Experimental Studies on Germinal Localization (1904), by Edmund B. Wilson

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At the turn of the twentieth century, Edmund B. Wilson performed experiments to show where germinal matter was located in molluscs. At Columbia University in New York City, New York, Wilson studied what happens to different materials during the first two cleavage divisions and showed that certain parts of the egg develop into the different regions of the embryo. This work was the first of many experiments Wilson conducted in the 1900s to understand the process of germinal localization.

Wilson's results helped him to develop the hypothesis he had already presented in his 1902 book on the phenomenon. He concluded that the nuclei transferred to the second cleavage divisions were responsible for the development of the different cell types. Wilson's experiments demonstrated that the embryos were capable of self-differentiation even when isolated, with developmental potency distributed along the lines of cells produced by the cleavage divisions.

Wilson's account of these experiments indicated that, by 1904, he had completed much of his theory of differentiation and progressive development. His hypothesis of cytoplasmic preformation was a progressive innovation in the field of developmental biology.

Sources

At the turn of the twentieth century, Edmund B. Wilson performed experiments to show where germinal matter was located in molluscs. At Columbia University in New York City, New York, Wilson studied what causes cells to differentiate during development. In 1904 he conducted his experiments on molluscs, and he modified the theory about the location of germinal matter in the succeeding years. Wilson and others modified the theory of germinal localization to accommodate results that showed the significance of chromosomes in development and heredity.

Subject


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