BOOK REVIEW

THEORY AND PROBLEMS OF GENETICS. W. D. Stansfield. McGraw-Hill Book Co. 2nd Edn. Pp 392.

Problem solving has always been an important component of genetics teaching from the first introduction of Mendelian principles to the honours year of a degree course. A source of carefully designed questions covering this wide range of standards is, therefore, likely to be a valuable aid to the genetics teacher.

"Genetics" contains 440 problems and also some background textual information. It is the only volume covering a biological discipline in the "Schaum's Outline Series". The outlines provide "basic theory and definitions" as well as problems and are intended primarily as supplements to standard textbooks. This volume covers the whole range of genetics, not just those areas traditionally tackled by problem solving. The first six chapters progress through the principles of transmission genetics. There is then a chapter on the statistical background necessary for testing genetic ratios and a chapter of problems (new to this edition) which use ideas from all the preceding sections. The remaining eight chapters, all updated for this edition, cover cytogenetics, quantitative, population and evolutionary genetics, and finally molecular and microbial genetics with an introduction to the principles of genetic engineering.

Each chapter begins with a statement of theory and factual information. This is necessarily very condensed and is therefore more useful as reference or revision material than as an introduction to the topic. It is limited to firmly established principles, there being no space for discussion of alternative hypotheses, which makes the text rather dry. Numerous example calculations or, in later chapters experimental examples, are included in these introductory sections. There is then a set of problems with detailed solutions and each chapter ends with a set of "supplementary" problems for which answers only are provided. Both of these groups of problems progress within each chapter for the simple to the more testing. The easiest problems would be suitable for 'A' level biology courses whereas the most difficult would be hard work for many final year undergraduates. In later chapters many of the questions require short essay answers but nevertheless they require a logical approach and have an unambiguous solution.

This would certainly be a valuable book as a source of questions for use both in teaching and testing undergraduates throughout a genetics course. However, the usefulness of the text sections is less clear. They may provide helpful material for writing and illustrating lectures but for the student they are unlikely to add much to a standard genetics textbook.

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