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SCIENTIFIC AND LITERARY.

"THE ORIGIN OF THE SPECIES."- It must be a remarkable book that can invest a theme so recondite and at the same time so hackneyed as the above with interest sufficient to wean an Englishman from the love or himself and concentrate the mind or John Bull on a theory of other men's origin and tendencies. Yet such a book has lately been put forth, according to the English Reviews for April, and besides furnishing the subject for n lengthy criticism in each, it has fairly taken possession of all classes of readers. "Overflowing the narrow bounds of purely scientific circles," says the Westminster Review, "the species question divides with Italy and the volunteers the attention of general society." The author, who is a well known and accomplished naturalist, is Charles Darwin. He has acquired a reputation in the literary world as well as among zoological readers, and last year published a small volume introductory, it would appear, of the subject treated at length in his recent work. The theory, to support which he has produced these books, and upon the successful elucidation of which the interest of John Bull at present hangs, goes to prove that his species is intimately related to the baboon.

The hypothesis is not a new one in the scientific world; it may be said to be, in fact, as old as the vestiges of Creation. But perhaps we are treating the subject, which has supplanted for in the affectations of an Englishman, with unbecoming levity. The fact will nevertheless be recognized that, in the central idea of the new book, there is a likeness to the thought presented and supported in the volume published many years ago, whose title we have repeated.

Of course the process of clothing the idea with arguments and illustrations is different, and the later production has the advantage of having been illuminated by one of the foremost men of science in Great Britain. A few random, extracts from the Reviews must serve to reveal the character of the work which has for its fundamental proposition, that "species are derivative and mutable." Mr. Darwin refers to the multitude or the individuals of every species, which, from one cause or another, perish either before, or soon after attaining maturity. Owing to this struggle for life, any variation, however slight and from whatever cause proceeding, if it be in any degree profitable to an individual of any species, in its infinitely complex relations to other organic beings and to external nature, will tend lo the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving, for, of the many individuals of any species which are periodically born , but a small number can survive. I have called this principle, by which each slight variation, if useful, is preserved, by the term of natural selection, in order

to mark its relation to man's power of selection. We have seen that man by selection can certainly produce great results, and can adapt organic beings to his own uses, though the accumulation of slight but useful variations, given to him by the hand of Nature. But natural selection, as we shall hereafter see, is a power incessantly ready for action, and is as immeasurably superior to man's feeble efforts, as the words of Nature are to those of art.
The author says in another place:
To give an imaginary example from changes in progress on an island: let the organization of a canine animal, which preys chiefly on rabbits, but sometimes on hares, become slightly plastic; let these same changes cause the number of rabbits very slowly to decrease, and the number of hares to increase; the effect of this would be that the fox or dog would be driven to try to catch more hares; his organization, however, being slightly plastic, those individuals with the lightest forms, longest limbs, and best eyesight, let the difference be ever so small, would be slightly favored, and would tend to live longer, and to survive during that time of the year when food was scarcest; they would also rear more young, which would tend to inherit these slight peculiarities. The less fleet ones would be rigidly destroyed. I can see no more reason to doubt that these causes in a thousand generations would produce a marked effect, and adapt the form of the fox or dog to the catching of hares instead of rabbits, than that greyhounds can be improved by selection and careful breeding.
Mr. Darwin (we quote from the Edinburgh Review), availing himself of the more exact ideas or the affinities and relationships of animal groups obtained by subsequent induction, says:
"I believe that animals have descended from at most only four or five progenitors," (evidently meaning or answering to the type forms of the four or five "sub-kingdoms" in modern zoology), "and plants from an equal or lesser number."
First crosses between forms sufficiently distinct to be ranked as species, and their hybrids, are very generally, but not universally, sterile. The sterility is of all degrees, and is often so light that the two most careful experimentalist who have ever lived have come to diametrically opposite conclusions in ranking forms by this test. The sterility is innately variable in individuals of the same species, and is eminently susceptible of favorable and unfavourable conditions. The degree of sterility does not strictly follow systematic affinity, but is governed by several curious and complex laws. It is generally different, and sometimes widely different, in reciprocal crosses between the same two species. It is not always equal in degree in a first cross, and in the hybrid produced from this cross.
In the same manner as in grafting trees, the capacity of one species or variety to take on another is incidental on generally unknown differences in their vegetative systems, so in crossing, the greater or less facility of one species to unite with another is incidental on unknown differences in their productive systems. There is no more reason to think that species have been specialls endowed with various degrees of sterility to prevent them crossing and breeding in nature, than to think that trees have been specially endowed with various and somewhat analogous degrees of difficulty in being grafted together in order to prevent them becoming inarched in our forests.

The Westminster Review, which, as may be inferred from its peculiar views relating to Scripture and the Mosaic Cosmogony, is exceedingly partial to this new work, is, after all, obliged to confess:

After much consideration, and with assuredly no bias against Darwin's views, it is our clear conviction that, as the evidence stands, it is not absolutely proven that a group of animals, having all the characters exhibited by species in nature, has ever been originated by selection, whether artificial or natural. Groups having the morphological character of species, distinct and permanent races in fact, have been so produced over and over again; but there is no positive evidence at present that any group of animals has, by variation and selective breeding, given rise to another group which was even in the last degree infertile with the first. Darwin is perfectly aware of this weak point, and brings forward a multitude of ingenious and important arguments to diminish the force of the objection. We admit the value of these arguments to their fullest extent; nay, we will go so far as to express our belief that experiments, conducted by a skillful physiologist, would very probably obtain the desired production of mutually more or less infertile breeds from a common stock, in a comparatively few years; but still, as the case stands at present, this “little rift within the lute” is not to be disguised or overlooked.

The Edinburgh Review totally dissents from Darwin's views, and in no able paper exposes the insufficiency of his reasoning. Thus far, then making the above results of a critical survey of the new field of argument, the author, whose book everybody in England is reading, may be said not to have proven conclusively that either our English connections or ourselves have sprung from the same stock with the baboon.