

it to mathematical physics, which shall make clear the postulates on which they rest, and at the same time to explain and apply the basic principles of the vector method. He claims that this approach has proved its value in teaching and enables the student to use vector analysis in his later work. The book, which may be confidently recommended, contains sufficient material for an introductory and an advanced course.

TECHNOLOGY

Principles of Mechanism

By F. Dyson. Third edition. Pp. vii + 364. (London: Oxford University Press, 1939.) 12s. net.

FIRST published in 1928 and now already appearing in its third edition, this text-book has fully proved its adequacy for the purpose for which it was written. This was to present the fundamental principles which apply to the moving parts of machines in a sufficiently comprehensive manner to satisfy the requirements of those studying for the engineering degree or for the examinations of the engineering institutions. The line taken by the author was to develop the theory of machines in logical sequence from the well-known principles of mechanics, of which a summary was given in the first chapters. That the third edition exhibits no substantial change in the structure of the book, beyond a number of additions made necessary by the increasing scope of the examination syllabuses, is evidence of the sufficiency of this method of presentation.

The additions fall into two classes, the first of which includes a description, explanation and analysis of the pre-selective epicyclic gear-box. Such an example requires very careful treatment, as each operative gear is a combination of simple mechanisms, and here the method of analysis has been set out in full detail, thus giving the student a lead which should enable him to deal successfully with any other complication of epicyclic gears. The second class of additions comprises several of the more difficult examples of the determination of the acceleration of points in mechanisms. There is an acceleration diagram for a quick-return motion fully explained in the appendix, and as this case is more difficult than that of the simple link mechanisms, this constitutes a very welcome piece of extra information for the student. The exact mathematical analysis of the acceleration of a piston and that of a follower in contact with a cam face of straight or circular outline are also new. What the student will greatly value is the clear, direct, and unambiguous style in which the author expresses himself.

Colour Cinematography

By Major Adrian Bernard Klein. Second edition, revised and enlarged. Pp. xxii + 463 + 42 plates. (London: Chapman and Hall, Ltd., 1939.) 30s. net.

IN the previous edition Major Klein gave us, in addition to much information and informed criticism on all aspects of motion pictures in colour,

first-hand knowledge of the Gasparcolor system. He has since migrated to the Dufay-Chromex concern and now treats us with details of the Dufay system, the commercial difficulties, and the brilliant way in which they have been met. Perhaps we shall not get the full story of the most used colour process until he is acquired by Technicolor. The text remains a most useful historical summary of the subject, a guide to the present application of scientific principles in a difficult branch of commercial engineering, and a severe criticism of usage. Of particular mention are the Dufay printing and mitigation of moiré, the treatment of beam-splitter cameras, the development of suitable light-sources, and the calculation of filter transmissions. We wish other publishers would emulate the gay colours of the binding.

L. E. C. H.

Wissenschaftliche Photographie

Eine Einführung in Theorie und Praxis. Von Prof. Dr. E. v. Angerer. Zweite gänzlich neubearbeitete Auflage. Pp. vii + 211 + 3 plates. (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1939.) 13.80 gold marks.

THIS volume is addressed to the scientific worker who uses photography as a tool rather than to the specialist in photographic technique or theory. Thus the book is written in a style easily understood by anyone with a rudimentary knowledge of physics and chemistry. It describes the nature of the photographic emulsion, its sensitometry and treatment after exposure in considerable detail. The production of the positive print, colour photography and the camera itself are only described to an extent sufficient to make the book complete. This is as it should be, for the main concern of such a book is to guide the experimenter to find the best possible conditions for obtaining the most satisfactory negative. It is, however, more than a photographic manual, for it contains much interesting information for the reader with only a casual acquaintance with photographic methods.

H. W. M.

The Art of Soaring Flight

By Wolf Hirth. Translated from the German by Naomi Heron Maxwell. Pp. 214. (London: Sail-plane and Glider, 1938.) 5s.

AN English translation of the work of Wolf Hirth, one of the pioneers of soaring flight, was called for by reason of the rapid strides made in the art during recent years in Great Britain and America.

The translator says: "No student of soaring flight can ever hope to achieve success without an understanding of certain meteorological phenomena which are clearly explained in this book, and I feel that the reader will find every page both stimulating and interesting". There are accounts of storm-flying and interesting information on the obstruction of fronts by mountain ranges and the like. Sailing in the air, to a greater extent even than on water, raises a host of meteorological questions which would otherwise never be thought of.

L. C. W. B.