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CHIASMATYPY OR THE DOCTRINE OF DELAYED ACTION FERTILIZATION

By Professor EDWARD C. JEFFREY
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IN my undergraduate days, I was much interested in the reading of two publications on fertilization, which appeared in the early and late eighties of the last century.¹ One of these dealt with fertilization in the higher seed plants or Angiosperms.¹ In this publication Eduard Strasburger described the fusion of the sperm nucleus, derived from the fertilizing pollen tube, with that of the egg as the essential and fundamental act of fertilization, leading directly to the formation of a new individual. The other gave a much more circumstantial and detailed account of fertilization in *Ascaris megalcephala*, a large parasitic worm found in the intestine of the horse.² Here the authors also noted the fusion of the male and

¹ "Befruchtungsvorgang bei den Phanerogamen," Jena, Gustav Fischer; 1884.

² Van Beneden et Neyt, Bull. Ac. roy. Belgique, 1887.

female nuclei as an essential and final fact of fertilization. In both cases cited fertilization was regarded as completed by the fusion of male and female reproductive elements.

Towards the end of the nineteenth century the subject of chromosomes began to attract more and more attention. It was early realized that these are characteristic of the active or dividing stages of the nuclei from which they take their origin. Considered to be the main carriers of hereditary influences, they are also important as providing a mechanism for the exactly equal distribution of chromatin between the daughter cells resulting from division. They were also considered to play an important role in fertilization, although its exact nature was not fully understood.

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