language, and far from being formed by it, one may say, in a certain sense, that it forms language. However that may be, M. Max Müller has treated the delicate subject which he wished to elucidate with great completeness and much knowledge."

After touching on the main topics of the 'Science of Thought,' and protesting strongly against some of its tenets, M. Barthélemy St. Hilaire concludes as follows:—

> "On peut voir par cette courte analyse de l'ouvrage de M. Max Müller qu'il ne craint pas les idées neuves, ni même les idées paradoxales. Mais le paradoxe, tout en choquant les idées reçues, peut cacher et annoncer une vérité. Nous n'oserions pas affirmer que cette théorie de M. Max Müller soit aussi vraie que sans doute il le suppose. Mais c'est beaucoup dans des études aussi ardues d'apporter pour sa part des idées originales, qui doivent éveiller l'examen, au risque de la contradiction, venant d'un écrivain aussi savant et aussi autorisé."

MESSRS. POLLARD & Co., of Exeter, are going to publish by subscription 'The History of the Family of Borlase,' by Mr. W. C. Borlase, late M.P. for St. Austell, with large chart pedigree dating back to the time of William II.

THE chief Parliamentary Papers of the week are Historical MSS. Commission, Marquess of Abergavenny and others, Tenth Report, Part VI.; East India, Deccan Mines, Return; Local Taxation Returns, England, 1885-6, Part III.; and Colonial Possessions, Reports for 1885-6.

SCIENCE

The Life and Letters of Charles Darwin, including an Autobiographical Chapter. Edited by his Son, Francis Darwin. 3 vols. (Murray.)

"NATURE," wrote Emerson, "stretches out her arms to embrace man, only let his thoughts be of equal greatness. Willingly does she follow his steps with the rose and the violet, and bend her lines of grandeur and grace to the decoration of her darling child. Only let his thoughts be of equal scope, and the frame will suit the picture." These eloquent words may well occur to the reader as he lays down the last of the three volumes in which, with pious care and great skill in selection, Mr. Francis Darwin has furnished a fitting portrait of his father. Rising from them and setting at once to express one's feelings, it is difficult to find the means which will adequately represent to others the kind of emotions which the threefold picture has aroused. Mr. Darwin himself makes use of an expression of admiration which will best, perhaps, serve our present purpose; he wrote from Rio de Janeiro to Prof. Henslow: "I formerly admired Humboldt, I now almost adore him."

We have advisedly called the present 'Life' a threefold picture, for it comprises [illegible] interesting autobiographical [illegible] Mr. Darwin, consciously drawn [illegible] for his children, [illegible] chapter entitled [illegible] of my Father's Every-day [illegible] the letters [illegible] consciously [illegible] general [illegible] vividly [illegible]

even greater as a man than as a naturalist, a hero as well as a philosopher, and more rightly beloved for his moral nature than admired for his intellectual acquirements. The chief object which his biographer has set before himself has been that of illustrating his father's personal character; and he is to be sincerely congratulated on having well performed a task which, though it was not difficult, because of the noble simplicity of his father's nature, became so from the wealth of material at his disposal, and the character and variety of his father's work. In this connexion the world owes a deep debt of gratitude to Sir J. D. Hooker—"best of friends and philosophers"—for the care with which he preserved the letters received by him from his illustrious correspondent.

The first remarkable point in Mr. Darwin's character was its absolute simplicity. His belief in the good feeling and uprightness of other men was quite astounding; indeed, after the virulent attacks to which he was subjected on the publication of the 'Origin of Species,' it is wonderful that he did not fall into a permanent pessimism, in which, with Schopenhauer, he would have regarded the world as a "harbouring place for rascals." Instead of this he writes even of Bishop Wilberforce: "If you have not seen the last *Quarterly* do get it; the Bishop of Oxford has made such capital fun of me and my grandfather"; and of Mr. Mivart he seems to do no more than conclude "with sorrow that though he means to be honourable, he is so bigoted that he cannot act fairly."* We believe, indeed, that Mr. Darwin would never have mistaken, as the ordinary proverb-monger does, the words of Job, "and that mine adversary had written a book."

Virtues such as simplicity are often found to be only superficial; when the mind becomes unhinged by sorrow or despair the self-consciousness of the natural man is revealed. Burke showed himself to be of the same kidney as Mr. Thomas Sapsea in the elaboration of his lamentations on the death of his son; but when Mr. Darwin lost his favourite child at Malvern he gave way to no public expression of his loss; the gravestone under the cedar to the north of the Priory Church bears only, in addition to the ordinary information, the simple and touching expression, "A good and dear child." Again and again it has been our fortune to see those words, and every time we see them they move us more and more. This genuine simplicity extended itself to every action of his life. Never was there a man who thought so little of fame or who so little thought he deserved it, and never was there one to whom the advice of Mark Pattison—"Shun above all that worst of slavery, the resting your happiness on the good opinion of others"—could be less appropriately given. Evidences innumerable of this central characteristic are to be found in the letters, as they were in the correspondence with Mr. Hancock, which we mentioned some months since.

[illegible] is the central characteristic, for it is that from which many others flowed.

It found expression in the "intense and almost passionate honesty" on which Prof. Huxley has insisted, for Darwin saw things as little through a glass darkly as mortal can ever hope to see them; it led him to see his own faults so distinctly that he was able to admire others unreservedly, to recognize his errors, to accept criticisms, and to avoid controversy; and it brought him, lastly, the esteem and admiration of the world, for "honour," as Solomon tells us, "shall uphold the humble in spirit."

And, so far as others were concerned, it was the prime cause of their affection for him. His daughter writes:—

> "He was always so ready to be convinced that any suggested alteration was an improvement, and so full of gratitude for the trouble taken. I do not think he ever forgot to tell me what improvement he thought I had made, and he used almost to excuse himself if he did not agree with any correction. I think I felt the singular modesty and graciousness of his nature through thus working for him in a way I never should otherwise have done."

Prof. Huxley has put on record that Darwin had the same desire as Socrates to find some one wiser than himself. Mr. Romanes applies to him what Darwin himself had said of Henslow:—

> "When I reflect how immediately we felt at perfect ease with a man older, and in every way so immensely our superior, I think it was as much owing to the transparent sincerity of his character as to his kindness of heart, and perhaps even still more to a highly remarkable absence in him of all self-consciousness."

His son describes his manner in the following terms:—

> "When he was excited with pleasant talk his whole manner was wonderfully bright and animated, and his face shared to the full in the general animation. His laugh was a free and sounding peal, like that of a man who gives himself sympathetically and with enjoyment to the person and thing which have amused him."

The reader will recall the hero of Spenser:

Whose every deed and word that he did say
Was like enchantment, that through both the eares
And both the eyes did steale the hart away.

One or two quotations from his letters must suffice to exemplify the points on which we have been insisting. Here is what he thought of the world's honours. On receiving the information that he had been awarded the Royal Society's medal he wrote to Hooker:—

> "Amongst my letters received this morning I opened first one from Col. Sabine; the contents certainly surprised me much, but, though the letter was a *very kind one*, somehow, I cared very little indeed for the announcement it contained. I then opened yours, and such is the effect of warmth, friendship, and kindness from one that is loved, that the very same fact, told as you told it, made me glow with pleasure till my very heart throbbed......Such hearty, affectionate sympathy is worth more than all the medals that ever were or will be coined."

His candid repentance about the work of the South American Missionary Society is of especial interest at this moment, when the missionary value of Christianity is under discussion:—

> "I had never heard a word about the [illegible] of the T. del Fuego mission. It is most [illegible] and [illegible] I always pro[illegible] [illegible]. It is [illegible]

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* [illegible] Mr. Chauncey Wright's essay on [illegible]

His generous appreciation of others is well exhibited by the following to Mr. Chauncey Wright:—

> "I agree to almost everything which you say. Your memory must be wonderfully accurate, for you know my works as well as I do myself, and your power of grasping other men's thoughts is something quite surprising; and this, as far as my experience goes, is a very rare quality."

We must now select some of the sayings which illustrate the well-marked possession of humour. Weary with the length of his voyage, he writes to Mr. Whitley: "That this voyage must come to a conclusion my reason tells me, but otherwise I see no end to it." When he lived in London he used to "go and dine at the Athenæum like a gentleman, or rather like a lord, for I am sure the first evening I sat in that great drawing-room, all on a sofa by myself, I felt just like a duke." But he hardly felt like a duke on that day's entomologizing on the banks of the Cam when

> "under a piece of bark I found two *Carabi* (I forget which), and caught one in each hand, when, lo and behold, I saw a sacred *Panagæus crux-major*. I could not bear to give up either of my *Carabi*, and to lose *Panagæus* was out of the question; so that in my despair I gently seized one of the *Carabi* between my teeth, when to my unspeakable pain and disgust the little inconsiderate beast squirted his acid down my throat and I lost both *Carabi* and *Panagæus*."

He was wise enough to remember one paternal lesson:—

> "In this one respect I am in the state which, according to a very wise saying of my father's, is the only fit state for asking advice, viz., with my mind firmly made up, and then, as my father used to say, *good* advice was very comfortable, and it was easy to reject bad advice."

He had an argument with Sir C. Lyell, and he writes to Sir J. Hooker:—

> "Lyell has written me a *capital* letter on your side, which ought to upset me entirely, but I cannot say it does quite. Though I must try and cease being rabid and try to feel humble, and allow you all to make continents as easily as a cook does pancakes."

He could be friends with men with whom he disagreed. Of Mr. Brodie Innes, sometime Vicar of Down, he said:—

> "Innes and I have been fast friends for thirty years, and we never thoroughly agreed on any subject but once, and then we stared hard at each other, and thought one of us must be very ill."

His friendly banter of Prof. Huxley is in excellent style:—

> "With respect to Automatism, I wish that you could review yourself in the old, and of course forgotten [do the Duke of Argyll and Mr. Gladstone agree?], trenchant style, and then you would here answer yourself with equal incisiveness; and then, by Jove, you might go on *ad infinitum* to the joy and instruction of the world."

And again:—

> "For heaven's sake don't write an Anti-Darwinian article; you would do it so confoundedly well. I have sometimes amused myself with thinking how I could best pitch into myself, and I believe I could give two or three good digs."

He was, perhaps, better pleased with the booksellers than the critics, for he writes to Lyell that a friend had asked for the 'Origin of Species' at the bookstall at Waterloo Station, and the bookseller said he had not read it, but heard it was a very remarkable book!

And he could enjoy the fun of others. He repeated with gusto his brother's answer on being asked by Charles to read his 'South American Geology': "Upon my life I would sooner ever buy it." He writes to Hooker of Lyell being

> "so delighted with one of Agassiz' lectures on progressive development, &c., that he went to him afterwards, and told him 'that it was so delightful, that he could not help all the time wishing it was true.'"

But his best story was the

> "Johnsonian answer of Erasmus Darwin's: 'Don't you find it very inconvenient stammering, Dr. Darwin?' 'No, sir, because I have time to think before I speak, and don't ask impertinent questions.'"

Unless, indeed, it be equalled by the letter

> "from a German homœopathic doctor, an ardent admirer of the 'Origin.' Had himself published nearly the same sort of book, but goes much deeper. Explains the origin of plants and animals on the principle of homœopathy, or by the law of spirality. Book fell dead in Germany. Therefore would I translate it and publish it in England."

Many will ask, though most assuredly Mr. Darwin himself would never have done so, Was this great man, then, without faults? Well, there were rather what may be called failings; the most remarkable, and one which he deplores himself most bitterly, was the gradual loss of the æsthetic tastes:—

> "My mind seems to have become a kind of machine for grinding general laws out of large collections of facts, but why this should have caused the atrophy of that part of the brain alone, on which the higher tastes depend, I cannot conceive. A man with a mind more highly organized or better constituted than mine, would not, I suppose, have thus suffered; and if I had to live my life again, I would have made a rule to read some poetry and listen to some music at least every week; for perhaps the parts of my brain now atrophied would thus have been kept active through use. The loss of these tastes is a loss of happiness, and may possibly be injurious to the intellect, and more probably to the moral character, by enfeebling the emotional part of our nature."

He supposed he was a very slow thinker, and laments the want of quickness in criticism. The latter, of course, is a consequence of the former, and the quality of the thoughts may well be balanced against the length of their gestation. But, undoubtedly, the difficulty of composition to which he refers incessantly was a great misfortune: "There seems to be a sort of fatality in my mind leading me to put at first my statement or proposition in a wrong or awkward form"—"I have as much difficulty as ever in expressing myself clearly and concisely; and this difficulty has caused me a very great loss of time"; but it had the advantage of increasing the period of self-criticism, and that he regarded as an advantage.

The state of his health afforded him quite sufficient reason for taking but a slight share in the general duties of a citizen, yet "in all parish matters he was an active assistant"; he was for thirty years treasurer of a friendly club at Down, and of the coal club, and he was for some years a county magistrate. His only official connexion with scientific society was his three years' [illegible] of the [illegible] Society. [illegible] great interest in the vivisection question, and the settlement which was arrived at owed a good deal to the share that he had in the matter.

But if the amount of civic or social duty performed by him was small, his interest (as every reader of his 'Journal' knows) in human affairs was prompted by a noble and generous liberality and a remarkable elevation of sentiment. His regard for the native and savage races of South America, his hatred and abomination of slavery, his generosity towards the Zoological Station at Naples (vol. iii. p. 225) and to the work at Kew (vol. iii. p. 351), are sufficient to prove this.

The enormous quantity of work done by Mr. Darwin must often have led those who were unacquainted with the real facts to imagine that "his ill health" was a *façon de parler*; but they will learn now that it was not so. If he accomplished three hours' work a day he would say, "in a satisfied voice, '*I've* done a good day's work.'" His children, Mr. Francis Darwin tells us,

> "saw him in constant ill-health—and saw him, in spite of it, full of pleasure in what pleased them. Thus, in later life, their perceptions of what he endured had to be disentangled from the impression produced in childhood by constant genial kindness under conditions of unrecognized difficulty."

After a touching reference to the devotion of Mrs. Darwin, a thing so sacred that her son hesitates to speak of it, he adds:—

> "But it is, I repeat, a principal feature of his life that for nearly forty years he never knew one day of the health of ordinary men, and that thus his life was one long struggle against the weariness and strain of sickness."

Elsewhere Prof. Huxley has spoken of the "physical difficulties which would have converted nine men out of ten into aimless invalids." The numerous references to his health which are to be found in his letters fully confirm these statements. Thus in 1841 he wrote to Lyell:—

> "My father scarcely seems to expect that I shall become strong for some years; it has been a bitter mortification for me to digest the conclusion that the 'race is for the strong,' and that I shall probably do little more, but be content to admire the strides others make in science."

Some measure of the physical strength of his later years may be gained from another letter to Lyell twenty years later, when he was only fifty-two: "I have actually walked, I believe, good two miles out and back, which is a grand feat." In 1862 he writes to Mr. W. D. Fox, "My nights are *always* bad, and that stops my becoming vigorous"; and, a little later, "The other day I went to London and back, and the fatigue, though so trifling, brought on my bad form of vomiting."

We shall respect the delicacy of the son, and only remark that the fact of so great and so constant a sufferer working till seventy-one years of age, signally falsifying "his melancholy prophecy," and living till he could say with Dido,

> Urbem præclaram statui; mea mœnia vidi,

is sufficient testimony to the care with which his every-day life was surrounded. And, so far as concerns himself, his endurance, even without the masterly self-restraint with which he suffered malevolent criticism, would win [illegible] compare the joyousness of his letters with the daily whinings of Casaubon or the cruel gibes of Carlyle.

The details of Mr. Darwin's life are easily summed up. A youth of no great promise; a course at Cambridge, when he began to attract the notice of men older than himself; the voyage on the Beagle, of which every reader knows; a short period in London; and a life of retirement at Down, broken by rare visits to friends and rather more frequent visits in search of health, make up the sum. Of his work we will only say that, *pace* the Duke of Argyll, the theory of coral reefs would have sufficed for an ordinary reputation; the monograph on cirripedes would have justified a Royal Medal; his observations on domesticated animals, on orchids, on carnivorous plants, on earthworms, or on the expression of the emotions, are, singly, works with which a naturalist might have been contented. The great central work and its companion on 'The Descent of Man' dwell, like a star, apart from any biological work by any other author.

Mr. Francis Darwin has brought together in a most convenient manner the correspondence relating to the 'Origin of Species,' and has woven the whole in a fashion which will give the second volume the highest scientific value. Here the letters to Hooker, Lyell, and Asa Gray are of signal importance. The most interesting point at this moment is the extent of Darwin's indebtedness to others—a point, it must be said, which his own desire to give due credit has a little obscured. This has been aided by the common belief that all great achievements are the result of a number of combined forces, or, as Mr. Gladstone eloquently says in 'Juventus Mundi':—

> "When some splendid edifice is to be reared, its diversified materials are brought from this quarter and from that, according as nature and man favour their production......Every worker was, with or without his knowledge and his will, to contribute to the work."

In his autobiographical sketch Mr. Darwin puts the matter very clearly and simply:—

> "It has sometimes been said that the success of the 'Origin' proved that 'the subject was in the air' or 'that men's minds were prepared for it.' I do not think that this is strictly true, for I occasionally sounded not a few naturalists, and never happened to come across a single one who seemed to doubt about the permanence of species. Even Lyell and Hooker, though they would listen with interest to me, never seemed to agree. I tried once or twice to explain to able men what I meant by Natural Selection, but signally failed. What I believe was strictly true is that innumerable well-observed facts were stored in the minds of naturalists ready to take their proper places as soon as any theory which would receive them was sufficiently explained."

Malthus was his only intellectual father. The claims of Lamarck and of R. Chambers are sufficiently disp[illegible] following, though it unfortu[illegible] enough, was [illegible] Bell's '[illegible] future loose naturalist attempting the same speculations will, perhaps, say) has Mr. D..."

As to priority of discovery—a "trumpery affair" in Mr. Darwin's eyes—he had, of course, predecessors of a kind; but Mr. Matthew, for example, can hardly be regarded as a serious competitor, for "one may be excused in not having discovered the fact in a work on Naval Timber." The last words in the following extract not only contain the real gist of the matter, but represent, as all the world knows, Mr. Wallace's own opinion:—

> "So all my originality, whatever it may amount to, will be smashed, though my book, if it will ever have any value, will not be deteriorated; as all the labour consists in the application of the theory."

Mr. Wallace, who alone could be regarded as a serious competitor, has thus expressed himself:—

> "I have felt all my life, and I still feel, the most sincere satisfaction that Mr. Darwin had been at work long before me, and that it was not left for me to write the 'Origin of Species.' I have long since measured my own strength, and know well that it would be quite unequal to that task."

The letters in the second volume reveal the slow, cautious, but steady progress made by Mr. Darwin in his convictions of the value of his theory, and they will always form the best *vade mecum* to a comprehension of his real intentions. The historian of the subject will be much indebted to Prof. Huxley for the vigorous chapter which he has contributed "On the Reception of the Origin of Species"; but at this moment, while every one must recognize its great value, its vigour impresses the reader not unfavourably, but painfully, when compared with the calm atmosphere of Darwin's benign geniality; it is a "tempest after sun," and not the "sunshine after rain." Yet if it is realistic, it is artistic in the sense of conveying to the reader a good idea of the tempest that raged, while fury, virulence, and ignorance sharpened every one of their darts, and misrepresentations and base imputations worked their wicked will. For Mr. Darwin and his theories that kind of thing is at an end, and Prof. Huxley hopes, though a good deal against hope, that it is at end for other people too. If this be so, none would more desire to have been its victim than Mr. Darwin; but as it is a kind of envy, we fear that it will continue to be what Bacon calls the "most importune and continual of affections." That in Mr. Darwin's case it came to an end as soon as it did was largely because Prof. Huxley acted on the offensive as well as the defensive, that Lyell was converted, and Hooker a prophet. It is curious that Mr. Darwin's correspondence does not contain any remarks on Baden Powell's 'Unity of Worlds,' which, [illegible] the more strictly philosophical aspect, [illegible] to have done much in preparing the [illegible] men for Mr. Darwin's views. The [illegible] has had, of [illegible]

Schleicher* of Jena early (1863) perceived the influence it would have on the study of language, and justly remarked that "the two main points in Darwin's theory have this in common with many other important discoveries, that they are confirmed even in those spheres which at first had been left unnoticed." It has made a belief in evolution possible in other branches of science, as was well shown by Sir R. S. Ball in his address on 'The Relation of Darwinism to other Branches of Science.' It has invaded the domains of politics and of morals; and theologians apply it to all religions but their own.

The numerous and valuable researches on botany are considered together in the latter part of the third volume; and here, again, the editor's method will prove of great assistance to the student. In these also the true genius of Darwin is seen—so slight appear to be the points which he selects for observation, so wide and far-reaching the results which he obtains.

As to Mr. Darwin's religious views we shall say nothing, "for he felt strongly that a man's religion is an essentially private matter, and one concerning himself alone"; and as to the question, which, in a suitable place, may be justly discussed, Do Darwin's scientific teachings incline to agnosticism or atheism? it is not proper here to say more than that a large number of evolutionists—such as Prof. Cope, whom we quoted a few months since—are most certainly neither agnostics nor atheists.

Here—though we have by no means said all, and still less quoted all that we wished—we take leave of these delightful volumes. If Mr. John Morley believes in "that terrible, that woeful, that desolating saying, There is in every man and woman something which, if you knew it, would make you hate them," he may now cite, we believe, a great instance against that truly dreadful law. If the Duke of Argyll has had reason to fear "idolatry" in the past, he will have much more reason now, for we of this day—and we ought to be particularly proud of our age—know that we have had among us one who may as justly as Gordon claim to belong to the band of gentle heroes, and as proudly as Newton assert his place among the great benefactors of mankind.

ASTRONOMICAL NOTES.

EARLY next month the planet Venus will [illegible] from Virgo into Libra, and towards the [illegible] the year into Scorpio, a constellation [illegible] Jupiter will enter about the same time. [illegible] first two or three days in January [illegible] planets will be very near each other (Jupiter about 2° to the south of Venus), rising [illegible] 1 and 2 o'clock in the morning. [illegible] in Virgo throughout December, [illegible] near η Virginis on the 12th [illegible] Cancer, and the only planet [illegible] ing, rising about 8 o'clock.

It is not likely that [illegible] Biela comet meteors on the [illegible] earth will again traverse [illegible] year, just the reverse of what we do with respect to the Leonids or meteors of the 14th of November, and in about three hundred years both displays will take place nearly at the same time, about the 20th of November.

Mr. J. M. Schäberle, assistant at the Ann Arbor Observatory, Michigan, U.S. (where he discovered the second comet of 1880 on the 6th of April in that year), has, like Mr. E. E. Barnard, been recommended by the director, Prof. Holden, for an appointment at the new Lick Observatory, California. Official action will not, however, be taken by the Regents until the observatory is handed over to the State, and in the mean time Mr. Schäberle will remain at Ann Arbor. It is hoped that active operations at the new observatory will commence early next year.

The Dearborn Observatory, Chicago, is under orders to remove from its present site to the North-Western University at Evanston, which is also in Illinois, and only a few miles distant from Chicago.

Iowa College, situated at Grinnell, Iowa, is building a new astronomical observatory, which will probably be shortly completed. For its use an 8-in. equatorial has been constructed by the Clarks.

An "Astronomical Society of France" has recently been inaugurated, and held its first meeting on the 12th of October, M. Camille Flammarion being the president.

Dr. A. Galle contributes a note to No. 2813 of the *Astronomische Nachrichten* on the near approach, which will take place next autumn, of the small planets Astræa and Flora. It appears that about the second week of September these planets will pass within a distance of less than 600,000 miles of each other.

We are informed by Mr. Denning that several meteors belonging to the Leonid radiant were observed on the night of the 14th inst. by himself at Bristol, by Mr. Booth at Leeds, and by Mr. Backhouse at Sunderland. But the display was meagre, as we anticipated it would be.

Prof. Schjellerup, Director of the Observatory at Copenhagen, died there on the morning of the 13th inst.

Sir R. S. Ball, the Astronomer Royal of Ireland, will give the children's lectures at the Royal Institution this year.

MR. DARWIN AND MR. S. BUTLER.

15, Clifford's Inn, Fleet Street, Nov. 22, 1887.

In Mr. Francis Darwin's recently published life and letters of the late Charles Darwin I find the following passage:—

> "The publication of the 'Life of Erasmus Darwin' led to an attack by Mr. Samuel Butler, which amounted to a charge of falsehood against my father. After consulting his friends, he came to the determination to leave the charge unanswered, as being unworthy of his notice.* Those who wish to know more of the matter, may gather the facts of the case from Ernst Krause's 'Charles Darwin,' and they will find Mr. Butler's statement of his grievance in the *Athenæum*, January 31st, 1880, and in the *St. James's Gazette*, December 8th, 1880. The affair gave my father much pain, but the warm sympathy of those whose opinion he respected soon helped him to let it pass into a well-merited oblivion."

If the affair "well merits oblivion" why does not Mr. Francis Darwin leave it alone? It has caused as much pain to myself as it can have caused the late Mr. Charles Darwin, and drawn upon me an obloquy not more easy to bear for being unmerited. I had resolved never to return to the subject, and, though very angrily attacked in respect to it by Dr. Krause in his German work 'Charles Darwin,' was advised to [illegible] attacked in English. In 'Luck, or Cunning?' therefore, published a year ago, I [illegible] from remote allusion to it. Now [illegible] Darwin has reopened the matter [illegible] to prefer his readers to my book 'Unconscious Memory' and to my letter to *Nature*, February 3rd, 1881, in both which places he is well aware that I stated the case with far greater fulness than in your columns or in the *St. James's Gazette*; and why does he not refer to some English publication for a statement of his father's case, instead of to a German book which few of his readers are likely to see?

In 'Unconscious Memory' I have explained that the letter to myself, in which, Mr. Francis Darwin says, his father expressed his regret, was, in reality, an aggravation of the offence. It is very short; why, I wonder, if it was a sufficient expression of regret, has not Mr. Francis Darwin printed it? He now contends that I brought a charge of falsehood against his father so frivolous that there can have been no necessity to reply to it. I, on the other hand, contend that Mr. Francis Darwin is trying to justify at my expense a high-handed action of his father's, and to evade challenges repeatedly made which neither the late Mr. Darwin nor any of his successors have ever ventured to take up. I repeat, then, that the late Mr. C. Darwin's pretended translation of Dr. Krause's article was a garbled, antedated, and hence misleading version; that Mr. Darwin knew the article had, since its original publication, been manipulated in a sense seriously hostile to me and favourable to himself; that in spite of this knowledge he said in his preface to 'Erasmus Darwin' that he was giving the original article; expressly stated that my own book had appeared subsequently to this, though he knew that what he was giving to the public had been modified by the light of, and turned into an attack on, my book; and on complaint from me he took not one single step towards a public correction of his misstatement.

S. BUTLER.

THE CROOKSHANK BACTERIOLOGICAL LABORATORY AT KING'S COLLEGE.

Although in this country considerable interest has for many years past been taken by professed men of science in the work with which the names of Pasteur of Paris and Koch of Berlin will always remain associated, it is only within the last five years that any attention has been given to bacteriology by the practising members of the medical and veterinary professions. The discovery, in 1882, by Koch of the bacillus of tubercle was to many a complete revelation of a new field of inquiry. The work of Burdon Sanderson and of Klein under the medical officer of the Privy Council had had little practical effect on their minds; but consumption and its cause was a matter in which they were all interested. Not, indeed, that some did not ridicule the whole matter; the point is that the serious study of bacteriology as a branch of medical investigation began in England in 1882. In 1884 Mr. Watson Cheyne had a most interesting laboratory at the Health Exhibition, of which we gave an account at the time. It was hoped by many others besides ourselves that the interest excited by the demonstrations of Mr. Cheyne would be sufficient to justify the formation of a Government Institute of Bacteriology. This, however, was not to be, and it has remained, as it generally does in this country, for a private individual and an unendowed institution to undertake the work which in most states would be regarded as of public importance. Dr. Crookshank, a distinguished student of King's College, was one of the first to see the importance of bacteriology to the medical treatment of men and animals; and he took [illegible] to visit and study in [illegible] ratories on [illegible] embodied [illegible] which [illegible] Professor of Physiology, a course of lectures and practical work was given in the physiological laboratory last May; to this, however, only twenty students could be admitted, and many had to be refused. The great success of this course encouraged the Council to go further, and to institute the first professorship of bacteriology which has been founded in this country; to this, of course, Dr. Crookshank was appointed.

A large and well-lit apartment was set aside as a general laboratory, and during the past summer smaller rooms have been built in connexion with it. Any difficulty that the College might have had in suitably equipping the rooms was obviated by Prof. Crookshank's generous donation of one thousand pounds for this purpose.

Of the more important characteristics of this new laboratory, which is intended for the use of investigators as well as of students in bacteriology, we may note that each working table is completely fitted with all necessary adjuncts, so that each student is able to work quite independently. The microscope table is painted a slate colour, with a broad band of white. This arrangement allows of the mounting of preparations and the examination of cultivations on either a white or dark background. The new Welsbach burner has been applied to the microscope lamp invented by the professor, and has already proved of the greatest value; the steadiness, whiteness, and intensity of the light bring out with great effect the aniline dyes which are so much used in staining bacteria.

In the centre of the room are long working tables, provided with all the complicated apparatus now necessary in researches of this kind, and on side tables are various microtomes for cutting either ordinary sections or sections of a whole organ. The supply of microscopes is ample and extensive, and objectives made of the new glass are already in use here.

Prof. Crookshank's first course commenced on November 1st, and already applicants have to be refused admission. This is, in a sense, satisfactory, as it shows that in undertaking this new branch of work the College has responded to a widely felt need. The fact that investigators are particularly invited to make use of the laboratory is of much importance, and will, we hope, lead to this country taking a large share in investigations that are of the highest value to the health and wealth of mankind, and the comfort and hygiene of domestic animals.

SOCIETIES.

Royal.—*Nov.* 17.—The President in the chair.—The address to the Queen on the celebration of Her Majesty's Jubilee year, which had been presented since the last meeting of the Society, was read from the chair.—The statutes relating to the anniversary meeting of the Society were read, and the election of officers and Council was announced for Wednesday, November 30th, at 4 P.M.—The auditors of the Treasurer's accounts on the part of the Society were elected.—The following papers were read: 'Researches on the Spectra of Meteorites' (a Report to the Solar Physics Committee), by Mr. J. N. Lockyer,—and 'Specific Inductive Capacity,' by Dr. J. Hopkinson.

Astronomical.—*Nov.* 11.—Mr. J. W. L. Glaisher, President, in the chair.—Mr. T. Bauchope was elected a Fellow.—The President read a letter from Mr. I. Roberts, in which he offered to place in the hands of Fellows of the Society who would provide themselves with the [illegible] and micrometer [illegible] groups which would enable [illegible] astronomical results.—Dr. [illegible] the appearance [illegible] during transit [illegible] relative