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THE SCIENTIFIC AMERICAN SUPPLEMENT,

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For the Week ending November 11, 1876.

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ULTRA-DARWINISM.

The story is told of a tourist among the mountains of Wales who, amazed at the contrast between the thought and the language of a village preacher's sermon, asked an explanation of the marvel. The honest preacher confessed that, in default of ability to write an original sermon, he made a practice of translating the sermons of a leading English divine, first into Welsh and then into the dialect of his hearers: by which time, he naively remarked, "the author himself wouldn't recognize them."

Sometimes we think there must be some such process of translation continually going on with regard to scientific discoveries, a translation into a dialect as unscientific as the Welsh preacher's was un-English; and what is worse, the the would-be scientific teachers usually manage to impart a greater confusion into the thought than the Welshman did into the language.

Anything about Darwinism, for example, in almost any religious newspaper will serve as an illustration of this process and its results. But the mischief is unhappily not confined to the religious press, so-called. It turns up in all sorts of places. One of the prettiest specimens we have seen lately appears in the last report of the Secretary of the Massachusetts Board of Agriculture. The chairman of the committee on poultry, discussing new breeds and how to produce them, gravely remarks:

"We are not of the number of those who believe in the ingenious but improbable theories of Darwin. The principle of selection, perseveringly carried out" (practice of selection, we presume, is meant), "is productive of wonderful results; but there is a limit beyond which progress is impossible, and it seems to us that the burden of proof rests with these philosophers till they can show hybrids which are capable of producing their like continually and not exceptionally. Neither do we believe with another learned professor that the strong desire of the original Bengal tiger to conceal himself, while crawling through thickets and canebrakes, produced the stripes on his body. If it did, why, we may ask, did not that desire go a little further, and produce a skin of a *pea-green tint*, which would have been a much better protection?" The italics are not ours.

This is a very pretty specimen, since it combines in a short paragraph so many of the leading errors of theory, fact, and logic, which characterize the writings of anti-Darwinists everywhere. The first stroke is to beg the question by calling the theories of Darwin, in a lump, "ingenious but improbable." There is no possible reply to that except a flat denial, and that goes for nothing in an argument. The next stroke is an appeal to "fact," in an authoritative way, very convincing to those who do not know that the facts are overwhelmingly against the position taken.

Our poultry man's logic was in this wise: If specific evolution by variation is true, then crosses between related species ought not to be invariably infertile. They are infertile: in other words, are incapable of producing offspring able to breed with each other and breed true. Therefore evolution is false, and the theory of distinct and separate specific creations is true.

But it happens that the asserted infertility of plants and animals produced by crossing those of different species is not true: and in producing this as a crucial test of Darwinism, the objector only confesses his profound ignorance of Nature. Among plants, fruitful bastards are plentiful; so they are among insects, fish, and birds. And they are not uncommon among the higher animals.

For example, systematists have never questioned the specific distinctness of the hare (*lepus timidus*) and the rabbit (*lepus cuniculus*); yet for a quarter of a century a cross of these two species has been bred for the table in France. In their natural state, the two species will not pair, but when bred together from birth there is no aversion; they pair freely, and produce offspring which are neither hares nor rabbits, but a clearly marked hybrid species, capable of propagating itself by pure in-and in-breeding. But this is not nearly so remarkable as the cross of goats and sheep—two distinct genera—bred for industrial purposes in Chili. In this case it happens that only the offspring of the he-goat with the ewe are fertile, the ram and the she-goat pairing but rarely, and then without result.

But we have wandered a long way from our typical anti-evolutionist. The faults we have pointed out are followed in the same short paragraph by two others, equally characteristic and possibly more common among that sort of writers; the first is misrepresentation, the second, erroneous inference from incorrectly apprehended facts.

If he ever existed, the "learned professor." who accounted for the tiger's stripes by the strong desire of that animal to hide himself in cane-brakes, has been dead a great many years: so many that Darwin and his friends may fairly be reckoned innocent of any responsibility for his intellectual vagaries. Only pretentious ignorance could seriously refer to such an ultra-Lamarckian view in connection with modern Science: but our poultry man evidently thinks the hypothetical learned professor a model Darwinist, and the example given a true illustration of the accepted method of evolution. It is a characteristic blunder of the school of thinking and writing which he so happily represents.

But the most charming exhibition of scientific and logical verdancy—pea-green tintedness, one might say—also characteristic of the school, appears in the closing question. It is triumphantly funny. Just think what a conspicuous object a pea-green tiger would be in the customary haunts of tigers!

Whether he got his color by desiring it, or by the natural process of variation, with the survival of the fittest, a pea-green tiger would be equally an impossibility; while for protection amid thickets of vertical stems, white and brown, and casting the blackest of shadows in the glow of a tropical sun, no other coloring of his coat would serve nearly as well as the one he now enjoys. Tiger hunters declare that a motionless tiger is all but invisible amid jungle growths, even when his form is fully exposed.

At this late day it would seem impossible for an intelligent man—much more a man who aspires to be a teacher in any department of nature-study, even poultry breeding—to cram so many typical blunders unwittingly into one short paragraph; but there they are, and we suppose that men will go on doing the like just as long as it remains more fashionable and "orthodox" to denounce Darwin than to read him, so much easier to settle questions of scientific theory off-hand than to examine them by the light of sound experience and verifiable observation.

WAS IT VULCAN?

In our recent article on the intra-Mercurial planet, we published a communication in which a correspondent reported his having witnessed the transit of a dark body across the sun's disk on July 23, 1876, at about 3 P. M. The instrument used, a 2½ inch telescope, defined the object as a clearly cut circle, not jagged nor presenting the well known characteristics of a solar spot. Observations made a few days after revealed no trace of the phenomenon.

Our correspondent's observation is now confirmed by the letter given below. The writer, Mr. Samuel Wilde, is a gentleman of wealth, owning a private astronomical observatory, in which is located the 6¼ inch refracting telescope to which he alludes. This instrument is the largest of its class in the State of New Jersey. It will be noted further that both Mr. Wilde and our correspondent B. B. saw the phenomenon from the same locality, Montclair, N. J., at nearly exactly the same time; so that, the conditions of weather, etc., being precisely similar, the mutual confirmation of these two independent observations is all the more marked.

We hazard no opinion as to the nature of the occurrence. The circumstances, on one hand, are in every way opposed to its being a sun spot, while on the other they certainly tally with the descriptions given by Lescarbault and others of their observations of a supposed Vulcanian transit. The problem is one for the astronomers to solve, and to them we leave it. Meanwhile, here is Mr. Wilde's letter:

To the Editor of the Scientific American:

Accidentally hearing of the article in your paper of October 21 on the subject of the intra-Mercurial planet and of the observation by your correspondent (B. B.), it brought to my mind an observation of the sun I had on the same day, Sunday, the 23d of July last. Having some friends visiting at my house, they desired to see the spots on the sun. Knowing that none had been visible for some time, and the day being exceedingly warm and my observatory some little way off, they concluded to stay in the house until I ascertained if any were visible. At about one quarter to three oclock I directed my telescope (a 6¼ inch) toward the sun's disk, and immediately perceived a well defined dark round spot on the lower left portion of the sun, substantially as given in B. B.'s drawing. I watched it 25 or 30 minutes, when, the sun becoming obscured by a passing cloud, I returned to the house. Knowing that the spot was of unusual character, entirely different from any sun spot I had ever seen before, I remarked to my friends that none of the usual spots were visible, but that I had observed a dark round spot, apparently moving, which looked like the photograph of the transit of Venus. Not knowing of the expected appearance of Vulcan, I took no note of its motion; and the occurrence had passed from my mind until my attention was called to the article in your paper. I used the solar prism, thus having a white light.

SAMUEL WILDE.

Montclair, N. J., October 24, 1876.

The French scientific periodicals which have arrived since the above was written are filled with discussions and news relative to the supposed planet. M. Leverrier has reviewed his calculations, and now rejects all previous observations but five, three of which occurred in the month of March in the years 1849–56, and 1859, and two in October of 1802 and 1839. Combining these, he calculates an orbit with greater precision than heretofore, determining the positions of the imaginary planet within half a degree. The result is that he now announces the Vulcanian year as neither 42 nor 28 days, but as 33·0225 days.

Next comes Señor Ventosa, Astronomer of the Madrid Observatory, who proceeds to annihilate Weber's observation, on which all the present excitement is founded. On April 3, at 23h. 18m. Berlin time, Señor Ventosa saw a sun spot and noted its position. On April 4, at 4h. 25m. same time, M. Weber saw his supposed Vulcan, and noted its locality on the sun's face. Calculating back from Weber's position, for a period of 5 hours and 7 minutes, brings Weber's planet in exactly the place where Ventosa saw the spot. *Ergo*, Weber saw a sun spot; and as M. Leverrier himself accepts this conclusion, there is an end of Weber's fragile foundation. But this need not arrest the work of astronomers who are still watching the solar face. There are the two observations of our correspondents which yet remain, and which are certainly much more valuable and better authenticated than that of M. Weber.

M. Janssen, the distinguished physical astronomer, ha, sent to the French Academy of Sciences the following notes which offers excellent suggestions to observers. The roundness of an observed body, he says, on the sun's face is not a specific characteristic of an intra-Mercurial planet, neither does its disappearance after five or six hours incontestably prove a planetary transit. There exist, however, features determined from the constitution of the photosphere which allow, even during the brief instants of a fugitive observation, of deciding whether the phenomenon seen is