

Mephistopheles sits down between the solemn antique sphinxes and boldly questions them, and reads their riddles, even so must we boldly question the bones, &c., that constantly turn up, and as boldly read their riddles; and so vague images and gorgeous dreams, that float about like the tremulous sunbeam on the wave, dazzling yet undefined, shall give place to "things of beauty," and so become "a joy for ever." But I have almost lost sight of what I intended to relate. In sinking a pit for gravel, through mould, clay and sand, a human skull was found by Mr. Chowler, of corn-law protection notoriety, twelve feet below the surface, with bones of *Bos*, *Elephas*, *Equus*, &c. The strata evidently never had been disturbed, but were just as originally deposited.

Those who fond of archæology will likewise find in their ramble through the Vale ample gratification: near Bennington is a British encampment, with a circular moat or vallum round, and partly filled with water. I dug out some British pottery, and found some stone foundations formed with Drift from the Oolite, and crammed with fossils: near is also a mound, which I hope to see opened at a future trip. Opposite on the "back bone" of Lincolnshire are extensive remains of another British camp.

There is no doubt but that the valley of the Trent is exceedingly rich in Drift fossils; and I firmly believe the delta of the Soar, near Kegworth, where that river made its embouchure into the Trent, would well repay a little work. Cannot some of your readers buckle on the harness and set to work?—Yours, &c., FRANCIS DRAKE, Leicester.

[This communication from our correspondent Mr. Drake, reached us barely in time for press. We hope to give minute details of this important discovery of human-remains in our next number.—
ED. GEOL.]

CORRESPONDENCE.

THE DARWINIAN THEORY.

SIR,—I read with some regret the article in your number for April, on the "Darwinian Theory:" not that I would be understood to be in any way opposed to the ventilation and free discussion of any subject fairly within the range of scientific research; on the contrary, I believe there is no surer method of testing the numerous theories, which now-a-days so often take the place of facts, than to submit them to the free and open discussion of those who are conversant with the facts which they profess to generalize and explain. Still, when all this allowance has been made, I confess that I *do* feel some little regret at seeing the modernized Lamarckian Theory of Darwin advocated in the pages of your valuable magazine; for I cannot forget that this "development" theory would not only not furnish us with an adequate solution of the facts it professes to generalize, since by the direct admission of its advocates, an admission, by the way, which forms one of their

readiest arguments *against* observed facts, its operation is so exceedingly slow and intermittent that it is removed altogether from the range of correct observation, and its verification rendered impossible; but, also, its direct effect would be to shut the Creator out of the world of his own creation, and to set up instead what the Rev. Baden Powell calls "the self-evolving powers of nature."

In arguing this theory Mr. Hutton gives a list of twenty-six "reasons for supposing that variation is at present unlimited," and says that "he knows of no answers to them." He may know of no answers to these arguments; but I don't think it would be very difficult to supply satisfactory answers to most, if not all of them, without having recourse to the "Darwinian" theory, and I have no doubt but that most of your readers have already done so to their own satisfaction. Whether or not, to bring forward a number of isolated statements, many of them sufficiently hypothetical, and make *them* decisive of the question is simply absurd. With greater propriety might those who maintain the constancy of species produce a number of statements of an opposite character, and claim that *they* shall decide the question.

Again, Mr. Hutton professes to have answered the principal objections to the "Darwinian" theory: will he find answers to the following, which I give by way of example? If the Darwinian theory be true, then for long ages before the deposition of the lowest Silurian strata the world must have swarmed with living creatures (Darwin, "On the Origin of Species," page 307). What have become of the "records of these vast primordial periods?" If acquired organs are obtained gradually, how is it then that no specimen in the transition state has ever been found? What will he say to the statement of Professor Owen (Classification of Mammals, appendix xiii, on the "Orang, Chimpanzee, and Gorilla, with reference to the Transmutation of Species"), that "no known cause of change productive of the varieties of mammalian species could operate in altering the size, the shape, or the connections of the premaxillary bones, which so remarkably distinguish the *Troglochytes gorilla* not from man only, but from all other antropoid apes"? This single statement is weighty enough to decide the whole question, if any statement *could* decide a theory so tenacious of life; and lastly, his theory professes to explain the history of all creation, will he, by way of proving its sufficiency, give us, instead, the history of a *single species* and exhibit, by *facts* its "development from some other? If the "Darwinian" theory *can* do this it will then be time enough to receive it as a true physical law; but if it cannot, then it is a mere dream, and unworthy of the serious attention of the true student of nature.

But leaving this line of argument, which has been gone over again and again only to be again and again disregarded by the transmutationists; and which, after all, is not adequate to decide a question which deals with a compound nature such as that of man. I now turn to another which ought to receive a due consideration in every fair discussion of this theory: I mean the argument derived from the mental and moral powers of man; and in this argument I restrict myself, for the sake of brevity and simplicity of detail, to a single example; but it must be borne in mind that one part of the argument, at least, is equally applicable to every other species of living beings.

The unity of the human species is demonstrated by the constancy of certain osteological and dental characteristics; but he is less characterized by these physical peculiarities than by his mental and moral characteristics. Compare the gigantic grasp of his intellect with the feeble and uncertain mental powers of the most sagacious of the inferior creatures—what analogy is there between them that we should infer the one to be a "development" of the other? Can the "sagacious" brute explore the depths of space, and weigh as in a balance the ponderous orbs of heaven? Can he dig into the bowels of the earth and drag out from thence the buried records of ages, vast as the spaces about him? Can he control the elements, and wield the powers of nature? In all these things, and in a thousand others, the brute is as powerless and insignificant as the man is mighty and all-controlling, and yet in the face of all there are those who, with audacity equalled only by their humility, would link themselves by a bond of identity with the brute, and make their lofty and god-like intellect the transmuted

instinct of the brute! To maintain this strange position the first individuals of the race are regarded as savages of the most degraded type in whom the boundary line between the man and brute is scarcely distinguishable, and an upward progress is supposed, produced by the "struggle for life," in which, as generation after generation passed away, the powers of the individual gradually increased until, after the lapse of countless ages, they become what we find them now. This, in brief, is the argument employed to support the "development" theory, but unfortunately for its stability it is mere supposition, and the voice of science, as well as the voice of revelation, gives us a far different account of the nature and powers of original man. The arguments upon this point I need not produce here, they are well known to everyone; but they prove undeniably what the Scriptures of Truth assert, that "man was *made* in the image of God"—that "Adam, the father of mankind, was no squalid savage of doubtful humanity, but a noble specimen of man; and Eve a soft Circassian beauty, but exquisitely lovely beyond the lot of fallen humanity." If, then, the "theory" fails on this point—if it fails to establish a chain of "development" between man and the higher forms of the brute creation—how can it expect to succeed in tracing the connexion lower down in the scale of life! If it cannot trace the sequence of the "development" of the mammal into the man, how can it hope to show the faintest trace of the development of the bird into the man? or, still more hopeless task, of the mollusc or crustacean of the Silurian deposits into the mammal or the man of the recent! And yet this is the theory in favour of which "after taking *everything* into consideration," the balance of evidence greatly preponderates!

But once more, conceding, for the sake of illustration, that the instinct of the brute *might* be "developed" into the reason of the man: nay more, that the in-complex form and vegetative existence of the zoophyte might be "developed" into the highly organized body and magnificent intellect of the man: wondrous concession! Conceding all this, I say what shall we say respecting the *moral* powers of man? Are they "developed" too? And if so from what? In many of the inferior animals we may occasionally discover traces of an indistinct reasoning power, in which the willing eye may perhaps see the "undeveloped" intellect of man; but where in the ape, or in *any other earthly thing*, shall we find the faintest traces of that moral nature which so pre-eminently distinguishes man from above every other creature, and which links his earthly nature with the spiritual natures of heaven? In the case of the *intellect* of man, the advocates of the "Darwinian" theory may, with some little show of plausibility, point to feeble glimmerings of reason which have been observed in some of the lower animals, and assert man's intellectual powers to be merely a "development" of theirs. But if they cannot point to the possession of a moral nature beyond the pale of humanity, then I contend that their whole theory fails, and that man, instead of being merely a "development" of some previously existing creature is, in reality, *a new creation*, and if one species is admitted to be an independent creation, and not a "development" the whole theory breaks down; for it becomes impossible, the operation of this supposed law once broken, to fix its limits anew. The whole theory smacks strongly of the unscientific and reprehensible scheme of bestowing upon what they call the "*self-evolving powers* of nature," the prerogative of the Deity, the power to create; so much so that the sooner it becomes a thing of the past the better.

I have this morning got my copy for this month (May), and I find that the conclusion of Mr. Hutton's long and elaborate "notes" is almost entirely taken up by an account of the imperfect condition of the geological records, with the view of throwing upon this imperfection the onus of the fact that *not a single specimen of any species in the transition state has ever been found*. Admitting all he urges respecting the manifold imperfections of palæontology, are these imperfections sufficient to account for the *total* absence of examples of what, if it existed at all, must be considered as the great law of existence? These breaks in the geologic records might be sufficient to account for the *rarity* of these examples: but they do not account for their *entire absence*. How they can be made to furnish an additional argument *in favour* of the "development" theory, I am certainly at a

loss to discover. I remember that exactly the same kind of argument was used by Sir C. Lyell ("Principles," 3rd edition), to produce just an opposite result, namely, to prove the theory that *all the great classes of organic life were created at once*; and not successively, as inferred from geology. How would Mr. Hutton reconcile these opposite conclusions drawn from the same facts? Or does he expect *his* theory to be better received than Sir Charles'? In conclusion I assert that, while other considerations may be either for or against this theory, geology alone must *decide* it. By the supposed slowness of the operations of the assumed law it is thrown entirely beyond the scope of observation, and unless *actual facts*—facts conclusive and undeniable—can be cited out of the stony records, it must still be considered the mere speculation of a theorist.—Yours, &c., THOS. GRINDLEY, Glossop.

NOTE BY THE EDITOR.—We are sorry that our correspondent should express regret at the appearance of Lieut. Hutton's article on the Darwinian Theory in the "GEOLOGIST." Our readers will doubtless bear in mind what our correspondent has forgotten in this remark, that whenever an article bears the name of its author, *we are not responsible* either for its facts or its arguments. Our pages are alike open to Mr. Grindley or Lieut. Hutton—to one correspondent equally with another; and on this point we have always justly prided ourselves on our fair dealing; we have printed the labouring man's communication beside that of the most talented geologist; we have printed even communications against ourselves. Darwin's theory undoubtedly has a most important bearing on geology, and if not wholly accepted, still contains views which must exert a powerful influence on all future investigations.

Granting it to be an error, we would still wish to see it powerfully treated and defended by the ablest hands; for the more powerful the defence of an error, the stronger and mightier the intellect that wields the weapons of its defence, so much the more brilliant will be the victory of TRUTH in the end. We can not have discussions without the defence of error, and without discussions there would be no progress.

In concluding this note, the Editor wishes distinctly to say that he does not consider himself as in any way advocating doctrines contained in any articles excepting in those which are written by himself. On the other hand, he considers the magazine to be, and always to have been, open to the fair expression of any opinion deserving of attention. Moreover, he trusts that friendly discussion and correspondence will be more developed in this magazine than even it has hitherto been.

FOREIGN CORRESPONDENCE.

SPECIMENS of minerals have been sent from Chili by M. Domeyho, for the School of Mines in Paris. 1. Black copper-ore, fibrous, (a silico-aluminate), brought from the mines of Taltat, in the desert of Atacama. 2. Arseniate of copper from the Gerro of las Yeguas, in the district of Rancagua. 3. Arseniate of copper, with sub-oxide from the same locality. 4. Two specimens, arseniate of silver, with antimony from Chauarcillo (one washed in a tube, the other in its original state). 5. Arsenical silver-ore from the mines of Bandurrias. 6. Bi-arseniate of nickel, mixed with arsenical acid, and sub-arseniate of nickel, brought from the mines of San Pedro, situated a few leagues from the port of San Francisco, in the desert of Atacama. 7. Arseniate of nickel, a little hydrated, mixed with a silico aluminate of nickel from the same locality as the preceding one. 8. Fragment of an aërolite which fell in 1857, in the environs of Hevedia at Costa-Rica.