

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Descent of Man, and Selection in Relation to Sex. By CHARLES DARWIN, M.A., F.R.S., &c. 2 vols., with illustrations. London: John Murray. 1871.

THE advent of this new book of Mr. Darwin's has been anxiously looked forward to by all interested in questions of Zoology or Ethnology; coming as it does from one who occupies such a definite position in the world of science, and with the evident marks of care in its compilation which it shows, such a work is the more deserving of our notice, as it has not been hurriedly put together or carelessly written.

As it is now thirteen years since the "Origin of Species" appeared, and as the subjects considered in that work have been the theme of many critics, and the basis of many investigations in the interval, this work of Mr. Darwin's is also interesting as an evidence of how far the author maintains his original position in relation to the criticisms, adverse and otherwise, which have assailed or applauded his theory. To the great majority of readers the first 250 pages of this book will be the part of the greatest interest, as the latter section, on sexual selection, though bearing the marks of the great erudition which so eminently distinguishes the author, yet does not as directly touch on subjects of so great or so general importance as the first part.

Mr. Darwin holds a high rank in the midst of naturalists as one of the leaders of the great and daily increasing school of evolutionists: he is the apostle of a special form of the evolution philosophy, based on a more circumscribed foundation than evolution in general as taught by other masters. The common ground upon which the holders of this philosophy unite may be briefly stated thus:—The present condition of nature is a result produced by the constant action of forces subject to definite laws; the present forms of living beings, animate or vegetal, are the modified descendants of a simpler ancestry; that they have attained their present

conditions through the agencies of such causes as we call natural, and in modes so regular that the processes of their production can be expressed in the form of general statements or laws. While Buffon, Lamarck, and Le Maillet, held theories of evolution in common with Darwin, Hackel, and Mivart, yet the forms of the doctrine are not to be confounded. The older developmentalists followed Lamarck in regarding the progressive changes in living forms as volitional to a certain extent, at least, and this idea is brought out in that curiously fanciful production, the "Telliamed." With the modern evolutionists, volition counts for little or nothing as a factor, but they regard changes as depending on the concurrence of internal and external conditions, to each of which they individually assign a varying amount of importance. Mr. Darwin regards, as the forces of the greatest power in producing permanent specific change, the survival of the fittest of the individual varieties of a stock, in the struggle for life, and the tendency of individual peculiarities, to be transmitted hereditarily, and in these consist the specific character of the Darwinian theory, hence those that confound the older and more modern theories betray a gross ignorance of the subject.

The history of this doctrine of evolution differs in respect from the general history of many new scientific opinions, propounded at first crudely in the days of the "Philosophic Zoologique," and the "Vestiges of Creation;" it was seized upon by sceptics as a formidable weapon wherewith to assail revelation, but the very grossness with which it was put forward in those imperfect states of scientific knowledge rendered it obnoxious to successful attack; but now, after the foundations of its original form have been beaten down, from its ruins the newer evolution philosophy has started up on a broader basis, and built up with the skill of a more scientific architecture. In this country the general subject has received its most perfect elucidation at the hands of Mr. Herbert Spencer in his series of works on the subject,^a and in Germany it has been made the subject of two able works by Professor Hackel, of Jena;^b but these two exponents do not coincide in all their views respecting the system or its relations. The negative character of Mr. Spencer's philosophy is, perhaps, its most marked feature, and his uncompromising severance of what he regards as unthinkable and

^a First Principles, 1867; Principles of Psychology, 1855; Principles of Biology, 1864.

^b Generelle Morphologie, 1866; Naturliche Schopfungsgeschichte, Berlin, 1868.

unknowable, from the domain of scientific inquiry, show that the school of biological rationalists, of which he is the apostle, manifests a tendency towards what amounts to a modified positivism. Hæckel, on the other hand, conducts us to pure materialism, as the foundation of his scheme of nature. As an illustration of the different manners in which these writers deal with their subjects, we find the first mentioned author saying, with regard to subjective psychology, that consciousness is a subject-matter radically-distinct in its nature from the subject-matter of biology in general, and though he in a measure qualifies this, yet he allows the differences to be such as to compel us to deal with the two as forming at least independent sub-sciences.* Hæckel, in referring to the same subject, says^b:—“ Auf keinem Gebiete der Zoologie wird diese Erkenntniss grössere umwälzungen hervorbringen als auf demjenigen der thierischen Psychologie, auf welche wir nothwendig jetzt noch zuletzt einen besonderen blick werfen müssen. Den gerade die Seelenlehre der Thiere hat sich in grösserer Isolirung entwickelt, und ist daher auch in stärkerem, Rückstande geblieben, als alle übrigen Zweige der Zoologie. Hat ja selbst die menschliche Psychologie, von welcher doch alle vergleichende Psychologie der Thiere immer erst ausgegangen ist, sich bisher fast ganz im Dienste einer speculativen Philosophie entwickelt, welche die unentbehrlichen Fundamente der empirischen Physiologie von vornherein verschmähete. Was würden wir heutzutage von einem Botaniker sagen, der das Seelenleben der Pflanzen von ihren übrigen Lebenserscheinungen trennen, und das Studium der letzteren der empirischen Physiologie, dasjenige der ersten aber der speculativen Philosophie zuweisen wollte ?”

Mr. Darwin, though a thorough evolutionist and a thorough naturalist, and, in his own way, a systematic philosopher, endeavours to establish his own views by a course of simple induction from an immense assemblage of facts, and falls in more closely with Hæckel than with Spencer. Now, any one who holds the evolution hypothesis must be brought face to face with the question of the origin of man. Man is sufficiently an animal to form part of the zoologist's domain, and if we profess to account for the origin of the other species we have no ground to put man out of the question, and it is this very consideration which chiefly gives such an interest to the evolution controversy ; were it not for this,

* Principles of Biology, Vol. i., p. 99.

^b Jenaische Zeitschrift, 1870, p. 367.

development would be to the general public of as little interest as any other special doctrine of science; it is this part of its consideration in the concrete which renders the abstract question of vital importance. As far as possible this should be regarded as a matter of pure science, and should be considered apart from any intermixture of evidence from revelation, not because we consider the latter as of no force, far from it, but because it is always safer to pursue questions of science as such, and we think it not judicious to introduce religion into what are plainly matters of pure science, for "philosophy being not a matter of faith but reason, men ought not to affect to derive it from revelation, and by that very pretence seek to impose it tyrannically on the minds of men which God hath here purposely left free to the use of their own faculties, that so finding out truth by them, they might enjoy that pleasure and satisfaction which arise from thence."^a

Different theories of the origin of man have been held by many naturalists: some regarding the human race as one species, others as two, three, five, or many species. On evolutionary grounds we have no basis for any theory involving a plurality of origins; the most dissimilar races of men are not separated from each other by any characters, the like to which we do not experience in varieties undoubtedly derived from a single common species. We may then simplify our study, as we are at present endeavouring to look at the matter as much as possible from an evolution stand-point, and regarding man as a single species, examine into the scientific evidence concerning his origin. But even in this regard we cannot enter on the question without understanding something of man's nature. Man differs from the other animals not only in several well marked characters of body, but also, and to a far greater extent, in psychological characters; and any theory which professes to account for his origin must account for his endowments psychical as well as physical.

We may group the proposed theories under three heads:—

I. The creation theory: that man as a whole emerged from the hand of the Creator as we find him;

II. The pure evolution theory: that man's entire being was produced from some lower form by the gradual action of natural forces;

III. The mixed evolution theory: that man consists of two

^a Cudworth, *Intellectual System of the Universe*, Vol. i., p. 21.

parts which have had separate originals, a body evolved from a pre-existing form by the action of natural forces, and a soul a special creation bestowed upon him directly by his Creator.

Before proceeding to the direct discussion of these three theories, there are a few general considerations which require to be noticed. There is a common popular fallacy regarding the evolution doctrine so absurd that it scarcely deserves to be mentioned were it not that it is used to throw ridicule on it, namely, that any *direct* genetic affinity subsists between different existing species; a doctrine which no scientific evolutionist ever propounded. They regard living species as the terminals of the branches of the great tree of living forms, each species as the end of a series, the gorilla as much as the man, and only connected to their congeners through the main trunk. The gorilla has no place in the direct genealogical line of the man according to any author, the two genealogies can be only connected by having a common starting point, from which the latter has diverged as much as the former.

All theories of the mutual relationships of so-called species, the creational as well as the evolutional, are founded on analogy. We find in nature individuals only, and we require to collect from these evidences as to their affinities; these evidences are drawn—1st, from relations in outward form; 2nd, from relations in internal structure; 3rd, from the absolute variation noticed in the descendants of one set of parents, and especially from the effects of external conditions in inducing such change; 4th, from the relations of the changes gone through by different forms in the course of individual development. It would be foreign to the purpose of the present paper to delay to give illustrations of these methods, as in the works of Darwin, Hückel, Wallace, &c., will be found numerous instances in application of these various ways of determining kinship.

In connexion with this preliminary consideration we may notice a common objection often brought against the evolution hypothesis, namely, it is stated that we do not find species varying at the present day; but when we take into consideration the first general statement made above, together with the fact that specific distinctions are for the most part purely arbitrary, we see the fallacy of this. Let any one compare any two of the standard British floras—Babington's and Bentham's for instance—and see what will be the result as to his belief in the fixity of species, also in any of the works of the above-named authors on evolution,

many instances of the variations of well marked species will be found.

The study of the origin of man involves two separate lines of investigation. First, the examination of the human body, and the determination, if possible, of its mode of origin; and secondly, the study of the human psychical development and its comparison with the manifestations seen in the study of comparative psychology. These two lines are so distinct that we shall take them up independently.

I, Man has been variously considered by naturalists as making up a kingdom or sub-kingdom separate from the other animals (Goodsir, Swainson, &c.), as making a class in the animal kingdom (Owen), an order (Cuvier), or only a family in the order primates (Linnæus, Huxley, &c.) Whether we consider his characteristics as of ordinal value or no, makes no matter to us now; however, the most practical way of studying them is first to tabulate them; secondly, to examine their range of variation in man; thirdly, to examine the nearest allies of man with a view to see if any of these characters ever appeared in them; and fourthly, we have to study the characters common to man and the primates to see their bearings on the point in doubt.

The characters of man may be tabulated as follows:—

α, Characters of general form: 1, erect position; 2, progression on his hinder limbs; 3, foot developed into an organ of support; 4, hand perfectly relieved from all function as an ordinary organ of progression, and devoted to prehension alone; 5, absence of tail; 6, general bareness of surface, and limitation of the growth of hair to a few localities; 7, perfect opposability of the thumb; 8, proportional shortness of arm; 9, hallux not opposable.

β, Characters of skeleton: 1, great preponderance of brain, case over the face in the skull, causing an increase in the facial angle; 2, projection of the nasal arch; 3, continuity in series and equality of the teeth; 4, zygomatic arches at anterior $\frac{1}{4}$ of skull; 5, several small osseous peculiarities arising from the comparative fore-shortening of the skull, such as horizontality of fronto-ethmoid suture, convergence forwards of the inner orbital walls, shortness of palate, &c.; 6, presence of a series of alternate spinal curves; 7, increased width of the sacrum; 8, shortness of the iliac bones; 9, greater length of thigh bone; 10, capacity of almost perfect extension of hip and knee; 11, larger articular area on the head of the humerus.

γ, Characters of the muscular system: 1, well developed facial muscles; 2, absence of an occipital rhomboid; 3, a dorsi-epitrochlear; 4, presence of a coronoid head of the pronator teres; 5, of a radial origin of the flexor digitorum sublimis; 6, separation of the flexor pollicis longus from the flexor profundus digitorum; 7, presence of an abductor pollicis minor (extensor primi internodii pollicis); 8, limitation of the extensor indicis to the first finger, and 9, of the extensor minimi digiti to the little finger; 10, large size of the erectores spinæ; 11, gluteus maximus exceeding the gluteus minimus in point of size; 12, equality or preponderance of the extensors over the flexors of the knee; 13, the presence of a tibial head to the soleus; 14, presence of a peroneus tertius; 15, simplicity of the tibialis anticus.

δ, Characters of the nervous system are: 1, enormous preponderance of the cerebral hemispheres over-lapping the olfactory lobes and the cerebellum; 2, small size of the olfactory nerves; 3, large size of the pes hippocampi minor, separation of the corpora albicantia into two bodies; 4, horizontality of tentorium.

ε, Characters of the visceral systems: 1, large size and mobility of the arytenoid cartilages; 2, rudimentary laryngeal sacculus; 3, double curvature of the crico-arytenoid articulation; 4, free mobile short tongue; 5, lips protrusible.

These are the only characters which may be regarded as of value in the discrimination of the physical frame of man from that of his congeners, some of them are of very much greater importance than others, those of the skull, of the general surface and outline, are most valuable of all; the only visceral characters of note are those of the larynx, and they are singularly few in importance when we consider the enormous functional difference of the larynx of man from that of the most anthropoid of the primates; there is less difference between the larynx of man and that of the chimpanzee than there is between that of the chimpanzee and the orang-outang. The vascular and splanchnic system do not show us any other points worthy of note. To consider each of these points in detail would be to re-write Darwin's book. What we have rather to do, is to see how the evolutionists in general make out their case in the face of all these differences. Some may be easily disposed of; the group of muscular peculiarities, for instance, affords little difficulty when we consider that there is not a single so-called human peculiarity in the muscular system which has not been found over and over again wanting in man, while the chimpanzee has

been found to show ordinarily the characters marked 2, and occasionally those marked 4, 5, 9, and 13; sometimes in man there have been noticed the absence of groups of human characters, and also the presence of groups of muscular characters usually distinctive of the quadrumanous primates; the osteological distinctions are of more permanence, but even here we find none so fixed as to be incapable of varying. No. 2 is deficient in most negroes in whom the nasal bones, instead of being separate as in Europeans, early unite into a single flat scale of bone as in the anthropoid apes. The peculiarly human spinal curves are absent in the young of the human race, in whom the curves are precisely the same as in the chimpanzee, and many of the other differences are comparative, not absolute. Mr. Darwin shows, what has long been admitted, that the coccyx is a rudimental tail, and, singularly enough, it is still more rudimental in some of the primates, man having four coccygeal bones, while Inuus has only three.

It would be interesting to follow each of these characters according to the two-fold system of analogies above suggested, to see how far these are capable of variety in man, or approached by the lower animals; but we have no space here for any such examination, we can merely say that such a process will show that there is not more difference between man, anatomically, and some of the other primates, the chimpanzee, for instance, than there is between the chimpanzee and *hylobates*, or *macacus*, or even the orang.

A plain series of anatomical facts, such as those referred to, leaves us undoubtedly in a position of difficulty regarding the anatomical distinctions of the body of man, so that we are practically compelled to leave the matter thus. If we have any sufficient grounds for believing that two forms like the orang and the chimpanzee have had a common parentage, then, if the same considerations apply to man and the chimpanzee, we must draw a similar conclusion. This is the fairest and most forcible way to put the argument of the evolutionist regarding man.

The supporters of evolution undoubtedly draw their strongest arguments from three anatomical sources:—1, Rudimental structures; 2, variations leading from the human to the simious type; and 3, embryology; and Mr. Darwin well knows how to handle these weapons. The first of these is undoubtedly a very great stumbling-block to any but evolutionists, and the force of the argument may be seen by stating it thus:—We find in some animals,

man for instance, rudiments of structures which, to him, are and cannot but be useless. In other neighbouring forms these same structures are developed and functional. We know that if the use of any part be suspended, it atrophies and becomes thus rudimental; that as varieties have a tendency to be transmitted hereditarily, so the descendants of animals which have any parts diminished by want of use, will have the same parts diminished too. The experiments of Brown-Sequard establish this on an independent basis. Man has some such rudimental organs, therefore they are the wasted representatives of what were function-performing parts in some ancestor. The upholders of evolution have proved, by examples, the undoubted truth of such parts of this argument as the wasting of organs from want of use, and the hereditary transmission of such wasted parts, and in man they point to the following rudimental organs in support of their theory:—

1. The projecting tip of the helix of the ear, rudimental of the pointed ear of animals.
2. The appendix vermiformis cœci.
3. The coccyx or rudimental tail, with its rudimental muscles.
4. The rudimental muscles of the ear, usually only present as functionless traces.
5. The plica semilunaris and lachrymal caruncula of the eye.
6. The platysma and scattered fibres of the panniculus, often present.
7. The psoas parvus muscle, so inconstant in man.
8. The corpora wolffiana of the embryo.
9. The parovarium and sinus pocularis of the male.
10. The sacculus laryngis.
11. The “ vestigial fold ” of pericardium (Marshall).
12. The “ sternalis brutorum.”
13. The supra-condyloid ligament or process.

Now how to account for these rudiments on any other but an evolution theory it is very hard to see. No teleological reason for their existence can be given, as they are for no end, perform no function; we can otherwise give no intelligible reason for their presence.

The second argument has been already referred to in speaking of the muscular system, and it undoubtedly is a very forcible one. The third is one equally strong, and it may be briefly stated thus. In the course of development of some animals, man, for instance, the embryo passes through stages similar, and in many respects,

identical with similar embryonic stages of other animals. The points specially enumerated under this head may be grouped as follows:—The original developmental stages of the human ovum agree with those of every other mammalian ovum; the embryo possesses branchial clefts, aortic, or branchial arches, a thymus body, a notochord, corpora wolffiana; the later stages show a rudimental covering of hair over the entire body, whose direction exactly corresponds with the arrangement of the hairs of the primates (Eschricht, Ueber die Richtung der Haare, &c.—Muller's Archiv., 1837, p. 47); a great toe farther separable from the others than in the adult (Wyman, Proc. Boston Soc. Nat. Hist., 1863, p. 185); a rudimental left superior vena cava; brain convolutions, similar to those of the baboon (Bischoff, Die Grosshirnwindungen des Menschen, 1868, p. 95).

Now of these embryonic characters, tabulated in the above list, there is not one which can be accounted for on teleological grounds. Other embryonic arrangements there are which perform obvious functions; but, of these, not one can be said to discharge any necessary part in the economy of foetal life, but all are related, apparently at least, to the perfect forms of other animals.

In concluding this review of the first part of our subject, we cannot deny that the defenders of evolution have the best of the evidence on their side. Man's body in embryonic stages is indistinguishable from the embryos of other animals, still later possesses such positive character of affinity as the hairy covering, occasionally exhibits specially quadramanous features, and always presents useless rudiments of structures, which are fully developed in other forms of living beings. The force of this combined argument is undoubtedly great, and, in the present light of science, unanswerable.

The argument *quo-ad* time is, however, very weak in the hands of Mr. Darwin, and, when we come to inquire, what evidence have we of the links joining on the *proto-homo* to the *proto-pithecus* on the one side, and to the *homo* on the other, we are answered with such replies as—the geological record is imperfect; we know little of the tertiary geology of the cradle of the human race, &c., &c. Certainly these are undoubtedly true, but it is very negative evidence in support of the theory. Mr. Darwin makes the most of M. Gaudry's *Dryopithecus* as a connecting link between the two sub-families of catarrhine monkeys, the macacus, and *semnopithecus*; but this all goes for nothing as positive proof, until the

proto-homo be found. Certainly we have no trace of him in the Neanderthal, Eguisheim, Crespy, or Engis skulls; though some of these may be of low type, yet they are decidedly human, and the missing links have yet to be found. And of those races, which are only known to us by their works, the palæolithic and neolithic men, these tools, designs, &c., which remain, show they were truly men, as there are no evidences whatever of similar works of an undoubtedly pithecoïd origin.

II.—We have just seen that the evolutionists hold a very strong, if not an unassailable, position in their arguments regarding the human corporeal frame. We now turn to the second part of our study to see whether man's psychical nature bears as easy interpretation on the development theory as his physical nature; and here we find that there is a tendency in the defenders of the evolution philosophy to rely upon the (at least temporary) firmness of their first position, and by force of ingenuity to bear down all opposition. This is favoured by the obscurity often attendant on the interpretation of psychological phenomena. The great stronghold of the evolutionists, and of Mr. Darwin in particular, is the comparison of the psychical phenomena of highly educated brutes with those of man in his savage state, and the establishment thus of intermediate gradations. Any one who reads the reports of travellers regarding the latter must know how precarious arguments drawn from these must be in general. A careless traveller, perhaps prejudiced one way or the other, passes through the territory of a tribe. Imperfectly acquainted with their language, he gives his own interpretation of what he sees and hears, and presents this as a correct picture of savage life. In these days, when travelling even in savage lands is common, when every traveller must write a book and state, *ex cathedra*, that such and such are the opinions of such tribes, it cannot but be expected that we can get travellers' opinions in favour of any possible theory. With this protest, *in limine*, against a part of Mr. Darwin's method, we will proceed to notice the arguments used by the upholders of pure evolution.

Mr. Herbert Spencer states that there is no difference between the rationality of man and that of animals, and points to the example of an infant, who is in intelligence no higher than a dog. Mr. Darwin* extends this by showing the mode of growth of

human morality and rationality, in which he says there are four stages:—1st, the evolution of the social instincts, producing a sense of pleasure in the society of fellow-creatures ; 2ndly, memory shows that this pleasure is destroyed by indulgences in ungoverned passion ; 3rdly, after animals have acquired language, public opinion becomes the guide in the community ; and 4thly, virtuous actions thus developed become habits, and these habits are to an extent hereditary.

Now to establish this theory we require to find data upon which to reason, similar in kind to those necessary in establishing the evolution of the physical frame of an animal. We require to find gradations in the manifestations and qualities possessed by the $\psi\chi\eta$ of man and animals to find traces of a rudimental or lower soul-form in primitive man, and to see traces of its similar gradual development in the lines of animal descent parallel to that of man's.

The instances adduced by Mr. Darwin as examples of the early steps of psychical development in lower animals are—1st, the posting of sentinels by gregarious animals ; 2nd, the performing of common services to each other, as monkeys pulling out thorns, &c., from each other ; 3rd, hunting in packs ; and 4th, sympathies, and no stronger cases can be brought from animals in their states of nature. He also instances cases of remarkable intelligence in dogs, horses, &c., in a condition of domestication and education. Now, on analysing these cases, we see that they are all reducible to the effects of affections, memory, simple apprehension, consciousness, fear, the simpler forms of judgment, attention, imagination (as evinced by dreaming). As far as one can see, no other simple principles are manifested in any of the exhibitions of intelligence in lower animals.

Are then the complex phenomena of human psychology of the same kind as these ? Evolution answers yes. The intellect of a Bacon or a Newton, and the fancy of a Shakspeare, are only psychical manifestations depending on a higher degree of the same force as that which animates the worm which preys on their dead bodies. All are of the same kind, and all finally merge into the great sum of force in the universe. And what is the bearing of this theory on the present position and future prospects of humanity ? Man, with all the parts of his complex nature and his high intelligence evolved from lower forms of being, possesses only a life which does not differ more from that of the *amphioxus*

than does that of the *amphioxus* from the vitality of the *protamæba*: the life in all is the same, a common attribute differing only in being displayed in the first in a more complex organization than in the second, and in the second than in the third. No other individuality does any one of these possess than the force of life, the attribute force of the protoplasm of the body, and when the body ceases to show traces of its life, when the protoplasm ceases to be protoplasm, and loses its contractility, when the force of life becomes chemical decomposition, the individuality is irrecoverably lost, and that which was a reasoning man becomes a corrupting mass of matter, and nothing more. The idea of the immortality of the soul is a dream: Hebrew, Platonist, and Christian have been alike pursuing a chimera; these have no hope beyond this life, and, therefore, being self-deceived, are of all men most miserable. This is the picture held up before us by the evolutionist. Disguise it as you may, yet the death's-head and the black mantle of annihilation are its fitting emblems. They may predict a glorious future for the human race when still farther evolved towards perhaps its final apotheosis; yet for us there is no hope, nothing but annihilation, the transmutation of our bodies into brute matter, and our life into physical force.

But looking from this picture on the living human race, with its energies, hopes, and fears, we are led to question one of the fundamental portions of this philosophy, and to detect an evident contradiction in the method whereby the manifestations of the present psychical endowments of mankind are accounted for by these theorists. Man, in his every form as we find him in nature now living, displays certain peculiar principles of action which leaven his every-day life. Not merely is he led or driven by his appetites, desires, and affections like the brutes, but he exhibits other grounds of action which we dare affirm can never be attributed to even the most intelligent of them—principles the tokens of whose presence characterize alike the civilized man and the savage. Man everywhere has some more or less clear shade of a consciousness of the existence of a distinction between right and wrong. Though his light of intellect may not, nay does not, always lead him to see what is the right, and what the wrong, yet that there is such a distinction mankind as a race universally acknowledge. As to the evolutionists, the admission of this would be perilous. They have ransacked the depths of savage life abroad, and the still lower heathendom of our large cities, to find exception,

but all the so-called exceptions hitherto adduced have shown themselves to be fallacies. All they can show is that in the black night of heathendom nature tells not abstractly what is right, but there is, in every fairly examined instance, some detectible trace of a moral nature, some sign of the recognition of the existence of such a thing as virtue, and the fact remains uncontrovertible that out of the 1,000,000,000 of this world's inhabitants, none dare state that even the thousandth part show no signs of the recognition of a right, the foundation of morality. Those who have lived longest among barbarous tribes are the best judges of this, and their testimony has constantly been that, even in the dark places of the earth, ideas of right and wrong, in some form or other, are known. Such is the testimony of Mr. Wallace among the Malay Islanders, of Mr. Bonwick among the Tasmanians,^a of Strzelecki among the Australians,^b of La Billardiere among the same people, of Snow among the Fuegians, of Whympfer among the Siberians,^c of Earl among the Papuans and other races of the Indian Archipelago,^d of Livingstone and Barth in Africa, of Majors Gray and Laing in West Africa, of Messrs. West and Jones among the Stone and Red River Indians, Krusenstern among the Marquesas Islanders, of Mr. Waddell among the natives of Old Calabar, and very many more might be cited did space permit.

If, in opposition to these, the flippant observations of hasty travellers be quoted, it will be borne in mind that this is a case where well authenticated positive evidence bears down any amount of negative assertion.^e We may remark here that it is only on the theory of Smith and Bain that Mr. Darwin's position is at all tenable.

Now, in dealing with Mr. Darwin on this point, it is well to notice that a thorough naturalist and man of science has taken the field in opposition to him on this very ethical ground. Mr. Mivart, in his admirable book, enters into this question at length, and sums up in a series of propositions. Mr. Darwin has, following somewhat

^a *Daily Life of the Tasmanians*, pp. 12, 58.

^b *New South Wales and Van Diemen's Land*, 1845, p. 339.

^c *Alaska, &c.*, 1868, p. 162.

^d *Native Races of Indian Archipelago*, 1853, p. 81.

^e Instances of such perversion of the moral sense, as the approval of infanticide and other vices, do not necessarily show absence of such a sense, although this is Mr. Darwin's strongest argument. If any tribe exhibit any recognition of the virtue or vice of any courses, it is sufficient as evidence of its existence.

in the footsteps of Protagoras the sophist, described morality as “the congealed^a past experience of the race, and virtue as a sort of retrieving which the thus improved human animal practices by a perfect and inherited habit, regardless of self-gratification, just as the brute animal has acquired the habit of seeking prey and bringing it to his master instead of devouring it himself.” Now Mr. Mivart states—1st. That natural selection could not have evolved a higher degree of morality than appears to be useful to the individual. 2nd. That it cannot account for such virtues as care for the sick and aged, but rather for the lower social states. 3rd. It could not have evolved from pure utilitarian considerations, systems of abstract virtue, nor could it have produced such a maxim as *Fiat Justitia ruat cælum*. 4th. The interval between material and formal morality is beyond its power to traverse.

If it be proved, as it may, that a recognition of the principles of morality is a characteristic of man, then the evolutionists fall back on what they esteem to be instances of moral distinction in lower animals; but “it may be safely affirmed that there is no trace in brutes of any actions simulating morality which are not explicable by the fear of punishment, the hope of pleasure, or personal affection,” and the connexion between these actions and their motive is always apparent—not so in man; and the consideration of the last of Mr. Mivart’s propositions is well deserving of the attention of all.

In such a necessarily limited paper as this it is impossible to go further in demonstration of the natural existence of a moral sense in man; but the more carefully the matter is considered, the stronger will the evidence appear. We have yet to sketch, in a few words, the outlines of a second great motive which underlies the actions of all men. Mr. Darwin (p. 65) says “there is no evidence that man was aboriginally endowed with the ennobling belief in an omnipotent God.” Now, in reference to this, if we examine the position of the present human race regarding religious belief, we will find that the remarks made above respecting morality hold good regarding religion. This is the testimony of many authors; and if we test the evidence upon which races are pronounced totally irreligious, we will find that it is mainly a want of abstract religious opinions that is relied on. Even those races

^a Mivart, *Genesis of Species*, p. 189. See also an admirable article by Mr. Hutton, *Contemporary Review*, July, 1871, p. 463.

which possess no form of religion in the abstract, show tokens of religiosity in the concrete, by superstitious belief in the supernatural, evil spirits, witchcraft, charms, &c. This is the case with the Tasmanians,^a with the hill tribes of India, with the Veddahs of Ceylon,^b with the Siberians,^c with the Australians,^d with the Fuegians,^e with the races of Africa.^f In all these cases, although no abstract deity may be acknowledged, there is in their superstitions a tacit admission of a supernatural power, and this is one of the first stages of religiosity. These witnesses are unwilling in some cases, and therefore more important, and the combined evidence amounts to this, that of not one million in the world can it be predicated that they are free from some religious feeling. Religion in these cases is shown—1, in its simplest form, in the recognition of a supernatural power, evil or good; 2, in the recognition of a providence on whom man depends; 3, and to whom man is accountable. This last phase of religion, the acknowledgment of duty, presupposes a law of right and wrong, and is shown by such measures of propitiation as sacrifices or offerings. Religious offerings are undoubtedly believed in by more than ninety-nine hundredths of the human race; and how are they accounted for? Why, say the evolutionists, men revered the memory of their ancestors, and came to deify them, and to invoke their favour by gifts. If so, this must arise from a wide-spread belief, even in the rudest times, that death was not annihilation, that one of the very thoughts which has been pronounced unthinkable was actually believed and acted on by an overwhelming majority of the human race. Thus, even on this theory of Mr. Tylor's, mankind, as a race, acted on an intuition of immortality and a consciousness of the existence of unseen beings. But on what evidence can it be proved that man was aboriginally not endowed with a belief in a God? In the old stone and bronze ages we have positively no evidence one way or the other; indeed, until later ages had engrafted symbolism on primitive religious worship, it is very hard to see how any evidence could be preserved. The very earliest intelligible records that we have manifest an existing religion. The remains of some of the earliest sepultures show traces of what as likely

^a Bonwick, *op. cit.*, p. 178.

^b Bailey. ^c Whympcr, *op. cit.*, 1866.

^d Stuart's *Central Australia*, Vol. ii., 1849.

^e Snow's *Two Years' Cruise off Tierra del Fuego*, Vol. i., p. 326, 1857.

^f *Savage Africa*, Winwood Reade, 1863, p. 536.

were as were not religious rites; so that we may with perfect safety retort Mr. Darwin's assertion thus:—There is no evidence that man was not aboriginally endowed with the ennobling belief in the existence of an omnipotent God, and tradition and our earliest records speak of the existence of such a belief.

But those that believe in physical evolution state that the elements of religiosity exist in the lower animals, that as Lesley, and after him Braubach, have expressed it, man is the god of the dog; but in this apparent analogy there is no constant similarity of the singulars. The domestic dog's wild relatives and his more distant congener the wolf, though the same specifically, show no such respect to man; and though man has acquired influence over the domesticated races by subjecting them directly to education, it is a superiority of power visibly manifested, and the same principles which we noticed before, fear, memory, affection, &c., mainly serve to keep the dog in subjection. Now, though these enter into some of the forms of fetichisms in the world, yet we cannot limit the feeling of religion to these; there is in them nothing of superstition, nothing of an appreciation of the moral excellence of deity, nothing of an internal, formal virtue, the last two which are necessary elements in developed religion, properly so called.

Nor, as in the case of morality, is the cause assigned by Mr. Tylor and Mr. Darwin adequate to account for a developed religion. A stream cannot rise higher than its source, and the primitive religion produced by the contemplation of nature and its forces, in a rude state of society, could no more have produced the perfectly developed systems of religion to be found on the earth than the "unreasoning intuitions" of the utility of moral actions could have produced a perfect morality. Even if it could be proved that any races of men had no traces of religion or of the recognition of the existence of moral distinctions, this would not be a necessary proof of the original absence of such a belief. The statement that a race having such a belief could never lose it is founded on a hypothesis which, in other matters, is palpably false. Races, the lineal descendants of the great nations of antiquity, still live, and yet how many of the ancient useful and ornamental arts possessed by them are lost. This is a fact so easily proved that it would be unnecessary to waste any more of our space in its discussion.

Man possesses thus these two distinct principles of action, mixed up certainly in their operation with his other and more animal mental principles, but evidently distinct in their nature, and as far

back as the days of Aristotle there was some such distinction recognized. We find that philosopher speaking of the *νοῦς* which originated without, and different from the *ψυχή* which originated from the seed itself; and this *νοῦς* Thales identified with God.* Among other ancient writers we find Josephus (*Antiq. Jud.*, Lib. 1, cap. 1, § 2) saying, regarding the Creator, *πνεῦμα ἐνήκεν αὐτῷ καρψυχῆ*. Plato describes the soul of man as composed of the *ἐπιθυμία*, *θυμὸς* and *νοῦς*, the latter of which is the regulative principle *τὸ ἡγεμονικόν*. And this is the principle which wants its analogue in the lower animals, which possess the two former. And thus Lucretius characterizes it, in speaking of death—

“Cedit item retro de terrâ quod fuit ante
In terram; sed quod missum est ex Ætheris oris
Id rursus cœli fulgentia templa receptant.”

(De Rerum Natura, lib. ii., v. 998).

Empedocles taught also the duality of the soul, one part being rational (specially human), and one sentient and perceptive (*ψυχή*), compounded of the four elements.

The same distinction is recognized by more modern metaphysical writers abundantly. “We have to distinguish in the soul two states: the one is that which derives its character from the life and light infused by the Divine Spirit, the other, no less essential, is that which man has by nature, including the understanding, the passions, feelings, and affections” (*Green's Spiritual Philosophy*, 1865, Vol. i., p. 288). The distinction of the soul as thinking, cognition, or idealistic momentum, as discriminated from the combination of sensibility and irritability which make up instinct, was pointed out by Schelling (Chalybäus, Lect. xii.), and from other authors quotations might be adduced *ad nauseam* to show that the opinion of the duality of the human nature is recognized by competent authorities.

Of the two parts of man's psychical nature thus distinguished, one, the seat of the passions, desires, and appetites, is identical with that of the lower animals, and in this part subsists all the feelings which Mr. Darwin relies on to prove the derivative nature of man's rationality; the other is the part which has no correlate in the lower animals, the seat of the moral sense, and the religious feelings, that which links us to higher created intelligences, which no evolution can account for, to which we find no mere physical force approaching.

* Plutarch De Placitis Phil. I., sec. 7.

Of the origin of this we have no other account than that given in revelation. Science, as it shows us no steps approaching to it, cannot bring us nearer to it, and we have no choice but to accept the doctrine that God breathed it into the animal frame of man, already endowed with his physical attributes, or to leave it wholly unaccounted for.

This leads us into, and has a definite bearing on, a curious subject which neither have we space to follow out here, nor would this be a suitable place for its expansion. If this doctrine of mixed evolution be accepted, whether is that specially created part of man's nature a truly special creation in every individual, or is it, after its original formation, transmitted *per traducem* from parent to child, as taught by Tertullian. The pure evolution theory pledges us unconditionally to traduction; the creation theory of the soul does not, but analogically favours the opposite view. The only important objection ever urged against the latter is that as the human soul is morally imperfect, if it be regarded as a special creation, does not that make the Creator the direct author of sin? but if we regard the Creator as the framer of the entire universe, and all its parts, the origin of evil is quite as mysterious on any other theory. A more valid argument may be brought against the traduction theory; if it were true we would expect to find a well marked heredity in what we must regard as soul characteristics. Now, we find undoubted traces of hereditary transmission of such mental characters as depend on the mere animal nature ($\psi\upsilon\chi\eta$) of man, capacities of regulation of appetites, special desires or affections, trains of thought, genius, &c.; but the heredity of principles of unmixed morality, or in matters of unmixed religion, is so far from being recognized, that its non-existence is proverbial.

The subject dealt with in this work is one of so vast extent and of so deep interest, that we have been able only to sketch out in outline a number of considerations, and we have been led to review the whole subject more closely than the book which is our text. Mr. Darwin has as signally failed in his attempts to show the derivability of man's soul from the psyche of the brute as he has succeeded in making for himself a strong position regarding the evolution of the human body. Still, in the present state of science, it behoves every man to be careful in his interpretations of lines of facts, and to content himself with provisional opinions. We have, however, no reason to confound "the spirit of the beast which goeth downward to the earth," to return to its original form

of physical force, with "the spirit of man which is ascending" to a higher destiny, and fitted

"to flourish in immortal youth,
Unhurt amid the war of elements,
The wreck of matter, and the crash of worlds."

ALEXANDER MACALISTER.

On the Wasting Diseases of Infants and Children. By EUSTACE SMITH, M.D., London. 2nd Edition, revised and enlarged. London: James Walton.

THIS work is one of real practical value, and will be found to contain a considerable amount of information of importance to the practitioner. Under the denomination of the wasting diseases of children, Dr. Eustace Smith describes simple atrophy from insufficient nourishment, chronic diarrhœa, chronic vomiting, rickets, inherited syphilis, mucous disease, worms, chronic tuberculosis, chronic pulmonary phthisis, and tuberculization of glands. There are also two chapters, one—the introductory—on wasting, and the final chapter on the diet of children in health and disease.

In his introductory chapter the author dwells with much force on the diminution of excitability and of vital reaction in children who have been reduced by malnutrition. In such patients severe organic disease may set in almost without symptoms, certainly without such as adequately reveal the extent and gravity of the lesion. Some good remarks on the physical examination of children follow, and the author proceeds to the subject of the general treatment of chronic wasting. The diet must be carefully regulated so as to suit the requirements of the case. Frictions with the hand alone or with oil are very useful, and the author believes that by means of the oil nourishment is introduced into the system, while the secretions generally are increased.

We are somewhat sceptical regarding the benefit to be derived from oil-rubbing in the way of direct nutrition of the body, but of its value in other respects we have had long experience. As regards the use of counter-irritants we are cautioned that a dangerous amount of irritation may be produced in an atrophic child by an agent which would be harmless where the health is not reduced. Baths are, under certain circumstances, of much value.