ON THE THEORY OF DEVELOPMENT, AND THE ANTIQUITY OF MAN:

A

LETTER

TO

J. PHILLIPS, ESQ., M.A., F.R.S., &c.

PROFESSOR OF GEOLOGY

IN THE UNIVERSITY OF OXFORD,

FROM THE

REV. H. H. WOOD, M.A., F.G.S.

RECTOR OF HOLWELL, DORSET,

AND FORMERLY FELLOW AND TUTOR OF QUEEN'S COLLEGE, OXFORD.

London,

RIVINGTONS, WATERLOO PLACE;

HIGH STREET, Oxford. | TRINITY STREET, Cambridge.

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GILBERT AND RIVINGTON, PRINTERS,
ST. JOHN'S SQUARE.

A

LETTER,

&c.

My dear Phillips,

You will not, I am sure, be surprised when I tell you that I still retain very vivid recollections of those pleasant days in dear old Alma Mater, when I sat a delighted listener to your lectures on Geology, or rambled with you, hammer in hand, to some interesting section, to extract from it the history of ages long since passed away. Nor yet, I think, will you be disappointed if I confess that I should be very sorry now to exchange the work of my quiet country parish, dull and monotonous as it might seem to be, for the excitement of ever hearing something new, and that restless activity that must always obtain in such centres of thought and learning as our Universities. But though disputed questions of science, rarely, if ever, disturb the repose of our rural Arcadia, and I may be growing rusty, and require to go to school again, it does seem to me that the conclusions which men of science are drawing now, are, in some instances at least, not those which your own method of patient investigation and cautious deduction, would

appear to justify, and so for the sake of old times you will forgive me, if I inflict on you somewhat at length the reasons which prevent me from accepting one or two of the conclusions that seem to find a more or less extensive acceptance at the present day.

No question, I suppose, in Natural Science excites more discussion at this moment than that of development. Nor can it be denied that it is a question which has become much more attractive now that it is no longer presented to us in the coarse form it bears in the works of De Maillet and Lamarck, but in that singularly ingenious and fascinating one in which we find it in Mr. Darwin's book. And yet I cannot help thinking that, when we come to examine it closely, it has, even there, far more of the ghastliness of lifeless speculation than the beauty of living truth. The one great principle which forms the foundation of all such books as these is the elimination of a Creator, and the erecting of a "law" to that position which we have hitherto believed to be occupied only by Him who clothes the lilies, and gives birds their food, and by whom the hairs of our heads are numbered every one. I do not mean to say,—I trust I should not be so unjust—that the theory of development, as at present held, leads necessarily to Atheism. For whilst God's interference by special creations is absolutely denied, He is still, I believe, allowed to be the Author of that law, and to have given it its wonderful powers, by which the complex organisms we see around us, are supposed to have been evolved from original simplicity. Nor will I at present express any opinion as to how far such a theory virtually overthrows those declarations of Revelation, which I for one feel I can only hold the position I occupy in the Church of God by receiving and maintaining in their full and absolute integrity.

But I do think that the theory of development as at present held is unphilosophical and untrue. If there be such a thing as development it must receive its most cogent proofs, not from the infinitely small range of our own experience, nor yet from the longer, though still limited period over which human history extends, but from that marvellous storehouse of facts, plain and undeniable, which Geology brings before us. Now the ablest expositor of the theory of development, Mr. Darwin, frankly confesses that the theory receives from Geology *at present* no support whatever. "Geology assuredly does not reveal any such finely graduated organic chain, and this, perhaps, is the most obvious and gravest objection which can be urged against my theory" (Origin of Species, p. 280). And this confession he repeats more than once in his book. Now how does he reason himself over this huge difficulty? "The explanation lies, I believe, in the extreme imperfection of the geological record" (*Ibid.*). That is—for this is what it really amounts to—because Geology is imperfect, we had better accept as true that which Geology contradicts. I trust I shall be forgiven if I decline to be content with such "Science" as this.

I cannot believe that any filling-up of the blanks which undeniably exist in the geological record, will ever supply the proofs that are required for these speculations, because I am sure that the blanks which are filled up from time to time do not tend in that direction, but in a contrary one. No one I suppose now-a-days holding the theory of development is so unphilosophical as to believe with De Maillet, that a flying-fish caught in a bramble-bush, through the force of external circumstances, became a bird. And why? Because, as they tell us, "*Natura non facit saltum*"—it is by slow and

insensible gradations that new species are developed. Now if this be so,—if the polype has been transmuted into the star-fish, the star-fish into the mollusc, the mollusc into the cold-blooded fish and reptile, and these again into the warm-blooded bird and mammal, through "a finely graduated organic chain,"—we ought to find nothing in the geological record to contradict this. And yet I venture to say that every part of it is already, or will eventually be found to be, so contradicted. Let me take a paper of Mr. Seeley's, read at the last Meeting of the British Association, as an illustration of this point. He proposes there for a certain class of remains, hitherto regarded as reptiles, the order Saurornia. This order is characterized as including "birds with teeth, with peculiar wings, tarsus and metatarsus separate, and reptilian types of vertebræ." Here then would seem to be found the passage of reptilian life into that of birds. And if in the strata immediately above those in which these bird-reptiles are found the remains of true birds occurred for the first time, there would be no doubt a strong apparent proof of the theory of development. But what is the fact? Why, that there is undoubted evidence of the existence not only of birds, but even of mammals, in strata of far higher antiquity than those in which the Saurornia are found. And to say that hereafter, when the imperfections of the geological record are filled up, the natural sequence and the line of passage will be discovered where, according to the theory, it ought to be discovered, is surely unworthy of philosophy [1]. I cannot understand on what principles any person can maintain it, "εἰ μὴ θέσιν διαφυλάττων." It is not that species are wanting where the upholders of

[1] See Note A. at the end.

the theory assure us that one day we shall find them, but they have an uncomfortable way of turning up in places where they are not wanted, and where they reduce the theory to very unpleasant difficulties[2].

Nor is it any escape from this difficulty to say that the earliest mammals belong to very low and humble genera; and that, therefore, though they do occur before the order of reptiles had reached its highest development, they are not out of their natural position in the whole series of organic life, because I do not suppose that any of those who hold the development hypothesis would venture to say that the lower forms of mammals were derived from low forms of reptiles, and the higher forms in the same way from higher reptiles, and not from lower forms of their own order: whereas, on the other hand, to say that lower forms of reptiles had the power of developing into higher forms in two different directions—i.e. reptiles and mammals—whilst all the higher forms could only develop in one, and that the lower one of the two—i.e. reptiles—is too paradoxical.

But these considerations, strong and unanswerable as they appear to be, are yet not the strongest arguments, in my judgment, that can be brought against the theory. Granting to whatever extent our opponents have chosen to claim, the imperfection of the geological record, there are yet other reasons which would prevent me from accepting the theory of development. If it were electricity acting upon matter, or some such law, which first produced life, where is that law now? What has prevented it from exercising itself oftener than at one period? Granting that the fossil remains, from the Laurentian rocks to the present time, show a gradual series of ever-

[2] See Note B. at the end.

ascending forms, why have we not many such series? We can hardly, I think, be expected to have much regard for, or faith in a law, which the single effort of producing something considerably more simple than a fungus utterly exhausted. And yet I suppose no one would be bold enough to assert that, during the myriads of ages which have elapsed since the deposition of those rocks in which we first find traces of life down to our own day, there have never been circumstances under which it could again have become active. Law, to be a law, must be always at work, or at least ready to exert itself on every opportunity. The mere presence of organic life cannot surely be conceived as an insurmountable bar to its energy: and to say that the Author of the law has, ever since its first employment, interfered with its further functions, would be not a whit less unphilosophical, and would certainly be a heavier tax on human credulity, than to suppose His interference by special creations. If there never was but one manifestation of life-producing power, how could it be the result of law? If there have been many such manifestations, where are there any traces, however imperfect, in the museum of Nature? Why do we never find the Trilobites of the Silurian recurring, or the Batrachians of the New Red, or the Saurians of the Oolites? Why do we not find them now? It is a great comfort, I confess, to feel quite sure that there is nothing either in reason or philosophy to make us expect these recurrences, and that I am in no way likely to have a "struggle for existence" with a hungry Icthyosaur in Weymouth Bay, or in danger of finding myself, some fine summer evening, being "catawampously chawed up," boots and all, by a Megalosaur, or one of his big brothers. It is so much more satisfactory to have them life-like, and yet harmless, in the pleasant grounds of the Crystal Palace.

It may be urged that I have here been misrepresenting Mr. Darwin, and that the law which he studies is exemplified, not in the creation, but in the transformation of matter. I will, therefore, give you my reasons for maintaining that the philosophy I have been considering is, if not the actual state, at all events the only logical development of Mr. Darwin's theory. I understand him to say that if, instead of introducing a Personal Will, creating species by direct interpositions of Almighty Power, we can discover, or seem to discover, a law by which the phenomena of organic life can be accounted for, it is more philosophical to accept the law than the will. Now if so, this principle must be carried a step further, unless it can be shown, on the principles of the theory, that it is impossible or improbable; for it is certainly equally conceivable. And such a step, as accepted by a highly scientific mind, we have in Oken's Physio-Philosophy. If, therefore, the reasoning that is applied to the transformation of organisms has been and can be applied equally well to their creation, it is only philosophical to accept both or reject both. Mr. Darwin's method may be, in its present form, a more Christian way of expressing such propositions as these:— "Physio-Philosophy has to show how, and in accordance indeed with what laws, the Material took its origin: and, therefore, how something derived its existence from nothing. It has to portray the first period of the world's development from nothing: how the elements and heavenly bodies originated: in what method by self-evolution into higher and manifold forms they separated into minerals, became finally organic, and in Man attained self-consciousness" (Introd.). "The primary mucus, out of which every thing organic has been created, is the sea mucus . . . . Light shines upon the salted sea and it

lives" (pp. 185, 186): but mere philosophy will not give him here any countenance. For my own part I believe that there is not the least degree more of proof in one hypothesis than in the other. A philosophy that is driven to explain away or suppress any portion of the facts with which it professes to be dealing rests on quite as insecure a foundation as one that has to invent its facts altogether. Nor do I think that either of them is ever likely to find acceptance with those who prefer the sober steady light of induction, to the brilliancy, however dazzling for the moment, of the most creative imagination.

There is another great difficulty into which the theory falls, which I proceed to mention. A species, according to Mr. Darwin, has no real existence: it is merely an artificial grouping of certain individuals, useful for the purpose of classification, but of no reality in nature, because these individuals are so closely and intimately joined through a "finely graduated organic chain" with other individuals of a higher and lower organization, that, supposing the series to be complete, it would be impossible to say where one group ended and another begun. All organisms, therefore, from the Protophyte, or at least the Monad, to man, form but one true species —species being defined to mean the offspring of common parents—the highest being derived from the lowest. Now if this be so, there must have been in every living organism a tendency to improvement—not, indeed, discernible in the minute beneficial changes of individuals, but amounting at last, by accumulation, to very important differences: for, what at one stage is an oyster, at another we find to be a man. But no capability of variation in an oyster—as an oyster—could make it any thing else. It might become a very highly improved

oyster, but nothing more. If it ever reached a higher form, it must have been from an inherent tendency to do so; for *mere* external circumstances could never effect it—no one, I presume, thinks with Lamarck now—and what was in one, must have been in all, unless the theory can show the contrary—only in some an improvement took place through favourable circumstances, whilst in others it was hindered through unfavourable ones. But if there has been even one series of developments constantly going on, how is it that there exist still those very low forms of life, which we do yet find in nature? If there was in every living organism this tendency to improvement, how was it that it was so unequally developed, especially in those very early ages, when the "struggle for existence" was at a minimum? How is it that the Monad has never had the opportunity, during the thousands of thousands of years of geological time, of developing, even into an oyster, much less, like some of his more fortunate brethren, into a man; nay, that the Protophyte of the dawn of creation is a Protophyte still[3]?

You have no doubt read, with the same pleasure as I have done, Mr. Bates' exceedingly interesting and valuable work, "The Naturalist on the River Amazons." In the preface, he tells us, that one purpose of his expedition was to "gather facts, as Mr. Wallace expressed it in one of his letters, 'towards solving the problem of the origin of species'—a subject on which we had conversed and corresponded much together." Now, what are the results, so far as we can gather them from his book, of his laborious and able investigations? Why, he has discovered that there are intermediate forms be-

[3] See Note C. at the end.

tween the *Heliconius Melpomene* of Linnæus, and the *H. Thelxiope* of Hübner; and, consequently, that we have here in "the existence of a complete series of connecting links" an actual example in recent forms of transmutation of species. And is this really all? One cannot help thinking of that sly remark, made a good many hundred years ago—"*Parturiunt montes*"—you know the rest. Why, Mr. Bates might have got a far better example without ever visiting the Amazons at all. If he had consulted Barrande's "Bassin Silurien de la Bohême," he would have found that eighteen *species* of Trilobites, belonging to ten different *genera*, had been "developed" out of the single species, *Sao hirsuta* (Barr.). But the true conclusion is, of course, as you know, that if other describers had had the same materials Barrande had, they could not have been guilty of the errors into which, through imperfect knowledge, they have fallen. And, surely, the same remark may apply to these poor little butterflies. To promise us proofs or illustrations of the theory of development, and to put us off with what may be only a piece of ignorant blundering on the part of a describer, is surely as unsatisfactory as giving us a stone when we are clamouring for bread.

If a tendency to variation were a circumstance of very rare occurrence among the Lepidoptera, Mr. Bates' discovery would be certainly very valuable as well as interesting: but I have just returned from examining some specimens belonging to a friend of mine, who bears a name well known in the Entomological world, Mr. Dale of Glanville's Wootton, and I find that we have cases in our English butterflies in which the extreme varieties are quite as distinct as those mentioned by Mr. Bates. Take, for instance, *Ypsolophus variellus* (Hüb.). In some cases the upper wings are entirely black; in others en-

tirely white: and there is a most interesting and "complete series of connecting links between the two." In other instances the variation is quite wonderful; as in the Button Tortrix (*Peronea cristana*, Schiff.), with its thirty-five named varieties (see Brit. Mus. Catal.), and its neighbour, the Sham Button T. (*P. Hastiana*, Linn.), with twenty-one. We could not, of course, expect to find climatal varieties in the limited range of the British Islands to the same extent as in the vast region of the Amazons: but still we have indications of such changes; as, for instance, in *Satyrus Davus* (Fab.), the depth of colour varying very considerably, according as the specimens come from the mountainous districts of the North of England, or the low marshy grounds near Manchester. The black varieties of *Charissa obscuraria* (Hüb.) are found on heaths, &c., white ones on chalky soils. In the case of *Polyommatus Artaxerxes* (Fab.) we find that, in specimens from the South of England, the spot on the upper wings is black, when it is the *Agestis* of Hübner; in Scotch specimens, white; whilst in Durham intermediate forms are found (=*Salmacis*, Stev.). And I think that if Entomologists will persist in saying, after the new evidence adduced by Mr. Bates, that, in the case of the Heliconius we have two perfectly distinct species, and in the Ypsolophus, &c., only one, they can hardly expect an unprejudiced person to acquit them of inconsistency.

There are, however, instances, and these, perhaps, Mr. Bates might consider more fairly parallel to the case of the Heliconius, in which varieties are found so extreme, it is almost or quite impossible to say at first to which of two species they belong. One very interesting instance was mentioned to me by Mr. Dale. A specimen of a moth was captured, exceedingly dark in colour,

which Mr. Curtis considered a variety of the Scarlet Tiger (*Hypercampa dominula*, Linn.), and Mr. Dale of the Cream Spot Tiger (*Eyprepia villica*, Linn.) Luckily, the specimen was a female; the eggs were collected and hatched, and then the caterpillars; and the result was, a brood of Cream Spot Tigers, *with not a single variety among them*. The offspring of a specimen that had reached the extreme limits of variation, reverted at a single bound to its original form. And I submit that, until this plan is followed in all doubtful cases—until we find whether one so-called species ever produces specimens of another so-called species, or the intermediate forms produce one or the other indifferently, we are really not in a position to say in such cases how much is due to common derivation, and how much—as in pseudomorph crystals—to the accidental circumstance of external resemblance.

But even supposing there were the fullest proof that *Heliconius Melpomene* and *H. Thelxiope* were true and distinct "species," and that the one was originally derived from the other, it would not one whit help on Mr. Darwin's theory. What we require of him is not an instance of one species passing through a "finely graduated chain of varieties" into another, the two being still so precisely alike in form and size and habits, that, except a certain variation of colour, there is nothing to distinguish them whatever; but an instance of a species passing into a higher one, and instances such as that of Mr. Bates give us no grounds for believing that such a passage, as it never has been, will ever be discovered.

But, again, we are told that the theory of development is daily receiving fresh proofs from the study of anatomy, and that in the case of the highest development, man, there is absolutely no feature to distinguish him ana-

tomically from the apes. Things hitherto insisted on as specialities have been gradually found to be no specialities at all. Supposing for a moment this to be really the case—though there are anatomists who refuse to admit it, at least quite as distinguished as those who do,—yet if besides those parts of man's nature which the scalpel can reach, there is, as we believe there is, an immaterial part as well, it is surely not like science or philosophy to omit the consideration of this in the argument. The vital principle, though immaterial, cannot be omitted by the physiologist in such questions as that of the circulation of the blood, because without it there could be no such phenomenon: the powers of reasoning, or analogous ones, though immaterial, are already admitted into the question of the relationship of man and apes; and therefore it cannot be unreasonable to require the consideration of another immaterial principle—if it be confessed to exist—when we are discussing what it is that makes up a "man." If Mr. Darwin, and those who think with him, mean that we have not an immortal soul within us, then, in truth's name, let them have the courage to say so, and we shall know how to meet them. But if they do not mean this, if they do not deny that even the worst types of human beings are still what Captain Burton calls the Dahomans, "*vermin, with a soul apiece,*" then they must, if they still abide by the theory of development, admit one of two conclusions: either all things with life have such souls, or man has by some special exception. Now no "law" could have produced this exception. Law never chooses when to act, and when not: it is a mere blind force, without feeling, without intelligence. The exception therefore must have been the act of some reasoning Almighty will. But to admit the interference of the Creator in one instance, is to give up

the theory altogether. If His interference on one occasion is granted, because it dare not be denied, it is I think most in accordance with reason and analogy to believe, not that He has never interfered on other occasions, but that He has certainly done so.

Nor would it be any answer to say, as perhaps some, wishing to graft the doctrine of development on the Biblical account of creation, and so holding a sort of pseudo-Moses-cum-Darwinism, instead of development "pure and simple," might say, that God may have seen special reasons for interfering at such a point as this—for it is not denied that He *may* interfere, but only that He *does* —because here would be a worthy cause for interference, on the principle long since recognized,

> "Nec Deus intersit nisi dignus vindice nodus
> Inciderit."

For at what point is the interference to be supposed to have taken place? If it was when "man," except by some minute beneficial change, was in no way distinguishable from the brutes, what reasonable cause can be alleged why God should have entrusted him at that moment with a treasure so priceless, and involving such deep responsibility as an immortal soul? If it was not given then, it must have been deferred till some man-like ape had reached a position which we have no reason whatever for thinking it ever could by natural causes have reached. For I do not think we can fairly be called upon to believe in a race of highly intelligent apes, merely because the theory requires it. And, again, what was the purpose of God's interference, allowing that He did interfere? Surely this—the perfect adaptation of the compound "man" to that position he was designed to occupy. But unless we say that every organized

being is not so fully and completely fitted for the place for which it was intended, as man is for his; and to say this, is to deny that the wisdom and skill of the Creator is Infinite, whether we regard Him as the Author of special creations, or of the law under which they are supposed to have been developed; we must allow that at the appearance of each species there was a sufficient reason for interference, which on the development theory there was not. The whole creation existed as a conception in the Divine Mind, from all eternity; and whatever it was not unworthy of God to conceive, it was not unworthy of Him to create. And it was no greater exertion of Almighty power to create intelligent, reasoning, immortal man, or to fill heaven with stars, than to create the tiniest mote that floats in the sunbeam, and when men argue or seem to argue otherwise, it is only because they confound their own feeble powers with the omnipotence of God.

If on the other hand, for the credit of the theory, we are to be assured that all things with life have immortal souls within them, what an extraordinary creed is proposed for our acceptance. There can be no degrees of immortality[4]. Between the most infinite space of time the human mind can conceive and eternity is a gulf far more impassable than that which lies between the Monad and the whole world of waters in which it has its existence. If then all living things have the same immortality as man, what a host of charming and interesting companions does this philosophy temptingly promise us. Blackbeetles and rattle-snakes, centipedes and mosquitos, "nasty things" which ladies so prettily scream at, and maids sweep away with a broom, all the

[4] See Note D. at the end.

flies that ever plagued (*vide* Leech's irritable gentleman disturbed by a bluebottle); all the wasps that ever teazed; all the vermin that ever infested; all the entozoa that ever distressed poor humanity. Or are we to suppose them, one and all, "wicked creatures," full of moral evil, and that as they are nuisances which find no pity here, so they are to be torments which must expect nothing but misery hereafter? Nay, as "all plants as well as animals may have descended from some one prototype" (Darwin, p. 484),—oh! for such a book in these days of "sensation," as "*the philosophy of consciousness by an inquiring fungus*," or "*the graver thoughts of a serious truffle*"—we must find room somewhere for all the vegetation of all periods from the beginning to the end of time, and where all these things are to be accommodated—particularly as we are to have no more miracles, they can find no place in a system of philosophy—puzzles me completely. I confess I can believe a good deal, but this is far too mighty a "camel" for me to swallow[5].

But I must pass on to another question which has also been exciting a good deal of discussion lately, I mean the antiquity of man. Now, first of all, let me confess that I have very little faith in any of those calculations which would express in numbers the date or duration of any geological period. I think there was a very striking instance of what mere guess-work such attempts are, given in your opening address to the geological section of the British Association at the Bath Meeting. You mentioned there some calculations by two men of science, both of them highly distinguished as mathematicians. And how nearly did their results approximate? "A

[5] See Note E. at the end.

careful computation by Professor W. Thomson, on selected data, which determine the rate of cooling of earthy masses, assigns ninety-eight millions of years for the whole period of the cooling of the earth's crust from a state of fusion to its present condition. On the other hand, Professor Haughton finds, from the data which he adopts, 2298 millions to have elapsed, while the earth was cooled from 212 degrees F. to 77 degrees [that is, a more limited period than Professor Thomson's], which is assumed to represent the climate of the later Eocene period in Britain." But both these calculations shrink into absolute insignificance when compared with that suggested by Mr. Darwin, who, from certain specified data, determines that the denudation of the Weald alone must have required 306,662,400 years! (Origin of Species, p. 287.) We have another instance in the calculation of the number of years required for the recession of the Falls of Niagara from the opening above Queenstown to its present site. Mr. Bakewell put it at 9856 years, Sir C. Lyell at 35,000, both calculations being based on evidence collected on the spot. And we cannot help contrasting the vastly extended periods which some have so confidently assigned for the existence of man in Europe, with the very modest calculation of M. Morlot, who, from observations on the comparative date of remains discovered in a mound formed by the Tiniere, near Villeneuve, can find no proof of a higher antiquity for man, at least in that neighbourhood, than from 5000 to 7000 years.

Very considerable discussion has arisen as to the date of the gravels of St. Acheul, &c., in which specimens of flint implements have been found evidently of human workmanship. But there is, I believe, a growing conviction amongst those who have studied the subject that

the age intimated at first by many geologists is far too great. Mr. Prestwich, our first English authority on matters of Tertiary Geology, concludes that "the evidence seems as much to necessitate the bringing forward of the extinct animals towards our own time, as the carrying back of man in geological time." And you have yourself given reasons (Br. Assoc. Rep. 1863) for refusing to these deposits "*proof* of more than a few thousand years of antiquity."

It may be urged that these gravels must still belong to a period more remote than that which the chronology as at present given in our Bibles would allow: but we must not forget that there is a more extended chronology suggested both by the Septuagint and the Samaritan version of the Pentateuch, and that till these discrepancies are fully investigated, it is hardly fair to assume that the Bible is wrong. Still as it may be said that even then we could not carry back our dates more than about 800 years or so, it will be as well to consider whether there are not other grounds which would lead us to hold the comparatively recent origin of man.

The very earliest historical records which we possess (excluding those at the beginning of the Book of Genesis) do not reach higher than the 27th or 28th century B.C.[6] No human constructions exist on the earth the date of which can be carried back further than B.C. 2400. And though we have been told of a pre-Adamite literature and Babylonian civilization of 4000 years B.C., I do not think we are likely to hear much more about that, after M. Rénan's Essay, in which the *post-Christian* date of the Book of Nabathæan agriculture seems to be completely established. All then that we know cer-

[6] See Note F. at the end.

tainly of history, literature, and art, falls within the last 5000 years. Now how is this consistent with the notion that man has existed on the earth for 50 or 100,000 years? Those who uphold the theory of development will of course tell us that that is surely no great amount of time for a species, only just removed from the beasts, to have risen to its present position as intelligent, reasoning man. But here I will venture to say that the Bible, if it does not and was not meant to teach us science, does, if it teach any thing at all, teach this, that man had, when first created, a position he no longer holds now, and to which God has planned various means to restore him; that, so far from being at first a degraded being, but little superior to the beasts, he was formed in the "image of God," and that, whatever this may mean, it can hardly, with any reverence, be held to mean nothing more than a very slightly improved edition of an anthropomorphous ape. "But are there not races of men, still existing, which are scarcely distinguishable from the brutes?" Well, and what then? Are those men undoubted examples of what all men once were? Let us see, Mr. Development-theory-holder, whether there is not a more reasonable account of them to be given. Go and take your stand on the mud-heaps of Mujelibé and Nimroud; ask the wandering Arab to calculate for you the courses of the planets and the periods of their return; demand of him canons of architecture, and painting, and sculpture, and cunning work in gold and silver, and when you find that in all these points he is scarcely removed from the veriest savage that exists on earth, will you tell me that Nineveh, and Babylon, and Chaldæan sages, and Assyrian art are therefore all a lie? Or go again to those miserable beings that haunt the ruins of the world-famed temples of Egypt, tell them you come, like

Herodotus more than 2000 years ago, to gain additions to your stores of human knowledge, and when you find that none can help you, that they do not even understand what you mean, will you say that the wisdom of Egypt is a fable also? Nay, we need not travel so far from home. Take London, or any other great city you please, and the police will find for you scores upon scores of creatures, ignorant, hopelessly ignorant of all that makes a "man." And what do these things prove? Not that the stories of Egyptian lore and Chaldæan science are untrue, not that the civilization of England itself is a delusion, but that these men are but instances of degradation, and not fair specimens of what their country either was or is at present. And, therefore, however low in point of mental capacity we find races of men now, it is quite as reasonable and, as I believe, more consistent with facts, to look upon them as degraded beings, fallen from an estate they once possessed, as to consider them remains of the original condition of all mankind. And there is another very strong confirmation of the truth of this view in the fact, that, however degraded the savage may be, however low in mental organization,—whether he be of the Bushmen of Africa, or the negroes of the Andaman Islands, or the Aborigines of Australia,—there exists still a chord you can waken, which at once marks him off from the beasts. Take, for instance, the testimony of Dr. Pritchard about the Bushmen:—"Although the wild tribes of the Hottentot race display ferocity and all the other vices of savage life, yet we have abundant proof that these people are not insusceptible of the blessings of civilization and Christianity" (Nat. Hist. of Man, p. 603). What can be more brute-like than the description of their language? "It seems to consist of snapping, hissing, grunting sounds, all of them nasal"

(*Ibid.* p. 312). And yet it is a *language*, and that a mere dialect of the Hottentot idiom, spoken by all of that race (p. 600). In what race of apes do we find the slightest attempts of imitating or inventing instruments which may serve for the capture of food, or other purposes? Yet we find the use of bows and arrows and hand-nets quite understood by the degraded inhabitants of the Andaman Islands. And surely the Boomerang of the Australian savage is no little triumph of skill and invention. To fashion a piece of wood in such form that, when thrown by a native, it can cut off the head of a kangaroo at a distance of sixty yards, is surely a very creditable piece of contrivance. In the Sandwich Islands there was, I suppose, but little civilization in Captain Cook's time, and yet I have just seen the new issue of postage stamps; and I do not think that even Bishop Colenso himself can have any doubt about the capacity of the Zulus. There is a very suggestive passage in Hugh Miller's most interesting work "My Schools and Schoolmasters" (p. 351):—"The family of the unsteady spendthrift workman is never a well taught family. It is reared up in ignorance, and, with evil example set before and around it, it almost necessarily takes its place among the lapsed classes. In the third generation the descent is of course still greater and more hopeless than in the second. There is a type of even physical degradation already manifesting itself in some of our large towns, especially among degraded females, which is scarce less marked than that exhibited by the negro[7], and which both my Edinburgh and Glasgow readers must have often remarked on the respective High Streets of their cities. The features are generally bloated and over-

[7] See Note G. at the end.

charged, the profile lines usually concave, the complexion coarse and high, and the expression that of dissipation and sensuality become chronic and inherent. And how this class, constitutionally degraded, and with the moral sense in most cases utterly undeveloped and blind, are ever to be reclaimed, it is difficult to see." And speaking of the slave population that existed in Scotland as late as 1799, he says of the women (*Ibid.* p. 304):—"They were marked by a peculiar type of mouth, by which I learned to distinguish them from all the other females of the country. It was wide, open, thick-lipped, projecting equally above and below, and exactly resembled that which we find in the prints given of savages in their lowest and most degraded state. During, however, the lapse of the last twenty years this type of mouth seems to have disappeared in Scotland."

But to resume. In all savage tribes with which we are acquainted there is something to which we can appeal, even in the case of the most degraded, powers and feelings in abeyance, moral sentiments in *posse*, if not in *esse*, and a capacity for civilization which belongs, and belongs only to man. Revolting and horrible practices may have reduced these powers to a minimum—individuals may be "past feeling" and utterly irreclaimable; but as a race they are accessible to good influences, and, if not capable of reaching a high degree of civilization, which after all is only reached by comparatively few, even in the most civilized nations, they may still be enabled to take a respectable position among the nations of the earth[8]. Nay, who shall venture to say, that as our English men of science themselves descended from men with whom, not so very long ago, skins were in fashion

[8] See Note H. at the end.

and little besides, so these degraded savages may not be the ancestors of a race which shall laugh in turn at that civilization on which we so pride ourselves to-day. And here I think we shall be able to find ground on which to challenge Mr. Darwin, and all who with him hold the theory of development. Let him take the highest type of ape he can find, let him, in as many years as he chooses to require, try, by force of reasoning and through the presence of civilization, to educate it to a level with the worst savage that exists; let him extract from it a language already existing in any higher sense than it is found in a parrot, or that it has the power of acquiring it; let him teach it to observe on moral grounds such things as common honesty and common decency; let him develop any powers or instincts whatever, which cannot be found in the same or even a higher degree in animals of very inferior organization, and I shall then be more content to believe that there may be something more than mere analogy between man and beast.

And we must not allow ourselves to be led away by the notion that mere rudeness of implements or mode of life is any test of antiquity, or that it cannot co-exist with the highest civilization elsewhere. Let me quote, as bearing on this point, another passage in "My Schools and Schoolmasters" (pp. 274, 275):—"The antiquary sometimes forgets that, tested by his special rules for determining periods, several ages may be found contemporary in contiguous districts of the same country. I am old enough to have seen the handmill at work in the north of Scotland; and the traveller into the Highlands of western Scotland might have witnessed the horizontal mill in action only two years ago. But to the

remains of either, if dug out of the mosses or sandhills of the southern counties, we would assign an antiquity of centuries. In the same way, the unglazed earthen pipkin, fashioned by the hand without the assistance of the potter's wheel, is held to belong to the bronze and stone periods of the antiquary, and yet in the southern portion of the Long Island this same hand-moulded pottery has been fashioned for domestic use during the early part of the present century."

I wonder how many of our flax spinners ever heard of the "rock and spindle:" and yet I recollect an uncle of mine telling me that he remembered it as still in use in Cumberland when he was a boy. It was so very primitive, I must give you my father's description of it. "The rock was a straight piece of wood, about five feet long, and the thickness of one's finger, with a foot or so at the top cut into notches, on which was bound the flax, laid in layers, so as to be easily drawn out. The spindle was a rather more slender piece of wood, about fifteen inches long, with a groove at the more pointed end to receive the thread. A small leather apron was also used, laid on the knee of the spinner to prevent the wearing of the dress. All being ready, the operator took the rock in his or her left hand, and joining a piece of the thread that was always left on the spindle to the flax, and placing the spindle on the apron, drew the hand quickly over the spindle so as to give it a rotatory motion. The spindle, thus twirling round, was allowed to roll on the floor; the spinner, meantime, with the right hand drawing out a thread as quickly as possible, and wetting it frequently between the finger and thumb with saliva. The length of thread that could be drawn out at once depended, of course, on the dexterity of the spinner, and the good

whirling motion that was given to the spindle at first. The whirling having ceased, the spindle was taken up, and the thread wound round the lower part of it, and the process was repeated till the spinner had 'got his rock off.' "

Another paper, read at the Bath meeting of the British Association, I must allude to for a moment, though it is, I suppose, intended to insist more on the plurality of the species of man than on his antiquity—I mean the Rev. F. W. Farrar's paper on "Finity of Type." His argument is, that inasmuch as in certain cases we can, in the space of 4000 years, see not the slightest tendency to change, we have no right to assume that, by natural causes, a change ever took place at all. Now I think that if it can be shown that a type of features—a marked and recognizable type—can be found, of which we can point out the origin, the argument falls to the ground: and I believe we have precisely the instance we want in the case of the inhabitants of the Northern States of America. We find there a people, the origin of whom we know, with a type of features recognized all the world over, and as real and distinct in the pictures of Leech, as any "type" of Jew in the pre-Leechian caricatures of Egypt. Yet here we know that the type is only an induced variety, and that in very recent times. But if all records of that period had perished, and our descendants, in a few thousand years' time, had only Mr. Punch's Gallery to judge by, they would have just as much reason to consider them a "primitive type" as any mentioned by Mr. Farrar. I am quite aware it may be said that, after all, the Yankee type may not last so long as the Jewish. But why? Only because improved modes of locomotion, and the increased activity of men running to and fro on the earth, tend to obscure the type by con-

tinual admixtures of foreign elements. Whereas, if the Northern States of America could be kept as distinct from their neighbours, and with as little intermarriage, as tribes in olden times were, or as the Jew is still, I cannot see on what grounds it can be asserted that this new type might not have continued to the end of time[9].

And now I must refrain. I feel I have already trespassed too much on your time and patience; but I could no longer keep silence. I am most willing to believe that those eminent men, whom the scientific world recognizes as the great upholders of the theories I have been considering, rise superior in their lives to those false philosophies with which they have identified themselves. But I cannot conceal from myself the fact that there are many others who eagerly enrol themselves as disciples in these new schools, not because they are impatient of the cosmogony, or ethnology, or chronology of the Bible —though they make a mighty disturbance about these things—but because they would gladly get rid of other teaching there which is still more unpalatable. Of scientific investigations, carried on in a reverent spirit, and on principles of truth, I for one can have no fear. God's two voices, in nature and His Book, cannot be contradictory. But what I do protest against is that dogmatism of so-called "science," which has of late years been increasing amongst us, and which is quite as irrational, and far more regardless of the best and deepest feelings of others, than any other "dogmatism" whatever. True science, indeed, like truth itself, must be dogmatic; and the more nearly it arrives at perfection, so much the more dogmatic will it become: for it is then that it approaches most closely to the Author of all

[9] See Note I. at the end.

truth, who is marked off from all possibility of error by a gulf sharply defined and impassable. But, meanwhile, as regards apparent discrepancies between the two voices of God, I think that spirit is not only more reverent, but also far nearer the truth, which says, "*Si aliquod in eis* [*Sanctis*] *offendero litteris, quod videatur contrarium veritati, nihil aliud quam mendosum esse codicem, vel interpretem non assecutum esse quod dictum est, vel me minime intellexisse non ambigam*" (S. August. ad Hieron. ii. 196). And I cannot help saying, in conclusion, that it seems to me a most cruel thing to try, by displays of subtlety, and "oppositions of science falsely so called," to juggle us out of our belief in a kind and loving Father, and to give us instead a "philosophy," which, however it might amuse and interest us in life, can promise us neither support nor consolation when we come to die.

Believe me, my dear Phillips,

Your affectionate friend and pupil,

H. H. WOOD.

HOLWELL RECTORY,
December 3, 1864.

Si quid in his erraverim, mea culpa: si quid simile veri invenerim, laus DEO.

APPENDIX.

NOTE A., Page 6.

OMITTING the consideration of the lowest classes of the Animal kingdom, concerning which the evidence is, from their perishable nature, necessarily very imperfect, we find that the highest form of Molluscan life, the Dibranchiate Cephalopods does not make its appearance in its fullest perfection—the Octopoda—till quite recent times: nor even as Decapoda till the secondary period, long after fishes had attained to considerable perfection. And if Professor Owen's classification (Br. Assoc. Rep. 1859, pp. 153 et seqq.) be followed, and fish and reptiles be united under one order, Hæmatocrya, these in turn had not reached their highest forms till long after the Hæmatotherma had commenced their existence. And I only pledge myself to Mr. Seeley's proposed classification so far as it shows that Saurians of a very high organization, *and possessing closer affinities with birds than any other known reptiles possess*, did not appear till ages after the introduction of a class which every naturalist admits to consist of forms higher still. In fact the classes of the Animal kingdom, like some of the dynasties of Egypt, were not successive, but to a considerable extent synchronous, and fossils prove Mr. Darwin wrong, just as the monuments do Manetho.

NOTE B., Page 7.

I cannot see how any proof or even illustration of the theory of development can be found in the artificial breeds of dogs, pigeons, &c., insisted on by Mr. Darwin, because as soon the un-"natural" and external pressure is removed, there is an immediate tendency to revert to the original type, and not to remain in the superinduced condition, much less to develop into higher forms. That a species

possesses a wide range of variation is no proof that it can ever rise into another species altogether. Nor can I think that instances from the Vegetable kingdom can be fairly quoted in support of his hypothesis, because, though we do talk of animal and vegetable *life*, it does not therefore follow that the powers expressed thereby are identical.

NOTE C., Page 11.

Suppose that during each of the four periods, Silurian, Carboniferous, Oolitic, and Cretaceous, a single Monad only got a fair chance of being improved into higher forms, and surely this is a very modest supposition, we should then have four series of ascending developments, of which it is not even pretended that any traces have ever been discovered. And the more Mr. Darwin extends his periods, in order to account for the "extreme imperfection of the geological record," the more unintelligible does it become that we should fail to find many such series. And if it were argued, as some might argue, that lower forms, because they are capable generally of wider variation than more complex ones, would be more easily improved than others, it would increase the chances against the present existence of simple forms of life so immensely that this existence would be incredible.

NOTE D., Page 17.

Of course I except the wonderful notion of Eternity accepted by the Privy Council. It seems to be "ruled" now that by a thing being everlasting is meant lasting—as long as it lasts. Now I think that if we went to complain of an upholsterer's work not lasting, and he were to say, "My good Sir, you are really very ignorant, my bad chairs are just as much everlasting as Messrs. Gillows' good ones—ask the Judicial Committee"—we should not waste much argument about him, or think it our duty to recommend him to our friends.

NOTE E., Page 18.

These remarks are not intended to apply to such a view as is propounded, for instance, by Bishop Butler, in the 1st chapter of his Analogy. For though he says we do not know what latent powers and capacities brutes may be endued with, still a belief in their immortality, as he tells us, does not in the least imply that they are endued with any such capacities. For "the economy of the universe

might require that there should be living creatures without any capacities of this kind." The argument from analogy, however, seems to me to lead rather to the conclusion that these things having been created for a special purpose or purposes, when those purposes have been fulfilled, the economy of the universe no longer requires their existence, and that therefore there is no ground for believing in their immortality. Man, as we believe, is specially designed by his Maker, not for an existence on earth, but for a far higher, though analogous one, in heaven; and this after-life is only a continuance, in a perfect form, of his present imperfect one. But no such continuance seems to be conceivable with respect to many of the lower forms of animal life, such, for instance, as those that are designed for the removal of decaying and putrifying substances; for where all things are immortal there could be no decay, or any thing analogous thereto, and therefore these particular creatures would seem to be out of place, as suggestive only of imperfection. And the same remark applies to the entozoa, which, if not the result, are the concomitants of disease, and, therefore, would also be out of place where disease was necessarily excluded.

To connect them with the "second death," as if that were analogous to decay, would surely be unreasonable, for if we conceive the sting of that death to be exile from God, we have no right to suppose that these creatures deserve to be involved in it more than the rest: and to say that their nature might not make them sensible of unhappiness under such circumstances, would be untenable by a philosophy which holds that all forms of life are only various stages of one and the same nature. If, indeed, the present condition of the brute creation had been brought about by man's sin we might have felt sure that they would share in man's restoration, but no one acquainted with the facts of Geology can hold such a view, unless he says, what there is surely no ground for saying, that God involved them proleptically, untold ages before the commission of moral guilt by man, in suffering and punishment. But, to return to the point in dispute, if the development theory insists on the immortality of all living things, it would require us to believe not only that these things are equally immortal with the rest, not only that they have latent capacities, but that their souls and capacities are identical in nature with those of man, only not so fully developed: for ἐξ ὁμοίων ὁμοῖα. And though God could of course dispose of all animals, if immortal, so as not to interfere with each others' enjoyment, no such disposition is possible on a theory which dis-

claims all that is miraculous, *i.e.*, contrary to experience or analogy. Nor, indeed, could the theory in fairness banish away from man hereafter the presence of things connected with him by a "finely graduated chain" of relationship, and which are not thought unworthy by the Creator of both, of being more or less intimately associated with him here. And what I specially object to is the altogether physical aspect under which the future is represented to us, if represented at all—and which we can find even in such books as Kingsley's Glaucus, where the study of natural history is represented as a possible employment of "the nobler world to come" (*vide* Dedication). The Professor has, I think, confounded the contemplation of God's works, which we may well conceive to be the employment of angels and their companions, with their study. The acquisition of knowledge is, no doubt, one of the purest pleasures here, but if St. Paul's words be true, "then shall I know even as also I am known," the happiness of heaven is something higher far than such physical views would suggest; unless we believe that the possession of knowledge is less pleasurable than the process of acquiring it, which is absurd, for that would be to say that God, because He is Omniscient, is, therefore, not perfectly happy.

NOTE F., Page 20.

See Professor Rawlinson's Essay in "Aids to Faith," where this argument is stated more fully. The Professor also suggests the answer to another argument for the antiquity of man, taken from language, in which he refers to Müller's Philosophy of Universal History, vol. iii. p. 483, for an account of the *rapid* changes which take place in the Dictionary of a nomadic people. And Mr. Leonard Horner's piece of Egyptian pottery of B.C. 11,646 is, I think, as effectually disposed of in the Quart. Review, No. 210, pp. 418—421, as Mr. Monkbarns' Roman inscription was by Edie Ochiltree.

NOTE G., Page 23.

The assertion that the colour of the Negro arises from a particular membrane entirely wanting in the white races, and that therefore they ought to be regarded as separate species, is well met by Dr. Pritchard (Nat. Hist. of Man, pp. 84—95 and notes). After the instances there given of changes from black to white, and white to black, it can hardly be asserted that such changes are impossible.

Note H., Page 24.

The superiority of one variety of man over another in mental powers and capacity for civilization may be difficult to explain or account for, but it should no more induce us to suggest a different origin as the explanation, than the marvellous sagacity of the Scotch "colley" prevents us from believing that it had a common ancestor with the most worthless lapdog ever petted into stupidity.

NOTE I., Page 28.

We have instances among fossils which exactly illustrate the point in question. Take, for example the common Eocene shell, *Pleurotoma denticula* (Bast.): the fact that we find one type in certain strata is, as we see from Mr. Edwards's excellent monograph on the Eocene Mollusca, no proof at all that we shall find it in more ancient ones. However long may be its duration afterwards, there is a point before which that variety had no existence. Two curious instances, showing through what protracted periods causes transitory in themselves may remain palpably influential in their effects are quoted from Dr. Fleming's "Zoology of the Bass," by Hugh Miller in his "Rambles of a Geologist," pp. 364-5: one, that of the far richer herbage which the hill forts in Scotland, which were also *hill folds*, exhibit as compared with corresponding heights, where the soil is of the same mineralogical character: the other, that of the patches of greensward, surrounded by a brown groundwork of stunted heath, which mark the spots where the dead lie buried on the bleak moor of Culloden.

THE END.

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