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THE MANCHESTER ANTHROPOLOGICAL SOCIETY.

To those who have watched the gradual rise and progress of anthropology in Europe, and especially in England, the opening of a new Society devoted to this special object is an event of much interest. The Society, whose birth we now have to record, is, however, not so much a new Society as a development of the London one which has itself only arrived at the tender age of four years. The Manchester Anthropological Society comes before the world, avowedly and actually as a branch of its parent Society in London. We believe there are many anthropologists in this country who look with no expectation of good results from local branches of the London Society. There are some, too, who would equally object to the formation of entirely independent societies in the different large cities throughout the British dominions; but we think that the great majority of British anthropologists are most anxious that local branches of the London Society should exist, and hope most sincerely that they may prosper. Time alone can determine whether these societies have the necessary conditions of successful existence. We have examined very carefully the plan of union, and think that it is satisfactory to the branch as well as to the parent Society. The terms of union afford to the branch Society considerable encouragement; but, if branch societies are to be successful as working scientific societies, and to help forward the study and development of anthropology in this country, it must be by a few really earnest and zealous men in each Society who are really conscious of the grandeur of the science they espouse. We shall not now dwell on the question whether the necessary conditions exist at Manchester for a flourishing local society devoted to anthropology. We shall be content to study the actions of the anthropologists of Manchester before we venture on any opinion. There is only

one thing, however, which we feel sure, can ruin the Manchester or any other anthropological society, and that is solely want of enthusiasm and zeal in the study of their science. On this point we may say that the present constitution of the Society offers grounds for hope. The President and Vice-President of the Society are both doing their work well, while the Honorary Secretary is working at his duties as all men both must and should do who wish, or which is better still, are determined, to succeed. These officers are supported by a Council, which, although at present rather small, yet will be able to render very valuable advice to their colleagues.

We shall now give an account of the first meeting of the Society, and at a future time we hope to be able to keep our readers informed of the result of the experiment of establishing branches of the Anthropological Society of London. The meeting was held in the large Lecture Hall of the Mechanics' Institution, David Street. There was a large and fashionable audience, including many ladies; the walls were covered with sketches and diagrams. Two tables the length of the room were well covered with specimens illustrative of the early history of man and of savage tribes.

The Chair was taken at half-past seven by George Harris, Esq. F.S.A., President. On the platform were, George Harris, Esq., F.S.A., President; C. W. Devis, Esq., B.A., F.Z.S., Vice-President; F. R. Fairbank, Esq., M.D., Loc. Sec. A.S.L., Secretary; John Plant, Esq., F.G.S., Curator, Peel Park Museum, and a deputation from the London Society, consisting of James Hunt, Esq., President A.S.L.; Rev. D. I. Heath, M.A., F.A.S.L., Treasurer; John Beddoe, Esq., M.D., B.A., F.A.S.L.; J. W. Grattan, Esq., F.A.S.L. A large series of casts of heads, illustrative of descriptive anthropology, which comprised among others, the following:—a large collection of prehistoric remains, including specimens of worked flints from Abbeville, Dordogne, etc., and objects from the Swiss lake dwellings (John Plant, Esq., F.G.S.); a collection of weapons and implements, a present, used by savage tribes, many of them illustrative of the use of those of prehistoric times (John Plant, Esq., F.G.S., R. W. Fairbank, Esq., F.A.S.L.); casts of the Neanderthal and Engis crania, and remains from Belgian bone caves, Anth. Soc. Lond.; casts of the two extreme forms of human crania described at Nottingham by Professor Huxley (Dr. Fairbank); a large and beautiful collection of worked flints and carved bones from Dordogne and of worked flints from Abbeville (Dr. Hunt and the Anthropological Society of London); a new craniometer, by which entire outlines of the skull may be taken in any direction (by John Grattan, Esq., F.A.S.L.). The walls were covered with drawings and diagrams, including a large sketch of Carnac in Brittany by Dr.

Hunt, and a series of sketches illustrative of the works of art, dwellings, and sepultures of prehistoric man (John Plant, Esq., F.G.S., George Harris, Esq., F.S.A., President, etc., etc.) Tea and coffee were provided, and a selection of music performed.

Besides these gentlemen we noticed in the room the Local Secretary of the Anthropological Society of London for Liverpool, and three Fellows of that Society from this city, and it was reported that they had attended to watch and learn something which might become useful ere long at the opening of a contemplated branch in that great and important town.

The President called on the Secretary, who read several communications, including a letter expressive of good wishes from the Secretary of the Paris Anthropological Society, and letters of apology for non-attendance from M. P. B. Du Chaillu and Dr. Barnard Davis.

The Secretary then read a Report on the Proceedings of the Anthropological Department at the late meeting of "The British Association for the Advancement of Science," by F. R. Fairbank, Esq., M.D., F.A.S.L.

"The Anthropological Society of Manchester being entitled to send three delegates to the meeting of the British Association, the following gentlemen attended, and were recognised in that capacity: Rev. R. S. Scott, M.A., Treasurer; David Morris, Esq., Loc. Sec. A.S.L., Member of the Council; F. R. Fairbank, M.D., Loc. Sec. Esq., A.S.L., Secretary.

"The meeting this year was particularly interesting to anthropologists, because, for the first time, their science was recognised as one worthy of a special department of its own. It is well known to you that great efforts have been made for several years past to obtain recognition for the science; and though the concession has not been made in the most graceful manner possible, yet a standpoint has been gained, and it remains to be seen what use will be made of it. At this meeting the department was fully occupied with papers, both interesting and valuable, and earned a popularity which it retained to the end. The new order of things has in great measure been brought about by the influence of Professor Huxley with the Council. Section D, over which he was elected to preside, hitherto styled zoology and botany, on this occasion appeared as biology, with two departments, physiology and anthropology. This arrangement was very distasteful to the physiologists, who would rather have been formed into a distinct section to themselves. So great was the discontent among them, that Professor Huxley considered it necessary to justify publicly the division which he had made. With the malcontents the anthropologists had little sympathy, and left the debate with those more or less personally interested. It was explained that the arrangements made were for this meeting only, and that it by no means followed that they would be the same next year unless they proved satisfactory. The anthropologists would have been glad to have been presided over

at this their first meeting by their recognised and indefatigable leader, Dr. James Hunt; but, for private reasons, Mr. Wallace, the traveller, was elected to that duty.

"The proceedings of the department were commenced by a brief address from the President, setting forth, in a modest sort of way, the objects of the science, and the mode in which its researches should be carried out.

"An immense number of papers followed of more or less interest. Among the most important were the following, 'On a supposed Human Jaw from the Belgian Bone Caves.' C. C. Blake.

"Mr. Blake recently spent some time in exploring the bone caves of Dinant. Among the remains found was the jaw, the subject of this communication; while most other finds of a similar description have been open to questions as to their authenticity, this was entirely free from such objections. It presented characters essentially different from those of any race at present inhabiting Europe, and approaching the Simian type more closely than any jaw previously known.

"Mr. E. B. Tylor read a paper 'On the Phenomena of Higher Civilisation traceable to a Rudimental Origin among Savage Tribes.'

"Dr. Hunt read two papers, the first, 'On the Cranial Measurements and Personal Attributes of Ninety-eight Examples of Norwegians;' the second, 'On the use which some of Mr. Darwin's Disciples have made of the Theory of Natural Selection.' This last was one of the most important of all the communications read in the department. Dr. Hunt pointed out that the application of the theory of natural selection to the human race, as made by some of Mr. Darwin's followers, is illogical, and disproved by facts. That so far from the theory accounting for existing differences and expected coming unity of type, if there be a word of truth in it, however much the inferior types may be driven off the face of the earth, the tendency to deviation from original type constantly acting would unceasingly cause new varieties, though perhaps of an increasingly superior quality. Dr. Hunt was strongly of opinion, that as yet we are not in a position to theorise as to man's origin, and the unity or diversity of the human family.

"A lively discussion followed; many of the speakers, however, evidently misunderstood the writer's argument.

"A very important communication was made by Professor Huxley, entitled, 'Remarks on two extreme forms of Human Crania,' the object of which was to show that synostosis could not be relied upon as the cause of abnormal developments of crania. One of the skulls exhibited, that of a Tartar, was an instance of extreme brachycephaly, with ossification of the sagittal suture. The other, that of a New Zealander (supposed), was an example of extreme dolichocephaly not associated with synostosis. The professor wished to impress on the audience, first, that the period at which synostosis took place cannot be positively ascertained; secondly, that early synostosis may occur without producing alteration in shape; thirdly, that extreme alteration may occur without synostosis. The importance of making a section through crania before expressing an opinion upon them was

also pointed out and illustrated. The angle of the basi-cranial axis may be the same, but the adjacent parts may be so arranged as to produce very different outlines. An interesting and important discussion followed.

"A large number of other papers were read, which may be divided under the heads Archaic, Historical, Descriptive and Comparative Anthropology.

"An important announcement was made in another section that it is proposed to hold an Anthropological Congress in Calcutta, on the occasion of the Exhibition of Arts and Manufactures in 1869, when living examples of the various tribes of India, and the various races of Asia, Polynesia, and Australasia will be collected. Delegates from the various learned societies of Europe will be invited to examine, compare, and photograph this curious assemblage.

"It is perhaps not surprising, though matter for regret, that on this occasion papers, which ought to have been read in the department in which we are most interested, were allowed to wander into others and be read there. It is to be hoped that when our science has become more firmly established in its new home these irregularities will not occur. Professor Huxley very properly on one such occasion when called upon to address the audience, declined doing so, as by that he would be sanctioning what he highly disapproved of.

"The Manchester Society was not prepared with much in the way of papers. One by Mr. Plant was taken and read. I earnestly hope that, should I have the honour to represent you at the next meeting, I shall be able to take several contributions. In conclusion, I beg to congratulate the Anthropological Society of London on the great success which attended its labours at Nottingham, and to express a hope that they may be equally successful in future" (cheers.)

Inaugural Address delivered at the opening of the Manchester Anthropological Society, November 1, 1866, by the President, George Harris, Esq., F.S.A., F.A.S.L., Barrister-at-law of the Middle Temple, Foundation Fellow of the Anthropological Society of London, Fellow of the Genealogical and Historical Society of Great Britain, and author of "Civilisation Considered as a Science", etc., etc.

Gentlemen,—We are met together this evening upon an occasion which is both interesting and important. Our intention in assembling is to inaugurate an Anthropological Society in Manchester, the first institution of this kind which has been established in this country out of London. Considering the objects which we have in view, and the great success which has attended the formation of the parent Society in London—success alike extraordinary and unprecedented, whether we regard the names and the number of those who have joined us, or the efforts which the Society has already made—I regard the event which we are here to celebrate as one of no mean consequence.

It was remarked at the last general meeting of the Anthropological Society of London, in connection with the establishment of the present Society, that as the people of Manchester are so eminently practical in their character, it is most fitting that in this great and important city should be established the first local society for the promotion of

a science which is of all others the most directly practical, and which is moreover adapted for the study of every individual. For myself I can claim but a very small share of credit in this good work, for which we are mainly indebted to the active and judicious exertions of our two able and excellent Local Secretaries, Dr. Fairbank and Mr. Morris (hear). I must, however, take this opportunity of thanking you, which I do most sincerely, for the high honour which you have conferred upon me by electing me as your President. In the studies which form the object of the Society I have long taken a deep interest, and I can assure you that there is no distinction to which I might aspire that I could prize more highly than this, which you have spontaneously, and in so kind a manner, conferred upon me. To fill such an office as it deserves to be filled, and as I could wish, no exertions on my part shall ever be wanting.

That

“The proper study of mankind is Man”*

is a truth which, although some time ago proclaimed by one of our greatest poets, appears not to have been so directly recognised in this country as on the continent, so far as regards making it avowedly a distinct pursuit, and establishing a society exclusively devoted to its promotion. And yet some of our most distinguished writers, whose works have commanded the deepest attention, have been devoted to subjects which, if comprehensively and correctly considered, were in every sense strictly anthropological. Sir Matthew Hale's great work on *The Primitive Origination of Mankind, Considered and Examined according to the Light of Nature*, is peculiarly of this character; as is also Hobbes's *Treatise on Human Nature*, by many considered his ablest work. Much that Bacon wrote is strictly applicable to anthropology; and in Burton's *Anatomy of Melancholy* every student of anthropology will find much valuable matter, and original and deep thought. Locke, too, above all others, we are entitled to claim as an anthropological writer; and his immortal *Essay Concerning Human Understanding*, as also his work on the *Conduct of the Understanding*, are invaluable contributions to the science of man. It has always, moreover, appeared to me that nearly everything of value which has been advanced by subsequent metaphysicians, was anticipated in the pages of Locke. I might mention several other writers as well, whose productions will be found extremely valuable in the prosecution of the science we are established to promote. The names of Des Cartes and Malebranche will at once occur to every one who has been in the habit of following studies of this nature. Much valuable thought and reasoning will be found in the pages of the former. A translation of his *Meditations*, and of parts of his *Principia*, was published at Edinburgh a few years ago. There is an old translation of *The Search after Truth* of the latter. It will amply repay a perusal.

But by far the most remarkable, if not the most valuable, of the works of this class, is the famous treatise by the great German Teutonic philosopher, Jacob Boehme, of which there is an English trans-

* Pope, *Essay on Man*.

lation, and which is at any rate well worthy of the attention of every one who wishes to dive deep into investigations of this kind. Speculative writers of this order, and of the originality of Boehme, occasionally serve as pioneers on whose bold researches solid discoveries are based. Sir Isaac Newton is supposed to have consulted Boehme's work much.

Another class of books which is of great value to anthropologists, consists of voyages and travels, especially those of an early period, when the narrations concerned in them were more original and less artificial and exaggerated than they are apt to be in later times. Cook's voyages I hold to be models of what we want in this respect. Locke and other great writers on the science of man, made frequent acknowledgments of their obligations to works of this class, as do the anthropological writers of Germany. I hope ere long to see many of these books of each kind in the library of our local Society, for which the Anthropological Society of London have kindly promised us a set of their own very valuable and interesting publications. The greatest writers of antiquity, particularly Aristotle, and Plato, and Cicero, treat extensively and profoundly on subjects connected with anthropology.

Advantageous, however, as is the study of anthropology to all persons and classes alike, yet the science has been attacked and the Society itself denounced in terms of the utmost virulence. Indeed, I should say that the opposition to it has only been exceeded by the triumphant success which has crowned the efforts of its supporters. It reminds us of the opposition with which all new discoveries, however beneficial, and with which all new sciences, however valuable, have ever been met, and which they must ever expect to encounter. Vaccination on its first introduction was denounced in every possible way, and one German writer actually endeavoured to prove that by this was meant Anti-christ. Bacon was ridiculed for his profound speculations, so far beyond the age in which he lived. And every person conversant with the subject who was contemporary with the author, appears to have exerted his pen to denounce Locke's *Essay on the Understanding*. So bitter was the hostility against Newton, that he was even led on one occasion to regret to a friend that he had made known to the world some of his immortal discoveries,* the value of which is now admitted and appreciated by all. Anthropology has fared no better. Writers of opposite creeds and opposite politics have united to crush anthropology; and, forgetting their wide differences on every other subject, have made common cause to exterminate what they all alike denounce as a deadly heresy. The *Record* and the *Guardian* have embraced on this occasion, and the *Standard* and the *Star* fraternise whenever they meet the common foe, anthropology. In a paragraph the other day in one of these papers, "infidels, anthropologists, and heretics," were placed together in the same sentence, in the same way as Cobbett placed in juxtaposition the words "mob, House of Commons, den of thieves"

* *Life*. By Sir D. Brewster.

(laughter). From the terms in which some of our assailants have spoken of us, I am led to imagine that from an imperfect acquaintance with the Greek language they have mistaken the term "anthropology," or the science of man, for that of "anthropophagi," or man-eaters (hear). One elderly lady objected in very decided terms to the gambling tendencies of the Society, as she heard that we devoted so much attention to the subject of "races" (laughter.)

Without wishing here to trench on the province of theology—questions connected with which it is desirable, on many accounts, on the present occasion to avoid—I must, however, in justice to this Society and to ourselves, allude to one or two leading points of attack that have been urged against anthropology. The first of these is, that we have advanced theories which are at variance with the facts narrated in the Bible, and that we have endeavoured to explain those facts in a way contrary to the recognised interpretation which has been put upon them. On this point I shall beg leave to quote the words, not of a member of the Anthropological Society, but of a distinguished living prelate, who, from his position as well as from his talents and learning, is entitled to speak with the highest authority upon such a subject, and whose sentiments coincide, I think, very nearly with the principle of interpretation which has on certain occasions been adopted by certain members of the Anthropological Society of London in regard to some of the historical portions of the Bible. Dr. Tait, the present Bishop of London, in his address to the Philosophical Institution of Edinburgh, in 1864, remarked as follows:—"We must be very cautious not to confound mere traditional expositions of what is contained in Scripture with the Scripture itself. It is astonishing how many statements, historical or scientific, are commonly believed to be in Scripture, which when we examine for ourselves we find are not really there." Now, it is precisely the error alluded to by the Bishop of London into which some of the very vehement, but not very judicious, assailants of the Anthropological Society, on theological grounds, have fallen. These men, instead of interpreting Scripture fairly, and according to its literal meaning, are ever intent on making it accord with their own previously conceived opinions and notions. They will admit of no construction of it whatever which does not coincide with their own peculiar, narrow, and erroneous tenets. Scripture and science they constantly force into collision, merely because they will not admit that the facts narrated in Scripture can possibly be regarded in any other light than that in which they have always been accustomed to view them. This is exactly the case of the persecutors of Galileo. Theologians of these narrow views and strong prejudices do more to undermine belief in revelation than the deadliest designed foes by whom religion has ever been assailed. Affording, as it does, so true, so deep, and so varied an insight into human nature, anthropology owes the Bible a debt of gratitude which it would be impossible to over-estimate; and it is my belief that anthropology best does her part towards discharging that debt, by the sound, and enlarged, and correct principles for the interpretation of the Bible which she inculcates. While there is nothing in the

Bible hostile to anthropology, so there is nothing in anthropology hostile to the Bible. It is only by the misinterpretation or misrepresentation of either, that they can be brought into hostile collision.

A good deal has been also said about certain attacks which have been made at some of the meetings of the Anthropological Society of London upon missionary enterprise ; and attacks have in consequence been made upon the Society in return. If rightly and fairly considered, however, anthropology may gain a great deal from the labours of our missionaries ; and our missionaries, I am sure, may gain quite as much from anthropology in return (hear). The opportunities afforded to missionaries for the observation of human nature under all its varied phases, are such as few other men possess ; and of almost incalculable value to us might be the information which they would afford. I wish that we had a few more Livingstones among them. On the other hand, anthropology would be of no less service to missionaries, in enabling them to deal successfully with the various characters and races of people with whom they came in contact. Due allowance, I must admit, ought to be made on our part for any errors in men whose enthusiastic zeal in the promotion of the highest good to their fellow creatures may have occasionally led them to exaggerate, or even to mistake facts, but which is surely more commendable than apathy or indolence. And, on the other hand, equal allowances ought to be made for men who are sincere and anxious in their search after truth, if they express themselves strongly and with sincerity whenever they find, or believe that they find, that truth has been perverted. In the great and good cause of civilisation, at any rate, both anthropologists and missionaries are earnest workers ; and of civilisation itself I am convinced that Christianity forms the highest type.

The systematic and scientific study of anthropology forms, indeed, the best guide to the promotion of civilisation, and to the pursuit of it as a science. The true theory, which has been much debated of late, as regards the adaptation of different races for civilisation, I hold to be this, and to be what anthropology establishes :—Not that any people or any races are actually or by any means naturally inadapted for civilisation, but that for each particular race and people that particular kind of civilisation, and that alone, is peculiarly, and indeed alone completely adapted which is suited to their individual and peculiar character and circumstances. All races are capable of civilisation, but each race differs as to the mode in which this should be applied. Anthropology, above all things, should teach us to be tolerant of the opinions of others. It should lead us to respect man from a consideration of his power, while it should induce us no less to make allowances for him out of a regard to his weakness. Our knowledge of his goodness should urge us to admire him, while our experience of his frailty may compel us to distrust him. At any rate, the more we know of human nature the more tolerant shall we become ; and the more deeply we study anthropology the better acquainted shall we be with human nature. Our own unfair treatment by others should be our warning ; our own fair treatment of

them should be their example. Nevertheless, hard and deadly as are the blows which the members of divers sects and parties have for a long period, by common consent, been relentlessly inflicting upon us unhappy, if not unfeeling, anthropologists, they have only been exceeded in their heartiness and their ferocity by those which, with very few and short intermissions, they are in the habit of dealing out against each other (loud laughter).

To the clergy as well as to the missionaries—to those who have the instruction of youth—to all the success of whose enterprises is promoted by the knowledge of human nature—and this, I believe, applies more or less to every member of a social community—the study of anthropology cannot but be highly advantageous. The investigation of languages, indeed, forms an important branch of this science, as does also that of history.

In the other professions, too, its pursuit will not be found less profitable. Take the law, for instance. What a varied and complete insight into human nature is afforded by the trials which take place in our courts of justice. On the other hand, what an acquaintance with human nature does anthropology afford to the lawyer, enabling him to deal successfully with the different characters with whom he is constantly brought in contact, more especially as regards the sifting of evidence, and the examination and cross-examination of witnesses. Thus the lawyers owe a debt to anthropology; and I hope that they will in return afford us some of the fruits of their wary and searching observation. Some law treatises of very high reputation are of great value from the anthropological matter which they contain. I may here refer to Puffendorf's great work on *The Law of Nature and Nations*, Burlamaqui's *Natural Law*, and above all, Montesquieu's *Spirit of Laws*, in which he discusses fully, and in the most comprehensive manner, many of the most important points connected with anthropology. It is, indeed, to the fact of their being founded on the study and observation of man, that these works mainly owe their permanent and high reputation. Anthropology is constantly peculiarly adapted for and serviceable as a study to all members of the legal profession.

To those who practise medicine, a knowledge of anthropology is almost, if not absolutely, essential. This is, indeed, too obvious to render it necessary for me to enlarge upon it. The medical profession, in return, have conferred important benefit upon anthropology by the numerous valuable treatises bearing upon the subject, and on its various branches, which have from time to time emanated from that body. Locke himself, to whose great work on what I should term the highest branch of anthropology I have already alluded, was a member of this profession. The works of some of the older writers, particularly of Sir Thomas Browne, will be perused with interest; as also that of Harvey, termed his *Anatomical Exercises concerning the Motion of the Heart and Blood*, developing his famous theory—long since indisputably established, although strenuously opposed at the time—of the circulation of the blood. John Hunter's lectures, and those of Mr. Lawrence, on the subject of man, may also be referred to as valuable

works to the anthropologist. The ingenious dissertation of Dr. Willis, a physician, who flourished in the beginning of the last century, *De Animâ Brutorum*, of which there is a quaint but vigorous translation by Pordage, is most interesting as tracing the analogy between human and animal intelligence.

But to the poet and the artist as well, an acquaintance with anthropology will be found no less serviceable; and the finest and most popular both of poets and painters of all ages, have evinced how much they owed to the study of human nature. Homer is especially distinguished for his truthful and forcible delineation of character, and for the fine development of passion which he affords. The poet, however, whose skill in this respect is paramount, and which is, I believe, the real secret of his being so generally appreciated and so universally read, is our own immortal Shakspeare, whom I might almost claim to call "our anthropological poet." Nor in the sister art of painting is the success attendant on the study of human nature, or an acquaintance with anthropology, less remarkable. The "divine" Raphael, who is regarded as the brightest genius in this branch of art, was peculiarly distinguished by the correct and forcible expression which he gave to the characters he represented. Indeed, to such an extent did his works excel in this respect, that writers both on physiognomy and phrenology have appealed to his productions in illustration of the principles which they have propounded. Rembrandt was also very remarkable for the vigorous manner in which he represented characters and feeling of various kinds, sometimes, as is seen in his etchings, by merely a few lines. Our own Hogarth was a master in the art of displaying character of every variety in his performances, as each one who has seen them can bear testimony. But to the merchant and the man of business, no less than to the poet and the painter, is a deep and practical acquaintance with human nature essential if he desires to attain success in his dealings with mankind. To the soldier also, especially if he aspires to high command in his profession, or to important enterprise in his exploits, is a practical knowledge of the operations of human nature all important.

Various conjectures have been raised as to what were the leading qualities in the mind of the first Napoleon, and what were the points in his character, to which he owed his extraordinary and unrivalled success. Some have asserted that it was his knowledge of geography that mainly aided him; others have thought that his extraordinary coolness and self-command were his most serviceable qualities. On the whole, however, from a careful study of his character and career, I am convinced that he was mainly indebted to his deep and varied knowledge of human nature, for his prodigious and unprecedented rise from a humble adventurer to be the ruler of half of Europe. It was this that enabled him to deal so successfully as he did with every variety of character with which he came in contact. It was this that gave him such an extraordinary ascendancy over the minds of all around him, whether friends or foes. It was this that enabled him so successfully to calculate on the measures that his adversaries on great emergencies would adopt. And what was perhaps most important and

most marked of all, it was this which enabled him to acquire such an extraordinary ascendancy and even absolute control over the minds of his soldiers, so as to render them not only his followers, but his adorers and devotees.

Having said thus much as to the advantages of the study of anthropology generally, I will now proceed to offer a few remarks with respect to the particular inducements to follow it in this town, and the desirableness of establishing an Anthropological Society in Manchester. Some who have read the attacks upon anthropology, to which I have adverted, may perhaps be dismayed at the proposal, and may exclaim, like the Jews of Thessalonica, "These that have turned the world upside down are come hither also"* (laughter). Manchester men, however, are not apt to be frightened by shadows, and are more inclined to listen to reason than to mere invective. In many and important respects Manchester appears peculiarly adapted for the establishment of a society of this description (hear). Its extensive connection with the colonies will afford us many opportunities of obtaining information respecting the people of other lands, as also for procuring specimens of various kinds from thence connected with anthropology to enrich our museum. A peculiar turn has long been evinced by the people of this great city for natural history, which is an essential aid, and a most useful accompaniment to that of anthropology. Botany, too, is followed with avidity by many among us, and some very interesting and important researches have been made by local students into this science. A very valuable paper, bearing on the subject of the connection between anthropology and botany was, some years ago, read at the Manchester Philosophical Society, by Dr. Percival, containing an investigation into the perceptive powers of vegetables; as also another by Mr. Charles White, on *The Regular Gradations of Man, and in different animals and vegetables*. Other works, too, of an important character, bearing on anthropology, have emanated from Manchester. Among them I may mention Mr Leo H. Grindon's very able and excellent treatise on *Life*, which will be an essential addition to our own library, and which I some time ago read with intense interest. The facts that I have just stated induce something more than a hope that we shall have a succession of valuable papers supplied to us at the meetings of our society, bearing not only on anthropology directly, but on the various subjects connected with it, and the discussion of which conduce in an important manner to aid its advancement, and to promote the thorough investigation of different points, and to present them in various aspects. The subjects of these papers I will not presume now to anticipate; but as regards the general operations and achievements of the society, I will only venture here to remark that in all institutions of this nature a generous rivalry, or rather emulation, may, I think, fairly be allowed between the parent and branch societies, as in the case of the mother country and the colonies—the one taking the lead in the general advancement of the science, and the other, while following in his track,

* Acts xvii, 6.

endeavouring to excel, more particularly in the pursuit of those special branches which the peculiar genius of the people of that district, their leading occupations, or other causes, have stimulated them to cultivate.

In an intellectual point, Lancashire at the present period occupies a very peculiar, and a very proud position. The Prime Minister of this country—a man not only of great eloquence and high eminence as a politician, but of extensive literary acquirements and tastes as well—is, as we all know, a native of Lancashire; so also is the Minister who fills that most important post at the present critical juncture, of Foreign Secretary, and who is the son of the Premier, a man of wonderful energy and of active interest in all that concerns the welfare of his countrymen. That highly-gifted and most eloquent statesman, the late Chancellor of the Exchequer, a man, too, of varied acquirements, profound scholarship, and refined literary tastes, is a native of Lancashire as well. There is also another very able and most eloquent statesman, the leader of the extreme Liberal party in the House of Commons, and whose great talents, untiring energy, and immense courage, all persons cannot fail to admire, to whatever party in politics they may belong, who was born in this county. That late eminent and distinguished philosopher and scholar, Dr. Whewell, was a native of Lancaster; so that it is not only in politics that Lancashire talent is pre-eminent. Other names of note will suggest themselves to you. I hope that, in the selection of subjects for papers to be read before our Society, Lancashire talent and characteristics will not be overlooked.

I have already adverted to the advantages to be derived in the case of men engaged in commercial enterprise, of which Manchester is the metropolis, from the study of anthropology, on account of the insight which they may by this means acquire into the characters and dispositions of those with whom they have to deal, as also from a correct measure of their own capacities. This can, of course, only be accomplished by an acquaintance with our mental as well as our material mechanism, a branch of anthropology which has not hitherto been so fully cultivated as I could wish, but to which the other departments of the science supply the best preliminary, and for which they afford the surest and most suitable foundation. The attainment of this, the most important of all knowledge, is the ultimate aim and the noblest end of anthropology, and indeed of all science. Of the material world around us, and of the material frame which we inhabit, we know but little; of our immaterial being, which is our essential self, we know next to nothing. Fortunate would it be for the interests of science and for the welfare of mankind, if, through the researches and the operations of the Anthropological Society, a Newton should arise, whose comprehensive genius and piercing ken would arrange, and reduce to order, and render intelligible the mental system, as he did the material universe. And most honourable for this Society, and for Manchester too, would it be if in this great centre of material pursuits, and midst the din of machinery, and the hum of busy voices engaged in commercial undertakings, the science of mind could be at length

successfully unravelled, and the laws which regulate the mighty operations of the human soul be made intelligible to us all. It is in such localities that the study of philosophy and of the polite arts is most needed to correct those sordid tendencies which the ardent pursuit of wealth engenders; and it is here that in certain instances it has been most successfully cultivated. Through the science of anthropology, which should combine and should unite the consideration and the study of both mind and matter, and the study of them together, have we the fullest assurance that a real knowledge of the nature of mind will be eventually obtained, and that the information most valuable to man may at length be acquired by man. Anthropology teaches us, indeed, to study in the way that Newton did the universe of nature, the universe of man, and, we may hope, with corresponding success. Sublime as was the subject of Newton's researches, those of the anthropologist and mental philosopher are no less exalted, and no less celestial. While the one brings heaven nearer to man, the other exalts man to heaven. As in the case of Newton, the immensity of the system does not render it too vast for our comprehension, nor its dazzling splendour too bright for our gaze. As Newton conjectured the attractive power of the sun from the fall of an apple, so the humblest incidents in daily action may often afford suggestions as to the mightiest operations of the soul. While from planet to planet, through interminable distances, the great astronomer pursued his sublime researches, we have only our own nature to look into, but whose depths have hitherto proved as unfathomable as the remotest regions of space. Astronomy reveals to us the wondrous structure and motions of the celestial system, worlds rolling through their spheres, and which, through the aid of the telescope, are exhibited to our gaze. Anthropology unfolds to our mental vision the no less splendid and no less wondrous system of the intellectual universe, and teaches us that most important and most essential, though perhaps most neglected branch of all knowledge—the most remote from our grasp, although the subject is of all others the most within our province—the knowledge of our own selves (cheers).

A vote of thanks having been passed by acclamation to Mr. Harris for his address, he called on Dr. Hunt, the President of the Parent Society, to address the Meeting.

Dr. HUNT, who was received with loud applause, said that, in the interesting address which they had just heard, there was an allusion to a remark which he had made in London, respecting the benefits likely to arise from the formation of an Anthropological Society in the great city of Manchester, on account of the business character of its inhabitants. He presumed it was for this reason that the zealous secretary of their society—Dr. Fairbank—had placed in his hands a resolution, to the effect that the scientific interest and practical value of anthropology recommended the study to all interested in the welfare of mankind. He remarked that he did not propose the resolution simply on account of the scientific interest and the practical value of anthropology, but also because knowledge was good, and it

was the duty of all to increase their knowledge, whether it was useful and interesting or not. We had, unfortunately, different ways of showing our interest in mankind. There was a large and influential party in this country, who desired that the world should be governed on philanthropical principles. Another party, unfortunately not quite so large, would like the world to be governed on scientific principles. It was for the public generally to decide which was the correct view. It would be easy for him to show that the chief disputes which were at present going on in the world were simply questions of race, or, as they were now generally termed, questions of nationality. He then gave a sketch of the history of the formation of anthropological societies in Paris, London, Madrid, Moscow, and to the establishment of periodicals specially devoted to the science in Germany and Italy. What was the meaning of this sudden rise and development of anthropology during the last five or six years? What had induced the most prominent scientific men of Europe to combine together and to work together? The explanation, he believed, might be found in the fact, that the majority of men of science had only during the last few years been thoroughly aroused to the fact that our former speculation on man's past history was based, not on scientific facts, but simply and nearly solely on fiction, which had gradually been handed down by tradition, and then given forth to the world in the garb of science. He did not allude to the Biblical account of the creation and dispersion of mankind, but to the fictions which were involved in the use of such terms as Caucasian, Aryan, or Anglo-Saxon. Some six or seven years ago, the past history of man was attempted to be based on historical and comparative philology, a branch of science which Dr. Prichard and his followers termed Ethnology. This science owed its origin to the late Cardinal Wiseman. In France and America it survived but a very few years; and in England, if it is not dead, it is very near its end. Dr. Latham and Mr. Crawford were its only two surviving prophets (laughter). Notwithstanding giving offence to those gentlemen, in this country it was found necessary to follow the example of French men of science, to term all books which based the natural history of man on ethnology, as more correctly historical and comparative philology. They had to commence their labours at the point where it was left by Blumenbach. There had during the last fifty years been many individual workers, who had kept to a right path; but, until the last few years, they had never combined together in order to assist each other, and the course of truth and science generally. The people of Manchester ought to share both the odium and the honour of being connected with anthropology, for it was in that city there was first brought to light the remarkable work, *On the Regular Gradation in Man and Animals*, by Mr. Charles White (hear). In that work, the doctrine of continuity applied to mankind is stated with admirable scientific candour. The republication of this work would assist to prove that there has been little or no progression on this subject in England since the year when the facts in that work were first brought before a scientific audience in Manchester, in the year 1795. He thought there was more

real science and true philosophy in that work, than in the recent work of one of England's best modern anatomists, but, unfortunately, one of her most illogical and unphilosophical reasoners. He knew of no greater compliment that he could pay to this great city, than to republish that work ; and he should be prepared to state in the preface that, if Mr. Charles White is a fair specimen of what you can produce in the way of an anthropologist, Manchester was in true philosophical anthropology seventy years in advance of London (cheers). The science of anthropology was divided into four portions. First, they took the past history of mankind, as deduced from his works. They went back to the earliest remains of man to be found, some of which might be seen on the table. They endeavoured to collect all these facts, and compare them together ; how much they differed, what were their resemblances, how they compared with the lower animals ; and by this process they hoped, at some future time, to be able to throw some little light upon the pre-historic man. For their chronology they were entirely indebted to the geologists. He believed no one could tell us what had been the past history of man. We knew nothing at all of the subject. The Society had in Manchester an excellent and thoroughly competent member, Mr. Plant, who could tell them, without speculation or assumption, what was the present state of the science. The next branch was historical anthropology. Besides all those records which early man had left, he had left a variety of creeds, superstitions, language, and mythology. It was the object of historical anthropology to collect all these, to find resemblances and connections, and see what light the traditions of one race would throw upon others ; to compare the languages, and trace the connections and migrations of races by language. The third branch was descriptive anthropology, in which he hoped the Manchester Society would be able very much to assist, because Manchester was in communication with all parts of the world, and he hoped the Manchester correspondents of the Society would be able to furnish accounts as authentic as those of Captain Cook and all those early travellers who had written without any preconceived opinions. Our published descriptions of the different races at present were unsatisfactory, and, instead of being original, were too often mere copies of what were current long ago. The fourth branch, the most difficult, and the one which exposed the science to the most abuse, was comparative anthropology. Its duty was to compare the different races of men, to compare them from previously ascertained facts, and detect their differences and resemblances. The first great portion of this subject was to compare man with the lower animals ; the second to compare the different species, races, and varieties of man ; then, comparing tribes with one another, to explain how and why one tribe differed from another, and why persons of the same race differed so widely as they do. To investigate and study comparative anthropology required extensive caution and the spirit of true science, for here was the point on which we met differences of opinion. To investigate this question there must be liberty of spirit and opinion. It was the comparison of man with animals on which so many men differed ; it was in the comparison

we had to make with the different species of men that the difficulty arose. Some men would say there was very little difference between the lower races of men and the higher apes ; some would say there was very little difference between the lower and higher races of man. It was, therefore, necessary to be thoroughly loyal to fact (hear). It was impossible for him to say what would be the ultimate conclusions of the science, or any branch of it. The man who chose not to acknowledge any fact, whether it was on his own side or against him, was a dishonest man (hear). There was unfortunately existing in this country a disease, said to be quite incurable, produced by systematically ignoring facts. It was wonderful, and at the same time melancholy to see the eccentricities, absurdities, and irrationalities, by which men are led when they refuse to accept a well-established fact. When persons are once afflicted with this disease, you can no longer reason with them. Facts they treat with utter contempt. He did not allude to those like himself who condemned cruelty to any race, but to those unfortunate persons who suffer from a disease which was termed negromania (loud laughter). Persons suffering from it treated with the utmost contempt all who differed from them. Sir Samuel and Lady Baker might spend great time in Africa, go through wonderful adventures, and tell what existed in Africa, but these men did not believe a word of it. Even scientific men were sometimes afflicted with the disorder. He heard, only on passing through London, that a very eminent anatomist had had another attack, and actually gone and joined the Jamaica committee (laughter). This was Professor Huxley ; and it was said that he intended to propose that they should prosecute M. du Chaillu for shooting gorillas (laughter). Were there distinct races of men now existing ? How could each of these races have the greatest amount of mental and physical happiness ? Mr. Bright, who was well known, and, he hoped, respected in Manchester, said two nights ago he believed whatever might be defective in the Irish people came not from race, but from the conditions to which they had been subjected. He (Dr. Hunt) put it to those who had studied anthropology, to those who had studied the races of men in this country, who had studied the characteristics, physical and mental, of the Irish, to say whether this was the fact. He saw present a gentleman (Dr. Beddoe) who had spent a great portion of his time in examining the Irish people, and he hoped that gentleman would say a few words on the subject. That was Mr. Bright's doctrine, started by Jeremy Bentham, and although based on a groundless and unwarrantable assumption it was supported by such eminent political economists as S. Mill, Herbert Spencer, and Goldwin Smith. Against these closet philosophers we have experience on the other side, and the testimony of every traveller, from Herodotus to Baker. He differed from one of the views of the president. He did not think we had any evidence to prove that all races were capable of civilisation properly so called. Take only one instance. Up to this time there was no evidence that the Australian aborigines could be civilised. The question was—is there race ? The same argument that Mr. Bright would apply to the Irish Mr. Mill applies to the Negro, or any other race. Hence it has become

the bounden duty of all persons interested in the welfare of mankind to study anthropology. What made this subject of great consequence and moment was, that the people of England were being taught an erroneous system of political economy—a system, he believed, which was neither based on nor supported by facts. This is why it behoved the people of Manchester to assist in the great work now going on in other parts of the civilised world, and to endeavour to have a system of political economy on a more correct and satisfactory basis. The labours of the Manchester Society would be watched with interest not merely by the parent Society in London, but by the scientific men of the world. He looked upon the union of the Manchester Society with its parent Society in London as likely to be of mutual benefit. The facts collected by the members of the Manchester Society would be disseminated through the medium of the parent Society to every part of the habitable globe. He was quite prepared, and indeed anxious, to see the rivalry of the Manchester branch against the parent Society. He was not, however, at all frightened at the allusion which the President of the Manchester Society had made to the possibility of the branch following the example of some of the former colonial possessions of this country. Before they took such a step as this he would advise them to study well what had been the fate of colonies, both ancient and modern, when separated from their mother country; and he thought that they would perhaps find that the sort of independence they would acquire would not be an unmixed benefit (laughter). In conclusion, he addressed a few remarks to the Members of the Society present, urging them to do all they could to correct erroneous statements, and to be on their guard against them, and to eschew all hasty induction. The world was not made yesterday, nor would it be likely to end for a few days yet. The work done by the London Society they had as some guide, but he would not advise them to blindly follow in their track, but simply to imitate all that was good. True success was the result of good honest work, and such work they must do if they were to succeed in the noble enterprise in which they were engaged. The more difficulties and obstacles they met the greater would be their success if they conquered them. Abuse, too, they would, no doubt, receive, but he could give his assurance, from personal experience, that it would do them no harm. The more their Society was abused the more immediate would be its success. He believed that the proud and powerful position now held by the London Society was in a great measure to be attributed to the hearty manner in which they had been abused. He, therefore, hoped for a liberal share of wholesome abuse for them. But above all things he cautioned them not to let either the fear or favour of any man or any set of men make them turn to the right or the left, but steadily pursue the object which they have before them, the acquisition of truth—first for its own sake, and secondly for the benefit to mankind at large. Those who had not yet joined the Manchester Society, he advised to do so without delay. It behoved all lovers of truth in Manchester to join the Society; and he hoped that the Society might reflect credit and renown on this great city. There might be some who believe themselves to be lovers

of truth who decline to join the Society ; but he trusted that there would be few persons in Manchester who would be afflicted with a great and terrible disease, which had been found to be at least concomitant with the formation of an anthropological society in another place. Those afflicted with this disease sometimes made the most absurd charges against persons which they could not prove, and which were incapable of proof. It was a very terrible disease, and consequently a very long word had to be invented in order to give some slight idea of its awful character. This disease was called ANTHROPOLOGICOPHOBIA (laughter). Some persons suffering from it, whenever they see the word anthropology, give a very loud bark, others a suppressed growl, while if they see a live anthropologist, they not only bark and growl, but sometimes attempt to bite (laughter). He hoped that not many persons would be afflicted with this disease in Manchester, for he could assure them that anthropologists were very dangerous, some thought very wicked animals, for when they were attacked they defended themselves (laughter and loud cheers).

Dr. BEDDOE, in seconding the resolution which has been proposed by his friend Dr. Hunt, said he would endeavour briefly to indicate some of the advantages that would flow from the cultivation of anthropological studies, and that in only a limited department of human affairs. It was now fifty years since the Congress of Vienna sat to determine the limits of the states of Europe. Fifty years ago anthropology was very little studied or understood ; but had the case been otherwise, and had the plain teachings of anthropology any weight at that congress, great calamities might have been avoided, calamities that more or less affect Europe to the present day. Passing over other blunders then committed, such as the giving of Posen to Prussia, a gift which an enlightened Prussian would rather have been without, he touched on the assignment of Lombardy and Venetia to Austria. That wrong has been at last set right, to the satisfaction of all or almost all ; but it has taken fifty years to do it ; and in the meantime, how much misery has been endured, what bloody wars have been fought, how many lives have been lost on the field, in the dungeon, on the scaffold ! All this time Austria and Italy might have been good friends (as we trust they may be henceforward), had their boundary line been drawn in accordance with the plain dictates of anthropological science, and with the divisions of blood, language and character. If they looked a little further eastward, they would see a people, the Roumans or Wallachs, now for the first time permitted fairly to develop their nationality. In reference to the neighbouring region, the ignorance still prevailing in this country is amazing, even among the newspaper writers who profess to give instruction in such matters. Thus the *Spectator*, in some other departments not a bad authority, has lately been just called to account by a contemporary for a series of blunders as to the races of Turkey that deserved whipping (laughter). He supposed most Englishmen were not less ignorant on this subject than the *Spectator*. Yet these blunders were not in mere matters of theory, but were of the most intense practical importance involving millions of men, and bearing directly on the solution of the

Great Eastern question. But perhaps you will say, "What is all this to us? we have ceased to be a European power; nobody on the continent cares a button for our opinion: let us involve ourselves in our virtue and our wealth, and let not only Savoy, but all Europe perish, for aught we care." Even if it be so, there remains to us the entire field of India and the colonies. Think of India with he knew not how many races, differing in every conceivable respect from the Aryan Brahmin, with a brain as good as the European, and an intellect yet more subtle; the Brahmin, heir of an ancient civilisation, fantastic indeed in some respects, but well deserving to be studied, down to the wretched Veddah that wanders naked and houseless in the forests of Ceylon. If we, or at least those of us who have to do with the government of our Indian empire, remain in wilful ignorance on such subjects, what sort of account can they render of their stewardship. Look again a little further, to New Zealand, where an anthropological problem of the intensest interest and importance has to be worked out, no less a one than this, whether that noble race of barbarians, the Maori, can be raised to the level of our civilisation, or whether they are destined utterly to perish. Similar or analogous problems confront us in several other of our colonies. But, to come nearer home, let me say a few words respecting Ireland and the Irish. My friend, Dr. Hunt, has, indeed, attributed to me an acquaintance with this subject greater than I can flatter myself I possess. I have, indeed, devoted some time and study to Irish anthropology; but I must confess that, partly perhaps because I have too much of the Saxon in me, I don't quite understand the Irish. This much, however, I do know, that if you take an Irishman of tolerably pure blood, and compare him with any ordinary or typical Englishman, you will find them to differ in frame of body, in form of skull and brain, in colour of skin and hair; and the moral and mental correspond to the physical differences* (hear). He did not mean to say that the Irish are an inferior race to ourselves, because he did not think so; but they differ from us extremely; and we English having attempted to manage and govern a people whose nature and feelings we could not understand, the results have been deplorable. Again, from the steeples of your sister city of Liverpool you may see the hills of Wales, and individual Welshmen abound among you; yet how different are they from us in their character as a race, and how little do we really know of them? These

* The *Morning Star* of Nov. 3, 1866, thus announces the birth of the Manchester society; and it deserves to be recorded, as showing harmony existing between fact and the statements which appear in our revered contemporary.—EDITOR.

"An Anthropological Society has been organised at Manchester. Those who are acquainted with the society of the same name in London, can easily imagine what the tendency of this body is likely to be. One thing is certain: that it will emulate the parent society in its hatred of the Negro and in its contempt of authorities like Professor Huxley, Mr. Mill, and Mr. Herbert Spencer. Dr. Hunt appealed to Dr. Beddoe to confirm his own wild theory that the evils from which the Irish people are suffering are due, not, as Mr. Bright argues, to the conditions to which they are subjected, but to peculiarities of race. Dr. Beddoe, however, did nothing of the kind, but remarked that the misfortune was that England had undertaken to govern a people whom she could not understand."

things he commended to their consideration, and with them another subject of great interest and importance, for the study of which Manchester affords peculiar facilities. It is this—you have in Lancashire a vast population which has almost suddenly changed its whole system of living—with the increasing development of material civilisation, a scattered agricultural population has been converted into a closely-packed manufacturing one, and almost all the other influences bearing upon it have undergone an equally great change. Now, what are to be the results of these changes on the race, physically and morally, for good and for evil? It is a great subject, and it falls in part at least within the domain of anthropology. He concluded by recommending the study of anthropology to the people of Manchester (cheers).

Mr. PLANT, F.G.S., moved the next resolution:—"That the thanks of the Manchester Anthropological Society be given to Dr. James Hunt, Dr. Beddoe of Clifton, and the Rev. Dunbar Heath, for their presence on the occasion." Mr. Plant said, that the resolution was but a slight acknowledgment of the great services these gentlemen had rendered at the inauguration of the local Society. Their presence was an assurance to the members, that the parent Society in London would give both encouragement and support to local endeavours to spread the scientific study of man. The address which had been given by their learned local President had taken a wide field for its valuable and philosophical views of the subject of anthropology; but in the systematised and scientific remarks from Dr. Hunt, the President of the London Society, they had had more exact and definite rules applied to the science, and it would be the object of the members of the local Society to keep their course of future action within the limits of the track laid down. The materials upon which they would have to labour were not locally abundant as far as the past and the present were concerned. The vicinity of Manchester did not abound with flint weapons, tumuli, or lake-pile remains—in fact, not a vestige of either had ever been found west of the Pennine range; but there was a wide field of research for those members who did not shrink from the investigation of the origin of the oldest tribes which first peopled Lancashire. The subject was full of difficulties arising from the use of derivative terms applied to ancient people, which, if they were capable of a definite and distinct application, the local historian seldom succeeded in making a satisfactory use of. The Roman remains of Lancashire had been very industriously worked out, and had all the value which belongs to history, but beyond that period backward in time, the anthropologist could fairly claim as his own. The great question, however, of the present day, was one which the geologist and anthropologist could only solve; it was a question of growing importance to all educated minds, and its influence upon the future teachings of the religious and moral world could not be overstated. The question was, "What was the origin of mankind upon the earth?" Is science to be the authority upon this question, or are we yet to rest our faith upon the early teachings of a literal revelation? He believed the day was not far distant when it would be regarded as no heresy in a Christian to declare his belief in the

scientific conclusions as to the great antiquity and primitive barbarism of man in his origin, and that it would not be blasphemy to say, that revelation is not an authority upon this question any more than upon questions in astronomy and the other sciences. But they must be prepared for a state of feeling in society which time would only ameliorate from suspicion, prejudice, and dread, into confidence, favour, and admiration. They would, he was afraid, meet with but little opposition to their Society, for opposition meant a knowledge of the subject, or else opposition was puerile and aimless; and as far as experience seemed to lead to a safe conclusion, the study of the subject by a cultivated mind always converted an intended opponent into a sound supporter of the "hard logic of facts." He hoped the Manchester people would carry out the same desire which it had hitherto displayed for other branches of natural science, for anthropology, and it then would maintain a good standing as a flourishing local society. There was an opening for some discoveries yet to be made as to prehistoric man in Poole's cavern near Buxton. The present year had brought to light several interesting matters, and by a well directed scientific exploration valuable light will be thrown upon the geological period at which the cavern first became a river course, and how early in its series of changes it first became the abode of prehistoric man. Under the care of the Society a successful result might be arrived at. He could hardly agree with the tendency of the remarks from Dr. Beddoe upon the Celtic races in Ireland, it gave a political aspect to the labours of the anthropologist, which was not science, nor in the true direction of scientific investigations, and of all places in the world it would be necessary for the anthropologist in Manchester to be careful that his views upon the question of races, whether the Celt or the Negro, be consciously kept clear of the political and religious aspect. As the President had pointed out, these questions are only countenanced by the Society in their Archaic, Historical, Descriptive, and Comparative aspects, and the religious and political questions must be rigorously excluded from the Manchester Society if it is to find a footing and be successful.

Mr. DEVIS, F.Z.S., F.A.S.L., Vice-President of the Manchester Society, said, he apprehended there are very few here to-night to whom the name, the fame, of Dr. Hunt are unknown; few, who previous to our meeting did not entertain a pretty strong opinion about him. To many he was known as a master in science, a zealous investigator, a bold expounder; and, moreover, as the uncompromising and successful leader of our science in a critical period of its history. To many he was known as all this, and something more. Clever, my dear sir, it has been said to him, ve-ry cle-ver—but dangerous, decidedly dangerous (laughter). He hoped that the address which we have heard from him to-night has swept their brains clear of all such cobwebs. Dangerous! why there is not a more harmless man alive than his friend Dr. Hunt, because there is not one more outspoken (hear). There was danger in men who dread to have an opinion of their own, lest it should prejudice their own comfort and convenience. There was danger in men who reap where they do not sow—who cleave to emolument and honour while they scorn and betray

the creed which fosters them ; but there is no danger to the truth in men who stand to the front and say this is our creed, we do not ask anybody to believe it, we ask them to confute it. To such men the heartiest thanks are due from their bitterest opponents, for such men enter the lists with their visors up and proclaim to all comers who and what it is they fight against (cheers). Such men are the first to rejoice when they see opponents doing as our future friends in bonny Dundee are doing, furbishing their armour and whetting their weapons, and they are only anxious that the best man should win. Those who have taken an interest in anthropological matters will rejoice at this opportunity of recognising the skilful generalship which has at length enabled the science to break through the barriers of prejudice and vested interests, and asserts its due position among those cognate sciences which themselves culminate in that of man. But the pleasure arising from the success attained in the British Association should by no means be confined to the anthropologist, its benefits will be felt if not acknowledged by every lover of truth (cheers). It was the vindication of unfettered liberty of thought and speech everywhere and in all things—for this was really the principle at issue, and this I hold to be a grand intellectual gain (hear). It is the establishment of this principle which enables us now to consider every science, not anthropology merely, but every branch of research, as an arena in which every statement, every opinion, may be fairly, freely discussed, without dread of being frowned down ; it is this which enables us now to come before you frankly and fearlessly and say, here we offer you an opportunity of bringing together all the information about man, physical, psychical, social, which you possess or can obtain, and of broaching any opinion you may choose to form about him and his doings. We will accept your facts as far as they are authenticated ; we will hear your opinions, but we will not identify ourselves with your theories on the one side or the other. As a society we can have no opinion, and we decline the responsibility of either your sense or your nonsense ; and if from all this good results follow, not to anthropology only, but to general independence of thought amongst us, they will be traceable to the previous efforts of Dr. Hunt and his colleagues ; and if, as we believe, no small amount of those results will have to be credited to the impulse which he and they have communicated to us to-night, we may fairly calculate that a large instalment of those thanks is already due, and approve the resolution cordially and unanimously (loud cheers).

The Rev. DUNBAR HEATH then rose to return thanks in the name of the deputation. The parent Society, he said, during less than four years of existence, has gathered together nearly four times two hundred members. During those four years events of the utmost importance have passed before us, and have illustrated some of the fundamental truths of anthropology. The French Emperor openly proclaimed his intention of grouping all the Latin nations into a unity, but the Teutons have taken a long step towards actually doing what the Latins have only talked about. In America, the greatest anthropological experiment the world has ever witnessed is at this

very moment in process of exhibition. The question is, can or cannot a black race live side by side with a white one, under the same laws and privileges? Taking facts as they are, taking the laws of the human mind in blacks and whites, taking the laws of competition for food, taking the laws by which property is accumulated and children reared; taking, in fact, all the mental, social, and physical laws of anthropology into consideration, will or will not the blacks, who used to number 4,000,000, and who probably already only number 2,500,000, die off or increase again, and hold their ground? A very few years will show the result of this mighty experiment. Mr. Heath then explained what the parent Society provided in return for its annual two guineas. Papers and discussions every fortnight in the season; a *Journal* once a quarter containing these discussions, etc., etc., with proceedings of other similar societies in Paris, Moscow, Madrid, etc.; an independent *Review*, which feared not to show up the anthropological deficiencies of the highest names, such as Mill, Comte, etc.; a volume of *Memoirs* annually, and besides all their translations of important foreign anthropological works. To show the impartiality by which these works were selected, Mr. Heath stated that the first (Waitz) advocated the unity theory of man's origin; the second (Pouchet) maintained plurality; while the third (Vogt) proclaimed the logical theory of development. Mr. Heath seeing several of the clergy present, gave his opinion that the Old Testament clearly recognised plurality, adducing not only the fact of Cain's banishment into a land of cities, but the mistranslated phrase, "High and low, rich and poor," in several parts of Scripture, the real rendering of which should be, "the race of Adam and the rest of mankind." The words in the original are simply "Adam and Ish." As to the hypothesis of a single origin, Mr. Heath pointed to the facsimiles of certain works of human art derived from the caves in the South of France. Here we have an outline of a naked human form drawn by the contemporaries of the mammoth. This form is not that of a Negro. This undeniable ocular proof that the Europeans so long back as the time of the Mammoth were not Negroes, seems very much in favour of the view recognised in the book of Genesis, that Adam and Ish were races of distinct origin (hear).

Mr. HARRIS then left the chair, and the company proceeded to examine the many objects of interest which were exhibited, and in which all present seemed to take the greatest interest.

Here we might very properly have concluded our report, but we feel sure that our readers will like to be informed how the appearance of an anthropological society was greeted by the people of that great city. The usual abuse of anthropologists had of course come, but not yet in sufficient quantities to render the Society much service. Some of the local newspapers have yet roused themselves sufficiently to see the vast national importance of the science of man. "Anthropology—what does it mean?" "Anthropological Society—what is it all about?" were the general comments made at the time of meeting.

The following article from the *Manchester Examiner and Times* of November 3, 1866, deserves to be reproduced.

"If 'the proper study of mankind is man,' anthropology is fairly entitled to high rank among the 'ologies.' The science is young, but its professors are ambitious, and if they fail it will not be owing to a lack of self-assertion. They have been engaged for six or seven years in the study of man. During that interval they have attained to some important results, and they propose to prosecute their researches in all directions, and after the most approved philosophical methods. At present, as Dr. Hunt confesses, they are quite in the dark. He has not the remotest idea of the sort of conclusions which will ultimately be established. But they are inquirers after truth. Their watchword is 'loyalty to facts.' They desire to travel round the globe in a guileless spirit, searching out the relics of humanity in former ages, and ascertaining all that can be known of its present ways. They will not of course forget to stretch defunct men and monkeys on the same dissecting table, and force anatomy to give up its most hidden secrets. They will collect every hint that history supplies relative to the laws, customs, superstitions, and traditions of various races of men. They will intercept sailors at the port of Liverpool and elsewhere, in order to get from them the latest news respecting the Sandwich Islanders. In these different modes they hope in time, not only to amass a valuable stock of information, but to be able to construct a science of the human race. But this, however distant it may yet be, will only serve as the starting point of their career. Anthropology is eminently practical. You must know your man in order to treat him properly, and when you know the universal man, or all the sorts of men that go to make him up, then only will you be able to govern him aright. When that day arrives philanthropy will be superseded by science. In other words, the love of man will be supplanted by the knowledge of man. We do not exactly see the logic of this substitution. We do not see why it should be assumed beforehand that a larger knowledge of man should necessarily set aside a system of conduct which is based upon our love of man. It may modify the practical working of the system, but the fundamental principle of the system it never can destroy, save upon one hypothesis. It may be that the more we know of mankind the less we shall love them. It may be that to love at all is a blunder born of ignorance. This seems to be the opinion of Dr. Hunt, and we must therefore admit that, from his own point of view, his reasoning is conclusive. It seems also to follow that when anthropology is perfect, hatred, or at least indifference, will be recognised as the proper regulating principle of civilised races towards other races less perfect and less perfectible than themselves.

"We have no doubt at all that, if our anthropological philosophers pursue their investigations diligently, we shall obtain from them a great deal of valuable knowledge. Fifty years hence we may hope to attain to an inkling of what we are. The discovery may not do us much good, but it will benefit our descendants, who will know pre-

cisely what scientific estimate to put upon our bones. In the meantime, on behalf of interests which have a charm for some of us, we venture to submit that our anthropological friends ought to catch their hare before they cook it; they ought to be sure of their science before they apply its conclusions. We shall, perhaps, be excused for hinting that they talk a good many platitudes, and are slightly too dogmatic. Dr. Hunt says that 'the chief disputes which are going on in the world are simply questions of race, or, as they are now generally termed, questions of nationality.' Now, we are not anthropologists, but we cannot help asking whether 'race' and 'nationality' are regarded by this new science as convertible terms? It seems to us that they are quite distinct, and refer to essentially different facts. Differences of race naturally produce differences of political organisation, and, under favourable circumstances, the race and the nation may remain co-extensive. But this is a mere theory, of the smallest possible value in explaining the political questions which are now agitating Europe. Poland is one of the 'nationalities,' but what has race to do with its repeated insurrections against Russia? Something might be said about difference of race with regard to Posen and Galicia, but there the Poles don't rebel. The great war just ended was waged by Germans against Germans. The sentiment of nationality has much to do with it, but the instinct of race simply nothing at all. The other great movement of the day is that of Italian independence. The Italians are a distinct people, but Dr. Hunt won't contend that they all belong ethnologically to the same race, using the term in the sense in which he uses it. No clearer lesson is taught in history than that circumstances may render a difference of descent of no political value whatever. Geography, conquest, historical tradition, language, religion, these override differences of race, and build up nationalities on their ruins. What are the relations between race and national sentiment in Great Britain? The Tweed is the dividing line of two strongly marked national sentiments, which for centuries led to bloody wars. Is there, at the same point, an equally clean division of race? The truth is that man, by his own thoughts and actions, creates agencies which, in the struggle for mastery, prove too much for ethnological differences, and that race, so far from being the most persistent, is the most yielding and most pliable fact in the history of mankind.

"We should be content if our anthropological friends merely talked platitudes, but we cannot resist the impression that, in spite of their talk about freedom from prejudice, they allow themselves to be largely influenced by foregone conclusions. They propose to inquire into the history of man with a view to determine his proper place in creation. They propose also to investigate the differences between one race and another, so as to fix their relative position in the scale of humanity. They propose to hold an impartial inquest upon the lowest types of man and the highest types of those animals which at present we do not call men, so as to tell us how many degrees of difference there are between them. These are important questions, but we take the position of the anthropologists to be that of patient inquirers, beginning in the dark, and resolved to grope their way towards daylight. But we find that

Dr. Hunt and others, whom we may regard as the leaders of the new movement, have already made up their minds. The science is only seven years old, yet its conclusions are already imported into politics. We expect to be asked before long to establish an anthropological department in Downing Street, and issue instructions to the Secretaries for Ireland and the Colonies to conform their administrative measures to the latest reports of the society's investigations. The anthropologists have already arrived at the conclusion that an impassible gulf divides certain races of men; that it is the right of the superior races to do as they like with the inferior races, discarding the philanthropic theory for the scientific; and that it is the merest Quixotism to make any attempts to improve the condition of those inferior races who, by Heaven's decree, are made the slaves and the victims of the privileged portion of mankind. Mr. Harris is an honourable exception, but he is almost the only anthropologist we have heard of who did not seem possessed by an uncontrollable desire to tear a missionary to pieces. We gather from Dr. Hunt that it is utterly impossible for an anthropologist consistently to subscribe to the funds of the Jamaica committee. Mr. Huxley has done so, along with Sir Charles Lyell. Mr. Huxley has explained that his only object is to ascertain whether it is murder by English law to hang a man illegally, but Dr. Hunt has a different explanation. It is clear that Mr. Huxley's anatomical researches have led him to the belief that the Negro is at least potentially a man, and that this heresy alone could have led him to conceive how, by any possibility, a Negro could be unlawfully hanged. In a vein of offensive pleasantry, Dr. Hunt puts the Negro and the gorilla into adjacent categories, and suggests that if Mr. Eyre is to be called to account for hanging Gordon, M. du Chaillu should be put on his trial for shooting gorillas. Nay, Dr. Hunt does not shrink from applying his theories to Ireland. In the condition of that country he sees the results of race deficiencies. Ages of oppression and spoliation go for nothing. Ireland is what it is because the Irishman is what his Maker made him. We begin to see Dr. Hunt's reasons for assuming that the triumph of anthropology would be the extinction of philanthropy. If he is a fair type of the science, the two cannot live together. In that case it may be a question whether we ought not to think of hanging Dr. Hunt. Anything to save us from the brutal devilism with which he threatens us. In the meantime we don't condemn the science; we merely submit that its professors have missed its first lessons, and enthroned their own prejudices in its stead."

We are glad thus to see that the great Radical organ of Manchester does not condemn anthropology. This is, at all events, one point gained for the science. It is not our business to defend the views of Dr. Hunt or any other anthropologist, but we think it is important that anthropologists, both at home and abroad, should see a fair and reasonable criticism on their doings, whenever such a remarkable phenomenon occurs.

ART IN RELATION TO COMPARATIVE ANTHROPOLOGY.

THE fine arts have long been devoid of a grand inspiration. We affect to despise the middle ages. But they gave us Gothic architecture. Shall we bequeath an equal idea to posterity? It is not sufficiently understood that we live in a decidedly negative, that is, protestant era. We cannot build up; on the contrary, it is our sad vocation to pull down. True edification is beyond us: that must be left to a more fortunate posterity. We are the creatures of an age of analysis. It is our business to criticise the works of others—but too happy if we succeed, even in this. Nevertheless, there are signs of the end—the end, we mean, of the reign of death. We are the men of transition—the road-makers to a better time. It is our business to improve processes—to perfect mechanical invention—and to make money; most respectable, and even right worshipful vocations, in their way, and for the faithful discharge of which the world will hereafter thank us. The fine arts partake of this spirit. They are gradually attaining to precision—shall we say it?—to veracity. Perhaps this was in some measure a matter of necessity. There was no longer, as we have said, a great inspiration—to cover a multitude of sins. What might be pardoned in Raphael or Titian, could not be overlooked in Smith or Malthus. To paint architecture that was never built, costume that was never worn, manners that never prevailed, vegetation that never grew, and even animals that Nature, in very shame, would have disowned, might be pardoned in the great masters, but certainly not in the little ones. So we have begun, in right earnest, to amend these things. Anachronisms are most carefully eschewed, and the forms of nature most religiously followed—at least in the vegetable and animal realms. Our roses might almost be plucked, and our horses seem ready to start for the course. But what of our men and women? What do, not only comparative anthropology, but anatomy, physiology, and phrenology say to the human types that we sometimes see, not only upon canvas, but in marble? We fear that the answer here would scarcely be quite so favourable. The age of artistic monstrosities, composed of a head from one subject, a torso from a second, and limbs from a third, is happily past. But a glance at any exhibition of modern paintings, is sufficient to convince a competent observer that man has been far less studied than the horse or the dog; Landseer and Rosa Bonheur being immeasurably more at home with their favourite quadrupeds, than certain other artists with

those interesting bipeds intended as illustrations of the human form divine.

In saying this, however, we are by no means prepared to blame art as being especially and exceptionally guilty. It has in such matters very naturally, and perhaps very properly, followed in the wake of medical science. It has studied anatomy, and thought this sufficient. Bones and muscles and blood-vessels being properly adjusted, what more was required? and, we may add, what more could anatomy teach? Truly but little. But then, above and beyond this familiarity with the mere mechanism of the human system, is an acquaintance with its working; with its functional activity; in short, with physiology, and its subdivision of temperament. The medical science is confessedly imperfect, and art is wholly at fault. It is under this head, that the practised eye of a good anthropologist and phrenologist still detects impossible monsters upon the canvas. It does not seem to be sufficiently known, that a certain contour of head implies a corresponding expression of face, and that both together necessitate a peculiar development of the torso, a special proportion in the limbs, and an accompanying management of the extremities. All this is known in the horse or the dog, because the breeds of those creatures have been carefully studied. Hence we do not see the head and neck of an Arab joined to the legs and body of a cob; nor do we ever behold the tail of a spaniel attached as a caudal appendage to the enormous chest and combative cranium of a bulldog. We know too much of brute nature, we have studied it too thoroughly, to fall into any such palpable mistakes.

But it is quite otherwise with the human system. Here we are apparently at the mercy of accident, or at best are dependent upon the individual inspiration of the painter. That man should be most profoundly studied, physiologically as well as anatomically, is only beginning to be recognised in our schools of art; while anything like an intimate acquaintance with cranial contour in relation to mental endowment, must be acquired, not within, but without our royal academies, the pupil, in this most important matter, being thrown wholly upon his own resources; his ability to produce a head in accurate correspondence with a certain cast of character being left to chance and his own industry—the academy, in its corporate capacity, not having recognised the existence of phrenology as a science. And it is the same with anthropology; the specialities of racial type being but indifferently understood by artists, and scarcely at all appreciated by the public. Now in all this, do not let us be understood as implying that art is at all behind the age. It perfectly satisfies its patrons as it is, because they know no better. They are at the same

stand-point, in relation to the human type, which their predecessors were, a few generations since, in relation to architecture, costume, and manner. They have not the information requisite for detecting error. But should art itself be thus easily satisfied? Are the painters of the nineteenth century prepared to be regarded with pity by their successors of the twentieth century? For, let us clearly understand it, the rectification of these most palpable errors is simply a question of time. To paint a well known historical character, that is, a man of marked mental attributes and of a given race, by accident, or according to the freaks of individual fancy, will some day be thought as barbarous as to represent Alexander in the dress of a Turkish pasha, or the beautiful Cleopatra in an Elizabethan bodice. These anachronisms are now admitted into our galleries upon sufferance—we know better. Are we willing to hold the same inferior place in the eyes of posterity?

As example is better than precept, we will illustrate our meaning by a few remarks on one of the finest and most carefully studied works of modern times—"Christ disputing with the Doctors", by Holman Hunt. In architecture, costume, and manners, this is perfectly unexceptionable. In all that antiquarian research and the most careful study of existing facts could accomplish, the artist has succeeded to admiration. As a reproduction of ancient Jewish life it is unique. Even racially, the doctors are ethnic models. Thus in all the accessories it is perfect; while in composition and execution there is nothing left to be desired. And yet, after all, this sublime achievement of the highest existing art is a magnificent failure. The central figure is both physiologically and phrenologically incorrect. That fine, vigorous, healthy, muscular boy, has no doubt the makings of a splendid man in him, but not the elements that, under any circumstances, could ever ripen into "the Man of Sorrows". It is a wonderful painting, but "the Christ" is nowhere visible. It is the play of *Hamlet*, with the part of Hamlet omitted. It could not be otherwise, from the manner of its origination. The artist went to Jerusalem, and studied his figures, as he did his manners and customs, from existing facts and living persons; a most excellent procedure as regards the doctors, and the musicians, and the on-lookers, but one altogether fatal in reference to the divine boy, and perhaps not quite safe even in regard to his saintly mother. Nothing, indeed, could more clearly indicate our utter ignorance of the real requirements of high art, than the entire approval, so generally expressed, of the very practical manner in which the painter obtained his data. It seems to be supposed that there is always a model Christ at Jerusalem; some favoured youth, of Jewish descent, who, with due location

and the proper opportunities, might emerge into the likeness of the Nazarene! Perhaps misconception could no farther go. Let us hope that an idea so essentially vulgar and irreverent, is not universal, even amongst ourselves. Catholicism very properly stands by the Christ of tradition, the morally exalted, coronally developed, spiritually organised, nervous, susceptible, and profoundly devotional founder of the woman's faith, the pure, benevolent, and sympathetic author of the grandest development of the feminine phase of religious thought, which the world has ever seen. And it is supposed that this exalted being, this supreme incarnation of the divinest of the attributes—that of all-embracing love, which we sometimes call mercy—for whom the ages had waited from the beginning, has his organic counterpart in every generation, and can therefore be “drawn from the life”, simply by going to Palestine! Art knew better three centuries since; and Raphael is superior to his modern rival, in the boy, though so very inferior in all the antiquarian accessories which surround him. The reason is, that the former drew from inspiration—the latter from fact.

Let us go somewhat more into the detail of this subject. The Christ has a strongly marked and very distinctive character, admirably delineated in Jew biographies, and reflected yet more effectually from the pervading spirit of the system which he bequeathed to posterity. From these two sources in combination, we obtain such data as cannot fail to put us in possession of the grand outlines of his character; that is, of the elemental forms of his mental constitution. In the first place, then, it is obvious that in him the moral dominated not only the passional, but also the intellectual nature. His head must have been distinguished by coronal altitude. He was profoundly venerative. He was not simply devotional. He lived the inner life. He dwelt with men in the body—with God in the spirit. He loved the former as brethren—he revered the latter as his Father in heaven. Yet his veneration was not incompatible with a self-respect so exalted, and a self-reliance so sublime, that he hesitated not to believe and proclaim himself the Messiah. The central organs must have dominated the lateral, and this, too, not only in the moral, but also in the affectional and intellectual regions. His love of children speaks for his philoprogenitiveness. His unequalled parables are evidence of his comparison. He was not a logician. His lightning intuitions rendered deduction needless. He saw the truth—as by direct perception. His cognitions were the instantaneous result of inspired insight. His perceptive faculties were large, and the forehead lofty but sloping, more distinguished by height than breadth; the poetry of his parables arising rather from the play of comparison than ideality. The basilar region was beneath the average, the pos-

terior developments being in the sphere of the affections rather than the passions ; the general structure being in this, as in all else, essentially feminine. The temperament was unusually refined, almost purely nervous. The hair, of silky softness, had probably a slight curl, or rather wavy undulation, and, if long, would fall naturally on each side—of the elevated central line.

Now such a head and temperament imply much else. The face must have been oval, with an approximately Greek, or rather Phœnician profile—the classic type of the high-caste Syrian Jew in his native habitat. The large, dreamy, loving eyes, were characterised rather by the tenderness of the woman than the fiery ardour of the man. The eyebrows were not corrugated, but very regular and beautifully arched. The eyelashes were long, softly shading the lambent light beneath. The ears were small and thoroughly finished, even to their minutest details, and set close to the head. The nostril was well marked—the nose throughout being delicately chiselled. The beautifully marked short upper lip, led to a mouth where purity sat throned. On the wavy outline of those lovely lips, the keenest eye, in its most searching glance, could detect not even the faintest shadow of sensuality. It was a mouth which an angel might kiss without defilement ; yet was it most richly expressive of all human love. It was made for prayer—not the agonised prayer of the terrified bondsman, but the confiding supplications and profound soul-communion of the beloved son. The voice had tones of the most enchanting sweetness, that, once heard, could never be forgotten. It forgave the Magdalen. It said “Suffer little children to come unto me”. Such accents have never been heard before or since from a masculine speaker ; yet had they a depth and significance in their entrancing music, to which even the finest woman has only remotely approached, for here was a nature that in a most extraordinary manner united the higher qualities of both sexes. The chin was well marked, but not massive, the lower jaw having feminine delicacy rather than masculine strength. And lastly, the beard, like the hair, was of delicate texture, and, without being actually deficient, was nevertheless wanting in the strength and luxuriance indicative of a thoroughly masculine nature. It did not cover the cheeks, on which in latter years an unutterable sorrow, as for the sins and woes of a self-abandoned world, had left its unmistakable impress.

Now, such a head and face and temperament, necessitate a corresponding corporeal structure. The figure was slender. The chest rather flat, the thoracic development being somewhat feminine. Even the throat wanted masculine muscularity ; the action of the cerebellum being comparatively feeble in the direction of the passions. The

abdominal region was small, and the function of nutrition at a minimum. The limbs were rather slenderly, yet beautifully formed. The articulations were perfect, and the extremities small. The hands were eminently psychical. The instep was finely arched, and the tread elastic. The result of such a cranial contour and such proportions in the frame, was an easy and graceful, yet dignified, carriage—the perfection of Syrian motion. No head ever bowed lower in prayer; none was ever bent in more genial sympathy to the tale of distress and suffering; yet none was ever held more proudly erect when the sceptical Sadducee had to be confronted and the hypocritical Pharisee to be rebuked.

Now it is obvious that such a being could never have been the robust and muscular boy that occupies the foreground of Mr. Hunt's otherwise admirable painting. That fine globular head is formed for a life of action, as the expanded chest and vigorously developed limbs also sufficiently indicate. Such an individuality is formed to do rather than to suffer. He is eminently positive and masculine, having in him all the elements of the finest type of eastern manhood. He might have been a Judas Maccabæus. He never could have uttered the beatitudes and prayed for his murderers as he expired on Calvary.

The reader familiar with the various styles of art, will at once see that the Christ of tradition is much nearer the truth than the copy from a modern fact, which has been placed on the canvas of a gifted but mistaken cotemporary. In such a matter, humanitarian inspirations are not to be despised. They must accord with the feelings of our common nature. They are a response to the demand of the universal mind; and, if altered at all, should be yet farther idealised, in correspondence with our growing estimate of the grandeur and power, the purity and spirituality, of the divine original.

We might make somewhat similar remarks on the Virgin, not simply in Mr. Hunt's painting, but even in those of the old masters, whenever they have departed from the traditional type of the Madonna, in favour of some drawing "from the life". It seems to be forgotten that the mother of such a son must have been a most extraordinary woman. Without following literally the text of the two Synoptics, who have furnished us with the popular conception of the preternatural character of his birth, and admitting that he was in the order of nature the son of Joseph, it is still very obvious that he was pre-eminently a "mother's boy". Every characteristic, mental and physical, which we learn of him, unmistakably demonstrates this. His type of mind as shown in his system, and his type of body as deducible either from the traditions of art or the deductions of science, alike confirm us in this conclusion. His racial characteristics

might have been paternal; but we have reason to believe that his specially marked individuality was wholly maternal. The mother of the Messiah came of a family prone to ecstatic illumination. She and her cousin Elizabeth, the mother of the Baptist, were both gifted, not figuratively, but literally, "with the vision and the faculty divine". They were devout and prayerful Hannahs, of whom Samuels might have been expected. Like their distinguished sons, they must have possessed all the elements of seerdom. In accordance with the pre-eminently masculine spirit of Judaism, which systematically excluded females from all the offices of religion, their gift was discouraged in themselves, to be manifested in their sons. Not to be herself a prophetess, but the mother of a prophet, was the highest ambition of the Jewish woman. Both Mary and Elizabeth shared in this lofty aspirations; nor is there any reason to doubt that both believed in their sublime and enviable destiny. "The annunciation" was not the myth which rationalism supposes. It was the clear prevision of religious ecstasy, vouchsafed in some moment of supernal illumination, an experience of which only the Hannahs and Marys of their sex are susceptible.

Thus contemplated, then, it becomes at once apparent that to paint the Mother of Christ from fancy or by chance selection, more especially from an alien race, could not fail to prove a most hazardous procedure, leading generally to results that would be simply ridiculous, were they not also rather profane. And yet we all know that this has been done again and again, with the grave approval, apparently, of "holy Mother Church", even in reference to her altarpieces. Thus Murillo gives us Spanish beauties, with a most unmistakable dash of Moorish blood, evidenced not only in their swarthy complexion, but in the osseous structure of the brow and jaw! While Reubens has managed a similar introduction of blond Dutch femininity to the honours of divine maternity! The Madonnas of the great Italian masters are proverbial—each has his own, and very beautiful creations they are, if you will only forget the very distinctive character of the original! Here, again, we have reason to believe that the traditions of art are nearer to truth than the wayward fancies of one school of artists, or the arbitrary selections of another. The pre-Raphaelite Madonna might have been the mother of the pre-Raphaelite Christ. In both there is no doubt a certain veracity of outline, though in neither is there the high-toned spirituality of expression, to which Raphael himself sometimes attains in the representation of his favourite saints. Mediæval art was devout in its sentiments, and reverentially accurate in its traditional delineations; but it is wanting in many, if not in most, of the higher elements of executive

power. These have now been attained; and when to these have been added the devotional spirit of the ages of faith, we may expect representations, both of the Christ and the Madonna, immeasurably transcending anything which even the highest art has yet accomplished.

Shall we, then, for a few moments, attempt a portrait of "the Virgin" from the stand-point of modern science? And in the first place, we will commence with what she is *not*, by way of showing what models must be excluded. She was not, then, a European but an Asiatic, a Syrian Jewess of the highest caste, and therefore probably of Phœnician, that is, Greek, not aquiline profile. She was descended from spiritualised ancestors, who, through her, culminated in the flower of Israel, for whom, as we have said, the ages had waited from the beginning. There could not have been one vestige of sensuality, not the faintest trace of grossness, not the slightest shadow of what is of the earth earthy, in her entire composition. The angel had absorbed the woman—rather, shall we say, had transfigured her, as with the celestial radiance of a supernal glory. We matter-of-fact Protestants do not understand the archmystery of the "immaculate conception"; a dogma mysteriously folded up in the Catholic faith from its very commencement, and only requiring time to bud and blossom, as it has done in these latter centuries. Contemplated philosophically, it is simply humanity's undeniable assertion, that so great and good a son must have had a mother proportionately excellent. Let us lay aside our petty sectarianism, and forget for a moment the specially theological form which has been given to this great veracity by the feeble old man and his senile advisers, who now preside over the destinies of the most venerable Church in Christendom. "The immaculate conception", whether of the mother or the son, translated out of theological jargon into rational speech, simply means purity of descent from virtuous ancestors, good blood honourably transmitted—not by the will of the flesh, but of the spirit—not by the lower lusts, but through the higher sympathies and the holier affections.

Do not let us suppose that there was anything exceptional in all this. There can be nothing exceptional, nothing arbitrary or disorderly in a universe governed by divine law. The Virgin was a chosen vessel for a special purpose in the moral economy of the world. An epochal man was wanted, and an epochal woman was provided as his mother, a befitting mould for the peerless form of a divine incarnation. Such advents are not often wanted, for it is not every day that God's temple needs to be rebuilt among men; but whenever it does, there is a competent architect forthcoming, for whose birth a mother, adequate to so sublime an occasion, is duly provided. Again in

this do not let us unwisely despise humanitarian tradition. The adoration of the Virgin is not an accident. Mariolatry is but the somewhat unripened fruit of a beautiful blossom ; the grateful recognition of our unspeakable indebtedness to her, whom all Christian nations have, as with one consent, agreed to call "blessed among women."

The head must have been coronally arched, with not only a fine development of veneration, but with wonder, sublimity, and ideality of more than ordinary power. Let us remember that she was susceptible to the "overshadowing;" that in all probability, like Joan of Arc, she was occasionally the subject of visional ecstasy from girlhood, and through all her devout and dreamy youth, long prior to her marriage, had doubtless a growing, and ultimately a clear presentiment, of her unspeakably grand and enviable destiny. To be the befitting mother of such a son, she would also have needed a more than ordinary development of the domestic affections — the priceless dowry of maternal love, purified and spiritualised in this case by an exalted consciousness of the divine character of its object. Whatever we may think of "the adoration of the Magi," we may be sure that Mary, while she loved, at the same time adored her son, knowing that he was "the hope of Israel." Is art even yet competent to combine the unutterable tenderness, the yearning affection, the glowing love of the young and beautiful mother, with the dreamy spirituality and devotional exaltation of the prophetess and the saint? Can it unite intensity of feeling with sublimity of aspiration in the same girlish yet matronly face? Can it show us the intensity of the woman, as we have said, transfused and transfigured by the glory of the angel? Can it give us the ardour of the one expressed through all the stainless purity of the other? Can it combine all that is amiable of the earth with all that is transcendent in the heavens, and embody this in a female form, whose faultless beauty of contour is yet radiant with the splendour and glorious with the light of divine intercommunion?

From what has been just said, it must be obvious that a large proportion of those fine old paintings, known as "the Virgin and Child," must be at once condemned, as utterly inadequate to express the sublime idea involved in "the Mother of God," as the old church has not hesitated to phrase it. The failure in most of these cases is not simply ethnic, it is also affectional and moral. In some instances the artist has simply selected an interesting and beautiful girl, of antenuptial experiences, without special regard to her devotional development. In others he has taken some devout nun, utterly devoid of the maternal element, and in whom the domestic sym-

pathies had been long and systematically repressed. In others the model was obviously a young matron, in whom the wife and mother had altogether preponderated over the saint and devotee. Now it must be at once obvious, that individually, these at the best, could be but fractional representatives of "the blessed Mary." Could the painter by a miracle of art, have succeeded in combining the higher qualities of all three, in one transcendant form of female loveliness, purity, and affection, he would still have failed in the higher prerequisites of the subject. There would still have been wanting the *primal* light, the mystic radiance of ecstatic illumination. The beautiful face would still have been devoid of that heightened spirituality of *expression*, that lingering glory as of the heaven of heavens, which speaks of habitual intercommunion with the divine, and in this case, told not only of the *one* annunciation, but of the grandly cherished hopes of a life of supernal aspiration.

But in addition to these deficiencies, nearly all artistic attempts at the Virgin, are wanting in the requisite intellectuality, whether of cranial contour or physiognomical expression. It seems to have been forgotten, that she was not only the physical mother, but also the moral trainer of the Messiah. She heard the first lisplings of his infancy, the prattlings of his childhood, and as we know from authority, the deep and searching questionings of his boyhood. Let us again remember that she was an Oriental mother, between whom and her son there is ever a closer union and a profounder sympathy than in the same relationship among the stronger but harder, and perhaps coarser races of the West. Mary never deserted, and probably never lost faith in her son. She appears at all the more salient points of his career. Not only in the stable at Bethlehem and at the disputation in the Temple, but also at the marriage of Cana and at the foot of the cross. Was woman ever before entrusted with so grand a mission? Nothing less than the maternal tuition of the greatest moral teacher that has yet appeared in the sphere of time; the formation of the most powerful mind yet devoted to the sublime task of religious edification. It does not seem to be sufficiently understood that the fortunes of Christianity lay folded up in that divine babe, so providentially entrusted to her keeping. That she had to respond to his first desires, to help the unfolding of his earliest aspirations, to watch and to favour with all reverence and with unresting solicitude, the gradual awakening of that terrible consciousness of his supernal mission, as the God-sent Saviour of mankind. Now a blind bigot, on the one hand, or a girl of merely mediocre ability on the other, would have proved utterly incompetent to the efficient discharge of so important a duty, which demanded a woman of the rarest endow-

ments, not only in the more feminine sphere of the affections and sentiments, but also in that of the intellectual faculties.

The forehead must have been not only lofty but expanded, more especially in the superior region of the reflective faculties and towards the temples, in the group known as "the poet's corner." For this sublime seeress was not only a subject of the grandest visions—on the lowest standard of the most vulgar rationalism, of a dreamy idealism ever tending to objectivity—but she was also eminently capable of manifesting the good sense and sound judgment of a really superior woman in the education of her son. To permit of such a combination, the anterior lobe must have presented a more than ordinary development, in the sphere of perception, memory, thought and imagination. There must have been a certain breadth and comprehensiveness, in one sense, a manysidedness in such a nature, of which the usual Virgin (and Child) affords but an imperfect indication. The traditional Madonna, like the traditional Christ, is nearer to the truth, and probably for the same reason, namely, that in both we have some faint and far off copy of the sublime original.

It need scarcely be said, that such a structure combined with such manifestations, implies a temperament of the very finest quality. The hair was probably auburn, and like that of her son, of silky softness. With such warmth of affection, with such gushing sympathies, with all the attributes of the purest, the noblest, and the most richly endowed womanhood, absolutely overflowing in her genial nature, that hair, more especially in early youth, must have been long and luxuriant, and, left to nature, would have fallen in wavy and massive folds on her beautiful and finely rounded neck. It was high—almost bare—at the temples, distinctly divided off from the smooth, clear, transparent brow, its almost redundant profusion arising from the coronal and lateral, but more especially *occipital* regions—nourished by the genial affections beneath. The eyebrows were well-marked, and arched with all the symmetry of the finest type of eastern beauty. The eyelashes were long, and when the lids were closed, nearly touched the cheek—nature's kindly provision against the burning light of a Syrian sun.

The form was graceful and elegant, and probably rather above the medium height. The extremities were small, indicative of the highest blood, yet the finely moulded limbs were full and rounded. The slender waist was surmounted by a perfectly developed bust—for remember that while we have the saintly, we have here also the *maternal* element at its maximum—a combination which, in contour and expression, taxes all the resources of the very highest art to the utter-

most, and presents indeed a problem yet waiting its effective and triumphant solution at the hands of future genius. Hitherto art has presented us with mothers on the one hand and with saints on the other, but it has never yet effectually united the two in one sublime embodiment of glorified womanhood, seen in the light and crowned with the halo of ecstatic illumination.

Similar observations of course apply to artistic representations of the apostles. It should never be forgotten that they were Galilean fishermen. That they were Asiatics and Syrians, though probably of rather mingled descent, still ever tending to the predominant type of their race and area. Hence the absurdity of taking Italian, French, German, or English models, as befitting representatives of these simple and devoted, yet earnest and energetic men. Thus adjudged, the great work of Leonardo da Vinci must be pronounced an ethnic failure. Those powerfully organised and strongly-marked heads and faces, that surround the Lord at the last supper, are no more Syrian in their type and physiognomy, than in their manners and costume. They are magnificent Europeans, not distinguished Asiatics, and are very properly placed in a sitting and not a recumbent attitude, and surrounded by mediæval and not Oriental accessories. Even here, however, the inspiration of the highest genius has not been wholly wanting, and in the approximative resemblance of the beloved apostle to the type of his Divine Master, we see an explanation of their almost fraternal sympathy, and of that Christ-like spirit which breathes through the Epistles and speaks in the Gospel of St. John.

"John preaching in the wilderness" is another pet subject of Christian art, in which the imagination of the painter has been allowed to freely dominate not only European manners and costume, but also ethnic data and phrenological principles. The race, the family, and the individual character of the Baptist have been alike forgotten, and the fiery successor of Elijah, the daring precursor of Christ, the great prophet and master of the Nazarenes of Galilee, themselves the northern counterpart of the more famous Essenes of the south, has usually been represented by some stalwart and nervo-fibrous European, generally with far more of the porter than the prophet in his thoroughly and merely human composition. The archmystic of the east, who quite independently of Christianity, stamped his impress on the ages, is nowhere to be seen. The mighty seer, through whose stupendously magnetic force, the Messianic consciousness of Jesus was finally awakened never again to slumber, stands before us in the person of a simply material man, in whom digestion is obviously the preponderating function. Or where, in the place of a servile copy of some swarthy and muscular Spaniard or

Italian, the painter has given the reins to his imagination, we have but too often some impossible savage, the incarnation of brute force, not only in corporeal structure, but also in cranial contour, with a physiognomy and temperament anything but saintly or seerlike, and such as, in all human probability, never did and never could bear rule in a school of the prophets.

Again let us glance at this matter from the standpoint of ethnic and physiological science, and see if there be not some data by which art may be guided in its attempted reproductions of the great forerunner. John was a Jew of ancient and honourable lineage, and of eminently masculine proclivities. The male element was as distinctly marked in his character as the female in that of his greater successor. His universal recognition as a second Elijah, is also sufficiently indicative of this, while his mission as a pioneer specially demanded it. Nor in this connection can his hardy life in the desert be wholly ignored. He was pre-eminently positive, born to *do* rather than to suffer, to threaten and command rather than to supplicate and obey. Nature had clothed him with authority, and the majority of men must have felt that he was to be feared rather than loved. As a leader he was far more formidable to political rulers than his cousin, and met his death at the hands not of priests but a king.

Like Elijah he was probably tall and certainly muscular, not however with the osseous ponderosity of a European, but with the combined lightness and firmness of a powerfully grown Arab. His finely expanded and magnificently arched chest was for unimpeded respiration under rapid movement, and to give force and volume to the thunder tones of his stentorian yet varying and flexible voice, more especially in these terrible denunciations, which must have sounded like the minatory notes of a judgment trump. This chest, in accordance with his distinctly pronounced masculinity, was covered by long, dark hair, over which fell the massive shadow of his black and curling beard. The hair, as in the case of all Nazarenes, was unshorn, and swept his broad and swarthy shoulders in thickly tangled folds, telling more of the sun and wind of the desert than of the recent labours of the toilet, so that even this speciality gave nothing feminine to his appearance. It was hair which could only have grown on the head of a man. Like his great predecessor the Tishbite, he was throughout eminently hirsute, and we may add leonine in appearance, this characteristic being merely his inner disposition ultimated into form. The poise of the figure was particularly firm and erect, the attitude and gestures being unmistakeably commanding, and very decidedly expressive of the consciousness of both mental and physical power. The latter was borne out by the finely formed and firmly knit limbs, on which we

may remark, the muscular elevations and depressions were strongly but not coarsely marked, their development, to a practised eye, being obviously the result not of heavy lifts but of oft repeated and elastic movements, in the wild gymnasium of the mountain and the desert. Let it be distinctly understood that both Elijah and John were magnificent instances of the occasional return of a cultured race to its primitive type. They were civilised Jews by immediate birth, but they could both trace up their remote ancestry to the faithful Abraham and his Bedoween clansmen, to the desert lords and wiry nomads of the eastern pastures. Hence ethnically, they had much of the wild Arab in their constitution. They were more fervent and intense, more daring and excitable, less settled and conventional, than the ordinary Palestinian Israelite, the tamed creature of many centuries of Egyptian and Syrian civilisation. They were neither of them the bondsmen, even of a system. Of Pharisaic formalism they had not a shadow. They were free, not merely in outward life, but in thought and feeling, and their structure and bearing, the contour of their limbs and their physiognomical expression, must all have been profoundly symbolical of this spiritual condition of untrammelled liberty.

Phrenologically speaking, the temperament was eminently nervo-fibrous. The head most distinctly partook of the general power of the organisation. The brain was considerably above the average in volume, and the cranial development strongly pronounced. The basilar region afforded indisputable evidence of an aptitude for action, combativeness and destructiveness being both very prominently marked. The region of the affections was only moderately developed, this portion of the system, like every other, being entirely devoid of the *feminine* element. The fulcrum of the mental constitution was in the governing portion of the moral principles. Firmness and conscientiousness were both very large, and well-sustained by considerable self-esteem. The central line, in accordance with the Semitic type, was well elevated throughout, but nevertheless sloped down through veneration towards benevolence, indicative of a certain severity of tone in the general character. John came to call the (Jewish) world to judgment, to announce the end of the Mosaic system of retributive justice, while it was left to his gentler cousin to really inaugurate the new religion of love. Strictly speaking John was a destroyer. He was the axe laid unto the root of the tree, and possessed in full measure, not only the fearless daring, but the strength and sternness usually attaching to such dire instrumentalities of a frowning Providence.

The head was dolichocephalic, the anterior lobe being distinguished by length rather than height or breadth. Nevertheless the forehead

was decidedly indicative of considerable intellectual power, arising, however, from intensity rather than range, from force and earnestness rather than grasp of thought. The ideas were neither vast nor varied, but they had already worn themselves into deep channels, and were adhered to with a tenacity and a strength of conviction that defied argument and despised persecution. It was a naturally vigorous intellect, specially reinforced, however, from the depths of the moral nature, both thought and imagination being dominated by principle. The perceptive faculties were unusually developed, transcending even the average of the desert Arab. The frontal sinus was very strongly marked, and the black eyebrows, arched perhaps in childhood, were corrugated, in part by the fiery zeal and consuming earnestness of the prophetic soul that flashed beneath them, and in part by the physical necessities of the desert prophet, exposed habitually to the burning light of a Syrian sun. The eyes of darkest hazel, were large yet deeply set. At rest and in solitude, they often shone with the lambent light of dreamy and prophetic meditation, and occasionally, in hours of relaxation among his chosen and faithful disciples, were lit up with all the warmth of undying friendship and ardent attachment. But these milder manifestations were for the chosen few, for John was pre-eminently a prophet of reproof. His rebukes and denunciations were truly terrible, the stern utterances of an earnest soul, committed to life-long warfare with respectable iniquity and pharisaic formalism.

The nose was long and aquiline, and when seen in profile appeared rather strongly pronounced. It was in perfect accordance with his resolute and aggressive character, indicating most unmistakeably the more salient points in the mental constitution of the young prophet of the wilderness. It was impossible to associate it with a weak will, or with confused and self-contradictory ideas. On the contrary, it was abundantly eloquent to all competent beholders, of the high and stern resolves, if not the unrelenting severity of the chief of the Nazarenes, who from his desert fastness dared to openly reprove not only the hypocrisy of priests, but even the immorality of kings. The nostrils were powerfully marked even in moments of repose, but dilated with especial force in his bursts of righteous indignation, as if to mark and emphasise his towering contempt and withering denunciation of Pharisaic pretentiousness.

In congruity with his fibrous temperament and unyielding nature, the osseous portion of the structure was effectually, though not coarsely developed. And as an accompaniment of this, the cheekbones were distinctly perceptible, being, however, rather high than prominent, and not interfering to any marked extent, with the generally oval and

perfectly Caucasian form of the face. There was something of almost Roman strength in the lower jaw. Its contour, however indicative of will, conveyed no evidence of sensuality. The chin was prominent, and in a certain sense massive, but neither broad nor heavy. But this, together with the outline of the jaw, was now effectually masked by the black and flowing beard of his matured and rarely gifted manhood.

The mouth, like the remainder of the physiognomy, was eminently expressive of promptitude and determination. No one could look on those firmly closed lips, and doubt the decision of their owner. It was obviously the mouth of a man that never relented, that never softened, and from whose soul every vestige of feminine weakness had been thoroughly purged amidst the sterner discipline of the desert. Self-denial, and the denial of others were inscribed in lines of fire, on every curve of those clearly cut and thoroughly masculine, yet beautiful and intellectual lips. His mother's kiss was the last that had ever pressed them. Filial love was his only experience of the magnetic power of woman. His volcanic heart was consumed with the burning zeal of the religious reformer, and its lava floods were those of righteous anger, not of baser passion. He was a Nazarene, not merely in outward form, but inward spirit. To every form of indulgence he was an utter stranger. The man was lost in the prophet. His deepest thoughts, his highest aspirations, his most ardent wishes were all unreservedly devoted to his mission. He regarded the world but as the theatre for a divine drama, now culminating towards the grand crisis of a Messianic advent, wherein it was his part to enact the precursor. And through life and through death he was faithful to the part allotted to him. And all this was reflected in that stern yet refined, that decisive yet intellectual mouth.

The ears, like every other portion of the system, were eminently masculine. They were of fully average size, and to a keen eye indicated the all-pervading muscularity of the organisation. They were placed well forward, and left the impression of considerable volume in their rear. Well-shaded by his dark and tangled locks, it was, however, only at intervals they could be seen, and then but imperfectly, as the desert wind occasionally swept the superincumbent mass of swarthy curls upon its passing blast, so that art, if diffident in the matter, may altogether avoid committal to details. If shown at all, however, they must be represented *close* to the head, as this was an organisation, that with stupendous power, gave nowhere an indication of coarseness or inferior blood. Above all, remember that the prophet was perfectly Caucasianised, which is only saying, in other words, that he was entirely *human*, and had nothing Simian in his whole structure.

From the foregoing observations, which after all afford but an imperfect sketch of the great Baptist, it must be at once obvious that John is an ethnic study, demanding more than ordinary care, and by no means to be painted from passing fancies or casual models. The demand on the racial and physiological knowledge of the artist, is, indeed, all the more severe in consequence of so much of the figure being nude, so that he cannot hide his structural errors beneath the folds of his unexceptionable drapery. It is not only the powerfully formed head and strongly marked face, but the muscular neck, the broad shoulders, the arched chest, the finely formed limbs, the well-knit joints, and the fibrous yet fundamentally psychical extremities which he has to represent, even to the last articulation, according to the severest rules of science. It is a work that must be executed throughout in strictest obedience to the organic laws, under the penalty of defects, which although imperceptible to cotemporary critics and existing patrons, will be patent enough to the better informed and more observant generations of the future.

But should even these severe demands be fulfilled, there is yet another and a higher which cannot be neglected; we allude to the law of expression. This organisation has to be put in action, and its every attitude and movement must be in strictest accordance with the cerebral development and general anatomical structure. The habitual poise of the body in such a being is not a matter of accident, but dependent on the proportion of the coronal to the lateral, basilar and anterior portions of the brain, whose action on the muscular system is again modified by the law of temperament. The very manner in which such a man, so morally determined, so physically firm, so prompt in thought, so elastic in movement, would place his foot to the ground, is the result of forces inherent in his structure. The arched instep, the cleanly formed ankle, and the symmetrical calf, placed high in the leg, are all simply the necessary accompaniments of the lordly port of the desert seer. It is the same with his arms, now rapid and vehement, and anon solemn and commanding in movement, as with instinctive propriety, the inspired prophet adapts his graceful gesture to his ever-varying but always impressive thought. Let no painter fall into the grievous error of supposing that he can obtain the model of that perfectly flexible wrist, or of that finely formed and tendinous forearm, from the first stout peasant that enters his studio. If he must draw from the life, perhaps a first-class swordsman would be somewhat more germane to the matter. So with the neck, in every respect so admirably formed as a support to that haughty and commanding head. Its muscular development is before and not behind, and arises not from the erotic action of the cerebellum, but the sustained will-power of firmness and self-esteem.

But the highest of all forms of expression—that, indeed, properly so called—the expression of this powerfully marked face, in its moments of ecstatic illumination or transcendent oratorical power, yet remains to be portrayed. The first should attach to the baptismal scene on Jordan; the last to his addresses to the multitude, “Repent! for the kingdom of heaven is at hand.” In the former, he is the prophet actually rapt in seer-vision, with the supernal light of present inspiration beaming in full effulgence from his heavenly countenance; in the other, he is only the prophet of reproof and denunciation, hurling the thunderbolts of divine wrath on the heads of an erring yet pharisaical generation. The treatment of the latter is comparatively easy. Combativeness and destructiveness, sustained by firmness and self-esteem, and directed by conscientiousness, will give the predominant feeling of minatory indignation at the leaders, softened through benevolence, with a slight ray of almost contemptuous pity for their ignorant and misguided followers. The uplifted arm, the frowning brow, the flashing eye, the dilated nostril, and the curling lip of the haughty prophet, uttering his message with withering scorn for all that Jerusalem held as high and holy, may be readily managed, provided only there be the requisite force for an effective delineation of the sterner sentiments and stronger passions. But it is otherwise with the former. Here higher powers and nobler faculties, rarer gifts and finer endowments, come into play, and must, if possible, be reflected from the canvas of the painter. In this case, the passions have subsided into temporary quiescence; leaving, however, the traces of their stormful passage in many a well marked line. But for the time they have been overmastered by the sentiments, more especially by veneration, wonder, and sublimity. The arch-mystic, like Elijah of old, already knows of his own approaching departure. “He must increase, but I must decrease.” This, however, only adds to the grandeur and solemnity of expression, and to the general elevation of his look and bearing. He is about to ordain his successor, generally a culminating point in the life of an ancient prophet, involving as it did the outpouring of his whole soul in the consecration of another to the dread and holy vocation, now proving mortal to himself. But that other is the hope of ages, the expectation of Israel, the crown and glory of the long beadroll of prophetic souls from Moses downwards. The great end and purpose of John’s life is now about to be accomplished—the public recognition, and, if we may so say, official consecration of the Messiah. His emotions, even in the ordinary condition of the system, would, under such circumstances, have been sublime beyond description, and such as only the earnest and enthusiastic devotee of one grand and all-absorbing idea

can ever experience. But in the very act of baptism, the prophetic afflatus and the full power of seervision were developed into effective manifestation; and the great precursor, raised to the highest point of ecstatic lucidity and inspiration, hears the words of divine approval, and beholds the symbolical dove of the Holy Spirit descending on the beloved son of the Infinite. It is in this expression of present inspiration, that art has hitherto failed in its representations of the Baptist. It has not only given us an Aryan in place of a Semitic type, but it has also presented us with a material in place of a spiritual man. But the demands we make are unfair. To realise such an idea, we should need the force of Michael Angelo for the attitude and the outlines, and the devotional spirituality of Raphael for the expression, combined with a knowledge of manners, costume, and ethnic type, of which they were necessarily and utterly ignorant.

It must not be supposed from the foregoing remarks, that we are yet prepared to lay down all the rules by which art should be guided in its reproduction of the human form. Like anatomists, we may point out the grosser errors of which art is sometimes guilty, and may perhaps offer some few suggestions on the subject; but the details of application must be left to artists themselves. It is enough if men of science evolve the principles; they will then have done their share of the common work, and the remainder must then devolve on Royal Academies and their pupils. In short, artists must study race and type, structure and temperament, for themselves, and not depend wholly, or even largely, upon us for guidance. What naturalist could have given their finishing lessons to Landseer and Rosa Bonheur? or what geologist could have fully instructed Horatio McCulloch in the character of his lakes, or the outline of his mountains? Archæology is one thing in the book, it is quite another in the picture. In the former it is Dr. Dryasdust's descriptions—hard, angular, and pedantic as a black-letter folio; in the other it is a living reality, redolent of love and heroism, of poetry and beauty, where the generations of the past undergo a resurrection, and once more move before us in court and camp, in bower and tournament, with light in their eyes and bloom on their cheeks, the actual men and women of a bygone, yet not wholly vanished time.

At a future period, we may perhaps extend this paper, by a few remarks on Greek sculpture, and the treatment of classic subjects in modern art.

JANET'S ATTACK ON MATERIALISM.*

BEFORE we say a word about the merits of the book before us, we will make one or two extracts from the translator's preface :—"The Sorbonne has never lacked spirited and eloquent advocates, to maintain the *true* principles of metaphysical science. The standard of *sound* teaching is still borne aloft." And since the year 1857, M. Paul Janet "has never ceased by his pen or in the lecture-room protesting against the *errors*"—of what? Now we have no hesitation in predicting that our readers already know which side the author and translator have taken up. It is quite unnecessary to tell them that the "errors" are those of the modern materialistic school.

What a comfort it must be to those good people, who never accept an invitation to tea without promising to go if God will let them, to know that they can never make a mistake. How delightful it must be for them to know whenever they have been under a shower-bath, and felt the benefit of it, that they have been under God at the same time. There is only one thing about these good people that we have never been able to understand, and that is why they persistently ignore the teachings of the Bible in which they affect to believe. We have, for instance, some recollection of meeting in that book with the excellent precept, "judge not that ye be not judged." Yet these excessively good people are always the first to do precisely what the Pharisee did in the temple, to thank God that they are not as other men.

From the extracts that we have already made it will be seen that Mr. Masson is a Pharisee of unimpeachable belief. And he has translated a book which is thoroughly Pharisaical, yet not by any means orthodox. Dr. Janet knows he is right just as much as Mr. Masson or Dr. Cumming. But his certainty is of a kind which would horrify both the Evangelical Alliance and the priests of St. Alban's, Holborn. Dr. Janet is certain only that Dr. Büchner and Mr. Darwin are wrong, and maintains nothing but an incomprehensible will.

An incomprehensible will is, without doubt, a very fine thing in its way, but we submit that this is not the teaching of the Bible. We have been taught from our youth upwards that God showed his back parts unto Moses; and that has always appeared to us an intelligible proceeding. Back parts necessarily imply front parts; and from back

* *The Materialism of the Present Day.* By Paul Janet. Translated from the French by Gustave Masson, B.A. London: Ballière.

parts and front parts it is not difficult to infer top parts and bottom parts—in short, the entire man, which we believe is the only idea that any one ever clearly conceived to himself of the entire God.

But this is by no means the teaching of M. Janet. He, on the contrary, says :—

“As a run-away horse carried on by blind impetuosity in his reckless career might follow a thousand various directions, but under the guidance and authority of a skilful rider, takes only one course which leads him to the appointed end ; so, blind nature, constrained from the beginning by the power of an incomprehensible will, and directed by an unknown master, is everlastingly progressing by a graduated movement full of greatness and of splendour, towards the eternal ideal, the desire of which possesses and animates it.”

Of course if any man likes to write this kind of stuff, he is certain to be well received by a particular class ; but we need hardly point out that such writing is quite outside the province of science. The first thing required of any scientific proposition is that it should be intelligible ; and Dr. Janet at once puts himself out of court by confessing that his first principles are incomprehensible.

We, however, agree with the author of this book, so far as to allow that however far we may go back we come at last to something incomprehensible. But an incomprehensible will signifies no more to us than an incomprehensible Abracadabra. An incomprehensible and infinite impotence is just as intelligible to us, just as useful a formula of belief, as an incomprehensible and infinite omnipotence. No doubt, when the Büchnerists and Darwinists assert that their systems explain everything (which, by the way, we believe Mr. Darwin does not assert), they lay themselves open to attack. They have not explained, and they never can explain, everything. But the fact that the dogmatic atheists are wrong, is in no way evidence that the dogmatic theists are right. Neither party has the slightest tittle of evidence to rely upon.

It is perhaps right that the belief in an incomprehensible will should be finally expressed in an incomprehensible sentence. And thus the book ends :—

“Let us conclude with them against the champions of a blind mechanism, that an unknown law directs the progress of things towards an end unceasingly receding, but the absolute type of which is precisely the very cause from which the stream once of old issued forth by an incomprehensible operation.”

We submit that if all things progress towards an end unceasingly receding they perform a more incomprehensible operation than any dreamt of by Dr. Janet. If the end recedes unceasingly it must recede at the same speed with the “things,” at greater speed or at less. If at the same speed, or at greater speed, it is quite clear that

the "things" do not progress relatively to the end at all; if at less speed, it is equally clear that the "things" must overtake the end at some time or other, and the end does not recede unceasingly. We have no notion what the absolute type may be, because there is nothing to show whether it is the type of the end, the things, the progress, the law, the mechanism or the champion. But this possibly is the fault of the translator. We have not seen the original.

We have spoken somewhat severely, but let it not be supposed that we have not a good word to say of Dr. Janet. He has written a very concise and clear *résumé* of the history of German philosophy since the time of Hegel, and has given a fair abstract of Dr. Büchner's *Kraft und Stoff*, with a shorter and somewhat less satisfactory account of the Darwinian theory.

In the chapter on German philosophy we noticed some very remarkable passages extracted from German authors. Dr. Büchner is quoted by Dr. Janet to this effect:—"It is nearly thirty years since the Germans have been making transcendental science. If they once become aware of it they will find themselves very ridiculous." But this is nothing to Schopenhauer who, according to Dr. Janet, has thus expressed himself:—"Dilute a minimum of thought into five hundred pages of nauseous phraseology, and trust for the rest to the truly German patience of the reader." This is a German recipe for making a philosophical reputation in Germany.

PIKE ON THE ORIGIN OF THE ENGLISH.*

MR. PIKE'S book has met with more attention at the hands of the leading reviews than has perhaps been ever accorded to an anthropological work by the critics who aspire to be the fuglemen in general literature of the reading public. This may be partly due to the growing interest taken by that public in the science of man, but is certainly not wholly so; for even those who are least disposed to agree with the author's conclusions, must give him credit for the learning and ability he has displayed in his attempt to show their probability.

Mr. Froude, by the publication of the later volumes of his history, has stirred up in Scotland the smouldering embers of the controversy between the pro-Marian and the anti-Marian parties. Nearly three

* *The English and their Origin; a Prologue to Authentic English History.* By Luke Owen Pike, M.A., F.A.S.L., Barrister-at-Law. London: Longmans.

hundred years ago the latter faction got Mary satisfactorily beheaded and buried out of the way ; but the feud was by no means extinguished by that trenchant proof on which side lay the right of the stronger, and has continued to be waged in the field of literature even to the present day, though the pen has generally, and on the whole, corroborated the decision of the sword. Similarly the Anglo-Saxons, or the Normans who in the eleventh century served themselves heirs to them, have in a manner more or less satisfactory and complete, by superiority of valour, strength, prudence, perseverance, civilisation, or wealth, succeeded in putting down the Kelts throughout the British islands ; but the question whether the several so-called Keltic tribes or races, by reason of their faults or deficiencies, deserved to be so put down, has continued to be fought over by politicians, antiquarians, and ethnologists, even to our own time. In general the verdict of the lower court has been confirmed, and from Spenser to Pinkerton, and from Pinkerton to the latest special correspondent, the Saxon scribes, or the scribes who believed themselves to be Saxon, have not ceased to add insult to injury, and to follow up the unhappy Kelt with all the contumely that conscious superiority could dictate. If now and then some frantic Gael dared to ridicule the "dulness of the creeping Saxon," or to describe him as "a bullet-headed boor, with a mop of flax on his head ;" if some Welshman, on his own dunghill of an Eisteddfod, and secure of the inability of the enemy to test his assertions, crowed over the superior flexibility and expressiveness of his own language, a smile of contempt from the Englishman was a sufficient answer to such ravings.

In the persons of Matthew Arnold and of our author, however, the Kelts have at last found two doughty champions ; but while the former thinks it necessary to go to Wales to find his protégés, the latter discovers them among ourselves and in our own persons, or perhaps we should rather say he discovers the *Cymric* race ; for that is the name he prefers, spelling it, by the way, as he insists on spelling *Celtic*, with a C, and arguing with some point on behalf of his practice, to which we will endeavour to conform in the present article.

Mr. Pike appears to have two principal objects : he desires in the first place to prove that the bulk of the people now called English are really descended, not from the Teutonic conquerors of South Britain, but from the Cymric division of the Celts ; and, in the second, to make out a case in favour of the nearer connexion of these Cymri with the Greeks than with other branches of the Indogermanic family.

The proof of the former point is made to depend on the convergence of four lines of argument, historical, philological, anatomical, and psychological : the suggestion of the second arises mainly, though not

entirely, from considerations of the second and fourth class, especially the second.

In the historical chapter, the most important object is to discredit the account given by the "school-books," which is shown to rest almost entirely on the very unsound foundation of Gildas. We wish the author's space and plan had drawn more largely on the statements of the Welsh Triads, of Aneurin, and of Llywarch Hên. To most of us Englishmen these are sealed books, nor can their unsupported dicta, of course, be allowed any great weight; but we are informed, on competent authority, that some of the Triads support Mr. Pike's historical views in a remarkable manner. He, however, rests this part of his case mainly on *à priori* reasoning; and succeeds very well in showing the extreme improbability of the notion that an invading tribe, coming by sea, would ever have destroyed or driven out the entire aboriginal population.

When Mr. Pike approaches his second line of argument, we find that in him we have to deal with that too great rarity, a philologist who expects no more from his science than it is competent to give him; one who is willing to use without abusing it. His canons as to the use of philological evidence in questions of race are excellent.

"Whenever," he says, "any given people speak, wholly or in part, a language spoken by any other given people, there has been, at some time, a connection of some kind between these two peoples. Language cannot of itself tell us what are the proportions of the constituent elements in any nation. We cannot say that the language of the conquerors always prevails; for, if so, we should ourselves speak Norman-French, the French would speak German, and the Germans would speak Latin. (?) We cannot say that the language of the conquered always prevails; for, if so, the French and English would probably speak dialects of a common Celtic language. We cannot say that the prevailing language is that of the race which survives in the greatest numbers; for, if so, there would be hardly a trace of Latin in France or Spain. We cannot say that change of language may not be simply the result of time, geographical contact, and the influence of a metropolis, because we have seen one instance of such a change in Cornwall. It is obvious, then, that we cannot, by means of philology alone, solve the more delicate question of the exact proportion which one element, in any population, may bear to another. If language cannot tell us which was the conquered people, and which was the conquering, it certainly cannot tell us that any people has been almost or completely extirpated, though it may, in certain cases, lead us to suspect that a people has *not* been extirpated.

We have quoted these propositions of our author, partly because, though there is only one of them that is open to the slightest cavil, they are often so entirely ignored by writers of the philological

school of anthropology ; and partly because they have been the subject of a criticism in the *Westminster Review*, which, for muddle-headed perverseness, beats almost anything of the kind we have ever read :—

“No sane man,” says the reviewer, “has ever asserted that the language of either the conqueror or the conquered, or the race which survives in the greatest numbers, always prevails. All that is asserted is, that where two races have come into conflict, and the language of one is found to have superseded the language of the other, the race using the prevailing language is, *cæteris paribus*, most likely to have been the conquering one of the two. This is a very narrow proposition, which Mr. Pike has neither conceived nor grappled with. Yet its irresistible cogency, as applied to the present question, is such as at once to throw upon all Celtic advocates the onus of showing by distinct positive evidence that the Celts have contributed more than the smallest proportion of blood to the formation of the English people.”

Probably the writer of this galimatias had some idea seething mistily in his brain when he penned it ; but what that idea was we cannot divine, for he can never have meant what he said. His “irresistible proposition,” translated from generalities into particulars, amounts to this, and this only. The Saxons and the Celts came into conflict : the language of the Saxons is found to have superseded the language of the Celts : *therefore, the Saxons probably conquered the Celts*. This is another, but a roundabout and confused way of stating that the language of the conquerors generally prevails over that of the conquered. The only possible bearing of this rule on the matter in dispute would be favourable to Mr. Pike’s views, as it might lead to the inference that the Saxon language prevailed in England owing to other causes than superiority of numbers on the part of the invaders.

Mr. Pike, however, is by no means prepared to admit that the English language is so radically Teutonic as it is generally supposed to be. His arguments will of course be examined by all who are interested in the subject ; some of them have considerable weight, but on the whole we are disposed to think he is more successful in rendering probable a peculiar connection between the Cymric and the Hellenic than in reducing the Teutonic element in our language. He is certainly right when he says that our grammar is not purely Teutonic ; but when he takes to counting words in dictionaries he must infallibly go wrong. A great many words which are and have been in common use (and of which, by the way, some are Celtic) do not find their way into dictionaries, which on the other hand readily admit all kinds of Johnsonian and scientific slang. His remarks on the sounds *th* and *dh* are very interesting. The frequent confusion of

the two in Anglo-Saxon orthography rather tends to strengthen his position, that the English borrowed both sounds from the Welsh. But when we consider how the guttural aspirate, *gh*, though found in almost all other Teutonic or Celtic tongues, and still represented in the spelling of our own, has gradually slipped out of our pronunciation, until, everywhere south of the Don,* its power is absolutely forgotten; when we consider this, we shall be more disposed to think that the Germans have forgotten how to pronounce their *th*, than that they ever encumbered their language with a literal combination which had at the time no meaning or use for them.

The anatomical section of the book testifies to careful study and judicious employment of all the materials as yet available, to which the author has added some observations of his own on the prevailing colour of hair in England. He is fully aware, though some of his reviewers appear to have obstinately shut their eyes to the fact, that while no European tribe or race exhibits anything like uniformity in respect of colour, the differences among several races in the proportion of the various shades are great and tolerably constant, so as to furnish a valuable characteristic. His principal aim in this chapter is to show that the ancient Britons were longer-headed and darker-haired, as a rule, than the Germans; that the same difference still exists between the English and the modern Germans; and that these facts lead to the inference that the British type has not been materially modified by immigration from Germany. If the data are, perhaps, not quite sufficient for his purpose, this is assuredly not the fault of the author, but depends on the nature of the subject, on the loose notions as to nomenclature of colours which prevail equally in modern as in classical times, and on the paucity of craniometrical observations. We may expect a considerable addition to these last very shortly, from the publication of Dr. Barnard Davis's *Thesaurus Craniorum*, and from the continued investigations into the contents of British barrows, which are now being carried out, not only by the authors of the *Crania Britannica* and their friends, but by Greenwell, Hunt, Tate, and others.

What we are inclined to desiderate in the present volume, and what we hope to see in any future edition, is an attempt to *define* the physical and other differences between the High and Low Celts, who are too often confounded by writers on the subject. Among other points, we are disposed to think the prominent mouth a characteristic of the Low as distinguished from the High Celt, and not a mere result of unfavourable "media". The Irish are, as a rule, inferior in strength of shoul-

* The natives of Keighley do, or did not many years ago, pronounce the name of that town with the guttural aspirate.

der to the Welsh of Cymric type: the latter and the Staffordshire men are said to furnish the best hand-workers in the iron works: the Irishmen can use the barrow, etc., but not the sledgehammer. We would have liked, also, to have seen a more sustained attempt to develop the differences that exist between local sections of the English people. For the admixture of races is as yet very far from being uniform over the whole country; and there can hardly be said to be any such thing as a typical Englishman.

Though the Saxon type is not the prevailing one in most parts of England, we have met with it in great abundance over extensive districts. For example, Saxons, as described by Mackintosh, who is more accurate and less trenchant than Knox, swarm in Berkshire, and in parts of Hampshire, Gloucestershire, and Wiltshire; and, having ourselves travelled through Friesland and Hanover, we can testify that thoroughly English-like people abound in both regions. The Philistine of Arnold, the typical John Bull, is, we are confident, no true Celt, in person or in character. We think, moreover, that Mr. Pike has not given sufficient prominence to the Scandinavian element.

"No one," writes to us a Welsh anthropologist, who has unusual opportunities of observation, "can have much to do with Swedes, Norwegians, Danes, Holsteiners, etc., without being struck by their resemblance to, if not their complete identity with, the higher classes of Englishmen. The straight face, regular features, moderately developed cheekbones, rounded forehead, the arched skull, considerably developed over the parts ascribed by phrenologists to self-esteem and concentrativeness, and the graceful body, as also the moderate views on religion, the absence of tendency to metaphysics, the eminently practical straightforward character, the capacity for making good sailors, etc., are all common to both."

Mr. Pike would account for so much of these statements as he would receive, by the theory of the presence in the Scandinavian blood of an element derived from the ancient Cimbrian occupants of part, if not the whole, of Scandinavia. This theory we are not prepared to contest, still less to condemn. We must concede to him that many modern Scandinavian heads, while they differ much from the ordinary Teutonic, approach in some respects the Celtic forms. But we will not further follow up this subject; for already one enticing theory after another, each more or less plausible, but each equally incapable of proof, seems to rise up before us and to beckon us onward into a labyrinth of unprofitable speculation. To return! Our author has investigated the subject of the ancient Greek head-form, with the view of showing that it was usually long, like that of the Cymry. The evidence is scanty, but, on the whole, rather favourable to his view: as usual, it is set forth clearly and with candour.

The psychological section of the work has provoked much hostile criticism from the Teutonophilists. We must confess that we think Mr. Pike has dealt rather hard measure to our friends (he will hardly allow us any longer to call them our relations) beyond the Zuyder Zee ; but, when we consider the amount of abuse and detraction that has been showered upon the Celts by English writers, we think it was full time that some one should begin to paint the other side of the shield. This chapter will to many prove the most interesting in the book : but it would be impossible to do justice to it except by devoting to it more space than we have at present at command. We will, however, call Mr. Pike's attention to one little fact which, if he was aware of it, he may perhaps have thought hardly worth mentioning. It is the identity of the Derby "foot-ball play" with the Breton national game of the "soule". This seems to us noteworthy, inasmuch as the plain of Derby is not generally supposed to be at all a Celtic district. The game called bandy or hockey in our western and midland counties, identical, or nearly so, with the shinty of the Highlanders and the hurling of the Irish, furnishes another instance of an athletic game apparently belonging to the several divisions of the Celts.

We have given our readers rather a running and disconnected commentary on the book, than a complete sketch of its nature and purport. For it is a book that every one interested in the subject (and what English anthropologist can fail to be so ?) should study for himself : in fact, no one who is ignorant of it can henceforth speak or write of the origin and anthropological character of the English nation.

ON THE SKULL OF DANTE.

A Letter from HERMANN WELCKER, *Professor of Anatomy, Halle, Hon. Fellow A.S.L., Corr. Memb. E.S.L., to* Dr. J. BARNARD DAVIS.

MY MOST ESTEEMED FRIEND,—

The following inquiry, which I have the pleasure to address to you, is founded not only on the death-mask of Dante, and that important, interesting, and full Report,* which the Commissioners for the identification of the recently discovered remains of Dante have published, but also on a treatise of the excellent anthropologist Nicolucci, in many points based upon this Report.† A third publication, issued in the meanwhile, I did not become acquainted with until you informed me of it.‡

The question of the *authenticity* of the bones found in the chest of the Fratri Minori, I shall not enter into the probability of, or into the arguments by which it is sustained, which are derived from the history of Dante's interment, the first renovation of his tomb, and the finding of the chest. This is a subject already sufficiently examined into by those entrusted with the inquiry, and it has been copiously treated on. For my part, so far as I am able to survey the circumstances, I do not doubt the authenticity of the bones produced to be the remains of Dante, and believe that in this letter I shall bring forward new grounds in support of this authenticity. All that I know speaks for the same, nothing against it. But it cannot be denied that the authenticity of the contents of the chest found at Braccioforte, notwithstanding the inscription thereon in distinct characters, might be doubted. The ashes of Dante have in the course of centuries experienced so many vicissitudes; they have, as it is said, after repeated interments, been saved by flight and hidden in an unknown place, then been suddenly found again by a peculiar accident. The circumstances and the moment of this re-discovery might excite distrust in those inclined to doubt. They came to light opportunely, during the preparations for the celebration of the six hundredth year jubilee of the poet, in the ecstasy of the Italian people, who could not regard the bones of their

* *Relazione della Commissione Governativa eletta a verificare il fatto del ritrovamento delle ossa di Dante in Ravenna.* Firenze: 1865. 4to.

† *Il Cranio di Dante Alighieri*; Lettera del Cav. Dr. Giustiniano Nicolucci, all' illustre Antropologo, Sig. Dr. F. Pruner-Bey, Parigi. 1866.

‡ *Intorno al Cranio di Dante Alighieri*; Nota Antropologica diretta al Preside della R. Accademia di Science, Lettere ed Arti in Modena, da Paoli Gaddi. 1866. 4to.

greatest poet, the combatant at Campaldino and Caprona, the leading champion of the white party exiled by the black, to have been scattered to the four winds—they appeared, as it may be said, quite *à propos*. Might not, if we do not admit an intentional substitution, an undesigned change of the bones have taken place in the flight? However much all things plead for the honest purpose of the Frati Santi, still I believe that as thorough an examination as possible, based on anatomical conditions, will only be welcome to the friends of Dante.

1. The “Relazione” or Report justly lays great stress upon the question of the agreement of Dante’s mask and the skull found in the chest; and it is stated at p. 17, that the comparison of the two has afforded the same character in the conformation of the forehead, the same form of the arches of the eyebrows, of the bridge of the nose, and the same length and shape of the nasal bones. But, if the skull and the death-mask belong to one another, they must show, not only corresponding *forms*, but also corresponding *proportions*. The dimensions of the mask must be everywhere *larger*, certainly in various proportions; since the soft parts covering the bones in different divisions of the face are of different thicknesses. Yet, everywhere the measures of the mask will be greater; *smaller dimensions cannot be expected*. The measurements of the mask do not occur in the “Report”; on the other hand, there are specified (p. 17) a number of dimensions which were taken from the skull found in the chest. Let us compare them with those which I have obtained from the mask.

a. The perpendicular distance from the root of the nose to the lower extremity of the connection of the two superior maxillary bones, consequently to the roots of the inner incisor teeth, *i.e.* to the middle of the upper lip. In the skull, according to the statement of the “Report”, this is 85 *millimètres*. In the mask I find the distance between the two points named, which cannot be easily missed, to be at most 66 *mm.* The dimension taken from the skull is consequently much *too large* for the mask. The callipers, when opened to the extent of 85 *mm.* and one limb placed on the root of the nose, reach down a finger’s breadth below the mouth.*

b. The transverse measure through the middle region of the cheek-

* Professor Welcker’s letter was accompanied with two outline tracings of the profile of the mask of Dante, taken by the profile apparatus described in his *Kraniologisches Mittheilungen*, p. 101. One of these sketches is of the size of the mask, where it is seen, by a line introduced for the purpose, that the distance in question is 66 *millimètres*. The other is a magnified or colossal profile, made sufficiently large to allow of the distance defined to extend to 85 *mm.* In this way the incongruity of the latter measure of the *Relazione* is rendered more conspicuous.—ED.

bones. In the cranium, 107 *mm.*; in the mask, 115 *mm.* This is an increase which may very well be dependent on the soft parts of this region of the face.

c. The transverse measure between the middle of the two jugal arches. In the skull, 135 *mm.*; in the mask, 134 *mm.* at the most. The compasses opened to 135 *mm.* allow the whole jugal region, in all places, to come between them without touching.

d. The distance from the outer edge of the orbit on one side to that of the other. On the skull, according to the "Relazione", 124 *mm.*; upon the mask, I find it to be only 106 *mm.* The callipers opened to 124 *mm.* and placed on the transverse line intersecting the orbits, reach much farther backwards, to the surface of the temples.*

Other dimensions of the skull given in the "Report" (especially those of the proper brain-skull) are but little fitted for comparison with the measurements of the mask. I believe I may assert, as the result of our comparison, that *either the mask is not genuine, at least it is not the death-mask of Dante, or the measures of the "Report" are not the measures of Dante's skull.*

This result leads us, first of all, to a closer examination of the *mask*. The "Relazione" appears to hold it to be genuine; and, although this is not explicitly asserted, there is no intimation that the authenticity of the mask is doubtful.† It is always called a mask ("maschera") whereby, according to the usage of the Italian language, is understood a *death-mask*, not a free imitation. It is so much like the best and most assured portraits of Dante, that, if it be a death-mask, there can be no doubt it is the death-mask of Dante. The copy used by myself I owe to the kindness of our renowned Dante-man, my colleague Witte, who obtained it from the atelier of Rauch, and warrants that it is identical with the Torregianian example.

I have never been able to think this modelled head was a mere and unaltered death-mask. The same hand that modelled the portion of a cap in the manner of a diadem rising upwards, may also have employed some art touches here and there upon the face, to dissipate the expression of death, and give the whole an appearance of life. Indeed, there are many points to be recognised in this mask, which remind

* It must be allowed that, with respect to this measure especially, a mistake on the mask is not very likely; for it concerns the narrow border of bone lying close under the skin, which limits the outer edge of the orbit. It is quite clear that for the mask of Dante the dimension of 106 *mm.* is too small, and that of 124 *mm.* far too large.

† It is introduced in the Report (p. 17) by the words "La maschera di Dante, che dicesi tolta dal cadavere, ora posseduta della R. Galleria di Firenze per legato del marchesa Torregiani"; and by Nicolucci it is said, "La maschera tolta dal suo cadavere", p. 8.

us more of the proceedings of art and the technicalities of modelling than of the mere cast of a dead head. On the other hand, I consider that in the neighbourhood of the eyes, at the corners of the mouth, and in some other places, I can perceive marks such as are to be seen in real death-masks; so that I must suppose that the mask, so far as it is not the mere impression of the real head, has had the actual death-mask for its original ground.*

I am, however, of opinion that this point ought to be most carefully investigated. Against the supposition that the Torregianian head is a death-mask, it might probably be of moment that it reminds one more of the profile portrait of the youthful Dante (28—30 years) originating from Giotto than of Raphael's picture of the older man; whilst we should have expected the reverse, that the death-mask would represent the features of the pictures taken in later years. Still, there is no ground for assuming that Raphael collated this with any authentic portrait, it is much more probable that he only relied on the traditional likenesses of the manuscripts of the Divine Comedy. So we might suppose that the original of the "mask" was a Dante at a period of life between Giotto's and Raphael's portraits, and that the "death-mask" was nothing more than a likeness made in Dante's lifetime. There is another question after all—its answer in the *negative* would totally alter the state of the whole matter—were death-masks usually taken six hundred years ago? Upon this antiquarian point I am not informed, and shall content myself with having raised the question. The oldest death-masks I recollect are of a later time, those of Luther and of Tasso.

Let us, however, suppose for a moment that the mask is really a death-mask, although artistically restored, we should then not expect to find it cut away, diminished; but the reverse, deeply depressed places filled out, and here and there parts of the face enlarged. But it is quite the contrary. The jugal breadth (*c.* of our previous explanation) is in the mask *less* than the corresponding dimension of the bare skull; and the measures mentioned under *a.* and *d.* (length of the upper face, and breadth in the orbital region) are in the skull so exceedingly much larger, that we must assume the mask to be, if genuine, still to be a reduction of the natural size. But, how could it be that the mask could be copied from Dante's face other than the

* It is evident that Goethe did not regard a certain head of Dante to be the poet's death-mask (Eckermann's *Gesprächen*, i, p. 170), for he says: "It is well done—he is already old, bent, peevish, with the features relaxed and sunk, as if he had just come from hell." These expressions weigh but little against the supposition of our mask being a death-mask, as it is not clear whether Goethe had the Torregianian mask before him. Eckermann speaks of a "colossale Büste", a "colossaler Bild".

natural size? On the other hand, the measure mentioned under *b*. must also be equally diminished; yet in this diameter the mask is larger than the skull.

Let us submit the *measures of the skull* to a critical examination. The measurement given in the "Relazione" for the breadth of the orbital region, 124 *millimètres*, appears to me under all circumstances to be too great, whether I take into consideration the portraits of Dante which lie before me, or whether I make use of the general results of craniometry as a standard. The highest cypher which I have obtained for the dimension in question (linea *zz*. of my system of measurements), out of two hundred and thirty-seven skulls of German men, is 112 *mm*. Twice I found the next highest figure to be 110. The average was 99 *mm*. Out of twenty-seven skulls of Italian men I obtained a mean of 97 *mm*. In Schiller, whose skull is of a rare size, and at the same time has an uncommon breadth, the cypher in question is 106. For the skull of Dante, a man of middle stature,* whose head was well proportioned to his body, and whose countenance, according to all the portraits, was of a rather narrow oval form,† 124 *millimètres* is an absolutely *impossible* measure. Open a pair of callipers to 124 *millimètres*, and seek to find amongst thousands of skulls an example, the orbital diameter of which will reach that breadth;‡ or model a bust of Dante, taking that foundation for the dimensions of the diameter of the orbital region of the skull and of the upper face, and a colossal bust would be obtained.

I am not able to explain the contradiction which exists between the specified measures of the mask and the skull. If the words, "la distanza della parte esterna della periferia della base orbitaria d'un lato fino al punto identico dell'orbita della parte opposta" should be understood not to be the line uniting the two outer edges of the orbits (as my line *zz*.); but should the outer surfaces of the frontal

* "Una statura media dell' uomo."—*Relazione*, p. 15.

† "Il suo volto fu lungo."—Boccaccio, *Vita di Dante*, p. 54.

‡ In the table I have given of remarkably large skulls (*Untersuchungen über Wachsthum und Bau*, u. s. w., S. 136), the skull of the "Marburger Reisen", with the enormous horizontal circumference of 592 *mm*., certainly has an orbital breadth of 125 *mm*. The cranium of Professor Arnoldi (horizontal circumference 569 *mm*.) has 111 *mm*. All the other skulls of that table have less than 111 *mm*. I am now able to add, that in the Neanderthal skull, described by yourself, with a horizontal circumference of 581 *mm*., which I take to be the skull of a giant, the line *zz* amounts to 114 *mm*. In the Neanderthal itself it is 116 *mm*. In no single normal skull of any race have I found the dimension in question greater than 112 *mm*. The horizontal circumference of Dante's skull amounts, according to the *Relazione*, only to 525 *mm*.; this is a size at which the corresponding orbital breadth is usually from 98 to 104 *mm*.

processes of the jugal bones be regarded as the points of measurement, yet these unusual measurements certainly would turn out only 4 to 10 *millimètres* more than the transverse line *zz.* of the same skull. Even in Schiller's cranium,—such an orbital breadth taken from the outsides of the orbits, is only 116 *millimètres*. I should assume for this cypher “124” the occurrence of some accident, as an error of the press, if I did not find the same difficulty again in the dimension of the upper face (compare as before). 85 *millimètres* for this line is an extraordinarily large measure, such as could only be met with in quite particular, abnormally large skulls. It is in the highest degree to be regretted that the members of the Commission were not allowed to have a mould of the skull taken. To produce a cast from such mould, or only a good drawing of the skull, would have been of more validity than the best that I am able to say upon the matter.

Let us pass on to another character equally found in the mask and the skull, which, in spite of the contradictions just named, falls into the scale weightily for the authenticity of the skull found in the chest.

The “*Relazione*” mentions at page 16 the occurrence of an *asymmetry* in the skull discovered in the chest. And although the text in this place only says the skull appeared “somewhat unsymmetrical,” since the left parietal protuberance was more prominent than the right, and, at the same time, “placed a little further backwards,” there cannot be a doubt that a more considerable degree of asymmetry existed in this part than those smaller defects of symmetry which are only perceptible by careful comparison, and from which scarcely any skull is free. It certainly was not the intention of the “*Relazione*” to remark that there was some trace of deviation from the mathematical equality of the two halves of the skull. Indeed, in *Nicolucci* there occur the words (p. 5), “il teschio offre in questa parte una notevole assimetria”—“il che tieno senza dubbio ad una *sinostosi precoce*.” We may consequently presume upon a real *obliquity of the skull*, and there is no contradiction in the circumstance, that as it appears none of his contemporaries had observed a want of symmetry in the face of the living man, as such inequalities are confessedly easily overlooked. It further seems that here we have a case of that obliquity of skull depending upon one-sided ossification of sutures in early infancy, as made known by Soemmering, Virchow, and others, for there follows at p. 16 the assertion of a one-sided obliteration:—“Le suture della volta craniense non sono cancellate, se non che vedesi una soldatura là dove il parietale destro s'articola coll' osso occipitale.”

With respect to the obliteration of sutures, which in this skull

occasioned asymmetry, the text of the "Relazione" does not permit me to form a judgment. It says, "the left parietal protuberance was more prominent, and at the same time lay a little more backwards." But the asymmetrical obliteration affected the right half of the lambdoidal suture. Asymmetries, as far as they depend on obliteration of sutures, usually operate otherwise. The backward position of the left parietal tuber commonly depends upon this, that the frontal and parietal tuberosities of the *right* side, in consequence of the obliteration of the limb of the coronal suture lying between them, are not sufficiently separated from one another. An obliteration of the right half of the *sutura lambdoidea* cannot draw the *left* parietal tuber backwards; but it will, on the other hand, bring the right parietal tuberosity nearer to the occipital tuber. However that may be, there occur in the case of wry skulls diverse irregularities, and the obliteration of sutures and their results in older skulls are only with difficulty recognised and estimated.

It appears to me to be of decisive importance that the mask of Dante exhibits a very obvious asymmetry originating in the bones, exactly of that nature which I have often observed where the posterior position of the left parietal tuberosity was dependent on synostosis of sutures.* If we place the mask so that the upper face is directed straight forward, and glance from the forehead of the mask down to the chin, it is very remarkable that the anterior surface of the strong angular chin deviates to the right. The deviation from the true square line amounts at least to from 12 to 15 degrees.

It is singular that the Reporters in their assertion, that the skull and the mask exhibited essentially the same characters, did not make mention of this *obliquity* as a character common to both; but, that this skull, which on many other grounds is probably the skull of Dante, and that the mask, which on many other grounds also is likely to be that of Dante, should both agree in a character so rarely occurring, renders the probability greater that both are genuine.

I find in the "Relazione" no mention that the mask of Dante is awry, neither is it known that the same mask nor Dante's head was formed unsymmetrically. Indeed, a considerable asymmetry of the skull and face may escape a common observer. We assume it has not been known of Dante;† but if a modeller should have undertaken to discover a "death-mask" of the poet, or to have substituted one, how should he happen to make it so strongly unsymmetrical, and in that definite manner which agrees with the skull?

* For example, the skull No. 103 of the Halle collection may be referred to.

† No portrait, as far as I know, indicates it. Boccaccio's very exact report of the bodily proportions of Dante (in *Vita e Costumi di Dante*) knows nothing of a wryness.

However absolutely incompatible the measures taken upon the mask may be with the corresponding dimensions specified in the "Relazione" as those of the skull, it appears to me that in the agreement of the asymmetry of the mask and of the skull, we have a testimony for the genuineness of the cranium found in the chest outweighing this contradiction. And to this may be added another fact. On the opening of the marble urn in which the ashes of Dante were interred, it was found to be empty, with the exception of three phalanges lying at the bottom; and exactly the same bones were wanting, as the Reporters rightly call attention to the fact, in the remains of the skeleton in the chest. The authenticity of the marble urn and its contents is unassailable; and if the contents of the urn and of the chest represent one congruous skeleton, it is as good as certain that the chest contained that which was wanting in the urn—*the bones of Dante*.

2. The "Relazione" gives at page 19 a detailed account of Dante's skull according to the principles of Gall's Phrenology. We hear that the back-head showed the organs of passion, the anterior frontal region, intelligence; the lateral frontal and the parietal regions, "poetry, music, satire, and benevolence;" further, a love of authority, a sense of independence, self-esteem, pride, courage, egotism. The lateral parts of the vault of the cranium indicated circumspection and understanding; the temporal depressions, mechanical talent, drawing, sculpture, architecture; the entire development of the skull, a philosophical spirit.

The phrenological interpretation of a skull is so much the more doubtful an affair, the more intimately the constitution of the mind of the respective man is already known by his life and his works.* Science, in my opinion, still stands too far from a localisation of the actions of the mind in individual working territories of the brain, to venture to bring the talents and powers of a master-spirit into relation with the greater or smaller projection of this or that part of the brain. Even to this day it is not generally recognised, that a surpassing spiritual endowment pre-supposes simply a more largely de-

* In this respect, even accident has many times played its mischievous part. In praise of the beauty and fineness of the skull of Raphael, Goethe could not say enough. Yet later it has come out that this skull (which is found in plaster in different collections, as at Giessen in the Soemmerring museum, "*Cranium gypso effictum summi pictoris Raphael*") is not the true skull, but that it is a very ugly skull, of coarse, rude construction. Concerning the reopening of Raphael's tomb in the year 1833, to which "even professors of surgery and anatomy, which is indeed common, were appointed", compare J. D. Passavant, *Rafäel von Urbino*, Leipzig, 1839, i, p. 562. There was a plaster cast taken of Raphael's skull, of which hitherto I cannot obtain any account.

veloped, and consequently *heavier brain*, than a moderate endowment. This leads us to the question of *the size of the brain of Dante*.

In this respect the "Relazione" contains the statement, that the cerebral cavity of the skull found in the chest was filled with grains of rice, and that the weight of the grains consumed in the process amounted to 1,420 *grammes*. Of the specific gravity of the rice there is no mention.

As the fixing the weight of the brain of so richly-endowed and so genial a man as Dante has a great interest for the question touched upon, *Nicolucci* hath sought to reduce the figures given in the "Relazione" into brain-weight. He has obtained out of the 1,420 *grammes* of rice of the Report, p. 63, an internal capacity of the cranium of 1,493 cubic *centimètres*,* and deduced a weight of brain of 1,552 *grammes*; adding that this weight of brain, if it does not reach those of Cuvier and Byron,† yet it exceeds that of the eminent intellectual men brought forward by *Rudolph Wagner*:—Dirichlet with 1,520 *grammes*, Fuchs with 1,499 *grammes*, Gaus with 1,492 *grammes*, Dupuytren with 1,437 *grammes*.

I must here object that a weight of 1,420 *grammes* of rice cannot possibly correspond to a brain weighing 1,552 *grammes*. The volume of the internal capacity of the skull, which *Nicolucci* estimates at 1,493 cubic *centimètres*, is scarcely too little; but when he estimates the weight of the brain at 1,552 *grammes*, it is surely very much too high.

1,420 *grammes* of rice, which I shook together pretty well, gave a volume of 1,630 cubic *centimètres*. When I pressed the same into the measuring-glass closer together, probably closer than it would be shaken into the somewhat fragile skull of Dante, I then obtained a volume of 1,680 cubic *centimètres*,‡ which would still correspond to a greater internal cranial capacity of 87 cubic *centimètres* than *Nicolucci* (reckoning with the specific gravity 0.9512) has deduced from the 1,420 *grammes* of rice of the "Relazione." After this, I at first conjectured that the cavity of the skull might have been *larger*. But

* "Pollici cubici" is obviously a misprint.

† In the case of Byron, I have pointed out that the usual statement "2238 *grammes* of brain" is an impossibility, as the skull proper to this weight of brain would presuppose a head about as large as a tun; a view which *Wagner* afterwards adopted. We do not know what kind of weight the figures quoted for Byron's brain refer to, and it therefore appears to me not justifiable when *Wagner* reduces them to "1807 *grammes*". I think that the amount of the weight of Byron's brain, of which we know nothing certain, should be struck out of the tables.

‡ The specific gravity of rice with the air included between the grains, was in both cases 0.870 and 0.897.

still I have no ground to doubt that the rice used in determining the volume of the cavity of the skull of Dante did not possess the specific gravity assumed by Nicolucci, since the other measurements of the skull communicated in the "Relazione" lead me to *figures expressing the internal capacity of the skull, which deviate little from those calculated by Nicolucci, and are at all times not greater*. Thus the horizontal circumference of the skull is specified at 525 *millimètres*. With such a circumference (where no abnormal conditions of the skull, which here do not exist, exercise a disturbing influence) agrees with, as I by numerous experiments have shown,* an internal capacity of from 1,350 to 1,570, in the mean 1,470 cubic *centimètres*. Further, the sum we obtain by adding together the long, broad, and high diameters is 458. From this amount of the three chief diameters of the head, the mean size of the internal capacity to be expected is, according to my observations, 1,460 cubic *centimètres*. So I do not doubt the correctness of the 1,490 cubic *centimètres* obtained by Nicolucci. Still the weight of the brain is undoubtedly reckoned too high at 1,550 *grammes*, as more than 100 cubic *centimètres* of the internal capacity must be deducted for the membranes of the brain and the blood in the venous sinuses.† The figures of the weight of the brain must, therefore, in all cases, be lower than those expressing the internal capacity of the skull in cubical *centimètres*.‡ To an internal capacity of 1,490 cubic *centimètres* there belongs, according to my investigations, a weight of brain of 1,420 *grammes*, so that I believe 1,420 *grammes* (and not 1,550 *grammes*), must be accepted as the probable weight of Dante's brain.

Let us now inquire how this weight of brain stands in the series of weights of the brains of pre-eminently intellectual men known to us, and for this purpose a glance at the following Table will render it distinct.§

* *Untersuchungen über Wachsthum und Bau des Menschlichen Schaedels*, s. 37, and taf. xvii, 3.

† In the three cases I have mentioned at s. 33, *op. cit.*, the volume of the dura mater and of the blood contained in its sinuses amounted to 100, 115, and 130 cubic *centimètres*; in other cases to 200 *c. c.* and more. Cf. Davis, *Crania Britannica*, p. 224.

‡ In Nicolucci's calculation this appears to be overlooked. This is obvious from p. 6 of his Letter. Internal capacity of the skull = 1493 cubic *centimètres*; specific gravity of brain 1040. Consequently, weight of the brain 1552 *c. c.*, for $1493 \times 1040 = 1552$.

§ The basis of this table was laid in my former one, by which the commonly accepted position, that the weight of the brain of distinguished or intellectually pre-eminent men is, in the average, greater than the normal mean weight of the brain, was for the first time proved in a more exact manner (cf. *Ueber zwei seltnere Difformitäten*, etc., Halle, 1863, p. 14). I have

Out of the brain weights of the twenty-six highly endowed men of the accompanying Table, besides Dante, there results as a mean 1509 grammes, a figure which is related to 1390 grammes, the average obtained from a very large number of the "brains of commoner men," as 109 to 100, and consequently exceeds the mean nine per centum. We shall not rate it too high if we assume between these numbers (the mean of the common brain, and of the brain organised for higher intellectual manifestations) a difference of ten per cent: since the series of our twenty-six men contains, together with real geniuses and men of great talent, some simply well-endowed heads; whilst the great series of nameless men, which affords the mean of "common" increased this table by some later measurements, as well as by the addition of some further statements given by an accurate inquirer, J. Thurnam (*On the Weight of the Brain*, London, 1866).

It might perhaps be objected against my table, that "pre-eminent intellectual endowment" is a somewhat indefinite and wide notion. Notwithstanding, I have not at present determined upon making any division into several sections (as men of intellect, of imagination, of will), because the series seems to me too small for this purpose. Nevertheless, I willingly admit the possibility that the individual members of this table may have excelled by excessive development of very different segments of the brain.

In fifteen brains of our table, distinguished by the addition of *w*, the weight was directly determined by weighing. In five (Schiller, R. Bruce, Weissenbach, v. Mosheim, Spix), marked *h*, I have derived the cyphers for the brain from the circumference of the skull. In 6 (Arnoldi, Doell, v. Rheinwald, Büniger, Heinse, Schubert), marked *c*, it has been reckoned from the internal capacity of the skull determined by grain-corns.

To our table belong the following notes. 1. Cuvier, the renowned naturalist, died at the age of 63 years (Thurnam, *op. cit.*, p. 33). 2. Abercrombie, physician, 64 years (*ib.* p. 33). 3. Arnoldi, professor in Marburg, renowned orientalist, 85 years. 4. Joh. Veit Doell, excellent medalist, of diversified talents, 85 years. 5. v. Rheinwald, man rich in intellect, friend of Soemmerring. 6. Robert Bruce, King of Scotland, 54 years. 7. Schiller, 56 years. 8. Spurzheim, physician, 56 years (Thurnam, p. 33). 9. Büniger, professor of anatomy in Marburg. 10. Prof. Weissenbach, out of the Tyrol, 70 years. 11. Dirichlet, professor of mathematics, 54 years (R. Wagner, *Vorstudien*, i). 12. Count de Morny, statesman, 50 years (Thurnam, p. 34). 13. Dan. Webster, statesman, 70 years (*ib.* 34). 14. Campbell, Lord Chancellor, 80 years (*ib.* p. 34). 15. Fuchs, professor of pathology, 52 years (R. Wagner). 16. Chalmers, celebrated preacher, 67 years (Thurnam, p. 34). 17. Gauss, mathematician, Goettingen, 78 years (R. Wagner). 18. v. Mosheim, theologian, multifarious, very intelligent investigator (skull in Blumenbachian collection). 19. Dupuytren, surgeon, 58 years (Thurnam, p. 34). 20. W. Heinse, author of *Ardinghells*, 57 years. 21. Franz Schubert, composer, 69 years. I have to thank Professor Seligmanns of Vienna, for the measurement of the skull. 22. Whewell, philosopher, 71 years (Thurnam, p. 34). 23. Spix, naturalist, 45 years; skull at München. 24. Hermann, philologue, Goettingen, 51 years (R. Wagner). 25. Tiedemann, physiologist, Heidelberg, 80 years. 26. Hausmann, mineralogist, Goettingen, 77 years (R. Wagner, *Vorst.*, i).

brains," does not consist of pure talentless people. Still more, the mean of the ordinary brain is derived from the brains of four hundred and thirteen men, who were of the age of from twenty to sixty years. The mean time of life of our twenty-six men of talent is *sixty-five years*, at which period of life the weight of the brain usually amounts to only about 1320 grammes, i. e., *full fourteen per cent. less than the mean estimate of our six-and-twenty*. So great a difference would scarcely have been expected by those inquirers who already share my view.

Under all circumstances the position of Dante in our Table must appear very remarkable. That the cypher representing the weight of the brain of so eminent a genius exceeds the common average only by a little, appears to stand in strong contradiction to the before-stated position. Among the true geniuses of our Table Dante shows the lowest figure, and the five instances in which smaller cyphers occur are far from being of equal birth.

If we ask for an explanation, I may remind the reader that, as I have shown in another place,* in many highly-endowed and in part truly genial men, who have a small capacity of skull and consequently not a very large brain, *the skull, in consequence of infantile obliteration of sutures, has become contracted*. The skull of *Paracelsus* (so far as the remains of the skeleton preserved in the Sebastian's church at Salzburg, are really genuine) has an internal capacity of only 1250 *centimètres*, which would give a weight of brain equal to 1200 grammes. In Philipp Meckel the internal capacity is only 1320 cubic *centimètres*, which represents a brain of 1260 grammes; and also the brain of Wilh. von Humboldt stands, without doubt, below the average. Whilst I, according to my observations, may maintain that smallness of skull, so long as it does not rest on a checked development, produced by synostosis, will rarely, if ever be met with, in conjunction with higher intellectual endowments. Still, I also admit, that a brain designed for greater intellectual powers, restrained in its development by the occurrence of contraction of the space of the cavity of the skull, may, without injurious results, be circumscribed to a smaller volume under a limitation of the growth of those tissues which are indifferent to the psyche, and when the tissues especially serving the intellectual functions are spared. Admitting this hypothetical proposition, I might first of all merely maintain the position, *that smallness of brain, which is met with in conjunction with open sutures, is a more unfavourable condition for the intellectual functions, than smallness of brain, which is in conjunction with synostotic con-*

* *Ueber zwei seltnere Difformitaeten des menschlichen Schaedels, und über die Frage nach dem zwischen Hirgroesse und geistiger Begabung bestehenden Wechselverhaeltnisse*, Halle, 1863, s. 17. Cf. Barnard Davis, *On Synostotic Crania among Aboriginal Races of Man*, 1865, p. 21.

traction of the skull. Now, if the skull and the mask of Dante show symptoms ensuing from a contraction of space in early childhood, according to our positions, the remarkably low figure representing the weight of Dante's brain obtains a sufficient explanation.

The inquiry embraced in this letter, as no one mistakes less than the writer, has had to contend with several difficulties, chiefly from this cause, that *the skull of Dante*, its peculiar subject, or the best substitutes, a mould of it, is wholly wanting. And this cast is wanting because anthropological science, however great the progress it may have made in the last few years, has still not acquired in all places the estimation due to it. When the injuries which the precipitate attempts of phrenology, certain hypothetical doctrines of natural philosophy, and a more trifling and playful mode of treatment have occasioned our science, shall be completely dissipated, when people more generally learn to understand that to undertake the study of the whole natural history of *man*, is at least as valuable and important, even where it brings no uses serving any direct so-called practical purpose of common necessity, as the study of snails, plant-lice, crabs, then shall we no longer have to complain that the psychologically interesting remains of our great dead can only be employed clandestinely, and so far as a lucky accident brings them to daylight for our investigations. Then it will not be regarded as a desecration to open graves, and an investigation, under all circumstances difficult, will not then be rendered still more difficult by depriving it of the necessary materials for study.

Always your most devoted,

H. WELCKER.

Halle, July 30th, 1866.

The distinguished anatomist who has honoured me by addressing to me the preceding Letter, has expressed a wish that I should add some Notes to it from the *Memoir* of Professor Gaddi mentioned above, as this *Memoir* did not fall into his hands until this Letter was written. I do not see any important fact in Dr. Gaddi's *Memoir* that bears upon the ingenious line of argument of Professor Welcker which he has not already introduced from the "Relazione" of the Commissioners. Professor Gaddi was already struck with the extraordinary height of 85 *millimètres*, attributed by the Reporters to the upper face, which, he says, in long faces amounts only to 71 *mm*. But he regards this comparative observation as sufficient of itself to demonstrate that these were the bones of Dante, as he is always represented with an extremely long face—a special conformation—which passes as conventional among artists. He also remarks upon

the inordinate distance between the two extreme margins of the orbits, said in the "Relazione" to be 124 *millimètres*, usually only 103 *mm.*; and concludes that the eyes of Dante were placed at a great distance from one another, which Professor Gaddi attributes to the considerable development in breadth of the middle frontal region. The other measurements of the *calvarium*, for such is the skull of Dante, the lower jaw being absent, are regarded by Professor Gaddi as, for a like reason, to exceed the ordinary dimensions of human skulls. He notices the precocious obliteration of the right parieto-occipital suture, and attributes the want of symmetry in the two sides of the calvarium to this as its cause.

The deductions Professor Gaddi obtains from the statements of the "Relazione" and his own comparisons, are these: That the head of Dante Alighieri, is, 1. dolichocephalic; 2. eminently orthognathous; 3. offers great development in the frontal, inter-parietal, and superior occipital regions; and 4. belongs preeminently to the *frontal races* of Gratiolet.

These results are supported at some length, and the eminent anatomist concludes thus:—

"From this combination of facts the encephalon of this amazing genius has had a great volume of the cerebral hemispheres, signally in the anterior and middle segments, and also a conspicuous predominance of the cerebellum. If to these facts we should add that which is known to the entire world of all the incomparable mental faculties exercised by him in his life-time, we shall be constrained to conjecture that the cerebral hemispheres of Dante will have been certainly provided with a great number of convolutions, with anfractuosités very profound, and consequently with a spacious superficies for action. The noted prominence situated longitudinally upon the middle superior part of the frontal bone, gives reason for the *Theosophia* which always shines through in his immortal writings," p. 18.

With respect to the stock from which Dante, who regarded himself to have been of Roman origin, was descended, Professor Gaddi quotes a passage from Dr. Nicolucci, who decides with confidence that he was not Roman, but Tuscan by birth and descent.

The most generally interesting portion of the *Memoir* addressed by Professor Gaddi to the President of the Royal Academy of Sciences, Letters and Arts of Modena, is probably that in which he exhibits such striking zeal to have secured that thorough anatomical investigation of the remains of the great Italian poet, which all must now lament was not instituted when these relics were brought to the light of day.

Convinced of the great value of anthropology, and regarding ethnographic and anthropological studies as signally based upon the confor-

mation of the cranium, which, he says, is that part of the human skeleton upon which nature has impressed indelible and constant characters, he early addressed (June 3, 1864) a respectful letter to the municipality of Ravenna, offering his services to search for the venerable remains and to give a scientific description of them. He received a tardy reply from the municipality, informing him that there was no intention whatever to open the urn which contained the bones of Dante, and that the profane hand of man could not, without offence, approach its interior. This was in July 1864. The bones of Dante, which had been removed from the chest at a remote period, were found in the wall of the chapel of Braccio Forte, on the 27th May, 1865, which took away all idea of profanation. He pointedly inquires why, if the municipality had not confidence in him, did they not apply to other competent persons, and above all to the illustrious ethnograph Nicolucci? At this latter time a Government Commission was created by the Minister for Public Instruction, which did not include the name of Nicolucci or of Gaddi, for the purpose of identifying the remains. Among the instructions given to this Commission was that of especially examining the cranium to see if it corresponded to those portraits which are considered to be most authentic, and *to institute upon it those phrenological investigations which science suggests.*

Professor Gaddi, with great justice, feelingly laments that so precious an opportunity should have been lost, that his ardent desires should have been frustrated, and that he should have been prevented from obtaining the materials necessary for producing a *Memoir* for the Acts of the Royal Academy of Sciences of Modena, which, from its subject, would have thrown lustre on the Academy itself.

J. B. D.

ON THE VALUE OF PHRENOLOGY IN ANTHROPOLOGICAL INVESTIGATIONS.*

By J. W. JACKSON, Esq., F.A.S.L.

As a Member of the Phrenological Association of Edinburgh, and a Fellow of the Anthropological Society of London, I have long felt that phrenologists, devoted to their own speciality, are, as a body, unwisely indifferent to the wider field of anthropology; while conversely, anthropologists, occupied with their grander facts and larger area, are

* This is a report of a speech delivered at the anniversary meeting of the Edinburgh Phrenological Association, on October 24th, 1866.

prone to neglect phrenology, alike ignorant of the evidence by which its truth as a science is demonstrated, and indifferent to the aid which it is capable of affording to their investigations. Happily, on the present occasion, thanks to the high culture which still distinguishes certain classes of the modern Athens, I see before me an audience not thus limited, some of whom, indeed, like our excellent secretary, Mr. Gowans, are members of the one and fellows of the other society; while the remainder, not so distinguished, are, while zealous students of phrenology, also enlightened and unprejudiced readers of the *Anthropological Review* and the publications of the London Society. This, then, is an opportunity not likely to again occur, at least till our next annual gathering. For with all due respect to other, and perhaps higher intellectual centres, I must candidly confess that, at the present moment, I do not know where, within the limits of the United Kingdom, to find an auditory so capable of taking in both sides of this important question, so qualified by a knowledge both of phrenology and anthropology for estimating their relative importance, for seeing the extent to which the data furnished by the former science may throw light on the inquiries of the latter.

It need scarcely be observed that anthropology is the science of man in all his attributes and relationships; that in the hands of its abler leaders it presumably entertains no prejudices, nourishes no presumptions, has, in Baconian phrase, no "idola," which could interfere with the truly inductive investigation of its subject matter. Its followers want only the truth as it is in nature. They have no antagonism to anything save baseless assumption and dogmatic assertion. They neither oppose nor favour the groundless cosmogonies which have descended to us, in the shape of written records, from the ages of tradition; they simply ignore them, together with the equally groundless and absolutely ridiculous, because utterly impossible, schemes of *à priori* anthropology which generally accompany them. And while thus conducting their investigations, independently of traditional ideas and written authority, they are, or at least aim to be, equally free from the dogmatism of science and the prejudices of the schools. Perhaps in this duplex attempt at perfect intellectual liberation, they are more successful in the former than the latter; they defy the antiquated absurdities of theology better than the crude hypotheses of science; and while waging successful battle with creeds, are, almost unconsciously the willing slaves of theory. They have cast off much; but, as a body, I would scarcely be understood to assert that they have risen entirely superior to the prestige of great names or the despotism of accepted ideas. For example, they are not yet prepared, save with few individual exceptions, to investigate the

claims of phrenology. The great majority would, I fear, be found incapable of approaching this subject in a true Baconian spirit, having neither favour or affection, wish or feeling, on the subject. They have already made up their minds that it is a baseless hypothesis ; and while utterly incapable of delineating a character from craniological and physiological data, content themselves with an *à priori* assumption that the thing is impossible. This is, of course, only saying, in other words, that they occupy the ordinary position of men of science who are not phrenologists, and who, in utter oblivion of the lessons which they have acquired from the *Novum Organum*, content themselves with denying, and sometimes deriding, what they do not understand, and what in their present state of mind, whether as regards knowledge or feeling, they are very imperfectly capable of investigating.

In the foregoing remarks, I have been perhaps almost blameably severe on my brother anthropologists, who are for the most part absent ; and now do you, phrenologists, who are present, bear with me while, in no unfriendly spirit, I lay bare, with an equal freedom of remark, the deficiencies and shortcomings, if not of ourselves, at least of the majority of our cobelievers and coadjutors. Phrenology, then, let us confess it, has been persecuted into isolation. It is something apart ; it stands alone ; it expects no favour from, it affords no help to any other branch of science ; it is not an integral part of the living and growing intelligence of the age. It is not sufficiently vital and expansive ; it does not advance ; it moves in a circle, the circle of ideas, developed by its champions in the last generation, whose thoughts it echoes and whose limitations it observes. Like some ivy-circled sapling, it exhibits all the signs of premature old age. It is falling into saint-worship ; it reverences its olden reputations so devoutly, that it has neither eyes nor ears for higher veracities, lying beyond their horizon, and only now looming into view, as humanity in its onward march advances to a new position, from whence there is a wider outlook and a sublimer prospect ; it has fallen for the most part into the hands of professional manipulators—men who are practical phrenologists and nothing else, and who, except in this, their professional position, have no status either in the scientific or the literary world.

As a necessary result of this condition of things, phrenology does not occupy the position to which it is legitimately entitled ; it does not do so either in the estimation of its disciples or in the opinion of the public. Let us clearly understand this matter. Phrenology is not simply craniology, but neurology. In its higher aspect, it is the science of the nervous system. Nay, in its widest acceptation, it is

the science of the external in its relation to the internal, of the body in its relation to the mind ; it predicates the relation of form to function. It is by no means confined to the human sphere : its principles are as applicable to animals as to men. The carnivorous character of the tiger is as effectually impressed on his feline brain, with its powerful and predominant combativeness and destructiveness as on his teeth and talons, his stomach calculated only for the digestion of flesh ; or his agile limbs and powerful chest, which qualify him for the capture of his prey. It is no exaggeration to say that comparative anatomy will ever remain imperfect till it calls phrenology to its aid, for by this alone will it be enabled to explain how the habits and instincts of each species are so beautifully in harmony with its organisation.

Were this the time and place, we might dilate on its application to art, which, without its guidance, but too often paints monstrosities and calls them men. Or we might explain its use in medical diagnosis, where it would often guide the physician in his estimate of constitutional proclivities, and provide him with a key to individual specialities and idiosyncrasies otherwise all but inexplicable.

But it is time we should advance to the more especial subject matter of this evening's address—the value of phrenology in anthropological researches. Again, to such an audience as the present, it is scarcely necessary to observe that anthropology, the latest of the sciences, is also one of the highest ; that it implies not only the pre-existence, but also the effective development of many others. It could not possibly have existed in its present comparatively advanced state even a generation since, for the instrumentalities which it employs were not then fully prepared for its use. This remark applies more especially to geology and archæology ; while as regards philology, technology, and comparative anatomy in its relation to the various types of man, these subordinate and contributive departments are not yet sufficiently matured to effectually aid us in our investigations.

As anthropology demands the assistance of so many branches of knowledge, it is almost needless to observe that it also requires the labours of many diversely constituted minds. It wants both the observer and the thinker, the collector of facts and the master of principles, the workman who quarries the stone, and the architect who designs the temple. And among these workmen, these hewers of wood and drawers of water to the higher priesthood of intellect, we may place the phrenologist. It is his humble vocation to supply the facts of cerebral physiology, for which, let me warn him, he will at first receive but slender thanks. He must be contented to wait in faith and patience for the recognition of his services. He must submit

to be treated with indifference, if not contempt, by men who are ignorant of the very elements of his science, and who could not practically wield the simplest of its resources.

The fundamental problem in anthropology is, "the place of man in the animate scale." On this depends much else, and on its solution some of the keenest if not highest intellects of the age are now engaged with a zeal that occasionally outruns discretion, and leads to personalities, of which theologians may be guilty, but which are altogether beneath the dignity of science. Now, I presume, most of you are aware that the determining element of form and function throughout the animal kingdom, is the development of the nervous system. To this, bone and muscle are simply subordinate instrumentalities. This is only saying, in other words, that the place of an animal in the scale of being is determined by its relation to the imponderable forces. Those of you who have listened to some of my previous addresses are also aware, that I regard the form of plants and animals as by no means arbitrary and accidental—they could not have been other than they now are in the present state of the earth, of which they are in reality the necessary and appropriate organs, through which as a cosmic organism, at a certain stage of growth or development, it discharges some of its more important, and in truth, vital functions. Their form, therefore, is no more arbitrary than the shape of our hands or the relative position of our features. They are what they are, and in a sense, where they are, because they discharge certain duties in relation to that larger whole, of which they constitute the subsidiary and harmonious parts. Forgive my thus descending to fundamentals. If we start from a false basis our conclusions can scarcely fail to betray the error of our premises.

The place of man in the animate scale must then be primarily determined by the development of his nervous system, to which, however, the ruder portions of his organism will infallibly bear a certain relation. In other words, if you would accurately, or even approximately define the specialities, by which man is differenced from the anthropoid apes, you should commence, not with his feet or hands, but with his brain, thus mounting at a leap from the circumferential sphere of effects to the central sphere of causation. It is here that phrenology becomes not only valuable, but invaluable. Where anatomy stumbles, it triumphs. This is a bold assertion, but I utter it advisedly. And now to the proof; not, however, for the present audience, but rather for those who may hear the echo of our proceedings.

Most of you are doubtless familiar with the rather extraordinary circumstance, that two of our greatest comparative anatomists se-

riously differed, not about a principle or a conclusion, but a fact, the presence or absence of the *Hippocampus minor* in the brain of some of the anthropoid apes—a little matter, which might have been settled far more conveniently by dissection than assertion. Without attempting to enter into the merits of this very important controversy, we may say that from the phrenological standpoint it loses much of its significance. We are quite prepared to find that the basis of the human brain resembles that of the apes; nay, it would not modify our estimate of the place of man, to find that they are identical in character, for in the animate scale the superior differs from the inferior not so much by subtraction as addition. Now the additions here are in the way of superposition. The specially human brain rests upon that of the animal, and in all normal cases dominates it. When it does not, the man sinks not only to, but below the level of, the brute.

Let us go somewhat more minutely into this matter. Here, for example, is a cast of the brain and cranium of a gorilla; now, at a glance, the practised eye of a phrenologist detects the presence of the animal and the absence of the human elements. Here are the powerful impulses of amativeness, combativeness, and destructiveness, in the postero-basilar region; resting on which are at least the rudiments of domestic affection, in strong philoprogenitiveness and considerable adhesiveness. But when we look for the moral sentiments, which should control these excitable feelings, they are nowhere to be found. The true coronal region of the human head is entirely absent. This is a creature morally idiotic and absolutely irresponsible, as much so as a tiger or a bull. And when, advancing to the anterior region, we examine its indications, we find in perfect correspondence with the animal characteristics already adverted to, that perception is almost the sole function of the intellect. Here is a being utterly incapable of rising from a fact to a principle, from a phenomenon to the law on which it depends. He has never entered the sphere of abstract thought. His reflective faculties are on a par with those of the dog and the elephant, or rather perhaps of the wild ruminants. He is utterly devoid of imagination. He has never, at any moment, conceived of a state of existence superior to that arboreal life, of which alone he has had experience, and to which alone we may add, is he either morally or physically adapted. Here, then, is a being existing on a totally different plane to that of man, between whom and man there is indeed a gulf so wide, that neither genus, order or class seems fully adequate to express its whole significance, and we are almost tempted to adopt the nomenclature of Mr. Luke Burke, and specify the human type as the germinal and embryonic form of a new KINGDOM.

Again, those of you who have read my communications to the "*Future*," are aware that I regard man as the beginning of that higher and aërial type of being, which will hold the same relation to quadrupedal and instinctive mammals that birds do to reptiles, and which the papilio as an individual does to the creeping grub, of which it is the transformed and translated, or, shall we say, transmigrated completion. This, of course, does not strictly imply a new kingdom, the relationship being one for which the Cuvierian system provides no term, because it does not embrace the idea on which it is based. Remember that in uttering these thoughts I know to whom I am speaking, namely, to those who have mastered scientific knowledge without being enslaved by scientific systems.

But to return from this semi-digression. We have here, in the case of man and the gorilla, an instance of the competence of phrenology and the incompetence of anatomy (as at present taught and practised by the highest authorities) to express a diversity in organisation, which must exist, for we see and can admeasure its effects in function. The man and the ape are different, radically different, in mental aptitudes, and yet anatomy so imperfectly defines this difference in structure, that its ablest representatives are in conflict, not only as to the degree of this difference, but as to its very existence. After the foregoing remarks, you will not think that I exaggerate in saying that anthropology will ever remain imperfect without the aid of phrenology, or to speak yet more correctly, without the aid of those facts in cerebral physiology, whereof existing phrenology is the very imperfect and inadequate expression.

But if phrenology can thus aid us in defining the place of man in the animate scale, it is of course equally valuable in defining the rank of his various types. No phrenologist has any doubt as to the inferiority of the Negroid to the Turanian type, or the superiority of the Caucasian to either. But he can do more than this; he can enter with confidence upon the specialities of mental constitution, attaching to each of these great divisions of humanity, and in many cases, of their subdivisions. To such an audience as the present it would be superfluous to illustrate this by the citation of examples from the writings of our greater phrenologists, whose portraiture of national character shows what may be done in this direction even by men but imperfectly acquainted with anthropology as a science. While on this subject, permit me to remark, that while phrenology—or shall we rather say cerebral physiology—constitutes a most important province of anthropology, the many important facts furnished by the latter in reference to the crania of foreign nations and ancient races, are of unspeakable value from the phrenological standpoint, and constitute indeed a

mass of data so interesting and instructive, as to indicate the approach of a new era in the application of phrenological principles to the interpretation of racial characteristics.

But we are yet far from having exhausted the possible application of phrenological principles to the solution of anthropological problems. There is the great subject of temperament, which means quality, in all its profound effects upon character, and in all its far-reaching consequences upon organisation. Even the ablest anthropologists have as yet but an imperfect appreciation of the vast importance of this subject. They are so occupied with the form and volume of a human structure, that they are comparatively indifferent to the quality of the materials of which it is composed, and yet this element often underlies form and always influences function. Though type and temperament are not identical, there is obviously an intimate connection between them. It is only necessary to say that the Caucasian is predominantly nervous, the Turanian muscular, and the Negro vascular, to show that certain types tend to promote the development of corresponding temperaments. Again, let us clearly understand this matter. Form is not the only determining element of type, but form and quality in combination. The Negro is not only ruder than the Caucasian in form, but he is also coarser in texture. Now it is here that a practical acquaintance with phrenology would prove an invaluable acquisition to the anthropologist. Where the language, and it is to be feared, the ideas of the latter are often vague, the terms of the latter are well defined, and he expresses himself with ease and precision on a subject, long familiar to him, but only now faintly dawning on the minds of anthropologists who are not also phrenologists.

But it is to be feared that I must have already more than exhausted your patience, in the utterance of what must appear mere truisms to you, but which are yet, for the most part, unknown or unappreciated veracities to even the world of science, on the outside. Throughout I have assumed phrenology to be based on truth; this at least was neither the time or place to question or defend its principles. Such a task may well be postponed to another time. Suffice it that, although during more than twenty years a convert to the fundamental doctrine of specialisation in cerebral function, I am far from regarding phrenology as perfect, or its present teachers as final. If we do not expand it and leave them behind, our doom is sealed. We must march with the age, or consent to be trodden under foot by those more progressive than ourselves. But I have no fear. Our past is the earnest of our future, we were pioneers in the former, we shall not be less in the latter.

MR. PIKE AND THE "WESTMINSTER REVIEW."

To the Editor of the "Anthropological Review."

SIR,—It is not without great diffidence that I ask you to find a place in a scientific review for some remarks upon a production which is not only not scientific but which is not even grammatical. And I only ask this favour at the instigation of my friends, who seem to think, one and all, that gross ignorance and gross want of good faith in a critic should not be allowed to pass unnoticed; and so, as the subject is anthropological, I appeal to you.

I do not, however, ask you to let me give a complete statement of my whole case. If I can show that the writer of a critique on the "English and their Origin," which appeared in October, 1866, in the *Westminster Review*, is not competent to write on that or any other subject, I shall, perhaps, have done enough for my present purpose. And if I can further show that this critic is no more scrupulous in his assertion than he is correct in his grammar, happy in his metaphors, or well read in English literature, I shall have committed what may perhaps be considered a cruelty. But I am glad to say that I can do all this, and yet show mercy in abundance. I shall select for the gibbet one or two specimens of bad grammar, one or two of self-contradictory metaphors, one or two of general ignorance, and one or two of deliberate misrepresentation, and I shall then leave the critic to the tranquil enjoyment of the rest.

Of bad grammar I ought perhaps, in fairness, to select specimens, which show that the critic appears to have adopted a system of compensation. If he makes a blunder of a given kind in one place he sets it right by making the converse blunder when he has an opportunity in another place. The system is not original, because its working may be observed in the very lowest classes, who compensate the blunder "you was" by the blunder "I were," who, if they have their 'ats on their 'eads have been known to carry ropes of "honions" on their "harms." Of this principle, however, the Westminster reviewer tells us that "the *picture* of the forefathers whose claims Mr. Pike advocates *are*, to say the least of it, not more attractive;" and further on, that "such *has been the positive circumstances* of the English people from the times of Edward the Confessor."

I do not know what is intended to serve as a compensation to *Belgorum*, which the critic gives as the genitive case of *Belgæ*. Perhaps it is this elegant sentence: "The Teutonic race in Germany *has*, in

every department, closely rivalled, and in some actually eclipsed, *their* Anglo-Saxon competitors." Perhaps it is the still more elegant sentence which follows: "The truth is, that within the brief period of German literature, the celebrity of German poets of the second and third order is probably far greater all over Europe than that of more than four or five of all the poets who have illuminated the whole four centuries of literary effort in England."

I confess myself unable to interpret the last quoted passage, which appears to me to be simply nonsense. I suspect, however, that the critic wishes to assert this proposition; every one of the second and third rate poets of Germany has a higher reputation than any of the first rate English poets, except four or five. Perhaps he thought this statement would not look well in grammatical English.

I shall say but little more about my critic's grammatical blunders, because, numerous as they are, they are nothing to his other absurdities. I have only to remark that he lays claim to the title of — philologist! He is quite ignorant that the leading philologists are already giving up the belief in language as an index to race, and falls foul of me because I do likewise. This, perhaps, is not much; but to discover a philologist who has no notion of grammar is better fun than to see a bridegroom of ninety, a quack doctor dying of the disease for which he advertises a specific, or a blind man leading not the blind but the quick-sighted.

Except in this same review I do not believe that anything equal in absurdity to the subjoined passage has been written since the days when Mr. Robert Montgomery announced that

"The soul, aspiring, pants its source to mount,
As streams meander level with their fount."

The critic appears to differ from Mr. Robert Montgomery only in possessing the pompous wordiness of Dr. Nares:—

"The result is a simulation of logical methods all the more dangerous for its seductive garb; an ostentatious parade of valueless and unverified occurrences, the mere pallid skeletons of cautiously collected and indisputable phenomena; in fine, the earliest of generalisations, wholly destitute of contrary instances, exclusion of possible causes, and allowance for the plurality of causation. The old vices of ancient logicians are repeated in the dress of the most modern improvements; and unless a new Bacon arise, or the warning voice of criticism is listened to betimes, a modern *Dunciad* will be ushered in, more irremediable because more delusive and phantasmagoric, than any of old."

The critic tells us elsewhere that the Germans "can hardly use their marvellous language without handling some suggestive metaphor, or combination of imagery, or luminous trope." The Germans

may well pray to be saved from their friends. This critic's tropes are so luminous that they quite put out our mental eyes ; his imagery is so combined that it is not the likeness of anything in the heavens above, or in the earth beneath, or in the waters under the earth ; his metaphors are most unquestionably suggestive—of Bedlam ; indeed, a few more such articles as this on "The English and their Origin," would entitle the *Westminster Review* to set itself up as a "Comic Quarterly," with its own Special "Colwell Hatchney" Correspondent.

To begin with the first metaphor in the sublime passage above quoted : a simulation is made more dangerous by having a seductive garb. I have heard of butter upon bacon, of a light hidden under a bushel ; but these are nothing to a simulation hidden under a garb. How can a simulation be a simulation when it is concealed, or even partially concealed ? If we could see a wolf in sheep's clothing we should see a good instance of simulation ; but if the wolf thought proper to clap on a peacock's tail, the illusion would at once be destroyed. But perhaps the greatest beauty of my critic's metaphor is that he never tells what the garb is. I suspect if he had any definite idea at all, it was that the simulation and the garb were identical ; but in order to impress us with his eloquence, he went on to assert that his simulation was more dangerous than itself, simply because it was itself and nothing else.

Not less absurd is the metaphor which closely follows the garb of a simulation of methods. Valueless and unverified occurrences are the pallid skeletons of cautiously collected and indisputable phenomena. But what sort of a thing is a pallid skeleton ? *Pallid* is an epithet applied to the complexion ; but where is the complexion when there is no skin ? and how, on earth, can an unverified occurrence be the skeleton, pallid or otherwise, of an indisputable phenomenon ? A skeleton is that which underlies the flesh, and before the skeleton can be reached the flesh must in some way be got rid of. If it were suspected that a certain bony structure supported certain soft tissues, the only way of testing the truth of the suspicion would be to tear away the flesh, and the thing verified would be the existence of the skeleton itself. If, then, there is any connection at all between an indisputable phenomenon, a skeleton, and an unverified occurrence, it is the indisputable phenomenon which is the skeleton of the unverified occurrence, and not the unverified occurrence which is the skeleton of the indisputable phenomenon. For my own part I do not quite see how any occurrence can deserve the name and be unverified at the same time. If any one were to tell me that a meteor, weighing forty pounds, struck him in the eye and inflicted no more injury than a raw beefsteak would counteract, I should consider not

that there had been an unverified occurrence, but that there had been no such occurrence at all. To use the expression "unverified occurrence" is to admit that some event has happened, and yet to express a doubt whether it ever happened or not.

"The old vices of ancient logicians," it will be remarked, are "repeated in the dress of the most modern improvements." I know neither what particular vices are referred to, nor what is the dress. But my critic is extremely liberal in the distribution of superfluous clothing. He has elsewhere bestowed a "guise" upon me for which I am very much obliged to him; and I do not doubt that he had the very best intentions when he thus carefully wrapped up "the old vices of ancient logicians."

But the end of this passage is the very climax of absurdity. Unless a new Bacon arise, or we listen to the warning voice of the critic, we shall have a new *Dunciad*. It is a great thing to know that if we cannot get a new Bacon, the critic in the *Westminster Review* will do as well; but it is a still greater thing to know that if we cannot have another Bacon we are certain of another Pope. The Reviewer does not appear to be of this opinion. He seems to think that the advent of a new Pope would be about the greatest evil that could befall him. Perhaps this is not to be wondered at, as Pope was harder upon dull and ignorant critics than any writer who preceded or succeeded him, and it was in the *Dunciad* that he displayed his severity. But what is the meaning of a *Dunciad* "more delusive and phantasmagoric than any of old?" How many *Dunciads* have there been? I am almost ashamed to confess my ignorance, but I am acquainted with only one *Dunciad*, and that Pope's, which is neither delusive nor phantasmagoric, but full of the hardest hits, in downright good English, that ever I met with. May I be permitted to recommend this poem to the notice of the critic? Perhaps he will repay me for the treat thus provided for him by telling me where I can find any more old *Dunciads*, and especially those which are delusive and phantasmagoric; perhaps, too, he will add to the favour, by stating precisely what he understands by a *Dunciad* that is irremediable.

I suspect he has some vague idea that a *Dunciad* is not a poem, but a collection of dunces; if so, what harm could possibly be done by dunces not real but phantasmagoric?

As I am now on the subject of the *Dunciad*, I may perhaps be permitted to say that I have no quarrel with any of my critics except the Westminster Reviewer. I considered myself ill-used by two others out of about a score; but the opportunity of setting myself right was most courteously granted to me by the editor of one paper in which I had been misrepresented; and the other critic, who did

not adhere to facts, received such a punishment at the hands of Mr. G. W. Cox as I should have been unable to administer myself; and if I were to say another word on the subject I should be justly accused of hitting a man who is down.

But to return to the Westminster Reviewer. He announces that I have accused the Germans of "incapacity to blush at the most outrageous violation of decency and comeliness." Not only have I made no such accusation, but I have no idea what a "violation of comeliness" can be. It looks like rape; but why a rape should be committed upon the abstract term "comeliness" rather than upon a girl that is comely, and what the act would be like, I no more know than I know what could have put such an expression into the critic's head. There is not a word about rape in my book. But to quote from the *Dunciad* :—

"In clouded majesty here Dulness shone."

And as the reviewer would, without doubt, like to know still more about the *Dunciad*, here is another passage which is specially applicable to him :—

"Ductile Dulness new meanders takes."

And these meanders are of a most extraordinary character, as will be seen in the following remarkable sentence :—

"The most accomplished of positivists does not owe his power and skill to having learnt to despise or underrate the mysteries of life and being; but having travelled to the farthest limits of human experience, he finds the desert lengthening as he goes, and almost distraught by the ineffable revelation, he comes back a more sombre man, prepared to work out his little day in finding out such narrow truths as alone lie within his ken, and doing such beneficent works as best promote the happiness of man."

It seems, according to this, that it is when man is distraught that he does "such beneficent works as best promote the happiness of man." If so, the sooner the earth is converted into one vast lunatic asylum the better. But first of all it seems we must have an *ineffable* revelation. As the revelation is ineffable, it is rather hard to see in what way it can be made, and, of course, no man can tell another what it is. This is, however, the less to be regretted, as it appears that the sombre man knows less after the revelation than he knew before, and they are but "narrow truths which lie within his ken." But the way of getting at this revelation must be excessively unpleasant, because it appears to be necessary either to stand still and move on at the same time, or to move in two different directions at once. The unfortunate positivist having reached the farthest limits, still goes on, and finds the desert lengthening as he goes. The rack was nothing

to this process of infinite stretching which is too suggestive of nightmare to be dwelt upon any longer.

So much for the critic's competence ; now for his good faith. He says, " Not to linger at present over the special instances of weak and fallacious reasoning with which Mr. Pike's book abounds, the sum of its shortcomings may be conveniently gathered up in the allegation that Mr. Pike ignores from first to last the nature and strength of his opponent's case." The word "allegation" is, perhaps, better chosen than any other in the review ; it is a term which may without impropriety be applied to any breach of the ninth commandment. The state of the case is simply this :—I have devoted a whole chapter to the consideration of the historical evidence, and the critic's "allegation," if it means anything, means that this particular chapter is not to be found in my book. In confirmation of what I assert, I need only refer to No. 34 of the *Fortnightly Review*, in which there is an excellent *résumé* by Mr. G. W. Cox of the chapter in question. It is the Westminster Reviewer who has from first to last ignored one of the most important portions of my book, not I who have ignored the case of my adversaries.

I cannot quote a chapter in a letter ; but it fortunately happens that I can expose another of the critic's "allegations" in very few words. He gives his readers to understand that in my book will be found no "exclusion of possible causes," no "allowance for the plurality of causation." The absurdity of using these two expressions will be obvious to every logician. It is, however, true ; and the critic may have meant to say, not only that a given effect may possibly be produced by one cause, possibly by another, but that some effects are produced by the conjunct action of several causes. Having now assumed that the reviewer really had more than one meaning in his double-barrelled accusation, and having allowed the accusation the widest possible range, I shall demonstrate its accuracy by a very short passage from my book :—

"But let us not too hastily rush to a conclusion. Let us consider all possible hypotheses which may account for the phenomena. Of such hypotheses three suggest themselves : the first is that the medium (*i.e.* the climate, food, aspects of nature, &c.) may so modify physical and psychical characteristics that in the same place they will always conform to the same type, and that therefore the English type resembles the Cymric type ; the second hypothesis is that a preponderance of Cymric blood in the invaders who came from the Cimbric Chersonese and its neighbourhood may have caused, wholly or in part, that resemblance which is to be traced between the ancient Britons and the modern English ; the third hypothesis is that the ancient pre-Roman inhabitants greatly outnumbered the invaders of different blood who at different periods obtained a footing in the island."

It is not necessary for me to quote the reasons which induced me to adopt one hypothesis rather than another, because the question is not whether I have adopted the right hypothesis, but whether I have made allowance for other possible explanations. I believe I have now said enough to expose the true character of my critic; and that, it must be remembered, is the only object which I have had in view—not a complete defence of my book. I cannot, however, refrain from making a very simple statement: I have found in the *Westminster Review* a misrepresentation wherever I have found anything which touches my argument. There are many passages in which the attempt to get up a case is so apparent and so clumsy, that any one who has not seen my book can detect the trick; for the rest, I hope my word will be considered as trustworthy as that of an anonymous and ungrammatical writer in the *Westminster Review*, some of whose statements have already been shown to be false.

I have only further to say that no one appreciates honest criticism, however severe it may be, at a higher value than I do myself; and I am sincerely sorry to see discredit brought upon a periodical which has been honourably associated with the names of Mr. Stuart Mill and Mr. Herbert Spencer.

I am, Sir, your obedient servant,

L. OWEN PIKE.

New University Club, Nov. 17, 1866.

THE CELTIC TUMULI OF DORSET.*

THE anthropologist ought to have a special reverence for tumuli, for they alone can give him any solid information concerning the physical structure, habits, and social economy of races, whose existence lies altogether beyond the range of history, or receives but scanty illustration from it. He is an antiquary in the truest sense of the word; for his object is not the mere gathering together of what is curious of antique art, or venerable for its age, but his aim is to acquire data that will serve as a basis for building up a theory to supply the place

* *The Celtic Tumuli of Dorset.* An account of personal and other researches of the sepulchral mounds of the Durotriges, etc. By Chas. Warne, F.S.A., author of an *Illustrated Map of Dorsetshire*, etc. John Russell Smith. 1866.

of positive knowledge, and give him perhaps such an insight into the past as history herself might not disown. What do we know of the migrations of the Indo-European race from books? So little, that the very existence of the race itself is disputed. Cimmerian darkness hides it from our sight; and reason and research, where authorities are silent, must be our guides in tracking the devious steps of that race from its cradle in the East to the bounds of the far West, and the isles of the northern sea. Philology and the study of the science of language have cleared the way in this pursuit, and facilitated our progress very materially, by discovering and pointing out affinities in the speech of peoples who are widely diffused, geographically distinct, and wholly differing in their political and social institutions. And yet those affinities are so well marked as to afford strong presumptive evidence of community of origin. Other evidence, of a corroborative tendency, may be gathered from the stone monuments, the dwellings, and the burial-mounds which mark the path of the primitive migrations.

In endeavouring to discover the starting point of that ancient race which has left its footprints on British ground, we naturally inquire whether the vestiges of its past life are at all analogous to what may be observed in foreign and distant lands, in relation to *their* ancient population. Take the monuments of the Megalithic era, as it is called—the Stone Age. We are told by travellers that cromlechs, cairns, circles, menhirs, etc., are found in the Deccan precisely similar to those which are in Britain: they are seen in Arabia and Syria, and Algeria is said “to swarm with lithic structures exactly similar to those in Brittany,” therefore the same as those in Britain. Then, as to tumuli: in the Coimbatore district, and on the Neilgherry hills, they are numerously scattered, and have yielded, on examination, such results as bring them strictly within the category of the tumuli of our own country. They do not seem to affect the southern shores of the Mediterranean to the same extent as the stone monuments; but they are largely dispersed in Europe generally, and especially in Northern Germany, along the shores of the Baltic, and so into ancient Scandinavia. The tumuli of the steppes of Tartary, Scythia, and Siberia, existing there in great profusion, seemingly belong to another race, for the character of their contents argues a striking distinction in sepulchral customs; and those of which we have details are perhaps of a more recent date than those generally which are met with in Europe.

Now, looking at the fact that stone monuments are frequent in the south, while tumuli prevail in the north, and that both are found together in India, as in Britain; and assuming the existence of an

Indo-European race, we infer that the original stock separated into two streams, divided probably by a wide interval of time, and flowed towards the north-west of Europe ; one, the stream of the earliest migration, the stone-builders, taking a course through Media, Arabia, Syria, Libya, Mauritania, and thence through Iberia and Aquitania into Britain ; the other, the barrow-builders, flowing through Dacia and Mæsia into Europe, and inundating the countries bounded by the Baltic and Atlantic ocean, and breaking on the shores of Scandinavia and Britain. This hypothesis of a double and successive migration of the Indo-European race, commends itself as favourable to the doctrine, universally accepted, of the racial division into Gael and Kymri. The Galli, Gauls, Gael, the men of the Stone Age, are the more ancient ; the Kymri, the men of the Bronze Age, the more modern of the two migrations. With regard to the date of these successive migrations it is obviously impossible to give anything like an approximation to the truth, for we have no reliable data to go by. The accounts which British historians give of the original colonisation of these islands must be considered as purely fabulous ; and yet fables and myths may enshrine some particles of the pure ore of truth.

Now, Geoffrey of Monmouth would have us believe that this country received its earliest settlers at some time not long subsequent to the Trojan war, eleven centuries before Christ ; and he makes his hero Brutus pass from Greece into Africa through Mauritania, thence into Aquitaine and Britain.

Here may be dimly shadowed the course of that earliest migration, of which we have spoken. The true date of the arrival of those strangers here, may have been centuries earlier than the date assigned. The siege of Troy is one of those remote epochs that serves well as a *hegira* to any transaction that is really shrouded in the night of time, but fain would be brought within the pale of authentic history. It is equally impossible to affirm in what probable period the second or Kymric migration occurred. We believe they were the same people as they who in the time of Herodotus occupied the central parts and west of Europe, and to whom he gave the name of *Κελται*—Kelts. But they were not of pure blood ; before they had reached Gaul, their type was modified by admixture with the Turanian elements they had encountered on the way. In this view, there can be no great difficulty, one should imagine, in determining the normal Keltic skull-form, about which doctors have differed so much. That two ancient peoples, branches of the same primitive stock, have inhabited these islands, we have strong and growing proof from the researches in the two kinds of tumuli that are found here, and known as long and round barrows. From the former are obtained skulls of longer, and

from the latter skulls of shorter, proportions—respectively termed dolichocephalic and brachycephalic skulls; and the latter appear, also, to have belonged to people characterised by greater stature and coarser outline than the former. These latter people we apprehend to have been the men of the Bronze era—Kelts or Kymri. Moreover, these two skull-forms have their analogues in the existing population of these islands. In Scotland, where the Gael prevails, both long and short heads are found, but the former the more frequent. In Ireland, the same forms again, but the long head the more prevalent. In Wales, as in Brittany, there is a tendency towards brachycephalism. Amongst the English generally the long form of head is the more common; derived, in all probability, chiefly from our Anglo-Saxon genealogy.

But we had well-nigh forgotten the work before us, Mr. Warne's *Celtic Tumuli of Dorset*. The county of Dorset was anciently occupied by a people who, in their Kymric tongue, may have called themselves "Dwr-trigiawdwyr", dwellers by the water, which Ptolemy converted into *Δουροτριγες*. How far they were justified in appropriating to themselves this appellation, may be understood by a glance at their territory on the map, presenting a seaboard of about forty miles in extent, consisting of elevated land chiefly of the chalk formation, which seems to have been generally in favour with the Kymri, probably by reason of the dryness of the soil. The whole length of this southern ridgeway of the county is thickly studded with tumuli, interspersed with a few stone remains. And the tumuli are also seen throughout the county, on the downs and high lands that extend into Wilts. As a cautious antiquary, Mr. Warne observes:—

"In making use of the term Celtic, and applying it appellatively to the Dorset tumuli, I desire to be understood as describing the sepulchral remains of those peoples who occupied Britain up to the period of Cæsar's invasion."

Seeing the divergence of opinions that still prevails on the Celtic question, the author was quite right in premising this definition, though, with somewhat more of boldness, we should not hesitate to assign these round tumuli to the men of the Bronze Age, the Kymri; nor would it make any difference to us if some should prefer to call them Belgæ, considering, as we do, that the Kelto-Belgæ and Kymri were the same people. Unfortunately, we are denied the proof to be found in skull-form; for, as these researches were made before the importance of that mark of racial character was so fully appreciated as it is now, we have here no measurement of skulls. We have no reason, however, to doubt that the general typical form will be found, in future researches, to correspond with what has been discovered

elsewhere in round barrows; Dr. Thurnam, indeed, has tabulated one skull obtained from a barrow in Purbeck, that presents remarkably brachycephalic proportions. We have heard, however, of long skulls having been procured from certain round barrows in Dorsetshire; and it is well to be on our guard against a probable source of fallacy in this seemingly contradictory evidence, and to bear in mind, that not all the skeletons found in round barrows can be deemed to be coeval with them; and, as a practical suggestion, we would recommend that close attention should be paid to the position and mode of interment of the bodies. Without this precaution, the facts themselves would possess but little value as evidence. These researches extend to the investigation of one hundred and ninety tumuli, and on the part of Mr. Warne and his friends appear to have been carried out with great carefulness and accurate observation. The general results are, that fifty per cent. of the tumuli were found to contain cinerary urns; and about thirty per cent. contained skeletons, of which about an equal number were found interred with urns as without; and by far the greater number of tumuli presented indications of cremation in one form or another. The author observes:—

“The principal forms of deposit appear to have been two—either by burying the body entire, or by submitting it to the process of cremation, an operation invariably so effectually performed that ‘the earthly house’ was resolved into a very small compass, the few whitened bones which alone remained, being carefully collected and deposited in a hollowed cist, small grave, or in an urn (usually unbaked), which was placed either in an upright or inverted position, sometimes covered by a flat stone or protected by a mass of flints carefully and skilfully packed around it, and then covered with the superincumbent mound.”

In the Rimsbury “necropolis”, where numerous interments were found, the extraordinary fact was revealed of “*skeletons in their integrity found lying beneath the urns.*” These Dorset tumuli are distinguished for “the paucity and simplicity of their contents”; from which Mr. Warne deduces the inference that—

“Though they cannot be placed in comparison with many of those of Wiltshire, and the still more prolific and illustrative cairns and tumuli opened by the late Mr. Bateman in Derbyshire, they may nevertheless be regarded with intense interest, and as their examination has satisfactorily established the fact that they constitute the earliest series of tumuli in any part of this kingdom, whilst they identify Dorset as one of the earliest colonised portions of Britain.”

The urns are for the most part of a very rude and unartistic form, as may be seen by the admirable plates which are included in the work. Weapons, whether of bronze or flint, were but rarely found; the former in ten per cent. of the tumuli, and the latter in only five

per cent., which is a remarkable fact considering the abundance of flint that exists in the district. But bronze and flint were occasionally found with the same deposit. Stone implements were rarer still, only one battle-axe having been discovered; but that one was beautifully shaped and polished. In one exceptional barrow a fine bronze dagger, having an ivory handle, was found in apposition with two iron spear-heads. Throughout the contents of the tumuli there was a general absence of any indication of Roman art or influence, "all is purely Celtic; and a fact so forcibly attested must lead to the inevitable conclusion, that tumular practice can be only ascribed to a period anterior to the establishment, and possibly to the advent, of the Roman power." Ornamental objects were rare—a few beads of glass and amber; the latter substance seems to be indicative of early intercourse with the Germanic tribes. With regard to the plan of construction:—

"They were all constructed on very simple designs, consisting either in the heaping of the soil over the deposit, which was placed in a cist cut in the chalk, or laid on the floor of tumuli of several rearings, and in parts of which the deposits were either collected in small heaps, enclosed in urns, sometimes placed in rude kistvaens, or protected by flints carefully packed so as to form an arch or dome over them."

But we must refer to the work itself for a great deal of curious and valuable information. One of the tumuli, however, is too singular to pass unnoticed. It was of very large size, and was found to consist of two cairns of flints, the one superimposed on the other, and each capped with a massive stone, on the underside of which was the figure of a concentric circle incised, precisely resembling those described by Mr. Tate in Northumberland. In the lower cairn was an urn; on the floor six skeletons, and some bones of the ox.

We find here no instance of the examination of a long barrow, and regret the circumstance the more, as attention has been attracted by the researches of Dr. Thurnam and Mr. Greenwell in tumuli of this description. They are not by any means numerous in Dorsetshire, and the few that exist there are chiefly towards the northern side of the county. It would be very desirable to have the opportunity of comparing their contents with those of the same kind in other districts.

Anthropologists will thank Mr. Warne for his work. In a subject of so much obscurity as the investigation of the ethnic relations of a primitive race, we cannot too highly appreciate any fact, however trivial, that may tend to dispel some portion of the mystery in which the subject is enveloped. Interesting as such facts may be to the archæologist, to the anthropologist they are doubly acceptable.

MEMOIRS READ BEFORE THE ANTHROPOLOGICAL
SOCIETY OF LONDON.*

THE first in the series of fourteen papers contained in the first volume is one by the founder and President of the Society, Dr. Hunt, on "The Negro's Place in Nature." This mysterious being, whose origin and destiny are problems forced upon the contemplation alike of the philanthropist and philosopher, is here treated in a critical, logical spirit, whose object is truth, although it may prove to be in opposition to popular notions, which are not always founded on wisdom when dictated by motives of benevolence. The author's object in this essay is to determine the Negro's "position in animated nature and the station to be assigned to him in the genus *homo*." His physical, mental, and moral characteristics are brought under review, for the purpose of comparing him with the European. The question of his origin is not entered upon at all, as being unnecessary to the consideration of the Negro as he is. The term "Negro" is limited here to "the dark woolly-headed African found in the neighbourhood of the Congo River," and "excluding all who have any admixture of foreign blood in their veins." Now what are his physical distinctions? The anatomist will tell us that his skeleton differs in many particulars from that of the European, which we need not particularise. Who has not noticed his stooping gait, his long weak limbs, long hands, flat feet, and projecting jaws? his coarse, crisp, woolly hair? But his skull presents marked features of difference—premature union of the bones gives it always an elongated form—it is never round or oval like the European—and this is accompanied by an arrest of development of the brain. The skull bears a greater resemblance to the European female or child's skull. Its capacity is usually below the standard of European skulls, though higher in the scale than several other cognate races. (This point is ably illustrated in this volume by Dr. Peacock, who contributes a paper on "The weight of the Brain in the Negro, and on the Capacity of the Cranial Cavity.") The convolutions of the brain are less numerous and more massive than in the European.

He differs again in his psychological character. It is a very remarkable fact in his history that he has never civilised himself, or adopted any kind of civilisation with which he has come in contact. He is a child in art, in science, in literature, religion. As a child he

* *Memoirs* read before the Anthropological Society of London. Vols. I. and II. Trübner and Co.

is precocious in ability, but no advance is made after the age of childhood is past. The reflective faculties remain undeveloped; he is incapable of generalisation. His memory is good; senses acute; and the faculty of imitation strong, which accounts for the improved intelligence which domestic slaves have exhibited in America; just in the same way that the natural intelligence of some animals is improved by training and domestication. But in all instances in which the Negro has been observed to acquire European features and intelligence, it has resulted from admixture of European blood. His *moral* qualities are a paradox: he is at once kind, affectionate, hospitable; revengeful, treacherous, sensual and mendacious. The deductions which the author draws from these facts, are—

“1. That there are good reasons for classifying him as a distinct species from the European. 2. That the analogies are more numerous between the Negro and Ape, than between the European and Ape. 3. That he is intellectually inferior to the European. 4. That he becomes more humanised when in natural subordination to the European than under any other circumstances. 5. That the Negro race can only be humanised and civilised by the European. 6. That European civilisation is not suited to the Negro's requirements.”

The author, in fact, declares his opinion that the Negro's place in nature is that of inferiority, indeed of servitude, to the more highly organised races. If his degraded position in the scale of humanity be the consequence of an original curse, this opinion is quite consistent with his nature. We cannot revoke his destiny, but we may endeavour to render it more tolerable. Let not Dr. Hunt be misunderstood. He abhors slavery as much as any member of the Abolition Society; *that* slavery which is known by the atrocious barbarities with which it is identified; but slavery in his views has another meaning. It is simply the subordination of an inferior to a superior race, which, when practically carried out on principles of humanity and justice, is capable of improving the condition and nature of the inferior race, and of conferring on the Negro an existence, which, in comparison with his natural state, is a paradise. With all the disadvantages he has had to contend with in the Confederate States of America, his type there is improved mentally and physically; the duration of his life increased. The question, however, may be asked, why not civilise him at home? Let the attempt be made and persevered in by all means. Let every moral and religious influence be made to bear upon him. The probability is, that the object aimed at will be much easier attained when he is separated from his savage associations.

There is but too much reason to fear that the liberated Negroes, under the influence of English institutions, present but sorry examples

of the civilisation we desire to introduce amongst them. Alas ! they generally show a greater aptitude for the vices than the virtues of the European. But when it is remembered that many of those free Negroes were criminals before they were enslaved, no wonder that their freedom is not conspicuous for a higher scale of morality. The idea entertained in some quarters of the Negro's equality with the European, must be abandoned ; it will not stand the test of experience ; it is an assumption contradicted by evidence. Our duty is equally clear, and is not rendered less imperative by the demonstration of error.

Captain Richard Burton contributes "Notes connected with the Dahoman," which contain useful additions to our knowledge of these Africans, especially as regards their language and certain peculiar customs, for the details of which we refer the reader to the memoir itself. And we must adopt the same course in reference to a paper by Mr. Sellon, "on the Phallic Worship of India."

Mr. Pritchard has a paper "on Certain Anthropological Matters respecting the South Sea Islanders (the Samoans,)" curious customs relating to marriage ; and in a second paper "on Viti and its inhabitants," the author gives some important information on the comparative anthropology of that mixed race, amongst whom it was his lot to dwell for a period of fifteen years.

Three papers by Mr. William Bollaert, viz., "Observations on the Past and Present Populations of the New World," "Introduction to the Palæography of America," etc., and "some account of the Astronomy of the Red Man of the New World," etc. comprise a large amount of detail which will be useful to the student of anthropology. The author reviews the population of the various states and republics of North and South America. The one great fact established is its large decrease since the discovery of America. It has been estimated that there were one hundred million natives before the discovery, whilst at the present time there may be only ten or twelve. Here is a loss of ninety millions. But it seems to be a law that the native races everywhere should diminish before the advent of the white man. In the United States nations and tribes of the Red Indian are disappearing wholesale. In the West India islands the aboriginal Lucayans and Caribs have entirely disappeared. The Negro race, who were first imported into America by the Spaniards, are dying out in Mexico and the Argentine Republic. More favoured by climate in other parts of the New World, it seems to flourish, as in the West India islands, three-fourths of the population there consist of Negroes.

The population of the New World is calculated by Mr. Bollaert to

have amounted in the year 1863 to nearly seventy-four millions, of whom thirty-eight were white, twelve black, eleven Indian, and eleven and a half mixed breeds. The mixed breeds exist in endless varieties ; the chief of which are the Mestizo, Mulatto, and Zambo, resulting from the union of the white with the Indian and Negro, and of the Indian with the Negro. From these hybrid stocks a strange confusion of races ensues, which seems to have the effect of impairing their prolificness. Emancipation of the Negro has not improved his moral character. "In Lima and throughout Peru the free Negroes are a plague to society. . . . Dishonesty seems to be a part of their nature ; and, moreover, all their tastes are coarse and sensual. My opinion is, that the Negro, in respect to capability for mental improvement, is far behind the European." Contrast the condition of Lima and Peru with the republic of Chile, where there are no mixed breeds, no Indian or Negro blood. There, "Wealth and population are increasing rapidly. In the last thirty years landed property has risen tenfold : its ports are scenes of the greatest activity ; mining and agriculture are most prosperous ; the public treasury has always a surplus ; public works of great magnitude are continually going on," etc.

Such are the indications of the superiority of the European races over the aboriginal and mixed breeds of South America, and where is this contrast between energy and indolence, prosperity and wretchedness, virtue and crime, civilisation and barbarism, so strongly marked as in the United States ? The white man is destined to be the renovator of the world.

The method adopted by the red man to communicate his thoughts by signs, was the same in principle to that which was used in the Old World, namely by figures, pictures and symbols. The languages and dialects of the New World were as numerous and varied as the tribes ; and it is said that their structure is different from that of any other known language. They were represented by hieroglyphics. But the pictorial scratches on the rocks of North America bear no comparison with the picture-writing of Mexico, and this again is less artistic than the system which prevailed in Central America, and to which the Maya language is the key, as the Coptic is to the Hieroglyphics of Egypt. In Peru there existed a curious method of communicating their ideas by a certain mechanical contrivance of strings and knots, called *Quipu* ; and we see there ancient stone monuments with figurative sculptures, but no hieroglyphics.

Their mode of the computation of time, their chronology, astronomy, their zodiacs and calendars, are as curious and as original as their picture-writing ; so different, indeed, from anything we find in the

Old World as to justify the opinion that the red man must have invented his own system. The history of his ancient civilisation is one of the deep mysteries the anthropologist will endeavour to penetrate.

"The History of Anthropology" is ably handled by Mr. Bendyshe. In reference to the subjects we have just noticed, we find it here stated that "the discovery of America gave rise to the first polygenist doctrines of modern times." "In 1512 it was found necessary to publish the famous declaration that all the Indians were descended from Adam and Eve," to check the atrocious acts of the Spaniards. But Paracelsus was the first to assert the plurality of the origin of mankind; and Isaac Peyrere in 1655 ventured the hypothesis of the *Præ-Adamitæ*—that Adam and Eve were not the first human beings. Mr. Bendyshe traces the various opinions held by the philosophers of Greece on the origin of man; he includes in his essay a translation of the treatise of Fabricius, "*On the human inhabitants of our globe, who are of one and the same species and origin*," containing a great deal of curious matter; and he quotes largely from the *System of Nature*, of Linnæus, who seemed greatly puzzled to know where to place man in his zoological classification; he placed him at the top of the animal scale, admitting at the same time that man is distinguished from all other animals principally by the possession of reason; but even in this respect he differs from them in *degree* only, not in kind. There is a greater difference between the highest type of man and the lowest, than there is between the lowest type of man and the highest species of ape; yet debased as his nature may be, he possesses still a *psychical ductility* that separates him widely from the brute. The so called "missing link" between the animal and man had been by some enthusiastic anthropologists deemed at length discovered in the celebrated Neanderthal skull. But this dream has been scattered by Dr. Barnard Davis, who has here a dissertation "On the Neanderthal skull and its peculiar conformation explained anatomically," wherein is shown that its peculiar type has mainly resulted from premature ossification of the sutures. That this particular skull cannot, in fact, be regarded as typical of a race, but as an abnormal or exaggerated specimen of an organisation that is common to several races, and termed dolichocephalism.

Ancient skull-forms are further described by Mr. Carter Blake in his "Remarks on the Human remains from the Mückle Heog in the Island of Unst, Shetland," which is a companion paper to Mr. Roberts's account of "The discovery of large Kist-vaens on the Mückle Heog containing Urns of Chloritic Schist." These papers are illustrated by two plates of the urns and skulls, exceedingly well engraved. But we pass on rapidly to the very able papers by Dr. Thurnam, "On

the two Principal Forms of Ancient British and Gaulish Skulls," (Parts i. and ii.) "with Appendix of Tables of Measurement." These papers are illustrated by plates and woodcuts. Who were the ancient British people? It must be admitted that the question has not yet been satisfactorily answered. Did they consist of one distinct race, to which the term Celtic has been applied, or of more than one pre-historic race? The researches of Dr. Thurnam and others in the tumuli of this country reveal the existence, at all events, of two distinct types of skull-form; the one long, the other short or round; and these types so associated with distinct forms of the tumuli, that Dr. Thurnam lays down the axiom—"Long barrows—long skulls; round barrows—round skulls." In the round tumuli, bronze weapons are found, and stone; in the long tumuli, stone only. In the former, the bones belong to a tall stalwart race; in the latter, they denote a people of short stature. The round tumuli belong to the people who inhabited this country at the period of Cæsar's invasion, who are said to be one with the people of Celtic and Belgic Gaul. The long or chambered tumuli appear to indicate a more ancient people, that people probably who inhabited "*Britanniæ pars interior*" in Cæsar's time. This form of barrow is found in Dorset, in North Wilts, and in Gloucestershire (the country of the Dobuni), and in Derbyshire and Yorkshire. The Dobuni were certainly not of Belgic or Gaulish origin, like the Belgæ of Wilts, the Atrebates of Berks, or the Regni of Sussex. We are at variance with the French in our estimation of the relative antiquity of these two skull forms. With them the older (*Gaelic*) is round, and the latter (*Kymric*) is long. Retzius considered the Celtic type to be long; and the round or brachycephalic skulls from Gaulish tombs to belong to a pre-Celtic Turanian race, represented by the ancient Basques. But the Basque skull-form is now admitted to be of the long or dolichocephalic type. The evidence is strong that the long type preceded the round in this country; but it was not the same in France: the two types are there found together occasionally, whence we infer that the races came in contact earlier there than in England. Dr. Barnard Davis, Bateman, and Wilson agree with Dr. Thurnam in considering the brachycephalic type the form of ancient British skulls at the beginning of the historical period. There is a similarity between the ancient Basque skull and the long skulls of the long tumuli. Does this point to a common Iberian, Berber, or Phœnician origin? The brachycephalous type is found in the Scandinavian chambered tumuli of the stone age; and it characterises the modern Germans, Slavonians, and Mongolians; and Dr. Thurnam sees so great a correspondence between the skull forms of the brachycephalous Briton, Gaul, and Scandinavian, and modern

Finn, that he would have no difficulty, on sufficient evidence, in admitting their common origin. The two distinct types of skull are still found to exist in the British population. In Ireland it is dolichocephalous; in Wales, the form inclines to brachycephalism. "It appears to me," Dr. Thurnam observes, "worthy of inquiry whether these two peoples are not, in truth, the descendants, and representatives, the latter of the people of the round, the former of those of the long barrows."

If this be so, the distinct skull-forms cannot be received as evidence of distinct races, but taken in connection with the gradations by which they merge into each other from the two extremes, as indications of a race whose physical forms have been modified by circumstances during the lapse of ages. That race being the Indo-European, with its Gaelic, Kymric, and other modifications and branches.

The publication of the Society's second volume of *Memoirs* will be hailed with satisfaction by all who are interested in the science, and did not enjoy the opportunity of hearing these papers read and discussed at the Society's meetings. The thirty papers which it includes, present, as may be imagined, a very large amount of information of great variety, which, for our own convenience, we will arrange under the several heads of Archaic, Historical, Descriptive, and Comparative anthropology—a classification for which we are indebted to the President. We do not pretend to give within the limits of this article anything like an analysis of the *Memoirs*, and must be content to direct attention to those which seem to us to be the most worthy of notice. The last in the series, is decidedly not the least in importance, therefore we wish to take it first, "On Blood Relationship in Marriage," by Dr. Mitchell. The author, who is Deputy-Commissioner in Lunacy for Scotland, was induced to institute this inquiry with the view of determining what proportion of the cases of idiocy and other mental disease that fell under his inspection was due to the influence of blood alliance in the families in which they occurred; and having satisfied himself on this point, he enlarged the field of his inquiries to other districts of Scotland, for the purpose of ascertaining the effects of marriages of consanguinity on the physical and mental constitution of their inhabitants. The results obtained are confirmatory of the popular conviction that such marriages are injurious to the offspring. Inquiries of this kind are surrounded with difficulties, and one great value of this paper consists in its showing how such difficulties should be met, and how much caution and judgment are required in deducing legitimate conclusions. Cases which appear to be startling evidence of the evil consequence of the union of relations in marriage may be toned down by extending the range of observation to unions when no



relationship exists, for even they may exhibit equally deplorable results. The children, if cousins, may be as healthy as any other ; and again, a natural defect in the parents may not show itself until the third or fourth generation. There can be no doubt that if blood alliance does not of itself generate disease or infirmity, it strengthens and intensifies those proclivities in the parents' constitutions which tend to the production of disease in the offspring. Therefore the risk attending such marriages ought to be avoided. The author states, in reference to the fishing villages on the north-east coast of Scotland, that "there is a general lowering of the physical and mental strength in these communities, which is popularly attributed to the system of in-and-in breeding. When compared with the agricultural population, or with the tradespeople of the small towns of the neighbourhood, they are, as a race, inferior both in bodily vigour and intellectual capacity." Their heads are small, so that "the average size of hat, which is for Scotland $7\frac{1}{8}$ inches, representing a head $22\frac{1}{4}$ inches in circumference, is for the fishing villages from Fife to Caithness $6\frac{7}{8}$ and 7 inches, representing circumferences of $21\frac{5}{8}$ and 22 inches." The defect has become almost a racial character.

Dr. Gibb, who is well known for his researches in the anatomy and physiology of the larynx, contributes an important paper, "On Essential Points of Difference between the Larynx of the Negro and that of the White Man." These points consist chiefly in the large development of certain small cartilages connected with the vocal cords in the Negro, which are altogether absent in the white race, or are so minute that very few British anatomists have any practical knowledge of their existence. But the great interest of this discovery consists in the fact, that the same structures are also largely developed in the quadrumana. The skull comes in for a considerable amount of notice.

There are papers "On the Iconography of the Skull ;" "On the Orthographic Projection of the Skull ;" and the "Description of a New Goniometer," by Dr. Broca of Paris. The question mooted is as to the relative advantages of the two methods of delineation, geometric and perspective, neither of which can be affirmed to be absolutely superior to the other, and both must be held in subordinate estimation to accurate measurement, from which alone can be obtained those data of form and size, which serve as a basis of comparison between races as well as individuals.

Mr. Carter Blake follows with a paper "On Certain Simious Skulls, with especial reference to a Skull from Louth, in Ireland ;" and Dr. Beddoe "On the Head-forms of the West of England ;" and again, "On the Testimony of Local Phenomena in the West of England to

the Permanence of Anthropological Types." Dr. Beddoe deduces the conclusion that the people of the west of England are decidedly dolichocephalic. He attaches very much importance to colour as a race-mark, and says, "there is a certain chromatic character, the frequency of which I have myself observed in all parts of Ireland, in most parts of the Scottish Highlands, and of Wales, in Cornwall, in the West of England. . . . The conjunction of blue, cerulean, or ash-grey eyes, with dark hair, brows, and lashes, which Dr. Barnard Davis calls, for shortness sake, "the Keltic eye." Having found this combination frequent everywhere where Keltic blood may be supposed to abound, and scarcely any where else, I believe it to furnish a pretty good index of the presence of Kelts." The typical form of Keltic skulls he considers to be "pear-shaped," or "coffin-headed," "varying in length, but usually rather dolichous." The author's observations are worthy of great attention.

There are several other papers on matters relating to anatomy, physiology, and psychology, which we are compelled to pass over, and as we enter the domain of descriptive anthropology, we cast a passing glance "On the Dervishes of the East," by Arminius Vambery; "The Gallinas of Sierra Leone," by Mr. Harris; "The People inhabiting Spain," by Mr. Beavan; and pause awhile on Mr. Bollaert's "Contributions to an Introduction to the Anthropology of the New World," which, together with his paper "On the Maya Hieroglyphic Alphabet of Yucatan," form a continuation of the same subject from the first volume of the Society's *Memoirs*, and become a connected account of one great division of the human race. The author passes in review the various theories that have been propounded at different periods to explain the probable source from where America obtained her original population. The Jews, the Phœnicians, the Celts, the Mongols, the Tartars, have all had their turn, but not one of them has helped forward the solution of this great problem. The red men themselves believe they are a separate branch of the human family, and this view Mr. Bollaert has adopted; for after a long familiarity with his subject, he admits that he can form no other opinion than that which arises from the conviction of their origin being distinct from that of the white man. He is a polygenist. This hypothesis will probably continue an open question.

The author takes a cursory view of the various tribes, nations, and peoples of the New World, ancient and modern, from the frozen lands of North America to Cape Horn. The mounds of Ohio, the ruined cities, pyramids, tombs, roads, aqueducts of Mexico; the stone monuments, temples, palaces of Central America and Peru. The mind is overwhelmed by the contemplation of such stupendous

remains of an ancient civilisation, the origin and history of which is hidden in the deepest obscurity. Our author, however, believes it to be as indigenous as the race itself. Some faint hope remains that the mysterious cartouches of hieroglyphic inscriptions in the temples of Yucatan, may yet be made to give up their secrets to the spell of that Maya alphabet, which is the last and most important addition to Mexican discovery. A Spanish Franciscan monk, Diego de Landa, who went to Yucatan and died, the second Bishop of Merida, in 1759, has the merit of handing down to posterity this precious fragment, which is preserved in the Royal Academy of Madrid. His zeal for religion, as then understood, led him to destroy all the Maya MSS. he could find, for their uncouth palæography could be, he thought, no other than the devil's own handiwork; haply, some stray document may yet be found that escaped destruction, and with the clue we now possess may throw some unexpected light on these visions of the past. We are glad to find that Mr. Bollaert is now engaged in comparing the hieroglyphics of Yucatan, Palenque, Copan, etc., by this Maya alphabet.

We must not leave the New World without noticing the paper by Dr. Seemann "On the Resemblance of Inscriptions found on Ancient British Rocks with those of Central America." This paper is illustrated by a plate. Two of the figures are quite identical with the concentric circles incised on the Northumbrian rocks, and elsewhere, and described by Mr. Tate; but we must admit that the other figures do not impress us with any resemblance at all. They were discovered in a district of Veraguas, New Granada, "once densely peopled by a nation that buried their dead in stone cists, accompanied by their weapons, ornaments, potteries, and other household articles." Here is food for speculation on the possibility of an ancient intercourse between the Old and New Worlds, and we agree with the author that more facts are wanted before we may assume the existence of a natural bridge between them, by which alone such intercourse could have taken place.

We are now on the threshold of archaic anthropology. Mr. Westropp has a paper "On Analogous Forms of Implements among Early and Primitive Races." It is a striking fact that the flint, stone, and bronze weapons or implements of uncivilised man were manufactured after the same types all over the world, but they are not of themselves evidences of high antiquity, but of a low and barbarous stage of society, for stone hatchets are found at this day amongst the South Sea Islanders. The transition from the lower to the higher forms, from the flint to the metal, is an evidence of the advance of civilisation in the countries where they are found.

A series of Reports on archæological researches in Scotland follows. Mr. Petrie contributes "A Notice of Brochs and Picts'-houses in Orkney;" Mr. Anderson, "A Report on the Ancient Remains of Caithness;" "A Report on Explorations into the Archaic Anthropology of the Islands of Unst, Brassay, and the Mainland of Zetland," by Dr. Hunt; and a third "Report," by Mr. Tate, "of the Zetland Anthropological Expedition." Mr. Anderson gives a very interesting report of the ancient burial mounds of Caithness, which consist of "grey" and "green" cairns, and chambered tumuli of the long and circular form. Certain long cairns were ascertained, for the first time, to be chambered barrows of a very peculiar construction, in having at the extremities "horns," or double walls of a crescentic shape, the use of which is totally unknown. A short cairn of similar structure was excavated, which proved to be as singular in its contents, as unique in type. It contained both human and animal bones, burned and unburned, fragments of ware, a hammer of grey granite perforated and polished, flint arrow-heads and a flint knife. Bronze implements are sometimes found in these cairns, therefore they must clearly be assigned to the bronze age, although implements of flint and stone are most numerous. The Picts'-houses, as those of Orkney, are decidedly chambered cairns or barrows of the same era. The expedition to the Zetland isles appears to have been undertaken in consequence of the discoveries made in the Mücke Heog, or "large burial mound" in Unst, and reported in the former volume of the *Memoirs*. These consisted of skulls and urns of "chloritic schist;" the material proves to be steatite, which was no doubt worked up in a soft slate, like other clay, and baked. Although the expectations of the party as to farther discoveries in this spot were not realised, their labours received some compensation in other directions, particularly in the discovery by Dr. Hunt, in the Island of Brassay, of a stone implement of new type, and at Safester of a great number of rude stone implements connected with an underground structure, as well as lying about on the surface of the ground. They present no trace of polish, are most rudely fashioned, and seem to be "a connecting link between the flint implements of the drift and polished celts." Stone battle axes, or steinbartes, of a more finished style of art, are very commonly found in Zetland.

On examining some graves in peat soil, Dr. Hunt was struck with the circumstance that in one of the cists there were merely a few traces of the body remaining, which seemed to be caused by a chemical action of a nature contrary to that which is usually attributed to that substance. This question is treated in a paper "On the Influence of some kinds of Peat in destroying the Human Body," etc.,

by Dr. Hunt ; and at the same time and place a stone was brought to light, having some Runic characters incised upon its under side. The inscription has been submitted to several eminent Runic scholars, but without any decisive explanation of its meaning ; their various opinions are recorded in a paper "On the Interpretation of some Inscriptions on stones recently discovered in the Islands of Brassay, Zetland," etc., by Dr. James Hunt.

With regard to the brochs and Picts'-houses of Orkney, Mr. Petrie observes, that "the name *Picts'-house* is applied indiscriminately, in the northern counties of Scotland, to every sort of ancient structure ;" these to which his researches refer, are of that class which resemble a bowl-shaped barrow, and they are, no doubt, chambered cairns. The brochs are circular towers, which were probably occupied as strongholds, but it appears it is impossible to assign a date to them. These Memoirs are illustrated with plates.

Mr. Morris presents a "Report of Explorations conducted in the Kirkhead Cave at Ulverstone." The objects disinterred consist of portions of human remains, animal bones, bronze weapons, a disk of polished granite, and a flint flake. We can, therefore, have no difficulty in referring these relics to the bronze age, and probably to some period subsequent to the Roman invasion, as a coin of Domitian had been previously discovered.

Historical anthropology is represented by Dr. Bower's paper "On Ancient Slavery." The author commences his subject, "ab ovo," from the curse on Canaan, and traces the consequences of that sentence in relation to the political economy of the Jews. Slavery was sanctioned under the Hebrew polity, and it has prevailed, in one form or another, from the earliest historical period until now. The author gives an account of it as it existed amongst the classic nations of antiquity. The Negro has ever been a slave, and time alone will prove whether he be destined to work out his existence as "a servant of servants," or to perish through his own incapacity for rising to the standard of civilised races. If his inferiority be, as the author thinks, penal, the one or the other of those alternatives must infallibly occur.

MR. WALLACE ON NATURAL SELECTION APPLIED TO ANTHROPOLOGY.

To the Editor of the Anthropological Review.

SIR,—In the last number of your periodical, Dr. Hunt's paper "On the Application of the Principle of Natural Selection to Anthropology," which was read at Nottingham, is printed at length. I beg, therefore, a little of your space to reply to the charge of being entirely "illogical," in the application which I have elsewhere made of the principle of natural selection to the question of the origin of man.

Dr. Hunt selects from my paper "On the Origin of Human Races, etc., deduced from the Theory of Natural Section," published in the *Review* of May, 1864, two statements of opinion which are not, perhaps, very important parts of that paper, and maintains that they are not fairly deducible from Mr. Darwin's principles. The first is, "Man may have been, indeed I believe must have been, once a homogeneous race." The second is that, "Man may and probably will in the future again become a single homogeneous race." I am only now concerned to show, that admitting the application of "Natural Selection" to man, these are fair and logical inferences.

In Chapter IV. of *The Origin of Species*, Mr. Darwin maintains, that just as all varieties of a species are descended from one homogeneous species, so all the species of a genus are descended from one parent species, and all the genera of a family from one parent genus; and generally any group of animals, whether large or small, has descended from a more or less remote single species. It matters not, therefore, whether man be a species with many varieties, or a genus with many species, in either case he has, on Mr. Darwin's principles, descended from *one species*, and if that one species was sub-divided into varieties, then by going a little further back we arrive at their common ancestor in a single homogeneous species, or one in which there are no well marked and permanent varieties. Such species among animals, when we now find them, are almost always confined to a limited area, cosmopolitan species being as a rule variable. I think, therefore, that when I state that I believe man was once "a single homogeneous race," I am merely stating a truism to those who admit the application to him of the principle of "natural selection."

It is, however, my second statement, that man may in the future again become a single homogeneous race, that seems so paradoxical to Dr. Hunt; and no doubt it is very like blowing hot and cold with the same mouth to make "natural selection" answerable for such opposite

results. But the whole scope and purport of my paper was to show, that since that early period at which the ancestors of mankind formed a single homogeneous race, all the very distinct forms now existing (and perhaps others now extinct) were produced by "natural selection," till the process was checked by the development of the *mind* of man, causing changes of his external form to be less important than advances in his intellectual and moral nature. Had this check not occurred it seems to me probable that the world would now be inhabited by many quite distinct *species*, and, perhaps, even distinct *genera* of the animal *man*. As it is, the forms of man on the earth are steadily decreasing in number, owing to the more rapid mental, moral, and physical development of a few superior races. It is a bare fact that man is becoming more homogeneous. The most extreme forms, the native American, the New Zealander, the Australian, and the Polynesian races, are all doomed. It is a mere question of time as to when these will become extinct. And when I see how Europeans have spread over tropical South America, when I contemplate the rapid increase of that energetic race which in three centuries has changed the vast continent of North America from a waste of forest to a hive of industry and high civilisation, when I think of the possible advances of science in making the forces of nature subserve the wants and supplement the energies of this dominant race, I cannot believe that the resistance of lower races and lower civilisations will permanently avail them, or that climatal influences will for ever prevent the tropics from being the home of the civilised man armed with ever-increasing insight into nature and nature's laws.

This is the "struggle for existence" on the grandest scale; and I believe the next few centuries will see it go on at such a rate that even the great races hitherto dominant in their own areas—the Negroes, the Hindoos, and the Mongols—will begin to suffer from it. I cannot believe that the progress of civilisation and science will stop, and I can see no end to such progress, but the absorption and displacement of lower races by higher, till the world again become inhabited by a "homogeneous race," whose command over nature and whose powers of intercommunication will be such as to prevent local conditions affecting, to more than a very slight degree, its external characteristics. The globe is or very soon will be to civilised man, an area over which he can roam at will, with as much ease as any animal over the single island or continental area that it inhabits; and it will then become impossible for an inferior race long to maintain itself against him. If then we admit that the mental are more important than the more corporeal forces in the great human "struggle for existence," it is a necessary result that the higher will continue to

displace or absorb the lower races of man. It is for those who deny this to show why and when this process will cease.

I believe that I have now shown that the principles of Mr. Darwin's *Origin of Species*, if applied to man with such modifications as are required by the great development and vast importance of his intellectual and moral rather than his mere animal nature, leads to the apparently paradoxical result that he is tending to become again as his progenitors once undoubtedly must have been, "a single homogeneous race."

ALFRED R. WALLACE.

DR. MOORE AND HIS FIRST MAN.

To the Editor of the Anthropological Review.

SIR,—When reading the remarkable article in No. XV of the *Anthropological Review*, "On the Application of the Principle of Natural Selection to Anthropology," my interest was peculiarly awakened by the hard blows which the writer therein took occasion to aim at myself and my book entitled *The First Man and his Place in Creation*. At once acknowledging that work to be immeasurably below the dignity and grandeur of the subject, I must, nevertheless, beg permission to expostulate with the author of this article on the severe treatment of me and my volume. My science and philosophy, alas! are not so advanced, but that I feel it painful to be misunderstood by him, more especially as the misunderstanding provokes him to express himself in a manner indicative of unphilosophical perturbation in his own spirit.

Dr. Hunt cannot be offended at my endeavour to defend the Christian idea of man's origin as that which, in my opinion, best accounts for the actual condition of mankind. This point of view may be deemed that of prejudice and presumption; but it is manifest that those who have been able to find their way to this point appear to comprehend the phenomena and ideas pertaining to man's mind and world quite as clearly as those who take other ground, and yet have not succeeded in accounting for man's existence and experience either scientifically or otherwise. In this respect, therefore, the Christian has an advantage; he assigns a sufficient cause for his existence and his hope, while those who do not believe as he does are still inquiring where they obtain no intelligence. Is not the fact that so many men of average thinking faculties have for ages believed the Christian

point of view to be most rational and satisfactory itself worthy of scientific consideration? This is an anthropological question. You at least will not blame me for striving to attain a stand-point whence best to discover the truths most important to man, and I will not blame him, if, proving my position to be wrong, he does his best to conduct me to the right one.

Dr. Hunt does not say my point of view is ill-chosen, but he classes me with those popular writers who "follow the reckless speculations of some of our teachers of science." Now, as true science cannot be compatible with reckless speculation, it is desirable to know what teachers of science he means. The most popular speculators of scientific character, at present in vogue, are, I believe, those who follow the teaching of Mr. Darwin and Professor Huxley, but he will not charge me with following them either very closely or very far. Had I not known better, my first impression might have been that he charged me with following certain teachers whose names are familiar in the *Anthropological Review*, since recklessness of speculation is supposed by many to be their most striking characteristic. It is important not to run into error on this matter. As, therefore, he intended to caution me and others, he would complete his kindness by informing us who are "our teachers of science," whose "reckless speculations" we are unfortunately following.

Dr. Hunt next observes that in my work on that interesting creature, *The First Man*, I write "with charming simplicity and modesty, 'How then was a Negro produced? We answer in a word by climate.'" Dr. Hunt writes ironically; by charming he probably signifies offensive; by simplicity, foolishness; and by modesty, impudence. As, however, I adduce the personal testimony of those who have observed the influence of climate and its concomitants in degrading the common African to the inferior condition of the Negro, may I not in all candour and courtesy assert that it is quite as charming, simple, and modest to attribute the Negro's inferiority to such external influences, as to his derivation by birth from some unknown species of black ape, which must have been wonderfully subject to external influences of some sort to produce a man at all, especially when we consider, that evidence to that effect is altogether wanting?

Dr. Hunt then gave me credit for stating a fact known to everybody, namely, that "man as he is has not yet been accounted for by philosophers." He does not, however, approve of my added suggestion, that anthropologists should endeavour to understand their own nature in particular, in order to prepare their minds for the study of "the science of man" in general. He deems it "deleterious to the cause of truth and science that such views should go forth to the

world unchallenged," and he rightly observes that men ought to learn the alphabet before they attempt to read. Precisely so; if any one would learn anything concerning man, either as a genus or a species, he should begin at the beginning, that is with himself, as Linnæus says *nosce teipsum*, because it is only as we are conscious of our own qualities that we can know what is human.

Lastly, Dr. Hunt announces that "no one can have read with greater feelings of indignation than myself, a charge which Dr. Moore has made more than once in his recent work, *The First Man and his place in Creation*, that Professor Huxley 'had undertaken his researches and assumed his character of seer and prophet on the ground of prejudice against Christianity.'" Now, it is not correct to say I either bring a charge against Professor Huxley or impute motives to him in this or any other passage. I merely express a fear founded as I show on these, his own words—"Thoughtful men, once escaped from the blinding influences of traditional prejudice, will find in the lowly stock whence man has sprung, the best evidence of the splendour of his capacities, and will discern, in his long progress through the past, a reasonable ground in his attainment of a nobler future." In these words Professor Huxley clearly asserts his power of surveying the past of man and of foreseeing man's future. That is to say, he thinks it a more reasonable ground of faith to rely on his own ability to discern a past nowhere revealed, and a future nowhere foretold, than to entertain the faith of Christians who, according to "the blinding influences of traditional prejudice," associate the beginning of man with his end, and believe in a direct genealogical connection between the second Adam, the Lord from Heaven, and the first Adam, of the earth earthy, but without any intermediate paternity between him and his Maker. As Christianity is professedly founded on a record of the past and a promise of a nobler future, does not the whole evidence on which Christian faith rests properly belong to the science of Anthropology? Certainly Christianity offers the key of knowledge to all, and repudiates no true science, but while excluding superstition and pretension declares the right of all men to acquire all the truth they can. If then I find Professor Huxley founding his faith only upon his own retrospective and prospective discernment of "Man's Place in Nature," as expounded by himself, am I not justified in expressing a fear lest, while he attributes my faith to the "blinding influences of traditional prejudice," he grounds his own faith on a prejudice in favour of a theory that excludes Christianity? If in the expression of this fear I have wronged Professor Huxley, I most sincerely beg his pardon, and assure him that no one can possibly feel higher respect for him as a profound and most thorough anatomist

than myself. But I am sure that if I believed he taught a dogma that is not true, and, therefore, is dangerous, he would not think me honest if I did not say so, when the occasion properly presented itself. Why he, or any one else, should be more indignant at my expression of a fear as beforesaid, than at Dr. Hunt's affirming, as he does, "his reasoning incorrect" and "his assertions dogmatic," I cannot conceive. Professor Huxley may deem my views dreamy, as I deem his, and that without indignation on either side. I honour him as a gentleman of extraordinary scientific acquirements, and I would honour all men because they are men, but especially those who are entrusted with vast endowments, such as Mr. Darwin, Sir Charles Lyell and Professors Huxley and Owen; that, however, is no reason why I should not the more deplore anything which appeared to me wrong in their teaching, and freely say why to the best of my ability.

Dr. Hunt directly applied the terms reckless, contemptible, deleterious, ungenerous, base, and he has implied offensive foolishness and impudence in relation to my opinions. I do not complain of such terms because they injure me, but because he feels justified in employing them, while I cannot help thinking them quite uncalled for and utterly unphilosophical on the occasion, since they serve no purpose but to show how heartily he abominates my ideas.

Suffer me to add an expression of regret that the reviewer of my book in the *Popular Magazine of Anthropology* (Oct. 1866) suffered from *melancholy* in consequence of reading it; I regret the event the more, since the *black bile* to which the malady is ascribed, seems to have disturbed his discerning functions. He condemns the strong language I apply to Büchner's logic, and I fear it is blamable, but yet I would say that if he adopts the reasoning in "*Force and Matter*," as the exponent of his own views, he will still be unable to explain the existence of his own reason, his will, and his consciousness of personal self-hood. The pity and indignation he expresses towards me as a "malicious, incoherent, scribbler," whose writings are fit only for the entertainment of "elderly females of both sexes and Sunday-school children," must pass for what they are worth in comparison with his very positive science for the useful results of which the world waits. As the verdant freshness of his style indicates mental vigour, it is somewhat surprising that he perceives no difference of meaning between being *anatomic* and being an *anatomist*. We speak of anatomic specimens but not of anatomic men. If he thinks that he himself can be made into an anatomic specimen, as his body or any part of it can be, I can only say *that* is not my idea of him. With regard to my anatomy, though my life is not devoted to that science, I have studied it with the best anatomists in Europe, and, while from youth to age I have

watched the progress of science and the vagaries that falsely go under its name, I have retained enough anatomy to understand what Professors Huxley and Owen have so admirably written, but have failed to learn that the nature of a man is to be discovered by anatomising his body.

I thank my reviewer for his corrections; and, though his own article shows how easily he overlooks his own mistakes, I should be glad of his keen eye for errors when revising the press for a new edition of *The First Man*, to be improved by a review of reviewers, whose *animus* may usefully serve as a warning to that nobler class of readers, curiously designated by my reviewer, "elderly *females of both sexes*, and Sunday-school children."

GEO. MOORE.

[Dr. Moore, in the foregoing letter, makes the remark: "Now it is not correct to say I either bring a charge against Professor Huxley or impute motives to him in this or any other passage." Dr. Moore, in his work, says, Professor Huxley undertook "his researches and assumed his character of seer and prophet on the ground of prejudice against Christianity." This, he now tells us, does not convey a charge or impute a motive! We think it would have been well had Dr. Moore remained silent and not again called attention to a book which ought to be buried in oblivion as soon as possible. When we look through Dr. Moore's book we feel very much inclined to apply far stronger terms to it than any employed in the article complained of. Who, for instance, can read without a feeling of indignation such passages as the following?—"So we believe that Vogt, like some others, has *perverted science* under the blinding influence of prejudice, arising from *ignorance* of Christianity," preface, p. xv. "Hence a kind of smaller philosophers are now prevalent, who think they believe as they teach, that man was verily, in some remote era, in the immeasurable ages, gradually raised in character and style of mind by the pressure of circumstances and natural selection, under which a first-class pair of apes begat the lowest possible pair of approximate human beings," p. xix. "The theory of man's origin and self-elevation now advocated by certain lecturers on science, who exclude especial revelation, and endeavour to supplant or supplement the pulpit by their platform on Sunday evenings, will probably convince themselves and many of their audience that the babel language of their science is that of true inspiration but it is *profane impertinence* to obtrude their clashing 'ologies' upon us on the day appointed to hear what He who died and rose from the dead for us would say to us," p. xxv. The foregoing passages all occur in the preface, but

throughout the whole volume the same narrow-minded spirit prevails. Our facetious contemporary, the *Popular Magazine of Anthropology*, has, we understand, given up the ghost (at least for a time) on hearing that the public generally, and Dr. Moore in particular, could not understand how there could be "elderly females of both sexes." Our contemporary will, we understand, appear again when the popular mind is prepared to accept this profound and suggestive truth. If Dr. Moore will take the trouble to read this article again, he will find that the quotation he has made from it of "malicious, incoherent scribbler," nowhere occurs there. The word "malicious" is not to be found in the article, nor any word of similar import.—EDITOR.]

ON THE DOCTRINE OF CONTINUITY APPLIED TO ANTHROPOLOGY.*

By JAMES HUNT, Esq., Ph.D., F.S.A., F.R.S.L., F.A.S.L., etc.

THE great German philosopher, Emanuel Kant, in his work on *Anthropologie*, points out the fact that it is somewhat hazardous to publish any assertion opposed to the general opinion, and that man generally is loth to utter opinions in which few persons will agree with him. Human nature has, I fear, not greatly changed since the time of Kant. I must confess to a great sympathy with those people who like to utter sentiments in unison with those whom they address: but on the present occasion I am entirely in ignorance of what may be the sentiments of my audience on the subject to which I have undertaken to call attention. If, therefore, I express sentiments in which I shall find few or no supporters, you must please remember that I do so in entire ignorance of what you would like me to say on this subject. I do not promise that if I did know what you would like me to say, I would do it.

A celebrated anthropologist of the last century, Charles White, said that he published his work "under the idea that whatever tends to elucidate the nature, constitution, and history of the human race, must be interesting to man; and whatever tends to display the wisdom, order, and harmony of the creation, and to evince the necessity of recurring to a Deity as a first cause, must be agreeable to man."† I think few will doubt that the subject I have chosen is in-

* Extracts from a paper read before the Hastings and St. Leonards Philosophical Society, on December 12, 1866.

† *On the Regular Gradation of Man and Animals*, 1795, p. 138.

teresting, but I cannot consent to advocate that we should attempt to refer natural phenomena to a Deity because such sentiments may happen to be agreeable.

It is not the duty of science to be concerned with the question of what may be agreeable to mankind ; but she is simply concerned to know what is true. Nor can I admit that the continual recurrence to a Deity for the explanation of natural phenomena is agreeable to mankind generally. On the contrary, it is the duty of science to explain all natural phenomena. Within the last two centuries she has made some wonderful strides in this direction : but she is far, very far from the goal at which she aims. But if it be admitted that science is not yet in a position to solve all natural phenomena, we are not then driven to call in the aid of a first cause ; we merely admit that secondary causes known to us are not capable of solving them.

The title of my subject was suggested to me by the admirable address which Mr. W. R. Grove recently delivered, as President, before the British Association for the Advancement of Science at Nottingham. The extensive publicity which was given to this address, together with the remarks which have since appeared in the public prints, leads me to hope that the subject has been to some extent under your consideration. As Mr. Grove has remarked, the word "continuity" is not a new one, and he has not treated it in any new sense, but simply given it a wider application than it has ever before had. Nor can I claim any novelty in my attempt to apply this doctrine to anthropology. This has been done with admirable effect in the last century by such men as Herder, Soemmerring, and Charles White.

But although for eighty years the science of mankind has made little perceptible progress in England, yet when we find that the subject is again being discussed, it behoves those who have to any extent investigated the subject, to come forward with their views whatever they may be.

Mr. Darwin says that, " whoever is led to believe that species are mutable will do good service by conscientiously expressing his conviction ; for only thus can the load of prejudice by which this subject is overwhelmed be removed," p. 569. Now I can really see no good in any man expressing his belief that species are mutable until he has got some facts on which to base such an assumption. What good can be done by men expressing their belief either on one side or the other ? Or how can we make deductions from the unknown ? It is equally objectionable to assert that because we have not yet found transition forms, that none therefore exist. All true science must be based on facts or on philosophical deductive reasoning. Unless a man's sci-

entific belief be based on one or the other, he had better not express it. I am quite willing to admit that the mutability of species is a fair and philosophical hypothesis, but I must not by this be understood to endorse the manner in which Mr. Darwin advocates the mutability of species: on the contrary, I shall endeavour to show that Darwinism, as now being taught in this country, is neither warranted by scientific facts, by logical reasoning, nor by philosophical assumption.

I shall further endeavour to prove that the doctrine of continuity, as advocated by Mr. Grove, is far more supported by facts and logic, and that it is far more philosophical.

To show that continuity is no new doctrine applied to anthropology, let me quote the words of Herder,* written more than eighty years ago.

“Everything in nature is connected; one state pushes forward and prepares another. If, then, man be the last and highest link, closing the chain of terrestrial organisation, he must begin the chain of a higher order of creatures as its lowest link, and is probably, therefore, the middle ring between the adjoining systems of the creation. He cannot pass into any other organisation upon earth, without turning backwards and wandering in a circle; for him to stand still is impossible; since no living power in the dominions of the most active goodness is at rest, thus there must be a step before him, close to him, yet as exalted above him, as he is pre-eminent over the brute to whom he is at the same time nearly allied. This view of things, which is supported by all the laws of nature, alone gives us the key to the wonderful phenomena of man, and at the same time to the only philosophy of his history.”

I now come to the position in which the science of man is placed by admitting the doctrine of “continuity”, or that of “natural selection”. Now anthropology is a science based on known facts; or, as Kant observes, “Anthropology comprises empirical phenomena, combined according to the laws of the understanding.” Now, if we sum up all the empirical phenomena, bearing on the origin of man, what do we find? Do these phenomena, interpreted according to the laws of the understanding, in any way support the Darwinian hypothesis of the origin of man?

With regard to the origin of man, let me here remark that real, true, genuine science ought not to trouble itself very much about what Mr. Darwin or anyone else likes to believe regarding that question. There is an adage which says, “He is a wise divine who follows his own teaching.” I suppose this precept would apply with like force to the man of science. I would suggest that it would have been well for Mr. Darwin, and especially for some of his disciples, had they followed the wise remark, speaking on another question, which I

* *Philosophy of Mankind*, 1784, p. 127.

find on the 145th page of the last edition of his celebrated work:—
“But as we have no facts to guide us, all speculation on the subject is useless.” There are no facts at present which throw any light on the origin of mankind. Mr. Darwin is only to be blamed because he has not curbed the restless impatience of his disciples. The mischief is being done by Professor Huxley and Mr. Wallace; but Mr. Darwin has hitherto refrained from coming forward to protest against the abuse which is being made of his theory. If, however, he agrees with his disciples, then so much the worse for his own theory. If the views advocated by Mr. Wallace are logically to be deduced from Mr. Darwin’s hypothesis, then we may bid a long farewell to Darwinism. The brief period during which it will reign triumphant in this country will only go down to posterity as evincing the very low logical powers of the scientific men who supported it. Darwinism may be true applied to botany or zoology; but there is not a fact in the whole range of anthropology which lends it any support. I am glad to know that when Mr. Wallace first brought his views before the Anthropological Society of London, he did not find a single supporter to what I then ventured to call his eloquent dream. I for one have done all in my power to show the absurdities into which the modern advocates of Darwinism are leading their followers. Anthropologists in this country drop a tear of pity for the poor victims when they hear that Professor Huxley is announced to appear before the working man in Jermyn Street, or the ladies who attend the lectures at the Royal Institution. There is a most noteworthy point respecting the manner in which these disciples of Mr. Darwin carry on their defence of their master’s teaching. If you tell them that a logical application of Darwinism does not lead to a coming unity of all mankind, they at once reply that it is a fact! The lower races are dying out under our own eyes! Mr. Wallace used this style of argument at the last meeting of the British Association at Nottingham. Natural selection, according to that gentleman, has produced from one homogeneous race all the diversity now seen in mankind, and now natural selection is going to lead us again to a unity. I tried on that occasion to convince Mr. Wallace that if Darwin’s principles were logically applied to man, there never could be a monotonous uniformity amongst all races of man, but that the struggle for existence would continually assist to produce new races. Mr. Wallace’s theory seems to me to be about on a par in scientific value with Dr. Cumming’s prophecies respecting the end of the present order of things. When I think of this past and coming unity, I am continually reminded of the Greenlanders’ account of the origin of man. In the beginning they believe that God created man, and that woman was

made from the thumb of the man. In time the world was thickly inhabited, when they were all destroyed except one man. Woman had to be manufactured a second time, and this was done by knocking the earth with a stick, when forth came a full-grown woman. Now there is no more reason for supposing that there was ever only one homogeneous race than supposing that only one man was originally created. Nor is the supposition that we are again uniting in one homogeneous race one whit more wonderful than the way in which the Greenlanders get rid of the whole world except one man. There is much in common between these views.

On former occasions I have contributed to this Society views regarding the diversity in mankind, which appear at first sight entirely at variance with the doctrine of continuity. I have, for instance, on more than one occasion endeavoured to show that on mere zoological principles of classification we are bound, if consistent, to apply the same nomenclature to the groups composing humanity as we do to other groups of animals. I contend that, if this were done, it would at once be evident that mankind is composed of distinct species. In this view, which I have now advocated for a number of years, I am supported by Professor Carl Vogt, of Geneva, one of the most logical and accomplished naturalists of modern times, who says he has "proved that the differences between some human races are greater than those subsisting between some ape species; that, therefore, we are justified in assuming different species of mankind."* As Mr. Darwin remarks,—“Varieties, when very distinct, take the rank of species.” That is a correct statement of the principle which regulates all systems of classification. After we get a certain number of well marked varieties, we then change the word from varieties to species. But it has been asked by my friend, Dr. Moore, how I can reconcile the views of distinction of the species of man? “If their views were true,” says Dr. G. Moore, “Mr. Crawford and Dr. Hunt will certainly be able to point to some impassable boundary between the white and black man.” But, supposing there is no such thing as an impassable boundary in the whole of animate, or, indeed, inanimate nature, what becomes of the value of this argument? I have before adduced facts to demonstrate that the European and Negro do differ as much as any two allied species. But Dr. Moore goes on to remark, “In default of intelligence concerning the existence of lines of demarcation between the different so-called types of mankind, it was universally believed, until the new preposterous philosophy was invented, that the extremes are united by intervening gradations and varieties that blend together in every shade.” Dr. Moore says that such teaching means, “that

* P. 462.

the creation was bound, so to say, in accommodation to their ignorance, to form one kind of man expressly to suit the climate of Central Africa, and another kind in adaptation to that of Northern Europe." I grant it may be "preposterous philosophy," from Dr. Moore's view of the matter, to admit facts, because if he were to do so, he could no longer be the sole possessor of wisdom and knowledge on this subject. The height at which Dr. Moore writes is quite inaccessible to myself. That gentleman exhibits himself on a lofty pinnacle, and delivers his oracular fiats to the world as if he had received them direct from the hands or voice of his Maker. If the past history of mankind really has been "revealed" to Dr. Moore, then what he says deserves the most profound attention. I am quite ready to believe, on good evidence, that such has been the case ; but, in the meantime, I must continue to propagate my "preposterous philosophy," simply because it is based solely on the only logical or rational interpretation of the facts which I have before me.

But strange to say, Dr. Moore's views respecting the "intervening gradations" are just those of Mr. Darwin, Mr. Grove, Professor Huxley, and Mr. Wallace. His picture of the physical character of Adam, as given in his recent work, is certainly not in accordance with the views of either of those gentlemen. In anthropology Dr. Moore is with the most so-called advanced thinkers of the age. The differences now existing in mankind are very slight ; variations do occur, but they are not specific, and, if they are, they are so small ! All mankind now proclaims the truth of natural selection, and supports continuity ! But if we take these gentlemen back in time for thousands of years, we find they begin to quarrel. The Darwinites implicitly follow their leader. He tells that the principle of natural selection "always acts very slowly, generally only at long intervals of time, and generally on only a very few of the inhabitants of the same region at the same time."* This they accept as their gospel without asking for the table of observations which enables their master to use the word "generally." He further tells them "that this slow intermittent action of natural selection accords perfectly with what geology tells of the rate and manner at which the inhabitants of the world have changed." And Mr. Darwin further announces that he "can see no limit to the amount of change," and armed with these three articles of faith, viz., a belief that natural selection only generally acts on a few of the inhabitants in the same region at the same time ; that it is intermittent ; and that there is no limit to the amount of change it can produce, they forthwith rush

* P. 122.

before the public with a practical application of these principles to anthropology. The problem is very simple, viz., how to explain the origin of man with these articles of faith. In the first place, they take the dogma that natural selection only generally acts on a few individuals at the same time. If this is the case, it might only act on one; and thus they get unity. And if it acts on more than one individual, they still get unity of race. But from what do they get the original man? Here we see Dr. Moore and his companions part in anger. They have no time to discuss the merits of the other article of faith, "intermittent action;" but they can produce man without it. It is surely only logical to assert that mankind sprang from an ape, if natural selection has no limit to its power, and it acts on only a few or one favoured individual. But here we see the difference between a disciple of Darwin and a disciple of Moses—one calls in natural selection with unlimited power, and the other calls in a Deity provided in the same manner. One gets the first man from an improved ape, and the other has him created perfect; the one supposes low forms of man who have all become now utterly extinct, and are only to be found at the bottom of the ocean; the other fancies that his perfect man has degenerated so that no single man in the present day is equal to him.

The disciple of Darwin says to the disciple of Moses, "You are blinded by the influence of traditional prejudice" (Huxley); and the disciple of Moses proclaims to the world that the Darwinites are simply promulgating their views from "the blindness of prejudice against Christianity,"* to use the words of Dr. Moore.

Let me, if I can, endeavour to pour some oil on the troubled waters. Let me cry peace before you do each other more injury!

First of all, then, which is right, Moses or Darwin? Now many will answer that question without hesitation, and, although quite differently, each will be equally positive that he is right.

But what says Science to all this Babel respecting the origin of man? Something very significant is to be learnt from the aspect of science with regard to that question. She folds her arms, and remains absolutely silent. "It is useless for either party to plead," says Science, "until one of you have got a solitary fact on which to base your assumptions." Let it, therefore, be proclaimed to the world at once that Science teaches absolutely nothing on that point. I have here used the word science in order to signify especially inductive science. But it is still permissible for students of physical science to advance hypotheses which explain any natural phenomena, although these may not be supported by an ascertained fact. But this deduc-

* *First Man*, p. xiii.

tive or *à priori* reasoning must be carefully separated from science, properly so-called.

Both natural selection and continuity commend themselves to our attention and study as valuable *à priori* assumptions. And here let me say a few words on which I think best accords with known facts and logic. In the first place, the words "natural selection" did not convey a correct impression of what Mr. Darwin's theory really is; it is, indeed, more than probable that his theory will not prove to be natural selection. His theory is Darwinism. The words natural selection also convey a logical flaw, as even Mr. Darwin does not imagine that nature can "select" in the usual application of that word. But admitting the word selection to be used in this sense, we must bear in mind that it is quite possible that some other writer may come before the world and publish views on the same subject which better explain natural phenomena.

It is for this reason that the recent attempts of Mr. Grove to explain all phenomena by one simple word—*continuity*—assumes such vast importance, and affords such an interesting field for discussion.

On examining Darwinism by the side of continuity, as advocated by Mr. Grove, we see several striking points of difference. In the first place, Darwinism requires that life shall have originally "been breathed by the Creator into a few forms or into one;"* but Mr. Grove believes "that the day is approaching"—"when the two fundamental conceptions of matter and motion will be found sufficient to explain physical phenomena."†

Mr. Darwin does not require continuous slow changes, and expressly says, at p. 162, "nor that it goes on continuously;" while Mr. Grove sees continuity, not necessarily uniformity, in everything. They, however, both agree in one feature: they both advocate indefinite variability.

Mr. Darwin has, I think, most unfairly put natural selection *v.* independent creation. Now those who refuse to accept Darwinism are not to be compelled to resort to independent creation. Professor Owen long ago pointed this out. In the last edition of his book, Mr. Darwin complains that many of those who have opposed his teaching have not taken the "trouble to understand" his views.‡

But the difficulty in Mr. Darwin's views, and which has called down upon him well-merited criticism from my friend Dr. Moore and others, relates to the fact that he merely removes the difficulty regarding special creation a little further back in time.

Mr. Darwin is most successful in his sneers at those who resort to the hypothesis of independent creation to explain the existing species

* P. 577.

† Address B. A., p. 20.

‡ P. 146.

of plants and animals, apparently entirely oblivious to the fact that he lays himself open to exactly the same charge. Men that sneer at special creation must expect in their turn to be treated in a similar manner. Spontaneous generation forms no part of Darwinism. When spontaneous generation is proved to be true, Darwinism will necessarily, by implication, be found to be false. To Lamarck's system spontaneous generation was a philosophical necessity. Future generations will be able to decide on the respective merits of the two systems better than we can do at this time.

Mr. Grove says, of the origin of life on the globe, "The earlier forms have existed at a period when the planet was in course of formation, or being separated or detached from other worlds or systems."* Even the author of the *Vestiges of Creation*, with all his gratuitous assumption, is nevertheless more logical and philosophical than Mr. Darwin respecting the origin of life on the globe. In the eleventh edition of that work, published in 1860, he points out, that as "Mr. Darwin's hypothesis places the advances and variations of organic beings upon a natural basis," it cannot escape the conclusion advocated in the first edition of that work, "that the very first appearance of organisation on the primitive mineral surface, was also the result of a process in all respects natural (though not on that account otherwise than divine)." I quote these extracts to show that continuity and Darwinism, although having much in common, yet are not the same thing.

Anthropology offers much to support continuity ; nothing to support Darwinism, or what at least is passed off to the public as such. A fundamental objection to the application of Darwinism to anthropology is to be found in the fact that it is supposed to support a unity of the origin of mankind. Such an assumption is entirely contrary to what we know of both existing monkeys and apes, and also of fossil monkeys. When Mr. Darwin takes us back to the origin of life on the globe, he again seems inclined to argue that all organic life has had its origin in one primary form. Carl Vogt, although professing to accept the hypothesis of "Natural Selection," is at the same time utterly opposed to the unity of organic life, and prefers "the assumption of an original difference in the primary germs from which the animal kingdom has been developed."† That distinguished anthropologist has well remarked, that without the assumption of original difference, he will find himself face to face with an "insoluble enigma," and he very properly fails to see "why the primary

* Appendix, p. xiv.

† Address, p. 32

‡ *Lectures on Man*, Eng. ed., p. 460.

single-celled organisms which might have arisen from the elementary substances should all have possessed the same form, quality, and capacity for development.”*

So, too, he repudiates the idea that “Natural Selection” logically leads to the unity of origin of mankind. In replying to the late professor Rudolph Wagner, he disclaims the idea that any Darwinite should raise that inference. To those interested in this question I would especially recommend the study of Vogt’s *Lectures on Man*.

How, then, does anthropology support the doctrine of continuity?

* * * * *

I can see no reason why continuity may not apply with equal truth to anthropology as to the rest of organic nature. The acceptance of this doctrine must not be supposed to warrant the destruction of all our systems of classification. Such a confusion is rather to be produced by those who refuse to apply to some causes of classification to mankind which they advocate for the rest of animate nature.

There is a grandeur and sublimity in the view of continuity, as advocated by Mr. Grove, which is most seductive. To many a student of science it is looked upon as the development of the highest philosophy which has ever been put before the world, simply because they think it is the truest.

It is good for the anthropologist occasionally to tear himself away from his own engrossing study, to see in what direction other sciences are tending. Mr. Grove has brought together what he believes to be the tendency of modern scientific research, and it may be a very long time before we again have so masterly and logical a summary of what that tendency really is. That address, I trust, will assist to regenerate British science.

The year 1866 will be remarkable for two events in the history of science of the period; the first being the delivery of this admirable address, and the second the recognition by the British Association of the science of anthropology. I have said it is the duty of anthropologists to occasionally ascertain the progress made in allied branches of study. Thus at Nottingham, the anthropological department was adjourned to hear the address of the President of the Biological Section on the science of life, and the subdivisions into which it could conveniently be worked. Now the British Association has, in some quarters, got the character of being rather too conservative in its tendency; at all events, it was supposed that a dread of the science of anthropology had taken hold of some of the rulers of the Association. Be this as it may, we have now been admitted and

* *Lectures on Man*, p. 461.

all promises to work well for the future. We attended, however, to hear the President of the Section, with some dread that we were about to have a lecture on our past conduct, and some advice on our future behaviour. Happily, however, we got off very easily indeed. Our past received only a friendly sneer, and our future was not proscribed by any rules or maxims.

The nerves of some of the anthropologists who attended to hear this address were however somewhat shaken at hearing that the science of physiology was nothing more than applied physics and chemistry. To most anthropologists who heard this, such a statement, I do not hesitate to say, was a little startling. Some men do not now see how the psychical, intellectual, and moral differences in different men, and especially in the different races of men, are thus to be solved. Others cannot see how the wonderful diversities of language, religion and art, can also be thus explained. But after all, these may be only apparent objections. It is very unsafe to pronounce such broad statements unworthy of consideration. Mr. Grove thinks physical phenomena may be explained by the true fundamental conceptions of matter and motion. Professor Huxley only echoes a similar statement. Life, then, may be simply matter in a state of motion, and mankind only particles of matter in a more violent state of motion than the rest of animate nature !

In any case, continuity is one of the grandest conceptions of man, and we have rather poets than men of science who work it out.

With a quotation from a poet, Alexander Pope, I will therefore conclude.

“ See dying vegetables life sustain,
 See life dissolving vegetate again :
 All forms that perish other forms supply,
 (By turns we catch the vital breath, and die,)
 Like bubbles on the sea of matter borne,
 They rise, they break, and to that sea return.
 * * * * *
 All serv'd, all serving : nothing stands alone,
 The chain holds on, and where it ends, unknown.”

PROCEEDINGS OF THE PARIS ANTHROPOLOGICAL
SOCIETY.*

Hair as a race character.—M. Bonté, in reply to M. Pruner-Bey, observed that although we cannot expect the most *rigorous conformity* between the hair of the same head, two conditions are nevertheless required in order that it should constitute a race character. The first is that there should exist a general form upon the same head; the second that this general form should belong *exclusively* to that race and not to any other foreign races.

Starting from this principle he had two objections to offer to M. Pruner-Bey's theory: first, there are met with on the *same head* the most *different* sections, nor is there any general specific character seen; second, so little can the hair be considered as a race character, that the most similar sections are found on the heads of races quite distinct from each other.

If this diversity were only met with in heads of mixed blood it would be very natural, but such is not the case. To commence with the Arab. In five sections of the hair of the same head *not one resembles the other*. Now the Arabic race is by M. Pruner-Bey himself considered as perfectly pure. The same applies to the hair of the Esquimaux, the Jambas, and the Malays, in whom the sections of the hair on the same head greatly differ.

As regards the second objection, namely, that he found similar forms in the most distinct races, he would mention that he met with a circular form in the Japanese, the Chinese, the Mongols, the Aymarus, the Peruvians, South Americans, Turks, Gonds, and Basques. He would admit that the first four are allied in blood, but still there subsists a marked difference between some of them. Compare, for instance, the dolichocephalic Chinese and the brachycephalic Japanese with the pure Calmuck! Are all the Americans of the same race? Why, M. Pruner-Bey considers the American as a heterogeneous race, despite the uniformity of their hair. Thus, according to our author, the same hair may exist in the heads of races differing in every other respect, which was quite sufficient to establish his (M. Bertillon's) starting points.

Boucher de Perthes read a paper "On New Discoveries of Human Fossils in the Diluvium", already noticed by the *Anthropological Review*.

November 3, 1864.—*London Anthropological Society*.—Mr. Carter

* Continued from No. xv, p. 386.

Blake transmits to the society a printed list of the papers to be read before the Anthropological Society of London during the session 1863—1864. This list comprises twenty-four memoirs on a variety of interesting subjects. This is the best answer to a recent decision of the British Association which has decreed “that Anthropology forms but an *inferior* branch of Ethnology”—(laughter). Despite this decree, which fortunately may be appealed from, the London Society is becoming rapidly developed, numbering already 439 members.

Merovingian Crania of Langres.—M. de Saulcy presents to the society four crania found at Langres in Merovingian tombs. Col. Fernel, who superintended the excavations, gives the following account: There exist in the territory of Langres two Gallo-Roman cemeteries, the one within the citadel, the other at the northern extremity of the suburb called *Sous-Murs*, about forty mètres from the wall. The latter cemetery is about three hundred mètres long and fifty mètres wide. The former is in the west limited by a Roman road and is filled with cinders, carbonised substances, and sculptured tombs. The quantity of animal bones is so great that the workmen trade in them. Bones of the wild boar are specially abundant.

All the tombs are monolith troughs with monolith lids. In these tombs were found earthen lamps, oil vases, ivory hair pins, medals from the time of Tiberius and Constantine; urns filled with cinders and bones have been found in the vicinity. The number of the tombs is so great that a suburb called *des Anges* has taken its name from them, though the learned assert that the name *Anges* is derived from *aage*, water. Langres is known to have been a vast necropolis, and there is daily found varnished pottery with the names of the manufacturers Germanus, Primus, Sigillus, Macrinus. Most of the crania crumble into dust on exposure to the air.

M. Broca places on the table the first copy of a chromatic table (already noticed in the *Anthropological Review*). M. Meillet gives some particulars concerning the manufacturing of worked flints near Pressigny-le-Grand. The fields of Pressigny, of which there are about twenty-five, are encumbered with *débris* of worked flints, knives, etc. Flint hammers are found which served for the manufacture of the various objects. M. Meillet found also hatchets well worked of the same form as those found in dolmens. Two of these hatchets were three-fourths polished. Some amateurs of Pressigny possess a dozen of them found in a particular field. The large flints which are found in immense numbers are the nuclei from which the knives are split off which are found in every stage of workmanship. What is singular is that the principal field where these objects are found,

though situated in the open country far from towns and villages, is still called *Champ du Commerce*. These museums of a novel kind are not in a diluvian terrain but on the surface of the soil or covered with a recent deposit. M. Meillet thinks that they belong to the third period of the stone age, which preceded the appearance of metal.

M. Pruner-Bey on the Neanderthal Skull, in reply to Dr. B. Davis.—The question relative to the Neanderthal cranium has entered a new phasis. An English officer has in the environs of Gibraltar discovered an enlarged edition of this cranium, *i.e.* with an identical cranium, but with an *entire face*. I place before the society the photograph of this object for which I am indebted to Mr. Busk. The original is in possession of our eminent colleague, and we shortly expect to hear the particulars.

I fully agree with the judicious views of Dr. Barnard Davis with respect to the first condition in the examination of any cranium. First, it must be determined whether the object is in a normal state. As regards the Neanderthal cranium I also admit that the state of the sutures corresponds with the clear and precise description given by Dr. Davis, and that their obliteration may partly at least have been premature. But in admitting this possibility I should be much embarrassed to prove its reality. There is no doubt that the Neanderthal man is an aged subject, as shown by the sinking of the anterior lobe of the brain and the state of the arteries, which may be ascertained in the internal cast of the cranium. Besides this the coronal suture presents in the line of its obliteration the senile character. Secondly, if this cranium is abnormal from the cause assigned by Dr. Davis, how can we explain the concordance of its circumference and its principal diameters with those of other ancient Celtic crania which are found in the normal state?

There is another argument which appears to me decisive. The piece I have the honour of submitting to the inspection of the society comes from an ancient tumulus of Poitou (Pictones). It is a frontal bone to which fragments of the parietals are still attached. The coronal suture finely indented is still open. But what is most remarkable is, that in the centre of this suture there exists an intercalated ossiculum where ordinarily the sagittal suture commences. This ossiculum in form of a parallelogram has a length of 41 mm. and a breadth of 27 mm. The four sutures by which it adjoins the frontal and the parietals are also open and finely denticulated. Here we have a multiplication of sutures, *i.e.* a disposition reverse to that pointed out by Dr. Davis in the Neanderthal cranium, and yet by the development of the frontal sinuses, and still more by the lowness of the forehead we are permitted to approach it to the Neanderthal cranium. At least

its internal surface adapts itself perfectly to the cerebral mould of the latter; and, taking into account the difference of age of these two individuals, it is presumable that the projection of the supraciliary arches would have increased in the posterior if he had lived longer. His frontal sinuses have an elevation of at least 30 m.m., a width of 45 m.m., and a depth of 13 m.m. Their cellules are in horizontal juxtaposition as is the rule in ancient dolichocephalic crania, whilst in brachycephalic they are vertically superposed. The fragment of the cranium just described comes from the territory of the ancient Celts, another motive for insisting upon a similar origin of the Neanderthal man. Lastly, whilst recognising the great influence of a spontaneous and premature obliteration of the sutures on cranial forms and *vice versa*, I am not aware that the cranium thereby changes its primitive form so that its national character is no longer recognisable. I ask, can the spontaneous obliteration of the sutures without artificial compression convert dolichocephali into brachycephali and *vice versa*?

I am happy to agree with our eminent colleague as regards the human and European characters of the Neanderthal skull, and I may by the way mention that Mr. Carter Blake has compiled a complete and remarkable collection of the literature relative to this subject which has been discussed more or less successfully in all Europe. Very lately M. Meyer has found traces of rachitis in the left forearm and the ribs of the Neanderthal man. This individual was then in a pathological condition. Finally Mr. Turner has as appears to me proved, even to the satisfaction of Mr. Huxley, the parallelism between modern crania of Europe and that of the Neanderthal.

November 17, 1865.—*Distribution of the Basque Language in France*.—M. Broca in presenting to the Society a manuscript map indicating the actual limits of the Basque language in France, said, in one of our preceding discussions, the question of the gradual extinction of languages was mooted. I endeavoured, therefore, to ascertain whether the Basque had lost ground during the last centuries. For this purpose I have searched the various authors on this subject, but to my surprise none of them indicates these limits. All that is said on the subject amounts merely to a statement, that the Basque is spoken at the foot of the Pyrenees in Soule, Basse Navarre, and Labour. Old authors are equally vague, and with such data it was impossible to compare the past with the present. After an interesting account of the history and distribution of the Basque language, M. Broca expressed his opinion that the Basque would sooner or later be supplanted by the French language, and not, as some think by the Bearnese dialect; and that everything leads to the conclusion that in a few generations the Basques will all speak

French, and have forgotten the language of their ancestors. In Spain the Basques had lost territory since the commencement of this century ; half a century ago it extended south to Puente del Reyna ; at present the limits of this language pass a little north of Pampeluna, and have thus diminished by eight leagues towards the north. The Basque country of France, from its greatest length from the Pic d'Anié to the mouth of the Bidassoa, is only twenty-five leagues. In its eastern portion it was, on the average, ten leagues in breadth, and in the west its width does not exceed four to five leagues ; M. Broca also stated that he was, with the assistance of M. E. Réclus, preparing a similar map of the Spanish Basque provinces, for which he would claim the assistance of M. Velasco.

M. Martin de Moussy thought that these researches should be hastened as much as possible, for the alteration of the Basque language proceeds so rapidly that those speaking it reproach each other for altering it. Moreover, the Spanish and the French Basques accuse each other of not speaking the genuine Basque.

M. de Quatrefages said, that there are such profound differences in the dialects, that he had seen French and Spanish Basques, who were obliged to have recourse to French to understand each other.

M. Goussin considered such a map of the distribution of the Basque language of the highest importance, and proposed its immediate publication.

M. Broca, however, thought it would be better to wait till that for the Spanish Basque provinces was ready, when one map embracing the whole region where Basque is spoken might be published.

On the Larynx of Negroes.—M. Auburtin called the attention of the Society to a memoir by Dr. Gibb, which recently appeared in the Report of the British Association, and which was based on the examination of fifty-eight dissections of the larynx of Negroes compared with the larynx of the white. If the facts are correct, we are authorised to think that the particular *timbre* of the voice of the Negro is owing to these anatomical differences.

M. Pruner-Bey said that he had dissected many larynges belonging to distinct races, and the differences he could detect applied chiefly to the form of that organ, which is rounded in the Negro and angular in the Arab, for instance. M. Eschricht has found in the larynx of the Negro, an internal cricoidian muscle, which also exists in the ape ; but it is possible that this is only an individual character which is not applicable to the whole race ; an error to which we are liable when inferred only from few cases.

December 15, 1865. — *Crania of the Sepulchre near Maintenon (Stone age).*—M. Leguay presents to the Society in his own and Dr.

Lamy's name three crania found in a sepulchre, of which he gives a minute description. He expressed the hope that well-directed excavations will reveal the mystery attached to this interesting monument. One of the three heads presents all so-called Celtic characters, and the form of all the three crania resembles much that of the crania he found in 1862 at La Varenne, Saint Hilaire, and which he had assigned to the period of polished stone preceding the bronze period. The three tibias which he also presented, although belonging to adult subjects, differed considerably in size; one of them presented an alteration resulting from a chronic ulcer.

Prognathic face of a Cranium of the Stone period.—M. Pruner-Bey showed to the Society a plaster-cast of a human face found in a stalagmite breccia by Viscount de Sambucy in the cavern of Larzac (Aveyron). Near this piece were two crania of the ancient Celtic type, small fragments of brachycephalic crania, fragments of the pelvis and the tibia, a fragment of the humerus of a child, pieces of charcoal, and of coarse pottery containing grains of quartz.

The piece must have belonged to an infant, there being in the jaws only room for six teeth. What strikes us first is a prognathism as decided as in the chimpanzee at the commencement of the second dentition. The alveoli of the incisors and of the canine teeth are very wide and deep; those of the latter projecting from the face. No trace of an intermaxillary bone, nor of a incisive suture. The length of the alveoli is as considerable as in the most prognathous adult Negro, but their forward inclination exceeds that observed in the latter. After some further descriptive remarks, M. Pruner-Bey continued: What are we to think of this specimen? Its human origin is unquestionable, since its prognathism, owing to the absence of the intermaxillary, is not that of the ape, nor has it any other character of the anthropomorphous apes. He thought that it was a pathological specimen. Crétinism presents two series of phenomena; one series manifested in the cerebral cranium, indicates arrest of development, whilst the other shows in the face, by an inverse progress, the features of animality. Crétins have usually the tongue very large; many of them are prognathous. He admitted, however, that he had never seen any analogous cranium.

M. Gratiolet said that the prognathism of this piece was certainly considerable, but did not present the prognathism of the ape, in which the alveoli project forward, but the line from the maxillary to the nasal spine is always curved and convex. In man it is curved but concave; so that even in the absence of the intermaxillary bone we are enabled to assert that it is not a pithecoïd prognathism, but a prognathism peculiar to man.

On the Pelvis of Different Races.—M. Pruner-Bey read a long and interesting historical and critical essay containing a summary of the views of various authors on the form of the pelvis in different races of mankind. The greater portion of this paper is devoted to an analysis of M. Joulin's interesting treatise, *Sur le bassin considéré dans les races humaines*,* in which that author, differing from his predecessors, endeavours to demonstrate :—

I. That the important anatomical peculiarities which have been signalised as characterising the pelvis of the Negro and Mongol races have no existence.

II. That the slight differences observed in the pelvis of three human races have nothing characteristic in them ; they only appear when the comparison is made in a number of subjects.

III. That the Mongol and Negro race present, in the conformation of the pelvis, an identity which does not admit of their being distinguished.

IV. That whilst, by the examination of the cranium, we ought to divide the genus *Homo* into three principal races, the examination of the pelvis only furnishes two groups. In the first group the author places the Aryan or Caucasian race ; in the second the Mongol and Negro races.

On the Crania from the Cave of Lombrives. By M. GARRIGOU, read by the Secretary General.—Our readers will find a description of the caverns and of the crania in Professor Vogt's *Lectures on Man*. Here we give a few more extracts of M. Garrigou's paper :—The tear and wear of the teeth observed in fossil human jaws is so general that it must be owing to a general cause. Prof. Richard Owen, to whom a speculator of Avignon sold fossil bones from the cave of Bruniquel, has expressed on this subject an opinion which certainly would not have presented itself to his mind had he been present at the excavations. He thought that the men of Bruniquel did not cook their food, since all the teeth were completely used up by the mastication of raw aliments. I have no hesitation in saying that this interpretation is erroneous.

The bones of all the caverns, especially those of the polished stone age, may be divided into two categories ; such as adhere to the tongue and such as do not adhere, which two categories exist in almost all caverns formerly inhabited by man. I believe that the first of these bones belonged to animals, the flesh of which was either roasted or boiled, whilst the second were not subjected to any preparation. These bones are frequently found amidst cinders and charcoal, or in a mass agglutinated by grease, cinders, and coal. The

* *Archives Générales de Médecine*, Juillet 1864.

condition of bones used for the fabrication of instruments supports my opinion. These bones are usually hard; they have preserved their gelatine, and do not adhere to the tongue. It is presumable that the men of the prehistoric period had still sufficient experience to know that fresh bones, containing still their gelatine, were preferable for making implements to bones whose solidity was diminished by cooking. I conclude, therefore, that the men of Bruniquel, like those found in stations of the pre-historic epoch, cooked the flesh of animals, and that the excessive wear of their teeth must be ascribed to some other cause than that assigned by the learned English professor. For my part I am inclined to ascribe the wear of the teeth of the peoples of the quaternary period to the use of raw vegetables, roots, or other parts of trees and plants. I also agree with MM. Vogt, Morlot, and others, that the mastication of coarse bread, intermixed with stony particles, is the chief cause of this wear and tear of the teeth.

After giving the description of these crania by Professor Vogt, with whose conclusions, as regards their elevated type and their osteological construction, he agreed; he, nevertheless, did not share his opinion that they were Basque crania. He looked upon these two crania as having belonged to mongrels of Celts and Iberians, presenting however more of the type of the latter. He could not conclude without offering some observations on craniology and its results as affecting the antiquity of man upon the earth.

Hitherto two great divisions have been established for the study of crania. Round, short, Iberian, brachycephalic, and elongated, Celtic, dolichocephalic heads. These divisions may suffice for the present; but the time will arrive when a new and more ancient form will be established, and when the dolichocephalic and brachycephalic crania, now forming separate species, will only be considered as varieties. Already human remains, probably more ancient than such at present known, discovered by M. Alzien and by himself, and of which M. Pruner-Bey has promised to give an account, do not present the character of pure dolichocephaly. He felt convinced that, despite the authority of Lyell, the primitive type of man will be found not merely in the post-pliocene and even the pliocene beds, but in lower geological strata. Wherever such perfect mammals as the mastodon, the lion, and the hyæna, could live, man could exist. Whether or not the theories of Lamarck and Darwin be correct, we see the progress of nature from the trilobite to the ape; and if nature has contrived to mould and animate the brain of the ape, why should it be more difficult for her to rise to that of man?

(To be continued.)

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RACE IN HISTORY.*

TIMES of political and religious change have an unparalleled interest in the history of a people ; it is during such times that many latent characteristics which strongly mark races and nations become conspicuous. Whatever may be the inherent qualities of a race, these are certain to influence, or to be influenced greatly by new ideas on matters which so powerfully affect human feelings and passions. Every race, pure or mixed, is modified by political or religious theories ; not that any creed or any form of government is peculiar to anyone, but the manner in which a religious creed or political institution operates is almost solely dependent on the character of that one by which it is adopted. Let the government be monarchical or republican, the social conditions will determine its special operation, so that the monarchy or republic shall be developed entirely in relation to the instincts of the race among whom it is instituted. And, also, let the creed be orthodox or heterodox, Christian, Mahometan, or idolatrous, its tenets are sure to be modified by the feelings and sympathies of the people among whom it is propagated.

No period of British history is, on this account, more instructive than that which commences with the civil war in England in the reign of Charles the First, and ends with the insurrection of 1745 in the Scottish Highlands for the purpose of restoring the Stuart dynasty. During that period the religious creed and the form of government had undergone an extraordinary and rapid change ; and the people in the different parts of the British Isles were affected variously by it, according as Celt or Teuton preponderated among them. The progress of the reformation brought out very boldly the different racial

* *History of England.* By Lord Macaulay. London : Longmans.

peculiarities. In Scotland the religious change was rapid and accompanied with much fury and violence. The persecution which the reformed faith had to endure in that country evolved the Celtic fervency and enthusiasm as well as the Teutonic imperturbable firmness and dogmatism of the mixed people. In Ireland protestantism entered as the religion of the rulers ; owing to which the old creed became the suffering one, a fact which rendered the masses of the population averse to listen to any arguments adduced in favour of the former ; for the Celts are very prone to believe that the side of weakness and suffering is the right one, and usually court, rather than avoid, martyrdom. "Be always on the weak side," is a favourite Celtic adage. The Scotch, having adapted presbyterian tenets, clung to them in defiance of force, sword, and fire ; nor could any amount of persecution compel them to relinquish these ; on the contrary, the more they were persecuted the more confirmed did they become in their opinions. The Irish people have been almost as much persecuted for Roman Catholicism as the Scotch were for presbyterianism. It is the same fervent enthusiastic character which made the Scotch hold to their presbyterianism that has made the Irish people hold to their Roman Catholicism. The results in both countries have been widely different so far as social, moral, and intellectual progress are concerned ; but the difference in the results may be traced mainly to difference of creed and political institutions. All error is opposed to human progress, and no error is more opposed to it than religious superstition ; presbyterianism is christianity with fewer superstitions than Roman Catholicism ; so the balance of superstition in their favour has partly helped to render the Irish people less progressive than the Scotch ; while the amount of it thrown away has greatly contributed to the advancement of the latter nation. Circumstances also secured to the Scotch their national independence, owing to which they were governed by political institutions of their own growth until united with England in the reign of Queen Anne ; while Ireland, struggling for independence ever since her partial conquest by Henry the Second, was governed, so far as that could be done, by political institutions imported from England until her union with the latter country in 1801. This diversity in the political conditions of Scotland and Ireland accounts further for the greater progress of the former. With destinies so different, however, and with outward peculiarities so apparently opposite, the Scotch and Irish characters have much more in common than many of the intelligent would feel disposed to believe. With external austerity, the Scotch have in their nature more wit and vivacity than those who are not intimate with them are at all aware ; and the Irish have more coolness and forethought when not labouring under excite-

ment than has ever been accredited to them. Both have this in common that they are disposed to fatalistic faiths and enthusiastic forms of worship. Both nations opposed the change of the ruling dynasty of Britain, and fought for the old.

In England Teutonic and Celtic elements seem to have been more evenly blended than in Ireland or Scotland ; so that Celtic socialism had been better tempered by Teutonic individualism. The consequence was that personal freedom and religious toleration were more successful in England than in the sister countries.

The history of the period which we have mentioned is of intense interest to the student of British anthropology ; and it has fortunately been written by men of superior genius and talent, one of whom was pre-eminently gifted with all the mental endowments requisite to an historical artist ; and accordingly he has given us a book which does not yield in clear and vivid delineation to any of the kind written in the English language. As Lord Macaulay brought such superior qualities to the task, we need not wonder that his work has realised all the high expectations entertained of him by the learned and enlightened. Glad were all the lovers of literature when the brilliant orator and essayist announced his intention of writing a history of England, and great was the delight of all when two volumes of that history appeared. It was a work surpassing the most sanguine expectations, whether the clearness of the style, the arrangement of the matter, the acuteness of the arguments, the vividness of the details, or the wonderful discriminative delineations of character were to be considered. The various changes which took place in men's characters and opinions, the difference between one period and another, the progress made in each, the distinctive characteristics of the original peoples from whose intermixture the English nation has been formed, are investigated and portrayed with matchless ability. The weaknesses which were displayed under the influence of certain sectarian whims ; the bigotry, enthusiasm, and fanaticism of contending factions ; the blindness of partisan zeal and the violence of political opponents, are exceedingly well analysed, and are delineated with great graphic power. In these analyses and delineations the student of the science of man will be able to trace the peculiar instincts and moral sentiments of the various races which have blended into one great and powerful people.

In treating of race, Lord Macaulay frequently errs in theory. He was not an anthropologist, and probably had studied little or nothing of the science. Perhaps this is not to be regretted, as in that case a work so highly artistic might have its beauty and excellence impaired by too much scientific disquisition. That which is required of the

historian is to delineate peoples and nations as they exist in the concrete ; as he knows and observes them ; as they are influenced and modified by circumstances at various periods ; and this the author has done in an admirable manner. Errors and exaggerations doubtless abound ; as the writer is extremely fond of contrasts, and has light and shade always in view. Like all those who are richly endowed with the artistic mind his primary idea is a beautiful and perfect work, to accomplish which he looks upon men and nations as mere material ; but the love of truth is ever present, and rhetorical ornament is chiefly employed for the purpose of rendering a truthful portraiture of men and peoples more conspicuous. Provided with such a portraiture the anthropologist is powerfully aided in his researches ; and he will find them eminently suggestive even when he thinks he has just grounds for disputing their correctness. It is much to be regretted that the illustrious historian did not live until he brought his history down to the year 1745. However, the history of the last insurrection that took place for the purpose of restoring the Stuart dynasty has been so well handled by Lord Mahon that the loss sustained by literature through the death of Lord Macaulay is in a great measure compensated.

No author can write the history of a race unless he partly belongs to that race himself ; a statistical account or a brilliant romance he can write of them if possessed of the suitable talents ; but not the chronicle that livingly expresses their instincts, feelings, sentiments, and mental peculiarities ; and, racially, Macaulay was qualified for writing British history. By the mother's side an Englishman, the blood of all the races forming the English nation flowed in his veins ; by the father's side he inherited those qualities of mind and character which have distinguished the Scandinavian Celtic race of the Scottish Highlands. From the former he derives his shrewdness, his calmness, and his keen practical sense ; from the latter his eloquence, his rhetorical aptitude, and his poetic cast of mind. He is not only of the Scottish Highland race, but a descendant of one of their bards. An elegy full of tenderness and pathos, and an exquisite love song displaying a luxuriant fancy found among old collections of Gaelic songs and ballads are the compositions of "Isachari Mac Aulai," one of his ancestors. In these two beautiful pieces that inherited genius may be traced which pervades his "Lays of Ancient Rome," his essays, his speeches, and his English history.

The first part of the work being a review of English history from the earliest times to the commencement of the reign of James the Second, is remarkable for its comprehensiveness and concentration ; but here and there the brilliant writer commits grave errors. "Nothing," says he, "in the early existence of Britain indicated the

greatness which she was destined to attain. Her inhabitants, when first they became known to the Tyrian mariners, were little superior to the natives of the Sandwich Islands."

No authentic history points to a period when the inhabitants of Britain were as low in civilisation as those of the Sandwich Islands before their conversion to Christianity; and if Britain was inhabited at the period to which the author refers by any of the mixed races that have blended into the mixed ones, which now inhabit her, there is everything to indicate her present superiority in their organisation; and that she was then inhabited by these there is little room to doubt. Julius Cæsar found a regularly organised priesthood in the island; and according to his account of them their knowledge and wisdom, when we consider the age, were by no means contemptible. These were the Druids. The Sandwich Islanders have no Stonehenge. The British Druidical schools, according to the same writer, were superior to those of Gaul; and thither the Gallic youths resorted for the purpose of being initiated in the mysteries of that worship. Tacitus, in his *Life of Agricola*, informs us that the British youths were more talented than those of Gaul, and that they acquired a knowledge of the Roman language and literature with wonderful facility; also, that, although the Britons were conquered and would easily submit to pay taxes, they could not endure the idea of being considered as slaves; and, consequently, stoutly opposed all attempts made by the Romans to curtail their personal freedom. From these remarks of the two great Roman writers, as well as from numerous other sources, we clearly discern in the past the germ of the present greatness of the British people. They are great because the races of which they are composed are physically, morally, and intellectually superior. They are great because they have superior brains, nerves, bones, and muscles. We pass from this to another passage, which assumes that the English, at the time that the Scandinavian invasion commenced, were a pure Teutonic race. "The same atrocities," remarks the author, "which had attended the victory of the Saxon over the Celt, were now, after the lapse of ages, suffered by the Saxon at the hand of the Dane. Civilisation, just as it began to rise, was met by this blow, and sank down once more. Large colonies of adventurers from the Baltic established themselves on the eastern shore, spread gradually westward, and, supported by constant reinforcements from beyond the seas, aspired to the dominion of the whole realm. The struggle between the two fierce Teutonic breeds lasted during six generations."

This is a clear and concise description of the long struggle between English and Danes; but the Anglo-Saxons at the time that the Danish invasions began were not a pure Teutonic breed, but a Teutonic British

one. The Anglo-Saxon language has elements common to the Cymraeg and Gaelic in its structure ; and as that is so it may be judiciously inferred that it is a speech formed from the language of Eastern Britain and that of the original Saxon invaders ; for before the Saxons had ever put foot on British ground there is strong reason for believing that the tongue of Eastern Britain approached nearer to that of Germany than that of the West did. As we have no specimen either of the language of Eastern Britain or of that of the first Saxon invaders, we are unable to assert how much of the Anglo-Saxon, written long afterwards, was native or imported. It is highly probable that Eastern British and original Saxon had much in common, and that they rapidly amalgamated into one speech. We must not lose sight of the facts, that the masses of the cultivators of the soil continued to be Britons after the Saxons had obtained possession, and that those Britons who were driven westward were chiefly dispossessed chiefs and their retainers. It should always be borne in mind that warriors do not contend for victory with no other aim than putting their hand to the plough ; it is rather to secure others to perform that useful labour for them that they fight ; and so anxious were the Saxons to have the Britons to do this for them that they were not satisfied with the numbers of the vanquished on the conquered territory only ; but made raids into those British districts which still preserved their independence, and thence carried off numerous captives for the purpose of tilling the soil for them. But a vanquished race, when of superior organisation, does not hopelessly continue in serfdom ; so, in the frequent and sanguinary wars which so long subsisted between the kingdoms of the Anglo-Saxon heptarchy, the British serfs had frequent opportunities of ruining their masters and rising into power themselves. During centuries of warfare, therefore, by the vicissitudes of fortune, Saxon thanes were reduced to serfs and British serfs were raised to the dignity of thanes. Independently of these freaks of fortune, intermarriages between Saxon and British families were frequent ; owing to which the English, at the time when the Danish invasions commenced, were a thoroughly crossed Saxon-British breed. The Anglo-Saxons and the Danes were not "two fierce Teutonic breeds," as the talented historian asserts ; but a fierce Teuto-Celtic and a fierce Teutonic breed.

In his beautiful and vivid description of the Norman conquerors of England the same error is committed by the author ; namely, that of fancying that these were also a Teutonic race. As this noble delineation of the Norman people is one of the happiest effusions of the author's genius, and is as powerful a specimen of word painting as is to be found in the work of any writer, we quote the following passage from it :—

“They abandoned their native speech and adopted the French tongue, in which the Latin was the predominant element. They speedily raised their new language to a dignity and importance which it had never before possessed. They found it a barbarous jargon; they fixed it in writing; and they employed it in legislation, poetry, and romance. They renounced that brutal intemperance to which all the other branches of the Germanic family were too much inclined. The polite luxury of the Norman presented a striking contrast to the coarse voracity and drunkenness of his Saxon and Danish neighbours. He loved to display his magnificence not in huge piles of wood and hogsheads of strong drink, but in large and stately edifices, in rich armour, gallant horses, choice falcons, well ordered tournaments, banquets rather delicate than abundant, and wines remarkable rather for their exquisite flavour than for their intoxicating power. That chivalrous spirit which has exercised so powerful an influence on the politics, morals, and manners of the European nations, was found in the highest exaltation among the Norman nobles. Those nobles were distinguished by their graceful bearing and insinuating address. They were distinguished also by their skill in negotiation, and by a natural eloquence which they assiduously cultivated. It was the boast of one of their historians that the Norman gentlemen were orators from the cradle. But their chief fame was derived from their military exploits. Every country from the Atlantic Ocean to the Dead Sea witnessed the prodigies of their discipline and valour. One Norman knight at the head of a handful of warriors, scattered the Celts of Connaught. Another founded the monarchy of the Two Sicilies, and saw the Emperors of the East and of the West fly before his arms. A third, the Ulysses of the first crusade, was invested by his fellow soldiers with the sovereignty of Antioch; and a fourth, the Tancred whose name lives in the great poem of Tasso, was celebrated through Christendom as the bravest and most generous of the champions of the Holy Sepulchre.”

The distinguishing qualities of a people could not be more vividly and accurately portrayed than in this passage; and these are the qualities of a mixed people, not of a pure race—qualities which have been evolved from the vivacity, sentimentality, and acuteness of the Celt, combined with the perseverance, application, and cool deliberation of the Teuton. The pure Normans did not abandon their native speech, but the mixed Normans did. The language of the mothers, serfs and neighbours, prevailed over that of the fathers and became the speech of the new people. Even the first Normans who obtained possession of Normandy can hardly be said to have been pure Norsemen: for previous to that event the Scandinavians had obtained sure footing on the East Coast of Britain, and, besides, were in possession of Iceland, the Hebrides, and the East of Ireland; and there is very little doubt that many of the mixed Celtic Scandinavian race of the Hebrides and Ireland, were among those Norsemen who first settled

in the North of France. The Norman conquerors of England had probably two-thirds of French blood in their veins; and the conqueror's army was not even composed entirely of Normans. Adventurers from other French provinces flocked to his standard. The Bretons, the descendants of those Britons who had been expelled from their country by the pressure of the Saxon invasion, and had settled in the North-west of France, formed a considerable part of his army, and received a share of that conquered land which, several centuries before, had been wrested from their forefathers by the strong hand of the Teutonic invader. This people, then, whose eminent qualities are so vigorously and brilliantly narrated by Lord Macaulay, were not a German or Teutonic people, as he would imply, but a Teuto-Celtic race in which Celtic elements predominate. The reader who wishes to know fully the history of this remarkable people is referred to Thierry's beautiful history of the Norman conquest.

The Norman people continued distinct from the English for a couple of centuries; and from the reign of William the First to that of John the name of Englishman was held in the greatest contempt. In the reign of Richard the First the historian tells us that the ordinary imprecation of a Norman gentleman was, "Do you take me for an Englishman?" This may be taken as an illustration of the manner in which the vanquished are treated by the victors in all ages and in all countries, and accounts for the many fabulous stories which chroniclers have handed down to us of the subdued peoples by their conquerors; for in such cases the vanquished are usually glad to change their own name and assume that of the victors, to avoid the odium attached to the former. Old Anglo-Saxon chroniclers speak of the entire expulsion of the Britons from England and old Scottish historians relate stories of the complete destruction of the Picts by the Scot; but the reality was that despised Britons and Picts assumed the more honoured name of their conquerors and endeavoured as much as possible to conceal their own origin.

Of the new people evolved from old English and Normans the historian remarks:—

"The disdain with which in the twelfth century the conquerors from the continent had regarded the islanders, was now retorted by the islanders on the people of the Continent. Every yeoman from Kent to Northumberland valued himself as one of a race born for victory and dominion; and looked down with scorn on the nation before which his ancestors trembled. Even those knights of Gascony and Guienne who had fought gallantly under the Black Prince, were regarded by the English as men of an inferior breed, and were contemptuously excluded from honourable and lucrative commands."

Here we have a lucid description of a new people who even excel

those from whom they have been derived ; but still the groundwork of their superiority was of British origin. Of this the anthropologist who considers the facts brought forward in this article will be readily convinced. The various conquests served but to refresh and invigorate the old aboriginal Britons. Those Englishmen who gained the brilliant victories of Cressy and Agincourt are but the old Britons invigorated by successive crossings—the old Britons so truthfully and vigorously delineated by Shakespeare in the dramas of “King Lear” and “Cymbeline.”

The progress of the new people is finely traced and investigated by the author ; their gradual growth in commerce and arts clearly expounded and charmingly narrated.

In talking of Scotland Lord Macaulay errs with regard to its racial character as he does in the case of England.

“The population of Scotland,” he asserts, “with the exception of the Celtic tribes which were thinly scattered over the Hebrides and over the mountainous parts of the northern shires, was of the same blood with the population of England, and spoke a tongue which did not differ from the purest English more than the dialects of Somersetshire and Lancashire differed from each other. In Ireland, on the contrary, the population, with the exception of the small English colony near the coast, was Celtic, and still kept the Celtic speech and manners.”

The Scotch were indeed the same people with the English in so far as both were descended from the ancient Britons and crossed with Danes and Saxons ; both, indeed, spoke a common language ; but that language, in Scotland, had spread and displaced the language of a Celtic population which was not conquered or removed by, but intermixed with, a neighbouring Teutonic people. In the reign of Malcolm Canmore Anglo-Saxon became the court language of Scotland, and from the south-east of the country it spread along with Anglo-Saxon settlers in the north-east and south-west. The Highland chiefs intermarried, for centuries, with the daughters of Lowland gentlemen, as did Lowland gentlemen with their daughters ; so that, in the course of time, the blood of the upper classes in the Highlands and Lowlands of Scotland must have been very much the same, while in many ways, direct and indirect, that blood must have largely entered into the veins of the lower classes. The Norwegians, having had a hold of the Hebrides and coast of the western Highlands for a long period, intermingled with the native people, owing to which the Scottish Highlanders, who speak a Celtic language, are a Teuto-Celtic race ; while the Lowlanders, who speak a tongue of which the principal elements are Teutonic, have a large admixture of Celtic blood. A common nationality had grown through time in Scotland at the same that the Anglo-Saxons there had been politically and

socially separated from those of England, and, in consequence, the kindred peoples in both countries became two different nations, and for centuries there was but interfusion of blood, but the interfusion of blood already mentioned which took place between Highlanders and Lowlanders united both peoples into one nationality. Gaelic was spoken in Galloway in the reign of James the Sixth, and was the speech of the north-east of Scotland from the Firth of Forth to the Pentland Firth in the reign of Malcolm Canmore and long afterwards. The south-east of Scotland is the portion which is most Teutonic in race, and the north-west that which is most Celtic.

While pointing out ethnographical errors in some stray passages of one of our greatest historians, we must call the attention of the reader to the fact, as has already been done, of the author's wonderful aptitude in delineating, as well as in seizing at a glance, the ethnic characteristics of a people. Social relations, as has already been stated, preponderate in the character of the Celt. The social community, the family, the clan, the nation, are everything with him and the individual almost nothing; the contrary is the case with the Teuton—with him individual interests are all important and social interests altogether subordinate. In the olden times an insult to an individual himself was thought little of by Scottish Highlanders or Irishmen; but an insult to a person's family, clan, or country, if it was not one of the seven deadly sins, was still a sin never to be forgiven by them; and Lord Macaulay tells us that "an insult to his country is that which a Scotchman never forgives," and this is actually so because the Scotchman has so much of the Celt in his nature.

Macaulay is almost invariably happy in his descriptions of the people of those districts of Britain which are more strongly Celtic. At all times we find that people strongly moved by anything affecting social relations, such as attachment to country, clan, or family. His account of the agitation in Cornwall in favour of Trelawney, Bishop of Bristol, whose life was considered by his countrymen to be in danger from the arbitrary manner in which he was dealt with by James the Second. The lucid sketch of the Cornish in the following passage clearly shows how very like they are to their Celtic brethren in other districts:—

"The people of Cornwall, a fierce, bold, and athletic race, among whom there was a stronger provincial feeling than in any other part of the realm, were greatly moved by the danger of Trelawney, whom they honoured less as a ruler of the church than as the head of an honourable house, and the heir through twenty descents of ancestors who had been of great note before the Normans had set foot on English ground. All over the country was sung a song of which the burden is still remembered:—

“‘And shall Trelawney die—and shall Trelawney die?’

Then thirty thousand Cornish boys will know the reason why.’

The strong attachment to chiefs of old standing so strong in the ancient Gauls, the Scottish Highlanders, the Irish, the Welsh, and the Bretons is shown in this vivid description to have been equally strong in the natives of the Duchy of Cornwall.”

While the author's delineations of peoples and individuals are so truthful and so accurate, the influence of a false anthropological theory is perceptible in all his speculations—a theory frequently embraced by metaphysicians, theologians, and various other nondescript pedants and bookworms, but seldom received by those who have themselves observed mankind; the theory that assumes that all the differences observed among the human races depend upon civilisation and other circumstances, a theory adopted by the lamented and talented Buckle, and advocated by the logical John Stuart Mill; a theory proved false by scientific observation and experiment, but adhered to with pertinacity by dogmatic and effeminate closet students. Whenever Lord Macaulay speculates this theory is his evil genius; the “dreamy Celt” gains all the mastery in his mind; but the artistic inventiveness of the Celt retains all its vigour, so much so that the reader is more charmed with his fanciful theorising than with the more accurate disquisitions of Hume or of Gibbon. Always powerful and truthful when he narrates, but ever erring when he philosophises, his speculation on the Irish people is pure romance, but his sketching of them is graphic, vivid, and original in the highest degree. He ever talks of the English as a pure Anglo-Saxon race, whereas from the first they were a very much mixed Anglo-Irish people; and not only so, but the English who settled in Ireland were the most Celtic of the English. They were mostly from the West of England, and were accompanied by large numbers of Welshmen—the Fitzgeralds were Norman Welsh. The English government found to their regret that they became in a short time more Irish than the Irish themselves; and this usually happens whenever a mixed race comes in contact with a pure one with which it has half its elements in common. It was, perhaps, the misfortune of Ireland that the English who settled on her soil were already strongly Celtic; and so, introduced but a small admixture of Teutonic blood. Ireland is, in consequence, the most Celtic of the three British kingdoms.

The historian's comparison of the native Irish to the Helots and of the English of the pale to the Spartans is as philosophically erroneous as it is poetically beautiful. Unlike the Helots, who were slaves, the native Irish were a people who had never been thoroughly subdued by the English. Despised they were not by the English in the same sense in which the Helots were by the Spartans, and could not be. A people, partially conquered, who possessed such enduring spirit of in-

dependence and bravery as ever to prevent their conquest from being complete, and to give the victors frequent cause of annoyance and terror, might be hated but could not seriously be despised. According to the illustrious writer himself, the following were the sentiments of the Irish Helots:—

“He had been brought up to regard the foreign sovereigns of his native land with the feeling with which the Jew regarded Cæsar, with which the Scot regarded Edward the First, with which the Castilian regarded Joseph Buonaparte, with which the Pole regards the Autocrat of the Russias. It was the boast of the high-born Milesian that, from the twelfth century to the seventeenth, every generation of his family had been in arms against the English crown. His remote ancestors had contended with Fitz Stephen and De Burgh. His great grandfather had cloven down the soldiers of Elizabeth in the battle of the Blackwater. His grandfather had conspired with O'Donnel. His father had fought under Phelim O'Neil against Charles the First.” And this is the man who stood in the same relation to the Englishman as the Helot did to the Spartan!! As much like a Helot as a Bedouin Arab is like a Negro.

But it is to be remarked that feigning contempt and indulging in contemptuous ridicule is a strong trait in the Teutonic character. In coarse ridicule the Teuton much excels the Celt; moreover, the Teuton who is acquainted with the Celt knows that the latter is usually sensitive; and that, consequently, the darts of ridicule are not aimed at him in vain. On the other hand, the Teutonic races are more impervious and are but little moved by the flashing raillery of the Celts. They can better suppress their emotions, they can better conceal their sufferings, they can better laugh under misfortunes than the Celts. Their great firmness and self-esteem enable them well to conceal their weaknesses. Celts glory in giving way to their emotions; Teutons take pride in restraining them. Owing to these distinctive racial qualities, the historian has been led to think that the feigned contempt of the Anglo-Irish was real, and that the desponding pathetic laments in which Celts are prone to indulge, were signs of their being hopelessly trodden down and vanquished. With a masterly hand does the talented author describe the Gaelic people of Scotland; and as prominent Celtic characteristics are found to unite all peoples who have a strong admixture of Celtic blood, we quote it here, in order to show how much Scottish Highlanders and Irish agree in their leading peculiarities. Of the former he graphically remarks:—

“And yet an enlightened and dispassionate observer would have found in the character and manners of this rude people something which might well excite admiration and a good hope. Their courage was what great exploits, achieved in all the four quarters of the globe, have since proved it to be. Their intense attachment to their own tribe, and to their own patriarch, though politically a great evil, par-

took of the nature of virtue. The sentiment was misdirected and ill-regulated, but still it was heroic. There must be some elevation of soul in a man who loves the society of which he is a member, and the leader whom he follows with a love stronger than the love of life. It was true that the Highlanders had few scruples about shedding the blood of an enemy ; but it was not less true that they had high notions of the duty of observing faith to allies and hospitality to guests."

To illustrate this brilliant delineation of the Scoto-Gaelic character, we beg to quote Lord Mahon's beautiful description of the devotion and bravery of the same people at the battle of Culloden :—

"Yet let it not be deemed that even then their courage failed. Not by their forefathers at Bannockburn, not by themselves at Preston and Falkirk, not in after years when discipline had raised and refined the valour of their arms, not on the shores of the Nile, not on that other field of victory when their gallant chief with a prophetic shroud (it is their own superstition) addressed to them only these three words 'Highlanders, remember Egypt,' not in those hours of triumph and of glory was displayed a more firm and resolute bravery than now in the defeat of Culloden. The right and centre had done all that human strength or human spirit could do, they had yielded only to necessity and numbers, and, like the captive monarch at Pavia, might boast that everything was lost but their honour."

In this description we recognise the same race that fought under Galgacus against the Romans at the foot of the Grampians. As frequently remarked the essential characteristics of the British are still essentially the same as the most ancient writers who acquired any knowledge of these Isles found them to be. From the extracts made from Lord Macaulay's work it will clearly appear that the qualities ascribed to Celts by writers of our own day are very much the same as those ascribed to them by the ancient writers of Greece and Rome. According to the oldest writers they were daring, excitable, patriotic, and clannish ; and, according to modern writers, they are still possessed of the same qualities.

While we have made some strictures on some of the views of such an eminent historian as Lord Macaulay, it must be borne in mind that we consider his faults as trifling in comparison with his merits. A noble contribution to anthropology his work doubtless is ; and, as an historical artist, he is entitled to rank among the first of all ages and nations.

We have dwelt more fully on the portions of the work which delineate the more Celtic districts of Britain, in order that the intermixture of the original race with the intrusive ones might be more distinctly traced and analysed. In no other historical work can the anthropologist find more suggestive and instructive matters than in Lord Macaulay's *History of England*.

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ITALIAN ANTHROPOLOGY.*

As it is one of the objects of the *Anthropological Review* to collect and to diffuse, as extensively as possible, the contemporary literature of the grand science to which it is dedicated, it seems desirable to continue the announcements, however brief or imperfect, of foreign publications. We cannot afford to limit our knowledge to the productions of our own islands. On the contrary, light upon any of the multitudinous subjects of anthropology is most acceptable from every source whence it can come. The scientific men of Italy have recently made some important contributions. The first place must be conceded to the zealous Nicolucci, who so ably sustains the position of the Prichard of Italy.

Ancient Liguria may be said to be that region of the Peninsula which reached from Gaul to Etruria, extending along the shores of the Mediterranean Sea. But the Ligurian race has had more extensive limits; to Massilia and the mouths of the Rhone westwards, to the Maritime Alps northward, and to near the city of Pisa on the Arno southward. In the earliest times the Ligurians consisted of a number of wild tribes, rightly to be regarded as the most ancient inhabitants, or aborigines of these regions, whose origin could not be traced. Strabo and other ancient authorities speak decidedly of their distinctness from the Celts or Gauls. Their language is lost. Although much nearer home, the Romans found these brave tribes about as difficult to subject as those of Britain. And, like the latter, almost the only pages of history occupied by the Ligurians are those in which Livy relates the long-continued efforts of a succession of Roman armies to bring them to submission. For upwards of two hundred years different tribes offered vigorous resistance, and it was not till near the commencement of the Christian era that they were finally subdued.

The purport of the author's investigations, he tells us, is limited to the Ligurians, the most renowned among the oldest populations of Italy; to prove that it is probable this was the first people who dwelt on the Italian soil, and that, notwithstanding the revolution of so many ages, and the occurrence of so many and of such diverse vicissitudes, some remnant of the race still survives in their ancient seats,

* *La Stirpe Ligure in Italia, ne' tempi antichi e ne' moderni.* Per Giustino Nicolucci. Napoli: 1864. 4to, pp. 87, con tavole vii.—The Ligurian Race in Italy, in Ancient and Modern Times.

and still preserves those characters and same natural attributes by which they were distinguished in the most remote ages. This is a noble design, and will add another to the numerous other such proofs of the permanency and indelibility of race.

It will be impossible to follow the author in his learned researches through the whole of the recondite course he has marked out. He treats, first, of the primitive populations of the west of Europe of the age of stone, a subject already familiar to his pen.* He assures us that these ancient people were generally distinguishable, according to the evidence of human crania found as well in Denmark as in Germany, as well as in Switzerland, France, and the British Isles, by the *brachycephalic* form of Retzius; namely, by that short, broad, as it were spherical cranial form, in which the transverse diameter stands in its relation to the longitudinal, as 4 or more is to 5, or, as 80 or more is to 100. The succeeding races of the bronze and iron periods are readily discriminated from these by the oval figure of their calvaria, in which the long diameter exceeds by a fifth or more the transverse, constituting the ovoid form of Prichard, and the *dolichocephalic* of Retzius. Still, in the bronze age, there are frequent evidences of brachycephalic skulls, which gradually diminish in number as we approach the iron period. And this could not be otherwise, since the countries of Europe conquered by the new races of the bronze and iron epochs, would be gradually thinned of their pristine inhabitants. Not all the conquered would submit to the yoke of the victors; many would go in search of other seats, or they would recover some spots not contaminated by the presence of the stranger. Those who were not absorbed by the new comers, and remained free from extraneous mixture, would preserve unchanged their original stamp; and still, even in our times, notwithstanding the lapse of so many ages, represent the types of the primitive races. Remnants of these races endure continually in the north and the centre of Europe, in the Finno-Ugrian family; remnants still exist in that group of people who dwell towards the point of conjunction of the Pyrenees and the Calabrian mountains, in France and in Spain, and in that tract of country named Liguria and Piedmont, which extends from the Var as far as the Macra, and from the Mediterranean up to the Ticino.

The next section of this well-argued treatise is entitled, "The Ligurians traced out by the aid of History and of Philology." This

* *Di alcune Armi ed Utensili in pietra, rinvenuti nella Provincie Meridionali dell' Italia, e della Popolazione ne' tempi antestorici della Penisola Italiana.* Napoli: 1863. 4to, con tav. ii. This work contains measurements of human crania found at a considerable depth at Torre della Maina and at Cadelbosco di Sopra, and also small figures of two of them.

division of the work is full of learned research, and contains an investigation of the names of districts, rivers, mountains, etc., which are referred to their roots and etymologies, and traced through ancient authors with much patience and ingenuity. This section may be passed over, as it constitutes a speciality for the study of those who have formed a considerable estimate of philology in solving obscure questions of origin. Its importance as a means of collecting the scattered rays of knowledge extant with regard to the ancient Ligurians, cannot be called in question.

The following section takes up the ancient Ligurian type, and endeavours to deduce it from antique medals and from Ligurian crania. It opens with a lamentation that, whilst the ancients, with one unanimous voice, have celebrated the intrepidity, the valour, and the marvellous endurance of the Ligurians, there remains no record of their physical conformation. From some mere expressions, it may be collected that they were of medium stature, of spare and robust constitution. Some cut off their hair, others allowed it to flow freely over their shoulders; whence the Ligurians were distinguished into the *tonsi* and the *capillati* or *comati*. By an ingenious argument, based on the assertions of Jornandés, Strabo and Tacitus, Dr. Nicolucci is enabled to affirm with some degree of confidence that they had black hair, or hair of a dark tint. He says, we have reason to consider that a brunette colour prevailed among the Liguri, with a not unfrequent disposition to curly hair. Although it has been the lot of Liguria to have no ancient monuments, we have some medals of Aquitania and of Spain, which have preserved the portraits of the indigeni expressing the national type. At least, those bearing legends in the obscure characters, which Boudard has shown are in the Basque or Euscarian language. The heads on these medals are generally held to be the true effigies of the persons whose names they bear. In those of the greatest number, there prevails a common type, which is not Greek, nor Phœnician, nor Celtic. They reveal a visage rather short, as it were quadrate, with prominent supraciliary arches; a nose almost always large; curled hair; and beard, where it exists, standing on end.

If from such scant materials we should be disposed to indicate the features by which the ancient Ligurians were distinguished, we might be able with reason to define them by their *medium stature, their spare and vigorous limbs, their brown tint, their thick black hair, their face more square than round, and their prominent supraciliary arches*. If it were attempted to deduce from the effigies on the medals the form of the crania of the persons represented, it would be a skull more round than oval, a short brachycephalic skull, a skull different

from that which is at the present day commonly met with in Spain, in France, and in the Italian population. But this deduction would be of small worth, if it could not be supported by other facts derived from ancient crania appertaining to the Ligurian race. Of these, the author has only three to bring forward.

These antique remains were found in the provinces of Modena and of Reggio, which were in the power of the Ligurian tribe *Friniati*, before the Etruscans could have had dominion there, or their successors, the Gaulish Boii and the Romans. Respecting the antiquity of these skulls, the author considers that he has already demonstrated, in his former Memoir before mentioned, "On the Stone Implements of Italy," that they appertain to the people who inhabited Italy during that portion of the stone age which adjoins the epoch of bronze. Hence he regards them as certainly relics of the oldest inhabitants of the country—the Ligurians. Two of the skulls were found, in 1862, in Torre della Maina, about ten miles from Modena, in a deposit termed there Maina, or Marniera, *i. e.*, marl beds. They were associated with quantities of charcoal and ashes, fragments of urns, with here and there bones of domestic animals, and chiefly the large antlers of deer; bones, teeth, and jaws of the horse, of the sheep, and of the wild boar. The third is in the anatomical museum of the University of Modena, and was met with at Cadelbosco di Sopra, five miles from Reggio, in 1837, in a stratum of black bog earth, at a depth of fifteen feet. The three skulls markedly differ as well from those of the modern inhabitants of the provinces of Modena and Reggio, as from the other Italians, with the exception of the Ligurians and the Piedmontese, to whose crania they are very similar.

The conformation of these skulls is brachycephalic. This is rendered very striking by the measurements given by Dr. Nicolucci, and the three first of the seven lithographic plates which accompany his Memoir, and which represent the skulls of their natural size. The first and least perfect of the two from Torre della Marna is the cranium of a woman, judged to be not more than from forty to forty-five years of age. The author has described this skull, as well as the others, very carefully, but he has omitted to mention the premature ossification of some extent of the extremities of the coronal suture, which has occasioned klinocephalism. The cephalic index of this skull rises to 90.5, or this is the proportion of its greatest breadth compared with its length, taken as 100. The second example from Torre della Maina is the skull of a young man of from twenty-five to thirty years of age. This is equally brachycephalic with the pre-

ceding, as its cephalic index is 90·7. The cranium from Cadelbosco di Sopra is likewise brachycephalic, with an index of ·85.

The author takes the opportunity in this place to speak of some Etruscan skulls referred to the brachycephalic type, which Retzius did not hesitate to regard as proper to the head of that race. This view has not been supported by the observations of Garbiglietti,* Von Baer,† Rudolph Wagner,‡ and Maggiorani;§ and the Etruscan skull figured in the fine edition of Cuvier's *Règne Animal*, published by his pupils, is also dolichocephalic.

Since the publication of this memoir, *La Stirpe Ligure*, the Etruscan cemetery at Marzabotto, near Bologna, has been very carefully excavated by Count Giovanni Gozzadini, and the results have been made known in a splendid volume by that learned and distinguished antiquary, *Di un antica Necropoli a Marzabotto nel Bolognese*. Folio, Bologna, 1865, 20 Tavole. In this cemetery a few human skulls were found, which were submitted to the investigation of Dr. Nicolucci, who has contributed a long letter or note upon these ancient crania to the volume just noticed. He first compared them with unquestionable Etruscan skulls, and found them to vary from these in a number of important characters. The horizontal circumference of the Etruscan skulls he found to be higher, namely, 529 *millimètres*, that of the Marzabotto crania only 487 *millimètres*. He next instituted a similar comparison of the latter with Celtic skulls, from which they also differed materially, and he was ultimately led to the conclusion that the crania found in the cemetery are not those of the Etruscans who first used this necropolis, but have been introduced at a much later period, and are the remains of the people who at present inhabit the Bolognese territory, belonging to the Italian family of Umbri. In this note Dr. Nicolucci gives the results of some careful measurements of the Marzabotto skulls, of true Etruscan skulls, of Celtic skulls, and of skulls of the Bolognese of the present day. The Marzabotto crania have a cephalic index of 79·6, and those of the Bolognese of ·78, whereas the cephalic index of the Etruscan skulls was ·76 only.

At a subsequent period, the eminent professor, Carl Vogt, addressed a letter to Signor B. Gastaldi upon some ancient human skulls found in Italy.|| In this communication Professor Vogt can scarcely have

* *Brevi Cenni Intorno ad un Cranio Etrusco*. 1841.

† *Ueber den Schädelbau der Rhätischen Romanen*. 1859.

‡ *Zologisch-Anthropologische Untersuchungen*. 1861. S. 13.

§ *Saggio di Studi Craniologici sull' Antica Stirpe Romana e sulla Etrusca*. 1858.

|| *Su alcuni antichi Cranii Umani rinvenuta in Italia*, Feb. 1866.

had before his eyes the epithet of "rash," applied to him by a recent English writer. He gives the results of his examination and measurement of about a dozen ancient crania found in Italy, comparing them with some others; but, in the course of this investigation, he appears somewhat to ignore the labours of previous observers who have had more abundant materials in their hands.

Professor Vogt in his letter to Gastaldi speaks of the cranium of the ancient Romans, but apparently in a somewhat doubtful manner, and refers to no other writers upon the subject, save Professors His and Rüttimeyer, the distinguished authors of the *Crania Helvetica*, who have embraced it under their "Hohberg type," and have, besides, given a profile and a vertical outline figure of the skull of the Roman Prætorian in the Blumenbach collection. This skull seems to have been scarcely long enough and narrow enough for the Professors' conclusions, hence he has thrown out a doubt upon its authenticity, and considered that it might be of barbarian Celtic origin. The Prætorian guards underwent many changes after their institution by Augustus, when they were chosen from the troops in *Italy*; but, except at a late period of the empire, they were of all troops the least likely to contain barbarian blood. The fine and perfect skull of V. L. ALEIVS admits of no doubt of its authenticity. It is dolichocephalic, like those of His and Rüttimeyer's Hohberg type, only not in so extreme a degree, and it agrees well with other ancient Roman crania. The cephalic index of Blumenbach's skull is .72, the mean of those of the Hohberg type is .70. The former ratio must be regarded to be confirmed by the observers whose estimates Professor Vogt has omitted to quote, unless there be a more exact conformity in crania than we have ever been able to discover. It is difficult to say positively what is the cephalic index of the ancient Roman skulls examined by Professor Carlo Maggiorani,* since it is probable that neither his anterior nor posterior transverse diameter represents the greatest breadth of the calvarium. The anterior is the longest, and by taking this to be the nearest indication of the greatest diameter of the calvarium, the mean cephalic index of the five skulls is .74. Of a series of four ancient Roman skulls engraved in the *Crania Britannica*, the mean cephalic index is .74. These materials give us good ground for concluding that the extreme length and narrowness of the Hohberg type of His and Rüttimeyer is not essential to the genuine ancient Roman skull, of which the Prætorian of Blumenbach may be, and probably is, a typical representative.

Professor Vogt goes on to assure us in this letter that the ancient

* *Saggio di Studii Craniologici*; and *Nuovo Saggio di Studii Craniologici. Sull' Antica Stirpe Romana e sulla Etrusca*. 1862.

Etruscan skull is brachycephalic, its mean cephalic index being $\cdot 82$, and proceeds to describe it at length.*

* As we have already noted, Retzius had previously classed the Etruscans among his brachycephali; but there was much evidence on the other side. This we shall get at best, and at the same time supply the missing links passed over by Professor Vogt, by briefly alluding to a recent publication of Dr. G. Nicolucci, the title of which is *Su i Crani invenuti nella Necropoli di Marzabotto e di Villanova nel Bolognese; Lettere del Cav. Dr. Giustiniano Nicolucci all' illustrissimo Sig. Conte Giovanni Gozzadini, Senatore del Regno*, 15 Settembre, 1866. This brochure contains a reprint of the author's former letter to the Count, with the table of measurements of the skulls, to which is added a second letter, in reply to Professor Vogt. In this last letter, Dr. Nicolucci informs us that he has found the true ancient Etruscan cranium, in the great majority of instances, to be sub-dolichocephalic, and that its mean cephalic index does not exceed 76. He has deduced this proportion from the study of many Etruscan skulls; and he affirms that the results obtained by Von Baer, by Rudolph Wagner, and by his friends Garbiglietti and Maggiorani, are not different from this deduction, which has the support of Dr. Pruner-Bey also. The characters of the Etruscan cranium, he proposes to treat upon in a distinct work, on the Anthropology of Etruria, in which he will show that it differs from all other cranial forms in Italy. He adds, that Professor Vogt errs in attributing to Von Baer, and to His and Rüttimeyer, the recalling the Etruscan type into modern literature. On the contrary, before any of these observers had directed their attention to the subject, the learned but modest Cavaliere Antonio Garbiglietti had discovered in 1839, and had in 1841 described and figured, a beautiful Etruscan skull, which he had obtained with his own hands from a very ancient tomb at Veii. The author has not mentioned the title of Professor Garbiglietti's memoir, but we have already given it above. It may not be unworthy of notice, that this ancient Etruscan skull is the theme of a more recent memoir of Dr. Garbiglietti's. It presents, as far as we at present know, the only example among European races of that anomalous supplementary jugal bone, which has been occasionally observed among Oriental races. To this memoir we may hereafter direct attention. The Etruscan skull of Signor Garbiglietti is evidently not brachycephalic, as its length is 7.5 inches English. The next writer upon the subject of Etruscan crania was Carlo Maggiorani, at that time professor in Rome. His first memoir was published in that city in 1858; his subsequent memoir in 1862. We have already given the titles of these memoirs, and also the proportions of the Roman skulls described by Maggiorani. The mean cephalic index of the five Etruscan crania described appears to be 76.

It will not be necessary to follow Nicolucci in the subsequent part of his last letter. It may be sufficient to say, that he differs materially from Professor Carl Vogt respecting the crania discovered in the Etruscan cemeteries of Villanova and Marzabotto, and supports his former opinions concerning them by an appeal to the method for obtaining an approximate idea of the internal capacity of crania devised by Professor Paul Broca. It is not insignificant to note, that neither observer regards the skulls from the Etruscan cemetery at Marzabotto as of Etruscan origin. Vogt looks upon them as Ligurian; whilst Nicolucci reiterates his former view, that they are

Dr. Nicolucci confines his search for true Ligurians within the limits of Liguria proper and of Piedmont, in what are now named the Ancient Provinces, where the Ligurian type is preserved as it was in the most ancient times. The inhabitants living near the shores of the rivers which bound ancient Liguria have lost much of their native character, and the purity of their Ligurian blood is tarnished by foreign admixture. At the same time, upon the Alps and in the deep valleys of Piedmont they are so mingled with the Gallic type, that the limits of the two cannot be fixed ; although in the Grisons, in ancient Rætia, in many of those valleys of difficult access, the Liguri still continue as if unchanged, and the crania of the alpine people offer at present the brachycephalic conformation, which Von Baer has carefully studied in skulls collected at Chur, or Coire.

After this lengthened exposition of Dr. Nicolucci's treatise, we shall not follow him closely in the next sections of the work. The sixth is entitled "The Races of Europe and the probable order of their Immigration," a section which, together with the following, on "The Aryan Conquest in Italy," affords as much light as is to be collected on the dark and speculative view that ancient European races are to be regarded as strangers and immigrants in this continent. After these succeeds a short section devoted to the examination of the question whether the Ligurians are the descendants of the African Lybians. Sig. Nicolucci here appeals forcibly and conclusively to craniological evidence. The skulls of some Kabyles, preserved in the Anatomical Cabinet at Modena, present a mean cephalic index of $\cdot 75$; another example in the hands of the writer yields a cephalic index of $\cdot 76$; four crania of Berbers afford a very similar testimony, for their mean cephalic index is 73 ; a series of skulls of Guanches, who are fancied by some to have been allied with the Lybians, give a mean cephalic index of not more than $\cdot 78$; whilst it must be recollected that Dr. Nicolucci's Ligurian race gives a cephalic index amounting to $\cdot 86$. This difference, without appealing to the absolutely different idioms, belonging to two distinct glossological families, the author regards as the most stringest confutation of the opinion which would derive the Iberians and the Ligurians from the African continent, and would populate Spain, Italy, and the South of France with a Lybian race.

identical with those of the Bolognese of the present day, and belong to the Italian family of the Umbri. Nicolucci concludes his second letter in these highly commendable terms: "To restore facts to their just value, and to give to them that interpretation which is believed to be most consentaneous with truth, is the business of those who devote themselves to the sacred culture of science ; and I believe I have performed my duty, in expressing my opinion plainly and without reserve."

The concluding section of this learned and important work contains the author's deductions, which we shall give entire, with the terminal aspiration of an Italian patriot, in which he considers that he has demonstrated :

"I. The modern Ligurians to be the direct descendants of those Ligurians of antiquity, who, in ante-historic times, peopled not only Italy, but also parts of France and of Spain ;

"II. Them to be of an allied race to that of the other nations who inhabited Europe before the arrival of the Aryan people, a race distinguished by the brachycephalic character of the skull, and by those other natural qualities which are proper to the Turanian family ;

"III. The Aryan colonies coming into Italy, to have in part supplanted the more ancient inhabitants, and to be superposed over the indigenous races, whose type was scattered and was absorbed by the Aryan, which became the general type of the Peninsula.

"IV. But in Piedmont and in Liguria the old race kept itself predominant, hence the ancient type either was not at all or only slightly modified ; because, at this day, the brachycephalic cranium is still observable in the major part of the inhabitants of these provinces, preserved unchanged, and as it was at the most remote period.

"V. Notwithstanding the inhabitants of Piedmont and of Liguria, mingled with the rest of the inhabitants of the Peninsula, and bound to them by community of language, of religion, and of customs, have, for a long time, formed with them one single nation ; as all the great territory from the Alps to the sea hath formed from a remote period, and forms at present one sole and indivisible country."

J. B. D.

THE ROMAN AND THE CELT.*

HISTORY is a promise rather than a fulfilment, a fragment rather than a whole. It cannot well be otherwise; for it is simply a few scenes from a mighty drama, whose beginning is hidden in an unfathomable past, and whose end lies in the sublime remoteness of an unrevealed future. Science has successfully vindicated the vast eras of geology. Nobody now dreams that the earth began its existence yesterday. Palæontology can draw on unlimited periods for the gradual evolution of the successive forms of sentient life. But it is otherwise with history. It is expected to crowd its successive phases of civilisation into limited areas of time, easily measurable by the compasses of scholastic chronology. We are still haunted with the groundless idea, that we can mount to the origin of human culture, and trace its various stages of development to our own day. Till very recently, the great body even of the learned, believed in nothing but written history, their own history, based on Semitic traditions and classic authorities. Monumental records were scarcely appreciated, and true archæology had no existence, while philology was still encumbered with the grave misconceptions of a shallow pedantry. Nor have we yet fully emerged from this condition of things. The contracted ideas of the popular theology as embodied in its cosmogony, have yielded to the expansive influences of modern discovery, but its equally contracted and erroneous tutions in reference to anthropology are still tyrannically prevalent. And this despotism of the theological school of thinkers is rather aggravated than softened by their special studies as classical scholars, which unconsciously induce the habit of practically regarding profane history as limited to the annals of the Greeks and Romans, or, at farthest, the nations known to us through their writers. To attempt to mount higher than Herodotus would once have been regarded as scarcely less impious than to doubt the credibility of Moses. "The Father of History" had set effectual limits to idle curiosity, and for anything beyond him, troublesome inquirers were gravely referred to the earlier pages of their Bible. Our studies in Sanscrit literature, and the comparatively recent discoveries in Egyptian Hieroglyphics and the cuneiform inscriptions, have slightly modified these comfortable assurances. Slowly and with much recalcitration, the educated public are beginning to understand that there is a learning outside the area of traditional European cul-

* *History of Julius Cæsar*. London: Cassell, Petter, and Galpin. Vols. I and II.

ture, and that there is a history not yet written in orthodox books. And, of course, as an inevitable consequence, it is also beginning to be confessed that the old plumb-lines are somewhat deficient for fathoming the depths of primeval history.

We have been led into these reflections by a perusal of what is apparently to be the grandest biography of modern times, the life of the ancient by the modern Cæsar, or at least "My Nephew." The two volumes in which the imperial penman has thus far given us the digest, not simply of his learning, but also of his experience in matters gubernatorial, are now before us, and we can judge in some measure, both of his qualifications and the character of the work which he has produced. Its primal recommendation consists in the fact that it bears, on nearly every page, the internal evidence of not being written by a mere closet scholar, but by a man well versed in the practice of statesmanship, and accustomed to weigh empires in the balance. Perhaps it is not too much to say that there are sentences in it which only a monarch familiar with the exercise of authority, at home in the use of supreme power, could have written. Whatever small assistance in the getting up of subsidiary portions may have been rendered to the august author by his court scribes, there is no question that both in the conception and execution of this extraordinary work, we trace a head that has framed decrees and a hand that has signed treaties. This is, perhaps, the highest praise we can bestow, and implies that we regard this life of one emperor by another as something almost unique in literature, for although monarchs have ere this occasionally condescended to authorship, they have not always written so royally as might have been, perhaps, expected, considering their opportunities and experiences. It is not, however, of the literary attainments or the statesmanly abilities whereof this work is the evidence, that we here purpose to speak. That will doubtless be done far more effectually by our contemporaries. It will be quite sufficient if we contemplate the production of the imperial mind from our own standpoint, that is in its relationship to some of the great race questions, with which it is the business of this journal to render its readers more or less familiar.

It is, no doubt, very proper for the general reader to regard history as simply a narrative of the rise and fall of nations and empires, but to the anthropologist it is also an exposition, although a very imperfect one, of the tidal movement of races. To him the eastern conquests of Alexander and the Greeks, and the western conquests of Cæsar and the Romans, are evidences, not simply of the martial prowess and political power, but also of the racial supremacy and colonial expansion of the classic peoples at the period of their culmina-

tion. Ere they could have achieved so much, he knows that the Semites and Aryans of Asia must have sunk into a state of collapse, after their imperial splendour as Assyrians and Persians. And although he has but little history and imperfect monuments to guide him, he has no hesitation in concluding that a somewhat similar fate must have overtaken the Celts of Europe, ere the stern lords of the eternal city succeeded in planting their eagles on the Seine and the Thames. Now, however necessary it may be to base history on these larger views, it is, perhaps, scarcely fair to expect them in a biography, however strictly historical may be the character with whose career it endeavours to render us familiar. And let our subsequent remarks, therefore, on the life of Julius Cæsar be regarded rather as supplementary to, than critical of, the literary labour of the imperial penman of the Tuileries.

It is doubtful if we have even yet correctly defined the place of the classic peoples, either in history or anthropology. Till very recently, we do not seem to have known how much must have gone before them ere they could have existed. Deriving our knowledge of them from their own imperfect annals, we understood but little that was geographically beyond or chronologically before them. Philology has now revealed their lingual relationship to the great Aryan family, while a study of the principal schools of Hindoo philosophy, shows us that this relationship is not simply one of words, but also of thoughts. Nor has archæology failed to contribute to this enlargement of our ideas. We now know not only that there were "brave men before Agamemnon," but that there was a prehistoric cyclopean civilisation in Greece, Italy, and Asia Minor, whereof Tiryns and Mycenæ are the evidence, though they cannot render us back its minuter annals. We have discovered enough, however, to see that classic civilisation rested on the ruins of a preceding culture, whose antiquity antedates, not only the age of inscriptions, but in its rude beginning, even that of the hewn stone.

Was the classic man autochthonous, or was he induced colonially or otherwise, on a ruder aboriginal type? We suspect that this is but part of a larger question, the origin and age of the Caucasian race. Ever accumulating data seem to indicate with continually increasing force, that in accordance with the general evidence of palæontology, the ruder and lower preceded the finer and higher types; and that the Caucasian is not only the noblest, but the latest variety of man. It is still, however, an open question whether the Semitic or the Aryan division be the older of the two. Without attempting here to settle this still disputable point, we would suggest for the future consideration of anthropologists, the possibility that they may be derived

from different sources, the former from the Negroid and dolichocephalic type of the south, and the latter from the Turanian and brachycephalic types of the north. The fact of most interest to us in this connection is, that the Classic peoples were at the line of junction and interaction between these two great races. The Asiatic, that is Ionian Greek, came into direct contact with the Semitic Jew and Phœnician. Of this we have the present effect in Christianity, that magnificent bequest of the Oriental conquests and colonisation of the Classic peoples during the historical period. But is it to be supposed that the action and reaction of Semitic faith and Aryan intellects, commenced at this comparatively late period in human affairs? Have we not, on the contrary, reason to believe, even from tradition, in a corresponding and prehistoric cycle of events, whereof the myth of Cadmus, and perhaps of Jason, are faint echoes, and of which the dethronement of Saturn was a remote consequence. Inherently and essentially, however, the classic man was obviously of Aryan lineage, and we may add, judging both by his physical type and mental constitution, of nearly pure blood. In other words, he was largely devoid of that Turanian taint which so perceptibly attaches to most of the mingled populations of modern Europe.

But while it is quite proper to regard the classic peoples as one, when contemplated from without, they are, as we all know, historically, and we may add racially, separable into two well-marked divisions, the Greeks and Romans. And while from geographical position it was inevitable that the former should come into more immediate contact with the Semites and Persian Aryans, it was equally inevitable that the latter should interact with the Celts and Teutons. Both the physical type and mental constitution of the Roman, indicate that he was not so purely classical as the Greek, that is, he was neither so harmonious or intellectual. Primarily, he was neither poet nor artist, but warrior and legislator. It is doubtful if he was of such pure blood as the Greek. His cranial contour indicates a powerful Teutonic admixture, as if Alaric and his Goths were only a second edition of some prehistoric invasion from the north. Morally, he was nobler and grander than the Greek, susceptible to higher motives, of more exalted principles, and above all, of a stronger and more persistent will. Intellectually, he was massive rather than brilliant, and endowed with talent as contradistinguished from genius. He was a born statesman, and conserved by policy what he had acquired by arms. He did not subdue the world in a few brilliant campaigns under one Alexander, but marching steadily to supreme power through centuries of conquest, he held the nations in his giant grasp till both their laws and language became unalterably moulded upon his own, so that to this

day Europe bears indelible traces of the ironhanded empress of the West.

The mission of Rome was the summation of ancient civilisation. After her came the flood of race, religion, and policy. To understand the place of Rome, we must, therefore, know what ancient civilisation had achieved. From what has been already said, the reader will be at no loss to understand that we regard it as altogether underestimated. It was older in date and higher in character than even the learned are yet prepared to believe. Already "Egypt's place in history" is admitted to be more remote than was formerly supposed possible; while Nineveh, Babylon, India, and China are relegated to a position, not simply determined by the accepted chronology of the deluge. But while our ideas are being thus rapidly enlarged in relation to the great oriental empires of antiquity, there is another grave possibility looming into view, that does not meet with such ready acceptance, we allude to the prehistoric civilisation of Europe. There, in addition to archæology, we want the help of anthropology. Of Etrurian culture we have undeniable evidence. Of Cyclopean civilisation there are the truly Titanic remains. But it is still lawful to speak of the Celts as "painted savages," and to treat of the Germans as people who always came out of their rude forests. We have already glanced at this subject in some observations on the Roman and Teuton, and what we now purpose is to make a few remarks on the possible prehistoric civilisation of the Celt.

Anthropologists scarcely need to be reminded that humanity is not a democracy, but a hierarchy, ascending in successive gradations from the lowest Negroid to the highest Caucasian type, from the man of muscle to the man of mind, from the creature of appetite to the being of thought; and the grandest problem yet awaiting solution is the due relegation of each great family to its proper place in the ethnic scale. Of the relative place of the Negro, the Turanian, and the Caucasian, there can be no doubt; the order of these primary divisions may be regarded as settled. But when we come to their minute subdivisions, especially those of the last, opinions differ, a satisfactory indication that our data are insufficient, or that our principles are unsettled. We all admit that the Foulah and the Kaffir are superior to the Negro of the coast of Guinea; nor do we deny that the Turcoman and the Finn stand higher in the ethnic scale than the Samoyede and the Lapp. And perhaps one reason why we see all this so clearly is, that we are on the outside of these races, so that we have no feelings of jealousy to disturb our perceptions and warp our judgment. But it is otherwise with our own more exalted type. Here the rival claims of Semite and Aryan, of Greek,

Roman, Teuton, and Celt, afford a never-ending subject of controversy, in which it is to be feared passion and prejudice have but too often supplied the place of fact and argument.

Let us not, however, be too hard upon the combatants in this intellectual warfare. Much of the confusion which reigns in their contest is inevitable. In the language of Comte, anthropology is only now in the process of emergence from its theological phase, and is certainly very far from having attained to the positive stage of development. Its facts are inadequate, and, as we have said, its principles are unsettled, and, as a necessary result, the conclusions of its professors are regarded as little other than individual opinions, from which, whoso pleases, may differ at his discretion. We do not make these statements to discourage our fellow-labourers. On the contrary, such a state of things, while it may oppress the weak, will only stimulate the strong, by showing them how much yet remains to be accomplished, and consequently what opportunities for usefulness are still presented to their choice. It is this, indeed, which renders the study of anthropology so especially attractive to a vigorously constituted mind. We are called upon to work at the foundations, leaving to after ages the comparatively easy task of adding to the superstructure.

The speculation which regards humanity as the collective or grand man, is not perhaps altogether fanciful or ungrounded. It, at all events, has the recommendation of comprehensiveness, and enables us the more readily to arrange subordinate topics as parts of a large whole. Thus contemplated, then, we may say that the Negroid races represent the vascular, the Turanian the muscular, and the Caucasian the nervous portion of this mundane structure. Were we inclined to enlarge our comparison by taking in a wider, and therefore more diversified range of vitality, we would say that the Negro represents the vegetative, the Turanian the animal, and the Caucasian the more purely human attributes of this collective organism. We shall not perhaps greatly err, if we speak of these three great types as successive stages of advancement from alimentation and reproduction to respiration and cerebration. Fundamentally and primarily, it is a question of more or less nerve, which determines all that is subordinate to it. We have been induced to make this statement, although to some who have read previous communications it may sound like a repetition, because if the principles upon which it is based be sound, they must prove applicable to the minor as well as the major divisions of humanity, and so perhaps may help us to arrive at somewhat more definite conclusions in reference to the former.

We are here advancing upon rather disputable ground. Zoology has managed to arrange its classes, orders, genera, and species in a manner sufficiently convenient for all the purposes of description and reference, and on principles satisfactory to most, if not to all, students of natural history. But it is yet, alas, quite otherwise with anthropology. Here we have not yet determined authoritatively whether there be more than varieties. So that while some anthropologists, like Mr. Luke Burke, regard the *genus homo* as a new kingdom in nature, with of course all its subdivisions, at least in a germinal condition, there are others, jealous of the affirmation even of different species. This diversity of opinion is no doubt, in large part, due to the imperfection of the science, but it may be also in some measure due to the merely incipient and embryonic stage of its subject matter. Man, as the latest advent on the globe, is presumably at the farthest remove from his ulterior possibilities. While indubitably the highest of all organic types, he yet manifests unmistakeable traces of ethnic immaturity; and among other concomitants of this condition of things is, probably, the rather imperfect demarcation of his special diversities. But to whatever cause it may be attributed, let us begin with the rather humiliating confession, that anthropology, both in its classification and terminology, is still in a miserably confused and almost chaotic condition. So much so is this the case, that scarcely any two writers use the word "race" in exactly the same sense, nor indeed does any one author employ it at all times with the same signification. Thus, for example, we speak with equal facility of the Negro and the Caucasian, the Aryan and the Semite, the Teuton and the Celt, as constituting different "races," while, in reality, the two last are but subdivisions of the Aryan, as the latter is but a branch of the great Caucasian stem. We do not make these observations by way of urging a precipitate attempt at classification, which in the present state of our knowledge would be premature, but simply as a means of guarding the reader, as far as possible, against misconception, from the rigid interpretation of terms, necessarily used with a latitude anything but conducive to the precision demanded in the language of a fully matured science.

One of the profoundest observations of Swedenborg, who if he had not been so noted as a mystic, might have been more famous as a philosopher, was that the great is seen in the small, as, conversely, the small may be seen in the great. So, perhaps, in the present case, we may throw some additional light on the minute subdivisions of the principal races by studying the relation of the latter to each other, not despising, indeed, the hints which we may obtain from the still wider fields of comparative anatomy and animal physiology,

more especially as these are enlarged by the data obtainable from the structure and presumable habits of extinct species. It is not, indeed, until we contemplate man by the light derivable from a wider area than his own—that is, until we view him in relation to sentient life as a whole—that we begin to thoroughly understand him, or estimate aright his true position as the crowning glory of organic existence; for man is but the realised result of ascension, thus far, in the scale of telluric being. To this, as an effect, has the earth attained in her attempted production of form and function. With the noblest individualities in the highest races, we sum up nature's power *then* and *now*. Thus far has she prevailed—and no farther.

Now, by a comparison of the lower with the higher types, whether we proceed by classes or orders, it will be found that nature has been moving in a definite direction, aiming, if we may so say, at a result, and steadily, or at least persistently, approaching it through successive stages. She has not only been advancing towards specialisation, but also centralisation; the former being indeed not only a necessary concomitant, but, in a certain sense, an effect of the latter. Thus, man is not only the most specialised, but the most centralised being yet developed on the earth, the one on whom the brain has attained to the highest complexity and the greatest power. Indeed, Owen's fourfold division of the mammalia into Archencephala, Gyrencephala, Lissencephala, and Lycencephala, or, to give examples, into man, lion, hare, or kangaroo, proceeds on a recognition of the same principle. So, again, if, enlarging our view, we take in the entire range of the vertebrata, we shall find a regularly ascending series, not only a specialisation, but in centralisation, from fishes to reptiles, and from the latter, through birds, up to mammals. Nay, if we embrace the entire animal kingdom, from the radiata, up through the mollusca and articulata, to the vertebrata, we shall find the same tendency manifesting itself. But to return to the last, with which we are more immediately concerned, it will be found that this tendency to centralisation in the structure and functions of the nervous system, eventuating, or rather consisting in increased cerebration, is accompanied also by a corresponding, and probably proportionate change in the relative form and importance of other functions. Thus, as the brain increases in power, the thoracic tend to predominate over the abdominal viscera, so that cerebration and respiration become of more, and nutrition and reproduction of less, importance in the animal economy. Fishes are the most prolific and the most voracious of all the vertebrates, while their cerebration and respiration are at the minimum.

Descending, however, from these perhaps rather vague generalisa-

tions, let us apply some of the principles involved in them to the matter more immediately in hand, in illustration of the order and relative position of races. And here we are at once made painfully conscious of an admitted deficiency in anthropological science; we allude to its comparative anatomy. We do know something of the structure of various species of animals, but what do we know of the visceral and other peculiarities of the various types of men? With the exception of the facts recently furnished to us by Dr. Pruner-Bey in reference to the Negro, and some others by Baron Larrey, as to the Arab, we may say almost nothing. From the former we learn, as might be expected, that the liver of the Negro is much larger in proportion to his lungs than that of the Caucasian, which is only saying in other words that he is more foetal than the higher type, as his cranial, facial, and entire osseous structure would clearly indicate. From the latter we learn that the Arab is the very antithesis of all this, and in the disposition of his viscera, and the elasticity and play of his muscles, is superior even to the European. But for the remaining races and varieties we are thrown back, for the most part, upon external configuration and those indications of function which we find in the established and traditional habits of different peoples.

But before attempting to proceed with such an application, it is well to guard ourselves against a possible source of error in the examination of data. We allude to the necessity which obviously exists for the periodic baptism of the nervous races by their muscular correlates, devoid of which they sink into ethnic effeteness from overaction and its consequent exhaustion. This was the condition of the classic and Celtic races at the period of the Gothic conquest, which no doubt took place in strict obedience to law, as the appointed means for their renewal. Now, it is from their ignorance of this law that most writers regard the Celtic-speaking peoples of these islands as the only true Celts remaining among us, whereas they are simply the imperfectly baptised remnant of the old or effete type of the race. Thus it is not the wiry little Connaughtman who is the truest representative of the Irish Celt, but the well baptised Irishman of the Pale or of Ulster. In fact, the radical defect of Ireland, the ethnic source of the manifold evils under which she labours, is the still imperfect baptism of the Celtic by a superincumbent Teutonic population. She wants racial renewal. So the best representative of the British Celt is not the little Cardiganshire peasant, with his Amazonian wife—the feminine element always tends to preponderate at the decline of a race,—but the normal Englishman, the well-amalgated result of Roman, Saxon, Scandinavian, and Norman infusion. He is the re-

habilitated Celt—in the process of resurrection. So the best type of the Gaul is not the native of Brittany, but the Frenchman of Paris—not the diminutive citizen of the South, but the vigorous and comparatively stalwart man of the North, with plenty of German blood in his veins. We must not confound purity of race with exhaustion. The German is all the better for an occasional Slavonic admixture, and the Spaniard is periodically recuperated, not merely by a Gothic immigration from the North, but a Moorish conquest from the South, the former being needed by the Celtic, and the latter by the Iberian element in the Peninsula.

From what has been said, the reader will be at no loss to understand that we regard the Celtic race (when effectually baptised and regenerated) as inherently and essentially superior to the Teutonic, as the latter is higher than the Slavonic; and, we may add, as the last is superior to the Tartar and the Tartar to the Mongol. From the east of Asia to the west of Europe, throughout the northern temperate latitudes, it is a continual ascent in the scale of being, a march from the partially animal to the truly human plane of existence. In the lower stages, from Mongolia to Teutonia, this will no doubt be readily admitted. But a fair and unprejudiced application of the principles, which induce us to regard the Teuton as the highest of all the muscular races, as, in truth, the Caucasian representative of muscular man, must, of necessity, land us in the conclusion that the Celt is unquestionably his racial superior—in fact, his nervous correlate. He has a higher nervous development, and, as a consequence, more intense cerebral action, with respiration more preponderant over alimentation; and, as an accompaniment of this, he has a more delicately organised physique, and a mental susceptibility, immeasurably more acute. When effete, he becomes diminutive in stature, and excitable rather than energetic in mind. He wants weight and volume of being; but when these have been duly supplied, as they have been in the case of the English and the greater part of the Scotch, you have Teutonic power put into action by Celtic force, and in favourable individualities, like Shakespeare, Milton, and Byron, may combine the refinement, susceptibility, intensity, and taste of the latter, with the breadth, grandeur, and masculine vigour of the former. Were this the place, it would not indeed be difficult to psychologically dissect the mental constitution of our men of genius, and point out the special racial source of their respective qualities. Suffice it here, that Shakespeare is the highest example extant of the perfectly matured, and therefore harmonised, blending of Celt and Teuton; in other words, he is thoroughly baptised, and so completely rehabilitated Celt. Let it suffice, however, for the present, that we

simply affirm the superior quality of the Celtic race ; the question of relative power we will leave for decision at a later stage of the inquiry.

We have hitherto spoken only of the baptism of the superior by the inferior races for the purpose of physical invigoration—the great ethnic event of the last two thousand years. But action and reaction are always equal, even between Iran and Turan. If the nervous races require an occasional accession of bone and muscle, the muscular races, conversely, demand a periodic innervation—an infusion of fire—to save them from sinking under their constitutional phlegm and inertia. Conquest and colonisation are not always Turanian and Teutonic. They are sometimes Classic, as was evidenced under both the Greeks and Romans, and sometimes Celtic, as we see under the French and British, but more especially the latter, to say nothing of similar movements farther east under the Saracen, in comparatively modern and the Assyrian in more ancient times. Nay, in the memory of living men, did not the Corsican lead his victorious Gauls, not only into Germany, but through it, into the very heart of far Sarmatia? And are we to suppose that this was an exceptional fact in history ; that it and the like of it never occurred before? Such a conclusion would indeed show us to be but superficial students of the past, and utterly incompetent to the interpretation of its remoter chronicles. We may be quite certain that in this last age of the world, and on the well-worn track from Britain to India, we see nothing but repeating cycles, ever enlarging in their area and deepening in their effects, on the law of the epicycle, but still repeating. Of course written history makes but the faintest allusion to these earlier cycles, for the simple reason that they were transacted ere it was composed. But geographical names and ethnic facts, to say nothing of mythology and tradition, combine to indicate the prehistoric presence of Celtic peoples in much of Germany if not Scandinavia, in that remote era, when western Europe, from Denmark to Spain, was, if not wholly, at least predominantly, Celtic. The truth is, that as the Celt without the Teuton becomes wiredrawn and exhausted, so the Teuton without the Celt becomes lymphatic and inert, degenerating like an uncultured plant, to the wild Turanian type, which probably constitutes his remote ethnic root ; so, in a similar manner, the Slavon is sometimes conquered by the Tartar, and occasionally, as at present under Russia, subdues and rules him in return.

In an inquiry like the present, where so much new ground has to be trodden, and so many disputed questions have to be approximately settled, it will be well to avail ourselves of all possible aid in their attempted solution. As an additional means, then, of enabling

us to decide on the relative grade of the superior nervous races, let us look at the rank of their inferior and muscular correlates, with which, from geographical position or other causes, they are more nearly associated, and to whose reaction, in periods of ethnic exhaustion, they are more especially subjected. And here we are again reminded of the racial superiority of the Celts. To begin, then, with these. They are placed in the extreme west of Europe, at the farthest possible remove from the Turanians of Eastern Asia. Their proper muscular correlates are the Teutons, and when subjected to conquest from the south, it is by the classic Romans. It is doubtful if even the Slavons ever reached them except by infiltration through the Germans and Scandinavians, while judging by the later and therefore historic career of Attila, Ghengis Khan and Tamerlane, neither Tartar nor Mongol proper, ever prevailed to penetrate so far into the sacred realm of Iran. In Spain and perhaps Southern France they have been exposed to the inroads of Moorish but still Caucasian conquest. Surely a race so especially protected by position from direct contact with either the ruder Turanian or Negroid element, and whose successive racial baptisms have thus always been effected by comparatively pure Caucasian tribes, must, from this circumstance alone, have preserved a purity of blood all but unique. But is not the fact of their being so placed also indicative of a primordial superiority, as if, so to speak, the Celtic area were the highest in the world, from whence, by successive ethnic planes of descent, humanity ultimately arrives at its simply material type.

We are aware that to this very flattering, though rather sweeping conclusion, the scholar will cite his favourite Greeks and Romans, but more especially the former, as an exception; and, historically speaking, he is right in regarding them as having attained to the culminating point, hitherto, of intellectual manifestation. But we should remember that the prehistoric cycle of Celtic culture corresponds chronologically to their Cyclopean age, and that the present epicycle is, we have reason to believe, only at its initial stage, more especially in Britain, the (oceanic) Rome of the future.

But leaving this aspect of the question for the present, let us return to that branch of our subject-matter more immediately under consideration, namely, racial correlation as indicative of ethnic rank. That the Classic is one of the specially intellectual races, and if not the very highest, at least next in order, cannot for a moment be doubted. But let us pursue our inquiry. Italy, within the historic period, has been conquered and colonised by the Teutons, and at least invaded by the Celts, who in some of its subalpine provinces are, if not absolutely indigenous, yet of prehistoric antiquity. And as

mediaeval Italy owed her regeneration to an infusion of the Gothic blood of her conquerors, so from their cranial type and mental constitution, we have reason to believe that the Romans were Italians quite recently baptised by transalpine immigration, and thus mounting in the process of resurrection to the very heights of mundane empire. From Dalmatia and Lower Austria a Slavonic element may have occasionally and exceptionally percolated, but as a rule the Celt and Teuton are the appointed baptisers of the effete Italian. The wars with Carthage and some Saracenic inroads indicate, that like all the Mediterranean peoples of Southern Europe, the Italians may at remote intervals have been subjected to more or less of reaction from Northern Africa. Their racial correlates, however, are all Caucasian, and that, too, as in the case of the Celts, of exalted type.

But it is otherwise with the Greeks ; they interact with the Slavon, and are subject to the invasion and occupation of the Turcoman. And here a grave question arises, whether we have not greatly undervalued both these races, but more especially the former. In this connection, let us not forget the very important and significant philological fact, that Sanscrit finds its nearest lingual relative, not in Greek or Latin, but in the rude and despised dialect of the uncultured Lithuanian peasant. Neither is it unimportant from the anthropological standpoint, that the Russian church belongs to the Greek communion and was the result of Greek missions, many of its clergy being still of undoubted Hellenic descent. No wonder the Muscovite tends, as by a racial inspiration, to Constantinople ; he goes there to be Hellenised as the Goth did to Rome to be Latinised. The baptismal speciality of the Greek, however, as contrasted with European peoples placed farther west, consists in the fact that he is subject to invasion and permanent occupation by a race of decidedly Turanian stock, a fate he shares in conjunction with the Slavon. We suspect however that this is, in a sense, exceptional ; that is, it occurs not periodically, by the law of national action and reaction, but only at those long distant and epochal intervals, when as at the collapse of classic civilisation there is a *mundane* movement that precipitates the muscular on the nervous races from India to Britain, and under which the Aryans and Semites of Asia also of necessity succumbed. And as a counterpoise to this, we have reason to believe that the Hellenes have, at other periods, been invigorated, like the Italians and Celts, by a direct Teutonic colonisation. Of this probably we have an ethnic record in the *Iliad*. Achilles is a Scandinavian Jarl ; Ajax is a well-fed, ponderous and stupid German Baron ; while Agamemnon has many of the moral qualities, at least, of an exalted Gothic king. In Ulysses, on the other hand, in virtue, perhaps, of his insular isolation,

we have the subtlety and cunning of the primæval Greek (Pelasgian?), a remnant of the ancient leaders of the then vanished age of Cyclopean civilisation; that civilisation, we may remark in passing, we regard as predominantly the effect of a prehistoric *Celtic* conquest of South-Eastern Europe, while, what we know more immediately as classic civilisation, was due to that Teutonic colonisation, of which, as we have said, the racial effects are so vividly portrayed to us in the Homeric poems.

The Greek, however, holds another racial relationship, in virtue of his eastern position, and consequent proximity to the Caucasians of Asia. If, in periods of especial collapse, he is liable to the inroads of the brutal Tartar, he is also exposed to the refining influence of the Aryan, and the exalting power of the Semite. The Ionic school of philosophy in earlier and the Alexandrian in later ages, to say nothing of the system of Pythagoras, afford ample evidence of the susceptibility of Grecian intellect to the influence of Oriental ideas. But the most notable and convincing instance of the profound and peculiar relation which the Hellenic holds to the Oriental mind, is afforded by the history of Christianity, both in its origin and its diffusion. Arising from the interfusion of Greek philosophy and Judaic theology, its first impingement on Europe was through Hellas, while its sacred records were composed and still exist in the Greek tongue. Is it from this eastern source that the Greek obtained his metaphysical subtlety and logical acumen, and that tendency to refined and profound philosophic speculation, whereby he was differenced, not only from the ancient Roman, but also the modern Italian?

From the foregoing survey of the racial correlates of the Classic peoples, it is obvious that they, too, like the Celts, are well protected from a direct Turanian invasion under ordinary circumstances; but the fact that both the Asiatic and European Greeks have been for centuries subjected to the Turkish yoke, indicates that they are less favourably situated in this respect than the more westerly divisions of the Caucasian race. And here we obtain the glimpse of a great principle, which may perhaps help to guide us in this investigation of an ethnic labyrinth. If we glance at the muscular races from West to East, from the Teuton, through the Slavon and Tartar, to the Mongol proper, we shall find a gradually diminishing refinement of type, a descent by successive stages, from the high-caste Scandinavian on the Atlantic to the flat-faced nomad on the Pacific. But if this be so with the baptisers, do not the orderly and generally harmonic arrangements of nature suggest the probability, if not necessity, of a corresponding condition in their nervous correlates, from whom, in positive ages, they are to receive nerve and intellect, and to whom, in

periods of political decay and organic exhaustion, they are destined to communicate corporeal strength and material vigour? From such data, and by such reasoning, it is obvious that we should arrive at the conclusion that Europe, as a whole, is a higher ethnic area than Asia, and that the west of Europe is higher than the east; and lastly, that the Celtic is the highest, because the best protected and the most nobly related of all the intellectual types, from India to Britain. We would not be understood as pushing this conclusion too far, or estimating it beyond its real worth, as a suggestion for further inquiry, and a hint to future speculation.

But it is time that we should return to the more especial subject-matter of the present paper, from which, however, we trust the foregoing remarks will not be considered a needless digression. And first as to the Roman. He was not a (modern) Italian; that is, he was not a pure ethnic product of the Italic area; he was not of that type, mental or physical, to which the people of the peninsula ever gravitate, after full recovery from a racial baptism. He was too strong and too coarse, too harsh and too angular, too stern and determined, too calm and self-possessed, too osseous and too muscular, for the lineal descendant of a perfectly classic type. Neither was he of this type, crossed by another of yet greater nervous refinement and sensibility, like the Celtic. He errs, if we may so say, on the side of muscularity. His alien progenitors were either Teutons or Moors. We incline to the former, though it is possible there was a dash of the latter. His character and cranial contour present many decidedly Teutonic elements. He was cautious in the formation of plans, but persistent in their execution. Though stern to the verge of cruelty, he was fundamentally just. Till vitiated by the possession of empire, he entertained a profound respect for women; and the Roman matron of the republic was the highest model of domestic virtue and excellence that heathenism has bequeathed to us. He was great as a warrior, he was still greater as a legislator. He was devout, yet not superstitious. He was solid rather than brilliant, and sound rather than subtle in intellect. He lacked suppleness, that especial characteristic of the modern Italian; but he supplemented this deficiency by his iron will. He was neither æsthetic nor literary by natural proclivity, being pre-eminently a soldier and a statesman. His faculty was for the field and the senate, with an occasional condescension to the forum; but his appearance in literature was late, and too obviously the result of Greek culture, to allow us to regard it as in any respect spontaneous. The elder Cato was right as regarded the rhetoricians, but fate was too strong both for him and the republic.

We are quite in the dark about prehistoric Italy. Like Greece, it

was Cyclopean. But what was that? What definite image can we form of the men who piled the massive walls of Norba? What language did they speak, what arts had they mastered, what power did they exercise? Above all, whence did they come, and what bequest did they leave to posterity? To call them Pelasgi, is simply to put a name in place of a fact. We are in nowise helped, but rather hindered, by such a procedure. Of one thing we are certain, they left us the SITE of Classic civilisation. Such a sequence cannot be altogether devoid of significance. The rudeness of their structures indicates that they preceded the Etruscans, as these antedated the Romans. As already hinted, our *conjecture*, and it is nothing more, points to Classic aborigines dominated by Celtic immigrants, in that far-off movement, when primæval civilisation was moving eastwards from its western source in the high ethnic area of Europe, towards the warmer latitudes and softer races of Southern Asia, taking Italy and Greece in its way, as it did at a later, and therefore historic, age, on its return.

But who, or rather what, were the Etruscans? And we reply, judging by the predominant character of their art, a fundamentally Classic people, but, judging by their physical type, with a decidedly alien baptism. Descending from the Rhætian Alps, crossing the Po, and conquering Tuscany, short, thick-set, broad-shouldered, round-limbed, heavy-built men, with large heads and respectable corporations, implying vigorous cerebration combined with a sound digestion, have we not here the indications of a Czech or Slavonic element? Shall we say, in modern language, a Bohemian and Croatian immigration, the prehistoric foreshadowment of long subsequent Austrian occupation! Was not Count Cavour a modern reproduction of this type, which also reappears to a certain extent, though with a stronger dash of the Greco-Roman element, in the figure of the elder Napoleon? Nay, was not the Roman himself, in part, an ethnic result of this descent from the Rhætian Alps; that is, had he not Etruscan blood in his veins, as well as Etruscan laws in his political constitution? Was not Latium the border territory of the (Dorian) Greeks of Southern Italy, and was not Rome its frontier fortress on the Tiber? We may depend upon it that Etruscan aggression did not begin with Numa, though it may have ended with Tarquin; and, had we the early annals of Alba Longa, we should probably discover this.

And thus, then, we are brought to the great problem of the Latian aborigines. Dorian Greeks, as we have said, by their language, semi-Etruscans by their laws, and yet, in part at least, Teutons by their mental constitution. Though, of course, beneath all this, as the stock to be grafted on, they were Italians, in the same sense in which

Englishmen are Britons. And we may remark here, that the Romans held the same ethnic relation to the Greeks, which the English do to the French; that is, they were fundamentally of the same Classic type, but with a larger alien and invigorating element, just as the modern Briton is stronger than the Gaul, because he was more effectually baptised at the great Teutonic invasion. But of this more hereafter.

The rise of Rome to imperial supremacy was not an accident. It was due to a mundane movement. Empire and civilisation, in their north-western march, having reached Greece, and eventuated in the conquests of Alexander and the rule of his successors, were now passing into Italy, and settling on the central town and central race of that peninsula. It was simply the second and western phase of Classic development, and, from the mundane stand-point, may be regarded as one with that of Greece. In a sense, Classic and even Mediterranean civilisation culminated in Rome, the wealthy heiress of the total past. The fact, however, that the great political and ecclesiastical mission of Rome tended westward, as that of Greece did eastward, would indicate that her principal racial correlates must lie in the same direction, and so points unmistakably to prehistoric Celtic and Teutonic baptisms, as the ethnic preparation for her after greatness.

We have purposely mentioned the ecclesiastical mission of Rome. As Protestants we may wish to ignore this, but as anthropologists we cannot consent so to falsify history by the sin of omission. Fourteen centuries of sanctity and pontifical supremacy cannot be an exceptional phenomenon. It must be due to the operation of a law and to the presence of forces of a very permanent character. Rome is unquestionably one of the sacred cities of the world. Now the question is, can such sites be *made*. Do they not antedate history, and place even tradition itself at fault. The faith of Islam did not *make* Mecca sacred. It *found* it so. It was not Judaism that sanctified Jerusalem. Melchisedec, King of Salem, received tithes even of so exalted a character as Abraham, and this too obviously in virtue of his pontifical supremacy. It is a most mistaken idea that the union of sacerdotal and regal functions in one person is a comparatively modern invention. On the contrary, it is one of the oldest arrangements with which history renders us conversant. In a sense, Rome has always been ruled by a Pontifex Maximus. Before the Popes it was the Emperors who bore this title. Is not Roma Rama, one of the great Aryan incarnations; and is not Rome still the highplace for the worship of the great Semitic incarnation? To what, then, do our remarks tend? Why to the rather heterodox conclusion that the political Rome of history arose

on the ruins of a prehistoric and sacred Rome, and hence the *cloaca maxima* and other archæological puzzles, which in reality belong not to the time of the kings, but of their pontiff predecessors in yet remoter ages. Again let it be distinctly understood that we throw this out simply as a suggestion for further consideration.

But to return to the more immediate subject-matter of the present paper. Despite the apparently exceptional, because eastern, direction of Alexander's conquests, civilisation and power were marching steadily north-westward during the entire period of classic supremacy. This was the real direction of the tidal movement, the "set" of the main current to which Macedonian aggression in earlier, and Constantinopolitan effeteness in later, ages were merely counter-eddies. Let us distinctly understand that in her eastern dominions, Rome simply entered upon the inheritance of Grecian conquest, where her supremacy to the last was political, not moral or intellectual, so that she never superseded the language of her predecessor, the Byzantine empire, like its church, being in fact essentially Hellenic not Latin. Hence its slow decline was inevitable, ethnic vitality having for the time deserted the Grecian for a more western area, the appropriate sphere of Latin conquest and colonisation. Hence also the separation between the Papacy and the Patriarchate, and the superiority in power and influence of the former to the latter. Thus, then, we are brought to the second division of our subject, the Celt, as subject and successor to the Roman, or rather to the classic Græco-Roman peoples as a whole.

The idea of conquest and colonisation from the south seems alien to our established habits of thought. To listen to ordinary historians it might be supposed that the Gothic immigration was the only ethnic movement of any importance which had ever taken place. It seems to be forgotten that it was preceded by the extensive colonial operations of Rome, the effect of which is still lingually and perhaps racially distinguishable over large tracts of her transalpine territory, Spain and France being still in a sense, like Italy, the abode of Latin nations, while even Britain is not wholly free from the effects of Roman occupation. Whether conquest and colonisation are to proceed from the north or the south, the east or the west, depends on circumstances. Rome, as the imperial representative of the mundane tendencies of her era, marched westward till her eagles rested on the Atlantic seaboard from the Pillars of Hercules to the South of Scotland, thus completing that great movement which had commenced so long previously on the plain of Shinar. Not that Roman occupation was the first wave which the north received from the south. Both France and Ireland bear distinct traces of an Iberian infusion, but the history

of these earlier invasions is veiled in the night of ages, or, at most, exists simply in the faint echo of tradition.

The speciality of Roman conquest westward is the enduring character of its effects. Over her Asian and African provinces the scimeter of the Moslem has brought desolation and ruin ; the armies of the Faithful, like the breath of the Simoon, leaving only death in their course. Now the western mission of Rome was primarily to the Celt. She compelled him to accept the (moral) baptism of her civilisation, prior to his receiving, in common with herself, the ethnic and material baptism of the Teuton. Political, that is imperial, Rome only knew the latter as her enemy, and finally as her conqueror. It remained for spiritual Rome to make him her convert and her subject, and she could only accomplish this as he made his military pilgrimage to the holy city. The true pupil of the Roman, in the political and municipal, the social and religious sense of the term, was the Celt ; thus, we have some reason to believe, both morally and geographically, by training and position, his heir and successor.

But what was the condition of this pre-eminently nervous and sensitive man of the north-west, when he emerges into light on the page of history ? And we reply, that of ethnic collapse, of racial exhaustion, doubtless after the evocative excitement of a previous era of civilisation. His war chariots, on the one hand, and his Druidical faith, on the other, determine pretty accurately the phase of civilisation, whereof his prehistoric culture was a part. We find it in ancient Egypt, and India, and Persia, and at the siege of Troy. Whether he should be regarded as the master or the pupil, the originator or recipient of this culture may still be an open question, but that he partook of it there can be no doubt. Of course, with this we dismiss "the painted savage" theory to the limbo of all the pedantic vanities, as utterly unworthy either of serious consideration or reply. Chariots and corn fields, and these were retained even to the time of Cæsar, imply agriculture and the mechanical arts of civilised life. They cannot exist alone. They have their necessary accompaniments. They are the harmonious parts of a social state that we may deem barbarous, but which Rhameses would have esteemed civilised. So Druidism was obviously a branch of that primæval theosophy, whereof the Brahmins of India, the Magi of Babylon, and the priests of Egypt were the sacred conservators and expositors. That it was traditional and oral in the manner of its tuition bears witness to its antiquity rather than its imperfection. It obviously belonged to what is sometimes called the monumental as contradistinguished from the literate era of civilisation. This, the *bookish* scholars of the eighteenth century, of course, despised, but we who know how long Sanscrit learning

was thus preserved, can scarcely join in their superficial contempt for the unwritten.

Whether the Celt was the originator or the recipient of primeval culture is part of that larger question, the priority of Europe or of Asia in the march of civilisation. Now, for the free and effective discussion of this debateable point neither the theological nor the scholarly world is yet prepared. Divines, of course, hold fast by Ararat and the Orient! while scholars have still but a very inadequate idea of the importance of archæological and anthropological facts in an inquiry so far transcending the limits of written history. But anthropologists should not be so limited. We know that where written records fail monuments often serve us; while profounder yet than these are the indications of character attaching to the races that erected them. Now it is admitted that written records fail us as to the earlier history of the Celts. The utmost that we can gather from history is that they were once the predominant people of Western Europe. What then do we learn from their monuments? Simply, that for the most part they antedate the age of hewn stone, like the earliest Cyclopean remains of Greece and Italy, of which they may have been the precursors, but could not have been the copies. The monoliths, circles, and cromlechs of Gaul and Britain were obviously erected independently of architectural tuition from more advanced nations. They are in the strictest sense of the term primitive, the result either of priority or isolation. Now with this let us combine the important ethnic fact that the Celts are the most sensitive and refined of all the nervous races endowed, indeed, with sensibilities, to which Greek and Roman, Persian and Assyrian were alike strangers, and which are only now in these later ages finding a voice in literature, to which they are obviously in the process of adding a chapter previously unwritten, the voice of the soul. What then are the historic probabilities, as to this ancient race and this remote past, which are thus dawning upon us? Why that civilisation originated on the true Celtic area in the north-west of Europe, whence it swept over Italy and Greece, emerging into its Cyclopean phase during the process, and so reaching Asia, carried the victorious Aryans through Northern Persia into India. It need scarcely be said that this is exactly the reverse of that movement which constitutes the great feature of history proper, namely, the counter-movement of empire from the south-east to the north-west, now in the process of culmination on the primal seat and amidst the primordial race of civilisation.

Now of all this we, of course, have no hint from the imperial penman. It was, indeed, no business of his in a life of Julius Cæsar to go down to such depths, or stir up such vexed questions. His hero

had simply to carry into effect the racial movement of the Italic portion of the classic race in their aggressive action on the effete Celts, the exact counterpart of the corresponding though previous movement of the Greeks eastward. The two constituting in their totality the political result of classic culmination, whereof we have the moral bequests in Christianity and the Faith of Islam.

What then is the place of classic civilisation in human affairs? What is its true position in mundane history? What is its ethnic value? What is its significance contemplated from the anthropological standpoint? These, it must be confessed, are rather searching queries, more easily put than answered. It was not a part of the primal or south-eastern movement, that eventuated, as already observed, in Cyclopean civilisation. But it was a very important part of the return wave to the north-west. It was pre-eminently the Mediterranean, as its successor on the Celtic area will obviously be the Atlantic or oceanic phase of empire and civilisation, with a larger area and a grander destiny. Through Greece it received influences from the east; through Rome it transmitted them to the west. Classic civilisation was, however, essentially an Aryan product, as that of Phœnicia and Carthage was Semitic. The true imperial era of the latter terminated with the fall of Babylon, Carthage being but a prolonged and dying echo, without any of the true elements of a new life, the *lower* empire of the Semites, as the Byzantine was of the classic peoples. Hence the ultimate triumph of Rome was certain as the result of an ethnic law, she being the existing representative of Aryan power, then and still in the ascendant. This interaction of the Aryan and Semitic races, which reappeared at the Crusades, constitutes a most momentous chapter in the history of man; and, doubtless, has prospective as well as retrospective bearings.

The speciality of the classic man was his predominant intellectuality. In this he was an apt representative of the European as contradistinguished from the Asiatic type of humanity. Under Greek and Roman institutions, the citizen, for the first time in history, emerged into individuality and liberty. The Semitic monarchies of Egypt and Assyria were simply oriental despotisms of the primeval and theocratic order, that regarded the people as blind instruments, the passive subject-matter of their sacerdotal and political rulers. While the eastern Aryans of India and Persia, though exhibiting many features characteristic of the intellectual family of mankind, were nevertheless so far affected by their geographical environment as Asiatics, that their liberty never advanced from the sphere of speculation to that of action. They might be philosophers, but they were never citizens—except of “the republic of letters!” In a certain sense, then, it may be

said that the classic man affords us the first historic manifestation of the Aryan in a position of imperial supremacy. In him intellect for the first time emerged into formal power as the ruling influence of the world. But this is only saying that he was the first European on the page of history, the precursor and preparer of modern civilisation.

Neither the Greek nor the Roman alone suffices for a complete ideal of the classic man. The former was not adequately gubernatorial, nor the latter sufficiently intellectual for the efficient discharge of their combined mission. The Hellenes could never have built up an enduring empire, and centralised the resources of ancient civilisation for five centuries ; while the Latins were equally incapable of originating those unequalled models of literary and artistic excellence which the Greeks have bequeathed to an admiring posterity. Yet the latter were undoubtedly the more classic of the two. But their very speciality in literature, art, and philosophy disqualified them for the ruder but sterner task of government. For this, as already observed, the Roman was fitted by some process of racial amalgamation which had given him strength at the expense of refinement, and provided him with vigour while depriving him of taste.

And now then, for it is time that we should conclude this lengthened paper, though we have by no means exhausted the subject, what are the qualifications and what the legitimate expectancies of the Celt, in reference to the next great manifestation of imperial supremacy ? And this involves the equally important query, what is to be the essential character of impending empire ? In the first place, speaking racially, it will be an Aryan power, and so, among other things, decidedly an empire of intellect. From geographical position on the Atlantic seaboard, it must be largely, if not predominantly, maritime and oceanic, which, in the present age, implies a truly mundane area, more especially in the sphere of commerce and colonisation. It will probably be bipolar like the classic, France taking the part of Greece and Britain that of Rome, the Gauls being more purely Celtic, and so superior in taste and refinement, while the Britons, by their heavier Teutonic baptism, are like the Latins, more qualified for permanently sustaining the weight and responsibility of empire.

In a sense, then, it may be said that Celtic will be the epicycle and complement of classic supremacy. In it the great north-western movement of civilisation will culminate at its geographical terminus, on the high ethnic area of Western Europe. In a profounder and larger sense than that of Rome, it must prove the summation of the past. It will be the fire-baptism of a world whose hierarchies, monarchies and aristocracies, creeds, codes, and philosophies will be simply as fuel to the flame. At what stage of development, then, it may be asked, has

this great epicycle now arrived? And we answer, that of incipient transference from Greece to Rome, from Gaul to Britain. This needs some explanation.

The shadow of empire has hovered over France for a thousand years. Charle-magne, Louis le Grand, and Napoleon I, were its political exponents; while for the last two centuries the leadership of France in manners and fashion has been undisputed. Its language is the medium of diplomacy, and at one time almost promised to become that of literature and science. But there is a geographical boundary to Gallic power. It is European not mundane. It is courtly, social and political. It is an empire of influence and example rather than of policy and arms, of fashion rather than of art. It is not colonial, and in the higher and grander sense of the term, it is not strictly imperial. France can conquer, but she cannot retain her conquests. She has swept over Italy from the Alps to the Tiber, and even to Calabria, but she has never held it in her iron grasp with the tenacity of Austria.

But it is otherwise with Britain. Slow, yet sure, in her ascent to power, which rests not on the brilliant talents but the solid endowments of her people, she largely resembles Rome in the manner of her rise and in the character of her institutions. She has never attempted to subdue the world under one Alexander or one Napoleon. Her empire, while partly the result of conquest, is also very largely the effect of colonial extension, and under either aspect is rather a steadily accumulating heirloom from the ages than the bequest of one splendid and irresistible conqueror. The diffusion of her language, unlike that of France, is not a fashion but a necessity, the necessity of commerce and colonisation. It is already the native tongue of eighty millions of the most civilised peoples in the world, who by universal acknowledgment, march in the vanguard of political liberty and industrial activity, and who apparently only wait for the full advent of a spiritual era to assert a similar supremacy in literature and art. Their numerical increase is, at the very least, one million annually, and the fact that they possess not only the prairies of America but also the plains of Australia and Southern Africa, affords ample assurance that for this increase there will be "ample room and verge enough" for centuries to come. Their prospective destiny is the most splendid that has ever yet dawned on the sons of men, nothing less indeed than the religious, political, social, commercial, and intellectual leadership of the world during the impending age of imperial power in North-western Europe. The geographical centre of this truly mundane empire will, we hold, never permanently leave the old world, whose geographical extent and numerical force will combine to retain it on

the hither side of the Atlantic. Contemplated thus in the light of its ulterior destiny as the Rome of the future, the Babylon of the west, the stupendous growth of modern London can be readily understood. It is gradually preparing to become the capital of Christendom, the metropolis of civilisation.

But without dwelling on the specialities of Britain as contradistinguished from those of France, we may say that this Celtic area, as the primal seat and western terminus of mundane culture, cannot fail to present some peculiar characteristics, more especially at the period of its emergence into political and intellectual supremacy. As the primal seat and, in a sense, the source of civilisation, its people are most probably endowed with a richer vein of inventive and creative power than the population of any other ethnic area. In connection with this branch of the inquiry let us remember that, quite independently of their past history and racial characteristics, we have reason to believe, even from their geographical position alone, that the Celts occupy the highest ethnic area in the world.

But in strict accordance with that harmony which is found to pervade every other department of nature, the characteristics and the history of the Celts agree with their geographical position, and all combine to point them out as the most nervous and refined, the most sensitive and receptive, yet at the same time as the most active and energetic, the bravest and the most enterprising of the children of men. Such a people, so endowed and so placed, emerging into their inevitable and predestined supremacy, after the subsidence and rest, the ethnic baptism and reinvigoration of not only their historic but their prehistoric past, cannot fail to assume a power and exercise an influence altogether unexampled in the annals of the race, and such as in quality and degree can never again be attained till, in the grand revolution of the horologe of destiny, their epicycle shall commence, and in the far future of yet unborn millenniums they shall be once more called to the legitimate exercise of their sublime prerogative as the religious, political, and intellectual rulers of mankind, at the greatest and grandest crisis that human affairs can ever know, that is at the summation of their historic past and the birth of their yet unrevealed future.

Throughout these remarks we have been so occupied with "the Roman and the Celt" in the abstract, that we have failed to make any attempt at delineating the illustrious man, to a narrative and laudation of whose career the labours of the imperial author are more especially devoted. This omission was, however, intentional. As a biography, the work is not yet sufficiently advanced for such a purpose. We must wait for its conclusion. Then, with the final statement of fact

and rendering of opinion fully before us, we may, perhaps, enter into an ethnic portraiture of the character and capabilities of the great Roman patrician, on whom devolved the stupendous task of converting the most powerful republic into the mightiest empire upon record—a revolution whose advent, however, did not depend on any individual, or the fortune of any battle, such a result being about that time due on the mundane horologe of destiny.

THE PLURALITY OF RACES, AND THE DISTINCTIVE CHARACTER OF THE ADAMITE SPECIES.

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THE object aimed at in the following essay, is simply to inquire how far, and to what extent, the authority of the Bible and of early history confirms or contradicts the supposition that a plurality of races was originally created, or that all mankind were descended from a single pair. After a fair and dispassionate survey of the whole matter, I shall endeavour to draw such conclusions from the entire facts as the case may appear to warrant.

It seems to me extremely desirable, as far as we can, to reconcile the apparently conflicting claims of Scripture and of science; indeed, these differences, if closely examined, will be frequently found, like those among logicians and politicians, to be more apparent than real, more in terms than in things themselves. Although even here I would not for a moment consent to sacrifice truth to secure peace, yet, in this case, I am convinced that the best way to arrive at truth is to banish passion and prejudice, and to discuss the matter in a judicial and philosophical spirit, consistent with the dignity of the subject to be debated. A course very opposite to this, is that which is ordinarily pursued whenever grave and important topics of this class are brought forward; and the prevailing opinion appears to be, that the greater the heat and fury which can be excited, the more surely will truth at last be elicited.

On the directly theological part of the question, I desire to touch as lightly and as briefly as the case will admit of. I may state, however, on the outset, that I am not at all prepared to dispute the authority or the inspiration of the Bible, or to maintain that it is in

any respect at variance with science. Nor do I deem it in the least degree necessary, for the purpose of maintaining my argument to the full, that I should do so. On the contrary, I contend that Scripture and science are thoroughly consistent with, and that they are the best and surest supporters of each other. And so far from deeming it necessary to attempt to impugn the inspiration of the Bible, I hesitate not to assert my conviction that, if you once deny the authority of particular parts of it, it becomes impossible to determine what portion is inspired, and what is merely human. Each person will, of course, claim the right to settle this point for himself, and will be induced to deny the divinity of all those passages which at all militate against his own particular views, or condemn his peculiar failings and practices. Further than this, I would even assert that, if any of the books of the Old Testament exhibit peculiar traces of inspiration, Genesis in many respects bears very evident tokens of its divine origin. At the same time, it appears very reasonable, and fully consistent with all that we can conjecture (for we can hardly be said to know anything with certainty beyond the records of revelation) concerning the Divine wisdom and goodness, that the Bible may have been dictated throughout by Divine authority so far as regards its object in teaching men their duty, but without at all being intended to carry the same authority as an instructor on matters of science or of history. Nevertheless, as observed by Lord Bacon on several important points, the teaching of the Bible with regard to philosophical topics, has proved to be not only quite sound, but far in advance of modern discoveries.

It is, moreover, surely quite possible and rational to believe entirely and implicitly in the inspiration and truth of the Bible, and of every part of it, while at the same time you do not acquiesce with the same implicitness in the interpretation that has been put upon particular passages. As regards matters not directly theological, even the teachings of the church may be fairly questioned here, and that by the most orthodox churchmen ; inasmuch as the church, like the Bible, does not set up for a teacher on matters of science or history, but only seeks to guide its members aright as regards their religious duties : indeed, the interpretation put by the authority of the church upon the meaning of the Bible in relation to profane topics, cannot be considered to amount to anything more than the individual opinions of the writers on these points, who, had they lived in our day, and been acquainted with the discoveries of science known to us, would no doubt have greatly modified their sentiments upon many matters. It has, therefore, always appeared to me to be highly undesirable to contend, as some very well intentioned, though not very discreet persons take every opportunity

of doing, that Scripture and science are on many occasions directly antagonistic, merely because they appear in some slight degree to differ, but which seeming contrariety is often caused, not by the actual opposition of scripture to modern discovery, but by the mode in which we have been accustomed to interpret scripture in regard to this subject.

The principle adopted in the following essay with regard to the proper construction of scripture, will moreover do much to disarm the authority of those who contend that, from the direct contradiction which modern science gives to many of the statements contained in the Bible, especially in the Book of Genesis, it is impossible that the sacred volume can be throughout inspired.

One very remarkable instance of this sort occurs with respect to the opinion as to the plurality of races in the human species, entertained by scientific inquirers at the present day. The conclusion at which many eminent physiologists have arrived, is that the whole race of mankind could not possibly have sprung from a single pair. But here they are referred to the scripture narrative, which, they are told, asserts positively that Adam and Eve were the parents of the whole human race. This, however, is exactly one of those cases where the Bible has not been allowed to speak for itself, but its meaning has been explained through the forced and unwarranted interpretations that have been put upon it by writers in ages gone by. Thus, the first chapter of Genesis contains a simple and plain account of the creation of different races of mankind all at once, both male and female. A command was, moreover, then given to man "to be fruitful, multiply, and replenish the earth ;"* but which would surely not have been given to Adam alone, when he had no means whatever, Eve not being then created, of fulfilling the command. Nor would Adam while in Paradise, even after Eve became his wife, be told to replenish the earth, to which as yet, beyond the boundaries of Paradise, he had no access. The second chapter (except by the interpreters alluded to) was never intended to contradict or nullify the first, but was only added to give an account of the creation of a particular pair of human beings who were to be the parents of a particular race of people. The Bible, indeed, so far from teaching us that Adam and Eve were the progenitors of the entire race of mankind, on many occasions and in various ways directly and distinctly negatives any such supposition. Thus we are told by the Bible, that after Cain had slain Abel, and the Almighty had set a mark upon him, the murderer exclaimed that every one who sees him will slay him. But how

* Genesis i, 28.

could this be unless the earth had been already peopled, which could not possibly have been the case if all mankind had sprung from Adam and Eve?

The very circumstance of Adam calling his wife Eve, in token that through her as a mother the promised Redeemer should be born, also necessarily implies that there were other women besides Eve then living upon the earth, and who were not descended from Eve, through whom this promise might be accomplished. It has also been remarked by a learned writer, who is, however, opposed to the theory which I am maintaining, that Eve upon the birth of Cain her first-born, exclaimed, "I have gotten man, the very Jehovah; *i. e.*, I have brought forth the man who is Jehovah himself, the person who, according to the promise, is to come and redeem and restore me, my husband and our children, to the favour and acceptance of our Creator,* and who was to be the promised Messiah and Saviour of the world." But could Eve have supposed that the Redeemer would be born at a time when the earth was not peopled with men to be redeemed, with the exception of herself and Adam, and their children? On the contrary, this supposition of Eve's necessarily implies that the earth was at this time filled with inhabitants.

The Scripture shortly afterwards informs us that Cain became the builder of a city.† But does not this fact also imply that there were at least several other persons on the earth at that time besides his own family? Again, as regards the wife of Cain, a question may be raised as to who she was, if there were no other people on the earth except Adam and Eve and their family. Besides which, although every particularity respecting the successive birth of sons to Adam and Eve is recorded, there is no mention of their having a daughter until after the birth of Seth; yet, when any of Adam's children had daughters, this is always stated. The natural, and indeed the only direct inference to be drawn from the sacred narrative itself is, that there were other races upon the earth, and that Cain's wife, as also Lamech's, were taken from them.

From what the history of civilisation teaches us, we cannot suppose that efforts would have been made to cultivate the ground, or to tend flocks and herds, when only one family on the earth had to be maintained; nor would the members of this family have been likely to resort to this practice unless they had learnt it from others whose necessities had induced them to undertake it.

Each of the facts which I have mentioned, and which are taken from the Scripture narrative, go strongly to prove that there were

* *Mosaic Account of the Creation.* By Philo. 1819.

† Genesis iv, 17.

other races upon the face of the earth besides Adam and Eve. If we read the narrative literally we can arrive at no other conclusion ; and this view of the Scriptural account is much strengthened and confirmed by the circumstances which I have recently stated. The argument of the plurality of races may therefore rest on the Bible alone. Those who oppose this opinion, not its supporters, are compelled to resort to extraneous matter to uphold their views.

In addition to this it may be remarked, that it appears much more probable, and more consistent with what we have experienced of the general dealings of the Almighty in regard to the world, that He should have intended only that Adam and Eve and their descendants, being limited to a particular race, should inherit Paradise instead of the whole world residing there, and not entering upon the other parts of the earth, which would consequently, had it not been for the fall, have been left totally uninhabited by the very persons whom it was created to contain. According, however, to the literal meaning and reasonable interpretation of Genesis, Adam and Eve found the earth so peopled when they were turned out of Paradise, not of course by their own descendants who were as yet unborn, but by the "males and females" and their descendants, whose creation is recorded in the first chapter of the sacred volume.

In the fifth chapter of Genesis, v. 2, it is stated that the race of mankind, not one man alone, is called Adam. In the sixth chapter, v. 2, the descendants of Adam are spoken of as "the sons of God," a race distinct from the rest of the world, but with whom they intermarried. By "men" in general, who are mentioned in the first verse, it may be inferred are meant those of the original and ordinary creation, described in the first chapter.*

That there was a distinct creation in the case of Adam and Eve cannot be questioned. Their descendants, however, appear to have formed a separate race of themselves from the rest of the world, from which that of the Hebrews shortly afterwards sprang, and which is very early mentioned in Scripture as a distinct people. Moreover, the object of the Bible as regards the historical portion of it was obviously not to give an account of mankind in general, but only the Hebrew race, and which course was pursued throughout the Old Testament. Very soon

* It was stated by the Rev. Dunbar Heath, whose classical acquirements and extensive Biblical researches are well known, in his address at the inaugural meeting of the Manchester Anthropological Society, that, in his opinion, the Old Testament clearly recognised a plurality of races, and he adduced not only the fact of Cain's banishment into a land of cities, but the mistranslated phrase "high and low, rich and poor", in several parts of Scripture, the real rendering of which should be "the race of Adam and the rest of mankind." The words in the original are simply "Adam and Ish."

after the time of Abraham, the Hebrews were recognised as a distinct and separate race of themselves, which they surely would not have been merely because they belonged to his family. Thus, Joseph, when brought into Egypt, was spoken of as “‘an’ Hebrew;”^{*} and, in the very interesting representation discovered among the Egyptian remains descriptive of the history of Joseph and his brethren, they have each that strong peculiarity of feature even now characteristic of the Hebrew race. To Abraham was first revealed the design of God with regard to this people; but this does not necessitate its not having been formed long before. Not improbably there were others of the Hebrew race besides Joseph and his brethren, who united with them while they were in Egypt, and thus swelled their numbers beyond what in the ordinary course of propagation they could have reached. The promise to Abraham, indeed, related mainly to the Messiah being descended from him. His being the father of a nation did not preclude others of the same blood becoming members of that race. These appear to have been denominated Hebrews as well as his direct descendants; nor could they, as has been asserted by some, be confined to those who were descended from Ebur. The most probable supposition appears, therefore, to be that, although the children of Israel are the descendants of Abraham only, the Hebrew race included that distinct tribe of people who were descended from Adam, and who retain that peculiarity of feature, and other marked characteristics which have ever served to keep them separate from the other races of the earth. By being the father of a nation, does not necessarily or exclusively signify being its progenitor, but only its founder or deliverer, as many a monarch has been styled the father of his people. Abraham himself is indeed spoken of as the Hebrew,[†] as though the race to which he belonged, which could only have been the Adamite descendants, had been thus early distinguished and recognised.

But it may be said that if there were other races of mankind besides that of Adam, they were all destroyed at the deluge, when Noah and his family were preserved in the ark. Noah himself, it is to be observed, is spoken of as “perfect in his generations,”[‡] which may be implied to mean that he belonged to the Adamite race, with very little intermixture of the blood of the ordinary race of mankind. The Bible, as it has been ordinarily interpreted, has led to the supposition that the whole earth was overwhelmed by the catastrophe in question. Here, however, we are told, that the Bible and modern science come into direct conflict. The question, therefore, must again be

^{*} Genesis xxxix, 14.

[†] Genesis xiv, 13.

[‡] Genesis vi, 9.

raised, is it the Bible that asserts directly and unequivocally that the deluge was universal? or is it merely the arbitrary and unwarranted interpretation that has been put upon the words of the Bible which has led to this opinion? If the Bible be allowed to be its own interpreter, according to the ordinary and fair rules for interpretation, it will at once be obvious that it contains nothing to warrant the belief that the whole world was at once laid under water and destroyed. Both by sacred and profane historians, the term "whole world" is frequently meant to signify only the entire extent of the territory referred to. In the account of the temptation in the wilderness, the devil is described as exhibiting to our Lord all the kingdoms of the world at once, in one moment, and from the same point of view,* by which of course could only be really meant those cities and kingdoms lying around Jerusalem. St. Luke tells us† that a decree went out from Cæsar Augustus that "all the world should be taxed." Here again is clearly meant not the entire globe, but only such part of it as was comprised in the Roman Empire. So when it is said in St. John,‡ that "the world is gone after him," it was not really meant that every person in the world had become a follower of our Lord, but that a very great number in a certain district had done so.

After the destruction of Sodom and Gomorrah, Lot's daughters either imagined that the whole human race was destroyed,§ or confined the term to the descendants of Adam or the Hebrew race. Whichever way it is taken, whether symbolically or as confined to one race only, the description of the universality of the Deluge must be considered to comprehend merely the district inhabited by the race to which Noah belonged. In many parts of Scripture, both in the Old and the New Testament, the term "whole world" is evidently intended to signify not the entire human race, but either a very great number of men, or a large proportion out of the district where the event happened.|| Cicero and other ancient writers also frequently speak thus metaphorically, when they intend to include a great number of people in their description of any event. When we read in the newspapers that upon an occasion of much interest "all London" was assembled at the Mansion House, should we be construing the meaning of the writer fairly if we insist that he intended deliberately to assert that every man, woman and child in this vast metropolis were assembled in one building? And yet in this unreasonable and unfair manner do those critics insist upon interpreting the Bible, and unnaturally distorting its meaning, who contend that the account

* Matt. iv, 8. † Luke ii, 1. ‡ John xii, 19. § Genesis xix, 31.

|| See also Acts xi, 28, xvii, 6, xix, 27, and xxiv, 5; Romans i, 8, x, 18; and several other passages.

there given of the Deluge necessarily and inevitably means that the whole world was swept away by that inundation. When the meaning of any phrase is doubtful, the fair way is to refer to other and context passages in the narrative which may serve to throw light upon the whole. This is the course ordinarily pursued with regard to other writings, and this is the course I propose to adopt in regard to the Sacred volume. Without such a mode of interpretation, its meaning will often appear obscure and contrary to science and to experience. Interpreting it in this the only fair and legitimate mode, its meaning will be apparent, and its relations appear at once in harmony with our knowledge of things, and with what philosophy teaches. Thus viewed, Scripture and science will be found not to contradict but to aid one another, and to render each other important service.

That a vast Deluge did take place at the period and in the manner described cannot be doubted, or that the event itself was miraculous. If so, it is of little importance whether the whole or only a part of the earth was covered by it, inasmuch as the miraculousness of the event in no degree depended on the number of human beings who perished in the waters, or on the depth or width of the waters themselves.

In reality, I hold it to be far more heretical, as more directly at variance with the plain statements contained in the Bible, to assert that the earth moves round the sun, instead of the sun moving round the earth, than to maintain either the plurality of the human race, or that the Deluge was not universal. It may be said, indeed, that the Bible does assert, and in direct terms, that the sun moves round the earth, and not the earth round the sun, while it nowhere maintains in terms equally positive either that Adam was the father of the whole human race, or that the Deluge extended over the entire world.

If we examine minutely the description of the Deluge as contained in the Bible, we find that the depth of the flood, being the extent to which the waters prevailed upwards, was only fifteen cubits,* or one-half of the height of the ark, which was thirty cubits.† And yet we are told that the mountains were covered.‡ This assertion alone would lead to the conclusion that merely a certain very limited district, in which were only hills of a very moderate height, could have been overflowed by the waters. After the Deluge had subsided, the earth is spoken of as divided,§ implying that people were found living upon it after the flood. Cities and also kingdoms appear to have been formed soon after Noah left the ark,|| which could not have been done merely by his family. The assertion that by the sons of Noah “was

* Genesis vii, 29. † vi, 15. ‡ vii, 20. § x, 25, 32. || x, 5.

the whole earth overspread,"* may reasonably be interpreted to mean no more than that in every nation would his descendants in process of time be found, a prediction which has been singularly verified by the Hebrew race.

But it has been urged that in the New Testament the opinion that all men were descended from Adam has been confirmed by reference to that event, and by expressing the opinion of the inspired apostles and writers of that portion of the Bible. Were this the case, their authority on matters purely secular or scientific might fairly be questioned, considering that their office was not to teach men philosophy or history, but merely to instruct them in their duty. And if they were ignorant or misinformed respecting the structure and motion of the planets, it is not unreasonable to suppose they might have been left equally in error respecting the other parts of the creation. There is, however, in reality, no assertion throughout the New Testament that Adam was the father of all mankind. The passage which may most reasonably be contended to argue against the plurality of races is the expression of St. Paul, "For as in Adam all die, so in Christ shall all be made alive."† There is, however, no assertion here that all were descended from Adam, but that all died through his transgression; and for this purpose it seems to matter little whether the whole human race was actually descended from him, or whether he was to be regarded as the representative of that race, and through his misconduct they were to suffer.

The scheme, if it may be so termed without irreverence, developed in Scripture with regard to Adam and the fall, appears to be this. Adam, as the representative of the whole human race, was put to the trial and failed, and upon that was condemned to die, turned out of Paradise, and placed upon the same level with the rest of mankind. But through the descendants of Adam the redeemer was promised, the benefits of whose coming were extended from the posterity of Adam to the whole human race. The errors in the interpretation of the Bible already alluded to, have not arisen from any ambiguity in the Bible itself, but from the strained, unnatural, and unreasonable interpretation that has been put upon it by misguided zealots who take upon themselves to explain its meaning according to their own narrow views, and who are presumptuous enough to imagine that the Divine scheme of redemption would not be consistent and complete without their interference and aid. These people, instead of taking their system of religion from the Bible, first frame a system of their own, and then cut, and pare, and explain away the Bible so as to make

* Genesis ix, 19,

† Corinthians xv, 22.

it accord exactly with that system. It is from pursuing this course that the errors to which I have adverted in regard to the origin of mankind have arisen.

The following observations with regard to death having been brought into the world and inflicted upon mankind at large in consequence of Adam's transgression, are from the pen of an ingenious and learned writer of our own day, who contends that it "was not a threat that *corporeal* death should be inflicted ; it signified that breaking the commandment, he who had it given him should lose the high lovely life which is in union with God, sink into irreligiousness, which is infelicity and disquiet. He died to the true life of the spirit the moment that he tasted ; but as to his material body, he continued as he was before. Equally unscriptural and groundless is the notion that physical death was even an appendix to the punishment. Adam would have died had he never fallen, and so would all of his posterity, though none, perhaps, would have died of disease."*

In addition to this, I may remark that the sentence upon Adam was not of death generally, but of death upon a particular day. "In the *day that thou eatest thereof* thou shalt surely die." Now, according to the scriptural narrative, physical death did not take place on that day ; and, therefore, we may reasonably infer that not physical death, but death of a spiritual or moral nature was what was intended to be inflicted as a punishment for Adam's transgression.

We come, in the last place, to the consideration of the early historical records of different kinds, containing reference to the creation of man, and we have to enquire how their testimony bears upon the question before us. Evident allusion to Adam and Eve may be found in the remotest traditions ; but it is very remarkable that they are there spoken of not as a single pair but as a race. Thus, as Grotius records,† "The Egyptians tell us that, at first, *men* led *their* lives in great simplicity, *their* bodies being naked, whence arose the poet's fiction of the golden age, famous among the Indians, as Strabo remarks. Maimonides takes notice that the history of Adam, of Eve, of the tree, and of the serpent was extant amongst the idolatrous Indians in his time." Traditions of this history, he also tells us, are to be found in Peru and the Philipine Islands, and the name of Adam is preserved among the Brachmans.‡ The most ancient traditions and historians also concur with the Mosaic account as to the extraordinary longevity of the early inhabitants of the earth. The first men are recorded to have found out the fruit of trees ; and in the most ancient Greek mysteries they cried out *Eva*, and at the same time shewed a serpent.

* *Life, its Nature, etc.*, by L. H. Grindon, chap. vii, p. 74.

† *De Veritate*, lib. i, s. 16.

‡ *Ibid.*

Diodorus Siculus relates that "the first men," not the first *man* only, "lived very hardy before the conveniences of life were found out, being accustomed to go naked," referring evidently to man in Paradise. And Plato, deriving his account from early tradition, in relation to the primitive inhabitants of the earth, speaks not of one man, but of *men* in the plural, "God their Governor fed *them*, being *their* Keeper ;"* and in another passage he states that "they fed naked and without garments in the open air." The opinion of each of these early writers appears clearly to have been that there was originally a plurality of races. Cicero, in his book on the nature of the Gods, describes the creation of man, but makes no reference to the race being derived from a single pair. In Ovid's *Metamorphoses*, the creation of man, as derived from the ancient traditions, is described, not however as though the race sprung from one pair only.

Reference has already been made to the very remarkable ancient Egyptian representation of Joseph and his brethren in Egypt, in which that peculiarity of countenance characteristic of the Hebrew race is clearly marked out in each of the persons described, and which shows that at that early period that race formed one as distinct from the rest of mankind as it now does. This moreover proves how little mankind change, even in the long course of years ; and it may be remarked that the representations of Negroes and of Egyptians preserved in the Pyramids exhibit precisely the same cast of countenance as is observable among those people at the present day. This, as I have already remarked, is especially the case with regard to the Hebrew race, although inhabiting different parts of the world, and being consequently subject to those various influences by which changes in appearance are supposed to be produced. But if there has been no perceptible change in races since the time when the paintings in the pyramids were made, the change between the time of the Creation and the erection of the pyramids could not have been very essential, nor could the difference apparent in different races of men have been produced by cross-breeding, if, as contended, they were all originally of the same race. As animals were created male and female, several at the same time, but of different races and species, allied to one another as regards their general structure, but widely differing in their peculiar formation ; so is it most reasonable to suppose that the same course would be pursued with regard to man, and that it was so followed on the original creation of the species described in the first chapter of the Book of Genesis, different races and types being at once formed.

The Jews, God's own people, who had the sacred oracles delivered

* *Politics*.

to them direct, differed in opinion as to the question of the plurality of races.* And surely if this liberty was allowed to them, we, at least, ought to have the same freedom. Indeed, St. Augustine was the first among Christians who insisted that all mankind were descended from Adam, and that all Christians were bound to adopt that view as regards the sacred narrative."†

As has been well observed by an eminent physiologist, "the differences of physical organisation and of moral and intellectual qualities which characterise the several races of our species, are analogous in kind and degree to those which distinguish the breeds of the domestic animals, and must, therefore, be accounted for on the same principles. That they were first produced in both instances as native or congenital varieties, and then transmitted to the offspring in hereditary succession."‡ He further remarks that "external or adventitious causes, such as climate, situation, food, way of life, have considerable effect in altering the constitution of men and animals; but that this effect, as well as that of art or accident, is confined to the individual, not being transmitted by generation, and, therefore, not affecting the race."§

The difficulty of supporting the theory of all mankind having descended from a single pair, and of the varieties in their descendants having been caused by circumstances affecting their growth and mode of living, is most forcibly shewn by the shifts and devices resorted to to uphold such a notion. Thus, one writer seriously contends that the peculiar formation of the physiognomy of the New Hollanders, has been caused by their constantly flinching from the numerous gnats by which they are ceaselessly tortured!|| "The custom of carrying children on their back has also been referred to in order to explain the flat nose and swollen lips of the Negro. In the violent motions required in their hard labour, as in beating or pounding millet, the face of the young one is said to be constantly thumping against the back of the mother! This account is seriously quoted by Blumenbach."¶

How much more in accordance with nature, with reason, and with Revelation, is the opinion that when mankind were originally created, several species were formed at once, from whom the different varieties are derived; instead of supposing that one pair only was created, and that all the differences in formation and colour, and in moral and intellectual qualifications, were caused by adventitious circumstances affecting their descendants.

My desire on the present occasion is to reconcile and to render consistent, as far as I can without the slightest compromise or sacrifice of

* *Memoirs of the Anthropological Society*, vol. i, p. 345.

† *Ibid.* 347.

‡ *Lawrence's Lectures on Man*, 1st edit., pp. 375, 376.

§ *Ibid.* p. 376.

|| *Vide Ibid.* p. 265.

¶ *Ibid.* p. 165.

truth, the apparently, but not I believe really, conflicting testimonies of Scripture, of experience, and of science. As Revelation is the voice of God, so reason is the noblest gift of God to man. It is the duty of man to use both aright, and to apply each to the purpose for which it was bestowed. Those two most precious of all treasures, which God has given and intended to be used in conjunction, let not man vainly presume to put asunder, or to apply to oppose or thwart each other. Disunited and counteracting one another, confusion and chaotic disorder are the inevitable result. Reconciled and used aright, and acting in conjunction, the whole system appears at once reduced to order, and the harmony and perfection of the universe are seen to extend to the remotest regions throughout. Over the face of nature the spirit of omniscience is then perceived to rule. Thus, to use reason is but to apply the noblest of the Creator's gifts, and the most exalted of man's endowments to that which is at once its highest and its most legitimate purpose.

THE PEOPLES OF EASTERN ASIA.*

DR. ADOLF BASTIAN is a writer to whom great respect is due from all who are interested in the study of anthropology. His great work, entitled *Man in History* (*Der Mensch in der Geschichte*, Leipzig, 1860), contains a wonderful collection of information as to the psychological side of the science—from the nervous system and the metaphysical theories of ideas to the nature of language, the history of religion in its widest sense, the abnormal phenomena of madness, hysteria, and morbid enthusiasm, and the social development of the various human races. This remarkable work is too large in its extent, and too discursive in its character, to be suitable for translation under the auspices of the Anthropological Society, while so many works better suited for scientific manuals remain scarcely known even by name in England; but it may be safely said that any of the members of that Society whose inclination is towards psychology, and to whom the rather vague and mystical views of metaphysicians seem wanting in solidity, will find the study of Dr. Bastian's *Mensch in der Geschichte* a most profitable undertaking.

After thus relieving his mind of a load of learning, Dr. Bastian started on a journey into the far East. Between 1861 and 1865 he

* *Die Völker des Oestlichen Asien. Studien und Reisen von Dr. Adolf Bastian.* Vols. i and ii. 1866. Leipzig: Wigand. London: Trübner & Co.

travelled, making long stays for the purpose of studying the native languages and literature, in Burmah, Siam, Cambodia, and Cochin China, the Eastern Archipelago, Japan and China; and in 1865 returned from Peking through Mongolia, Siberia, and the Caucasus, and was present at the Birmingham meeting of the British Association. In the second of the two volumes now before us he gives an account of his journey in Burmah, and other volumes are to follow with details of the remainder of his vast journey, which was made as a private enterprise in the cause of oriental learning. His desire to be burdensome to no one is curiously illustrated by his scruples in receiving an allowance from the King of Burmah, according to the custom of the country with distinguished visitors. He did not want the money, but it would have been flying in the face of majesty to refuse the monthly bag of silver, and so he had to settle it by acquiescing in its disappearing somehow between the royal treasury and his own cash-box, an arrangement which probably suited all parties.

In his first volume Dr. Bastian compiles the result of his study of the native history of the Indo-Chinese nations. It must have cost him a stupendous amount of labour, but unluckily its contents are seldom of much interest to Europeans, of whom the number is small who take an interest in the dynastic legends of countries whose history is very dull or prolix, and whose mythology is for the most part duller or more prolix still. A native Indo-Chinese history, if we take the best points of it, appears to consist of the following elements:—First, an account of the creation of mankind, or their descent from trees, apes, or demons; next, the low alluvial lands will have the stories of the first settlement of colonists, and as the land is often of recent growth the legends of its colonisation may sometimes contain history mixed with more or less of myth. The following is such a story from Pegu:—

“Long ago, when what is now the great delta of the Irawaddy was an open bay, the king of Kala-gyee sailed across the sea, and saw a wild duck sitting on her nest, whereon he remarked to his followers that the water was sinking, and accordingly they found, as the bird flew off, that there was in fact a morsel of mud visible just large enough for her nest. The king had a stone pillar set up to claim the land, and returning home had the event chronicled in the royal archives. Long afterwards another king of Kala-gyee sailed to the same place and found not only that the land was dry, but that the Taliyns had settled on it. He said to them, ‘You have no right here, this is my land; did not my ancestor set up his boundary-stone here?’ The Taliyns answered, ‘The land is ours; where is your boundary-stone? we know nothing of it.’ The stone was duly found, and the Taliyns were much embarrassed what to do, but the prince of the Nats (demons or gods) appeared in a dream to the king of the

Taliyins and told him to acknowledge to the king of Kala-gyee that the stone was really his, but that the Taliyins had been there long before and left their memorial, as he would find by digging underneath the stone. Underneath the stone accordingly were found the tokens of the Taliyins, and so, the story simply concludes, the Taliyins kept the kingdom, and therefore it was called Pae-suh, or 'the stolen land,' for the Taliyins had never really put their tokens where they were found, but the thing came to pass through the power of the prince of the Nats." (P. 225.)

Between the early period and modern times come accounts of kings and political events largely mixed with fable. Monstrous dragons appear and are slain by heroes; when water is wanted a king strikes the ground with his staff, and a spring gushes forth; and the princes and princesses who figure in the story have, as a rule, in Buddhist countries, a predilection for coming into the world in ways not recognised by modern European physiology. The prettiest story in the book is, perhaps, that of the princess Thatungdau, whom king Noatasa gave in charge to his four knights to be carried safe to Pagau, where she was to be married:—

"She was so slight and tender that they put her in a needle-case that the rough hands of the men-at-arms might not hurt her. They weighed the needle-case (it just went against one flower of jessamine), and each of the knights was to take charge of it for a day. Yansitta was the first in charge, but by evening his curiosity was too much for him, and he opened the cover a little way and peeped in, but the evening breeze blew in and puffed up the little lady, so that she began to swell out over the top of the case, and he had quite a difficulty in poking her in again, and getting the cover on, and then he handed the case over to the next man. But he had not reckoned on the precautions taken; when the needle-case was weighed before being passed to the next guardian it was found to be a whole petal of a jessamine-flower too heavy, and the inquisitive hero was condemned to die. He proved too much for them, however, and went off with the princess, needle-case and all." (P. 45.)

As the native Indo-Chinese histories approach modern times, though their character otherwise changes little, they acquire an interest to us by the appearance from time to time of well-known European names. The native history of Ava, coming into the seventeenth century, describes the reign of Ngadabdayaka, and the flight of Younhli in 1658, under pressure from the Manchus, over the Burmese frontier to Ava, when his forces attacked the capital, but the city resisted the first attack under the leadership of Mithari Katau, who appears to have been an Englishman, Mr. Cotton; and about the same time Siamese history mentions an expedition under the celebrated European, Phaulcon (p. 61-2). In later times the Burmese court annals give the following account of the war with the English:—

"The Kulapyu, or white strangers of the west, fastened a quarrel upon the lord of the Golden Palace. They landed at Rangoon, took that place and Prome, and were permitted to advance as far as Yandaboo, for the king, from motives of piety and regard to life, made no effort whatever to oppose them. The strangers had spent vast sums of money in their enterprise, and by the time they reached Yandaboo their resources were exhausted, and they were in great distress. They petitioned the king, who, in his clemency and generosity, sent them large sums of money to pay expenses, and ordered them out of the country." (Vol. i, p. 68.)

Special students of Indo-Chinese subjects will find abundant details in this volume. For anthropological purposes the accounts of the more civilised Burmese nations, and also of the wilder Karens, Ahom, Singpho, etc., are of interest, though anatomical details are unfortunately very scanty.

In the second volume Dr. Bastian begins with the account of his journey at Rangoon, where he notices the practice of building houses on piles as simply made necessary by the muddy morass on which they stand. Dwellings of the nature of Swiss lake habitations are, in fact, here, as in several other places in Asia, so adapted to the circumstances of the country, that their appearance can excite no surprise. On the other hand, the curious point about the Swiss lake-dwellings is, the fact of their existing in places where it is hard to see why the dry land might not have done as well, or better. On his journey towards Prome, up the Irawaddy, he noticed the road-side shelters set up by the pious Buddhists for the refreshment of travellers, and the offerings of food left by the wayside for the demons or Nats, who seem quite to fill a large enough place in the Burman mind to justify the detailed accounts of them which are given in many places. Another topic of continual interest to the traveller in Buddhist Asia is the question of meat or no meat. As we all know, Buddhism forbids the taking of life, and our traveller, finding fowls and eggs at least absolutely necessary to keep up his strength in an unhealthy and debilitating climate, had a continual difficulty in getting outcasts or foreigners to kill the fowls and break the eggs, which it was hard even to buy. If the Burmese and their neighbours really abstained from the flesh of animals and the contents of eggs, there would have been more satisfaction in complying with this inconvenient ordinance, but this is by no means the case. As the king of Burmah, a thorough-paced theologian, carefully explained to Dr. Bastian, it is very wrong indeed to kill animals for food, and therefore you must get some one else to do it for you—what becomes of the misdoer is of course of no consequence to you. In the Siamese temples the torments with which fishermen will expiate their wicked-

ness in hell are depicted on the walls in awful colours. The wretched sinner hangs by the tongue to a fishhook, and mocking demons fish him up out of a lake of pitch and drop him in again. But, nevertheless, the whole population of Burmah delights in a horrible preparation called *ngapie*, which is made by burying fish till it is putrid, and mixing the result with rancid butter. The *ngapie* is so largely consumed that the whole atmosphere of the country, says Dr. Bastian, is pestiferous with it, and the fishermen have to live principally by providing it. The little difficulty as to conscience is therefore ingeniously removed by the fisherman never killing the fish he catches—he merely leaves them out on the bank, and then if they die it is their affair, not his. As in other countries, extreme ceremonial laws lead to evasions which make them practically less troublesome. A *pungyi*, or, as we call him, a *bonze*, must not eat after noon; therefore he sits with his back to the sun, and, being hungry at two or three o'clock, inquires of his scholar whether it is noon yet, to which the boy is trained to answer that it is not, and, on the strength of the pupil's assertion, the master eats another meal. The effect of practices of these kinds on the moral sense of the people is of course disastrous.

The king of Burmah now lives at Mandalay, being, it is said, disgusted with Amarapura by the English embassy presuming to come with their steamboats actually up to his palace. Dr. Bastian had hoped to remain an unnoticed stranger in the city, and thence, in good time, to travel where he would, studying the country at his leisure. It lay, however, quite outside his calculations that the king should know anything about English newspapers, but he had been mentioned in one, and found accordingly that his movements were watched and strictly limited. On presenting himself at court, nevertheless, he was well received, and the object of his journey—the more complete study of Buddhism—appeared to the king a highly reasonable and proper one. Accordingly he took up his abode in the palace, and made a considerable stay there—very successful in his investigations into literature and manners in spite of inconvenient accidents, such as that of profaning the royal abode by carrying in his umbrella, a thing only permitted to royalty, and accidentally having his bed placed so that his feet were turned towards the king, which is a high crime and misdemeanour. Resuming his journey, Dr. Bastian proceeded downwards into Pegu on the Siamese frontier, where his present volume leaves him.

Among the anthropological and ethnographical matters touched upon, the following are some of the most worthy of notice. Phases of mixed Brahminism and Buddhism are always interesting, as show-

ing the course of the two great waves of religious conversion in Eastern Asia. Such things as Brahmanic idols officiating as attendant gods to the great Buddha, and Brahmanic images adorned with Buddhist symbols, are noticed by Dr. Bastian (p. 73). The accounts of tattooing are curious ; it appears to be done for magical purposes in Burmah, certain figures having a virtue of protecting the body, and especially hard substances as gold and silver being introduced under the skin to make the patient invulnerable (pp. 35, 144, 160). Eclipses, as elsewhere, are caused by the great dragon, and the calculation of them by the French astronomers did not appear extraordinary to the priests ; the foreigners know a great deal about the dragon and can tell when he is likely to be hungry (p. 109). The accounts of Buddhist doctrines and ceremonies correspond in great measure with those given by Mr. Hardy in his description of Singhalese Buddhism. The following remarks on the complexion of the Burmese are interesting.

“At the bathing-place I had a good opportunity of observing the shades of complexion, which run very much into each other. A traveller who, having only known the Burmans of Rangoon, should see others from Ava, would doubtless pronounce those from the northern provinces to be darker, forgetting that the Burmans resident in Rangoon, who besides have all immigrated on account of their commercial affairs, expose themselves little to the sun. If he went into the settlements of the true natives of Rangoon, the fishing villages of Talein, he would find their inhabitants approaching yet more to the dark brown colour. The Karens, especially the Tzan, are generally lighter, as being in thick woods they are seldom exposed to the sun, but the Bghais again are very dark, although they come not only from the north but from high, although treeless mountains. The effect of external influences is shown more clearly in the Burman women. . . . When they are bathing it is easy to see, as if marked by a line, how far their usual clothing extends, for, contrasting with the dark tint of the upper part of their bodies and their arms, the rest of the body might be that of an inhabitant of Southern Europe. This is common in India. The Chinese ambassador remarked it among the Cambodians, whom he calls deep black, ‘*mais pour les dames du palais et même parmi les femmes de Nan-plung il y en a qui ont le teint d’un blanc éclatant comme du jaspe, et celà vient de ce qu’elles ne voient, ni le ciel, ni la lumière du soleil.*’” (p. 23).

A fair complexion seems considered beautiful (p. 161). As a medical man Dr. Bastian will probably be able to give other valuable anthropological descriptions of the races he met with in the East. As for the Burmese, at least, their interest in anatomical studies is considerable, but they look at dead bodies as merely suggestive of the miseries and horrors of existence ; a courtier who had to visit Dr. Bastian used to get out one of his anatomical books, and groan moral reflexions over it. We Europeans, “black barbarians” as they con-

sider us, may retaliate this treatment on the history-books which it was Dr. Bastian's severe fate to wade through; they fill us with a sense of the extremest weariness of the habits of East Asiatic life, and the events of East Asiatic history.

One more matter is mentioned by Dr. Bastian which should always be spoken of when an opportunity occurs. The native governments of South-Eastern Asia find their peoples well stocked with good thriving native vices, which are quite as much as they can conveniently deal with. Under these circumstances they object somewhat to the importation of new ones from abroad, and have therefore endeavoured by law to keep opium-smoking out of the country; but now that we are established in the district of course the opium-houses flourish, and Dr. Bastian's regret is not unfounded, that our otherwise beneficial influence in the country is marred for the sake of the opium revenue.

BROCA ON ANTHROPOLOGY.*

ANTHROPOLOGY is that science which has for its object the study of the human group considered in its *ensemble*, in its details, and in its relations to the rest of nature.

Before this science was definitely constituted, the word anthropology had received several other acceptations, and in point of fact man may be studied from several standpoints. The ancient Greek philosophers were frequently called anthropologists (*ἀνθρωπολόγοι*) because they discussed "the nature of man," which, according to some meant the mind, according to others the body. Hippocrates, *περί φύσιος ἀνθρώπου*, commences with the following significant phrase, "Those who are accustomed to hear the nature of man discussed apart from medicine will find nothing satisfactory to them in this treatise." The name of anthropology was thus received in a variety of acceptations. With many modern philosophers anthropology is nearly synonymous with psychology, whilst other authors have published under the title of anthropology works relating to descriptive anatomy, to general physiology, or to hygiene. Some dictionaries define anthropology, the description of the human body; others, the natural history of

* We propose to publish, in this and in a future number, a translation of the greater portion of Dr. Broca's admirable article on "Anthropologie", which has just appeared in the *Nouveau Dict. Encyclopédique des Sciences Médicales*.

mankind. It is thus seen that it becomes necessary clearly to define the sense of a word which has received so many different acceptations.

Psychology, anatomy, physiology, hygiène, and even pathology, aid us in the knowledge of man in distinguishing him from other animals in characterising his general and his particular types, but neither of these sciences has any claim to the name of anthropology, since each of these separately only shows man from one point of view. Each of the above has moreover a name universally adopted, and if we think proper from some motive to rebaptise them, we should not give them a name more vague and less characteristic than that by which they are known. Let us add that all these sciences, without excepting psychology, might exist if we had never thought of studying man. Those who cultivate them have no doubt the main object of knowing their own nature. But most of their descriptions might, with some slight variations, be applied to other animals as well as to man ; and we know that many great discoveries have been made both by the ancients and the moderns on creatures the zoological type of which differs much from our own. Psychology alone may with some show of reason pretend to the honour of being exclusively a science of man. And yet this appearance is deceptive, because animals possess, according to their respective species, an intelligence in which impartial analysis discovers, in a more or less rudimentary state, faculties and feelings analogous to our own of which we are so proud.

All sciences which concur to give us a knowledge of the nature of man are general sciences ; they cannot, without losing their synthetic character and their philosophical scope, be restricted specially to the study of man. And if one of them so mutilated assumes the name of anthropology, it would belie its title ; not merely because it makes known to us only a part of man, but it makes it known in an insufficient and frequently an incorrect manner.

It may now be remarked that these different sciences study man only as an individual. Even if by some impossible fusion it be attempted to unite them under the pretext that they relate to the same object, namely, the nature of man, this unique and complex science would still only be the particular history of the individual man, and would leave untouched all that relates to the collective history of the human genus. To give to such a science the name of anthropology would be to run counter to all rules of nomenclature. Zoology does not treat only of the animal, but of the animal kingdom. Ornithology does not treat of a bird, but of the whole class of birds ; and in the same way herpetology, ichthyology, malacology, etc., have each for their object the study of a group of beings resembling each other by certain fundamental characters, whilst differing in some cha-

acters of minor importance. But humanity, also, constitutes in nature one of those groups where the unity of the fundamental type shows itself amidst innumerable varieties of a secondary character, and it is the science which studies this natural group, that is entitled to the name of anthropology, which no other science can protest against.

Anthropology might in a strict sense be defined "the natural history of man." This definition would not essentially differ from that placed at the head of this article ; it would even be sufficiently strict for such who look upon natural history as something more than taxonomy, pure and simple ; for the true naturalist does not confine himself to characterise the genera, species, families, etc. ; but he studies in each species, and if necessary in each variety, the manners, instincts, mode of life, geographical distribution past or present ; and anthropology might altogether, despite the complexity of its domain, find a place in this programme. But if we abstract some species which man has associated with his existence and his history, the remainder has been studied exclusively, or nearly so, in regard to their form and structure, and hence the description of anatomical and morphological characters constitutes the greater portion of ordinary natural history. It is different with the natural history of the human genus. Men by their intelligence, their language, their social and political life, their voluntary migrations, their conquests over nature differ so much from other animals, that in order to commence the study of this exceptional group, the naturalist is obliged to have recourse to a particular mode of investigation ; to historical, archæological, and linguistic researches, which do not come in contact with other branches of natural history. To say that anthropology is the natural history of mankind, might in most minds give rise to the idea that it is a purely descriptive science ; that it confines itself to distinguish and classify the various races according to their physical type ; and this interpretation must be carefully guarded against, and the more so, since there has been a time when anthropology, still in its infancy, was confined within such narrow limits.

The definition we have thought proper to adopt is more significative, and it has, moreover, the advantage of indicating with sufficient precision the three great series of facts, the reunion of which constitutes anthropology. We may, in fact, bring all the studies relating to the knowledge of the human group under three heads.

I. It is first necessary to determine the position of this group in the series of creatures ; a question apparently very simple since the supremacy of man over all other animals is incontestable. It is, nevertheless, very difficult to be an impartial judge in our own case, and the study of this question proves it. Pride, one of the most cha-

racteristic features of our nature, dominates in many minds over the calm testimony of reason. Like the Roman emperors who, intoxicated by power finished by looking upon themselves as demi-gods, so the king of our planet imagines that the vile animal, subject to his caprice, has nothing in common with his own nature. The vicinity of the ape inconveniences and humiliates him ; he is not satisfied with being the king of animals, but desires to establish that an unfathomable chasm separates him from his subjects, and turning his back upon the earth he takes refuge with his threatened majesty in the nebulous sphere of the *human kingdom*. But anatomy, not unlike the slave who followed the car of the victor, exclaiming, "*Memento te hominem esse*," anatomy disturbs him in this self-admiration, and reminds him of the visible and tangible reality which allies him to animality. The doctrine of the human kingdom is then placed side by side with another not less radical doctrine, which pretends to derive man from the ape, and between these two extreme opinions others arise, which, according to a more or less rigorous interpretation of anatomical characters, present the human group as constituting now a species, now a genus, or a class, or a branching-off of the zoological series. A critical examination of the contradictory arguments adduced in favour of these different appreciations, leads to study on one hand the characters common to man and the animals nearest to him, and on the other to find out such characters as are peculiar to man. It becomes, moreover, necessary to see to what extent these analogies and differences agree with the laws presiding over the serial distribution of the groups called genera, species, families, etc. ; to investigate whether the gradation which obtains in a lower scale is preserved in a superior scale ; to mark the distance existing between the highest term of the simian and the lowest term of the human series, and to examine the arguments of those who do not consider that distance impassable. That portion of anthropology which comprises the study of these zoological questions is entitled to the name of *Zoological Anthropology*, and may be defined *the study of the human group, considered in its relations to the rest of organised nature*.

II. The human group once characterised, circumscribed, and classed as a group in its *ensemble*, must then be considered by itself ; it must be divided and subdivided, and each of these partial groups must be studied separately. This constitutes *Descriptive Anthropology*. Numerous physiological differences coincide with the physical differences. The muscular force, general sensibility, the degree of the perfection of the senses, specially of sight, hearing, and smelling, the mode of articulating certain sounds, the odour of the perspiration, the power of resisting heat or cold, the pathological aptitudes and

immunities, the period of puberty, the duration of female fecundity, etc., all these present in various peoples more or less extensive variations.

Finally, that which varies most is the degree of activity of the intellectual functions, the predominance of such or such a group of faculties, the development of the social condition and perfectibility, that is to say the aptitude, to originate or to receive progress.

Thus, whether we consider humanity as regards the external conformation, or the anatomical, physiological, intellectual, moral and social characters, we find considerable differences among the groups composing it. But, although the modifications of the different orders of characters do not always present themselves abreast, there are some which present a sort of solidarity. Thus, the obliquity and the projection of the face, constituting what is called *prognathism*, more or less black tint of the colour of the skin, woolly hair and intellectual and social inferiority are frequently associated, whilst a whitish skin, smooth hair, an orthognathous face, are usually the appanage of the more elevated peoples of the human series. Consequently, although the serial distribution obtains here as in other zoological groups, with its infinite gradations and degradations, its unions and its anastomoses, it is possible and even easy to distinguish between the innumerable variations of the human type, a certain number of secondary types, around which all these varieties group themselves with more or less precision.

As regards these varieties, they have received the name of *races*, which engenders the idea of more or less filiation between individuals of the same variety, but which neither affirms nor denies the question of parentage between individuals of different varieties. The name *species* implies the solution of the question as regards the diversity of origin; the term *varieties* taken in the special sense attached to it in natural history, would on the contrary imply, that the whole human group forms but one species. From this results the inconvenience of speaking two different languages, according as one is monogenist or polygenist, and that neither of these terms is acceptable to such who look upon the problem of origin as doubtful. The word *races*, on the contrary, may be adopted by all, and it is for this reason that it is now prevalent.

III. The third branch of anthropology, the last in the logical order of regular scientific evolution, but the first in importance, is *General Anthropology*, which has for its object *the study of the human group in its ensemble*. Here it is especially important to establish a line of demarcation between anthropology and other sciences which treat of man. All, without exception, furnish to general anthropology numerous facts, without which it could not exist. They make known

to us the individual man, and it is clear that a collection of individuals cannot be studied in its *ensemble* if we did not commence with the study of the individual type which forms the unit of the number. But general anthropology only borrows from the other sciences that which concerns man considered as forming part of a group. Some examples are necessary clearly to explain this distinction.

The study of the cerebral functions forms part of physiology. Those, for instance, who search for a certain relation between the volume of the brain and intellectual power, study a question which thus put is purely physiological. But if, instead of confining the comparison to individuals resembling each other by their physical characters, and differing in intelligence, we compare a series of individuals of a certain race with a series of individuals belonging to different races ; if, in addition, we place the results of this anatomical parallel by the side of those notions we possess concerning the relative intelligence of these different races, we quit the territory of pure physiology and enter the domain of general anthropology, just as in treating of a subject of zoological anthropology, we study the same question with the object of establishing a parallel between man and the rest of animals. The description of the skeleton, the muscles, nerves, viscera, skin, etc., belongs to anatomy only ; that of individual varieties equally so. But whenever an organ, either in form, structure, or volume, presents differences in various races, the history of these variations belongs to the comparative anatomy of races which is frequently put under contribution by ethnology, but which study in its *ensemble* belongs to general anthropology.

The study of cancer, tubercular affections, dysentery, yellow-fever, etc., forms part of pathology ; but when the pathologist states that either of these diseases presents, according to race, differences in frequency, gravity and progress, and these differences cannot be explained from external conditions, but must be referred to the organisation of the respective races, he contributes to the progress of the comparative pathology of races which forms part of general anthropology.

Hygiène, which has for its object the preservation of health, is not a branch of anthropology. Even public hygiène, although it embraces questions relating to the health of a whole people or of a great number of peoples, is perfectly distinct from anthropology. But the hygienist, by studying the conditions favourable or noxious to the health of individuals or masses, is obliged to inquire how far the influence of media is capable of modifying the organisation ; how far these modifications of the individual by external conditions may be capable of transmission from generation to generation, and these two questions form an integral part of the problem of races, one of the the most important of general anthropology.

The psychologist, who studies in himself or in other individuals the faculties of the mind, the feelings and passions, is not an anthropologist ; but who, extending the field of psychology, observes the differences existing between peoples and races in reference to intellectual power, perfectibility, sociability, artistic, scientific, literary, industrial, religious and political aptitudes, he participates in the work of anthropologists, and it is thus that the comparative psychology of races becomes one of the most interesting branches of general anthropology. It is unnecessary to multiply examples to show how general anthropology puts under contribution all sciences which have man for their object, without being confounded with these sciences.

Anthropology even borrows from sciences altogether foreign to the study of the individual man, but which still furnish facts concerning man as members of a zoological group. Climatology indicates the condition of the various media in which man can exist ; zoological and botanical geography make known to us the existence and the distribution of distinct *Faunas* and *Floras*, of multiple centres from which the actual species sprung, contrary to a general prejudice which derives if not all plants, at least all animals, from one focus ; and it is at once perceived how important the knowledge of this fact is for him who inquires whether the human genus had only one or several cradles.

Geology, in its turn, describes the gradual changes which have so many times modified the conditions of life on the globe, and makes us appreciate the immense time which must have elapsed between their different epochs, and the great antiquity of the quaternary strata which contain the remains of man or of his handiwork. And palæontology, finally placing man by the side of species he has survived, reveals to us the conditions of the existence of man in those primitive times, the record of which is lost.

General anthropology, towards which so many other sciences converge, embracing within its immense domain subjects of different orders requires different modes of investigation. The methods it adopts for the discovery of truth, are for each subject borrowed from the corresponding science, but as regards complex questions which encroach upon several sciences, and for such as belong to her properly, anthropology must follow her own principles and her own methods. We must dwell a little upon this point.

In truth anthropology, being a science of observation, has no other method than that of other sciences of the same family. But the modes of investigation vary according to the nature of the facts we desire to ascertain. Now the facts of anthropology are relative to collections of individuals and not to isolated men. In every race, in every family, there are individual variations, establishing sometimes be-

tween two brothers greater differences than such as exist between two men belonging to different races ; it is therefore indispensable to have recourse to such means of observation as shall obviate such a cause of error.

Two rocks must here be avoided. On the one hand, in endeavouring to determine the characters of a race, particularly in more or less exceptional cases, must not be capable of altering the general description. Nevertheless, on the other hand, if it be necessary to ascertain the mean type of a population, it is at the same time requisite to ascertain the maximum and minimum of each character were it only to learn whether it is a pure or a mixed race. Thus, even if it were possible to discern at first sight the individuals differing by one or several characters from the general type of the race, they must not be excluded from observation, since the study of these divergences forms an integral part of the description of that race ; hence the necessity of collecting a large number of observations, and to have recourse in the determination of each character to exact and uniform notations in order that the comparison of individual observations might yield methodical statements expressing the averages, maxima, minima, and if necessary, many other divisions. In order to effect this we ought to endeavour as much as possible to express by numerical signs the characters observed in each individual ; this is easy when, for instance, the length or absolute volume of an organ is to be stated. The results of such observations can then be stated in precise numbers easy to be calculated. The characters which cannot be determined by simple and direct measurement, may still in most cases be formulated either by indirect measurement, to which we shall recur, or by conventional notations. Thus, for instance, the shades of the skin, eyes and hair, despite their infinite diversity, may be reduced to a certain number of types or rather marks, represented on a chromatic table on which the graduated colours are respectively numbered. Thus, also, may the degree of the projection of an osseous protuberance, like the occipital protuberance, be expressed by progressive numbers from 0 to 5, whilst the degree of opening or fusion of the cranial sutures may be numbered from 0 to 3. These notations are conventional. It is clear that if zero expresses the total absence of the occipital protuberance, or of the suture, the number expressing the maximum development of either, is an arbitrary selection, as regards the number of intermediate conditions which it may be desirable to signalise. But if the convention be accepted, the observations may be collected with sufficient precision and applied to methodic statements which, with some necessary precautions, may become statistical.

Indirect measurements, of which we have spoken, relate to the determination of certain angles, fictitious lines, and certain proportions. These are chiefly employed in the study of the head and the cranium. Sometimes, for the appreciation of the relative development of various cephalic regions, we measure the inclination of two lines or planes, sometimes by the aid of certain graphic processes, we construct point by point, curves afterwards subjected to geometrical constructions, the elements of which are measured by compass and the goniometer. The linear or angular measurements thus obtained, in which cyphers express the proportions of the two lines, readily submit to statistical calculation. But in order that these varied statistics should be well composed, it is above all things necessary that all observations should be collected according to a uniform process. In seeking for an explanation of the contradictory results published by different authors, we almost invariably find it in the diversities of their processes, or in the uncertainty of their marks. Nearly all the measurements may be taken by different methods. What, for instance, is the length of the arm? What are the points of the marks for this measurement? For one, the superior point of mark is the point of the acromion; for another, it is the inferior border of the great pectoral muscle; for a third, it is the most elevated part of the armpit. The inferior mark point has been alternately placed on the epicondyle, the epitrochlea, the small head of the radius, the summit of the olecranon, whether the forearm be stretched or bent. To these uncertainties must be added such as result from the position of the arm, for the same process of mensuration applied to the same individual may present a difference of more than a *centimètre* according as the arm is approached to, or moved from, the trunk. It thus becomes indispensable to adopt for each measurement a constant and invariable method sufficiently simple to be employed by all observers.

It is generally admitted that the method of averages, based upon a large number of individual facts, is the only one leading to an exact knowledge of a group of individuals. It has been asserted that all this apparatus of measurement and cyphers is unnecessary, and that it is sufficient to measure in each race a small number of individuals selected *with discrimination*, as being the representatives of the mean type of a race. We readily admit that a very sagacious and much experienced observer, gifted with such particular aptitudes as constitute a good artist, may, without much error, distinguish amongst the mass such individuals, generally not very numerous, who in themselves present a harmonious *ensemble* of the characteristic features of their race. Still such appreciations can never be absolutely rigorous, being entirely subordinate to the qualities peculiar to the observer.

The dates they furnish are merely personal ; they are neither demonstrable nor can they be discussed ; they may be received with confidence—a confidence frequently justified—but it leads to accept as true, delusive facts ; and it tends, moreover, to the restriction of sources of information, to adopt a method, the appreciation of which can only be successfully made by a select few of observers. The facts required by anthropology must be collected from all parts of the world, and with precision by all kinds of educated travellers. The method of individual observations, by means of simple and uniform processes, sheltered from the flights of fancy and repeated upon a large number of individuals taken at hazard, is thus the true basis of anthropological investigations.

This method is, however, only applicable to the facts of the anatomical order. But statistics, of which it is only a particular form, plays in anthropological studies a more general part. A large number of questions find in it a solution it would be vain to look for elsewhere. Statistics alone can demonstrate whether a race is progressing, in *statu quo*, or decaying. Some unquiet and chagrined minds have with complacency accepted a report propagated by our trans-Rhenan neighbours, that the French population, despite its numerical increase, has for some sixty years past degenerated. Some attribute this to the development of industry ; others to social revolutions, to vaccination, to the large consumption of potatoes, to tobacco, to alcohol, to universal misconduct ; others invoke a real cause and worthy of the attention of the legislature, namely, that the mode of recruiting the army condemns the tallest and healthiest males to a seven years celibacy, whilst the short and less robustious males marry and transmit to their offspring their defective organisation. There are also some, who accuse civilisation in general as violating nature and thus gradually tend to the decay of humanity. Of these various hypotheses some are altogether paradoxical, others puerile ; some are founded upon grave facts, although too partial to seriously affect a population of thirty-nine millions of men. We must, however, before all, in order not to discuss the history of the golden tooth, ascertain whether it be true that since the beginning of this century height has diminished in France, and statistics alone can answer this question. This has been done by M. Boudin, and he has demonstrated that from 1831 to 1860, the only period of which we possess precise and complete documents, the height of the conscripts has been continuously on the increase.

The decay of a race, which must not be confounded with degeneration, for the latter may be compatible with a numerical increase, whilst the former is characterised by a continued diminution of births,

or the continued increase of mortality. This decay of a race cannot be measured, and frequently cannot even be revealed by statistics. When, for instance, the population of a colony increases, we are apt to conclude that the immigrant race is prospering, whilst in many cases it only maintains itself by constant reinforcements. Statistics, by comparing the number of births with that of deaths, destroys such illusions, and thus we arrive at the solution of the question acclimatisation or non-acclimatisation of certain races in certain climates. It has thus been demonstrated that European races cannot maintain themselves in Africa and tropical Asia, and doubts have even been raised as to the possibility of colonising certain parts of Algeria by Frenchmen. Here, again, it is by the aid of statistics that we are enabled to appreciate the influence of race and climate on the duration of life, the comparative frequency of the principal diseases, and specially such as cause the greatest mortality. Statistics, finally, is a means of studying the effects of consanguinity ; but here the subject is so complex that we must have recourse to other sources of information.

There are a great many questions of a still more complicated nature, which do not lend themselves to the application of rigorous methods. We need not on that account renounce giving them a scientific solution, but an increase of difficulties requires an increase of caution. The uncertainties arise chiefly from the multiplicity of elements combined in each case under consideration ; various influences which have, or might have, concurred in producing a definite result. The mind then indulges in various hypotheses, and feels disposed to adopt that which accords with a preconceived doctrine ; but it ought to resist such a tendency because facts are not subordinate to doctrines, but doctrines are subordinate to facts. When a physiologist finds himself in the presence of a complex phenomenon which gives rise to various hypotheses, he has recourse to the analytical and experimental method. He considers one by one the various conditions of this phenomenon, isolates them by vivisection or any other process, he successfully eliminates the false hypothesis, and finally succeeds in finding a true explanation. Anthropology must follow the same principles ; it cannot apply them in the same manner, as neither a race nor a collection of human beings can be subjected to scientific experiments ; but he profits by the experience derived from all parts of the globe, where immigrations, conquests, revolutions of all sorts, more or less modify the conditions of life. When he searches for the interpretation of a fact, he unites and compares all the analogous facts, produced in different places, under different conditions ; he analyses these conditions, then eliminates all the

explanations not applicable to the entire series of similar facts ; he more and more simplifies the question until the solution is derived from this analysis.

[*To be continued.*]

THE PRIMITIVE PERIOD OF THE HUMAN SPECIES.*

By CARL VOGT.

It is proper that, in a new organ for the natural and primitive history of man, the starting point from which it proceeds should be well fixed and in outlines, at least, the position defined, which science occupies in relation to certain questions. It cannot be our purpose here exhaustively to treat a subject still under investigation. Our object is rather to seize some prominent facts which may serve as boundary-stones, between which the subordinate results may be arranged. We cannot conceal from ourselves that such a selection presents difficulties, since on the one hand the number of discoveries daily increases—nay, owing to the extraordinary zeal with which the investigations are carried on, they swell to an enormous mass ; whilst on the other hand facts apparently insignificant come to light, which by subsequent discoveries acquire the greatest importance. Here, it must also be confessed, our knowledge is, more than on other questions, patchwork, so that in arranging the results we in some degree resemble the artist who is engaged in re-arranging the scattered little variegated stones of a destroyed mosaic pavement. It cannot fail that in such a work many errors of association must occur, and that a recovered missing stone may upset the whole combination. But such cases are also instructive, inasmuch as they invite us to caution and to close examination.

My purpose at present is to treat of the oldest documents we possess relative to the existence of man, without reference to periods approaching historical events. I therefore, putting aside the so-called bronze-period, shall exclusively speak of the stone-period, during which stones, wood and bones were the three chief materials of which implements were constructed. I do not so much purpose to cite the facts, as critically to examine, how far the findings are trust-

* This article is a translation from the *Archiv für Anthropologie*, and we have given it a place in our pages as a specimen of what our admirable contemporary is publishing.—EDITOR.

worthy, and how far we might succeed from the results obtained, to determine the period and the progress of civilisation in primitive times.

It never occurred to me, as some have done, abruptly to divide stone, bronze, and iron periods. Some little reflection clearly leads to the assumption that on the introduction of a new element of culture the preceding condition cannot cease at once. Whether bronze was in our part of the world independently used, or whether, as seems more probable, it was introduced by a more civilised people on the shores of the Mediterranean, or from the coast of Africa; this much is certain, that bronze made its way but slowly, and that stone and bone implements remained in use long after the introduction of bronze articles by trade, and even after such articles were fabricated in the respective countries themselves. The Homeric heroes, who knew bronze and iron, threw stones at each other, and the sling was, in not very remote times, a legitimate war weapon. It also appears that stone implements, even after they had disappeared from general use by the introduction of metals, retained an odour of sanctity, so that stone-knives and stone-hatchets were used in religious ceremonies, it being considered that metal which required so much human labour was rendered unclean by so much handling.

But are we from this transition of one epoch into another justified, as some have done, in inferring that no preceding distinct epoch had existed, and that when in certain spots we only find stone and bone implements, it was merely accidental that no bronze was deposited? It would be foolish to deny that in some cases this may have occurred. But if, on the other hand, the results of many researches agree that there were periods of culture which did not betray any trace of the knowledge of metals, and that stone and bone implements were exclusively used for purposes to which at later periods metal was applied, every unprejudiced inquirer must at once admit that such an epoch has really existed, and that we even distinguish in its progressive periods of development, civilisation.

It may be that a grave, for instance, containing only stone implements, belongs to a comparatively recent period, especially as on account of the above mentioned religious character, these stone implements were perhaps preferentially deposited. But the absence of metal loses its accidental character, when we meet with numerous settlements or stations, when hundreds of caves or graves are explored, where not only metal is entirely absent, but where the discoveries of remains of foreign species of animals, testify to a state of culture resembling those of savages subsequently discovered.

In mentioning savages I must be permitted to offer an observation.

Certain as it is that stone, bronze, and iron periods only form relative sections continued into one another, it cannot be assumed that similar civilisation epochs were simultaneously developed in different parts of the globe. In other words, even in the limited area of Europe, there may, on the coasts and on rivers, peoples have existed, further advanced in civilisation, who knew of and how to use metals; whilst in the interior of the country tribes dwelt, who for centuries, perhaps, had no idea of metals, not unlike the savages of islands who used stone weapons until Europe supplied them with iron, lead, and powder. It is therefore, in my opinion, improper to associate the findings of different countries, lying so far apart, instead of only comparatively treating them, and at first merely approximately to determine the period of the development of a given civilisation. It is, for instance, imaginable that in the Alpine highlands, especially in the northern declivity of Switzerland and the adjoining regions, the knowledge of metals was unknown to the pile builders; whilst around the Mediterranean, and specially on the southern and eastern coasts, the knowledge of metals was generally diffused. The more therefore these researches extend, the more must they be applied to definite regions, and be confined within narrower limits in the comparison of results, within which an arrangement of such results becomes possible.

Since the publication of my *Lectures on Man*, which were not exhaustive, but merely to further researches, materials have in all countries wonderfully increased. Efforts are now making in all parts of Europe, to dig up the treasures concealed in the soil, and new finds are brought to light which supplement the existing. In referring to what is known I shall confine myself to what is essential for the purpose of connection.

The minute exploration of caves and their contents has been carried on with great zeal, specially in France, and also in Italy and Belgium. Everywhere have the researches been carried on with the avowed object of arranging the obtained results in their proper series. The contents of a cave are no longer, as formerly, considered as a whole, but a distinction is made between natural deposits and the changes produced by man in different periods. There is no doubt that many caves have been filled up solely by brooks and streams, which reached the elevations at which the entrances to the caves are now found. In some caves we have succeeded to determine the intermediate periods of successive deposits differently characterised.

But although there are many caves recognised as containing deposits in their original natural condition, it cannot be denied that there are many other caves in which the original deposits have been disturbed

and mingled with products belonging to later and recent times. Many caves served as places of sepulchre or refuges in troublous times, or as dwelling places for hunters, shepherds, etc. In the places for refuge the dwellers left behind, their fire-places, portions of their meals, and implements which mingled with the relics of remote epochs. Beasts of prey inhabited the caves, and introduced into them bones of animals. There are thus caves containing samples of prehistoric and historic periods, which are apt to throw suspicion on the results of other investigations. Fortunately most investigators are at present fully alive to this difficulty, and by close attention endeavour to prevent any confusion. Where the natural deposits present themselves clearly and perfectly, where the stalactites which separate generally the deposits are perfectly uninjured, and where no trace is found of any disturbance we are justified in assuming that the finds are genuine, especially if they be of such a nature as to show a decided difference in the various periods of deposition. However reliable cave finds may be in normal cases, the severest examination is requisite to avoid errors. Where we have the least doubt whether we are in the presence of undisturbed original deposits, we ought to be careful in drawing conclusions from the facts. On the other hand, it appears to us foolish that because caves have been found disturbed no valid results can be obtained from the exploration of caves. This appears to me not unlike the assertion that because there are some churchyards in which after some thirty years the old graves are again made use of, all old churchyards must necessarily contain bodies of a recent period. There are, nevertheless, unquestionably churchyards in which for centuries no corpse had been interred, and where we may be sure that all objects found in them, of whatever kind they might be, must date from a period preceding the abandonment of the burial place. Just so with the caves. If we find in the soil beds containing only bones of the cave bear and cave hyæna, and other contemporaneous species, and above them an undisturbed stalactite roof, and above this another deposit of reindeer bones, and those of other animals contemporaneous with the reindeer; it would be impossible to find more convincing proofs of two successive periods differing from each other in their fundamental characters.

Of not less importance is the examination of the beds of the so-called diluvium, the conventional name of which conceals a sense which modern geology can no longer recognise. It must be insisted upon that no geological fact is in the least capable of affording any proof of a universal deluge in a comparatively recent period at all approaching historical times. All the facts, of whatever kind they may be, merely indicate deposits which, in the existing valleys, rose to a

comparatively small height, partly owing to changes of level, and which, though considerable for the respective regions, are insignificant when taken on the whole. It is now proved by incontestable evidence that the so-called diluvial period lasted a comparatively immeasurable long time within which the expansion of the glaciers induced great changes on the surface of Central Europe, and which preceded the arrival of man.

On referring to the various climatic conditions which obtained during this period, we observe that a great portion of Central Europe had at that time, in relation to climate and the *Fauna* and *Flora* depending thereon, an insular character resembling in some degree that of the southern islands of New Zealand. The glaciers could thus descend from the mountain heights into the valleys, where there existed a southern vegetation, and the elephant and rhinoceros could find the means of existence at the foot of the glaciers despite the adjoining ice mountains. When we consider that the glaciers surrounding Mount Cook, in New Zealand, descend to the region of ferns and palms, because the insular climate preserves them by the great quantity precipitated from the heights, whilst by moderating the heat of the summer it prevents their melting, we ought not to be surprised at finding in the circumference of the Alps in the diluvium produced by the glaciers elephant bones, or doubt that these regions were at a former period inhabited by pachydermata.

Whilst the exploration of caves presents peculiar difficulties, those attending the explorations of the diluvium are not much less perplexing, which is abundantly proved by the lively discussions on this subject in the French Academy. There are two special conditions which require our attention. First, the local difference of the deposits. In this respect we may say that not merely every country, but that every river bed and every valley has its own law. That there was a deposit here and none there; that the character of these deposits (gravel, sand, mud, etc.) varies and alternates greatly; that even deposits in adjoining localities, manifestly formed simultaneously, may present entirely different characters. It is, therefore, exceedingly difficult to parallelise the various deposits characterising the diluvium, and for the present, at least, to determine the chronological succession in which certain formations of different countries stand to each other; especially as the stratification which guides us in elder beds is in the diluvium very confused, and offers no certain basis for tenable inferences.

Another difficulty has been pointed out by Chevalier De Beaumont. Diluvial formation is constantly taking place; every little brook carries off some particles into the depth. That this restlessness, so to speak, of the earthy particles by the influence of the water acts also

in the depth, has been proved by the exploration of sepulchres, when it was found that the slightest gap in a sarcophagus was sufficient to give rise to accumulation within, which gradually not merely displaced the bones but by pressure changed their forms. The alluvial formations of the slopes, as Elie De Beaumont calls them, are, no doubt, continuous, and deposits may thus take place which, coming from heights, may present features of being older than they actually are.

We must, however, not forget that these phenomena are well-known to the geologist, and that we no longer live in the infancy of the science, when surprise was felt that, for instance, in the lower tertiary strata of Paris sea-urchins were found which belong to the chalk, but had been carried off and deposited in the tertiary strata. It cannot, therefore, be denied that alluvial formations still take place in which the products of former and later periods are commingled. Thus a river running through sand-banks belonging to different periods of formation, may mingle portions of these sand-banks in a new alluvial formation; but a minute examination of local conditions will also here lead to a satisfactory answer to questions of this kind. If above such deposits, accumulated in slopes, later deposits are found bearing a well defined periodical character, we may at least assume this much that the lower beds must belong to an older epoch.

The peat moors have contributed much to throw light upon certain periods of civilisation, and have yielded rich and genuine results, but unfortunately they reach only to a certain period. In the oldest period here treated of they were not inhabited, and can, therefore, afford us no clue; but they acted as excellent preservers of objects of later periods. It is true that it may give rise to a source of errors, because heavy objects especially may, in the peat moors, sink so deep as to be believed to have originally belonged to this stratum. But this sinking cannot be appealed to when we come to settlements with piles driven in the subsoil. With regard to an individual tree hollowed out for a boat, like that of the Nidan-moor, which caused M. Franz Maures to sing a song of triumph, there may be doubts which, however, must vanish before universal phenomena. If, therefore, peat moors give, as regards a relative period within which the deposits took place, a satisfactory explanation, I cannot help again drawing attention that in the peat moors alone we must look for the determination of the actual period within which the pile villages existed. Although we all at the present time in botanical and chemical respects very nearly understand the formation of peat, still the question of the growth of peat within a definite time is by no means solved. We neither know generally within what time a stratum of peat one foot thick may grow, nor do we possess any scientific data to calculate the quantity of

growth within a given time of any individual peat moor. That the growth must differ in various moors; that even in a given locality they must have differed during certain periods is easily imaginable; but I repeat that by minute researches in individual peat moors, which are as yet entirely wanting, we may succeed in establishing chronological determinations of the age of pile buildings.

We can only assign to the deposits in the open lakes a secondary rank to those of the peat moors, as regards the certainty of results. Although this kind of fishing is now carried on with the greatest zeal, nay, with a certain passion, it is clearly perceivable that the openness of the lakes must, in such places where settlements existed, have mixed products of different epochs. The celebrated Steinberg of Nidan has existed as a settlement from the stone to the iron period; it is impossible to assign to any object found there a chronological date.

Old graves form another source of our prehistoric knowledge. It will, indeed, have to be acknowledged that in the most primitive times burial places, properly so-called, were unknown, and that care for the dead of relations already indicates a progress of culture even before the development of religious feelings. Burial places with their contents will, therefore, although open to chronological doubts, present to us a greater interest, since the rarity of skulls in other deposits obliges us to seek for them in burial places.

The chronological question is a very important one. That these investigations concern a primeval period, of which even tradition renders no account, is now generally acknowledged; nor can it be contested that the existence of man can be traced at least to an epoch during which extinct species of animals inhabited our continent. But between this starting point and historical times intervene a series of periods or epochs which are to be partly demarcated and chronologically determined. What means do we possess for such a purpose, and what results have we already obtained?

I have already in my *Lectures* indicated that the chronological attempts of Gilleron, Morlot, and Troyon in Switzerland have no pretensions to scientific accuracy, and although this may not altogether apply to the excavations of Hekekyan Bey in Egypt nor to the computations of Dr. Dowler, of New Orleans, even these are open to criticism. These experiments lie rather outside of accurate supervision, and although I am perfectly convinced that the computations to which they lead are not exaggerated, I would not altogether rely upon these foreign results. They constitute, however, at present the only attempts chronologically to determine prehistoric times, and should find grateful acknowledgment, even if unsuccessful.

In the absence of a chronological determination of periods, we must be permitted to follow a method applied to geology. We do not in geology ask how many years have passed since this or that stratum has been formed, and for the simple reason that, even if an answer were possible, the standard at our command is insufficient. What we ask is, whether a stratum has been formed before, after, or simultaneously with another given stratum? To answer this question, we possess the same means as geology; and these must be applied to determine the chronology of prehistoric human epochs. The determination of the relative epochs within which a deposit belonging to prehistoric periods had taken place, belongs exclusively to the geological method; and I do not hesitate to ascribe many of the contradictions in this respect, solely to the ignorance of the respective authors of the proper geological method. In order to show this, let us examine the means applied to geology, and their relative value.

The geological character occupies the first place. Here is a stratum of red sandstone overlying a stratum of grey limestone, and beneath a layer of light grey lower muschelkalk (Wellenkalk). At some distance I find exactly the same red sandstone, in the same relative position between these two limestone strata; surely I cannot hesitate to assume that the two sandstone strata had been deposited at the same time, and at the same relative period, before the light grey "Wellenkalk" and the smoky grey magnesia limestone. The geological character thus partly depends upon the mineralogical property, and partly upon the relative position to other known strata. This character may surely be applied to the determination of the various beds in the diluvium. When Prof. Fuhlrott shows that in a grotto of the Neander valley there exists a lehmbed, containing a number of fossil bones and rolled flints, and that this layer corresponds exactly with the lehmbed in which at some little distance the famous Neander skull has been found, this concordance of the geological character affords, if not absolute certainty, at all events the greatest probability, that the Neander skull belongs to the same period in which the animals lived whose bones were found in the so-called Devil's chamber. There can, therefore, be no doubt, that the geological character has a claim to great importance, provided that it refers to localities at little distances from each other, and manifestly subjected to the same conditions. But the geologist who, from the resemblance of the deposits in the Devil's chamber and the Neander grotto, infers their contemporaneous formation, owing to their being scarcely one kilometer distant from each other, this same geologist would, at all events, hesitate to extend such an opinion to Belgian or Franconian grottos; and for this reason, that experience has taught him that de-

posits of more or less variegated lehm with rolled flints, may have taken place in different localities at different periods. Here, therefore, the geological method finds its limits ; applied to limited spaces, it affords reliable facts, which may lose their value as regards distant regions.

I look upon the palæontological character as affording much greater certainty in regard to the inferences which may be drawn from the organic remains found in prehistoric deposits. Let us explain. The distribution of animals and plants upon the globe is not the effect of accident, but the result of local conditions and historical traditions. These latter afford a reason why, in spite of favourable conditions, certain animal forms have not been developed. I must show by an example what I mean. An experience of three centuries has shown that America is an excellent field for horses ; nevertheless the type of solipeds did not exist in that part before its discovery. The finding of horse bones in an alluvial bed of America, would therefore irresistibly show that this bed has been forming after the introduction of the horse by Europeans ; whilst the original absence of the horse type proves that, at the time when solipeds were developed in the Old World, they had no access to the New World. The extinct species, the emigrated forms, still existing in other parts of the globe, the domestic animals gradually acquired, offer a like certainty in relation to the determination of a relative epoch, as the horse bones in the above example. Their bones found in the deposits, are speaking witnesses that they existed at the time the deposits were forming, and offered, therefore, the surest indication for determining that period.

This applies equally to plants. The changes in the flora of Denmark during the prehistoric period have been accurately traced, and, although computed by the elements of the present flora of Central Europe, they are still determinative for certain epochs. The same may be asserted of the pile-work periods in Switzerland and Italy. Even the relative frequency of many plants, as well as the cultivation of edible plants, partly taken from the primitive flora, partly introduced from other countries, may serve for an accurate determination of definite periods. The continuation of such researches, as pursued by Lartet, Rüttimeyer, Croizet, and Heer, will afford important contributions to the question of determining the periods to which the finds belong.

At present we cannot assign to the anthropological character, namely, the quality of the human bones, and especially of the skull, such importance as regards the determination of age, as possessed by the preceding elements. It certainly seems that already, at the beginning of man's appearance in Central Europe, as far as we know, several cranial types opposed each other, and that several of these

types succeeded each other in the peopling of certain regions. But, with the scanty materials for the craniology of the olden times, and the duration of the various cranial types, which manifests itself by the intermixture of immigrants with previously existing tribes, the examination of a single or of several crania can scarcely lead to a sound inference regarding the relative age of the same. The masterly investigations of His and Rüttimeyer on the Swiss cranial types and intermixtures in the Romanic districts, show what interesting results may be obtained; but they give no accurate information concerning the period in which these cranial types appeared. Let us instance that much talked of Neander skull. Its great antiquity is proved, as already stated, by its geological character. The dispute is whether it be a pathological product, an abnormality produced by premature synostosis, or a normal form. The balance inclines to the latter view, for there are many skulls presenting an early closure of the sutures, without showing the particular form of the Neander skull; and there are also skulls very much approaching the Neander skull, showing no such early closure of the sutures. We therefore assume that the Neander skull belongs to the highest antiquity, and to a peculiar type. Do we, then, say that every cranium of this kind which may be found must belong to that period? By no means. This Neander people have propagated like other peoples; they surely have intermixed more or less with other tribes; and, although it has disappeared as a tribe, be it by gradual extinction or by transformation of its original cranial forms, there have remained remnants which, partly by atavism, have continued down to a recent period.

Finally there comes, so to speak, the industrial character, which is important so far, inasmuch as the introduction of metals, of bronze and iron, must have caused a great revolution in the public and domestic life of man. That this change could only be gradual, that the old implements continued in use for a long time after more perfect instruments were manufactured is clear enough. We have seen even in our rapidly-progressing period that it is perhaps easier to effect a revolution in our government than to change domestic arrangements. If we proceed still further, and endeavour to determine different periods from the polish and workmanship of stone implements, the results will scarcely be in accord with the requirements of accurate investigation. Man with every progress he makes has a desire to render his existence more agreeable. He will therefore at first hammer away and sharpen the edges of his rude hatchets, then polish them; he will then with this knife, work, carve horn, and he will do so in proportion as his struggle for existence leaves him time for apparently useless occupations. But as in our present civilisation epoch there are many

regions where man requires his whole time for the acquirement of the necessities of existence, so must it in greater degree have been in primitive times; and thus it might have come to pass, that whilst in one district civilisation had sufficiently progressed for the manufacture of more perfect implements, those of adjoining districts were still in a rudimentary condition. Do we not possess an instance of this difference in the settlements of Concise on the Neufchatel lake and the implements of Middle and Eastern Switzerland? If these settlements were overlying each other, if above the rude implements of Robenhause were found the neatly worked implements of Concise, it would at once have been inferred that we had before us two successive culture epochs. Nevertheless these settlements might very easily have co-existed, although in one civilisation appears to have made greater progress than in the other.

In shortly recapitulating what we have said concerning the method to be applied for solving the problems in question, we come to this general inference; that no single character possesses an absolute value, and that only by the combination of all, with special reference to circumstantial conditions and limited localities, valid conclusions may be arrived at. When the facts shall have accumulated to such an extent that they embrace countries hitherto unexplored, and of which some had in certain respects attained degrees of civilisation before the already explored regions, then shall we be able to penetrate deeper into the mysteries of the primæval history of our species.

We must now be permitted to enter upon the results hitherto obtained. If partly in contradiction with the views we have advanced, we still divide them into sharply demarcated periods, it is not because we believe in no transitions and intermediate periods, but simply from the necessity of succession and separation.

If, then, we speak of cave-bear or reindeer periods, we protest at the outset against the assumption that the first reindeer was born on the day the last cave-bear died. We are permitted to assume that the form of the cave-bear has been gradually developed into that of the common brown bear; that the reindeer, which was partly contemporaneous with the cave-bear, and acquired greater importance for man, disappeared, like the cave-bear, but gradually, and retired very slowly from the south to its present habitation. These epochs we denominate, according to the chief character they represent, transition periods: we acknowledge their importance as forming the central reflex of a long period.

The oldest traces of man, if they can be attributed to him, have been laid bare by M. Desnoyers in the sand of Saint-Prest, near Chartres. This sand-pit is situated on the banks of the Eure,

covered above by lehm of considerable thickness ; then come beds of rolled flints and rounded blocks of sandstone, pudding-stone, white sand, mingled with rolled flints ; then very fine sand resting upon chalk. This mode of stratification, that of the sand deposits in which the bones of large mammals are found, is unquestionably older than the diluvial formations occurring in this country or in other districts of France, and that they belong to the upper tertiary strata found in the valley of the Arno, in France and England. The Norwich crag and the deposits of Grays-Thurrock and Ilford in the Thames valley, which at all events were formed before the glacial period, belong to the same period. In the known Norfolk cliffs, near Cromer, in the so-called forest-bed, and unquestionably underlying the glacial mud, there are found, according to Lyell, the following plants as determined by Heer: *Pinus sylvestris*, *Pinus Abies*, *Taxus baccata*, *Prunus spinosa*, *Menyanthes trifoliata*, *Nymphaea alba*, *Nuphar luteum*, *Ceratophyllum nemorosum*, *Potamogeton*, *Alnus*, and *Quercus*, and bones of the following animals, as determined by Falconer, Owen, and others: *Elephas meridionalis*, *Elephas primigenius*, *Elephas antiquus*, *Rhinoceros Etruscus*, *Hippopotamus* (*major*?) *Sus*, *Equus* (*fossilis*?), *Bos*, *Cervus capreolus* (?), and other species of *Cervus*, *Arvicola amphibia*, *Castor trogontherium*, *Castor Europæus*, and *Cetacea*. In the valley of the Arno were found, *Elephas meridionalis*, *Rhinoceros leptorhinus*, *Hippopotamus major*, large oxen, stags, and one horse, all differing from the species found in the alluvium. At St.-Prest were found, *Elephas meridionalis*, *Rhinoceros leptorhinus*, *Hippopotamus major*, several species of deer, one of which, on account of its resemblance to the large Irish deer, was called *Megaceros carnutorum*, whilst the teeth of the other species of deer quite resembled those found in the Arno valley ; further, one horse and one species of ox, corresponding with those found in the Arno valley, and also an extinct species of rodent of the size of the beaver, called by Laugel *Conodontes Boisviletti* ; there obtains, therefore, despite of the difference in localities, a concordance between the deposits, so that, on geological principles, the contemporaneity of these deposits in England, France and Italy is undoubted. Whether these deposits are belonging to the upper tertiary, so-called pliocene, or to the diluvial formation, is a purely theoretical and idle question, inasmuch as the division of the formations usually adopted in geology are purely arbitrary. But the relative age of these deposits is sharply demarcated. The deposits in Norfolk and at Saint-Prest prove that they have unquestionably taken place before the glacial period, and before such formations in which the later contemporaries of man—the cave-bear, the mammoth and *Rhinoceros leptorhinus*—have left us their bones.

If the proofs for the existence of man were as convincing as those for the age of these animals, no one could doubt of his great antiquity. But these proofs only consist of carvings, lines and stripes, certainly not unlike those found in caves and kitchen middens carved on the bones with flint knives. The crania of the large deer are almost all at the root of the antlers, broken as from a blow on the frontal bones, in the same way as Steenstrup has found in certain deposits, and as is still practised by the Laplanders. The antlers are broken into two pieces, apt to form handles of implements. The incisions are specially marked on the long bones of the elephant, but also on those of the rhinoceros and hippopotamus. That these incisions existed upon the bones before they were covered with sand, is proved by the sand being fixed in the incision, so as to refute the objection raised at the Ecole des Mines of Paris, that these incisions were caused by scratching the bones with iron instruments. Besides these incisions, there are seen in these bones other light scratches, which Desnoyers attributes to the friction of flints.

Whosoever has once seen bones from caves, pile works and kitchen middens, from which the flesh and the tendons had been removed by stone-knives, he cannot fail to mark the resemblance to the incisions discovered by Desnoyers. The experiments suggested by Lyell have however established that similar incisions might be produced by large rodents, and as such rodents are not altogether absent in Saint-Prest, the discoveries of Desnoyers have lost much of their validity in relation to the existence of man in the tertiary period. It must certainly be added that prejudice only, and not a rational contemplation of nature, can adduce well grounded reason against the existence of man in that remote period. If man at this day can inhabit the same countries, by the side of the elephant, the rhinoceros, hippopotamus and similar beasts, why should he not at a remote period have found the condition of his existence by the side of these animals? This epoch of the primeval period, if it should be confirmed, might be called the epoch of the southern elephant (*Elephas meridionalis*).

Since the first undoubted traces of man consist of rude flint implements, so-called hatchets and knives, and later of bones, found in the diluvium of the Somme valley, we shall treat of these first. These kinds of deposits may be designated as the epoch of the cave-bear and the mammoth.

There is no doubt that all such deposits of Central Europe, in which whole skeletons and limbs of the mammoth and the fossil rhinoceros are found, correspond with that epoch in which, around the Alps, the glaciers began to retire. But if this be a fact, doubts certainly may arise whether these diluvial formations, in which flint

implements are found, really belong to the mammoth beds, or whether the teeth of the pachydermata, and other bones found in them, might not have been carried away by the waters from other localities and deposited in the spots where they are found. The geological character was therefore doubted, because it was assumed that the diluvium in which the implements were found had been produced from the destruction of earlier mammoth beds, and was consequently of a later origin. But as the diluvial formations in the river valleys present the general character of stream formations, as they without exception consist of rolled flints, sand and gravel, and present that confused stratification peculiar to river deposits, this view seemed plausible. The thickness of more recent strata which cover the sandbanks containing flint implements could not well be invoked as a proof for their age, it being known that rivers frequently change their beds, and may within a few centuries in some spots accumulate deposits, whilst in other places they carry off huge masses in order to redeposit them lower down their banks.

The geologists who had studied the superficial formations, especially of France, had a full right to invoke the parallelism of the strata; they called to mind that the various deposits in adjoining regions presented the same succession as regards the composition of the banks of variously formed rolled flints. But all these considerations afforded only probability, not certainty. An Italian naturalist, B. Gastaldi, had therefore a perfect right to maintain that the finding of flint hatchets associated with mammoth teeth does not prove the contemporaneity of these deposits, which can only be proved if, as in Italy, whole skeletons, or at least all the bones composing them, are found in one spot. Single teeth and other bones may, like rolled flints, be carried off and deposited elsewhere by streams, whilst the deposit of a skeleton or bones in their relative position proved at least that the whole body, kept together by skin, muscles, and sinews, had been deposited. It did not occur to B. Gastaldi that when he raised this objection it had already been refuted as regards the Somme valley. These deposits, at Cuvier's time, already passed for the richest localities in which bones of the mammoth and fossil rhinoceros were met with; and more than thirty years ago, a Monsieur Baillon has, in the sands of Menchecourt, which yielded many stone hatchets, found a perfect hind foot of the rhinoceros, the bones of which were found in their normal position, whence Baillon justly inferred that these bones, when they were deposited, were still united by muscles and tendons. The skeleton of the whole animal to which this foot belonged was at a short distance from it. At the time when this discovery was made and published,

the existence of hatchets in the same bed was not even anticipated, nor its relation to later discoveries.

Very recently a perfectly valid confirmation of this deposit was found on the banks of the Manzanares at Madrid, in the vicinity of San Pedro, by Casiano de Prado. The stratification is as follows. Immediately beneath the vegetable earth lies a confused mass of sand and rubbish, with few rolled fragments, of the thickness of 7 mètres and 80 centimètres, overlying a lehm stratum 30 centimètres in thickness throughout. Then comes a layer of sandy lehm 70 centimètres thick, in which, in the year 1850, was found an almost perfect skeleton of an elephant, the bones of which were partly in their relative positions. About four or five years ago were found, in the same stratum, bones of a mammoth in a similar condition. There can, therefore, be no doubt that the waters which deposited this bed had carried off the whole bodies of these elephants, and that consequently the bed was deposited at the period when elephants lived in the vicinity of Madrid. Under this stratum was found a mass of rolled stones three mètres in thickness from the underlying tertiary formation, in which were found flint hatchets resembling those of the Somme valley, being neither polished nor sharpened, but solely formed of fractured flint lumps. This discovery removed every doubt. We might, from the overlying strata infer that the man who made the flint hatchets existed even before the mammoth, were it not that we find everywhere proofs that the beds which, beneath present rolled flints, but above a finer material, have been formed in the same epoch, although in different successive times.

The geological character of this first epoch being determined, the palæontological character is no less so. It is unnecessary to dwell long upon this. In my *Lectures*, I have stated that the mammoth, the fossil rhinoceros, the hippopotamus, the fossil horse, the large beaver, characterise these beds; and that, besides them, several species of deer, oxen, goats, and sheep, are not rare in the diluvial formations; while the cave animals, such as bear, hyæna, tiger, and leopard, belonging to extinct animals, are rarely found in the diluvium, but mostly in caves. Doubts might certainly arise as regards the contemporaneity of these deposits, were it not that in the diluvium large bones of carnivora have been found, whilst in the caves the bones of pachydermata and ruminants were met with, which had been evidently imported there by beasts of prey, as the bones still bear evidence of the traces of their formidable teeth.*

* In a little work by M. Troyon (*Recherches sur l'âge de pierre quaternaire*, etc.) which has just reached me, I find a note, according to which Lartet still divides the first period into four different epochs—that of the cave-bear, of

I must at the same time repeat, that many of the extinct species which we find in Central Europe, have gradually retired to the north, where probably they existed longer than in Central Europe ; whilst other animals, like the reindeer, the elk, the aurochs, the musk-ox, the gulo, the myoxus, the marmot, the ibex, and the chamois, have partly retired to the north, and partly to the mountains, where they still live ; others again, like the stag, the wolf, several species of oxen and swine, have remained, and live among us either in a wild or domesticated condition. Whilst these facts prove that the epochs of the cave-bear and the mammoth were richer in mammals than the present epoch, we find, on the other hand, that the gradual extinction and retirement of the various species within an epoch of long duration, afford us the means of separating individual sections of time. The finding of remains of extinct animals in Central Europe, will thus enable us to separate the earliest epoch, that of the mammoth and cave-bear.

On searching for anthropological character in the deposits of the diluvium, it is reduced to the celebrated jaw of Moulin-Quignon, and to the cranium latterly found there, the description of which we have yet to expect. The other scanty remains of bones and teeth, which are found here and there, do not possess any importance as regards the determination of race.

The industrial character is confined to the various flint implements. Despite many objections, they have proved themselves works of art. They show everywhere the same character, presenting no traces of polish or grinding, rudely struck off from flints, and have been further worked according to the form given them by accident or a skilful direction of the blow. But heaven forbid that we should, from this the mammoth, of the reindeer, and of the aurochs ; a division which Lartet first proposed in his description of the grotto of Aurignac. I must confess not to understand the grounds upon which this division rests. Cave-bear and mammoth have always been found associated. Schmerling enumerates the mammoth and the rhinoceros among the remains of the Belgian bone caves. There is no evidence that either of these animals appeared successively, or that one became extinct before the other. The finding of whole mammoths and rhinoceros in the icy Siberian diluvium, cannot be adduced as proof that they became extinct later. We should probably in our region have found, instead of skeletons, the entire bodies of elephants, if here the ice had increased instead of decreasing. This also applies to the distinction of the two other epochs, those of the reindeer and the aurochs. Both occur with the cave-bear and the mammoth (Schmerling found reindeer antlers in the Belgian caves). Both retired to the north, and have, like the human species, outlived their former contemporaries. The aurochs seems in France to have lived even later than the reindeer ; but we know of no facts affording a satisfactory proof that the aurochs, after the retirement of the reindeer, characterises a special prehistoric epoch.

circumstance, conclude that all such rudely worked flint implements, or their cast away nuclei, belong on this sole ground to the first epoch. Already, in the earliest period of human society, there must have obtained a certain division of labour; and many spots where many implements were found are justly looked upon as manufactories where the stonemen, as we may call them, first rudely worked suitable flints, in order subsequently, perhaps, to polish and grind them with ears for handles, etc. Where other characters for determining the age are wanting, we are perfectly justified in suspending our judgment, as regards the antiquity both of the rude implements and of the nuclei from which they were struck off, until other proofs are forthcoming. As an instance, I may mention the large flint nuclei, the so-called butterstones of Grand Pressigny, which have given rise to so lively a discussion between some members of the Academy and M. de Mortillet. These large blocks, of peculiar grain and quality, from which long flint knives had evidently been struck off, of which some have recently been found under the vegetable earth, were by some members looked upon as the remnants of a large manufactory of gun-flints, which had existed on that spot within a comparatively recent time. This assertion was successfully refuted by competent judges, such as Penguilly l'Haridon, director of the Paris artillery museum, and Mr. John Evans, both on historical and manufacturing grounds. I have myself, after inspecting the fragments collected by M. de Mortillet, become convinced that the fabrication of gun-flints by means of steel instruments, which, from the invention of the flint-lock down to the introduction of percussion-caps, obtained in France and England, never left remnants like these butterstones. The latter are frequently more than a foot in length, and consist of a peculiar coarse-grained flint with a waxy lustre, and was from its toughness unfit for gun-flints. It has, moreover, been shewn from the archives that a gun-flint manufactory had never existed near Pressigny. Such butterstones have, moreover, frequently been found in walls erected long before the use of gun-flints. But, whilst all this militates against the modern origin of these flint knives, of which many are found in the vicinity, it must, on the other hand, be admitted that the position in which they are found affords no satisfactory proof that these remnants of a flint manufactory belong to the mammoth epoch. The circumstance that some polished fragments, as stated by Evans, were found in the vicinity, rather proves that they belong to a later period.

I merely mention this instance, to show how cautious we should be positively to determine the age from few facts, and a single character not universally valid. A flint knife, intended to be polished, must necessarily be first struck off; and the find of such flakes, as

well as their nuclei, does not prove that they were not subsequently polished. I shall, therefore, say here no more of the many flint implements found in different spots, partly on the surface, or in the vegetable earth, or in sand and gravel beds. Further observation may, perhaps, by the addition of other more positive characters, assign to them a definite place in history ; but, until such characters are found, we should take all these finds *ad referendum*, and rather confess our ignorance, than enter into discussion on subjects which as yet have acquired no scientific certainty.

[*To be continued.*]

THE FOSSIL HUMAN JAW FROM SUFFOLK.

By ROBERT H. COLLYER, M.D.

At the instigation of Vice-Admiral Sir Edward Belcher, C.B., I was induced to exhibit to the Ethnological Society of London in April 1863, a fossil or coprolite human jaw, which was found by the workers employed in excavating coprolites near Ipswich, Suffolk.

The jaw was purchased from the finder by Mr. John Taylor, druggist, of Ipswich, for the sum of 2*s.* 6*d.*, who called my attention to it at the time, 1855. A small portion of the bone was filed off, which, on the application of heat, emitted a slight odour peculiar to burnt gelatine, showing conclusively that the whole of the animal matters of the bone had not been fossilised. As this, to my mind, is no criterion that the bone did not belong to a period coeval with extinct mammals, I was very anxious to become the possessor of this "coprolite jaw." The specific gravity is much greater than that of a recent bone of the like size, it being infiltrated throughout its entirety with oxide of iron, and the surface presents peculiar metallic lustre. The condyloid processes are one-and-half inches distant from the alæ, and from the condyles to the posterior angular protuberance it recedes full 45°, and the same receding angle is shown from the mentum prominens to the alveolar processes of the place formerly occupied by the incisor teeth ; the bone probably was that of a female of small stature, and as the alveolar portion of the jaw, where the incisor teeth were inserted, is closed, and the molar teeth ground down, I am of opinion that "the human" tore the food prior to mastication by the molars. The cranium of this jaw must have been very small, with a contracted low frontal region. I have now every reason to believe that this "coprolite jaw" is the oldest relic of the human animal in existence, as its

condition corresponds in every respect with the coprolites in whose contact it was found. Mr. Taylor presented the "coprolite jaw" to Sir Thomas Beaver, Bart., of Norfolk, in whose possession it remained until March 1857, when he kindly forwarded it to me. I took it forthwith to my friend Professor Quekett, who was then curator of the College of Surgeons, who after having carefully examined it, said, "this is, indeed, a curious bone ; it belonged to a very low race ; I would wish Mr. Owen, of the British Museum, to see it." I accordingly took it to Professor Owen, who kept it for two years without coming to any *expressed* opinion. In 1859 I took it to Mr. Prestwich.

In April 1863, in consequence of Sir Charles Lyell's work "On the Antiquity of Man," I wrote to Professor Huxley a short history of the "coprolite jaw." In the meantime Sir E. Belcher called on me, stating that Mr. Crawford was going to read a paper on "the primitive races of mankind" at the Ethnological Society, and urged me to accompany him, and bring the "coprolite jaw."

After the paper, a discussion took place, in which Sir C. Lyell, Sir Roderick Murchison, and Professor Busk took part. At this time the whole scientific world was very much interested in the discovery of the "Abbeville jaw" by M. Boucher de Perthes in the drift of the Somme Valley, in contact with flint haches or langues de chats.

Professor Busk, whom I had not the pleasure of knowing at the time, pronounced the "coprolite jaw" in the most summary manner to be "the jaw of some old woman, perhaps from some Roman burial ground," and also said that the "Abbeville jaw" had been proved to be a deception practised by the workmen on M. Boucher de Perthes. Everyone present at this juncture looked on me as an impostor or a fool for having had the rank temerity to have dared to foster on such authorities and experts "my jaw," without prestige or unheralded by fame. I, however, said mentally, this "old woman's jaw" shall "be heard;" but to vindicate the facts at that moment was out of the question. The tide had turned against me. I enjoyed a private laugh at the perversity of even the highest apostles of the science of geology, hitherto proscribed by the bigotted and intolerant. I was conscious of the genuineness of the "coprolite jaw."

Next morning Professor Huxley called at my house and pronounced the "coprolite jaw" to be a "most extraordinary specimen." I gave it to him, so that a careful examination should be made, and received the following :—

"Royal School of Mines, Jermyn Street, May 2, 1863.

"MY DEAR SIR,—My friend Mr. Busk has taken your remarkable specimen in hand, and I will ask him to inform you as to the conclusions to which he may arrive. No doubt, as I stated when you were

so good as to show me the jaw, it has some peculiar characters, but they do not appear to me in themselves adequate to lead me to ascribe the bone to an extinct or aberrant race of mankind, and the condition of the bone is not such as I should expect a crag fossil to be.

"I am, dear Sir, faithfully yours,

"T. H. HUXLEY.

"Dr. Collyer."

The "Abbeville jaw" controversy enlisted at this moment all the most eminent anthropologists of Europe. The principal disputants were, in England, Messrs. Hugh Falconer, Busk, Prestwich, and Evans; in France, MM. Quatrefages, Delesse, Desnoyers, Lartet, Gaudry, Lyman, Pictet, and Boucher de Perthes. Messrs. Prestwich and Evans undertook to show that the flint implements were of modern fabrication. Messrs. Falconer and Busk, that the "Abbeville jaw" contained so large a proportion of animal matter, as to pronounce the bone to be comparatively modern when compared with *the drift* with which it was alleged to have been found.

The "coprolite jaw" was considered, both by Drs. Falconer and Busk, to be of sufficient importance to be taken by them to Paris, so as to show the French savans that a human jaw favourably situated could be infiltrated with a metallic substance; and in the reprint of a pamphlet from the *Natural History Review*, July 1863:—

"An account of the proceedings of the late Conference held in France to inquire into the circumstances attendant on the asserted discovery of a human jaw in the gravel at Moulin Quignon near Abbeville, with notes by H. Falconer, M.D.; George Busk, F.R.S.; W. B. Carpenter, M.D., Vice-President of the Royal Society."

At note 37, in referring to the "coprolite jaw," I find these words:—

"The specimen is a very remarkable lower jaw of a human subject now belonging to Dr. Robert H. Collyer. It is reputed to have been found in the gravel heap of a coprolite pit near Ipswich; although retaining a portion of its gelatine, it is infiltrated through and through with iron. The Haversian cords are filled with red oxide, and a section of the fang shows that the ivory is partly infiltrated with the same metal. This specimen proves that the human jaw, if favourably placed, is equally susceptible of impregnation with metallic matter as the bones of any other mammal.

"(Signed)

"H. FALCONER,

"G. BUSK."

The term fossil has been used to designate a total conversion of a substance into mineral matter. Now, it is exactly in the correct use of this word that the whole question rests. I have in my possession the bone of a deer, which was found in the diluvium on the bare rock, twenty-three feet below the surface, with the bones of the mastodon,

but the presence of gelatine is at once discovered on submitting a portion of the bone to the action of fire ; it is, therefore, not an infallible test as to the presumed age of a bone that it contains or not a portion of its gelatine.

It now appears that the preservation of the gelatine itself, or its destruction, depends in a great measure in accordance with the earthy or metallic matter with which the bone happens to be in contact. I have found portions of the same bone perfectly fossilised, whilst other parts indicated the presence of gelatine. It is now admitted, as the result of experiment, that bones of recent animals, introduced into old deposits, may assume in a comparative short time the conditions of the bone of extinct animals ; while on the other hand, the undoubted fossil bones of extinct animals, may, under certain conditions, present a large amount of animal matter. In the Museum of Natural History, Philadelphia, the bones of the megalonyx and the extinct peccary remain in a condition nearly unchanged. Very little of the gelatine has been lost, nor a particle of the mineral matter added.

Many of the human bones found by Dr. Lund in the ossiferous caves of Brazil were petrified in the same manner, and offered the same metallic break, and were penetrated with the same ferruginous matter as the bones of extinct animals with which they were found associated. The same as the "coprolite jaw" was impregnated, like the coprolites, with which it was found. Sir C. Lyell says, in his *Elements of Geology*, 1852 :—

"The large amount of animal matter in the tusks, teeth, and bones of some of these fossil mammalia is truly astonishing ; it amounts, in some cases, as Dr. Jackson has ascertained by analysis, to be 27 per cent., so that when all the earthy ingredients are removed by acids the form of the bone remains perfect, and the mass of animal matter is almost as firm as a recent bone subjected to similar treatment."

Who would infer, because of the existence of the animal matter, that the bones had been recently buried or were comparatively modern ? "These fossil mammalia" inhabited the earth's surface coeval with a human being whose type was suited to the then state of things. Prior to the last great convulsion or catastrophe which entirely removed all life, the gelatine in the bones of the extinct mastodon, megatherium, megalonyx, glyptodon, or mylodon, is not adduced as an argument that these bones are of recent date, therefore, why should it be made use of when applied to the human bone ?

Is the structure of one bone in any wise different from the other, whether of the mastodon or of a man, that, under like conditions, it would not present the like infiltration of metallic matter entirely or in part ? It occurs to me that, when the difference is made, the disputant is sacrificing science to preconceived notions and prejudices.

M. Quatrefages says :—

“The presence of gelatine, if I am not mistaken, has been demonstrated in various bones, properly so-called belonging to fossils, much more ancient than the diluvium can be by any possibility.”

It is only within a few years that the bones of a fossil monkey were discovered.

Sir C. Lyell says :—

“At Kyson, a few miles east of Woodbridge, a bed of eocene clay twelve feet thick underlies the red crag. Beneath it is a deposit of yellow and white sand of considerable interest in consequence of many peculiar fossils contained in it. Its geological position is probably the lowest part of the London clay proper. In this sand has been found the *first example* of a fossil quadrumanous animal discovered in Great Britain, namely the teeth and part of a jaw, shown by Mr. Owen to belong to a monkey of the genus *Macacus*. It was not until 1836 that the existence of any fossil quadrumana had been brought to light.”*

Now comes the mental struggle—the monkey having been found as existing at a prior condition to that which now exists of the earth—why should not man?

The question is severe, but must be put. What are the conditions which admit of the monkey and mammals enjoying life that would not also equally admit of man being an inhabitant of the earth at a corresponding period?

Perhaps man, in his highest order of development, could not then have flourished; it is easy to understand a state of the earth congenial to purely animal existence, though not fitted to mental functions as we now manifest them.

M. Pictet says, with regard to fossil man :—

“The question may be put—At what period has man appeared upon the earth? What was the geological state of the surface of the earth? What animals lived at that period?”

A precise answer to these questions would be all that could be desired. We cannot arrive at that point, though we are much nearer than we appeared some years ago. When the earth was sufficiently cooled vegetation was produced on the emerged continents, after which the first zoological creation took place, and animals, differing from most of those which now exist, spread over the face of the earth.

Elevations and depressions modified the surface of the earth, and either by convulsions similar to those which had occasioned them, or by organic laws governing the world and not yet understood, the beings then living disappeared to be replaced by others. These phenomena,

* Prof. Owen has since admitted this “monkey” to be actually a small pachyderm, allied to the pig (*Hyracotherium*).—EDITOR.

or something like them, have occurred repeatedly, and thus numerous populations have succeeded each other. Each of these has left its remains or vestiges in strata formed at different periods. These remains are "the medals of creation," which, with data furnished by geology, enable us to read the past history of the globe—the existence of at least thirty different epochs, more or less distinct, and in each we recognise a different *Flora* or *Fauna*. The most vivid imagination cannot conceive the vast ages or eras of time requisite for the succession of these phenomena in which all these populations were developed in particular zones.

As regards the history of man, we need not occupy ourselves with these remote periods, we may take as a starting point the formation of the deposits of the tertiary period. These deposits, known as the Pliocene, are those in which for the first time, the mammal population contain the remains of such species as are *similar* to those now existing.

At the termination of the tertiary period commenced the diluvium. Now it was that we find the remains of animals similar to those which now exist, and some which are extinct. Did man live contemporaneous with the cave bear, the mammoth, and others like mammals?

The laws of the universe have never changed. The remotest star or sun, which is a million times the size of our planet, is governed by the identical laws which regulate our condition. Uniformity and consistence in the operations of nature show that every form of matter under like circumstances will re-exist, whether it be a crystal, a plant, or a mammoth.

The many alternate contractions, upheavings, and vast dismemberments of the entire earth's surface, having ages of comparative rest intervening in each of these epochs, the various conditions of vegetable and animal existence have been developed. Should the world tomorrow undergo another entire disrupture so as again to destroy all life, the same inherent power, incidental to its particular condition, would again people the globe with the various races, each compatible to the zones especially fitted for their existence.

How many times the earth has been previously to the present inhabited and repopled, it is impossible to even form a conjecture. It, however, may be admitted as a fact that it only requires a specific condition whether electrical, caloric, or chemical, we are sure to have a definite effect. The great convulsions of the world are accompanied by conditions perfectly adequate to produce every form of life with which we are cognisant. No one who is not intellectually blind, but must have observed the remarkable adaptation to locality which every form of life possesses, from the minutest animalculæ, 187 millions of whom only weigh one grain, to the development of the highest form of life, is exhibited in man of the temperate zones.

The discovery of human fossils has now become so frequent that no one who has taken the trouble to carefully investigate the facts will attempt to dispute that man did really exist at an ante-historic period, and coeval with extinct mammals.

My dear friend Dr. Morton of Philadelphia, said, in 1850 :—

“There is no good reason for doubting the existence of man in the fossil state. We have already several well authenticated cases, and we are hourly looking for more, even from the upper stratified rocks. Why may we not discover them in the tertiary deposits, and in the cretaceous beds, or even in the oolites. Contrary to all preconceived opinions, the latter strata have already afforded the remains of several marsupial animals, which have surprised geologists almost as much as if they discovered the bones of man himself.”

A fossil human skeleton is in the museum at Quebec ; it was dug out of the solid schist rock in making the foundations for the Citadel. This specimen I have examined, and it corresponds in structure to the fossil bones of extinct mammalia.

To revert to the “coprolite jaw,” it was found under circumstances which do not admit of a doubt, but no artificial means could have been employed so as to cause the permeation of the oxide of iron ; besides the other peculiarities of the jaw itself, all go to prove most conclusively to my mind that it belonged to a prehistoric human being, whose head was swallowed by a huge carnivore, and the jaw was excremented with other matters, the ducts of digestion.

The coprolites are unquestionably the excrementary deposition of animals who lived on sharks and whales, as we discover immense quantities of the teeth of the former and the bones of the ear of the latter, besides undigested bones of fish are discovered in many of the coprolites.

The “old woman’s jaw” has had her revenge.

With true philosophic spirit, and consistent with the high character of a gentleman in the strictest sense, Professor Busk sent me the following :—

“15, Harley Street, August 19th, 1863.

“MY DEAR SIR,—I have received the jaw from Dr. Falconer, and now forward it to you, with many thanks for the liberal use you have allowed us to make of it. I hope you will not consider that it has been much injured by the rough treatment we have submitted it to. In all essential respects it is much as it was, and it has been a great satisfaction to be able to compare its interior as well as exterior with other bones. Having thus had an opportunity of fully examining the bone, I have considerably modified the opinion I hastily expressed at the Ethnological Society. That is to say, it is *very different* from an ordinary churchyard bone, though, of course, without any relation as regards age with the fossil bones of the coprolite beds ; it is of *very*

great antiquity, and it is peculiarly remarkable for the great amount of iron it contains, though still retaining about 8 per cent. of animal matter. On the whole, therefore, though not of the portentous antiquity it would have claimed, had it been cotemporary of *Elephas meridionalis*, the "coprolite jaw" fairly claims a considerable age, and I, for one, am much obliged to you for having brought it under notice, and for the liberal way in which you have allowed it to be examined.

"Believe me, very truly,

"GEORGE BUSK.

"R. H. Collyer, Esq., M.D."

Nothing more could be expected from Professor Busk; when he says the coprolite jaw is of very great antiquity, he admits the whole question.

I have now the pleasure to add a letter from Mr. John Taylor, which completes the history of this really extraordinary specimen:—

"97, Fore Street, Ipswich, November 13th, 1866.

"DEAR DOCTOR,—I was very agreeably surprised to hear from you this morning. If I had known you were residing in Boulogne-sur-Mer, and had possession of 'the jaw,' I would have called upon you on my way to the Pyrenees last year, in order to have had another good look at the bone, which certainly must be of the same age as the coprolite in which it was found.

"The history of the matter, so far as I know, is very short.

"From what I could learn at the time, from the agricultural labourer of whom I bought it, it came from the coprolite pit on the farm of Mr. Laws at Foxhall, about four miles from Ipswich, and was thrown out at Mr. Packard's manure factory with the coprolite from a cart or tumbril, and from thence was brought to me to secure a glass of beer. I had possession of it for near three months, when Sir Thos. Beaver (whose son was then living with me) called on me, and seeing that he exhibited great interest in the inquiry as to the antiquity of the jaw, I had the pleasure of presenting him with it.

"There is no doubt the bone was obtained at some depth,* as I know the pit had been open for a considerable time when it was found.

"Having given you all the information I possess, I shall be anxious to hear the result of the investigation.

"The account of the 'Abbeville jaw' appeared in the *Times*, and I suppose yours of this jaw will also.

"Yours very truly,

"J. TAYLOR.

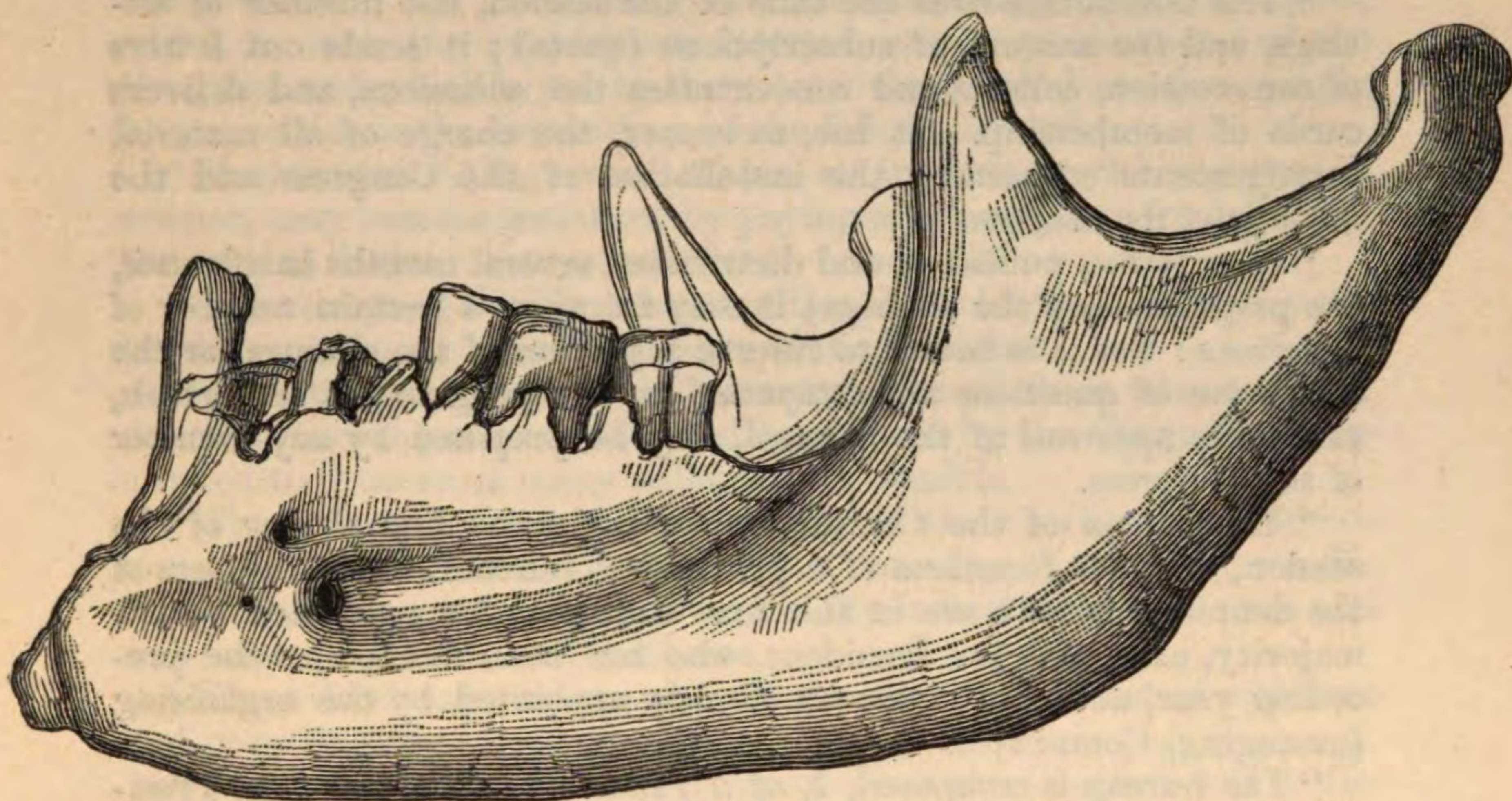
"Dr. Collyer."

It will be observed that Foxhall, where the "coprolite jaw" was found, is a few miles from Kyson, where Sir C. Lyell says the first example of a fossil quadrumanous animal was discovered in Great Britain,

* I visited the coprolite pit in 1855, immediately after it was found, and ascertained that it had been worked for over a year. The place from which "the jaw" in all probability came, was sixteen feet below the surface.

namely, the teeth and part of the jaw of a monkey, of the genus *Macacus*. The eocene strata, in the vicinity of Woodbridge and Ipswich, are exceedingly rich in animal remains of a prehistoric condition of the world. I see no reason whatever for doubting the antiquity of the "coprolite jaw."

These facts should at least make the sceptical pause, on the probability that man may be no exception to the rest of creation.



THE ANTHROPOLOGICAL CONGRESS OF 1867.

IN the year 1865, a Congress for Archaic Anthropology was held at La Spezzia, and in 1866 at Neufchâtel. This year it is to be held at Paris, on the 17th of August. The following are the rules of the Congress:—

“The Congress cannot be held twice successively in the same country.

“All persons desirous of becoming members, who have paid their annual subscription (quota) are entitled to receive the publications of the Congress.

“At the end of each session, the Congress decides upon the locality where the next meeting is to take place; it also elects from the *savants* resident in the country fixed upon, the President of the ensuing session. It also elects several other *savants*, who are charged to

constitute, under the direction of the President, an organising (managing) Committee.

"The organising (managing) Committee are at liberty to add other *savants* of their own country to their number ; they, moreover, have to request the co-operation of such foreign *savants* as may appear to them likely to obtain the greatest number of adhesions in favour of the Congress. These take the title of corresponding members of the Committee.

"The Committee fixes the time of the session, the number of sittings, and the amount of subscriptions (quota) ; it sends out letters of convocation, collects and concentrates the adhesions, and delivers cards of membership. It has, moreover, the charge of all material arrangements concerning the installation of the Congress and the holding of its sittings.

"It prepares, publishes, and distributes, several months in advance, the programme of the sittings ; it may fix upon a certain number of questions ; but it is bound to reserve a portion of the sittings for the discussion of questions not comprised in the programme, and which, under the approval of the Council, may be proposed by any member of the Congress.

"The bureau of the Committee fulfils, in the first sitting of the session, only the functions of a provisional bureau. The members of the definitive bureau are in this first sitting to be appointed by the majority, excepting the President, who has been elected in the preceding year, and the Treasurer, already appointed by the organising (managing) Committee.

"The bureau is composed, 1, of a President ; 2, of six Vice-Presidents, of whom two at least must be residents ; 3, of a General Secretary ; 4, of four Secretaries ; 5, of a Treasurer.

"The Council is composed, 1, of the members of the definitive bureau ; 2, of six elected by ballot from the list. Members of the Council by right are, 1, the four foundation members of the Congress of La Spezzia ; 2, all ex-Presidents, who have conserved their titles of honorary Presidents. Those members of the organising (managing) Committee who belong to neither of the preceding categories, assist at the meetings of the Council, and have a consulting vote.

"All demands concerning communications arriving during the session, and all claims, are submitted to the Council, whose decision is final. The Council is, conformably to article iv, charged to put to the vote of the Congress, 1, the designation of the locality where the next session is to be held ; 2, the nomination of the President, and the members of the organising (managing) Committee of the next Congress.

"In the second sitting, the Congress nominates, on the proposition of the Council, a Publishing Committee, of which the General Secretary is President by right, and of which the Treasurer is also a member. This Committee, entirely composed of national members, has also the charge of settling the accounts.

"The surplus, if any, is to be placed to the credit of the next following session.

"The objects offered to the Congress during the session and the whole of the correspondence, belong to the country where the session is held. Their destination is determined by the Council.

"The Committee of each session establish special regulations concerning all matters not specified in the preceding general regulations.

"Every proposition tending to modify the general regulations, must be signed by, at least, ten members; it must be placed upon the table, during the session, and submitted to the examination of the Council. The latter, after due deliberation, prepares a report, which is, with the proposition, inserted in the publications of the Congress, and which is put to the vote, without any discussion, simply by yes or no, in the first sitting of the following session.

"*Programme.*—All persons taking an interest in the progress of science, may become members by paying a subscription fixed for this year at ten francs.

"The receipt of the Treasurer entitles the holder to a card of membership, and to all the publications of the Congress.

"The correspondents of the Committee and all those who earnestly desire the development of the studies pursued by the Congress are requested to procure as many adherents as possible.

"The adherents are requested to send at their earliest convenience the amount of their subscription to the Treasurer of the Congress, M. E. Collomb, Rue de Madame, 26, carefully indicating their names and surnames, profession, and residence.

"These details are indispensable for making up the list of members and preparing the cards.

"The cards and the detailed programme of the Congress will be distributed from the 10th to the 16th of August between ten and five o'clock, at the residence of the Secretary, M. G. De Mortillet, Rue de Vaugirard, 35, corner of the Rue de Madame, Paris.

"The Congress will sit from the 17th to the 30th of August.

"According to Article VII of the General Regulations, the organising (managing) committee have fixed upon the following six questions which will form the order of the day on the subjoined dates:—

"*Sunday, 18th.*—I. Under what geological conditions, and amidst which *Fauna* or *Flora* have in the different parts of the globe the most ancient traces of the existence of man been met with.

"What are the changes which might since that period have taken place in the distribution of lands and seas?

"*Tuesday, 20th.*—II. Was habitation in caves universal? Is it merely the fact of one and the same race, and does it relate to one and the same period?

"If the contrary be the case, how can it be subdivided, and which are the essential characters of each subdivision?

"*Thursday, 22nd.*—III. Are the megalithic monuments due to one population who have successively occupied different countries?

"If this be the case, what has been the march of this population? What their successive progresses in arts and industry?

"Finally, what are the relations which may have existed between this population and the lake habitations of which the industry is analogous?

"*Saturday, 24th.*—iv. The appearance of bronze in the west, is it the product of native industry, the result of a violent conquest, or of new commercial relations?

"*Monday, 26th.*—v. Which are in the different countries of Europe, the chief characters of the first iron period?

"Is this epoch anterior to historic times?

"*Wednesday, 28th.*—vi. What notions have been acquired concerning the anatomical characters of man in prehistoric times from the most remote epochs to the appearance of iron?

"Can, especially in Western Europe, the succession of races be proved, and can these races be characterised?

"The remaining sittings are left open for the discussion of questions proposed by various members.

"Each of these questions initiated by individual members, will as much as possible be allied to the question put by the Committee with which it is most connected.

"The members desirous of sending communications are requested to inform the Secretary to that effect before the 10th of August, so that the general programme and the order of the day in the sittings may be distributed simultaneously with the cards.

"All members possessing objects likely to throw light on any question are earnestly requested to send, if not the original, at least, casts or drawings. This request applies specially to human remains.

"Fellows of the Anthropological Society of London wishing to take part in the Congress will receive their cards of admission by application to the Secretary of the Society on or before the 1st of August.

"At the same time there will be discussed in the international Medical Congress two questions of great interest to anthropologists, and specially belonging to their science. The first is on the influence of climates, races, and various conditions of life on menstruation in different countries; and the second is on the acclimatisation of man. Dr. Paul Broca takes a very prominent part in this Congress, and Dr. Jacond, 4, Rue Drouot, is the Secrétaire Général, and Dr. Vidal, of 112, Rue Neuve des Malharens, the Treasurer. A prospectus has been issued detailing the arrangements, and the following is a translation of the remarks made on the two questions we have named.

"The age of the first menstruation and the period of menopause vary according to climates, races, and modes of life. The object of the question proposed is mainly to determine the part of these three orders of influences by means of observations in different conditions, but reduced to comparable terms.

"The documents hitherto existing in science are, perhaps, neither sufficiently numerous nor sufficiently varied to admit of a solution of this complicated for the present; but the solution might possibly be derived from the comparison of the memoirs, which may be presented by physicians of different countries.

"Without in any degree desiring to limit the scope of their researches, the Committee nevertheless deem it their duty to indicate the chief elements of the problem.

"In order to appreciate the mode of life, it is necessary to compare

several series of females pertaining to the same race and inhabiting the same country, but living under different conditions. These series may easily be reduced to three: the women of the wealthy class, the work and poor women of the cities, and peasant women. The facts hitherto known tend to establish that the average age of the first menstruation presents in these three groups (which might, if necessary, be multiplied) very notable differences.

"The condition of comparing between themselves, women of the same race, presents itself rarely, in all its strictness, in the countries inhabited by the races of Europe. Most of the European populations of the Old and of the New World are issued from an intermixture of several races, more or less fused, a mixture which manifests itself by the variation in certain external characters, such as the colour of the eyes and hair. It would therefore be interesting to note these anthropological characters, in the observations, for the purpose of establishing in each group secondary groups composed of elements as comparable as possible.

"The influence of climates on the phenomena of menstruation may be inferred from the study of females of the same race living under different climates and in nearly equivalent social conditions.

"Finally, observers residing in countries inhabited by distinct races might, by establishing groups based both on the preceding indicated conditions and on the anthropological conditions, without neglecting the important study of women of mixed blood, be enabled to solve the problem of race on menstruation.

"It must be well understood that the study of anomalies of menstruation considered in their relations with the above-mentioned influenced enters directly into the subject proposed.*

Question VI. The Acclimation of the Races of Europe in Hot Countries. The facts relating to the acclimatisation of the individual are not comprised in the question proposed. Europeans cannot esta-

* The labours undertaken with the view of answering this question, can only repose on individual observation, and can only acquire importance by the comparison which will be established between the researches of different authors. It is therefore desirable that these researches, which will be carried on under very different conditions, should be executed on an uniform plan. We therefore request the respective authors to annex to their memoirs a table of individual observations, which might easily be disposed in the following frame.

Subjects observed.	Age.	Social condition, profession.	Age at the first menstruation.	Menstruation, regular, or irregular.	Intervals between menstruation.	Duration of the flux.	Married or single.	Number of children and miscarriages.	Age at the menopause.
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Other particulars might be added, relating to stature, colour of the eyes, hair, the constitution, etc. It is to be understood, that each *bulletin* should be accompanied with particulars concerning the locality where the observations were made (longitude, latitude, altitude, temperature, etc.).

blish themselves in hot countries without exposing themselves to certain diseases which increase more or less their chances of mortality. Nevertheless, however great may be the dangers which they incur, a certain number of individuals may escape, either owing to a particular flexibility of organisation, or by a mode of life capable of neutralising the noxious influence of the climate.

"It should be avoided to confound these individual facts with such as bear upon the acclimatisation of a race. A certain number, and even a large number of acclimated individuals, is insufficient to prove the acclimatisation of the race they belong to; for it may well happen that their descendants do not so well escape as they did the action of the climate, and that their progeny may become extinct at the end of a few generations, of which there exist too many examples.

"A race is only acclimated in a country when it can maintain itself indefinitely by *itself*, without intermixture with the indigenous races, and without being more or less frequently reinforced by the mother country. The process which consists in demonstrating the acclimatisation of a race in a colony by basing it purely and simply on the increase of the population is altogether deceptive. The arrival of fresh immigrants may entirely hide the destructive effects of the climate, and show a numerical increase, where, if the colony were left to itself, it would be threatened with an approaching extinction. The comparison of births with the deaths, which is the true method to proceed by, does not entirely escape this cause of error, since most of the immigrants, having already passed the age of infancy which is the most dangerous period of life, do not generally figure upon the registers of the population until they are in a condition to procreate. Hence results the necessity of separating the group of immigrants from that of the colonists born in the country.

"In order that a race should be completely acclimated, it is not sufficient that it maintains itself by its own blood, it must also be able to subsist by its own labour, by cultivating the soil, and not by having it cultivated by individuals of another race. Acclimatisation subordinate to the subjection of an indigenous or exotic race, reduced to domestication or slavery, can only be temporary, like the political conditions upon which it depends.

"The chief aim of the question presented to the congress is to obtain documents relating to the complete acclimatisation of European races in hot countries. It nevertheless would not be without interest to study the conditions by the aid of which races although not completely acclimated, may at least, by the labours of others, maintain themselves in hot countries, where they could not, without perishing, undertake to cultivate the soil.

"Without undervaluing the utility of compendious works which may be presented to the congress on the question proposed, the committee deems it necessary to ask for special memoirs on the acclimatisation of such or such a people of Europe in any of the hot regions of the globe. The committee wishes that each of these memoirs should be accompanied with particulars as complete as possible on the medical geography, meteorology and the climatology of these regions.

In our next we hope to be able to give a report of the objects of anthropological interest in the Paris exhibition; but in the meantime, we especially invite the attention of British anthropologists to both the congresses we have mentioned, and trust that British science will be well represented at them.

PROCEEDINGS OF THE PARIS ANTHROPOLOGICAL SOCIETY.*

DR. Pruner-Bey, on taking the chair as President, vice Dr. Gratiolet who retired by rotation, delivered an opening address.

After congratulating the Society on its steady progress, numbering now 264 numbers, and adverting to the decree by which the Society is recognised by the State as an institution of public utility, M. Pruner-Bey offered some interesting general remarks on the study of anthropology, and concluded in nearly the following words.

Every true science has for its object to trace the effects to their causes. Consequently in the same way as the theory of vital force has been demolished by substituting for it the correlation of forces and molecular actions, the attempt has been made to substitute the physiology of the brain and the nervous system for the physiology of former days. A great struggle on this subject is still going on in the fatherland of modern ideology. Its importance has been appreciated in our own discussions, and thanks to your own efforts, some light has been thrown on this subject. Let us, however, confess that the constitution and disposition of the anatomical elements of the brain in as far as they are accessible to our investigation, leave us but little hope to see the end of the struggle. Whilst, for a long time to come, we must confine ourselves to signalise and classify the manifestations of our mind, it is on the other hand only by comparative studies that we may be enabled to distinguish what is fundamental in human nature and what is the result of the culture of our faculties. I was obliged to touch on this delicate and thorny matter in order both to point out our mission in the sphere of speculation and to obviate the reproaches which might be made to anthropology, for not being as yet a science as regards the most interesting questions. We are in this respect entirely in the same position as the zoologist, who no more than the anthropologist can detect the primary springs which set the instinctive and intelligent acts of animals into action. We may even affirm that

* Continued from No. xvi, p. 128.

as regards phenomenology, man is already better known to us than the animal.

On the Relations between the Anthropoid Apes and Man, by M. Schaafhausen of Bonn, translated by M. Pruner-Bey. The scientific portion of M. du Chaillu's work has been received with distrust by the learned. There exists, nevertheless, no reason for doubting his descriptions of the mode of life of the gorilla. Some of the corrections of Mr. Reade of the remarks of Du Chaillu have no great bearing on the position which in my opinion this animal occupies in the scale of beings. But whatever may be the value of a profound knowledge of the mode of life of a gorilla, its anatomical structure shows us sufficiently the degree of his organisation, and the size of his brain, upon which depends his intelligence. In this respect the distance between the gorilla and man is immense, a difference which has not been properly appreciated by Mr. Huxley. There is no doubt that in the brain of the large anthropoid apes, no essential part of the human brain is absent; but as regards volume, the difference is very remarkable. The assertion of Mr. Huxley that men, even as regards the volume of the brain, differ among themselves more than apes, is equally erroneous; an opinion which is founded upon the arbitrary employment of measurements of crania both rare and doubtful. The brain of the Australian exceeds two or three times the volume of the brain of the gorilla, whilst the brain of a European exceeds that of the Australian only by one-fifth. Another allegation of Mr. Huxley to the effect that, as regards the volume of the brain, the inferior apes differ from the superior as much as the latter differ from man, is also without scientific value, inasmuch as this author has not taken into account the incomparable difference of size of the above-mentioned simia, whilst in this respect man and the gorilla are nearly equal. This distance between man and ape must not be ignored; in fact, one glance at the cranial cavity reveals it. I think, however, that it was less in times past, or perhaps did not exist at all. The differences of volume in organised beings of the present world are only gaps produced in the chain by time. Transitional forms will, no doubt, be found still reposing in the bosom of the earth which covers palæontological creation. Without entering into pretended developments, I shall confine myself to a single point.

In the present state of things, the distance between man and the animal increases under our own eye. Not merely the human races standing lowest in the scale, and presenting in their organisation many resemblances to animal forms, are gradually becoming extinct, but the superior apes approaching nearest to man become more rare from century to century; and will, perhaps, in a few centuries have entirely

disappeared. What is there illogical in the idea that thousands of years back the distance between the lowest man and the highest ape was less than at present, and that it would still lessen the more we ascend the past?

There is another circumstance, not owing to chance but to a natural law, namely, that the superior apes could only maintain themselves amidst inferior men; for on contact with civilised peoples they would long since have disappeared. The more that man advances, the more likely is he to break the links which ally him to brutes. There is another striking fact which deserves mention, namely, that the large apes of Asia and Africa differ from each other by the same characters which distinguish the men of these two continents, that is to say, in colour and the form of the cranium. Like the brachycephalic Malay, the orang is brown, and his head is round; the gorilla, on the contrary, is black and dolichocephalic, like the African negro. This approach of two different human races to different apes from the same countries, seems to me the most fatal objection, in our present state of knowledge, which might be made to the theory of the unity of the human genus.

M. Gratiolet thinks that there exists no reason for establishing an anatomical similitude between man and gorilla. As regards the brain, the gorilla's is the lowest of the anthropoid apes, since the brain does not cover the cerebellum, by which he approaches the cynocephali. It is not in his size and strength that we must look for human characters, but in the conformation of the hands, and just in this he differs considerably from man. The thumb is very short in the gorilla, and its muscles much reduced. The long flexor is replaced by a tendinous tract, the origin of which is lost in the tendinous sheaths of the flexors of the other fingers. It follows that the thumb has no independent movement of opposition. In the orang, though the thumb is shortened, it still is capable of an independent flexion; but this depends on a peculiar disposition which he had lately verified with M. Alix. In point of fact, the proper flexor of the thumb is entirely absent in the orang; there is not even found that tendinous tract existing in the gorilla; but by a singular contrivance, the marginal fibres of the adductor muscle of the thumb terminate in a tendon which is placed in the axis of the first terminal axis.

The fact which establishes a great relation between man and apes is, that in them the optic nerves open directly in the cerebral hemispheres, whilst in the other vertebrates these nerves reach the brain only by the intermediation of the tubercula quadrigemina. This peculiarity may explain the existence of a certain conformity in the manner in which man and ape perceive their sensations. But it does

not follow that there is an identity in the nature of their intelligence ; for, though the senses are subservient to the operations of the intellect, it cannot be said that they produce it. Man must be placed by the side of the ape, but only as an animal. Man is a being apart, just as all other vertebrata must be separated, as they cannot be considered as having originated from each other.

M. Gratiolet added, that as a pupil of Blainville, with whom originated the idea of a series in natural history, he felt bound to state how much the ideas of his master had become modified. Where Blainville formerly recognised transitions from group to group, he, in the latter period of his life, only saw maxima and minima of realisation for each group. He acknowledged an ideal series between types, but not a lineal series between all beings. It is thus impossible to invoke the opinions of Blainville for the support of theories tending to reduce to a single stock the numerous species composing the animal kingdom.

M. Broca is of opinion that M. Gratiolet had misunderstood the ideas of M. Schaafhausen, who, far from supporting the theory of Darwin, on the contrary, commenced by refuting the opinions of Mr. Huxley. M. Schaafhausen is apparently a partisan of *animal series*, but there is no necessary connexion between this and Darwin's theory. It may be admitted that all families, genera, species, from the monade up to man, are disposed in series, and form a continuous scale without necessarily admitting that the higher species are by a progressive evolution issued from the lower. Darwin's theory is a bold attempt to explain the existence of this series. It is the interpretation of a fact, and, whilst accepting the fact, we may reject the interpretation which was probably M. Schaafhausen's stand-point. The views communicated to the Society by M. Schaafhausen are both new and important. He shows that man is at present constantly engaged in the extermination of species which dispute his possession of the soil, and that he was so engaged in the past. We know that the superior human races tend to increase at the expense of the inferior races, some of which have disappeared within historical times, some will disappear, and others must have disappeared in the most remote periods. May, then, asks M. Schaafhausen, this destructive intervention of man not have contributed to enlarge the interval separating man from the group of anthropoid apes? He is of opinion that the interval was less originally than at present, and is less at present than it will be in times to come. The last opinion is very probable ; the former is less so, for even if it were demonstrated, the question still would remain whether the intermediate types which disappeared sufficiently differed from such now limiting the two groups, sensibly to

diminish the distance. At all events, the ingenious idea of M. Schaafhausen deserved serious consideration.

M. de Quatrefages confirmed the remarks of M. Gratiolet touching the first ideas of Blainville on the animal series.

M. Pouchet considered that the idea of a linear series on the ensemble of the animal kingdom was now abandoned, and justly so, because there existed an impassable abyss between the vertebrates and invertebrates. But in confining ourselves to the vertebrata we may imagine a series resembling the branching off from an arborescent trunk, many of the branches representing as many extinct species being wanting. He therefore believed with Mr. Darwin that we are the remote cousins of the gorilla by the intermediation of a vertebrate, the type of which is now lost.

M. de Quatrefages would not admit the ideas of Darwin as regards species, but admits them with respect to races, which are daily formed under our own eyes.

M. Sansen cannot allow this observation to pass without contradiction. M. Quatrefages would be much embarrassed to name one single race perfectly new.

M. Quatrefages replied that the number of esculent vegetables had, independent of new importations, remarkably increased since the time of Louis XIII, and he cited the sheep of Manchamp, Malnegrée, Charmoise, as examples of new races produced within a few years by the crossing of distinct races. The difference between him and M. Sansen consisted only in the definition of the word race.

M. Sansen said it was quite true that he differed with M. Quatrefages as to the definition of race. In his opinion race is a group of individuals presenting an ensemble of similar forms and capable of being transmitted; homogeneity of typical character, and hereditary transmission, being the necessary attribute of race. And here he must remark that the term of race had not yet been defined in the Society, and an understanding on that subject became requisite. As regards the examples invoked by M. Quatrefages, they cannot be considered as new races, the sheep of Manchamp are Merinos differing only from the mother race by their silky wool. This is not a race character, the same wool being found in perfectly distinct races. As to the sheep of the Charmoise, he could show him two distinct types. They only resemble each other by their aptitude for fattening, which is not a race character. And as regards some esculent vegetables they had become so by culture. When they are left to nature their characters disappear, which does not prove that they constitute new races.

[*To be continued.*]

Anthropological News.

DR. ANTON FRITSCH, Director of the National Museum of Bohemia, we understand, intends to visit England this year, and will most likely contribute a paper to the Anthropological department of the British Association.

CAMBRIDGE PHILOSOPHICAL SOCIETY, Monday, February 18.—Professor Humphry read a paper "On some Points in the Anatomy of the Chimpanzee, and the Consideration of the Term 'Quadrumanous' as applied to that Animal." His remarks were the results of the recent dissection of two chimpanzees, and referred chiefly to the differences between their lower limbs and those of man. He pointed out that the outer condyle of the thighbone is round instead of being prolonged from before backwards, and flattened beneath, as in man. Hence there is comparatively little security afforded by the ligaments in the straight position, and little provision for the maintenance of the erect posture. The bones and joints of the ankles were shewn to be constructed so as to permit free movement rather than to bear weight. With regard to the term "hand", and the objections which have been urged to its application to the lower limb of the monkey, Professor Humphry remarked that, if we use the term to designate a certain modification of the fore limb—a certain deviation, that is, from the ordinary fore foot—we may with equal propriety apply it to a corresponding modification of the hind limb—a corresponding deviation, that is, from the ordinary hind foot. We must not expect it closely to resemble the human hand, but merely to present such a similarity to it as the special features of a hand—viz., the shortness, mobility, and opposableness of the thumb and the relative lengths of the other digits—would give it. Judging by this rule, it is as correct to speak of the "hind hand" of a monkey as of the "fore hand", though, forasmuch as both are employed in progression, it may, perhaps, be better to use some other term, such as "cheiropod", for the designation of the class, leaving the term "bimanous" to indicate the characteristic feature of man. The psychical qualities should not be omitted in considering the distinctive features of man; and the importance of the long, strong, firm great toe in this respect was pointed out. Some other peculiarities in the limbs, and in the prostate gland of the chimpanzee were described.

WHAT IS ETHNOLOGY?—Although so many different meanings have been given to this word, from "heathen" to "anthropologist", we have to chronicle yet another definition, given forth to the world by Professor Huxley. In some lectures at the London Mechanics' Institution, he is reported to have said that Ethnology "might be explained by the phrase Man Fancying, in the same way as the terms Pigeon and Dog Fancying were used to express a study of these particular varieties." Who will add another meaning to this ill-treated word? We trust that Professor Huxley's well-merited sarcasm with regard to the word Ethnology, will be the means of inducing those men of science who use that word, to do so no longer. This step we should hail as a sign of real progress in our scientific nomenclature.

MR. GOLDWIN SMITH has, we understand, been indulging himself at Manchester in an attack on "the anthropologists." We counsel that gentleman to take the trouble to make himself acquainted with the views of "the anthropologists," and then he would not lay himself so much open to be described as "a wild man" and "a rampant orator." Mr. Goldwin Smith

is like a great mass of the British public, who know apparently more about anthropology than he does of it. When Mr. Goldwin Smith likes to make a direct and manly attack on the opinions of some anthropologists, or even on some school of anthropologists, we shall then be ready to give both parties fair play and no favour.

DR. ROBERT H. COLLYER has been appointed Commissioner for the Anthropological Society of London at the Paris Exhibition. He will be happy to render any assistance to Fellows of the Society who may visit Paris during the Exhibition. His address in the Exhibition is "English Department, Class 43."

WE understand that a large collection of objects from Western Africa has been presented by Mr. R. B. N. Walker to the museum of the Anthropological Society. These are now on their way to England.

IT is the intention of Dr. R. S. Charnock to make a pedestrian Anthropological expedition across European Russia, and down the Volga to Astrakhan, next autumn.

M. ALEXIS FEDTCHENKO, of Moscow, Loc. Sec. A.S.L., is about to undertake an anthropological investigation of the Finns, and will be very much obliged to any English anthropologist who can facilitate his task by bibliographical indications of descriptions of the Finns in English works.

FELLOWS of the Anthropological Society who intend to take part in the anthropological section of the British Association at Dundee should communicate their names to the Director of the Society.

ABOUT a twelvemonth ago, whilst underpinning the walls of the Mansion House on the western side, numerous bones, both animal and human, were found, the latter chiefly skulls, leg and arm bones, lying about three feet below the surface of the level of the cellars. These remains, we understand, were buried again with great care.

FELLOWS of the Anthropological Society and others who wish to deliver lectures before the Society, under the provisions of Rule 47, have been invited to communicate their names to the Director.

ON April 5th, at eight p.m., Mr. C. Carter Blake will deliver a lecture on the "Bone Caves of Southern Belgium" at the Geologists Association, University College, Gower Street.

ANTHROPOLOGY AT THE BRITISH ASSOCIATION.—The forthcoming meeting of the British Association at Dundee is looked forward to with great interest, and by many with no little dismay. A long controversy has been going on between the Rev. George Gilfillan, of Dundee, and Mr. Gillespie, of Torbanehill, respecting "modern anthropology," and the latter has just published this correspondence in the form of a pamphlet, entitled "The Modern Anthropology as Developed into an Universal Ape Ancestry: can it be held by a Christian Divine of the Straitest School?" The annual meeting of the Association will not take place until September, and in our next we shall have an opportunity of reverting to this subject. In the meantime we would especially warn anthropologists that they must be prepared not to find Dundee a bed of roses. We would counsel more than ordinary discretion on the part of anthropologists as to the subjects to be brought before the people of Dundee. Anthropology in Scotland now seems to hold the same position that it did in France and Germany about the middle of the sixteenth century.

Amongst the important anthropological events which have taken place during the past year, the destruction by fire of the statues of various savage tribes in the Crystal Palace, deserves to be chronicled. Inaccurate as these representations no doubt were, they were the only materials generally accessible to the public in London, by which the popular mind

could render itself familiar with the aspect of many of the races of man. Their loss, in an educational sense, is therefore very great; and it is to be hoped that some casts similar in character to those preserved in the Paris Gallery of Anthropology may soon take their place. These casts should in all cases be coloured with the precise tints of the original skin; and the greatest possible care should be taken, not merely to surround them with all necessary accessories of costume and furniture, but to maintain the expression of the living subject as far as possible. Masks taken from the dead face do not always indicate the true physiognomy of the individual.

WORKED STONES FROM ZETLAND.—The discovery which Dr. Hunt made in the Zetland islands of worked stones, has recently attracted much attention from the Edinburgh antiquaries. A short time ago, Dr. Arthur Mitchell read a paper on this subject before the Society of Antiquaries of Edinburgh, and it was declared to be the most interesting read for a long time. We are sorry to find, however, that no light has yet been thrown on the purpose for which these curious stones were manufactured.

M. ED. LARTET is the President of the Paris International Congress for Anthropology and Prehistoric Archæology; and **M. de Mortillet**, of 35, Rue de Vaugirard, the Secretary. The following is the list of corresponding members in the Committee of Organisation elected from residents in Great Britain:—**Dr. Blackmore**, **Mr. C. Carter Blake**, **Mr. Busk**, **Dr. Carpenter**, **Mr. Crawford**, **Dr. B. Davis**, **Mr. Boyd-Dawkins**, **Mr. Evans**, **Mr. Fergusson**, **Mr. Franks**, **Dr. J. Hunt**, **Professor Huxley**, **Professor Jukes**, **Sir John Lubbock**, **Sir Charles Lyell**, **Professor Owen**, **Mr. Prestwich**, **Mr. Stuart**, **Dr. Thurnam**, **Mr. Tylor**, **Mr. Way**, and **Sir W. Wilde**.

SCIENCE AND SPIRITUALISM.—**Mr. Alfred R. Wallace**, who is known to anthropologists by his advocacy of the unity origin of mankind on Darwinian principles, has become, or at least is at this moment, a zealous spiritualist, and has published his views under the title of *The Scientific Aspect of the Supernatural*. This fact cannot fail to be of interest to those who are curious respecting the idiosyncrasies of men of science. It has recently been remarked that the views held by Mr. Wallace on the past and coming unity of mankind "are about on a par in scientific value with Dr. Cumming's prophecies." But probably Mr. Wallace's views have been communicated to him by some kind departed spirit, perhaps that of the "first man." A more recent contribution to spiritualistic literature by Mr. Wallace is to be found in the *Spiritual Magazine* for February 1867. This account is to show that on December 14th last the spirits put a bouquet of flowers on Mr. Wallace's table. Deception in this case, we are told, was impossible. Lest we may do Mr. Wallace an injustice in giving an account of his researches, we print the account entire:—"On Friday morning, December 14th, my sister, Mrs. S., had a message purporting to be from her deceased brother William, to this effect: 'Go into the dark at Alfred's this evening, and I will shew that I am with you.' On arriving in the evening with Mrs. N. my sister told me of this message. When our other friends, four in number, had arrived, we sat down as usual, but instead of having raps on the table as on previous occasions, the room and table shook violently; and finding we had no manifestations, I mentioned the message that had been received, and we all adjourned into the next room, and the doors and windows being shut, sat round the table (which we had previously cleared of books, etc.) holding each other's hands. Raps soon began, and we were told to withdraw from the table. This we did, but thinking it better to see how we were placed before beginning the *séance*, I rose up to turn on the gas, which was down to a blue point, when just as my hand was reaching it the medium who was close to me cried out and started, saying that something cold and wet was thrown in her face. This caused her to tremble violently, and I took her

hand to calm her, and it struck me this was done to prevent me lighting the gas. We then sat still, and in a few moments several of the party said faintly that something was appearing on the table. The medium saw a hand, others what seemed flowers. These became more distinct, and some one put his hand on the table and said, 'There *are* flowers here.' Obtaining a light, we were all thunderstruck to see the table half covered with fern leaves, all fresh, cold, and damp, as if they had that moment been brought out of the night air. They were ordinary winter flowers which are cultivated in hot houses, for table decoration, the stems apparently cut off as if for a bouquet. They consisted of fifteen chrysanthemums, six variegated anemones, four tulips, five orange-berried solanums, six ferns of two sorts, one *Auricula sinensis* with nine flowers, thirty-seven stalks in all. All present had been engaged for some time in investigating spiritualism, and had no motive for deceiving the others, even if that were possible, which all agreed it was not. If flowers had been brought in and concealed by any of the party (who had all been in the warm room at least an hour) they could not possibly have retained their perfect freshness, coldness, and dewy moisture they possessed when we first discovered them. I may mention that the door of the back drawing room (where this happened) into the passage was locked inside, and that the only entrance was by the folding doors into the lighted sitting room, and that the flowers appeared unaccompanied by the slightest sound, while all present were gazing intently at the table, just rendered visible by a very faint diffused light entering through the blinds. As a testimony that all present are firmly convinced that the flowers were not on the table when we sat down, and were not placed there by any of those present, I am authorised to give the names and addresses of the whole party:—Miss Nicholl, 76½, Westbourne Grove, W.; Mrs. Sims, 76½, Westbourne Grove, W.; Mr. H. T. Humphreys, 1, Clifford's Inn, E.C.; Dr. Wilmshurst, 22, Priory Road, Kilburn, W.; Mr. T. Marshman, 11, Gloucester Crescent, N.W.; Mrs. Marshman, 11, Gloucester Crescent, N.W.; A. R. Wallace, 9, St. Mark's Crescent, N.W." The following appears in the *Spiritual Magazine* for March:—*The Flowers at Mr. Wallace's Séance.*—"Having received one or two inquiries from friends respecting the account appearing in the *Spiritual Magazine* of a *séance* at the house of Mr. A. R. Wallace on the 14th of December last, I write a line to say that what is stated perfectly describes the occurrences. I may add that I happened to sit nearer to the table than any other of the party, and that the table was between me and the light, the faint reflection of which was quite evident to me. Almost immediately after our having taken our seats, I noticed something dark, which partly shadowed the reflection of the faint window light, and observing this shadowing to spread over the table, I put out my hand, and to my amazement took hold of a sprig of the *Solanum* with its berry. I then exclaimed that there were flowers on the table, and we all remained quiet for a few moments further, when the light was turned on, and we found the flowers as stated. I can bear testimony to their having been covered with dew of a frosty coldness, as if they had but just passed through the air of the frosty night. It is also as well to add that on coming into the room everything that was on the table was taken off and the cloth removed, so that we sat by a perfectly bare polished table. The cold dew passed off the flowers in a very few minutes owing to the heat of the room.—H. T. HUMPHREYS, 1, Clifford's Inn, E.C., 22nd February, 1867." We should like to hear that the Council of the Anthropological Society of London had appointed a committee to investigate this matter.

DR. JOHN BEDDOE is, we understand, busily engaged in preparing the instructions of the Paris Anthropological Society for the local secretaries and fellows generally of the Anthropological Society.

MESSRS. TRÜBNER & Co. are about to publish an important work by Mr. George Catlin, entitled *O-Kee-Pa, or the History of Some Religious Ceremonies amongst the Mandans*. It will be copiously illustrated. An early application should be made for copies direct to the publishers.

MR. WINWOOD READE is at present studying anthropology under Professor Agassiz and Jeffreys Wyman of America.

THE catalogue of books in the library of the Anthropological Society of London is now passing through the press. At the same time there will be issued by the society a list of works required by the society. Fellows are invited to send in the titles of any works that they think it will be desirable the society should possess.

WE understand that the Anthropological Society of London have under their consideration the desirability of putting on their list of works contemplated to be published, a selection from the writings of the veteran anthropologist, Mr. B. H. Hodgson. Mr. Hodgson is now upwards of eighty years of age, and has done as much in behalf of descriptive anthropology as any living anthropologist.

DEATH OF M. BOUDIN. It is with deep regret we have to announce the death of the distinguished anthropologist, Dr. Boudin, who was president of the Paris society in 1862. This is no less than the third ex-president of the Paris society who has been prematurely removed from their labours since the establishment of that society in 1859. Dr. Boudin's works are known to a wider circle of readers than those of many anthropologists, as he was the author of several works on medical geography and statistics.

ARCHAIC ANTHROPOLOGY OF NEW ZEALAND. The following is an extract from a letter just received from Thomas Tate, Esq., jun., F.A.S.L., from New Zealand. "I am about to prepare a paper for the Anthropological Society on ancient remains found in the cave on the Waiwo, where (from what I can learn) an old type of skull, older than the modern Maori, is found associated with the remains of the moa (*Dinornis giganteus*). These caves are interesting places, the human skulls being also found together with stone instruments like our celts."

MR. HARCOURT BEATTY of Glasgow has just issued the following synopsis of a work, entitled *Ante-Diluvian Politics (Adamite and Pre-Adamite), or a Moral Cosmogony the True Theme of Genesis I to XI*. 1. Introduction—the formidable obstruction which scientific enterprise has encountered and is even now encountering from the fallible deductions of systematic theology. 2. Systematic theology not identical with Revelation. 3. Theology a progressive science,—wherefore much may yet remain to be extracted from Revelation. 4. False alarm of philosophically-minded Christians, owing to an identification of systematic theology with Divine Revelation. 5. The former portion of the book of Genesis one of those parts of Holy Writ least understood by theologians. 6. The total impossibility (upon the "orthodox" theory) of reconciling the two cosmogonies contained severally in the first and second chapters of Genesis—testimony of the best Hebrew critics to that effect. 7. The numerous contradictions of established scientific truths, and the general absurdities which the orthodox or literal exposition of the second and third chapters of Genesis involve, evidences either that the texts in question are not from God, or that the popular interpretation is not the true one. 8. A literal acceptance of the above-mentioned chapters being absurd and untenable, a symbolical or allegorical interpretation the only means of escape from an utter rejection of the sacred text,—so far, at least, as common sense may be concerned. 9. The whole scheme of scriptural symbols, examined with a view to avoid capricious and unjustifiable solutions of alleged allegorical passages. 10.

A general key to the symbols of Scripture, based upon a responsible principle;—a key perfectly adequate to the laying open of all symbolical Scripture, and most especially the acknowledged allegories of Daniel, Ezekiel, and St. John. 11. The first eleven chapters of Genesis thoroughly explained by the aid of this Scriptural key, and shewn to contain a complete secular and ecclesiastical history of that period, hitherto considered pre-historic; such history, however, being (like many of the most antique narratives and traditions of oriental nations), couched in a symbolical and mystical phraseology, constructed, however, upon certain fixed principles of symbolical composition formerly familiar to all the learned castes of the most antique nations of Asia. 12. The existence not only of pre-Adamite peoples, but also of pre-Adamite and of extra-Adamite polities, absolutely demonstrated. 13. A perfect harmony shewn to exist between the earliest known conditions of India, Scythia, Bactria, Media, Persia, Babylonia, and Egypt; and various facts recorded in the alleged allegorical History of Genesis.

Historical facts related in, or deduced from, the said allegorical narrative.

1. The origin of mankind referred to a vast antiquity,—an antiquity so remote and so vaguely alluded to, that almost any amount of ages may be supposed to have passed since the appearance upon earth of the first human beings.
2. The existence in the west of Central Asia of a pre-Adamite civilisation of a strictly Ethiopic, if not Nigritian ethnic character; a civilisation involving, among certain others, one particular system of morals and religion, which national system must be regarded as the parent of the most antique Egyptian economy known to the archæologist.
3. The existence in the said centre of primeval civilisation of a certain Hamito-Semitic moral and religious system of a perfectly pure and true character, wherein the worship of the true God, "THE INFINITE" (Jehovah), certainly prevailed, and to which can be traced the origin of that hitherto mysterious and strictly spiritual order of priesthood which is known in Scripture as the "order of Melchizedec;"—an order which, being certainly not proper to the race of Heber, can hardly be regarded as having appertained to the line of "Noah," or even of "Adam,"—that is, upon the supposition of the existence of extra and pre-Adamite races.
4. The parallel existence of a moral and religious system erected upon a very impure and false foundation, a system, however, of a philosophical nature, and the production of great metaphysical reasoning, whence may be traced the origin of all bloody and propitiatory sacrifices, together with those necessary accessories thereto,—an elaborate and sensuous ritual, and a hierarchy of sacrificial ministers.
5. Causes which led to the adoption of these "outward accessories" of worship by the then "elect" nations *i. e.*, the peoples, in the enjoyment of a more pure ethical and religious system.
6. The early erection of a great Scythic, or Scytho-Aryan polity, the first dynastic development of the Caucasian race;—a polity which flourished long before the establishment of the earliest Egyptian, Hindoo, or Chaldean economies known to the archæologists; a polity of which the learned have hitherto only obtained the faintest glimpse, but the existence of which had been asserted by the most far-seeing antiquarians of the last century.
7. The remarkable origin of the Medo-Persian nation, and of their priestly and philosophical order—the "Magi."
8. The origin of the primitive "Chasdim" (or Chaldæan) nation, and of the Brahmanical Hindoos; also the undoubted origin of the caste system of antiquity generally, but particularly that of the Brahmanical Hindoos.
9. The origin of "dualism" in its philosophic and its spiritual aspects, and the cause of its adoption by the Iranian nations.
10. History of Brahmanism down to the establishment of the solar and lunar dynasties, and the division of the Brahmanical priesthood into the "Gaura" and "Dravira" races,—if not down to the establishment of Buddhism in its original form.
11. Origin of the "Gomerian" nations. History of the Druidical Celtæ,

wherein a distinct account is given of their migration from east to west, *i.e.*, from Central Asia to Western Europe. 12. The Assyro-Babylonian and Hindoo "mythology" (as it is vulgarly called, but "allegory" or "mysticism" as it really is), expressive of the same moral facts essentially as is the allegorical or mystical history of Genesis, (i to xi). 13. The origin of Magian and Median "Fire worship," and the first establishment of the true Zoroastrian system.

Exegetical and other Advantages anticipated.—A final cessation of that long conflict between natural philosophers and theologians on the ground of the Biblical cosmogony, which, beginning with Copernicus and Galileo, seems to have reached its culmination in the present age,—there being, in fact (upon the allegorical hypothesis), no common ground whereon these parties could possibly meet. A redemption from that oblivion to which ages of mystical ignorance had consigned it, of the most antique history of civilisation and religion that (probably) the world ever saw; a history treating of times which for want of sufficient light upon the symbolical records and language of antiquity, have hitherto been regarded as "pre-historic" and even "mythical." A rational, consistent, and probable explanation of all those difficult and clearly symbolical portions of the Mosaic cosmogony, and subsequent history down to the era of Abraham, the contemplation of which has staggered some of the most "orthodox" and pious; has evoked honestly expressed scruples from some of the most candid, and has provoked infidel sneers, if not infidel derision, from some of the most thoughtless inquirers. Lastly, a most felicitous reconciliation of many of the so called Gentile "Myths" (Persian, Assyrian, Hindoo, Greek, etc.) with most of the facts recorded in the Mosaic narrative.

THE MOSCOW ANTHROPOLOGICAL SOCIETY.—The following is the list of papers read in the first four sittings. Schrirowsky.—The Fossil Man of the Tertiary Period; Study of the most Remarkable Crania of the Diluvian Man. Gatseck.—On Crania Found in the Tombs of Ancient Russians. Pyictorsky.—On the Measurements of Skeletons and the length of Bones in Different Races of Mankind and the Anthropomorphous Apes. Fedtchenko.—The Crania of Egyptian Mummies, and on the Researches of Pruner-Bey on the Origin of Ancient Egyptians. Gerz.—On the Processes of Preserving Bodies used in Old Egypt. Reresnitzky.—On the Principal Characters of the Negro. Bogdanoff.—On Macrocephali. Sontzoff.—On the Ancient Graves of Russia. Kertzelli.—On Buddhism. Jaenger.—Indo-European Origins after the Discussion of the Paris Anthropological Society. Fedtchenko.—On the Relations of Linguistic Anthropology, according to Broca. Fedtchenko.—On the Aztecs; on the occasion of pretended Aztecs visiting Moscow. Sokoloff.—On the Anatomical Monstrosity of the pretended Aztecs. Belgaeff.—On the Origin of the Great Russians.

DESCRIPTIVE ANTHROPOLOGY IN RUSSIA.—An anthropological exhibition is to be opened at Moscow on the 17th (29th) of April. It will consist of a series of figures representing the inhabitants of all the provinces of Russia and the Slavonian provinces of other countries, dressed in appropriate costume, and of a collection of the natural productions and manufactures of each province. The Russian empire alone will be represented by 265 figures. Public lectures, explanatory of the objects exhibited, are to be delivered in the beginning of May.

The following paragraph is from the *Sentinel of Freedom*, Newark, New Jersey, U.S., Dec. 11. "Traces of prehistoric civilisation have been found in St. Anthony, Minn. A trap-door, secured by a curiously shaped lock, was discovered in the floor of a cellar, and upon pushing investigation further, it was opened, and a spiral staircase, leading down one hundred and twenty-three steps, appeared. It ended in a passage which led into an

artificial cave, about which were strewn iron and copper instruments, and at one side of which was an elevated platform and rude seats. A stone sarcophagus was also found in another apartment, which on being opened disclosed a human skeleton."

ON THE SKULL OF DANTE.

To the Editor of the Anthropological Review.

Shelton, Staffordshire, Jan. 24, 1867.

Dear Sir,—I have received the following communication, which forms a postscript to his letter on the skull of Dante in your last number from my friend Professor Welcker. It is of considerable interest, and I trust you will afford it a place in the *Review*.

I am yours faithfully,
J. BARNARD DAVIS.

"Halle, 16th January, 1867.

"My highly-esteemed Friend,—Permit me to make some supplementary communications to my letter to you 'On the skull of Dante.'

"A very weighty vote for the genuineness of the mask of Dante is found in the splendid work of Charles Eliot Norton, issued in commemoration of the six hundredth year jubilee of Dante—*On the Original Portraits of Dante*, Cambridge, Massachusetts, 1865. This book, but fifty copies of which were printed, appears to have had only a late and limited distribution on this side the ocean. I have to thank the good kindness of the renowned Dante-inquirer (Danteforscher) Witte, for a knowledge of this work, whose hands it reached in October of last year, after I had sent my letter to you away. Since your equally instructive and kind letters to me contain no mention of this excellent book, I presume that it has hitherto escaped your notice. I might rejoice at finding my views, and the position I have taken in many points, repeated in this work. The very skilful author, who gives an excellent photograph of Giotto's portrait of Dante, and also a copy of the mask, placed in the same position, declares his opinion of the perfect agreement of the two.

"It is the same face with that of the mask; but the one is the face of a youth, 'with all triumphant splendour on his brow;' the other of a man burdened with 'the dust and injury of age.'" (P. 18.) The question I put forth, whether in Dante's time death-masks were already used, we find touched upon at p. 11. Norton also expresses himself as not being quite sure upon this point. He remarks that, according to Vasari's testimony, this art came into use in the second half of the fifteenth century, and that the death-mask of Brunelleschi, who died in 1446, is alluded to by Bottari. But Norton presumes that so simple an art might very well have been employed at an earlier period than that of Brunelleschi, and that the friend and protector of Dante, Guido Novello, in order to obtain a first draft for a bust to be executed at a later time, would have taken a death-mask.

"On the 'mask' Norton finds the definite characters of a *death*-mask. 'It was plainly taken as a cast from a face after death. It has none of the characteristics which a fictitious and imaginative representation of the sort would be likely to present. It bears no trace of being a work of skilful and deceptive art. The difference in the fall of the two half-closed eyelids, the difference between the sides of the face, the slight deflection in the line of the nose, the droop of the corners of the mouth, and other delicate, but none the less convincing, indications, combine to show that it was, in all probability taken directly from nature.'" (P. 14.)

"We learn from Norton that three Dante masks (probably joint copies of the original mask preserved by the painter Tacca) exist in Florence. One in possession of the painter Kirkup, one with Professor Ricci, the third the

Torregianian mask. The one communicated by North in three photographic representations, is that of Kirkup's. This, so far as I can discover, agrees in all parts with the Torregianian. It is the Torregianian mask, with the omission of the cap (Focale). It has exactly as much forehead, and as much frontal and temporal hair, as in the Torregianian mask; the cap leaves uncovered.

"Thus the repeated and careful comparison of the portrait by Giotto, the mask, and the skull, leads to the result that the mask and skull are authentic. These little notes I should like to have appended to my former letter. Adieu.

"Your most devoted friend,

"HERMANN WELCKER."

WAGNER ON THE OCCIPITAL LOBE OF MAN AND APES.

A LETTER TO DR. JAMES HUNT.

HONOURED SIR,—I perceive, from the reports of the Anthropological Society, which I have only lately seen, that you had undertaken the translation of Carl Vogt's *Lectures on Man*. If you share my opinion that every person should contribute his mite to the truth, then I am sure you will excuse my taking the liberty of drawing your attention to an important error in the above work, which must necessarily escape the attention of every person who has not the original treatise to compare with.

An author who criticises and sends forth his publications so rapidly cannot work with desirable correctness; and often (so say some great authorities in Germany) his sparkling arguments would fail if he had studied the views of his author more minutely. I venture, therefore, to send you a copy of a small treatise which had for its object to find out a method by which to express the size and development of the cerebral surface. My treatise is thus a sequel of that which my late father, Rudolph Wagner, has entitled, *Vorstudien zu einer Morphologie und Physiologie des menschlichen Gehirns als Seelenorgan*. You will have found the results stated in the treatise in the first part of Vogt's *Lectures on Man*.

Vogt supports his sole proof, which he gives (i, pp. 211–214) for the view that the microcephale has an occipital lobe at least as large as that of the ape, upon a false quotation from the work of my father. If you will have the goodness to read note 9, p. 12 of my treatise, you may convince yourself of the error committed by Vogt. You will perhaps kindly rectify it, should a second edition appear of your translation.

I trust you will not consider it an act of presumption to request you as President of the Anthropological Society of London to rectify this error. You will no doubt pardon the zeal of a young man who takes great interest in anthropological studies, who was favourably situated to pursue such studies both under the guidance of his father, and from having had at his disposal the rich collection of Blumenbach. The death of my father, of which such honourable mention is made in the report of the Anthropological Society, has caused a change in my position, and I have turned my attention to a different field. Fate has, in singular manner, directed me to the city in which the venerable Blumenbach was born. Some years since, the little street in which the house he was born in stands, has changed its name and is now called "Blumenbach Street."

I perceive with great pleasure that Mr. Bendyshe has translated Blumenbach's anthropological treatises into English. You will perhaps be kind enough to inform him, that if he desires to have some notices or information concerning Blumenbach's works or collections, I may be able to assist him, as I possess several of the author's editions, *e.g.*, his contributions to natural history, second edition, enriched by marginal notes in

his own handwriting. I may also state that my father was the immediate successor of Blumenbach in Goettingen (1840), and up to Easter, 1864, I myself occupied the place of assistant at the Anthropological Museum of Goettingen, and was preparing for press a catalogue of the cranial collection when the death of my father interrupted my labours. I take this opportunity of assuring you of my high consideration.

DR. HERMANN WAGNER,
Professor of Natural History at the gymnasium of Gotha.

CEREBRAL MEASUREMENTS.*—Dr. Hermann Wagner, son of the lamented Professor Rudolph Wagner of Goettingen, has lately published a treatise on this subject, in which he complains of a misstatement made by Dr. Vogt in his recent work, *Lectures on Man*. Referring to Table II, containing the results of the measurements made by his lamented father, Dr. H. Wagner makes the following remarks:—"I take this opportunity to draw attention to an error committed by Dr. Vogt, in his recent work, *Lectures on Man*. This author refers to the above table as affording a proof that the microcephalous possesses an occipital lobe as large as that of the ape. After quoting some remarks of my late father on the difference between the simian and the microcephalic brain as regards the occipital lobe, Vogt continues thus:—'Now, gentlemen, I have taken the trouble of subjecting these proportions to measurement, and as I myself have no materials at command, I have measured Professor Wagner's delineations. I have, in the engraved brains of a microcephalous and a chimpanzee, measured two distances on the left side; the first from the apex of the brain to the vertical fissure which separates the posterior lobe, the second from the above fissure to the end of the posterior lobe. I find for these measures in the chimpanzee; length of the anterior lobe = 76 millimètres, of the posterior lobe = 21 mm. In the microcephalous; length of anterior lobe = 75 mm., of the posterior lobe = 20 mm. I farther find, from Wagner's measurements of the cerebral surface, that it is to the surface of the posterior lobe: mean in eight males = 100:16.2; that, on the contrary, in the microcephalous, the proportion is = 100:68.5; that, therefore, the posterior lobe presents a surface four times greater than in the adult man; that, therefore, the idiot has a posterior lobe at least as much developed as the ape. *Result.* The posterior lobe is in the microcephalous just as large as in the ape, etc.' Now, as regards the first point, it is well known that perspective drawings do not admit of measurements; moreover, a glance at Table II shows at once that, in this case, the right proportions cannot be expressed by the extension of a single length. As regards the second point, we find in Table II the convex surface of the frontal lobe, 282; parietal, occipital, and temporal, 614 approximately; whole brain, 896. Vogt now takes the surface of the three lobes, which, on account of the smallness of the brain could not well be divided, to represent the surface of the occipital lobe alone, simply because the number happens accidentally to stand under that heading. He thus obtains the proportion of the whole brain to the occipital lobe = 100:68.5, without in the least considering that there exists neither a human nor a simian brain in which the occipital lobe attains 68.5, that is to say, two-thirds of the whole cerebral surface, which would only leave one-third of the whole surface for frontal, parietal, and temporal lobes. This mistake upsets the whole of his argument." We have, in the interest of science and in justice to the late Professor Wagner, thought it right to transcribe the whole passage, feeling assured that Dr. Vogt will take the correction in good part, and rectify his error at the first fitting opportunity. As regard Dr. Wagner's treatise, to which we may recur on a future occa-

* *Maassbestimmungen der Oberfläche des grossen Gehirns.* Goettingen: 1864.

sion, we would merely observe that, though not rich in results, from the small number of brains subjected to measurements, it suggests various improvements in method, and shows the author to be a painstaking inquirer. Additional tables, rectifying some of the results previously obtained, will render the essay useful to such as possess Professor's Wagner's *Introduction to the Morphology and Physiology of the Brain*, to which it forms an appendix.

To the Editor of the Anthropological Review.

Kulladghee, June 10, 1866.

DEAR SIR,—I beg your acceptance of the small pamphlet herewith forwarded. It embodies the views of a Parsee, a native of India, on the causes of the immense gulf that separates the Europeans from the Hindoos, morally, intellectually and physically, and the *rationale* thereof grounded on the principles of hereditary transmission, which are the recognised basis of the science of man, which your ably conducted periodical is established to promote.

The following extract from a letter penned about a fortnight before the receipt of the last number of your *Review*, will show how much my opinions coincide with those embodied in your article on "Race in Legislation and Political Economy," wherein the question of race as an important element in "the survey of human nature and life" is so admirably, so temperately, so ably and so convincingly argued.

"You may perhaps think that I lay more stress on the fact of hereditary transmission, that I have a stronger belief that it is through the gradual and painfully slow discipline of centuries and not in the course of a few generations that India's thorough regeneration can and will be effected, than is warranted by facts or philosophy; and that I take no account of the physical agencies, the social phenomenon, the political antecedents—in a word, all the natural causes which have contributed to bring about her degraded and lamentable condition. Without making light of, much less ignoring, the historical antecedents, the social associations and environments, and the physical causes whose operation is indisputable, I beg to assure you, Sir, that my belief is founded on several years' experience of the influence of heredity on individuals of different races, castes, and creeds, as well as of one and the same community; and I feel convinced that no native of India, whatever may be his birth, rank, caste, occupation, or religion, and however highly endowed by nature or improved by culture, has been known or may possibly be able to equal or even approach Europeans under similar circumstances, as to fortune, birth, profession, caste, colour, or creed, and that the natives of India, transplanted into foreign soils, where nature is more propitious and the artificial or natural surroundings are more favourable to their development, morally, intellectually, physically, will not be able at once to attain to the intellectual calibre, the physical stamina and moral grandeur, the strength of character and will of their neighbours; no matter how well directed be his energies, and assiduous and steady his efforts in pursuit of the ideal, the sight of which might fire him with the ambition of realising it."

Now, if the potency of race is so influential in producing such differences among cognate races, how much more puissant must be its influence on those "separated from Englishmen by such broad lines of demarcation as the Negroid and Mongolic populations of Central Africa and Eastern Asia?"

But my object in troubling you with this letter is not so much to obtrude the fact of my opinions being at one with your own, as to point out how superior in this, as in some other respects, is Mr. Herbert Spencer's philosophy to Mr. Mill's. He not only recognises the power of social and moral influ-

ences, but takes into account in conjunction with these the organic conditions and the transmissible mental constitution of the races, which again he shows are susceptible of undergoing modifications under the influence of social, moral, and physical forces, which are ever changing, brought to bear on them for thousands of years, and not in the insignificant space of time which has elapsed since the dawn of authentic history. And not only in this department of the science of man does he reconcile the conflicting doctrines of the two schools of thinkers, but in psychology also is his philosophy sufficient to effect the reconciliation between the *à priori* hypothesis and the experience hypothesis, by regarding knowledge as well as character or psychical and physical peculiarities, feelings and faculties, as acquired not only by individual experiences, but also by the experiences of remotest ancestors organised in the race.

This sense of his superiority it is that lately elicited a communication from me to the address of the Secretary to the Bombay Branch of the Royal Asiatic Society, a copy of which I beg to enclose herein, and which you are welcome to make use of in any way you please. Trusting you will excuse this trespass on your valuable time. I remain, dear Sir, your most obedient Servant,

NOURAJA BYMAIJ.

"To the Secretary to the Bombay Branch of the Royal Asiatic Society, Bombay.

"Kaladghee, June 5, 1866.

"SIR,—In forwarding to you the accompanying copy of a letter addressed by me to Mr. Herbert Spencer, I solicit the favour of your laying before the members of the august and respectable Society of which you are Secretary, this my humble but earnest appeal to their generous disposition, as well as to their sense of duty, for according a handsome support to that distinguished philosopher, so as to enable him to continue his labours in bringing to a successful completion the work mentioned therein, which is destined to be the crowning glory of British genius, and to shed the greatest lustre on the British name, and which the author has signified his intention to discontinue for want of a sufficient number of subscribers, entailing a drain on his private purse which he can ill sustain. It cannot surely be expected that a writer should incur a continuous pecuniary sacrifice, and yet go on favouring the world with a series of works destined for immortality. It would not only be the height of presumption on the part of a native of India like myself to point out the supreme excellencies of that eminent thinker and writer, and his unequalled merits as the founder of a new system of philosophy, but it would be an insult to the intelligence of a body of the most eminent literary and scientific men that this Presidency can boast of. Equally needless and supererogatory would it be for me to urge his claims to the patronage of that body by any very elaborate piece of ratiocination. His hitherto published writings possess too conspicuous and sterling merits, and the members of the Society to which I have ventured to address this letter, have too much perspicacity and penetration to need any eulogy on my part to commend them to their favourable consideration.

"You will, I hope, agree with me in supposing, that none of the members of your Society, who is at all acquainted with Mr. Spencer's writings, would make light of the claims he has established on the esteem, admiration, and gratitude of mankind, and that it would be something akin to the discharge of a debt, if they, one and all, contributed their mite towards enabling him to add immensely to the obligations under which he has laid Englishmen and natives alike (not to speak of Europeans and Americans as well), and to his title to rank with the highest orders of minds—with an Aristotle, a Bacon, a Bentham, or a Comte.

"I beg, therefore, only to remind them of the duty they owe, not only to their illustrious benefactor, but to themselves, as the *élite* of the Bombay community, capable of appreciating and rewarding the merits and services of their greatest philosophers, and of thereby not only signalling their superiority to their brethren in England, who have to all appearance suffered him to discontinue his valuable labours, but themselves to be robbed of the most precious of gifts with which they could be blessed, and which they could easily have secured by a judicious and timely exercise of patronage, but also of rescuing the British name from the ignominy they have earned by the want of encouragement on their part which I so deeply deplore.

"In concluding this appeal to their good sense and sagacity, as well as to their generous feelings, I beg to solicit forgiveness of the Society for this piece of extraordinary liberty I have ventured to take, by addressing to such an exalted assembly, what might I fear appear to them an impertinent epistle. May I also beg their acceptance of the pamphlet alluded to in the letter which accompanies this, and to remain, Sir,

"Your most obedient Servant,

"(Signed)

"NOURAJA BYMAIJ."

THE AZTECS. — In volume iv, 1856, *Transactions of the Ethnological Society of London*, there is a paper by Mr. Cull and Professor Owen on this subject. I was present when the paper was read. The children, a boy and girl, reported to be brother and sister, were at the meeting under the care of a Mr. Morris, and the general opinion was that they were little idiots. I considered them to be a Zambo-Mulatto breed, not Aztecs of America, but from Central America. Since that period they have been exhibited by Mr. Morris. In *Daily Telegraph*, January 8th of this year, there is a long account of the Aztecs, their marriage, and that a fashionable wedding-breakfast had been provided by them at the Hanover Square Rooms. The article in the *Telegraph* alludes to them as *crétins* and as *brother and sister*. Professor Owen is lugged in thus, "It is some satisfaction to know that Professor Owen has given an adverse opinion to the original hypothesis of their close consanguinity." When and where? "Maximo Valdez Nuñez and his bride Bartolo Vasquez are very much alike—especially Maximo—but they are not the children of one father and one mother." This is but a mere assertion, how about the fact? In the *Journal Encyclopédique*, par B. Lunel, Paris, 1857, article "Aztèques," tom. ii, p. 337, is a letter communicated by M. Boursier, late French Consul at Quito, which he had received from General Various, formerly Governor of San Miguel in the republic of San Salvador. The following is an extract from said letter. "When on my way," says the Governor, "to visit the district of Usuttan, I met Raymond Selva, who was going to the farm of Leon de Avila. We arrived at Jacotal, at which place I remember seeing the two children, a *brother and sister*; they were curious-looking and small. Continuing my journey, I observed to Selva, that if the mother, a poor woman, could exhibit them in Europe, or through some intelligent person, she would reap a fortune for them. On arriving at Jacotal, Selva said he would propose to the mother to give him the possession of them, and to share profits with her; that this could easily be done if I used my influence, which I did. Selva took charge of the children and prepared to leave by the river San Juan de Nicaragua, accompanied by a Yankee. Selva was concerned in an Indian outbreak at San Juan, was made prisoner, and received fifty lashes. The Yankee got away with the children to the United States. Some time afterwards, Selva told me, that wishing to get back the children and the profits for exhibiting them, the Yankee refused to comply, when Selva went to law with him. Selva subsequently sold the children to the Yankee for

£3,600, who took them to London. The mother of these children is a vigorous Mulatto, the father is a Mulatto ; as to the children being Aztecs is a fable. They are idiots ; they were known in the country as *monitos*, or little monkeys."—A TRAVELLER IN THE NEW WORLD.

EXTRACT OF A LETTER FROM J. S. WILSON TO W. BOLLAERT.—"Quito, Jan. 19, 1867. My journey to Canelos will enable me to send a paper to the Royal Geographical Society. I endeavoured when there to obtain information of interest for the Anthropological Society. I obtained the measurements of the heads of eight Indians of rather impure breed, who carried our baggage down to that country. On our return, we got thirteen Indians to accompany us, but the rascals deserted us before they reached the first white settlement. I intended to have taken their measurements next day. I have made a bargain with a trader in Canelos to obtain some skulls of the Jívaros. These he will buy of their enemies, the Canelos. Having seen the question mooted by the fact of Mr. Blake having extracted from an Indian tomb in Peru a skull with human hair attached, I have obtained two samples of hair at Canelos, to show that the colour of the hair of the Indians is by no means invariably black, nor invariably coarse. I shall communicate my observations as soon as I have got them in order, and send the samples of hair with them.

WHO WERE THE ANCIENT BRITONS ?—The *Medical Times and Gazette* gives the following account of the Rev. W. Greenwell's recent lecture :—

"Most of our readers notice at times paragraphs in the newspapers detailing the accounts of the examination of ancient burial mounds by the Rev. W. Greenwell. They may also be interested in the controversy now going on with regard to the round and long head, and the round and long barrow question. They may, besides, wish for materials for settling the question, who were the ancient Britons ? A few years since, as an eminent French archæologist says, the name Gothic was applied to almost all the buildings from the eleventh to the sixteenth century. Are we more precise in our use of the word Celtic to any pre-Roman remains in Britain and France ? Are the inhabitants of these islands even more mixed than is commonly believed ? Did a mixture of Berber and Basque from Africa and Spain, and of Lapp from Scandinavia, precede the mixture of Belgian, Celt, Frisian, Dane, and Norman ? In order to furnish materials for thought on these topics, we propose to give some notes of a discourse delivered last Friday evening at the Royal Institution by the Rev. Canon Greenwell, in which he presented a summary of his researches. The east wolds of Yorkshire—the place where the principal explorations have been made—were described as a somewhat quadrilateral district, of moderate elevation, with its surface varied by deep waterless valleys and rounded chalk hills, like the Wiltshire downs : covered with scanty herbage, thorn, furze, and ling, little wood, and no animals ; bounded on the south by the valley of the Humber, on the east by the sea, on the west by the York valley. Now, there is evidence that this district was largely cultivated in pre-historic times—evidence derived partly from the occasional discovery of the site of rude circular wigwams from fifteen to twenty feet in diameter, sometimes excavated in the ground, sometimes built above it, and sometimes still retaining vestiges of a rude stone bench around, and of a central hearthstone whence the smoke ascended through the roof. Such vestiges, however, are soon obliterated by the plough. There is no evidence of large camps ; the people were probably divided into small tribelets. The trackways by which they went to the nearest stream to fetch water are yet visible ; and the territory seems bounded on the north by an earthen mound with fosse, nearly twenty miles long—whether for defence or as a landmark seems uncertain. It is most likely that the people who inhabited these wolds got their food by

hunting in the swamps and thickets which bounded them, and which, whilst affording covert to animals, offered scarce any habitable or defensible positions for man. Who were these people? Without borrowing from Ptolemy the names of Brigantes and Parisii, Mr. Greenwell proposed to determine this question by examination of their remains; and has come to the conclusion that there were two races, of which one inhabited the district first and alone, whilst at a later date they existed side by side with another race which intruded itself amongst them. He is led to conclude that the earlier people were a long-headed or dolichocephalic people; that they buried their dead under barrows, tumuli, or mounds of an oblong shape—from three to four times as long as broad—generally lying east and west, with one end larger than the other, and the primary interment under the large end. By the term primary interment is meant, of course, the first body buried. Many other burials may have succeeded, the bodies being placed in part of the circumference, and the mound enlarged to cover the new bodies. Let us say, by way of parenthesis, that the general plan of mound burial seems to have been identical all over the West of Europe, England, Ireland, and Brittany. The body was placed in a square chamber, constructed in the best method available?—in some places a humble square excavation into the chalk, covered over with a pile of stones; in other magnificent instances which abound in Western Brittany, a huge chamber formed of colossal stones, one at the bottom, one at each side, and one for a cover; this chamber, too, perhaps, with a vestibule or wings added. But, in any case, the whole was covered with a huge mound of earth. These mounds are now in the farmer's way; they are perpetually levelled by the plough; thus in time the central stones (if any) become exposed; people see one huge stone atop, supported by others, tablewise; they overlook the fact of the interment; or the bones are scattered and forgotten, and the denuded stones pass with the vulgar as Druidical altars; and the solemn circles of stone set up to mark and dignify the burial-place, inspire the brains of antiquaries with notions of a primæval worship of the serpent that tempted Eve, or of some diabolical attempt to figure the signs of the Zodiac. Were the matter sufficiently medical, we should be glad to treat of *menhirs* and *dolmens*; but we must stick to ethnology. The elderhood of the long barrow, and of the long skull found therein, is, according to Mr. Greenwell, evident—first, from the total absence of metallic remains, and from the abundance and excellence of the flint implements, which are superior in finish to those found in the assumed later barrows along with bronze. Secondly, from evidence of cannibalism. This evidence consists in the discovery of bodies buried, as is believed, at the same time with the primary interment, and never disturbed since: in one case so many as eighteen bodies were found at the east end of a long barrow; of men, women, and children; the bones scattered and broken, and in such a way as could only have been done with the recent bones. In the long barrows in the wolds, the bodies had evidently been burned, although the action of the fire was in some instances very incomplete. It seemed as if the bodies had been deposited, then covered over with a layer of chalk and flint, and wood heaped on the top of this, so as to burn the body within, and weld the covering into a compact, half-vitrified mass; but in many cases the action of the fire was evidently very imperfect. In one case, over a mass of burnt chalk and bones 35 feet long and 3 feet high, had been raised a mound of chalk, rubble, and earth 140 feet long, 50 feet wide, and 7 feet high. The skulls found in the long barrows, according to Mr. Greenwell, illustrate Dr. Thurnam's alliterative axiom—long barrow, long skull. The face is upright, with no tendency to prognathism; the forehead, on the whole, narrow, but not receding; the superciliary ridges only slightly projecting, and the middle of the skull along the line of the sagittal suture assumes to some extent a keel-shaped form. The parietal prominences are ill-

developed and much rounded off, and the upper part of the occipital region is very projecting. Judging from their bones, these people were probably not more than 5 feet 5 or 6 inches in height, and probably of pleasing appearance, with soft rounded features, and an absence of ruggedness of outline in the skeleton. In Mr. Greenwell's opinion, they were the earliest inhabitants of these wolds, for no sepulchral remains of any race before them have been found. He thinks that we must look to Spain and North Africa for a people similar to them. The Basque head is decidedly dolichocephalic. The paucity of long barrows tends to show that the population at the time of their erection was but scanty. The round barrows of the later race are very abundant. They are of various sizes, ranging from 15 feet in diameter to above 100 feet, and in height from 2 feet to near 20 feet, the most common being about 50 feet in diameter and 5 feet high. In shape they are like a flattish inverted bowl; they are usually formed of surface soil and chalk rubble, and they generally crown the heights. They were, no doubt, erected only over the remains of the chiefs of the people and their families. In some cases, perhaps, the wives and children and attendants of a distinguished chief were slain and buried with him, and it is not uncommon to find a very young child occupying the central place in a large barrow. The ordinary dead were doubtless buried without barrows in cemeteries, and at one of these places (at Elton, near Beverley), in making a railway, above seventy bodies, placed in the ordinary "British" manner, were discovered. Mr. Greenwell also referred to the circles formed of stones, earth, etc., intended to preserve the barrows from desecration. These barrows also afford evidence of burial with burning and without it, the latter being the more prevalent mode, due, doubtless, to the scarcity of wood. In some cases both were adopted contemporaneously. When unburnt the bodies appear to have been interred with their clothing, with the knees to the chin, most frequently on the left side, sometimes being laid on the ground, and sometimes in a cist formed of four or more stones set on edge with covers. At Gristhorpe, a perfect skeleton was found in the hollow of a tree, which, from its colour, has been termed "the Black Prince." The remains of burnt bodies have been found in various positions in urns or small hollows. In the latter part of this discourse Mr. Greenwell gave full details of the investigation of several series of barrows containing unburnt and burnt bodies. In the former, besides the bones of persons of all ages, the investigators came upon relics of the funeral feast, broken bones of wild oxen, deer, swine, and goats, potsherds, flint chippings, etc. In the barrows containing the remains of burnt bodies they discovered, besides many flint implements, bronze daggers with bone handles, ornamented urns, food vessels, and drinking cups. The bodies of males in many cases were associated with stone weapons and implements, and those of women with stone rubbers or corn crushers, flint knives or scrapers, jet and amber necklaces, buttons, and other ornaments. Bronze celts and other weapons are also found. The skulls of the people buried in the round barrows present two distinct types, as well as a third, possessing the characters of both combined, probably descended from a mixture of the two. One type is that of the long-headed race already described; the other, that of the intruding conquerors, was of a round-headed people, with an average stature of 5 feet 8 or 9 inches, a broad head, especially square in the hinder part, and a high forehead, the parietal bosses being strongly developed, and the occiput so much flattened as to suggest the idea that it had been made so by artificial means. These people must have presented a savage appearance, as all their features were prominent, the mouth and eyebrows projecting, and the cheek-bones high and angular. With regard to their origin, Mr. Greenwell considers that we must look to the North of Europe, as they approach in the type of their skull to that of the people of the stone age buried in the chambered barrows of Denmark, who may

have been allied to the Lapps, the representatives of a race at one time probably widely spread over the North of Europe. In conclusion, Mr. Greenwell alluded to the objections made to his view of the antiquity of these people. He stated that Cæsar and Tacitus testified to the use of iron by the Britons of their time, and affirmed that no iron had been found in any of these barrows, and that hitherto no evidence of Roman influence had been discovered in them. He said that, however easy it might be to say to what period they do not belong, it is impossible to give more than an approximate date to them. With more extended researches we may be able to arrive at more certain conclusions. 'In the meantime it is safer not to lay down any specific date, but to say, what we can with confidence do, that they belong to a time which ends a century or two before the occupation of Britain by the Romans.'"

THE EMANCIPATED NEGRO.—Mr. Munro, the British Consul at Surinam, in a report to the Foreign Office, describes the immediate effect of emancipation on the Negro slaves in the Dutch colony. On the 1st of July, 1863, the freedom of the slaves was promulgated, and the rights and privileges of freemen were accorded to them. "The Negro population received the boon without any great signs of exultation; the day passed over even with more stillness than a Sabbath. The agricultural labourers did not so readily turn out to work, and when they did, it was only to work what they pleased, and that generally was but poorly done. Many of the people, when the time of contracting with the owners of estates was appointed, left their former homes, and took to squatting in the bush, and abandoned plantations and grounds, on the borders of creeks in the neighbourhood of towns, where they lead a life of comparative idleness, of little use to themselves and less to the community at large, returning to a state of gross heathenism, practising and enjoying the superstitious African dances, with all their immorality. Their wants being few, are easily supplied from a bountiful soil, forests teeming with game, and the rivers, creeks, and swamps abundantly stocked with fish, which require but little exertion to procure. The Negro population who have remained on the estates do as little work as possible, which tells greatly on the crops; they do little else than reap the fruits of former years' labour, planting but little for the future."

AN ANTI-MALTHUSIAN FAMILY.—At Lloyds, near Ironbridge, Salop, the other day Mrs. Felton, the wife of a labouring man, presented her husband with twins, for the third time. What makes the matter more remarkable is, that two of her sisters have twice had twins.—From Eddowes's *Shrewsbury Journal*, Oct. 3rd, 1866.

A YOUNG MOTHER.—The Registrar of the Park (Sheffield) district reports to the Registrar-General:—"I have registered the birth of a child in my district this quarter, the age of the mother being only thirteen years and ten months. She was employed in a cotton mill in the neighbourhood of Manchester."

PROOFS OF EARLY CIVILISATION IN IRELAND.—Lord Lifford has had a political controversy with Mr. Bright respecting the condition of Ireland. Mr. Bright proposes to revert to the land system in force before the conquest by Cromwell. Lord Lifford describes in a few forcible words the deplorable condition of the people at that time, and after showing how completely they were at the mercy of the chiefs, he says:—"As well might we compare the graceful coronation of Queen Victoria with that of an ancient Irish prince, who sat naked in a bath with the boiled carcass of a cow, which he tore with his teeth, while his nobles supped the broth in which his Highness sat."