

with the following subjects—the relations of animals to gravity and their locomotion in various media; light, colour, and luminescence; equilibration, hearing, and touch; chemical influences; the influence of heat and cold; animal electricity; and respiration. This is a lot to cover in 150 small pages, but we are bound to say that the treatment is very effective. The chapters are simply illustrative, and thus they remain interesting. Most of the illustrations are fresh.

*Origine de la vie sur le globe.* Par Julien Costantin. (Bibliothèque de Culture générale.) Pp. 192. (Paris: Ernest Flammarion, 1923.) 4.50 francs net.

THE problem of the origin of organisms upon the earth continues to attract and to defeat the inquisitive spirit. Prof. Julien Costantin discusses it in various aspects: Had living creatures a beginning at all? If they had, what were the first organisms like? Did plants come before animals? Is there any clue in the so-called "life of crystals"? He also inquires into the meaning of animate organisation, the importance of colloids, the chemistry of the cell, the puzzle of cell-division, the processes of growth and development.

The chapters are all careful and clear, but they do not lead us to any solution. The author concludes that there must have been pre-Cambrian spontaneous generation, that it is very improbable that it ever occurred again, that there is no hint of its occurring now, that green algæ were the first organisms, and that there is nothing to show that they were preceded by bacteria, that the hypothesis of cosmozoa only shelves the problem, and that their hypothetical arrival on the earth should have been followed by several distinct lines of evolution, which is not what the facts indicate. To expect to effect the synthesis of living matter in the near future is "perfectly ridiculous."

*University of Oxford: Institute for Research in Agricultural Economics.* An economic survey of a rural parish. By J. Pryse Howell. Pp. 31. (London: Oxford University Press, 1923.) 1s.

THIS little survey, extending to 25 pages only, is quite useful as an example of the kind of inquiry that could well be made in many more of our country parishes. We are told nothing of the location of the particular parish, not even its county, and the work loses much of its value in consequence. But the survey gives a picture of a village, presumably in Wales, where the houses are let at annual rentals of 25s. upwards, and where the inhabitants apparently produce most of what they need for themselves, since the sales from the farms work out to about £50 per annum only per person employed. It is interesting and should prove instructive to any rural or urban dweller interested in the human side of agriculture.

*Tychonis Brahe opera omnia.* Edidit I. L. E. Dreyer. Tomi quinti, fasciculus posterior. Pp. 217-343. (Hauniae: Libraria Gyldendaliana, 1923.) n.p.

THIS is a supplement to vol. v. of Tycho's collected works. It contains several examples of Tycho's observations of the sun and planets, and his discussion of them, assuming that the sun (the centre of the planetary motions) itself goes round the earth. These

will always remain classic, from the part they played in establishing Kepler's Laws, and later Newton's law of gravitation.

A map of Huen is reproduced.

The table of longitudes and latitudes reminds us how inaccurate the knowledge of longitude was in Tycho's time; for example, Alexandria is placed 36° east of London.

The volume closes with twenty-five pages of useful editorial notes. A. C. D. C.

*Scientific Method: an Inquiry into the Character and Validity of Natural Laws.* By A. D. Ritchie. (International Library of Psychology, Philosophy, and Scientific Method.) Pp. viii + 204. (London: Kegan Paul and Co., Ltd.; New York: Harcourt, Brace and Co., Inc., 1923.) 10s. 6d. net.

MR. RITCHIE'S book being a dissertation for the examination for a fellowship at Trinity College, Cambridge, is primarily designed to prove the extent and depth of the writer's reading. It leads us to hope much from Mr. Ritchie when he no longer needs credentials. The main scientific value of the book is perhaps that it reveals the type of mind the present Cambridge teachers are nurturing and the direction of research they are encouraging.

*Traité de Psychologie.* Par Prof. Georges Dumas. Tome 1. Pp. xiv + 964. (Paris: Félix Alcan, 1923.) 40 francs net.

THE work under notice partakes more of the nature of an encyclopædia of psychological science than of a treatise on psychology. It is a reminder of the exuberant growth of the subject in our own time. It was designed by the late Théodule Ribot, and his preface is retained, but the present edition is under the direction of Prof. Georges Dumas, and he has secured as his collaborators a number of most distinguished workers, every one eminent in some branch of psychological science.

*The Amateurs' Book of Wireless Circuits.* By F. H. Haynes. Pp. 107. (London: The Wireless Press, Ltd., 1923.) 2s. 6d. net.

THE amateur radio engineer will find Mr. Haynes's little work most instructive. The author begins with the simplest possible circuits and then introduces elaborations step by step until he arrives at many of the complicated arrangements used in practice. Standard symbols are employed and the diagrams are beautifully clear, so the gradual evolution of the systems can be very readily followed.

*Questions and Problems in Chemistry.* By F. L. Darrow. Pp. vii + 177. (London: G. Bell and Sons, Ltd., 1923.) 3s. 6d. net.

THIS book consists of a large number of very simple questions on chemistry, and may be found useful to teachers in schools. It is, however, more adapted for use with an American text-book, and adopts American spelling—"sulfuric," etc. The examination papers at the end are American, and in many ways the book will not fit in with English school methods.