Inductance Calculations

Working Formulas and Tables. By Prof. Frederick W. Grover. Second printing. Pp. xiv+286. (New York: D. Van Nostrand Co., Inc.; London: Macmillan and Co., Ltd., 1947.) 31*s.* 6*d.* net.

PROF. F. W. GROVER makes an authoritative selection among the numerous formulæ which have been suggested for the calculation of mutual and self-inductances. He does not attempt proofs of the formulæ, but gives adequate references to the original papers. He gives sufficient explanation of general principles to allow the adaptation of the formulæ to particular cases which are not directly covered (an improbable contingency, however). As the majority of exact formulæ are cumbersome to use, he usually offers numerical tables giving an accuracy of 1 in 1,000 or better, with some indication of the accuracy. Where interpolation between tabulated values would be inaccurate, he gives either alternative formulæ or tables using a different argument. Every likely shape and relative disposition of circuit element is included. There are formulæ for deeply wound coils, and for coils of spaced turns of round wire or of flat tape. The discussion of inductance at high frequencies is less precise than the rest of the book—excusably so, in view of the uncertain effects of self-capacitance. (Here is a field for some useful new work.) The mechanical forces between inductors are also calculated.

The most serious criticism is that the detailed contents pages do not atone for the lack of an index. The "Appendix" promised on p. 26 proves, on diligent search, to be Chapter 22 (which is not the last in the book). Most of the tables are admirably set out; but the type is sometimes small, for example, on p. 84, where it is difficult to count the zeros preceding the significant figures. There is a real need for a work of reference of this kind, and the increased scope of this book, as compared with its predecessors, makes it very useful indeed. A. C. LYNCH

Organic Evolution

By Prof. Richard Swann Lull. Revised edition. Pp. xx+744+31 plates. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1947.) 40*s.* net.

ALTHOUGH bravely marked as "Revised Edition" on the title-page, this appears to be no more than a reprint of the revised edition of 1929, which was itself not greatly modernized from the original of 1917. Perhaps it would have been kinder to have allowed this old favourite to go out to grass on the upper shelves of the library. The sections on adaptation to different environments, and the chapters on the evolutionary comparative anatomy of various groups of animals still provide an easily read, if out-of-date, introduction for elementary students. But the sections dealing with the processes of evolution are pathetic. The single short chapter on "Heredity", for example, contains fairly long paragraphs on such pre-genetical ideas as atavism, telegony, prenatal influence and the transmission of parental conditions; and although a sentence is inserted stating that "What is called telegony does not actually exist", the discussion leaves the definite impression that all four ideas are more or less acceptable biological concepts. The following paragraph on sex determination achieves the noteworthy feat of discussing this problem without once mentioning chromosomes; but the discussion on Mendelism, after devoting a total of four pages to an explanation of the F_2 1 : 2 : 1 ratio, does reach out towards the present sufficiently to incorporate a final two lines: "Mendel's laws, therefore, are apparently a generalisation of the greatest importance and apply universally to all cases of inheritance". C. H. W.

Copsford

By Walter J. C. Murray. Pp. 164+23 plates. (London: George Allen and Unwin, Ltd., 1948.) 12*s.* 6*d.* net.

IN many branches of physical science the amateur is inevitably becoming less important; in the observational branches of natural science his place is still as secure as it was in the days of Gilbert White, Jefferies or Hudson; and occasionally someone appears who shows the contribution which the non-professional can still make not only to our knowledge of natural life but also to its significance for the well-being of man.

Such a one is Walter J. C. Murray, whose "Copsford" gives us perhaps one of the most intimate accounts of Nature since Hudson wrote his "Far Away and Long Ago" some thirty years ago. Murray spent a year in a lonely cottage with neither road nor footpath connecting it with human habitation, working among the wild life which surrounded him. There he struggled with the elements, earned a living by harvesting wild herbs and waged continual war against the legion of rats which contested his right to live in Copsford.

He has now written a book about the countryside which is full of the most intimate experiences among the wild life of woodland and meadow, marsh and brook. In his book the author conveys the impression that he not only lived among wild things but also with them, light and darkness, sound, scent and movement becoming as vital in his life as in theirs. This strange, amusing and exciting story is told in prose which in itself is a pleasure to read. "Copsford" deserves the widest possible acquaintance.

T. H. HAWKINS

The Phasian Bird

By Henry Williamson. Pp. 341. (London: Faber and Faber, Ltd., 1948.) 10*s.* 6*d.* net.

IN this latest volume from his pen Mr. Henry Williamson tells of life on a Norfolk farm during the Second World War, taking as his hero a bird, namely, a hybrid pheasant. With the pheasant as principal character—it was seemingly a cross between the common pheasant and Reeves' pheasant—and such subsidiary characters as "Pertris" and "Pertrisel", the partridges, we see not only the wild life of this corner of eastern England but also the farm life, both human and animal. It is a tragic picture that Mr. Williamson paints, a picture of endless effort to cultivate the stern land, of despair and bitter frustration, of endurance and grim determination that win through, all depicted in the author's well-known vivid style.

F. P.

Interaction of Water and Porous Materials

(Discussions of the Faraday Society, No. 3, 1948.) Pp. ii+294. (London and Edinburgh: Gurney and Jackson, 1948.) 30*s.* net.

THE discussion on this subject held by the Faraday Society during March 31–April 2, 1948, was reported in an article in *Nature* (161, 629; 1948). The full text of the papers has now been published, with accounts of the discussion at the meeting.