

As regards the secondary or directive factors in evolution, attempts have been made to give statistical evidence of the action of selection or elimination (Weldon, Pearson); many detailed illustrations have been furnished as to the utility or survival-value of trivial characters; the content of the phrase "struggle for existence" has been enlarged; and the importance of various forms of "Isolation" has been suggested (Romanes, Gulick).

Great improvements in technical methods have made analysis much more thorough. The microtome has enabled us to dissect an animal in a new way—in a continuous series of fine sections—from which, if necessary, an accurate model can be reconstructed. A young student may now make better sections than was possible to Huxley. Countless methods of rapid fixing and differential staining have greatly aided the investigation of minute structure, and some attempt has even been made to understand the chemistry of the changes. The "method of Golgi" and its rivals have entirely altered the aspect of neurology. The apochromatic lenses mark an epoch in the evolution of the microscope. But a volume would be needed to do justice to the influence of methods on the progress of biology.

This outline will become clearer if it be re-read after the other chapters, but its drift may be shortly summed up. The history of biology before Darwin shows a progressive analysis of structure and function; the progress of biology after Darwin shows the increasingly penetrating influence of the evolution-idea, the growth of a more critical and cautious scientific spirit, a perfecting of methods of research, and tentative suggestions towards the synthesis which must succeed analysis. From different sides the minds of all are turned towards the problem of constructing a working thought-model of the organism in its individual development, in its racial history, and in its everyday activities.

Summary.

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