...

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DISEASES.	Under 5.				5–10.				10–15.				15–25.				25–35.				35–45.				45–55.				55–65.				65–75.				75 and upwards.				TOTAL.			
	Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.		Discharged.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Injuries of Lower Extremities (continued).																																											
Fracture of Femur—																																											
Simple	8	6	...	...	11	2	...	...	12	1	...	...	3	...	...	...	4	...	...	...	4	...	...	...	6	1	...	1	5	2	2	...	4	2	2	...	1	...	...	...	58	14	4	1
Compound	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	4	...
Cervix Femoris	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	3	...	...	1	1	...	...	2	7	...	...	1	2	...	...	8	13	...	...
Patella	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	6	1	...	...	7	5	...	...	5	...	...	...	2	2	...	...	...	...	1	...	...	...	...	...	22	8	1	...
Fracture of both Bones of the Leg—																																											
Simple	1	...	...	...	1	1	...	...	2	1	...	...	11	...	...	...	8	3	...	...	20	1	...	...	9	5	...	...	11	4	...	...	...	2	...	...	1	1	...	...	64	18	...	...
Compound	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	...	2	...	...	...	5	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	10	2	2	...
Fracture of Tibia, Simple	1	...	...	...	6	...	...	...	1	...	...	...	2	...	...	...	2	...	...	...	3	1	...	...	3	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	18	3	...	1
Do. Compound	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Fracture of Fibula, Simple	...	...	...	...	2	1	...	...	2	...	...	...	5	1	...	...	7	...	...	...	8	1	...	...	4	2	...	...	3	...	...	...	...	1	...	...	...	...	...	...	31	6	...	...
Do. Compound	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Fracture of Bones of Foot	...	...	...	...	1	1	...	...	1	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	1	...	...
"Pott's Fracture" of Leg	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	5	...	...	...	6	1	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	3	...	...
Dislocations	1	...	...	...	1	...	...	...	1	...	...	...	1	1	...	...	1	1	...	...	3	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	3	...	...
Rupture of Muscles and Tendon	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Gunshot Wound of Foot	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...

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TABLE III,

Showing the Number of Medical Cases under Treatment during the year 1874 in the Surgical Wards, with the Results.

DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases.										
Acute Rheumatism	...	1	...	1	...	...	...	...	...	...
Synovial do.	4	2	4	1	...	...	...	...	...	1
Muscular do.	...	1	...	1	...	...	...	...	...	...
Chronic Osteo-arthritis	1	...	1	...	...	...	...	...	...	...
Phthisis Pulmonalis	1	...	...	...	...	...	1	...	...	...
Rickets	...	1	...	1	...	...	...	...	...	...
Diseases of Nervous System.										
Sanguineous Apoplexy	2	...	1	...	...	...	1	...	...	...
Hemiplegia	2	...	1	...	...	...	1	...	...	...
Paraplegia	1	...	1	...	...	...	...	...	...	...
Infantile Paralysis	3	4	1	3	2	1	...	...	...	...
Local Paralysis	1	...	1	...	...	...	...	...	...	...
Sciatica	1	...	...	...	1	...	...	...	...	...
Coccydinia	...	2	...	2	...	...	...	...	...	...
Diseases of Circulatory System.										
Cardiac Dropsy	1	...	...	...	...	...	1	...	...	...
Valvular Diseases of Heart	2	...	...	...	...	...	2	...	...	...
Congenital Malformation	...	1	...	...	...	...	...	1	...	...
Phlegmasia Dolens	...	2	...	1	...	...	...	1	...	...
Diseases of Respiratory System.										
Croup	1	...	...	...	...	...	1	...	...	...
Pneumonia	1	...	1	...	...	...	...	...	...	...
Diseases of Digestive System.										
Diarrhœa	1	1	1	1	...	...	...	...	...	...
Colic and Constipation	...	1	...	1	...	...	...	...	...	...
Hydatid Disease of Liver	1	2	1	2	...	...	...	...	...	...
Peritonitis	...	1	...	1	...	...	...	...	...	...
Ascites	...	1	...	1	...	...	...	...	...	...

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DISEASES.	Total number of cases under treatment.		Discharged cured and relieved.		Unrelieved.		Died.		Remaining at the end of the year 1874.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF URINARY SYSTEM.										
Floating Kidney	...	1	...	1	...	...	...	...	...	...
Pyelitis	1	...	...	...	...	...	1	...	...	...
Hæmaturia	3	...	3	...	...	...	...	...	...	...
DISEASES OF FEMALE ORGANS OF GENERATION.										
Chronic Metritis	...	1	...	1	...	...	...	...	...	...
Fibroid Tumour of Uterus	...	1	...	1	...	...	...	...	...	...
POISONS.										
Alcohol—Delirium Tremens	2	1	2	1	...	...	...	...	...	...
Ditto—Inebriety	...	...	1	...	...	...	...	...	...	...

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SURGICAL OPERATIONS PERFORMED.

OPERATIONS.	AGE AND SEX.																									
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Operations on the Eye.																										
Strabismus	1	2	1	3	1	3	...	...	...	...	...	...	...	...	...	...	...	...	3	8	2	8	1	...	...	...
Iridectomy	...	2	2	2	5	4	2	2	4	1	1	2	2	1	3	...	...	...	19	14	17	13	2	1	...	...
Cataract—																										
Linear Extraction	...	...	...	1	1	...	2	...	1	...	4	1	...	3	6	2	2	1	16	8	14	8	2	...	...	...
Needle Operation	...	...	...	...	2	1	...	2	1	...	...	...	...	1	...	...	...	1	3	5	3	4	...	1	...	...
Suction ,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abscission	...	...	1	...	...	1	...	1	...	...	...	1	1	...	...	...	...	...	2	3	2	3	...	...	...	...
Extirpation of Globe	...	...	1	...	2	1	2	1	2	...	3	1	1	...	...	...	...	1	11	4	10	4	...	...	1	...
Conical Cornea	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Entropion	...	...	...	...	...	...	...	1	...	...	...	1	1	1	1	...	...	...	2	3	2	2	...	1	...	...
Removal of Tumours	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...
Anterior Chamber Tapped	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Canaliculi Slit Up	...	...	1	...	1	2	1	1	1	3	1	...	...	...	...	...	...	...	5	6	5	6	...	...	...	...
Ligature of Arteries	...	...	...	...	...	...	2	...	3	...	2	...	...	...	...	...	...	...	7	...	6	...	...	...	1	...
Excision of Joints and Bones.																										
Knee	1	...	...	...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	5	1	3	...	2	...	...	1

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Excision of Joints and Bones (*continued*).																										
Elbow	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Removal of Sequestra:																										
From Head and Face	...	...	1	...	2	...	3	...	...	...	...	...	...	...	...	...	...	...	6	...	6	...	...	...	...	...
„ Upper Extremity	...	...	1	...	2	...	2	...	...	...	1	...	...	...	...	...	...	...	6	...	6	...	...	...	...	...
„ Lower Extremity	2	1	2	2	7	1	2	...	4	...	2	...	2	...	...	...	...	...	21	4	21	4	...	...	...	...
Amputations.																										
Primary:																										
Shoulder-joint	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Arm	...	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Parts of Hand	...	...	...	1	8	...	2	...	2	...	...	...	...	1	...	...	...	...	12	2	12	2	...	...	...	...
„ Foot	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Syme's	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Secondary:																										
Forearm	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Amputations (*continued*).																										
Secondary (continued):																										
Leg	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Thigh	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
For Disease:																										
Forearm	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	1	2	2	2	2	...	...	...	...
Hip-joint	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2
Thigh	1	...	1	...	3	4	3	...	5	...	...	...	1	1	...	...	...	...	14	5	13	4	...	...	1	1
Leg	...	...	...	...	1	1	...	...	1	...	2	...	1	...	1	...	...	...	6	1	6	1	...	...	...	...
Syme	1	...	...	...	4	...	...	...	...	...	...	1	...	...	...	...	...	...	5	1	4	1	...	...	1	...
Roux	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	2	1	...	...	...	...
Parts of Hand	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...	4	...	4	...	...	...	...	...
Parts of Foot	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Removal of Tumours.																										
Cancer:																										
Clavicle	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Breast	...	...	...	...	...	...	...	...	...	3	...	5	...	4	...	...	...	...	...	12	...	11	...	...	...	1
Tongue	...	...	...	...	...	...	...	...	2	...	2	...	3	1	5	...	...	...	12	1	12	1	...	...	...	...
Lip	...	...	...	...	...	...	...	...	...	...	2	...	4	...	1	...	1	...	8	...	8	...	...	...	...	...
Penis and Scrotum	...	...	...	...	...	...	...	...	1	...	...	...	3	...	3	...	...	...	7	...	7	...	...	...	...	...

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Removal of Tumours (*continued*).																										
Cancer (continued):																										
Mouth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...
Skin	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	...	1	2	1	2	...	...	...	...
Adenoid Tumours:																										
Breast	...	...	...	...	...	1	...	6	...	1	...	1	...	...	...	...	...	1	...	10	...	9	...	...	...	1
Connective Tissue Tumours:																										
Polypi	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	2	...	...	...	5	...	5	...	...	...	...
Dermoid Cysts	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...
Fatty	...	...	...	...	...	...	...	1	1	1	1	2	3	2	...	...	...	...	5	6	5	6	...	...	...	...
Fibro-cellular	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...
Sarcomata	...	...	...	...	1	...	4	...	2	...	...	...	...	...	...	...	...	...	7	...	7	...	...	...	...	...
Exostosis	...	...	1	...	1	1	...	2	...	...	...	1	...	...	...	...	...	...	2	4	2	4	...	...	...	...
Enchondroma	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Epulis	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	2	...	...	...	...
Bursal	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
Sebaceous Tumours	1	...	...	...	1	1	2	2	...	3	2	3	...	...	1	...	...	...	7	9	7	9	...	...	...	...
Papillomata	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Vascular Tumour of Urethra	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...	2	...	...	...	...
Nævus	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Removal of Tumours (*continued*).																										
Tonsils removed	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Testicle removed	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Upper Jaw removed	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	1	...	...	...	1	...
Fibrous Tumour	...	...	...	...	1	1	2	1	...	...	...	...	...	...	...	...	...	...	3	2	3	2	...	...	...	...
Removal of Calculi and Foreign Bodies.																										
By Lithotomy—Median	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
„ —Lateral	4	...	2	...	1	...	1	...	...	...	...	...	1	...	2	...	...	...	11	...	8	...	...	...	3	...
„ Dilatation of Urethra	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
From Prostate	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
„ Urethra	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...
„ Kidney	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Ovariotomy	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
For Hernia:																										
Umbilical:	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	...	...	1	3	1	2	...	...	...	1
Inguinal:																										
Herniotomy—																										
Opening of Sac	...	...	...	...	...	...	2	...	...	...	1	...	...	1	...	...	...	...	3	1	2	...	...	...	1	1
Without opening	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Removal of Calculi and Foreign Bodies (*continued*).																										
Femoral:																										
Herniotomy—																										
Opening of Sac	...	...	...	...	...	...	...	...	...	1	...	2	1	2	...	4	2	2	3	11	1	3	...	...	2	8
Without opening	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	1	...	...	1	4	1	4	...	...	...	...
Fistula in Ano	...	...	...	...	...	...	2	...	3	...	2	...	...	...	...	...	...	...	7	...	7	...	...	...	...	...
Hæmorrhoids—																										
By Excision or Ligature	...	...	...	...	...	...	3	3	...	...	...	...	1	1	1	...	...	...	5	4	6	4	...	...	...	...
Fissure of the Anus	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	3	...	3	...	...	...	...
Tenotomy	5	3	6	5	4	1	...	6	...	...	...	...	...	...	...	...	...	...	15	15	14	12	1	...	...	1
Reparative Operations.																										
Harelip	8	4	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	8	6	7	6	...	...	1	...
Cleft Palate	1	1	2	2	2	1	1	...	...	...	...	...	...	...	...	...	...	...	6	4	4	3	2	1	...	...
Phimosis	9	...	5	...	12	...	2	...	1	...	...	...	1	...	...	...	...	...	30	...	30	...	...	...	...	...
Varicose Veins Tied	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	2	1	2	1	...	...	...	...
Ingrowing Toe-Nail	...	...	...	...	4	2	3	...	...	...	...	...	...	...	...	...	...	...	7	2	7	2	...	...	...	...
Imperforate Anus	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Reamputation of Thigh for Defective Stump	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...
Radical Cure of Hydrocele	...	...	...	...	2	...	3	...	...	...	2	...	1	...	...	...	...	...	8	...	8	...	...	...	...	...

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OPERATIONS.	AGE AND SEX.																							
	Under 5 Years.		5—		10—		20—		30—		40—		50—		60—		70—		Total.		Cured and Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Reparative Operations (*continued*).																										
Paracentesis Vesicæ (supra-pubic)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...	...	...	1	...	1	...
Perineal Section	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	1	...
Plastic Operation—Urethra	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Tracheotomy	...	...	...	1	...	...	...	...	...	...	3	...	...	...	...	...	...	...	3	1	3	1	...	...	...	...
Removal of Loose Cartilages	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	2	1	2	1	...	...	...	...
Trephining of Bone	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	3	...	2	...	...	...	1	...
Nerve Stretching	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Plastic Operation after Burn	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
Ruptured Perineum	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...

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APPENDIX

TO

TABLE OF OPERATIONS.

Ligature of Arteries:

A case of femoral aneurism, high up, was treated by ligature of the external iliac.

In two cases of femoral aneurism the femoral artery was tied. In one case, that of a man æt. 40, secondary hæmorrhage occurred on 23rd day. The artery was religatured in the wound in two places and the artery divided between them.

In a case of popliteal aneurism the femoral artery was tied.

In two cases the axillary artery was tied. In one case, previously to admission, a small traumatic aneurism lying between the thumb and index finger had been laid freely open; this had been followed by secondary hæmorrhage, and with the object of arresting the bleeding the ulna and radial arteries had been tied immediately above the wrist, but the hæmorrhage recurring from the aneurism and from the point of ligature of the ulna artery, pressure on the brachial artery having failed to control the bleeding, the axillary artery was tied in the third part of its course; there was no further bleeding.—See Clinical Society's 'Transactions,' vol. vii, p. 127.

In the second case, after removal of a large malignant tumour from the axilla, secondary hæmorrhage occurred on 5th day; a small oval opening was found in the third part of the course of the axillary artery, and the vessel was secured above and below.

In a case of punctured wound of the right calf, with wound of the posterior tibial artery, the artery was with great difficulty secured at the point of injury, the necessary wound being eight inches long. This patient died of exhaustion from loss of blood on 4th day. The wound had been caused by a piece of iron from a mandrel, and the iron was removed from the wound at the time of the operation. (See Case xxviii, p. 147, 'St. B. H. R.,' vol. x.)

The ligature of smaller vessels, as radial and ulnar, is not included in this Table.

Primary Amputations:

In the case of primary amputation at shoulder-joint for severe crush of arm the patient, æt. 74, died within a few hours, from the shock of the injury and operation.

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The amputations of arm were all for machinery accidents.

Syme's operation was performed for crush of foot, caused by passage of locomotive engine, and though the skin appeared to be uninjured it nevertheless sloughed, and secondary amputation in lower third of leg became necessary.

SECONDARY AMPUTATIONS:

Secondary amputation of the thigh was performed for acute inflammation and suppuration of the knee-joint, following punctured wound from a pitchfork, in a man æt. 17.

The forearm was also amputated for a deformed, useless hand, with much loss of skin, following crush of hand with severe laceration of soft parts.

AMPUTATIONS FOR DISEASE:

Hip-joint.—In two females, æt. 21 and 36, amputation was performed at hip-joint; in one case for sarcoma, in the other for enchondroma of the femur.

In the patient æt. 21 the thigh had been previously amputated in middle third for the same disease, which had recurred.

In the second patient, æt. 36, pyemia followed the operation, and patient died on the 14th day.

Thigh.—In eight male and two female patients for disease of the knee-joint, aged respectively, males, 5, 16, 20, 27, 33, 38, 39, 55; females, 17 and 20.

Two boys, æt. 4 and 13, in whom resection had been performed, and in whom there was total failure of union, suffered amputation of the thigh. Three males, æt. 18, 38, and 39, and one female, æt. 18, had amputation performed on account of malignant disease. One male, æt. 22, lost his leg for necrosis of the femur, and one female, æt. 18, for caries of the tibia.

A woman, æt. 53, in whom a simple fracture of the femur had failed to unite, and on whom the operation of resection of the fractured ends had been performed, died of erysipelas and exhaustion following amputation of the thigh, which had been practised on account of the irritation and suppuration following the former operation.

Leg.—Amputation of the leg in upper third was performed in five males, æt. 39, 44, 44, 54, and 66, for chronic ulcer of the leg.

A male, æt. 19, lost his leg for disease of the ankle-joint, and a girl, æt. 12, in whom resection of the os calcis and subsequent removal of the cuboid bone had been followed by extension of the disease to the other bones of the tarsus, likewise suffered amputation of the leg in the lower third.

Ankle-joint.—Syme's amputation or Roux's modification in every case. In all cases for disease of joint or bone. A patient, æt. 4½, died of acute tubercular meningitis, totally unconnected with the operation, the wounds being almost healed. This is the fatal case in the table.

Numerous primary and secondary amputations of fingers and toes, and of larger portions of hand and foot, were performed. None were followed by fatal consequences.

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Forearm.—In two males, æt. 22 and 41, for disease of the wrist-joint. In two females, æt. 43 and 76, one for recurrent enchondroma (see p. 149, vol. x, 'St. B. H. R.'), and in the second for epithelioma of the hand.

RESECTION:

A girl, æt. 11, died of pyæmia following this operation. The very greatest difficulty was experienced in getting the bones into good position at the time of operation, and the semi-tendenosis had to be divided. The child was remarkably restless after the operation. After death the periosteum was found stripped back from the lower end of femur; the cancelli were infiltrated with pus. A small portion of lower end of femur, whence periosteum had been denuded, had already begun to separate. The patient died 7 days after the operation.

REMOVAL OF TUMOURS:

A woman, æt. 70, had a cystic adeno-fibroma of breast, weighing eight pounds, removed; she died 26 days after operation, from exhaustion. (See 'St. B. H. R.,' p. 150, vol. x.)

A man, æt. 28, had a spindle-celled sarcoma removed from the breast.

LITHONEPHROTOMY:

A woman, æt. 43, died after removal of a stone from the kidney.

LITHOTOMY:

The lateral operation was performed in all cases except one.

In a man, æt. 54, right lateral lithotomy was performed for the third time within 1½ years. He made a good recovery.

A man, æt. 67, died 7 days after the operation, from shock and repeated attacks of hæmorrhage,

A man, æt. 65, died from shock within 24 hours after the operation.

A man engaged in the telegraph works was in the habit of passing, for an old-standing stricture, a catheter made from the gutta-percha telegraph-wire coating; the end of this broke off and remained in the bladder, and rapidly became coated with phosphates. A lithotrite having failed to divide it, lateral lithotomy was performed, but patient died in 10 days from septicæmia.

OVARIOTOMY:

A patient, æt. 22, was successfully operated upon.

HERNIA:

Death, in all cases except one, was due to peritonitis and other causes connected with strangulation of the intestine.

In a man, æt. 55, sac opened; death occurred from septicæmia.

In a woman in whom the operation for the relief of strangulated inguinal hernia

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had been performed and the sac opened, the hernia recurred, and was followed by suppuration in the sac and peritonitis.

REMOVAL OF UPPER JAW :

A patient, æt. 48, from whom the upper jaw had been removed for medullary carcinoma, died 13 days after the operation from extension of erysipelas, which had attacked the head and face, to the fauces.

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SUB-TABLE, SHOWING THE NUMBER OF CASES OF ERYSIPELAS, PYÆMIA, &c.

DISEASES.	Under 5.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		75–85.		Total.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Erysipelas—																								
Admissions	...	...	1	...	...	...	3	8	5	1	7	4	3	5	4	1	...	...	...	...	23	19	5	2
Occurring in Hospital	...	...	1	...	...	1	5	3	4	...	2	1	4	...	1	...	1	...	...	...	18	5	2	...
„ after Operations	...	1	1	...	...	1	2	...	1	2	2	4	2	2	1	1	...	...	1	...	10	11	1	3
Phlegmonous Inflammation—																								
Admissions	...	...	...	...	...	...	11	1	4	7	11	8	12	5	3	...	2	1	...	...	43	22	3	3
Occurring in Hospital	...	...	...	...	...	1	2	...	4	1	1	1	4	...	...	1	...	1	...	...	11	5	2	1
„ after Operations	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Diffuse Cellulitis—																								
Admissions	...	1	...	1	2	2	1	1	5	2	3	2	1	1	...	...	1	1	...	...	13	11	...	1
Occurring in Hospital	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
„ after Operations	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1
Pyæmia and Septicæmia—																								
Admissions	...	1	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	3	1	2	1
Occurring in Hospital	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	3	...	2	...
„ after Operations	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	1	2	1
Farcy—																								
Admission	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Phagedæna—																								
Admissions	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	3	...	1	...
Occurring in Hospital																								

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TABLE OF AMPUTATIONS WITH THE PERCENTAGE OF DEATHS DURING THE TEN YEARS

from 1865 *to* 1874, *inclusive.*

OPERATIONS.	CASES UNDER TREATMENT.										PERCENTAGE OF DEATHS.										Total Number of		Average Percentage of Deaths.
	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	Cases.	Deaths.	
PRIMARY.																							
Hip-Joint	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thigh	1	...	...	...	1	...	2	3	2	...	.....	.....	.....	.....	100·	.....	50·	33·33	.....	.....	9	3	33·33
Knee-Joint	...	1	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Leg	4	4	3	3	1	3	1	...	...	...	75·	25·	33·33	100·	.....	33·33	.....	.....	.....	.....	19	9	47·36
Ankle-Joint	...	...	...	...	..	...	...	...	...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Shoulder-Joint	...	...	...	...	...	...	...	...	...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	100·	2	1	100·
Arm	1	2	1	2	1	2	1	1	3	3	.....	.....	.....	.....	.....	50·	.....	.....	.....	.....	17	1	5·88
Forearm	4	2	1	7	4	1	3	5	...	...	.....	.....	.....	14·28	.....	.....	.....	.....	.....	.....	27	1	3·70
SECONDARY.																							
Hip-Joint	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thigh	6	4	2	1	1	2	1	1	...	1	50·	50·	50·	100·	.....	.....	.....	.....	.....	.....	19	7	36·84
Knee-Joint	...	1	...	1	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Leg	...	2	1	5	1	...	3	...	1	1	.....	50·	.....	60·	.....	.....	66·66	.....	.....	.....	14	5	35·71
Ankle-Joint	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shoulder-Joint	...	...	...	...	...	...	...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arm	1	1	...	...	...	2	...	2	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	.....
Forearm	1	...	1	...	1	1	...	...	...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....

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OPERATIONS.	CASES UNDER TREATMENT.										PERCENTAGE OF DEATHS.										Total Number of		Average Percentage of Deaths.
	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	Cases.	Deaths.	
For Disease.																							
Hip-Joint	...	...	...	...	...	...	...	1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	100·	4	2	50·00
Thigh	15	5	9	13	10	9	18	15	12	19	46·66	20·	44·44	53·84	20·	11·11	22·22	13·33	.....	10·52	125	30	24·00
Knee-Joint	...	...	2	...	...	...	...	...	2	...	.....	.....	50·	.....	.....	.....	.....	.....	.....	.....	4	1	25·00
Leg	14	3	2	10	8	5	4	5	7	7	42·88	66·66	50·	30·	25·	40·	.....	.....	14·28	.....	65	17	26·15
Ankle-Joint	...	1	4	6	4	...	2	8	8	9	.....	.....	25·	.....	25·	.....	.....	12·5	.....	11·11	42	4	9·52
Shoulder-Joint	1	...	...	...	1	2	1	...	...	...	.....	.....	.....	.....	.....	.....	100·	.....	.....	.....	5	1	20·00
Arm	5	2	3	3	1	1	...	1	...	...	.....	.....	.....	.....	100·	100·	.....	100·	.....	.....	16	3	18·75
Forearm	3	1	1	2	...	1	3	2	1	4	.....	.....	.....	.....	.....	100·	.....	.....	.....	.....	18	1	5·55

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VOLUME XI.

INDEX.

ABERNETHIAN SOCIETY, Proceedings of the, 271.
Abscess of liver, 85.
„ „ caused by hydatid cyst, 90.
„ „ rarity of, on Gold Coast, 211.
Air, in cavity of pleura, 255.
Albuminuria, pathology, and treatment of, 289.
Aneurysm, femoral, cured by digital pressure, 231.
„ of mitral valve, 78, 80.
Angina, various forms of, 278.
„ Faucium, tuberculous, 41.
„ „ syphilitico-scrofulous, 43.
„ pectoris, from atheroma of the aorta, 272.
Appendix vermiformis, ulceration of, from pin, 85.
Artery, femoral, aneurysm of, 231.
„ posterior tibial, hæmorrhage from, 93.
Atheroma, as cause of angina pectoris, 272.
„ specimens illustrating, 271.
Aural cases, on the examination of, 291.

BAKER, Mr Morrant, a case of femoral aneurysm cured by digital pressure, 231.
Beef-tea, does it cause diarrhœa? 61.
Belladonna, therapeutics of, 273.
Bladder, stone in, of female children, 127.
Blisters, action of, in internal inflammations, 178.
„ in rheumatism, 167.
Blood, transfusion of, in case of leucæmia, 68.
Brandy, in rheumatic fever, 59.
Bronchiectasis, a cause of hæmoptysis, 243.
Bruit de diable, in males, 49.

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Brunton, Dr Lauder, on irritants and counter-irritants, and the use of blisters in rheumatism, 167.
„ „ on the pathology and treatment of albuminuria, 289.
Butlin, Mr, three cases of air in the cavity of the pleura, as the result of injury, 255.

CALCULUS VESICAL, in female children, 127.
Camphor-chloral, in neuralgia, 273.
Cancer, of œsophagus, 263; of pancreas and liver, 82; of thyroid body, 263; osteoid, 268.
Cataract, traumatic, 183, *et seq.*
Chorea, Mr Wharry on, 289.
Clinical contributions to practical medicine, 49.
Collodion, use of, in herpes, 57.
Coma, death by, in diabetes mellitus without suppression of urine, 261-2.
Congestion, its relation to inflammation, 167.
Cornea, lacerated wound of, 201.
Counter-irritants, Dr Brunton, on, 167.
Cripps, Mr, on the treatment of hæmorrhage from the posterior tibial artery in the upper two-thirds of its course, 93.
Cynanche, see Angina.

DELIRIUM, frequency of, in apex pneumonia, 247.
Diabetes mellitus, cases of, 261-2.
Diaphragm, rupture of, allowing stomach to escape into left pleural cavity, 258.
Diarrhœa, caused by beef-tea, 61.
Dislocation, congenital, of hip-joint, 113.
Diverticula of intestine, their nature, 275.
Drainage tube, in empyema, 236.
Duckworth, Dr Dyce, clinical contributions to practical medicine, 49.
Dysentery on Gold Coast, 211; its treatment, 213.

EMPHYSEMA, pulmonary, hæmoptysis in, 57.
Empyema, drainage tube in, 236.
Enchondroma, primary, of lung, 77.
Erythema nodosum, high temperature in, 249.
Eyes, cases of injury to, 180.

FEMORAL artery, see Artery.
Femur, congenital dislocation of, 113.
Forceps, application of, in labour, 276.

GANGRENE of lung, 75.
Gee, Dr, on laryngismus, 47; on tuberculous angina faucium, 41.

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Glands, lymphatic, condition of, in leucæmia hæmorrhagica, 67; in pseudo-leucæmia, 71; in lymphoma of the peritonæum, 73.
Godson, Dr, on induction of premature labour, 29.
Gold Coast, notes from the, 211.
Greenhalgh, Dr, on the causes, diagnosis, pathology, and treatment of missed labour, 1.

HÆMOPTYSIS, case of, from bronchiectasis, 240; in pulmonary emphysema, 57; treated by ipecacuanha, 245.
Hæmorrhage from posterior tibial artery, 93; rotinal in purpura, 64.
Hæmorrhagic leucæmia, 67.
Hall, Dr F. de Havilland, three cases of diseases of the lungs, 235.
Harris, Vincent D., medical cases, 261.
Hastings, George, case of idiopathic tetanus, 251.
Heart, malformation of, 225.
Hensley, Dr Philip J., case of erythema nodosum, 249.
Hernia, diaphragmatic, of stomach, 258.
Herpes, brachialis, 54; femoralis, 54; right femoro-crural, 56; of left shoulder and ankle, 56; treatment of, 57.
Herpes Zoster, of left side, 55 *et seq.*; of right side, 54 *et seq.*; pain in, 52.
Hip-joint, cases of congenital dislocation of, 113.
Hydatid cyst of liver, causing abscess, 90.

IMPULSE, uncontrollable, Dr Claye Shaw on, 107.
Induction of premature labour, 29.
Inflammation, its relation to congestion, 167.
Intestine, large, peculiar appearance of, in leucæmia, 69.
„ small, diverticula of, 275.
Ipecacuanha, in acute tropical dysentery, 213; in hæmoptysis, 245.
„ therapeutics of, 272.
Ireland, history of medicine in, 145.
Irritants and counter-irritants, Dr Brunton on, 167.

JAUNDICE, from hydatid cyst in bile-ducts, 90.
„ from cancer of pancreas and liver, 82.
Jones, Thomas, notes from the Gold Coast, 211

KIDNEY, morbid appearances of, in leucæmia, 69; in hæmorrhagic leucæmia, 68; in pseudo-leucæmia, 71.

LABOUR, missed, its causes, diagnosis, pathology and treatment, Dr Greenhalgh on, 1; premature, induction of, Dr Godson on, 29.
Latham, Dr Peter Mere, obituary notice of, by Sir Thomas Watson, Bart., xxv.
Laryngismus, Dr Gee on, 47; etiology of, 47.
Legg, Dr Wickham, report from the post-mortem room, 63.
Leucæmia, case of, 68; transfusion of blood in, 68.

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Leucæmia hæmorrhagic, case of, 65.
Lithotomy, supra-pubic, 136; vaginal, 132.
Lithotrity, 135.
Liver, abscess of, 85; rare on Gold Coast, 211.
„ cancer of, 82.
„ hydatid cysts of, 90.
„ morbid appearances of, in leucæmia, 69; in leucæmia hæmorrhagica, 67; in pseudo-leucæmia, 71 *et seq.*
„ cells, microscopical appearances of, in abscess, 88.
„ pigment, 72.
Lung, gangrene of, 75; primary enchondroma of, 77.
Lungs, three cases of disease of, 235.
Lycanche, see Angina.
Lymphatic glands, see Glands.
Lymphoma of peritonæum, 73.

MALE, anæmic murmur in, 49.
Malformation of heart, 225.
Marsh, Mr Howard, cases of congenital dislocation of the hip-joint, 113.
Medicine, history of, in Ireland, 145.
„ practical, clinical contributions to, 49.
Missed labour, see Labour.
Mitral valve, aneurysm of, two cases, 78-80.
Moore, Dr Norman, on the history of medicine in Ireland, 145; two cases of malformation of the heart, 225.
Murmur, anæmic, in males, 49.

NEURALGIA, camphor-chloral in, 273.

ŒSOPHAGUS, cancer of, 263.
Ophthalmia, sympathetic, cases of, 182 *et seq.*
Ophthalmoscope, in medicine, 277.
Osteo-arthritis, case of, 268.
Otitis interna, with thrombosis of cerebral sinuses and gangrene of lung, 75.

PAIN, in herpes zoster, 52.
Palate, soft, tubercle of, 44.
Pancreas, cancer of, 82.
Paracentesis, see Thoracentesis.
Pericarditis, in connection with abscess of liver, 91.
Perinæum, ruptured, treatment of, 215.
Peritonæum, lymphoma of, 72.
Phthisis, common among West Indian soldiers on the Gold Coast, 213; night-sweats in, treated by oxide of zinc, 60.
Pigment-liver, 72; microscopic characters of, 74.
Pleura, air in cavity of, as result of injury, 255.

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Pleurisy, difficulties in diagnosis, 274; double in pseudo-leucæmia, 70; thoracentesis in, 235.
Pneumonia of apex, late appearance of physical signs, and frequency of delirium in, 247.
Pneumonia, case of simulating tubercular meningitis, 245.
Pneumothorax, three cases of traumatic, 255.
Post-mortem room, report from, 63.
Power, Mr, selected cases of injury of the eyes, 180.
Premature labour, see Labour.
Pressure, digital, in treatment of aneurysm, how applied, 232.
Pseudo-leucæmia, case of, 70.
Purpura, case of, 63.

QUINSY, paper on, by Dr Norman Moore, 278.
„ see Angina.

REPORT FROM THE POST-MORTEM ROOM, 63.
Retina, hæmorrhage into, in purpura, 64.
Rheumatism, blisters in, 167; brandy in, 59.
„ deforming, 75.

SCLEROTIC, wound of, 195.
Shaw, Dr Claye, on uncontrollable impulse, 107.
Sinus, longitudinal, thrombos in, 45.
Sinuses cerebral, thrombosis of, 75.
Smith, Mr Thomas, report on treatment of ruptured perinæum, 215.
Spleen, in leucæmia, 69; in leucæmia hæmorrhagica, 67; in pseudo-leucæmia, 71.
„ enlargement of, in diabetes mellitus, 261; in secondary syphilis, 265.
Statistical tables of patients under treatment in the hospital during 1874, 299.
Stomach, hernia of, into left pleural cavity, 258.
Stone in bladder in female children, Mr Butlin on, 127.
Sweating, excessive, treatment of by linimentum belladonnæ, 273; in phthisis by oxide of zinc, 60.
Syphilis, secondary, with intermittent pyrexia, 265.
Syphilitic, angina, 43.
„ disease of tongue, 283.

TAPE-WORMS, history of those found in man, 286.
Temperature, high, in erythema nodosum, 249; in secondary syphilis, 265.
Tetanus, suggestions for treatment of by nerve-stretching, 287.
„ idiopathic, case of, 251.
Thoracentesis in case of pleurisy, 235; when and how to be performed, 238.
Thrombosis of cerebral sinuses, 75; of longitudinal sinus, 45.

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Thymus, persistent, in case of purpura, 65.
Thyroid body, malignant tumour of, 263.
Tongue, Mr Baker on some of the diseases of, 283.
Tonsils, condition of, in pseudo-leucæmia, 71.
Transfusion of blood, in leucæmia, 68.
Tubercle, in soft palate, microscopical characters of, 44.
Tuberculous angina faucium, Dr Gee on, 41.

Ulceration, of vermiform appendix from pin, 85.
Urinary organs, wounds and other injuries of, 285.

Venous murmur, see Murmur.

Walsham, Mr, on treatment of stone in bladder of female children, 127.
Watson, Sir Thomas, obituary notice of Dr Peter Mere Latham, xxv.
Wharry, Mr, on chorea, 289.
Wounds, simple incised, treatment of, 284.

Xanthopsy in jaundice, 90.

Zinc, oxide of, in night-sweats of phthisis, 60.
Zona, see Herpes.

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