Edouard van Beneden Biography

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Biography

The son of zoologist Pierre-Joseph van Beneden (1809-1894), van Beneden was able to study many animal specimens at his father's small laboratory on the Belgian seaside. As a student, he began exploring cell theory; as a professor of zoology at the University of Liège, he studied how the eggs of an intestinal worm (called *Ascaris*) matured and were fertilized. In 1887, Beneden made two important contributions to the field of cytology. He discovered the amount of chromosomes in any body cell is constant and that the number of chromosomes characterizes a certain species. For example, humans always have 46 chromosomes.

Beneden's second important contribution was the discovery and naming of meiosis. He observed that when sex cells are formed prior to fertilization, the egg and sperm cell have only half the usual count of chromosomes. Chromosomes did not double as they did in regular cell division. Instead, the number of chromosomes in both the sperm and the egg cell halved. Therefore, fertilization created an embryo with one complete set of chromosomes from the sperm and the egg.

Beneden's findings were consistent with Gregor Mendel 's heredity theories--every genetic factor exists in duplicate; one coming from the male and one from the female. Theodor Boveri, Hugo de Vries and others would make these concepts clearer in the coming years.