

in the case of the *Teredo*,¹² as did formerly Prevost and Dumas with other animals, that more than one spermatozoon is requisite to fertilise an ovum. This has likewise been shown by Newport,¹³ who proved by numerous experiments, that, when a very small number of spermatozoa are applied to the ova of Batrachians, they are only partially impregnated, and an embryo is never fully developed. The rate also of the segmentation of the ovum is determined by the number of the spermatozoa. With respect to plants, nearly the same results were obtained by Kölreuter and Gärtner. This last careful observer, after making successive trials on a *Malva* with more and more pollen-grains, found,¹⁴ that even thirty grains did not fertilise a single seed; but when forty grains were applied to the stigma, a few seeds of small size were formed. In the case of *Mirabilis* the pollen grains are extraordinarily large, and the ovarium contains only a single ovule; and these circumstances led Naudin¹⁵ to make the following experiments: a flower was fertilised by three grains and succeeded perfectly; twelve flowers were fertilised by two grains, and seventeen flowers by a single grain, and of these one flower alone in each lot perfected its seed: and it deserves especial notice that the plants produced by these two seeds never attained their proper dimensions, and bore flowers of remarkably small size. From these facts we clearly see that the quantity of the peculiar formative matter which is contained within the spermatozoa and pollen-grains is an all-important element in the act of fertilisation, not only for the full development of the seed, but for the vigour of the plant produced from such seed. We see something of the same kind in certain cases of parthenogenesis, that is, when the male element is wholly excluded; for M. Jourdan¹⁶

¹² 'Annales des Sc. Nat.,' 3rd series, 1850, tom. xiii.

¹³ 'Transact. Phil. Soc.,' 1851, pp. 196, 208, 210; 1853, pp. 245, 247.

¹⁴ 'Beitrag zur Kenntniss,' &c., 1844, s. 345.

¹⁵ 'Nouvelles Archives du Muséum,' tom. i. p. 27.

¹⁶ As quoted by Sir J. Lubbock in 'Nat. Hist. Review' 1862, p. 345.

Weijenbergh also raised ('Nature,' Dec. 21, 1871, p. 149) two successive generations from unimpregnated females of another lepidopterous insect, *Liparis dispar*. These females did not produce at most one-twentieth of their full complement of eggs, and many of the eggs were worthless. Moreover the caterpillars raised from these unfertilised eggs "possessed far