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A CRITIC CRITICISED.

Darwinianism: Workmen and Work. By James Hutchison Stirling, F.R.C.S., and LL.D. Edin. (Edinburgh: J. and J. Clark, 1894.)

DR. STIRLING begins his preface thus: "Perhaps it may be thought that, on the whole, I might very well have spared myself this small venture"; and such of his readers as know anything of Darwin's theories and works will most cordially agree with him. It has been the present writer's business to read most of the anti-Darwinian literature that has appeared in this country, and though much of it has exhibited extreme ignorance of the whole subject and a total inability to understand the theories and the arguments discussed, in both these respects the present volume fully equals the worst of its predecessors, while in the effort to belittle Darwin's intellect and to depreciate the value of his life's work it surpasses them all.

Considerably more than one-third of the volume is occupied with the lives of the three generations of Darwins, and though the animus is carefully veiled, there is an unmistakable attempt to show that, while there is much to admire in the moral and social aspects of the whole family, yet intellectually they have been greatly overpraised. In the very first chapter a number of opinions are quoted adverse to Dr. Erasmus Darwin; and after a chapter devoted to the glorification of Dr. Thomas Brown, the metaphysician, a third chapter is given up to his "Observations on Dr. Darwin's Zoonomia" and the correspondence between them, and we are led to understand that the young critic had by far the best of the argument, and that Dr. Darwin lost his temper.

The seventh to the twelfth chapters are devoted to Charles Darwin; and at the very commencement we find a passage that gives the keynote to the whole book. After saying that, of course, Mr. Charles Darwin will go down to posterity as one of the first of naturalists—an observer only to be classed with the Linnæuses and the Cuviers—we have this curious statement: "Mr. Francis Darwin—and in the circumstances it is not to disparage him to say so—will not, in all probability, precisely do that; but, with perhaps a more vigorous or more comprehensive general intellect, he is otherwise, we make bold to say, just about as good a man as his father was, than whom, for genuine worth, it would not be easy to find a better." What does this imply, if not that Darwin, though a preeminently good man, was, intellectually, not remarkable? And the whole of the succeeding chapters show that this is its meaning. Darwin's observing powers are dwelt on, and how much he thinks of technical *names* (p. 72). Then we are told that he was considered by all his masters and by his father to be below the common standard of intellect (p. 75), and this is repeated at p. 77, and again at p. 117. To enforce this, his own depreciatory phrases—that he learnt almost nothing at school and college, that he could never follow abstract trains of thought, that mathematics were repugnant to him, and that he was compelled to conclude that "his brain was never formed for much thinking"—are fully set

forth. At the same time, Dr. Stirling reiterates, that though quite ordinary intellectually, he was "a very good young man," always trying to improve himself (p. 77); that at Cambridge he was "the steady well regulated young man" (p. 84); that he was "the good young man" who, for self-improvement, has interest in, and would have a try at, everything that gives marks. He actually "paid some attention to metaphysical subjects" (p. 105); and again—"he was the exemplarily good young man that sought self-improvement in all that was ticketed in society as right." (p. 119.)

While thus, with subtle ingenuity, "damning with faint praise" the man whose life-work he is striving to depreciate, Dr. Stirling impresses upon us what, in his opinion, is the intellectual faculty to which Darwin owes his reputation. It is, the love of observing movement! Thus—"The stir of a beetle in the dust was the first stir that arrested the interest of a Darwin: the convulsion of a continent was possibly the last." (p. 114.) "It was *stir* that alone claimed his attention, *stir* that alone woke his single natural life." (p. 113.) "Observation is an affair of the eyes—shallow, so far, and on the surface; but ideas and their expression no less, spring rather from the depth—the cerebral depth—of the ears." (p. 114.) Here, by the profound philosophy of a Stirling we are informed that because Darwin *was* an observer and was *not* a musician, therefore he was shallow and of few ideas! And for several pages this notion is harped upon—stir, movement, watching birds, observing facts, his very soul was "captivated, fascinated, mesmerised, by the enchantment of physical movement," the *Journal* shows that he was "only using his eyes there in every paragraph and almost every line"—and thus the general reader, for whom this book is clearly intended, will gain the idea that there is something trivial and weak in minute observation, and that this was what specially characterised Darwin.

Further matter for depreciation is found in Darwin's remarks on some of the eminent men with whom he associated. He thought Carlyle narrow, because he was utterly unable to appreciate science, and this evidently condemns Darwin in Dr. Stirling's opinion, who calls Mill "his shallow contemporary," and describes the group of eminent men who were more or less intimate with him in these terms:—"The truth is that a feebler general public has seldom existed than what was atmosphere to Carlyle"—of which Mill and the two Darwins, Tyndall, Huxley, and other eminent men were an important part. And when Darwin says of him—"I never met a man with a mind so ill-adapted for scientific research"—Dr. Stirling remarks, with crushing sarcasm, "Scientific research meant for Mr. Darwin only the observation of movement, as in beetles, say; and there was no such accomplishment in Carlyle." Darwin also knew Buckle, and read his books with great delight, though not accepting all his theoretical views; but even this limited admiration is too much for Dr. Stirling, who thereon pours out his wrath for seven pages on what he terms "the commonest, vulgarest, shallowest. free-thinkingism."

Having thus prepared his readers by this fancy picture of the extremely limited range of Darwin's intellect, Dr. Stirling proceeds to deal with the "Origin of Species"

as illustrated by the "Life and Letters." And the first point he brings forward is that Darwin was a compiler—a "not very sceptical" compiler, an "easy" compiler—and this idea is enforced throughout the first chapter of this second part of the work. Again and again this is recurred to, as the following passages show :—

"With all his experiences in pigeons, poultry, and seeds, Mr. Darwin supported his results mainly on a compilation. Had the public but known that!" (p. 190). "That all that—of the Descent of Man, say—should be supported, not on thirty years' actual observation, experiment, and insight—personally—of the greatest naturalist in existence, but only on little more than so many years' clippings and cuttings from articles in periodicals and other such, as—about 'Hearne the Hunter'!" (p. 212). "Now that is the pity of it! The success of the book depended on the belief of the public that it was the product of work at first hand, and not of compilation at second—work at first hand and of the greatest naturalist in existence. . . . A compilation is always a dressing of facts for a purpose; and such a state of the case is simply glaring in every turn of the 'Origin.'" (p. 179.)

It is then clear that Dr. Stirling wishes to impress upon the public that Darwin's chief work was mainly a compilation, badly put together—for he tells us it is "dull" and "as heavy as lead"—put together to support a foregone conclusion, without caution or judgment, and yet so as to deceive the ignorant public and make them believe it was original work! Surely here is a Daniel come to judgment—though rather late in the day. Presently we shall have to inquire whether he who delivers this severe judgment is a competent as well as a just judge.

The next point is to show how it was that this dull compilation created such an excitement in the literary and scientific world, and made so many converts. We are told this was all owing to Darwin's habit—partly unconscious, partly designed—of thinking and speaking so highly of the work of his chief scientific correspondents—Hooker, Lyell, and Huxley. "Lyell is the biggest fish; and it is the hooking of him that is wished, and watched, and waited for with the intensest interest." (p. 166.) And after giving nearly two pages of extracts from Darwin's letters, we have the remark—"I suppose no one in this world has been more liberally or more lavishly thanked, flattered, and bepraised than the recipients of the above." (p. 169.) Referring to the preliminary papers read before the Linnean Society, Dr. Stirling remarks :—

"The way being so conspicuously prepared for it, and its appearance ushered in and heralded by a trumpet-blowing so resonant and extraordinary, was it any wonder that the book itself was hailed with acclamation and received with even a rush of expectation? And we have now only to see how the proceedings of Mr. Huxley at the very first could but beat the excitement that, so to speak, already blazed into an absolute conflagration and a veritable fury." (p. 172.) "As we all know, all in England is done by parties, and everything that appears in England is of no use whatever until it is made an affair of party. It was not different with the origin of species." (p. 174.) "With all before it that has now been detailed what could the public be expected to think? The most powerful scientific trumpets that, in these islands, could be blown, were blown—before the book. The most powerful popular trumpets that, in these islands, could

be blown, were blown—after the book. . . . What could be expected for such a book, if not all but a universal rush to buy? And how did the public find the book? I do not suppose that any one will pretend that it is read now; and I do not suppose that any one will pretend that it was read *through* then—unless by those, the few friends of science and the author, whom, in both respects, of course, it immediately and specially concerned." (p. 176.)

Dr. Stirling should, however, have explained to his readers how it was that a book which hardly anybody read should have gone through six editions in twelve years, have been translated into every European language, and should still be constantly quoted and referred to as the most classical and authoritative work on the subjects of which it treats.

Half the volume having been thus occupied in the insinuation, and attempted proof, that Darwin was a mere compiler with little reasoning power, that there was nothing in his book that was not anticipated by his grandfather (pp. 43-49), and that the book itself owed its success to the carefully-prepared trumpet-blowing of a few influential friends, Dr. Stirling proceeds to demolish the whole theory in detail in order to justify the conclusion he has arrived at. And it is clear that the value to be attached to his judgment, in this matter, must depend upon whether he has taken the trouble, or has the capacity, to understand the theory, or has acquired an adequate knowledge of the facts on which the theory is founded. I propose therefore to show, by a rather full account of his work and by a sufficient number of extracts, the almost incredible state of ignorance and misapprehension everywhere displayed by it.

Chapter v. deals with the Struggle for Existence, devoting to it twelve pages, and maintaining throughout that, in the sense in which Darwin and his followers understand it, there is no such thing! If this can be proved Darwinians must indeed tremble. Let us then see how it is done. The tameness of animals in uninhabited islands is first referred to, with the remark: "It is impossible to think of struggle and strife in such circumstances." Dr. Andrew Smith and Mr. Selous are quoted to show the vast profusion of life in South Africa, carnivora and herbivora—"Plentiful lion was not incompatible with more plentiful antelope." Then the *passenger pigeon* of North America is referred to, as described in one of Cooper's novels; and the conclusion after two pages of such facts is—"With nature so prolific of life, what call is there for a struggle? what need?" Then we have several pages given to descriptions of how animals enjoy their lives. Mark Twain is quoted for playful schools of whales; Bret Harte for squirrels and jays; Jules Verne for antelopes, zebras, buffaloes, and monkeys; two articles in *Temple Bar* on birds and otters amusing themselves. Darwin himself testifies to "the positive pleasures of existence, to the actual joys of nature," and, "it is perfectly within the limits of truth to say that his entire *Journal* disproves the struggle!" And this conclusion is reiterated to the end of the chapter:—"There is little sign of a struggle for life in such cases. These animals have evidently no need to struggle: they seem indifferent about their food, and can remove themselves carelessly from any supplies of it."

(p. 214.) The *Journal* says so little of the struggle that Dr. Stirling believes the idea to have been only an after-thought, following the reading of Malthus, and he concludes the chapter with the opinion of Goethe, that, "in whatever situation of life we are placed, and wherever we fall, we never want actual food"—and he adds—"This means, that however galling the straits of life may be, there is no struggle such that, failing to triumph, we must perish in defeat."

The next chapter—on the Survival of the Fittest—is a short one; and it might well have been shorter, since it begins thus:—

"As regards our other consideration at present, it is pretty evident that if struggle there is none, survival, in that it simply means result of foregone contest, can be, and must be, so far, only a dead letter."

This, though forcible, is cautious, but the next paragraph sets the thing in a still clearer light.

"But, just squarely to say it, the proposition itself, survival of the fittest, is as things are, preposterousness proper. It is simply absurdity's self—the absolutely false."

And then follows, quite unnecessarily, a metaphysical and scriptural demonstration of the same thing, in which comets, tides, wind, the earthquake of Lisbon, the Black Hole of Calcutta, contingency, time, and physical necessity, with a host of other things, are all dragged in to enforce the argument. This abstract argument was, however, felt to need support by a concrete example, as follows:—

"Survival of the Fittest! Of two lions that fight, *must* the strongest win? How about a thorn, or a stone, or an unlucky miss, and an unfortunate grapple, and a fatal strain—to say nothing of infinite contingencies of rest and fatigue, of sleep, and food, and health, that precede?"

And after a few more such illustrations we have the conclusion, that—

"The proposition, as we have seen in fact, is wholly false as it stands."

And after some more vain attempts to arrive at any meaning in this "absurdity's self," the argument is clenched with what is evidently felt to be a *reductio ad absurdum*, and which is indeed a very gem of logic, as follows:—

"Is it possible in such a struggle—a struggle that just constitutes existence—is it possible in such a struggle for even a single competitor to survive him who is the fittest to survive? If individual with individual, species with species, genus with genus, must struggle, how is it that the infinitude of time has not already reduced all life to a single unit?" (p. 222.)

Every biologist, every reader of NATURE, will now, I am sure, see that I was justified in speaking of the almost incredible ignorance and misapprehension exhibited in this book; but we have yet to find still more glaring examples of it. Two chapters, entitled "Determination of what the Darwinian Theory *Is*" and "Design," may be passed over, and then follow six chapters of "Natural Selection Criticised," from which a few illustrations of the capacity of the critic must be given.

After Dr. Stirling's confident assertion that there is no struggle and no survival, and that the very idea of there being any such phenomena is "absurdity's self," we shall not be surprised to find that he prides himself on having cleared up a subject which Darwin left vague, indefinite, and obscure. He says:—

"It is only through long, patient looking that the particular moments in the theory have reached the clearness which we should be glad to think they will be found to possess in these pages." (p. 342.)

This is in the last chapter, when the author can look back with satisfaction on his completed work.

One of the difficulties he has cleared up is the meaning of the word origin, in "Origin of Species." He says there is never a moment's question of the *origin* of a single species:

"There is not even a hint before us of such a thing as *origin*. Change there is, not origin. We have a middle, elastic enough it may be, but we have no beginning, no origin, no first." (p. 250.)

And a little further on, having previously referred to small living armadillos and the gigantic extinct species, and having asserted that "It was the obvious resemblance common to both that irresistibly convinced Mr. Darwin of the indubitable descent of the one from the other"—a statement for which he gives us no authority—for the good reason that none can be given—he deals with the question in the following brilliant style:—

"Origin! We are referred from the Galapagos to the South American Continent, and there again the problem stares us in the face, only harder than ever. What is the origin of these South Americans? Again origin! What is the origin of these pigmies? and you refer us to giants! Good heavens! To be contented that the whole problem of the pigmies was solved in the giants, and never once to have asked what of these! Surely the giants at once suggest an infinitely more instant question as to origin than the pigmies. That pigmies, too, could come out of giants—such pigmies out of such giants! Was it *selection*, natural selection, condescended to such a feat as that? . . . Is that what is meant by 'the preservation of favoured races in the struggle for existence'—these pigmies? The nine-foot Glyptodon dies, the six-inch armadillo lives—is that the survival of the fittest?" (p. 251.)

This may be called argument by exclamation and interrogation founded on misconception, and it goes on with wearisome monotony page after page. And at the very end of the book he still stumbles over the same difficulty:

"This is strange, too—in the whole 'Origin of Species' there is not a single word of origin! The very species which is to originate never originates, but, on the contrary, is always to the fore."

And again:

"It was only the word *origin* did all this; and the word *origin*, strictly was a misnomer; misleading, not novelists alone, but the general public as such, into anticipations of a beginning and a first that was to be, as it were, a new creation of all things; whereas Mr. Darwin himself exclaims, 'It is mere rubbish thinking at present of the origin of life!' Had Mr. Darwin but used,

instead of the word origin, his own other word for the idea in his mind, 'modification' namely—had his title-page ran 'The Modification of Species by Means of Natural Selection,' I question whether Mr. Murray, with all his experience, would, for each of the thousand copies he did sell, actually have sold ten." (Last page.)

Poor novelists! Poor general public! For thirty-five years you have gone on reading and discussing this book, and helping to make it celebrated, and have only now found one candid and truthful friend to inform you that you have been flagitiously deceived by the title, without which you would never have read it, or made any fuss about it, or even have heard of it at all!

In order, perhaps, to enforce this conclusion—that it was the word origin that alone attracted readers, Dr. Stirling assures us that Lyell was too old a bird to be caught by such chaff. Huxley, he tells us, is in a state of doubt; Carpenter and Gray were only half-converted; Hooker is the only genuine convert; but—

"Lyell, from the moment he came properly to know the doctrine, was really, and in point of fact, that doctrine's absolute opponent."

It is to be supposed, of course, that Dr. Stirling believes this; but then what of his knowledge? In five long chapters of the last edition of the "Principles," Lyell expounds the whole theory in his own calm judicial style, and on every aspect of it pronounces in its favour.

The passages we have marked in this volume as examples of misconception, misstatement, or ignorance, are so numerous that it is difficult to know where to choose. Here for example is the way the author deals with natural selection, as being neither a law nor a discovery.

"But has there been a *discovery*? and actually of a *law*? We have seen an hypothesis—a gourd, as it were, that came up in a night to be a shadow over the land—but a discovery? Can what the Pampas suggested, or South America, or the Galapagos—can what the breeders or fanciers suggested, or what Malthus suggested, or what the split-up stock of horses suggested—can either or all of these suggestions be called a discovery? That the similarities in species (as in the beetles, say) should have struck him, and that he should have then asked, What, if naturally varying in time, and so naturally variously applied, they were all just naturally out of each other?—that is a mere supposition, it is no discovery. Even as a supposition, is it a credible one, unless we remove it, far out of sight, into the dark? Yes: variations, accidents, we know them well, we see them daily; but they come and go, they appear and disappear, they are born and they die out—they really do nothing; and as for forming new creatures, is not that an extraordinarily weighty complication to burden such simple, perishable, transitory accidents with?" (p. 284.)

Here we have an interrogative show of argument and of superior knowledge on a subject as to which it is quite clear that the writer knows nothing whatever, but hides his ignorance in vague involved words, from which it is impossible to extract any definite meaning. And when he attempts to deal with any definite facts, the ignorance becomes more glaring and the flood of wordy interrogations more ludicrous. One more quotation to show this, and we have done. He is attempting to deal with the theory of protective colouration, and after a couple

of pages of misconception and interrogation, he thus proceeds:—

"But, seriously, why are canaries yellow? Why are larks and starlings spotted? Why has the robin the red breast that gives him his name? Selection! There is actually no selection. Neither on the part of nature, nor on the part of sex itself, is there the slightest proof of the necessary limit of selection. For selection, in the very idea that constitutes it, means a limit. And limit there is none. Blacks, and whites, and blues, and reds, and greens, and yellows, are to be seen indiscriminately mingled, almost everywhere—blacks, and whites, and reds, and greens, &c., in almost every possible shading—nay, in almost every possible variegation, too! All that pretty anecdotal rationalising—story-telling—in regard to the leopard, too (the grandfather has it), is it not of the same kind? There are so many leopards in existence because their spots, confounded with the interstitial light and dark of the jungle, save them. But if that is so, why are there quite as many tigers, animals that are not spotted, but striped? Oh, the ghauts, the ghauts, you cry. Well, yes, the ghauts are defiles; but how is a stripe like a defile, or how does it come from a defile, or as being like a defile how does it save them? But admitting that, and saying that leopards are saved by spots, and tigers by stripes, what of the lions? They can be saved by neither—neither by spots nor by stripes, and they are equally numerous, or supposably equally numerous—and *supposably so* is the vernacular of the region—why is there no call for either spots or stripes in their case? Or, after all, just as it is, spotless, stripeless, is not the lion quite as likely to escape detection in the jungle as either of the others, let it be leopard, let it be tiger?"

How clever is the jingle of words and interrogatives, yet how crammed with blunders and how devoid of sense! The writer evidently thinks that Darwin, or some authoritative writer on Darwinism, has stated that the tigers' stripes imitate the defiles in which they live, which defiles are the "ghauts"! He also is of opinion that leopards, tigers, and lions, all live together in the same "jungles," all have the same habits, and therefore all require the same protective colouring. But they are not coloured alike; therefore their colouring is not protective! That is a sample of Dr. Stirling's knowledge and of Dr. Stirling's argument.

Readers of NATURE may think that too much space has been given to so contemptible and worthless a book; but it must be remembered that the author has a considerable reputation in philosophy and literature, has published over a dozen works of more or less importance, and was the first Gifford Lecturer at Edinburgh University in 1888-90. It is certain that many purely literary critics, as ignorant of biology as is the author, will declare the work to be an important adverse critique of Darwin and Darwinism. If it were the work of an unknown man, it would, so far as its matter is concerned, be beneath contempt. But when a writer of established reputation goes out of his way to discuss a subject of which he shows himself to be grossly ignorant, and puts forth all his literary skill to depreciate the mental power and the life-work of one of the greatest men of science of the century, it is necessary and right that, in the pages of one scientific journal at least, the ignorance, the fatuity, and the carping littleness of the whole performance should be fully and unflinchingly exposed.

ALFRED R. WALLACE.