

"WHICH STRAIN AT A GOAT AND SWALLOW A CAMEL."

ALL

THE ARTICLES

OF

THE DARWIN FAITH.

BY

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to her most gracious Majesty the Queen, etc., etc.

"*Etiam non sedit, sed etiam non sedit.*"—HORACE

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DEDICATED

BY PERMISSION

TO THE RIGHT HONOURABLE

THE COMMON SENSE

OF THE

PEOPLE OF ENGLAND.

"O ye fools, when will ye understand? ... He that made the eyes; shall He not see?"—Psalm xciv. 8, 9.

ALL THE ARTICLES
or
THE DARWIN FAITH.

I BELIEVE that we are the people, and that wisdom shall die with us.

I believe that my theory of natural selection is right, and that every one who does not hold it is in the wrong, although the difficulties "are so grave, that to this day I can never reflect on them without being staggered." (Darwin).

I believe that man, and all the animals, birds, fishes, reptiles, and insects in the world have descended from one single original, and not any of these from ancestors of their own kinds; that the gnat and the elephant, the cat and the mouse, the bat and the butterfly, the whale and the ant, the toad and the swallow, the hare and the tortoise,

the crocodile and the lamb, the humming-bird and the snake, the mole and the monkey, and then the man, are all one species—and only one.

I believe this, although I see that whilst animals of the several species described by naturalists breed solely together, and that their offspring are prolific, in like manner, generation after generation, any others which may exceptionally breed together have no progeny, except in very rare cases, and that any they may have leave no descendants, except still more rarely for perhaps one farther generation or so.

I believe that all the various creatures on the earth have sprung from a single parent, although I hold that each new species has "supplanted and exterminated its original parent and all the transitional varieties between its past and present status." (Darwin).

I believe that the drooping of the ears in domestic animals is due to the disease of the muscles of the ear, from the animals not being much alarmed by danger, although I see the horse with erect ears, and the hare and the rabbit with strikingly drooping ears.

I believe that the temporary variation of several races of

any one species of plant is a proof that permanent so-called species are thus produced, although I see that the varieties if left for many generations in a poor soil would to a large extent by degrees, and in the end wholly, revert to the form of the wild aboriginal stock.

I believe that I am using an able and sensible argument in saying that the mistletoe may metaphorically be said to struggle with other fruit-bearing plants in order to tempt birds to devour and thus disseminate its seeds rather than those of other plants.

I believe that the eye of every living creature was produced by natural selection, although in some species it consists of 4,000 lenses, in others 12,000, 17,000, or 25,000, and in others of various other vast numbers.

I believe that my theory is right, although I allow that according to it "all nature" ought to be "in confusion" instead of the species being, as we see them, "well defined." (*Darwin*).

I believe—"there seems to me no great difficulty in believing"—(*Darwin*)—that the swim-bladder in fishes "though originally constructed for one purpose," has been "actually converted" "into a lung or organ used exclusively for respiration."

I believe that the "electric organs of fishes" have been produced by "natural selection," although it is "impossible to conceive by what steps these wondrous organs have been produced." I believe this, although these organs only occur in species "widely remote in their affinities," while we "might have expected" (on Darwinian grounds), that they would all "have been specifically related to each other. I believe the same in the like case of luminous insects.

I believe that the most simple parts of species are due to natural selection, although I see that their "importance does not seem sufficient to cause the preservation of successively varying individuals."

I believe that the tail of the giraffe has grown by degrees into a "fly-flapper" (1), although I cannot explain how the species did without it in previous countless ages before it grew to its present length.

I believe that every "well-developed tail" in a water animal has been worked in as a "fly-flapper" for land animals, or as a "proberole instrument," or to "help them in turning;" although I see that in the dog it is of next to no such use at all, and that the hare "can double quickly enough, though with hardly any tail."

I believe that long tails are necessary to animals in hot countries to give them the "power of resisting the attacks of insects," although I see that sheep have heavy tails which they cannot and do not make use of for any such purpose, and are especially attacked by flies on their heads, which, if their tails were ever so light, they could not possibly reach.

I believe that—as I hold that the swim-bladder in creatures of the sea is modified into lungs in their descendants changed into land animals—the tail, having been so useful to the former as a means of locomotion, still proves its origin in the latter, though of so little use to them.

I believe that the green colour of the green woodpecker is due to selection by the male or female bird, because I see that there are black and pied woodpeckers also.

I believe that it is not the case that many structures have been created for beauty in the eyes of man, or for mere variety, although I "fully admit that many structures are of no direct use to their possessors."

I believe that there is "no logical impossibility in the requirement of any conceivable degree of perfection through natural selection," although I must admit that

the case of the eye is "more than enough to stagger any man."

I believe that the American ostrich "is not yet perfect," although I can give no proof whatever that it is in the process of becoming so.

I believe that the "most wonderful of all known instincts," that of the hive bee, can be explained by me, as a Darwinite, and the illogical way in which I have accounted for it in my work on "The Origin of Species" I believe to be a master-piece of reasoning, though nine out of ten of its facts prove nothing whatever by way of conclusion for it.

I believe the same in the case of the working of sterile ants, though "how the workers have been made sterile is a difficulty;" that is to say, in itself, but none whatever to my more "fertile" brain, which thinks nothing of any difficulty that stands in its way.

I believe that the difficulty, though "appearing insuperable," "disappears" by my imagining that selection may be exercised by a whole "family" as well as by an "individual." I choose to forget that families are made up of individuals.

I believe that on my theory no account need be taken of the "prodigious amount of difference between the fertile and sterile individuals of many insects."

I believe that my theory is perfectly correct, although there is a 'climax of the difficulty' beyond all those that I have yet stated, some of the neutrals differing even from each other to an "almost incredible degree;" some "with jaws and instincts extraordinarily different;" others with forms "the use of which is quite unknown."

I believe that I am right, and all the world else wrong, although it will be thought that I have an "overweening confidence in my own wisdom," which makes me "not admit that such wonderful and well-established facts at once annihilate my theory."

I believe that I must be right, although I can't "pretend that the facts given in this chapter (VII.) strengthen in any degree my theory," and all that I can say is that they do not "annihilate it;" ergo I must be right.

I believe that the sterility of hybrids is no disproof of my theory of natural selection, which is that it acts for the good of the creatures which exercise it, although it could not possibly be of any advantage to the several animals,

and although I think that the importance of the fact has been "much underrated by some writers."

I believe that my theory of hybridism is right, although it does not "go to the root of the matter" and "no explanation is offered" of the main fact. "*Ibrida quo pacto sit*" is quite beyond me.

I believe that "no part of the structure of any one species has been formed for the exclusive good of another species," though "natural selection" can and does often produce structures for the direct injury of other species; and though I see that the aphid voluntarily uses its structure for the sole good of the ants, and I can only "probably" imagine that it is of any convenience to the aphides themselves.

I believe that tumbler-pigeons have been produced by the long continued selection of such in many generations, though I can't at all tell how they first came to have the habit, or why it should have been fortunately noticed by some fancier, or how he came to think that it might be propagated and preserved, and succeeded in doing so.

I believe that I strengthen my argument by saying that dogs only rarely require, when young, to be taught

not to attack sheep, etc., though I see that it is the commonest thing possible that some dogs can never be broken of the habit, and that there is not a dog in existence but might be encouraged to it.

I believe generally that "natural instincts are lost under domestication," although I have the preceding fact and numberless others staring me in the face to show me the exact contrary, and that they are at the most but dormant, and ready to be restored to their former fulness.

I believe that young chickens have lost by habit the fear of dogs and cats, although I have no possible proof whatever, and cannot possibly have any proof, that they ever had such.

I believe that the cuckoo "once upon a time" did not lay her eggs in other birds' nests, but has acquired the habit by degrees, some "old bird" or other profiting by the mistake, or the young being made stronger by it, viz., by being tended by a foster parent instead of by their natural one, and so becoming "apt to follow" that unnatural practice; and this though I see that various birds "occasionally" lay their eggs in other birds' nests, and yet have acquired no such habit.

Although in spite of an "enormous accumulation of probabilities, we yet stand without the direct production of a new species from one common stock," nevertheless, against the evidence of my senses, I believe that such has been the case with all the so-called species in the world.

Although the remains of the horse existed in geological strata of "enormous antiquity" long before any indications of the existence of man have yet been found,—and although those remains show that the horse and the ass at that remote period exactly resembled in nearly every respect the horse and the ass which now run wild in many parts of Asia and Africa,—and although, "going still farther back to the Upper Miocene period, the horse is still found with its present peculiarities, and the two differ from each other only in minute details,"—yet as the remains of the hipparion or "little horse," are found in the same deposit as the horse, namely, the Upper Miocene, so that it could not have been its ancestor, though like it in several respects, and as the remains of the archæotherium are only found in the Lower Miocene, so that there is a wider gap between it and the hipparion than between the latter and the horse, still, for all that, inasmuch as in the archæotherium the leg bones are still more separated, as it has three bones on the

fore limb, which "theory requires that it should have," "it being impossible to obtain evidence more complete in kind than this of the origin of the horse," ergo I believe that the horse is descended from the ancotherium.— Q. E. D. (Huxley.)

Horses have sometimes been born with extra toes, ergo I believe that "the horse must at one time have had the leg and foot bones complete, although they were blotted out before the horse was turned into a perfect running machine" ! (Huxley).

The Darwin Doctrine therefore being *intra* (!) "made out in this one case of the horse," I believe that it is strong evidence that "similar modifications have taken place in all cases." (Huxley.)

I believe that the common saying that one "cannot draw blood out of a stone" is the reverse of the truth, and that not only bones, sinews, and life can be produced from them, but also, mind, reason, and the voice of conscience,—which though would-be philosophers and atheists brave out in daylight, they are so "horribly afraid" of in the dark.

I believe that I alone am right, although I see that though slight crosses beneath the offspring, greater crosses,

i.e., those of widely separated species, produce sterile hybrids, and I "cannot persuade myself that this parallelism (III) is an accident or an illusion."

I believe I am right, although I see that the widely different forms of the pigeon among birds, and the cabbage and other varieties among plants, are productive together, while other species "though resembling each other most closely are utterly sterile when crossed," and I admit that the former is "almost invariably the case."

I believe that the "imperfection of the geological record," showing no regular chain of species, and so giving no proof of my theory, and therefore the most obvious and gravest objection which can be urged against it, may nevertheless be assumed by me as conclusively proving it.

I believe that it is a sufficient answer to the question what has become of the innumerable forms which must have existed before the Silurian deposit, that "long before that" the world "may have," then, "presented a totally different aspect;" that the older continents, "may" now "all be in a metamorphosed condition," or "may" "lie buried under the ocean;" that there has "probably" been

more extinction of species during the periods of subsidence, and that the duration of each formation was "perhaps" short compared with the average duration of specific forms.

In fine, I believe that although the Mosais account of the Creation is borne out by the "Testimony of the Rocks" in a most wonderful manner, yet as it does not suit the theory I have taken into my head, it cannot possibly be true, and I do not believe a word of it.

I believe that if ever there was such a person as Moses, the five books called the five books of Moses were none of his at all, but a mere compilation of some impostor or victim of delusion.

I believe that no one who believes in the Bible has any sense or wisdom compared with me.

I believe that such persons in former times as Sir Isaac Newton, Herschell, Lord Bacon, Dr. Johnson, Milton, Locke, Sir Matthew Hale, etc., etc., etc., who were Believers in the Bible, were far behind me in intellect and knowledge.

I believe, in like manner, that others in the present time who are Believers also, as they were, such as Sir Roundell Palmer (Lord Selborne), Lord Haibacley, Lord Shaftesbury,

Paraday, Sir David Brewster, etc., etc., etc., and others who like them have taken the highest honours in the Universities, and distinguished themselves in the highest departments of art, science, and politics, are quite beneath me in mind and attainments, for if I am right, as I must be, and therefore am, they of course must be wrong.

I believe that mine is a much more valuable opinion, and much more to be received than that of Humboldt, who said of Strauss "what displeases me in him is the scientific levity which causes him to see no difficulty in the organic springing from the inorganic, nay, man himself, from the Chaldean mud."

I believe that the following suppositions guesses are "worthy of all men to be received," and should be accepted by all the world as scientific facts and truths, inasmuch as "I have spoken;" namely,—

I believe, "By considering the embryological structure of man—the homologies which he presents with the lower animals—the rudiments which he retains—and the reversions to which he is liable,—we can partly recall, in imagination, the former condition of our early progenitors, and can approximately place them in their proper position

in the zoological series. We thus (!) learn that man is descended from a hairy quadruped, furnished with a tail and pointed ears, probably arboreal in its habits, and an inhabitant of the Old World. This creature, if its whole structure had been examined by a naturalist, would have been classed amongst the quadrupeds, as surely as would the common and still more ancient progenitor of the Old and New World monkeys. The quadrupeds and all the higher mammals are probably derived from an ancient mammalian animal; and this, through a long line of diversified forms, either from some reptile-like or some amphibian-like creature, and this again from fish-like animal. In the dim obscurity of the past we can see (?) that the early progenitor of all the vertebrate man has been? an aquatic animal, provided with branchiae, with the two sexes united in the same individual, and with the most important organs of the body (such as the brain and heart) imperfectly developed. This animal seems to have been more like the larva of our existing marine Ascidians than any other known form."

I believe that an argument based on that which seems, is quite as valuable as one based on that which is; a chain

with gaps in the links, is quite as firmly held together as one without; and to lack no evidence but that of facts is amply sufficient for me, of which the following will serve for examples.

I believe—"I cannot doubt, that the theory of descent with modification embraces all the members of the same class." "I can indeed hardly doubt that all vertebrate animals having true lungs are descended by ordinary generation from an ancient prototype, of which we know nothing, furnished with a floating apparatus or swim-bladder."

I believe—"It is conceivable that the now utterly lost branchia might have been gradually worked in by natural selection for some quite distinct purpose, in the same manner as . . . it is probable that organs which at a very ancient period served for respiration, have been actually converted into organs of flight."

I believe that the opinion of Dr. Carpenter on the non-progressive character of the *Foraminifera* is as valuable as that of "any other man in England" (except myself); and therefore whereas Dr. Carpenter distinctly asserts there has been "no advance in the Foraminiferous type

from the Palaeozoic period to the present time," and states his conviction that "the present state of scientific evidence, instead of sanctioning the idea that the descendants of the primitive type or types of Foraminifera can ever rise to any higher grade, justifies the anti-Darwinian inference, that however widely they diverge from each other and from their originals, they still remain *Foraminifera*," I believe that as I think differently from him, he must be wrong, and I must be right. Q. E. D.

I believe that an assertion "not proven" is as good as or better than one that is proved.

I believe that I must admit Dr. Carpenter's assertion as an "absolute matter of fact;" but for all that, as it does not suit my theory, I must hold that "as we do not know under what forms, or how, life originated in this world, it would be rash to assert that even such lowly endowed animals as the Foraminifera, with their beautiful shells, as figured by Dr. Carpenter, have not in any degree advanced in organization!"

I believe, therefore, that we can thus "partly recall" the former condition of our early progenitors; though even that "partly" is "in imagination!" Thus too, we can "approximately place them in their proper position" ("in

imagination"). "We thus learn," also "in imagination," about the "tall and pointed ears," "probably derived" from *something*—or from *something else* ("some reptile-like, or some amphibian-like creature") or "this again from some fish-like animal." Thus "in the dim obscurity of the past, we can see" (?) what this animal "must have been;" or rather what I must after all own it to have been.

I believe this is a highly satisfactory and conclusive result of the "eleven years," labour I have expended on my last publication.

I believe that all the wisest men of the world for the six thousand years since it is commonly supposed to have been created, or six hundred thousand million years, or any number more, as I believe, have been altogether wrong, and that it has been reserved for me in this so-called nineteenth century to set them all right and lay down the law for ever.

I believe that it may help my argument, if I can find people simple enough to believe that humble bees are common in gardens, and scarce elsewhere in comparison, in consequence of being preyed on by field-mice which are kept down by cats about houses; the fact being, as any national-school boy can see, that those bees abound near

woods, or in any other wild places where thistles and other wild flowers which bees are fond of are found, a hundred-fold more than they do in gardens, and that if they are found more or less numerous in gardens, it is only because of there being more flowers there, for which they will fly for miles, there being no more nests there than anywhere else, and in ninety-nine cases out of one hundred nothing like so many.

I believe that all creation is derived from some one form, a mere monad, although I admit that "no one can at present say by what line of descent the three higher and related classes, namely, mammals, birds, reptiles, were derived from either of the two lower vertebrate classes namely, amphibians and fishes."

I believe that it requires several generations of cultivated talent to make the mind equal to high intellectual attainments, but I find it convenient to forget that it is just as easy a supposition that the debasement of the intellect at any given time, even assuming it as thus to be slowly recovered from, may have been acquired gradually by neglect from a previous height equal to that to be finally attained to.

I believe that there is no such art as logic, at least, if

there is, it is quite beneath me to be guided by it, and that one premise, or at all events a number of single premises strung together so as to give a great appearance of argument to those who know no better, is amply sufficient to prove any conclusion.

I believe that the Christian is the happiest of men, because he evidently has a hope for another world in addition to the peaceful happiness he enjoys here.

I believe that an Infidel or Unbeliever is "of all men most miserable"; nevertheless I have done all I could to make others as wretched as I am myself, and have given, and can give them, nothing in return but a dreary blank. If you ask me about the future, there, I confess, I am in the dark; all I can say is that I believe that you and I will "melt into the infinite sea of the past," (Tyndall), (whatever that may mean). I repeat that I believe that Christian Believers have a peace of mind which I own I have not myself. They have "a good hope" for the future, which I must admit I have not myself, "having no hope, and without God in the world." I do my little best, or worst, to shake their faith and rob them of their peace of mind, but I have nothing better, because I have nothing at all to give them in the place of it.

cannot offer them any happiness in the next world or in any future state, because I do not believe that there will be any future state, so that if you ask me what is the real base of all I have written I cannot tell you. I offer you no happiness here or hereafter, and all I can do is to rob those of you who are fond and foolish enough to take up with the idle conceits of my "vain philosophy," of their present hope, and therewith of their expectation of future happiness, which but for me they might have.

I, (Huxley) believe that there is a good deal to be said for the hypothesis, that animals are mere machines, as much so as if they were mills or steam engines, and that they have no feeling; that they do not hear, see, or smell, and that their "apparent states of consciousness," as they seem to us, are only the results of a "mechanical reflex process." ("Sicem tenentis animi?" This is philosophy! This is science!). It is true I believe that I am only an animal, come from one of them myself, and therefore you may argue that I have no feelings, and may ask me to allow myself to be experimented on accordingly for the good of science, but I must beg of you to excuse me. It might interfere rather unpleasantly with my theory, and with the calmness,—or to speak more truly, the cool

assurance—which a “Philosopher” ought to exhibit to the public when he lays down the law to them.

I believe it would be highly imprudent in me to accept the challenge which was thrown down to me at the meeting of the British Association in 1874, to meet the challenger face to face before the public and discuss the truth or otherwise of my assertions. On the contrary, though I have the advantage of a good memory, a fluent tongue, and any amount you please of assurance, if you will oblige me by using so mild a term, I altogether shrink from the touchstone of common sense. Theory and assertion are all I have to do with, to which I always make it a rule (a very convenient one) to bend any given number of facts.

I believe that though Professor Salton has shown that Darwinism is a mere scientific imagination, not a scientific fact, nevertheless the human species is descended from the *monstrum*, and this again from as low an origin as the larva or caterpillar of some sea animal.

I therefore believe, for all the above satisfactory reasons, that the origin of man is to be derived as follows:—

1. Marine animals, resembling the larva of existing *Actinians*.

2. Fishes as lowly organized as the lancelet.
3. Fishes like the *Lepidosteus*.
4. Amphibians.
5. Reptiles.
6. Monotremata.
7. Marsupials.
8. Placental Mammals.
9. Lemnids.
10. Simiids.
11. Old World Monkeys.
12. Man.

"O most lame and impotent conclusion!"

I, (Tyndall) believe that I can "prolong my intellectual vision backwards, into regions where the unscientific cannot follow, (no one but myself and those who think with me are scientific—in my opinion), and can discern in matter the promise and potency of every form and quality of life." All who are opposed to me I, (Harley), pronounce *ex cathedra*, to be "pigmies in intellect." This is a very easy way of setting down opponents, and especially becoming, I think, in a "scientific man," who calls himself a "professor" of science, when before the annual meeting of a scientific society. (*At Belfast, 1874.*)

As to "prolonging my vision" forward, there I am in the dark, even on my own confession. I am compelled to acknowledge that a time may be coming when even a "professor" of irreligion and science "falsely so called" may have to say to religion, "give us of your oil, for our lamps are gone out" into "outer darkness."

I, (Tyndall) also believe that life is a "continuous adjustment of internal relations to external relations," by which process some original tissue "vaguely sensitive all over" has come by degrees to be "differentiated" into man!! "(O Sapientia!)" I do not believe with Darwin in a "Primordial form," the origin of all living beings; I cannot tell whence he proposes to derive it, but neither can I tell you whence my original—(very original!)—"tissue" came. (Doctors differ you see.)

All this is science! knowledge!! philosophy!!! very clear, as well as very useful, and very profitable, is it not? as clear as the "Chaldean mud."

It is really difficult to say whether Huxley or Tyndall talks and writes the most senseless meandering. These are some of their choicest sayings.—"These be thy gods, O Israel," and "miserable comforters are they all."

I will supplement the above, *per contra*, with the

opinions of *The Times*, which are not so flattering to the scientific attainments or reasoning powers of the Darwinites as their own estimate of themselves.

"For this reason we must needs express our disappointment with the more important part of Mr. Darwin's book. His discussion of the faculties of man in comparison with those of animals appears to us utterly inadequate to the subject, independently of its being insufficient to sustain his theory. As it seems to us, he has not merely failed, but he has not duly grappled with the essential difficulties of the question. He has thought it possible to leap by the aid of a few illustrations over the momentous and arduous questions respecting the mental powers of man and animals, and the moral nature of man is dissected with a most rapid and unpenetrating hand. We can only express our conviction on this point by saying that on these subjects Mr. Darwin appears quite out of his element."

"For a natural philosopher to appeal to such superficial resemblances is much the same as for an astronomer to appeal to the apprehension of the vulgar with respect to the motions of the heavenly bodies."

"But the truth is that Mr. Darwin's argument is at every point supplemented by enormous assumption.

The utmost he proves, not merely in his present but in his former book, is not what has been, but what may have been, and he converts the 'may' into a 'must' by the sole force of the ever-present assumption that all forms of nature have been developed out of other forms. To our minds, the book bears in its very mode of expression, of which we have given some illustrations above, a character which is wholly unscientific. Science tells us what has been, what is, and what will be. But Mr. Darwin's argument is a continuous conjugation of the potential mood. It rings the changes on 'can have been,' 'might have been,' 'would have been,' until it leaps with a bound into 'must have been.'"

"When Mr. Darwin is confronted with the extremely remote and uncertain nature of the agencies on which he relies, he continually falls back on what 'might have been' in the lapse of unlimited periods of time. Such a style of argument is, to say the least, destitute of any scientific value. It is impossible to say what might or might not have been during periods so vast that we have no experience of them. For all we know, the vitality of species might wear itself out in the lapse of ages, or by some law of cyclic change, they might assume new forms.

To call in aid such an indefinite agency is a mere veil for ignorance. It may even be doubted whether to assert that a process takes effect in an infinite time, be not simply a round a roundabout way of," etc. etc.

"If in short, in its general application, Mr. Darwin's hypothesis is utterly unsupported by observed facts, it is still more destitute of such support in its application to man."

"This is precisely the solution which Mr. Darwin is unable to apply to his instances of approximation between species. If he could say in a single instance, '*admirar ambulando,*' 'here is a case of one true species having passed into another,' we should have a practical proof that the kind of approximation he brings to light is of such a kind as to end in coincidence. But this, as we have seen, is what he has not done. It is, in fact, not a little curious that the finite time which Newton demands is the very condition most energetically repudiated by Mr. Darwin and his followers. They place no limit whatever to the amount of time which their process requires. The knowledge of so prolonged a proof, would have been of no practical avail even to Methuselah.

"We are reminded, in fact, by such speculations, of the famous story which Corporal Trim endeavored so effecti-

ally to recite to Uncle Toby. "There was a certain king of Bohemia," said Trim; "but in whose reign except his own, I am not able to inform your honour." Uncle Toby was more accommodating than we are able to be from a scientific point of view. But we recommend the gracious permission he accorded to the corporal as a most appropriate motto for speculations of this kind. "Leave out the date entirely, Trim," said my Uncle Toby. In almost similar language 'There was a certain Monkey,' says Mr. Darwin; of that he is quite sure, and he frequently reiterates the assurance; 'There was a certain monkey; but in what period or country, except his own, I am not able to inform my readers.' The certainty, unfortunately, is hypothetical, and the particular monkey unknown."

"We are at a loss to understand the value of all this complicated guess-work. It represents a kind of Ptolemaic theory of creation heaping supposition on supposition and multiplying cycles of action as each supposition requires to be supplemented. It is the most conspicuous example yet afforded of that 'use of the imagination in science,' on which professor Tyndall dilated with such unscientific enthusiasm last autumn. Mr. Darwin's imagination is inexhaustible, and his power in this respect con-

tributes greatly to the charm of his strictly philosophical writings, but he does not hesitate, in accordance with Professor Tyndall's advice, to let it take the place of science when the means and methods of science fail."

"In section D (Anthropological Department) the meeting was held in the great lecture theatre of the museum, so as to accommodate the large number of persons who desired to attend. The question of human relationship to the ape was again talked about (for it cannot be said to have been discussed) by many speakers who vied with one another in loudness of declamation and shallowness of argument."

"This assumption is the very point to be proved. To argue from it is to assume the whole doctrine of evolution. The assertion in question is scientific or not, according as it is true or not. The only scientific question is whether, as a matter of fact, species have been developed by force of circumstances out of other species, and man out of an ape. It is certainly no scientific argument to assume that they must have been."

"Starting from the unsubstantial presumption just indicated, Mr. Darwin proceeds to speculate on the manner of man's development, without being able to address the

slightest evidence that facts correspond with his hypothesis. The history, however ingenious, is purely imaginary from beginning to end."

"Further consideration has led him to perceive an imperfection in his hypothesis of natural selection. 'He had not,' he says, 'sufficiently considered the existence of many structures in animals which appear to be, as far as we can judge, neither beneficial nor injurious;' and this he believes to be one of the greatest oversights yet detected in his work. In other words, the action of Natural Selection will not of itself sustain the theory of the continuous evolution of all organized beings from inferior forms."

"That, at all events, is the practical result for all the purposes of life. If, as seems to be admitted even by the most advanced Evolutionists, species be so permanently fixed that millions of years would be necessary to transform them, it follows that for all human purposes they must be treated as permanently independent."

"It is impossible to maintain unbroken gravity in discussing such a dream. But let us turn to Mr. Darwin's investigation of the physical basis of his conclusion,

which appears to us scarcely less unsatisfactory than his inquiry into its mental and moral bearings. He simply accumulates a variety of points of similarity between the human frame and that of animals."

"There is much reason to fear that loose philosophy stimulated by an irrational religion, has done not a little to weaken the force of these religious principles in France, and that this is at all events one potent element in the disorganisation of French society. A man incurs a grave responsibility, who, with the authority of a well earned reputation, advances at such a time the disintegrating speculations of this book. He ought to be capable of supporting them by the most conclusive evidence of facts. To put them forward on such incomplete evidence, such cursory investigation, such hypothetical arguments as we have exposed, is more than unscientific—it is reckless."

"We wish we could think that these speculations were as innocuous as they are unpractical and unscientific, but it is too probable that if unchecked they might exert a very mischievous influence. We abstain from noticing their bearings on religious thought, although it is hard to see how, on Mr. Darwin's hypothesis, it is possible to ascribe to man any other immortality or any other spiritual

existence, than that possessed by the brutes. But, apart from these considerations, if such views as he advances on the nature of the moral senses were generally accepted, it seems evident that morality would lose all elements of stable authority, and the 'ever fixed marks' around which the tempests of human passion now break themselves, would cease to exert their guiding and controlling influence."

"It should be the work of science to reveal this difference, not to construct theories on its mere apparent magnitude. But Mr. Darwin urges that this homological construction of the whole frame in the members of the same class is intelligible if we admit their descent from a common progenitor, together with their subsequent adaption to diversified conditions. 'On any other view,' he says, 'the similarity of pattern between the hand of a man or monkey, the foot of a horse, the flipper of a seal, the wing of a bat, etc., is utterly inexplicable.' We fail to see the inexplicability. What is there unreasonable in the supposition that they have all been formed on the same general plan? Mr. Darwin's only objection is that 'this is no scientific explanation,' but this is simply to beg the question."

"We fear the truth is that the study of mental philosophy, under the disastrous influence of one or two popular writers, has of late years become extremely loose and superficial, and Mr. Darwin does but illustrate the general vagueness of thought which prevails on such subjects."

Here are a few more instances of the way in which these would-be Philosophers have been set down by the London Press. The next is from the "*John Bull*."

"There is still, it seems, some uncertainty at one stage of the evolution :—

No one can at present say by what line of descent the three higher and related classes—namely mammals, birds, and reptiles—were derived from either of the two lower vertebrate classes, namely, amphibians and fishes,—(Vol. I, p. 212.)

The remaining steps, however, 'are not difficult to conceive.' Possibly not, if you start as Mr. Darwin does, by assuming his principle of evolution as the sole origin of species, and rejecting separate creation as 'unscientific.' In other words, you must first grant that man is descended from a monkey, and then it is 'not difficult to conceive' the intermediate steps; but if you decline to admit this *petitio principii*, you are wilfully closing your

eyes to what Mr. Darwin assures you is the fact. Such is the entire circle of this gentleman's logic. The book is full of interesting observations on natural history, exhibiting more or less relevancy to the argument it seeks to sustain; but the induction never advances a step without a confession of logical defectiveness. We are treated to tendencies, and probabilities, and conjectures, which derive all their force from a previous assumption of the point to be proved. Take away this, and there is hardly a proposition in the whole work which could pretend to the character of a logical conclusion.

The job-masters who swallow for science all that comes from scientific men were confounded to hear of this secret laboratory of imagination. The *Times* protested against the notion that experimental philosophers ever draw bills. But Tyndall and Darwin know better.

Mr. Darwin's present book is a conspicuous example of this utterly unscientific process. It begins by assuming evolution in the exact sense which Dr. Salmon justly called a scientific imagination, not a scientific fact. From a plausible conjecture that some species may be modified descendants of other species—the very most that Darwin-

ism can logically pretend to—its author quietly infers a universal law, and so sets himself to inquire in the present book 'whether man, like every other species, is descended from some pre-existing form'! Having by this good beginning accomplished more than half his work, he proceeds in like manner to 'take for granted' the high antiquity assigned to man by M. Boucher de Perthes, Sir Charles Lyell, Sir John Lubbock, and others, together with Professor Huxley's 'conclusive' proof that 'man differs less from the higher apes than these do from the lower members of the same order of primates.' Now here are at least four unproved hypotheses to be accepted in the dark before the new argument can see daylight. Of the first Mr. Darwin himself confesses that 'of the "older and honoured chiefs in natural science, many unfortunately are still opposed to evolution in every form." His greatest authority only denies the independent creation of every species, though Mr. Darwin, in quoting his words, enlarges them into an assertion that 'species'—instead of "some species"—are the modified descendants of other species. From this universal proposition, the induction is at present ludicrously scanty, while the acts and reasons on the contrary side are overpowering?

The battle, in short, has yet to be fought before Darwinism can make good this first step in its hypothetical series. The antiquity of man is another battle ground where it is hardly set up its banners. Assuredly it can boast no victory. On the existence of man before the Tertiary period all is yet the merest conjecture, and that of so slender a structure that it may at any moment vanish away. Sir John Lubbock's theory of a savage origin is a third hypothesis more in want of proof for itself, than able to afford proof of another. Not a single fact is established which is not quite as easily reconciled with the opposite theory. Against it is the unbroken testimony of history that while in many nations civilization has decayed and died out, in none has it sprung up and flourished without extraneous assistance. If man were originally savage, and acquired civilization by his own exertions, we ought occasionally to find him on the rise. There are savages enough within the sphere of history, and even of present observation, to give full scope for the experiment. How is it that we never see them improving themselves, till some one comes to improve them? Why did New Zealand remain in cannibalism till visited by missionaries within our own recollection, and then spring almost at a bound to a

level beyond many parts of Europe? That the New Zealander was capable of civilization is proved by the result; if it be a natural acquisition, why did he never acquire it before we found him out? On the other hand, if he received the gift from the Briton, as the Briton from the Roman, the Roman from the Greek, and the Greek from the Egyptian, we are conducted back to an original civilization from which the separated fragments fell, and to which they return again when the long lost connection is restored, as water returns to its level when the intervening mass is pierced without. Against this invariable testimony of history the most that is offered is that all existing nations were originally barbarous; but to infer from this that all ancient races were barbarous also, is again to beg the question. Our contention is that they were not, and we have some evidence in our favour in the remains of ancient Egypt and Assyria; to assume without evidence that these were in turn preceded by an unknown period of barbarism, requires us to admit the very point to be proved. If civilization (we repeat) did spring spontaneously out of barbarism at the first, why has it never done so since? To this question there is no reply. But if the original savagery is still an improbable conjecture,

instead of an established fact, the whole basis of Darwinism is gone.

Mr. Huxley's doctrine is in the same category of assumption without proof and against evidence. He is not more logical than his fellows, because he is more peremptory and scornful. Granting that in physical structure man approximates nearer to the ape than the ape to the lowest monkey, this is no argument for either being descended from the other, till we have admitted the two previous unproved hypotheses, universal evolution, and the savage origin of man. Again, physical structure is only one element in specific classification, and in the case of man the least important. His moral and intellectual nature is emphatically his specific difference from other mammals; and here it is easy to retort Mr. Huxley's argument. The highest ape is morally and intellectually more removed from the lowest savage than the latter from the most eminent philosopher. The savage may become a philosopher, but the ape never becomes even a savage. Neither can we detect the slightest tendency to such moral or intellectual evolution. Mr. Darwin does, indeed, collect some interesting anecdotes of quasi-human reason and affections in the lower animals, but it requires an enormous exercise of

'imagination' to elevate them into anything approaching to the nature of man. Of this he seems to be aware when he asks with a ludicrous sentimentality, 'Who can say what cows feel when they surround and stare intently on a dying or dead companion?' Yes, who indeed? There is nothing novel or scientific in this sort of stuff; we have heard of dreaming dogs, and reasoning elephants, and arithmetical pigs, and beavers' houses, and the wonderful instincts of bees all our lives, and the common sense of mankind, gentle and simple, has long ago, repudiated their real community with the moral and intellectual nature of man. Does Mr. Darwin hope to overcome the verdict by telling us that:—

If men were reared under precisely the same conditions as hive-bees, there can hardly be a doubt that our unsexed females would, like the worker-bees, think it a sacred duty to kill their brothers, and mothers would strive to kill their fertile daughters, and no one would think of interfering?

What would be said if any advocate of Revelation resorted to such puerile trifling? In the case supposed, the creatures would not be men, but bees, and not like other bees. But that bees ever think anything a 'sacred duty' is one of the thousand forms of begging the question artfully scattered up and down the book. Curiously enough, the best examples are found, not among the apes,

from whom we ought to inherit, but among creatures so remote in physical structure as the dog, the elephant, and the bee.

Amid all this irrelevant gossip, Mr. Darwin notices, with the feeblest attempt at refutation, the crucial arguments that man alone is capable of progressive improvement, and that man alone fashions implements for a special purpose. To the first he can only answer that in the hunting countries fens are more wary than in districts where they are not disturbed; and, to the second, that the chimpanzee cracks nuts with a stone, and other apes build temporary platforms (as birds build nests), which 'might readily 'grow into a voluntary and conscious act.' Nighi! But does it? And could it, unless we admit intellectual evolution, and so once more beg the question? It is astonishing how persistently this artifice is resorted to throughout. It pervades every part of the book, till, by dint of repetition and incessant assumption, often veiled in the most subtle implications, the reader is led to think a point demonstrated for which not a shadow of evidence has been presented. Of the courses of things, when reason, language, and religion have been once "acquired," Mr. Darwin writes as coolly as if such "acquisitions" were of

common experience, instead of being the wildest speculation, contrary to every conviction of our nature, and never in a single instance confirmed or indicated by experiment. It is really an abuse of language to call such writing 'scientific: to mistake the "Arabian Nights" for history would be far more excusable.

Such being the character of the thesis, we need not spend much time on the new hypothesis. The moment he attempts to draw any conclusion, Mr. Darwin himself is sensible of the exceeding tenuity of his premises. Showing us plainly enough what he is in quest of, he writes of what he has found either in the optative or conditional mood. In place of what is, we hear of what might, could, would, or should be—of what is probable or may be easily conceived—and unhappily the probability is often in inverse ratio to the importance of the conjecture. Here again Darwinism failing to establish its point by any kind of proof, is obliged to take refuge in imagination.

Its author, meanwhile, with as much assurance as if he had completed a mathematical demonstration, boldly apologises for the shock to our taste and our religion, by avowing that, for his own part, he would rather be decess-

ded from a monkey than a Fœgian savage: he adds that 'it is not more irreligious to explain (?) the origin of man as a distinct species from some lower form, than to explain the birth of the individual through the laws of ordinary reproduction.' The first excuse overlooks the little fact that the simian ancestry involves the savage also."

Again,

DARWINISM AND ASTRONOMY.

TO THE EDITOR OF THE TIMES.

Sir,—After the many solid arguments adduced in your late admirable and most welcome notices of Mr. Charles Darwin's recent work, I should like to make only one suggestion. Mr. Darwin's theory requires us to believe that animal life existed on this globe at a period when, according to a theory much more plausible than his, the earth and all the planets with the sun constituted but one diffused nebula. Astronomers really have some data on which to found this theory of theirs, since marked variations in the conformation of several nebulae within historic times are now on record; whereas all the variations which Mr.

Darwin has been able to point out in species, and especially in man, within the same limits of time are either zero or of an extremely nebulous character.

I remain, Sir, yours faithfully,

April 10.

ASTRONOMICUS.

Thus much from the *Times*, now from the *Globe*,

"The other point to note is Professor Huxley's speech. The learned gentleman is not only abandoning himself to a bad habit of mischievous talking; he is becoming insane. What did he mean by entertaining a company like that assembled around the board of the Royal Academy with a wretched retch of the old story that man is a cooking animal, with the obvious variation *à propos* of the occasion that he is distinguished by the power to 'draw'! Professor Huxley must either be running rapidly to seed himself, or he has a very low opinion of his contemporaries when he expects them to be amused—even after dinner—with such feeble wit."—*Globe*, May 1st, 1871.

"On Geology and Darwinism "Dagobert" holds decided opinions. He regards the former as a science so completely in its infancy that to attempt to reconstruct our theology in reference to it is simply absurd:—"

researches have, I think, proved more clearly than ever it was proved before—first, that man is a very recent inhabitant of this planet; and, secondly, that man has not been produced by any process of selection or development. . . . Darwin has left the origin of species, not where he found it, but darker than ever; for he has proved that there ought to be no species at all; and if his views were true, there could have been no such thing.” This is admirably put and not easily answered, and the following reply to the scientists who object to the argument from design is irrefragable. ‘The professor who sees in nature no traces of a Creator, will find in a wretched piece of flint, as he peers enchanted through his spectacles, the long-lost proof of pre-Adamite man.’ The truth is that neoteric science is ruined by the shallow scientist, the lecturing professor, who, the moment a new notion strikes him, airs it to an audience of ladies at Albemarle-street or South Kensington. ‘Natural selection’—‘protoplasm’—‘air germs’—come into fashion and go out again like *passiers* and *chignons*.”

Globe.

—And lastly our friend “Punch” whose wit has always a good deal of wisdom in it.

" Darwin's speculation
Is of another sort ;
'Tis one which demonstration
In no wise doth support.
Time, theory's dispeller,
Will out of mind remove it ;
We say, as said old *Weller*,
" Prove it." And he can't prove it."

Punch.

The following is Dr. Carpenter's opinion, the President of the British Association.

" There is a great deal of what I cannot but regard as fallacious and misleading philosophy—'oppositions of science falsely so called'—abroad in the world at the present time. And I hope to satisfy you that those who set up their own conceptions of the orderly sequence which they discern in the phenomena of nature, as fixed and determinate laws by which those phenomena not only are within all human experience, but always have been, and always must be, invariably governed, are really guilty of the intellectual arrogance they condemn in the systems of the ancients, and place themselves in diametrical antago-

nism to those real philosophers, by whose comprehensive grasp and penetrating insight that order has been so far disclosed."

And, another,

"It must not be supposed that there is much unity among these "philosophers." But in this they all agree, they all argue *a posteriori*, and they are all infallible."

"LOOK ON THIS PICTURE"

WORDS OF THE WISE.

There is a path which no fowl
knoweth, and which the vulture's
eye hath not seen.

The lion's whelps have not
trodden it, nor the fierce lion
passed it.

He putteth forth His hand upon
the rock; He overthroweth the
mountain by the roots.

He cutteth out rivers among
the rocks; and His eye seeth
every precious thing.

He blindeth the floods from
overflowing; and the thing that
is hid bringeth He forth to light.

But where shall wisdom be
found? and where is the place of
understanding?

Man knoweth not the price
thereof; neither is it found in the
land of the living.

"It cannot be valued with the
gold of Ophir, with the precious
onyx, or the sapphire."

"AND ON THAT"

WORDS OF THE WISEACRE.

"What little I know about the
matter leads me to think that if H.
Carter, had possessed the slight-
est acquaintance with biological
science, (Philosophers disagree, it
seems) he would have turned his
philosophy upside down, and
have found that we can have no
knowledge of the great laws of
life, except that which is based
upon the study of natural living
beings." (Huxley!!!)

"If there is one thing clear"
(clear!) about the progress of
modern science, it is the tendency
to reduce all scientific problems
except those which are purely
intellectual to questions of
molecular physics, that is to say
to the attractions, repulsions,
motions, and coordination of the
ultimate particles of matter. So-
cial phenomena are the result of
the interaction of the complements
of society, or men with one another
in the surrounding universe, but
in the language of physical science,

The gold and the crystal cannot equal it; and the exchange of it shall not be for jewels of the gold.

The Topaz of Ethiopia shall not equal it, neither shall it be valued with pure gold.

Whence then cometh wisdom? and where is the place of understanding.

Seeing it is hid from the eyes of all living, and kept close from the fowls of the air.

Destruction and death say, We have heard the fame thereof with our ears.

For He looketh to the ends of the earth, and seeth under the whole heaven;

To make the weight for the winds; and He weigheth the waters by measure.

When He made a decree for the rain, and a way for the lightning and thunder.

And unto man He said, Behold, the fear of the Lord, that is wisdom; and to depart from evil is understanding.

Canst thou by searching find out God? canst thou find out the Almighty unto perfection?

But ask now the beasts, and they shall teach thee: and the fowls of the air, and they shall tell thee.

Who knoweth not in all these that the hand of the Lord hath wrought this?

In whose hand is the soul of every living thing, and the breath of all mankind, *Job.*

which by the nature of the case is materialistic, the notions of men, so far as they are recognizable by science, are the results of molecular changes in the matter of which they are composed."

"To a certain extent indeed it may be said, that imperfect ossification of the vertebral column is of an embryonic character, but on the other hand it would be extremely incorrect to suppose that the vertebral columns of the older vertebrates are in any sense, embryonic, in their whole structure."

Huxley.

"Matter and spirit are both names for the imaginary substance of groups of natural phenomena."

Huxley.

"In itself it is but of little moment, whether we express the phenomena of matter in terms of spirit, or the phenomena of spirit in terms of matter."

Huxley.

"The extension of the province of what we call matter or materialism, and the concomitant gradual banishment from all regions of human thought, of what we call spirit and spontaneity."

Huxley.

"Traced back to its earliest state, the matter arises as the man does, in a particle of radiated protoplasm."

Huxley.

Wall wrote Canon Kingsley:—"All we have to do is to wait. Nominalism, and that Sensationalism which has sprung from Nominalism, are running fast to seed. Comptism seems to me its supreme effort, after which the whirligig of time may bring round its revenges, and Realism and we who hold the Realist creed may have our turn. Only wait—the end of that Philosophy is very near." "The tide is setting in against Darwinism."
