

distributed over an area extending from Spain to Southern India, and from Central Siberia to Abyssinia. — P. L. Selater, Secretary.

2. Linnean Society of London.

6th May, 1886. — Mr. D. Morris exhibited a number of living beetles (*Pyrophorus noctilucus*) from the Island of Dominica. These had been fed on sugar cane during the voyage to England. On the Meeting Room being darkened the phosphorescent show of light emitted was very brilliant. — Mr. Geo. J. Romanes read a communication on »Physiological selection; an additional suggestion on the origin of species«. He stated that considered as a theory of the origin of species, natural selection encounters three cardinal difficulties: 1st it cannot explain sterility between species, or the primary specific distribution: 2nd it cannot explain many among the secondary specific distinctions, or those trivial details of structure which, while serving to distinguish one species from another, present no meaning of an utilitarian kind: 3rd natural selection must always be so heavily handicapped by the swamping effects of intercrossing upon any new variation, that unless such intercrossing is in some way prevented, we may reasonably doubt whether natural selection alone could change one species into another in more than a very small percentage of cases, although, when intercrossing is prevented by the bar of sterility between species, natural selection may afterwards produce genera, families, orders and classes. In view of these considerations the author contended that the theory of natural selection has been misnamed a theory of the origin of species. It is, in truth, a theory of the origin of adaptive structures; and, if unassisted by any other principle, could not effect the evolution of species. The only other principle that could here assist natural selection would be one that might mitigate the swamping effects of intercrossing. This may be done by geographical barriers shutting off a portion of a species from the rest, and on allowing that portion to develop an independent course of varietal history without intercrossing with the parent form. It may also be done by portions of species migrating, changing habitual stations etc. But it may also be done by what the author calls physiological selection, or in virtue of a variation taking place in reproductive system in the direction of sterility (whether absolute or partial) with the parent form, without impairment of fertility within the varietal form. For instance, the season of flowering or of pairing may be either advanced or retarded in a portion of a species when all the individuals in that portion (or new variety) would be absolutely sterile towards the rest of the species, while completely fertile among themselves. They would thus start on an independent course of varied history. Sundry other causes (both extrinsic and intrinsic) may determine this particular variation in the reproductive system; and wherever it does occur, it must give rise to a new species to record the fact. The proof of its occurrence is furnished both among our domesticated varieties and in nature. It explains the sterility between species, the frequent inutility of other specific characteristics, and entirely escapes the difficulty from intercrossing. It, therefore, relieves the theory of natural selection from all the disabilities under which it lies in consequence of having been improperly formed to pose as a theory of the origin of species. — A paper, Descriptions of new species of Galerucida by Mr. Joseph S. Baly was thereafter read. — J. Murie.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Zoologischer Anzeiger](#)

Jahr/Year: 1886

Band/Volume: [9](#)

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Artikel/Article: [2. Linnean Society of London 351](#)