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Home Correspondence.

Mr. Darwin's Theory of Development. – The observation relative to the Swedish Turnip to which I alluded in my note on this subject occurs in page 997 of last year's *Gardeners' Chronicle*, and is to the effect that the discussion at the Central Farmers' Club on Monday, 5th December, turned upon the need of finding a substitute for that vegetable, which was rapidly deteriorating in the hands of the farmer in spite of the best efforts both of agriculturalists and scientific men.

With reference to Mr. Darwin's note on this subject (ante, p. 49), I apprehend, in the absence of details, that this is not a question as to the permanence of a cross-bred production but one of reversion, in which it is found impossible to maintain the status of a species which has been ennobled (to use a term which has lately been adopted for these modified, high-bred specimens, and which we may expect to see applied with equal propriety to the fat pigs exhibited at Christmas which can neither see nor walk). These later, like the Swedish Turnips, have been brought by man out of their natural condition; they are, in fact, monsters, and Nature will get rid of them and revert to the old true type of the species. Of varieties of distinct species produced in the state of Nature, even when carried beyond individual variations (which have been termed sub-species or geographical varieties), I believe also that Nature constantly endeavours to get rid of them in the same manner, although a persistence of the predisposing causes may, even for a long time, render the variety apparently permanent. I cited the case of the Ibis as an instance showing that a species has remained permanent during the whole historic period, and I think that we are thereby authorised in supposing that if that bird were reduced to the condition of a single pair (as its first creation), the progeny of that pair would in 3000 more years be a true to the character of the species as the present individuals are. As to the bee-hive, I intended to allude more especially to the case where a single hive might become the founder of an extensive apiary far removed from any other, the different hives being of course tenanted by the progeny of the first stock. Extensive bee-keepers do not find it necessary to import hives from a distance to keep up their establishments, and thus the species would keep true, immaterial whether the queens paired with their own subjects or with those of adjacent hives; all having descended from the same single stock-hive. The Egyptian records furnish us with another instance which we find to be in complete opposition to Mr. Darwin's theory. We there see the African ostrich, one of the most extreme types of the class of birds, faithfully represented. According to Mr. Darwin's theory it is mainly for the welfare both of the species and individual that modifications take place and new forms are developed.

Now, there can be no doubt that it would have been beneficial to this bird, both specifically and individually, if its coveted plumes could have been shortened and its wings lengthened, so as the better to escape from its pursuers. Moreover, as every one who saw the tame ostriches in the circus at Kensington during the Great Exhibition of 1851 will recollect, when driven to their fullest speed they stretch out their short stumps of wings in order to assist in

their attempts to escape. But all their efforts to acquire by such means the additional power of flight have been unavailing, and the type of the species remains as it was in this respect 3000 years ago. Whilst in the case of other analogous species of birds, such as the Dinornis and the Dodo, we know that the actual destruction of the species has taken place, whilst that of the Kivi of New Zealand is equally certain in a very short time. I purposely avoid referring to geological evidences, believing that – 1st, if the permanence of a species can be proved for such a length of time as 3000 years; 2d, if it be admitted that varieties exhibit a tendency to revert to the original type; and 3dly, if cases can be shown in which modifications beneficial to a species have not taken place in wild animals, even when the creature has made efforts in the direction, we are in each of these cases furnished with an answer to Mr. Darwin's theory. As regards to the second of these points, it seem inevitable that a theory which supposes the principle of development to be inherent in the works of the creation cannot be maintained if it be admitted that the antagonistic principle of reversion be also inherent in individuals.

Mr. Darwin mainly builds his theory that species are only intensified varieties, and that generic groups are only intensified species, on the modifications which man has effected in domestic animals. For his theory, however, to work, it is necessary to suppose that the modified individuals possess such powers of discrimination as well as of exclusiveness as not to allow of their intermingling with their less favoured brethren, whereby they would keep their improvements to themselves. Thus, supposing the large and small common white Cabbage butterflies to be modifications of one species, we must allow to them ( as they never pair together, although frequenting the same garden and feeding on the same Cabbage) a power of selection for breeding purposes which the improved breeds of domestic animals do not possess. The terrier and spaniel or the pouter and tumbler pigeons will under similar circumstances breed together, although they apparently differ much more from each other than these two species of butterflies. It will at once be seen that the idea of such a power of selection, the nearer we ascend to the supposed origin of the modification, becomes more and more untenable. J.O. Westwood.

[John Obadiah Westwood (1805-93), Entomological referee for *Gardeners' Chronicle*. Frequent correspondent of Darwin.]

Mr. Darwin's note on this subject (ante, p. 49) [F1704]