an explanation and substitutes for Paleogene used throughout the book for the lower Tertiary the term Eogenic.

HERVEY W. SHIMER,
FREDERIC H. LAHEE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Modes of Research in Genetics. By RAYMOND PEARL, Biologist of the Maine Agricultural Experiment Station. The Macmillan Company. Pp. 182. Price $1.25.

In this book Professor Pearl has paused in the midst of his prolific and fruitful researches to put together in logical sequence around the central theme of methodology in genetics the substance of several of his recent papers and addresses.

There has been need enough for such a clear-cut analysis of the possibilities and limitations of the various methods now being utilized by workers in the expanding field of genetics and the author has performed this service most acceptably.

It is particularly gratifying to have a sane non-controversial evaluation of the much abused biometric method by one who is a past-master in biometry and is at the same time a biologist of notable attainment. It must be confessed that biometry of late years has rather needed a champion since non-mathematical biologists while admiring the magic of the biometrician, are often haunted with serious doubts about the value of the conclusions sometimes reached by this mode of investigation.

Although biometrics receives the most extended consideration of any method there is a comprehensive analysis of three other modes of research, namely, the Mendelian, the cytological and the embryological.

The next to the last, and the longest, chapter diverges into a somewhat technical treatment of the problem of inbreeding. Here the average lay reader is likely to ride through a tunnel with only intermittent glimpses of the light, but he is sure to emerge into broad daylight in the final chapter, which is upon "Genetics and Breeding," and feel well repaid for his journey. For any one engaged, or even interested, in genetic research Dr. Pearl's book will prove a most welcome and illuminating volume.

It is obvious that "Table III." on page 111 should read Table I. H. E. WALTER

An Introduction to the Study of Variable Stars. By CAROLINE E. FURNESS, Ph.D. Boston, Houghton Mifflin Company. 1915. Pp. 327. $1.75 net.

It is rather remarkable that no comprehensive work on variable stars had previously appeared in any language, though Hagen's extensive treatise, "Die veränderlichen Sterne," of which the first two parts have already been published, would soon have been completed had the war not delayed it. It is very timely in view of the great expansion in the past few years, not only in the observations of variable stars, but more especially in the deductions from their phenomena. Cosmic theories have drawn heavily on these phenomena, and seem likely to gain still more from further study.

Following the introductory chapter the work falls naturally into four divisions.

1. The equipment of the observer; maps, charts, catalogues: Chapters II. to V.

2. Photometry of variable stars; visual, photographic, photo-electric: Chapters VI. to VIII.

3. Reduction of the observations; light-scale, light-curves, elements and predictions: Chapters IX. to XI.

4. Deductions from these data; eclipsing and long-period variables, statistics, observing hints, tables: Chapters XII. to XV.

That the book is written from the standpoint of the teacher is well evidenced by the care taken to explain the fundamental ideas of each chapter. For example, the elements of spectrum analysis and radial velocity are given in considerable detail, a precaution very necessary to clarify the hazy ideas held by young students of spectroscopy. The principles underlying the photometric instruments are set forth in detail, especially the photo-electric appliances which have so recently entered the field of stellar photometry. A human interest is added by brief biographical sketches of some of the older great astron-