

*On the Origin of Species by means of Natural Selection, or the Preservation of Favored Races in the struggle for Life.* By CHARLES DARWIN, M.A., Fellow of the Royal, Geological, Linnean, &c. Societies; Author of "*Journal and Researches during H. M. S. Beagle's Voyage round the World*"—London: JOHN MURRAY, 1861. Third Edition (Seventh Thousand) 8vo., pp. 538.

(Second Notice.)

*On the Origin of Species by means of Natural Affinity.* By H. FREKE, A.B.; M.B., M.D., T.C.D., M.R.I.A.; Fellow of the King and Queen's College of Physicians in Ireland; Physician to Dr. Steevens' Hospital, Dublin; Lecturer on the Practice of Physic and of Clinical Medicine in Steevens' Hospital School of Medicine, &c.—London: LONGMAN and Co.—Dublin: FANNIS and Co., 1861, 8vo., pp. 135.

In a recent number of this publication we gave insertion to a very able review of Mr. Darwin's "*Origin of Species*," furnished to us by a naturalist of note in this country.

Subsequent to the publication of that review we were favored by another distinguished contributor with an article on the same subject, including also a notice of a more recent work by Dr. Freke, relating in some degree to the points raised by Mr. Darwin. As the latter article may be read with profit by those interested in the important subjects discussed by Mr. Darwin, we, at the risk of being charged with repetition, have no hesitation in giving it a place in our columns.—EDITORS.

BEFORE entering upon the consideration of the two works, the names of which are placed at the head of this article, we may briefly premise that, although similar in the declared nature of the subject matter, nothing can be more widely different than the actual theme of discussion in each. And, feeling that the subject of the *Origin of Species* could not be discussed satisfactorily in our necessarily limited space, we prefer simply presenting analyses of the two books, with

a view to stimulate the attention of our readers, and to state our views of their value as guides to knowledge, or as indications of original thought on the part of their authors.

Mr. Darwin's book is so truly "one long argument" that it would be even more useless than injudicious were we to encumber our pages with mere passages quoted from it: and we prefer a brief analysis as more likely to indicate its general scope and tendency.

The source of the Origin of Species is not considered now for the first time.

"Does not," observes John Hunter,\* "the natural gradation of animals from one to another lead to the original species? And does not that mode of investigation gradually lead to the knowledge of that species? Are we not led on to the wolf by the gradual affinity of the different varieties in the dog? Could we not trace out the gradation in the cat, horse, cow, sheep, fowl, &c., in a like manner?" In a note made by the illustrious editor of the very remarkable book, from which this passage is quoted, we find the following: "The best attempt to answer this supreme question in zoology has been made by Charles Darwin in his work entitled 'On the Origin of Species,' &c."

It is now very generally known that Professor Owen does not adopt the views of Mr. Darwin concerning the origin of species, but all, even those who differ most widely from Mr. Darwin, and the learned Professor among the number, must admit the singular ability with which he attempts to solve the great difficulty as to the origin of species, and the extraordinary candour with which he enters upon the discussion of the many grave objections to his theory.

Of late the rival hypotheses with reference to the fixedness or changeability of species have received so large an amount of public attention, and have, even before popular assemblages, been discussed with so much earnestness, that we may here perhaps be pardoned if we state simply and in popular language, the cases of the two chief claimants who at present stand on trial before the great tribunal of the scientific public. It is our duty in making such a statement to be strictly impartial, and we shall strive to be so.

The creative hypothesis, sometimes spoken of as the Linnean, supposes all species to be fixed and immutable; pre-

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\* *Essays and Observations on Natural History, Anatomy, Physiology, Psychology and Geology*, by JOHN HUNTER, F.R.S. Arranged and revised by RICHARD OWEN, F.R.S., D.C.L.—London, 1861. *vide page 37.*

suming that all groups of animals and plants which differ so decidedly from their fellows as to be capable of arrangement in, what naturalists are pleased to call specific classes, have been so formed by a distinct creative act, and have so come down from past ages to the present time, unchanged and unchangeable, save in very slight degrees. Thus, to offer a familiar example, the various species which form the great Herring family (*Clupeidæ*) so largely existing in our seas, are on the creative hypothesis each believed to have been distinctly created by a fiat of the Almighty, and the common herring and the pilchard, the sardine and the sprat, are looked upon as the lineal descendants of a herring, a pilchard, a sardine or a sprat fashioned by the Creator's hand in ages past, and retaining still and always, while they continue to exist, the distinctive characters given to each at the beginning. Like the human race, in fact, each species has had its Adam, and since the original of each first passed through its nostrils, or its gills the vivifying element, a line of continuous descent has gone on unaltering, unaltered, and unalterable, except in slight individual particulars.

The hypothesis of Mr. Darwin, or, as we would rather call it, the theory of descent with modification, accounts for the origin of each species very differently. On this hypothesis it is supposed that there exist in Nature powers acting very slowly, but very surely, and capable of giving rise to new species by gradual modification, and without the special exercise of creative power. To make use of the former illustration, that in times long since gone by, a fish existed which has been the common ancestor of the herring, pilchard, sardine, sprat, &c., each species is thus supposed to be wonderfully and perfectly adapted to the precise position which it occupies in nature, by the action of secondary causes, and not by the direct interposition of Providence in every instance.

Mr. Darwin, in the work which stands at the head of this article, attempts to point out what are the powers in nature which, acting in obedience to definite laws, produce by slow gradations the great results which he attributes to them; subsequently he discusses the difficulties and the objections which are likely to be urged against his theory; and in the final chapters he points out the large number of facts which seem to him to harmonise with it.

Indeed we cannot conceive that any one, how much soever they may differ from the views of the author, will

read the chapters on geographical distribution and that on the mutual affinities of organic beings, morphology, embryology and rudimentary organs, without admitting that they find in the theory of descent with modification, an explanation of many facts hitherto unexplained. Buffon, Lamarck, the author of the "Vestiges of the Natural History of the Creation," and other naturalists, have each had their theory of descent, and have thereby given evidence of the necessity, of the "*desiderium*," of the longing, which the scientific mind feels for a scheme, which shall account for the origin of species without supposing each to have been separately and distinctly created. But, assuredly, none of these theories have ever come before the world in a garb so simple and yet so fascinating as those put forward by Mr. Wallace\* and Charles Darwin. Let those therefore who read the latter's book be warned, for we assure them they shall find it a strangely captivating and seductive work.

To give a general notion of Mr. Darwin's line of argument, we may suppose that our globe represents a large empire, wherein presides a great and inexorable Judge who fills all offices, from the lowest scavenger-ships to the highest crown bearers, on the competitive system: retaining each in the precise position for which nature has adapted him, until a better turns up, when the first occupant is pushed aside and surpassed by him who has acquired some advantage, making him better suited for the post, and consequently more successful in the struggle or competition for the place. No existing species can, therefore, be said to be in advance of another; the kingly lion fills his space in nature no better than the insignificant gnat fills his; the tape-worm and the fire-fly, the shark and the dolphin, the condor and the ostrich, the gorilla and the elephant, is each of them better suited than his fellow for the peculiar nook in creation which each fills, but is in no sense in advance. If, however, any new variety be born, whether shark or gorilla, condor or elephant, whose color, size, form, or any other slight peculiarity, gives him any advantage over the individuals of his own species, our great Judge pronounces this one, and those of his family who inherit his advantageous peculiarity, to be the successful competitors for the place; his descendants, as they become more numerous, turn out their predecessors, who gradually die and become extinct. So, in the lapse of time, the accumulation

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\* Proceedings of the Linnean Society, August 1858, p. 57.

of slight peculiarities, each of which has conferred some advantage, however trifling, on the possessor, makes the descendant differ more and more from the ancestor, slowly but certainly, if Mr. Darwin be correct, making mere varieties pass into what are ordinarily regarded as species. Nor can we speak of progress or advance with any other meaning, so far as species of plants and animals are concerned, than as the acquisition of some advantage of form, colour, instinct, &c., which tends to make the individuals possessing it, more successful in the struggle they have to undergo.

This struggle for place or life, and the natural and undoubted tendency in organised beings more or less fruitfully to produce descendants a little different from themselves, (to vary) leads to the accumulation of varieties or differences which constitutes species; such, with the help of some subordinate ones, are the great engines which give rise to the natural evolution of species according to our author.

How great is this struggle for existence! let us watch a clutch of frogs eggs placed in an aquarium, let us hatch them, and watch the progress of the development of the larvæ—if the water be a few inches in depth how many perish, not having strength enough in their tails (at this early period when they sink head foremost rapidly) to keep them constantly plying to the surface as they should do. Put in a single stickleback, how many fall victims to him—out of myriads, how few ever live to become frogs. So slight a variation as a little more breadth and strength in the tail, as we have ourselves often observed, saves multitudes from death during the early periods of larvæ-life, while the external gills still remain; for it has been shown by direct experiment that although breathing by branchiæ, that even at this stage the tadpole cannot live or thrive without either coming to the surface or having, at least, a very constant supply of highly aerated water. An apparently trifling variation in colour, assimilating the little animal to the shade of the water plants growing in their native pools, or to the mud or slime which forms their sides and bottoms, saves many from the pursuit of the voracious enemies which destroy them in such vast numbers.

We call these variations slight or trifling, but when they come to be multiplied by billions and tens of billions, we perceive that slight though they be, they confer great advantages on the races and families of tadpoles which possess them, and, in the long run, enable them to engage more

successfully in the great race for life than their less gifted competitors.

Besides the active or progressive principle which gives to each organised being a power of, from time to time, producing offspring, varying somewhat from itself, we also recognise a passive or, so to speak, negative or conservative principle which tends to produce the hereditary resemblance between parent and offspring with which every one is familiar. A *greenish* or a broad-tailed tadpole becomes then a frog, whose conservative principles dispose him to be the parent of young, which in their turn have broad tails or a greenish colour.

The progressive principle of variation gives rise to novelties of form, structure, instinct, &c., which, if proved by the competitive system to be of use to the creature in the great struggle for existence, are adopted, retained, and accumulated by the conservative principle of hereditary resemblance; but, in nature as in politics, conservatism will have nothing to do with what has not been proved to be useful, all variations therefore which are not so, are transient and short-lived. Howsoever feeble may be the influence of these principles in their action, yet if it be admitted that they are actually in operation, then assuredly if periods of time sufficiently long be granted, great results may be accomplished. No one now doubts that causes, which acting during the short epoch of historic time have produced little change on the continents and islands of the earth, have, nevertheless, in the countless ages of which geological records speak, altered the whole aspect of the globe.

The laving of the tides, the flowing of rivers, the falling of rains, the action of ice, the growth of corals, &c., are, if we look to brief periods, but feeble influences to which to attribute such great changes, yet we know what these influences have accomplished during the lapse of myriads of ages. So, argues the author of the theory of descent with modification, the influences already indicated can do great things; they also can, during ages uncountable, form their islands and their continents, their species and their genera. Give me, said Archimedes, a lever long enough, and where to stand—I can move the world. Grant me, says Darwin, length of time enough and a few created forms, I can people it.

We have purposely stated in, what may be called by some, a very mild form, the theory advocated by Mr. Darwin in

his book, and we have done so because we think that some of his reviewers have dealt unfairly with him, and stated his views in so extreme a fashion as to be guilty at least of disingenuousness, if not throwing themselves open to a charge of dishonesty. If the hypothesis of descent with modification can satisfactorily account for the origin of a herring, pilchard, sprat and sardine, from some long since defunct ancestor common to them all, then unquestionably this hypothesis accounts for the origin of what are ordinarily regarded as species. If we are told that all the doves which fly over the earth, or all the different species of gulls which frequent the waters, have each sprung from parent forms, and that as time has flowed on, nature has selected such descendants as were produced in a state well qualified to engage successfully in the struggle for life, and suited by their accumulated peculiarities to the aspects of nature which surround them, we do not shrink from the contemplation of the matter; nor do we ridicule it as absurd, or condemn it as impious. Many, indeed, will be found to follow Mr. Darwin to his conclusion that a much fewer number of created forms than at present exist, have been sufficient to give rise to the varied species of plants and animals which surround us.

But when we are told that Mr. Darwin holds that all spring from one primordial germ into which life was first breathed by the Creator; that the elephant and the flea are come of one stock, we feel that this is at least a matter beyond the reach of human knowledge, wrapt for ever in mystery for ever to be unfathomable and unknown. Moreover, we take it to be an unfair way of making Mr. Darwin's statement. Mr. Darwin no where says that he believes all living things to have sprung from one first created; what he does say is that the same line which leads him to conclude, that the many existing have sprung from, fewer pre-existing species, if followed on and on, leads by analogy to one prototype, "*but analogy may be a deceitful guide.*"

Those who oppose the theory of descent, and yet in a spirit of fairness advocate the creative hypothesis, admit the tendency to variation, and cannot ignore the struggle for existence; but they say the modifications which occur under these influences are limited in their extent. All animals are influenced by the circumstances which surround them, by temperature, food, habits, &c., but they urge such influences

acting through no amount of time, can produce more than a certain amount of variation. Strange indeed are the differences to be observed in the physical conformation and (if we use the term) intellectual capacity of divers races of dogs and horses, yet all are dogs or horses, distinguished from other species by essential differences greater and more special than the characters which distinguish families and individuals from each other. Such differences they admit are easily produced in plants and much more readily in some animals than others; the varieties of dogs are very numerous, varieties of the domestic cat much less common, yet among their variations they never cease to be dogs or cats, having the distinctive characteristics which make them known as such not only to man, but to their fellows, who will greet them with a friendly snuff or mew, no matter how eccentric may be the peculiarity which the *fancier* has produced by artificial selection.

In short they say that variation occurs only within certain limits, which limits bound each species; such limits may be difficult to define, and naturalists must and do constantly err in their attempts at definition; but this does not prove any thing more than man's incapability of precisely indicating the characteristics of those groups, which have existed from the beginning, as distinctly created specific groups.

Now, after all, there is not so very wide a difference between these rival hypotheses thus stated in general terms, and thus admitted by all those who are pressed in argument. The one grants a few created forms, capable of being narrowed by analogical reasoning to one. The other requires many created forms, but when pressed to define its own created species, finds so much difficulty or impossibility in the attempt, that it is content to admit that all the trouts and salmons of our lakes and streams (*Salmonidæ*) may have sprung from one created salmon, or all kinds of grass from grass, and so forth. But if we take each hypothesis in its integrity, that of descent from very few or one, against that which assumes the distinct creation of every group recognised in Zoological works as species, we must, in order to determine upon which to adopt, answer the following questions. Which appears to us to be the simpler and to accord best with the teachings of natural science in her various other departments, whereby, in obedience to laws framed by the Creator, suns and systems, oceans and continents, mountains and mole hills are produced by



causes which our own brief space of existence makes us, with characteristic presumption, call trifling? And secondly, which on examination is found to have in harmony with it the greatest number of acknowledged facts? Whatever old prejudices may incline us to say in answer, candour forces us to reply that the hypothesis of descent is the simpler, it, so to speak, economises the exercise of creative power, it husband the miraculous strength of the Almighty, it harmonises with the view that He who in the moral world is the God of Mercy and of Justice, is in the physical the God of Order and of Law.

There are, even in the present day, many intelligent persons whose souls delight in the supernatural, and revel in the miraculous, who charge with irreligion those who "perceive that in the material world changes are brought about not by insulated interpositions of divine power exerted in each particular case, but by the establishment of general laws," forgetting Butler's simple but admirable saying, "that what is natural as much requires and presupposes an intelligent agent to render it so—*i. e.*, to effect it continually or at stated times, as what is miraculous or supernatural does to effect it for once."

When we come to enquire which hypothesis has in harmony with it the greatest number of acknowledged facts, we must refer our readers to chapters XI., XII., XIII., of Mr. Darwin's work, nor do we fancy that any unprejudiced person will peruse these chapters with care, without admitting that the theory cannot be lightly set aside which explains such large classes of established and unquestionable facts. Perhaps it is in the consideration of the geographical distribution of plants and animals that lies the stronghold of the theory of descent with modification; not less numerous, however, are the facts in comparative anatomy and embryology which harmonise with it. The fundamental identity universally recognised as existing between the fore limb of a dog and a horse, the wing of a bat, the fin of a porpoise, the arm and hand of a monkey, the entire vast range of homologies—the idea of unity of type acquires a meaning and an importance unknown under the creative hypothesis. We know that the apteryx and blind worm have the bones of the wings, and limbs lying underneath the skin in a rudimentary condition of development; that the guinea pig has incisor teeth which it never uses, as it sheds them before birth; that many beetles have wings beneath wing

cases which are sealed down over them so as to render them quite useless ; that the eggs of the Surinam toad produce tadpoles with tails as well adapted for swimming as any of their kind, although they never enter the water as tadpoles ; that, in short, multitudes of plants and animals have rudimentary organs which, at least, in very many cases, are wholly useless to their possessors. We know that all these morphological facts are explicable by community of descent, and that they *have* not been explained in any other way.

Such then is the argument of Mr. Darwin, and to it and the pages in which it is evolved and illustrated, we would direct our readers' attention.

That on it diversities of opinions may, and must exist we cannot doubt ; but there can be no second opinion as to the manner in which it is submitted to our notice.

Clear and lucid in style, closely argued, and set forth with a plainness and simplicity of diction remarkable in dealing with so abstruse a subject, the book commands our respect, as the able and important exponent of views to which we must accord considerable praise for ingenuity, even if we do not coincide in them wholly.

Mr. Darwin thus concludes his work, pp. 524 and 525 :—

“ Authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual. When I view all beings not as special creations, but as the lineal descendants of some few beings which lived long before the first bed of the Silurian system was deposited, they seem to me to become ennobled. Judging from the past, we may safely infer that not one living species will transmit its unaltered likeness to a distant futurity. And of the species now living very few will transmit progeny of any kind to a far distant futurity ; for the manner in which all organic beings are grouped, shows that the greater number of species of each genus, and all the species of many genera, have left no descendants, but have become utterly extinct. We can so far take a prophetic glance into futurity as to foretell that it will be the common and widely spread species, belonging to the larger and dominant groups within each class, which will ultimately prevail and procreate new and dominant species. As all the living forms of life are the lineal descendants of those which lived long before the Silurian epoch, we may feel certain that the ordinary succession by

generation has never once been broken, and that no cataclysm has desolated the whole world. Hence we may look with some confidence to a secure future of equally inappreciable length. And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection.

"It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other, in so complex a manner, have all been produced by laws acting around us.

"These laws, taken in the largest sense, being growth with reproduction; inheritance which is almost implied by reproduction; variability from the indirect and direct action of the external conditions of life, and from use and disuse; a ratio of increase so high as to lead to a struggle for life, and as a consequence to natural selection, entailing divergence of character and the extinction of less-improved forms. Thus, from the war of Nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator, into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning, endless forms most beautiful and most wonderful have been, and are being, evolved."

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The work of Dr. Freke is possessed of a title which, although bearing little signification in itself, prompts the enquiring mind to seek the explanation of what is meant "*The Origin of Species by means of Organic Affinity.*"

We have read the book, honestly from cover to cover, noted the contents, and put our own analysis in the plainest language; and yet (with shame we confess it) we have not succeeded in our search after the author's verification of what appears to us to be an indistinct and vague, though high sounding title.

For reasons that will be apparent from our subsequent remarks, we desire to afford to Dr. Freke the advantage of himself explaining the meaning of the phrase by which his book is named. He says (pp. 75, 76, 77.)

"What I desire to convey by those terms is simply this, namely, that the different species of vegetable and animal existing throughout organic creation have emanated from different species of embryonic germs, and that these embryonic germs themselves have originated in a union of different species of simple organizing agents,

which union of those simple organizing agents has been brought about by *organic affinity*. That is, in other words, this union of the different species of organizing agent, comprised in the embryonic germ, has been brought about by the affinity naturally subsisting between one such species of organizing agent and another; and that consequently the origin of the embryonic germs which have originated the species, is the organic affinity referred to. I shall repeat the same statement in other words. What I am desirous of conveying is this, namely, that the *organic affinity* which must naturally subsist between the different species of organizing atom—*analogous to the chemical affinity* which subsists between different species of *mineral atom*, that this *organic affinity*, I say, has originally forced into union different species of organizing matter—different species of *simple organizing agents*,—and has thereby originated various compound organizing agents, which compound organizing agents are the *embryonic representatives* of the various different species of complex vegetable and animal which have since existed in organic creation. This *organic affinity*, I say, has caused the several *different species* of simple organizing agent to combine in a vast variety of forms, as regards, observe, both their *number* and their *relative arrangement*; in all respects analogously to the combinations of mineral elements which we see take place for the formation of the *inorganic world*, as that world is now found to exist.

“These combinations of different species of simple organizing agent—combinations differing from each other, bear in mind, both in the *number* and the *relative arrangement* of their respective component *different species*—these combinations, I say, constitute the *embryonic germs* of the various different species of vegetable and of animal.

“These embryonic germs, in the discharge of their function, develop different species of organized beings; that is, species of organized beings *differing* from each other both in the *number* and the *relative arrangement* of their respective component organized tissues.

“The reader will bear in mind that, in the commencement of these observations, I endeavoured to make it apparent that the difference in the species, respectively to be recognized throughout organic creation, *consists*, for the most part, in a difference in the *number* and the *relative arrangement* of their respective component organized structures, viz., bone, muscle, nerve, &c., and that these structures are themselves comprised, for the *entire* of organic creation, in a comparatively limited number of distinct species of organized tissue. The reader is now in possession of my views as to *how* that difference in the number and relative arrangement of those component organized structures has been brought about, or what it is, in a word, which has been the origin of that observed distinction.

“Such then is my opinion as to “*the origin of species*,” namely, that the embryonic representatives of the different species were first formed by the operation of *organic affinity*, and that subsequent-

ly these embryonic representatives, as their especial physiological function, developed the different species of vegetable and of animal.

“But there is an additional question in relation to this inquiry, which must at once suggest itself to every reflecting mind, and it is this, namely, what has been the *origin* of the *components* of those embryonic germs? Whence have the *simple* organizing agents, which have been brought by the operation of organic affinity into union to form embryonic germs, whence have these simple organizing agents themselves had their origin? In a word what has been the origin of the countless millions of *individual* simple organizing agents which must now be comprised under each distinct species of organizing matter?”

“I hesitate not to state, in reply to this question, that to me it would appear to be opposed to all that is known of the great Creator’s arrangements, to *doubt* for a moment that all the countless myriads of millions of individual organizing agents, comprised under each distinct species of organizing matter since the commencement of organic nature, have emanated for each distinct species from *one solitary germ of that species*.”

“Who doubts that *all* the individuals of mankind have descended from one such germ? The number of such doubters is *few*. But *few*, too, there are who doubt the same fact with regard to all the individuals comprised respectively under each of the other species of animals. Why, then, I ask, should the *many* doubt the same fact in relation to the individuals of *distinct species of simple organizing agents*.”

As will be seen from a subsequent quotation, Dr. Freke intends his remarks as to the Origin of Species to apply to a period “antecedent to that in which we are told that God breathed into his nostrils, and man became a living soul.”

The *time*, therefore, when the Origin of Species sprung from organic affinity, is quite unsettled, and may have been ten, or ten times ten thousand, years before the animation of our first parent.

The exact *modus operandi* is, we must add, equally uncertain to our minds, and we fairly confess that repeated attempts to master the argument of our author have only made our “*confusion worse confounded*.”

This is no doubt in a great degree attributable to our own want of acuteness, yet, even making allowance for this, we cannot help thinking that the majority of readers will find in Dr. Freke’s remarkable production, an obscurity of style which will remind them of the “*darkness which was on the face of the deep*,” in the chaotic period which preceded the time when the Creator called into being the “single primor-

dial germ" in which Dr. Freke believes. Indeed the imaginative reader may push even farther the resemblance between Dr. Freke's style and this age, when the thunders of the breaking billows sounded on the shores, when winds may have raged, and tempests howled, but darkness reigned supreme; for, in his book high sounding forms of words, and terms grandiloquent are met with, yet in almost every page impenetrable obscurity prevails. Let us take for example the following:—

"If, having made ourselves familiar with inanimate creation, with its atoms, its compounds, its worlds and their systems—if, having learned of its attributes and laws, it were announced to us, that some researcher in science having recognised a new species of creation, having seen matter under aspects hitherto unobserved, had attained to the discovery of a new class of compounds—of compounds possessed of symmetrical form—should we not, making analogy the guide of our reason, be led to attribute this new class of compounds to the operation of their attributes, general and specific, in an hitherto unrecognized or new CLASS OF ATOMS." (pp. 10, 11.)

Dr. Freke more than once cheers his reader by the expression "I shall presently endeavour to prove, &c.," so that one goes on hoping that some proof is certainly to burst forth in full splendour on the next page—one constantly hopes that they are about to overtake their friend round the next corner, but the hope is delusive,—heither never came, or he could not wait.

Our readers will learn with surprise that our author quotes passages, of the slight "obscurity" of which he is himself conscious; we find him quoting from himself as he wrote 10 years ago, and adding, (p. 17.)

"Some of the expressions employed in these quotations may possibly, in the absence of the context, appear a little obscure; but, should such be the case, I trust as we proceed they will become intelligible."

We regret to add that our friend round the corner is again absent from his appointment, and that we do not meet with him at any future period of our tedious journey.

And here we are reminded that the work now under notice is made up in great part of quotations from a former work, by the same author, on "*Organisation*" (1848), and from a series of "*Lectures on the Pathology of Inflammation and Fever*," published in the Dublin Medical Press in 1851,—'52 and '53.

To these former products of the author's pen we are unable

to refer; but, judging from the number and the length of the quotations given in the present book we should infer that either the former works were very long, or that they are, in spirit, reproduced on the present occasion.

Those of our readers whose libraries embrace the volumes in question can easily verify the reiterated passages; for "*Freke on Organisation*" and "*Freke in Medical Press*" may be stereotyped as the standard authorities to which he refers.

The author confessedly submits his former views for public approval "now for the first time in a distinct and separate form," and we can only regret that we are unable to discern in them any thing more than the profession of a belief on his part that all organic creation originated in one primordial germ.

We are, in fact, no wiser at the end than at the beginning, and yet we learn from a passage, thrice entered in his work, that all he has written "is in perfect harmony with the Mosaic record of creation, and," he adds:—

"I am fully prepared to substantiate that statement. God forbid that I should dare to contemplate—far less insanely attempt to establish—any result at variance with the *true* interpretation of His Word; but it must be obvious to every reflecting man who will but reflect upon the question, that there must have been a period in man's first material existence, antecedent to that in which we are told that God 'breathed into his nostrils the breath of life, and man became a living soul.' It is that *antecedent* period that I have been contemplating." (p. 135.)

The above, the concluding passage of the work, is one of the best in all the volume, for we have no doubt about its meaning.

It is preceded by some other passages which enter upon the theological question involved in the apparent contradictions between the written Word of God, and the facts in Physiology, Geology and Astronomy, which seem to clash with its literal interpretation.

On this subject the author writes clearly and well, and it is a matter of regret that the main argument of his work should not have been set forth in the same style. Had it been so we should have been spared the painful duty which has devolved upon us, and we might perhaps have gained clearer views as to what Dr. Freke really means.

There is nothing more distasteful to our minds than the unnecessary introduction of theological topics, in the dis-

discussion of great questions in Natural Science, and our author shows a decided proneness to offend in this particular.

The allusions to Holy Writ are plainly superfluous, if the author is referring to a period before that to which the written Word refers: and that he is so his own pages prove. Again, we have but to turn to the concluding pages in which the author tells us that he desires "his name, however humble, to be enrolled among the number of the champions of religion;" and in which he repeats the oft-reiterated, and never-to-be-forgotten sentiment that "*the works of the Creator's hand cannot be contradictory of his uttered words but the interpretations of both works and words may be, and have been, erroneous.*" Nowhere does the author place before us his own interpretation, yet it is certain that the idea of a single primordial parent of all existing beings is not "in perfect harmony" with the ordinarily received interpretation of the Mosaic record of creation.

Until the author expresses himself more fully on the subject (and we might hope more intelligibly to the common dull mass of mankind like ourselves) than in the greater part of his present work, he should remove the frontlet from between his eyes, and in his next edition erase from his Title Page, Preface, and Text, his tiresome and, we think, unnecessary motto.

"There is nothing advanced in this publication that is not perfectly in harmony with the Mosaic account of creation."