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THE English journals are evidently rather shy of Mr. Darwin's last work. They approach it cautiously, and handle it gingerly, as if they did not well know what to make of it. They all, however, admit its merit as a contribution to natural history.

The Athenaeum remarks that "it is replete with facts and arguments, and that it is a natural-history maze. Its literary merit lies in the marshalling and disposing in due order of a multitude of observations gathered from numerous inquirers, and from very numerous publications. Whoever will peruse these volumes apart from their ultimate aim, and totally disregard the author's hypotheses, will be highly pleased with them, and will readily acknowledge the patience and industry of the compiler of so many scattered facts in natural history. We have, in this spirit, already twice read many pages, and hope twice to read many more. In this spirit, too, we are not concerned about vagueness or irrelativeness; we accept the volumes as a naturalist's miscellany, and are grateful for the entertainment they have afforded us."

The Spectator says that "even to readers who are not naturalists, Mr. Darwin's works are full of fascination and instruction. No writer of the day arranges his facts so lucidly, with so unquestionable a sincerity, and so undisguised a candor when he has difficulties to confess. Though Mr. Darwin has shocked the deepest prejudices and prepossessions, he seems to live in a region far above the temper of controversy, and to aim at nothing but the nearest approach to scientific hypothesis that it is in his power to make. There is not a word of harsh criticism in his volumes, and, as far as a reader can judge, not a trace of disposition to disguise the objections to the views which he is disposed to take. It is hard to conceive of a

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scientific style at once so dispassionate and so full of intellectual vitality. There is nothing of the dreary prolixity of a mind too full to keep its material subordinate to the question under discussion, and yet nothing of the dogmatic vehemence of one that cannot bear to doubt the truth of its own conclusions. Every chapter advances the theory of the book, and yet every chapter deepens the confidence of the reader in his author's candor and grasp."

In its second notice of the work, the Saturday Review, speaking of the author's theory of sexual selection, pays a similar tribute to the value of the work in relation to natural history.

It says: "Through a series of chapters, ranging over the entire field of natural history, Mr. Darwin traces what he regards as the evidence of this exertion of choice or taste in the pairing or crossing of animals. The particulars of their courtship furnish an amount of reading in itself most curious and romantic, even apart from the special hypothesis it is designed to support. The loves of the animals have never before been shown so instinct with meaning and even with poetry. Throughout the most widely-distinct classes of the animal kingdom, mammals, birds, reptiles, fishes, insects, and even crustaceans, obey the same general rules. The males are almost always the wooers, and they alone are armed with special weapons for fighting with their rivals. They are generally stronger and larger than the females, and are endowed with the requisite qualities of courage and pugnacity. If not exclusively, they are at least in a much higher degree than the females provided with musical organs or odoriferous glands, with brilliant plumes or diversified appendages, which, acting upon the sense of beauty inherent in all animals, attract and fascinate the female. Often the male is gifted with special sense-organs for discovering the female, with locomotive organs for reaching her, and with prehensile organs for holding her. These various special structures are often developed in the male during part only of the year—namely, the breeding-season. They have in many cases been transferred in a greater or less degree to the females, in whom, however, they appear but as mere rudiments. On the other hand, in certain anomalous cases there is seen an almost complete transposition of the character proper to both sexes, and rudiments of the female structure are found in the male, as in the case of the mammary glands in man.

The laws of inheritance, which Mr. Darwin acknowledges to be obscure and little understood, must ultimately determine how far characteristics gained through the prolonged action of sexual preference by either sex shall be transmitted to the same sex, or to both sexes, as well as the age at which they shall be developed. But variations thus induced and accumulated through many generations may reach a degree of difference so strongly pronounced as to rank almost as distinct species or even genera. Of all the causes which have led to the differences in external form and character between the races of men, and to a certain extent between man and the lower animals, Mr. Darwin holds the belief that the most efficient by far has thus been sexual selection."

Sir John Lubbock's work on the "Origin of Civilization" has reached a second edition in England, in spite of a good deal of adverse criticism, based chiefly on theological grounds. The conclusions maintained by Sir John Lubbock in this work are, in his own words: "That existing savages are not the descendants of civilized ancestors. "That the primitive condition of man was one of utter barbarism. "That, from this condition, several races have independently raised themselves."

On the other hand, we have the opinion of the late Archbishop Whately, that "we have no reason to suppose that any community ever did or ever can emerge, unassisted by external

helps, from a state of utter barbarism into anything that can be called civilization; " and that of the Duke of Argyll, who holds that the primitive condition of man was one of civilization; that "there is no necessary connection between a state of mere childhood in respect to knowledge and a state of utter barbarism," and that man "even in his most civilized condition, is capable of degradation; that his knowledge may decay, and that his religion may be lost."

That the general propositions laid down by Archbishop Whately and the Duke of Argyll contain a certain limited amount of substantial truth, will probably be admitted by the staunchest adherents of the opposite theory. That "external helps" of some kind or other have played a most important part in the case of all civilizations the history of which is accessible, is as little open to question as the fact that under certain conditions civilization among certain races may be arrested or may even retrograde. At the very threshold, however, of any discussion in terms less general, we are met by the question "What is civilization?"

The baffling complexity, indeed, of the idea conveyed in the word "civilization" is the fountain-head of most of the confusion which exists among writers on the subject. That development is the vital principle, so to speak, of civilization is universally admitted, but there would probably be a very general disagreement of opinion as to the particular kinds and directions of development which constitute the essential elements of civilization. As generally understood, civilization appears to involve a development more or less advanced of commerce and the means of communication, of natural advantages, products, and wealth, of navigation and warfare, of the arts, mechanical and ornamental; of science, theoretical and practical; of legislation and the administration of the law; of customs and language; of morals and religion; of all the faculties of the individual and the race. It includes also a consideration of the diffusion of personal liberty, and of the proportion of those who participate in the general welfare and possess the necessary appliances both for physical comfort and intellectual culture. This, of course, is an inadequate definition of civilization; and it is further manifest, not only that development in many directions indicated is not absolutely necessary to civilization, but that no civilization on record has been equally developed in every direction. What is still wanting, is some standard by which to measure civilization in any particular case.

Mr. Wallace, following Montaigne, appears to consider civilization compatible with a very low development in nearly every direction. Archbishop Whately would consider as civilized the Germans described by Tacitus. The Duke of Argyll goes further still, for he seems to consider that Adam and Eve, when expelled from paradise, were, nevertheless, distinctly-civilized beings. The diversity of opinion is, indeed, owing to the absence of a recognized standard, almost universal.

Civilization is nearly always measured by the recorded achievements of men of genius. Yet, if this were the true test, no nation of modern Europe is so highly civilized as was Greece in the age of Pericles, and English civilization has been retrograding from the days of Elizabeth, nay, from those which gave us the "Canterbury Tales" and "Lincoln Minster," if not from those of Anselm and the Norman Bastard.

Mr. St. George Mivart is an eminent English naturalist, who in his "Genesis of Species" has made the most effective reply to Darwin that has yet appeared. He treats Mr. Darwin with courtesy and candor, admits his great services to science, and the plausibility at first sight of his theory of natural selection which lies at the basis of the whole Darwinian system. He then proceeds, with evident mastery of the subject, to suggest objections and to produce facts in opposition to natural selection, which leave that theory hardly anything to stand upon. He admits, it is true, that to a certain extent natural selection exists and acts; but he maintains that, in order that we may be able to account for the production of known kinds of animals and plants, it requires to be supplemented by the action of some other natural law or laws as yet undiscovered; also, that the consequences which have been drawn from evolution, whether exclusively Darwinian or not, to the prejudice of religion, by no means follow from it, and are in fact illegitimate.

Mr. Mivart declares that he was not disposed originally to dissent from the theory of natural selection; but he has found, after many years of careful examination and consideration, that it is wholly inadequate to account for the preservation and intensification of incessant specific and generic characters. That minute, fortuitous, and indefinite variations could have brought about such special forms and modifications, as Mr. Darwin maintains, seems to contradict reason and common-sense. In spite of all the resources of a fertile imagination, the Darwinian, pure and simple, is reduced to the assertion of a paradox as great as any he opposes. In the place of a mere assertion of our ignorance as to the way these phenomena have been produced, he brings forward as their explanation a cause which is demonstrably insufficient. The theory of natural selection is inconsistent with a vast multitude of facts in natural history, as well as with the first principles of the philosophy of the Divine government of the universe. Mr. Darwin has attempted to sustain it by a skilful collection of the facts which seem to serve his purpose; but the facts he has ignored disprove his theory, and with the explosion of that theory of natural selection his whole scheme falls to the ground. It should be stated, however, that Mr. Mivart does not wholly deny that natural selection acts to some extent in the organic world. But its action is not supreme, as Mr. Darwin makes it, but is only secondary and subordinate to other forces. Mr. Mivart undertakes to prove, and we think does prove:

That natural selection is incompetent to account for the incipient stages of useful structures. That it does not harmonize with the coexistence of closely-similar structures of diverse origin.

That there are grounds for thinking that specific differences may be developed suddenly instead of gradually.

That the opinion that species have definite though very different limits to their variability is still tenable.

That certain fossil transitional forms are absent, which might have been expected to be present.

That some facts of geographical distribution supplement other difficulties.

That the objection drawn from the physiological difference between species and races still exists unrefuted.

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That there are many remarkable phenomena in organic forms upon which natural selection throws no light whatever, but the explanation of which, if they could be attained, might throw light upon specific origination.

Mr. Mivart, in short, maintains that the development of species has been brought about not wholly by natural selection, but by an internal power which has controlled and continues to control the universe—in other words, by Divine power.