

been neglected, the ten talents would have been withheld; had the power of doing good to the one city been refused, the power of blessing ten cities would never have been possessed. If therefore we would have "much" influence, the only way of obtaining it is by being faithful in the exercise of "the least" which God gives us.

Be assured, that if, in our present condition, we are unfaithful over "the least" which God has given us, we would be unfaithful over "the much" at any time, and in any circumstances. The man who is, here and now, cruel to his children or dependents, would be a bloody tyrant if seated on an African throne. The man who, in this day of gospel light, scoffs at religion, lays a stumbling-block in the way of its professors, tempts his neighbours to sin, and sacrifices conscience to worldly interests, or the praise of men, is possessed by a spirit which would have made him a Nero if on Nero's throne, a Judas if among the apostles, or a worshipper of the golden image if on the plains of Dura. Do not ask, then, for a change of circumstances, or an increase of your talents in order to be good, to do good, or to prove your loyalty to God. Be faithful now, in what you have, in "the least," here where God has placed you, for this is all God seeks; and your being so will afford abundant evidence of one who would be faithful

everywhere over much, were the much committed to his care!

Reader! are you disposed to sink beneath the burden of a New Year? Does the thought pain you of all the duties to which it will summon you, all the temptations, and all the trials which it may bring to you? Is it your earnest wish, that should you see the first of January 1863, the previous months, now dark and unknown in prospect, shall, in retrospect, be bright and beautiful as any months in this cloudy world can be? and that you shall be able to recall, with humble gratitude to the God of all grace, duties performed, temptations resisted, spiritual comforts experienced, and spiritual strength imparted,—with afflictions, if such are to be your lot, sanctified?—If so, then "Take no heed of the morrow;" it is not yours; but, by God's grace helping you, *take great heed of each day* as it dawns upon you, and *each hour* of the day as it comes round, for *they* are yours. Divide the great year's burden of duty into three hundred and sixty-five parts, and each of them into so many hours as are in each day, and carry the little burdens only; and at the end of the year you will find that the great burden was carried, and was comparatively light! And thus you will have a good New Year, and because a good—a happy one!

THE FACTS AND FANCIES OF MR. DARWIN.

IN thus characterizing the contents of Mr. Darwin's work, *On the Origin of Species*, our readers will understand that it contains much valuable knowledge, and much wild speculation. Interesting facts and idle fancies have seldom been combined in physical researches, and when such an alliance has been formed, the value of the new facts has often compensated for the errors of their application. There are many cases, indeed, in the history of science, where speculations, like those of Kepler, have led to great discoveries in the very attempts which they suggested in order to establish or to refute them. It is otherwise, however, with speculations which trench upon sacred ground, and which run counter to the universal convictions of mankind, poisoning the fountains of science, and disturbing the serenity of the Christian world. Such is doubtless the tendency of Mr. Darwin's work on the origin of species. Trained in a less severe school than that of geometry and physics, his reasonings are almost always loose and inconclusive: His generalizations seem to have been reached before he had obtained the materials upon which he rests them: His facts, though frequently new and interesting, are often little more than conjectures; and the grand phenomena of the world of life, and instinct, and reason, which other minds

have woven into noble and elevating truths, have thus become in Mr. Darwin's hands the basis of a dangerous and degrading speculation.

We cannot suppose that he intended to undermine the foundations of natural and revealed religion; but we cannot conceal our conviction that the hypothesis, which he makes it the object of his life to support, has a tendency to expel the Almighty from the universe, to degrade the god-like race to which he has committed the development and appreciation of his power, and to render the revelation of his will an incredible superstition. That great Name, indeed, which true philosophy has never failed to respect, has not been wholly omitted in the pages of our author. It has no other title, however, but that which breathed life into *one* primordial form, from which all organic beings have been descended that have ever lived upon this earth—plant, fish, fowl, quadruped, and man! The Influence thus acknowledged, is the electric spark of a previous speculator which disappears for ever, when it has lighted the train of causes and effects by which all the orders of organic life have been fashioned and perpetuated. That tender Parent who longs to gather His children "as a hen gathereth her chickens under her wing;" who opens when they knock; who gives good things to them

that ask him, and without whose knowledge not a hair of their head can fall to the ground, takes no charge of the family of orphans who people the gloomy universe of our author.

In order to justify these strictures, we must make our readers acquainted with Mr. Darwin's views as stated by himself; and as he appeals to facts and principles in their support, we must appeal to facts and principles in their refutation. Without any profound knowledge of natural history, or indeed without any knowledge of it at all, the nature of this remarkable speculation may be made plain to the lowest capacity, and the humblest inquirer may be made to understand that it has not one fact to support it, and though now presented in a new form, that it has been long ago refuted by the most distinguished of our naturalists.

In discussing questions of this kind, which excite a general interest, we are naturally anxious to know something of the parties engaged in the contest. Mr. Darwin has been long known to the public as an eminent naturalist. He is the grandson of the celebrated Dr. Darwin, a poet and a physiologist, and the author of several ingenious works, in some of which he traced the origin of all organized beings, plants, animals, and even man, to living filaments, susceptible of irritation. The first work of Mr. Darwin was entitled *The Voyage of a Naturalist*, in which he gives an account of the celebrated voyage of four years during which Captain (now Rear-Admiral) Fitzroy circumnavigated the globe in Her Majesty's ship "Beagle," in the years 1832-1836. As naturalist to this expedition, Mr. Darwin was led to study the structure and distribution of coral reefs in the Pacific Ocean, to explore the minute organizations of invertebrate animals, such as the Cirripeda, and to investigate the geology of South America, the structure of the Falkland Islands, and the volcanic islands of Australia. In the various works in which he has given an account of these researches, he has shown himself an accomplished naturalist, and they are all written with a degree of elegance and perspicuity not very common in works of the same class. His health, we regret to say, is such as to preclude him from continuous study, but we trust that he may be long preserved to advance natural history by his experimental investigations, and may be led, by means of his own discoveries, to renounce the opinions which have so deeply offended both the naturalist and the Christian.

The views which Mr. Darwin endeavours to establish are contained in the following passage at the end of his work:—"I believe that animals have descended from at most only four or five progenitors, and plants from an equal or lesser number. Analogy would lead one step farther, namely, to the belief that all animals have descended from

some one prototype. But analogy may be a deceitful guide. Nevertheless, all living things have much in common in their chemical composition, their germinal vesicles, their cellular structure, and their laws of growth and reproduction. We see this even in so trifling a circumstance as that the same poison often similarly affects plants and animals, or that the poison secreted by the gall-fly produces monstrous growths in the wild rose or oak tree. *Therefore I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended FROM SOME ONE PRIMORDIAL FORM, into which life WAS FIRST BREATHED.*"

In supporting this extraordinary doctrine, Mr. Darwin devotes his first chapter to the changes produced in plants and animals "under domestication." These changes, which are universally admitted, he ascribes to difference of climate and treatment during several generations, the variations increasing with the time, and, when once begun, continuing for many generations. "No case," he says, "is on record of a variable being ceasing to vary under cultivation. Our oldest cultivated plants, such as wheat, still often yield new varieties; our oldest domesticated animals are still capable of rapid improvement or modification." In what gardeners call "sporting plants," where a single bud or offset assumes a new and sometimes "very different character from that of the rest of the plant;" and such "sports," which are very common under cultivation, support our author's view, that variations are not necessarily connected with the act of generation. Slight changes may also be produced from "the conditions of life," such as increased size from amount of food, colour from particular kinds of food, and perhaps thickness of fur from climate; but though such causes of variation may be numerous, yet the variations themselves are unimportant compared with those which are inherited; and hence Mr. Darwin concludes that "if strange and rare deviations of structure are truly inherited, less strange and commoner deviations may be freely admitted to be inheritable." It follows therefore that, after many generations, these accumulated variations may amount to a change of species from inheritance. In order to establish these views, Mr. Darwin describes the variations which have taken place in the breed of domestic pigeons. The carrier-pigeon, the short-faced tumbler, the runt, the barb, the porter, the turbit, the jacobin, the trumpeter, the fan-tail, are all described as differing in their beaks, their necks, their bodies, their feet, their tails, and even their skeletons, and to such a degree, that an ornithologist, were he told that they were wild birds, would certainly, he thinks, rank them as well-defined species; and yet all of these pigeons are

admitted to have been descended from the blue and barred rock-pigeon, the *Columba Livia*. Now, admitting all this to be true, it is no evidence that any of the varieties constitute a new species, though the variations may have been accumulating for four thousand years. On the contrary, there is no tendency in these variations to become permanent, but rather to disappear, so that the fancy pigeon returns to the rock-pigeon, from which it descended. The same law of reversion to the original type is proved in various domesticated animals. Pallas informs us that the wild horses of the Kalmucks, when no longer taken care of by man, relapse into their untamed condition; and Dr. Prichard states that the escaped domesticated animals—the horse, the ass, the sheep, the goat, the hog, the cow, the dog, the cat, and the gallinaceous fowls, which the Spaniards took from Europe to America, had lost all the most obvious appearances of domestication.

That the changes produced by domestication effect no permanent variation amounting to a specific difference, is strikingly shown in the case of the dog, which, of all domestic animals, exhibits the most numerous and marked variations in regard to size, colour, character of hair, and form of head; yet, notwithstanding these, as Professor Owen remarks, “the naturalist detects, in the dental formula, and in the construction of the cranium, the unmistakable generic and specific characters of the *Canis familiaris*.” “How differently,” he adds, in support of the same truth, “does the giant Newfoundland behave to the dwarf pug, on a casual rencontre, from the way in which either of them would treat a jackal, a wolf, or a fox. The dumb animal might teach the philosopher that unity of kind or of species is discoverable under the strongest masks of variation.”

Our limits will not permit us to follow our author in his attempt to show that great changes take place under the principle of artificial selection, where domestic races have been produced by man, in accumulating in certain directions useful to him, the successive variations produced by nature. A much more powerful cause of variation he finds in what he calls *Natural Selection*, or the power which Nature exercises “in rejecting that which is bad, preserving and adding up all that is good, and silently and insensibly working whenever and wherever opportunity offers, at the improvement of each organic being, in relation to its organic and inorganic conditions of life.” To this principle our author assigns almost a creative power. It can modify the structure of the young in relation to the parent, and of the parent in relation to the young; but it cannot modify the structure of one species without giving it any advantage for the good of another species. “If it had to make the beak of a

full-grown pigeon very short for the bird's own advantage, the process would be slow, and there would be simultaneously *the most vigorous selection* of the young birds within the egg, which had the most powerful and hardest beaks, for all with weak beaks would inevitably perish; or more delicate or easily broken shells *might be selected*.” As an example of the process of natural selection, Mr. Darwin tells us that “in North America the black bear was seen by Hearne swimming for hours with widely-opened mouth, thus catching, almost like a whale, insects in the water;” and he adds, “even in so extreme a case as this, if the supply of insects were constant, and if better adapted competitors did not already exist in the country, I can see no difficulty in a race of bears being rendered by natural selection more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale!”

Owing to the great rapidity with which plants and animals increase and multiply, the earth would soon be covered by their progeny, if numbers of them were not destroyed during some period of their lives. Hence there is “a struggle for existence,” during which superfluous life is taken, and the vigorous, the healthy, and the happy survive and multiply, while those of feebler constitutions, incapable of providing for themselves and their offspring, must annually perish. In this war of races, this struggle for food and existence, favourable variations are preserved, and injurious ones rejected; but there is no example of any specific form having been gradually changed by the accumulation of these favourable variations. In admitting the fact of this struggle for existence, naturalists have drawn from it the very opposite conclusion. When God saw that every living creature which he made was good, we cannot doubt that the type of each of them was perfect. The struggle for life, therefore, is to *prevent*, and not to promote a change in the original form. The strong tiger that survives the struggle will have more of its native ferocity than its sickly congener that has perished. The vigorous buffalo will not cease to be herbivorous, in consequence of its strength; and the lion will not feed upon straw, because it has a better appetite and stronger teeth than its feebler companion. Nor will the Red-Indian boy that has escaped from drowning, while his brother has perished, be a less perfect Red-Indian than his father who threw him into the sea. Instead, therefore, of there being “a constant tendency in the improved descendants of any one species, to supplant and exterminate in each stage of descent their predecessors, and their original parent,” there will be the very opposite tendency to preserve unimpaired the relative perfection which that species received from the Creator's hand.

Such is a brief and very imperfect notice of the processes by which, according to Mr. Darwin, species are so changed that, since the first act of creative power, man has risen from a primordial atom, through the numerous stages of plant, fish, fowl, and quadruped.

If this speculation has any evidence to support it, it will be found in the history of organized beings during the several thousand years of the historic period. In the course of this long period, no change of species has taken place, and no new species has appeared. The birds and beasts of Egypt, as preserved in her ancient tombs, have experienced no change in their specific character during the two, three, or four thousand years that have elapsed since the artist prepared their mummies for preservation. Though the large runt pigeon, with its massive beak and its huge feet, differs from its blue and barred progenitor the rock, it is a pigeon still. Though the slender Italian greyhound has a strange contrast with the short-legged bull-dog, they are both dogs in their teeth and in their skull. The mouse, even, has not been transmuted into the cat, nor the hen into the turkey, nor the duck into the goose, nor the hawk into the eagle, and still less the monkey into the man. When the highest instinct has passed into the lowest reason, when the chatter of the parrot has risen into speech, and when the lion on his forest throne has addressed his subjects in the vernacular of man, we may then submit to the imputation of an ignoble origin. The Almighty, however, as if foreseeing the degradation of His image, seems, as stated by Cuvier, to have provided the Egyptian embalmers to refute the speculation. "It might seem," says he, "as if the ancient Egyptians had been inspired by nature, for the purpose of transmitting to after ages a monument of her history. That strange and whimsical people, by embalming with so much care the brutes which were the object of their stupid adoration, have left us, in their sacred grottos, cabinets of zoology almost complete. Climate has conspired with art to preserve the bodies from corruption, and we can now assure ourselves with our own eyes what was the state of a good number of species three thousand years ago." The same lesson is read to us by the annals and the literature of ancient times. "The camel that bore his bride to Isaac," says an able writer, "and drew nigh as he was meditating at the evening tide, still projects the same outline sharply chiselled on the horizon wall of the Eastern deserts, between the sky and the sand; the war-horse, 'his neck clothed with thunder, and that said among the trumpets, Ha, ha,' in Syrian warfare, shows the same noble instincts on the battle-fields of Europe; and the dog that endangered the *incognito* of Ulysses was but a living rehearsal of the favourite of Abbotsford." The hippopotamus and crocodile which Herodotus saw and described are precisely the same as they will be seen, and would be described, by a modern visitor of the Nile. The salmon still mounts the river barrier, as when the Roman soldiers named it the Leaper, when they first saw it in the streams of Gaul; and the polypus and the sponge, and other inhabitants of the Mediterranean, exhibit the peculiar properties which were noticed in them by

Aristotle. In tracing the formation and growth of coral reefs in Florida, M. Agassiz has shown that eight thousand years are required to raise one of these coral reefs or walls from its foundation to the surface of the ocean; and as there are four wall reefs round the southern extremity of Florida, the first of these must be thirty thousand years of age, and yet all of them are built by the same identical species. "These facts, then," says he, "furnish as direct evidence as we can obtain, in any branch of physical inquiry, that some, at least, of the species of animals now existing have been in existence over thirty thousand years, and have not undergone the slightest change during the whole of that period."

These interesting facts, and others equally demonstrative of the immutability of species, are admitted to be difficulties by Mr. Darwin himself, and his only reply to them is, that more time is wanted than the age of Egyptian tombs, or even that of the coral reefs, for the transmutations which he advocates. Fortunately for our argument, there have been more animals embalmed than those of Egypt. The plants and animals which nature has preserved in the cemeteries of primeval times speak the same language as those in the Egyptian tombs, and we must now appeal to them in search of any evidence of a transmutation of species.

Geologists have agreed in dividing the crust of the earth into three different formations; namely, *Primary*, *Secondary*, and *Tertiary*, or, to use the more expressive names, *Palæozoic*, or the strata containing the most ancient forms of life; *Mesozoic*, or those containing less ancient forms; and *Oinozoic*, or those containing more recent forms. The thickness of these different masses is as follows:—

Palæozoic strata, about . . .	60,000 feet.
Mesozoic " " . . .	15,000
Oinozoic " " . . .	3,000

making altogether 78,000 feet, or nearly 15 miles. In the lowest of the palæozoic strata, namely, the Cambrian, there are no traces of plants or animals. In the next strata, the lower Silurian, trilobites and cephalopods (cuttle-fish) are found. In the upper Silurian, the earliest fishes appear. In the Old Red Sandstone, placoid and ganoid, or armour-clad fishes, are found; and in the Limestones and Coal-Measures, the upper palæozoic beds, reptiles and insects appear for the first time. In the lower mesozoic strata, or Sub-Oolite, birds and marsupial mammals are found. In the Oolite beds, reptiles are abundant; and in the Supra-Oolite, or chalk and Wealden formations, the cycloid and ctenoid fishes, soft-scaled and pectinated, make their appearance. In the lower strata of the oinozoic, the London clay, bats, dolphins, bees, etc., are found. In its middle formations, the coralline rag, the ape, dog, lion, elephant, ox, whale, etc., appear; and in its upper or most recent strata, the finest mammalia and man are found.

In this long range of created life, from its commencement with the trilobites and cuttle-fishes in the lower Silurian strata, to the occupation of the earth by man, there is not one fact indicating the transition of one species to another. Mr. Darwin him-

self confesses that the intermediate varieties are wanting, that "Geology assuredly does not reveal any such finely graduated organic chain;" and that "this is the most obvious and grave objection to his theory." "The explanation lies," he adds, "in the extreme imperfection of the geological record." In order to escape from the difficulty, thus candidly acknowledged, he is obliged to call in question the faith of geologists. He denies that life began in the lower Silurian strata. He believes that there must be strata much older than the *azoic* formations, or those without life; and in order to explain why, among fossil remains, none of the species are found which form the links between one race and another, he conjectures that the formations which contain them have been removed by denudation, and other causes, and may exist beneath the ocean, or in localities not yet explored by geologists. In thus maintaining "the imperfection of the geological record," in consequence chiefly of only a small portion of the globe having been explored with care, Mr. Darwin rejects all the leading truths of the science; and, conscious of the untenableness of his position, he seems frequently on the very eve of abandoning it. "He who rejects these views," he says, "on the nature of the geological record, will rightly reject my whole theory. For he may ask in vain where are the numberless transitoral links which must formerly have connected the closely allied or representative species found in the several stages of the same great formations." In reference to the great geological truth that the earlier formations, stretching over vast extent, and perfectly unaltered, do not contain the least traces of organized beings, and that the dawn of life is in the lower Silurian formation, our author admits that, "if his theory be true, it is indisputable that before the lowest Silurian stratum was deposited long periods elapsed, as long as, or probably far longer, than the whole interval from the Silurian age to the present day, and that during these vast yet quite unknown periods of time the world swarmed with living creatures." But if the geological record has all the imperfections urged against it by Mr. Darwin, and if they were all supplied according to his hypothesis, it would still present some important facts utterly subversive of his views. The existence of such creatures as the trilobites and the cephalopods or cuttle-fishes in the Silurian formations, with organs of sensation of the most perfect kind, is an unanswerable difficulty in the development theory. Mr. Darwin is sorely puzzled with the transition of organs. "Natural selection," he says, "will not produce absolute perfection, nor do we always meet with this high standard under nature. The correction for the aberration of light is said, on high authority, not to be perfect even in that most perfect organ, the eye." The meaning of this we presume to be, that though the eye is the most perfect of organs, it is yet not perfect, and therefore may be produced by natural selection. Now it is quite true that the correction for the aberration of colour is not complete in the human or in any known eye. But, notwithstanding this, *vision is perfect*. The uncorrected colour is never seen in using that organ, and consequently *the human eye, as the organ of vision, is perfect, and*

therefore not the result of natural selection. Upon Mr. Darwin's principle the ear is not perfect, because it is insensible to the music of the spheres, or the lense imperfect because it cannot discover every shade of colour. An over-sensitive ear would be destroyed by the sounds to which nature subjects it, and a touch sensitive to colour would be torture to its possessor. Natural selection, however, under Mr. Darwin's guide, may reconcile these difficulties, and the eye of the future may be furnished with crystalline lenses doubly or triply achromatic. Our author himself sometimes stands aghast before his own opinions. He declares that "the belief that an organ so perfect as the eye could have been formed by natural selection is *more than enough to stagger any one*;" but what can he say when he learns what he ought to have known, that the lens of the cuttle-fish, one of the earliest of animals, is as perfect and more complex even than that of man. The crystalline lens of the *Sepia Loligo* differs from that of all other animals in being a compound lens, consisting of a principal lens of a paraboloidal form, deeply convex behind, and slightly convex before, united to a meniscus with a predominating convexity placed in front of it. The concave face of the meniscus is kept in contact with the slightly convex face of the principal lens by means of a transparent cartilaginous ring, so that the lens actually consists of *three separate parts*. In all other lenses the laminae are composed of fibres, but in the *Loligo* they are films having a fibrous structure, radiating from the pole of the posterior surface of the lens. In the lenses of man, and other animals, the fibres terminate in poles or lines. The virtual fibres, or the edges of the laminae in the cuttle fish, terminate like a bunch of hair cut across, forming the anterior surface of the principal lens; and their extremities, composing that surface, are curiously bound together, and covered with a fine membrane. Here then we have an organ of sensation unique in the animal economy, and exhibiting a degree of complexity and high organization which is found in no other animal. If the *Loligo* has sprung from a lower or has been transmuted into a higher type, we ought to have found in both some traces of so extraordinary an organ. The cuttle-fish has furnished to Cuvier other arguments against the Darwinian theory. "No deviation," he says, "in the ordinary form of this animal has ever produced, or can constitute a being placed beneath it; nor can, or ever will, its better development give rise to a series of animals of a more perfect species to be placed above it. . . . In vain shall we attempt to approximate these mollusca to some fishes whose skeleton has almost disappeared. . . . In a word, we see here nature passing from one plan to another, making a leap, and leaving between its productions a manifest *hiatus*. The cephalopods are not passing into anything else. They have not resulted from the development of other animals, and their proper development has not produced anything superior to themselves, a consideration which gives them a high degree of importance in natural history, because they overturn a great number of vain systems."

But there are other organs than the eye which baffle the highest powers of natural selection. The

electric organs of fishes, Mr. Darwin himself tells us, "offer a case of special difficulty," and he confesses "that it is impossible to conceive by what steps these wondrous organs have been produced." The electric fishes are not even related to each other, and there is no appearance of ancient fishes having had electric organs, which most of their modified descendants have lost. The presence of luminous organs in a few insects of different families and orders, offers a parallel difficulty to our author; and he candidly mentions another puzzling case in which the *orchis* and the *asclepias*, two flowering plants of genera "almost as remote as possible from each other," have the same very curious contrivance of a mass of pollen grains borne on a footstalk with a sticky gland at the end. In order to explain how two very distinct species, as in the preceding cases, are furnished with the same anomalous organ, Mr. Darwin expresses the following extraordinary opinion:—"I am inclined to believe that in nearly the same way as two men have sometimes independently hit on the very same invention, so natural selection working for the good of each being, and taking advantage of analogous variations, has sometimes modified, in very nearly the same manner, two parts in two organic beings which owe but little of their structure in common to inheritance from the same ancestor"!!

In discussing the transition of organs, Mr. Darwin seems wisely to avoid the transition of brains, the organ of reason in man, although he must believe that the brain of the biped is an improvement upon that of the quadruped, under the discernment of natural selection. He tells us "that he has nothing to do with the origin of the *primary mental powers*, any more than he has with life itself;" but as he includes under instinct *several distinct mental actions*, he is bound to tell us how these mental actions of the brutes rise to reason, or the higher mental actions of man. As natural selection can produce every degree of perfection but absolute perfection, instinct must have risen into reason, and since, as Mr. Darwin remarks, "a little dose of *judgment or reason* often comes into play even in animals very low in the scale of creation," a greater dose of judgment or reason, such as that exhibited in the exercise of the "*primary mental powers*," must be accumulating in the human family in the course of their development. What then is to be the future of man in his physical, mental, and moral nature? To what form of being is the primordial atom to rise? Under the tutelage of natural selection, it is advancing to a state of perfection, short only of the absolute, and some time or other that goal must be reached.

Declining to receive light from above, how is the speculative philosopher to close the history of life which he has traced through such singular transformations? The physical astronomers of no distant age believed that all the planets of our system, moving in a resisting medium, were necessarily approaching to the sun, and would finally perish in its blaze. Might not Mr. Darwin escape from his difficulty, by throwing the cause of life into a circle, and by a process of natural deterioration, throw it backwards from its highest to its

lowest form—from intellectual man, through all his various ancestors, to the primordial atom from which he sprung? It is a more rational belief that man may become a brute than that a brute may become a man; and it is an easier faith that plants and animals may dwindle down into an elemental atom, than that this atom should embrace in its organization, and evolve, all the noble forms of vegetable, animal, and intellectual life.

From this slight and imperfect sketch of Mr. Darwin's speculations it will be seen that he has not adduced a single fact in its support. Had our limits permitted us to give some of the natural history details and experimental results which his work contains, we should have found that though they prove the existence of small variations in species, a fact admitted by every preceding naturalist, yet the small amount of these variations, both in number and character, establish the very truth which they are adduced to overturn. When the physical astronomer saw in the small secular acceleration of the planetary motions the final destruction of the system, the very study of these accelerations, which the hypothesis promoted, led to the discovery of its cause, and placed beyond a doubt the stability of the planetary system. The same result will be obtained from the study of those changes in the organization and habits of plants and animals which arise from domestication, from artificial selection, from the struggle for existence, and from food and climate. The comparative anatomist, the physiologist, and the botanist, will discover their nature and extent, and, instead of finding in them the materials of a wild speculation, they will see and admire the beautiful provision which has been made for enabling the various species of animal and vegetable life to adapt themselves to the different conditions in which civilisation may have placed them. Had Mr. Darwin written a work on the change of species, as determined by observation and experiment, without any other object but that of advancing natural science, he would have obtained a high place among philosophical naturalists. But after reading his work, in which the name of the Creator is never distinctly mentioned, we can hardly believe that scientific truth was the only object the author had in view. Researches, conducted under the influence of other motives, are not likely to stand the test of a rigorous scrutiny; and some of Mr. Darwin's not unfriendly critics have produced ample evidence that the idol of speculation has been occasionally worshipped at the expense of truth.

If Mr. Darwin has any loving disciples who lean upon him for instruction, they must have asked him some perplexing questions regarding the history of his primordial form. In what part of the earth was it placed? What placed it there, and whence came the planet which it was to enrich and adorn with all the varieties of life that it embosomed? Although he has not answered such natural inquiries, yet philosophers of the same school have found in a universe of dust, the creative power which made even the planetary worlds.

The theory of the origin of species is but an offset from the Nebular Cosmogony which pretends to explain the origin and formation of the primary and secondary planets, and which stands in direct con-

tradition to all the facts and laws of the solar system, and especially those of the system of comets. That form of it in which the mass of the Sun is supposed to have been expanded in nebulous matter to the orbit of the remotest planet, has been recently submitted to the scrutiny of mathematical analysis, by M. Babinet, a distinguished member of the French Academy of Sciences. Adopting the present period of the Sun's rotation about his axis, scarcely $25\frac{3}{8}$ days, he has proved that the rotation of the nebular matter at the distance of the Earth,

must have been 3181 years! and, at the distance of Neptune, nearly three millions (2,862,900) of years,—“ numbers,” he says, “ so infinitely superior to those which mark the times of revolution of the Earth and Neptune, that it is impossible to admit that these planets have been formed from the mass of the Sun expanded to the planetary orbits.”

In this overthrow of the great parent heresy, by the severe test of geometry, we may read the fate of its more offensive offspring.

DAVID BREWSTER.

V E S P E R.

BY THE COUNTESS DE GASPARIN, AUTHOR OF “THE NEAR AND HEAVENLY HORIZONS.”



“ Make haste home, children ; the soup is smoking on the table ; Granny is rising from her spinning-wheel ; Father is shouting for you ! Quick ! Quick ! ”

I.—JANUARY.

THAT morning there was no hum of insects in the grass, no song of birds in the woods. It was a January morning, cold and brilliant, such as winter shakes down from his diamond-spangled robe, as he paces to and fro in his icy halls.

The serenity, the very cold itself, the distinct colouring, the well-defined outline, seemed to set the heart at ease. There are certain winter days more exhilarating than those of spring.

In spring the moist exhalations of the earth infuse a sense of languor into the spirit. Those rain-saturated winds of the deserts, that dilate the hard soil, that relax the rugged bark, and make it throb with sap, occasion in us strange gushes of sudden tenderness, aspirations after the ideal, soon congealed again by more boisterous gusts. Is it the contrast between the warm breezes and cutting east wind,—is it the pitiable aspect of young leaf-buds, curled up, shivering in their sheaths,—is it