

Chapter iii. deals with the age of progress from Kepler to Hevelius, and that debatable question, which Borellus tried to answer, namely, Who was the true inventor of the telescope? forms the subject of the fourth chapter.

Optical history in general occupies the first half of the book. The second half is termed a "Description and Illustrated Catalogue," a designation which conveys little indication of the interest with which the material has been invested. The microscopes described are those possessed by the Society. They have been divided into two groups A and B, with accessories in a third group C. The year 1850, by which time a fairly rational type of instrument had been evolved, has been selected as the boundary between the first and second periods.

The authors are to be congratulated on the successful conclusion of their labours, and the thanks of all concerned with the history of optics and the microscope are due to the Royal Microscopical Society for the publication of this valuable work.

JAMES WEIR FRENCH.

Modern Investigations in Materials.

Applied Elasticity. By S. Timoshenko and J. M. Lessells. Pp. xxi+544. (London: Constable and Co., Ltd., n.d.) 25s. net.

THE importance of the strength and elasticity of the materials employed in engineering construction is well reflected in the frequency with which treatises on the subject appear. Prescott's book, with the same title as the volume at present under notice, was a specially notable contribution made a few years ago; but rather more abstract and mathematical than is perhaps desired by the majority of engineers. The volume here considered does not refrain from mathematical discussion, nor does it make any strenuous endeavour to simplify such methods, but it deals throughout with problems of definite practical moment, and its matter is in all respects up-to-date.

Mr. Timoshenko—well known for his original studies in elasticity—is responsible for the analytical Part I. of the volume, in which he incorporates much of his own original work. His chapter headings are of a very ordinary type, but a closer examination reveals that within each of these chapters there are many special developments quite unusual in treatises of this class. Chapter vi., on the bending of bars on elastic foundations, is, in its applications, a notable example of the author's powers; as are also Chapter viii. in which multi-throw crankshafts are

treated, and Chapter ix. on curved bars. Chapter xi., on stresses produced by dynamical causes, is ambitious in its scope but, probably hampered by space considerations, it fails to do full justice to the modern technical problems of vibration.

Part II., on the experimental side of the subject, is by Mr. Lessells, who has conducted many researches on materials. His treatment is wide in range, and well defined in sectional detail. The important modern lines of fatigue, impact, and hardness testing are very clearly reviewed and presented; although the section on the effects of high temperature might have been extended with advantage. The separate chapter on theory of strengths is a welcome innovation in works of this kind.

The book is, in its general scheme, of an advanced order, mainly suited to senior students of the subject and to engineers who have to deal with the difficult details of modern design, but its wealth of treatment, summary, and reference on the outstanding modern problems and investigations of this important subject, give it a very high place in the rather lengthy list of works on the same subject.

Our Bookshelf.

Die neueren Milchindustrien. Von Dr. L. Eberlein. (Technische Fortschrittsberichte: Fortschritte der chem. Technologie in Einzeldarstellungen, herausgegeben von Prof. Dr. B. Rassow, Band 14.) Pp. xi+119. (Dresden und Leipzig: Theodor Steinkopff, 1927.) 5 gold marks.

THIS volume deals with the industrial aspect of milk production. After a brief account of the composition of milk and a description of the chief chemical and bacteriological methods which are used in its examination, the production and supply of clean milk are considered. Attention is directed to the milking machine, the cleaning of the vessels in which milk is transported, and the bacterial content of milk. The supply of milk to towns is an important chapter, and whilst it is agreed that fresh raw milk is the ideal food for children and adults, provided it can be obtained of low bacterial content and free from dirt, it is held to be impossible, on account of the cost, in present circumstances to provide such milk for the main body of the population. Pasteurisation and the three main systems are described, and two methods, other than by heat, for the removal of bacteria are described.

The preparation of condensed milk and the apparatus used for the purpose are described, and the succeeding chapter deals with dried milk and its preparation. The use of dried milk for infant feeding is mentioned.

In view of the difficulty which is often experienced in disposing of surplus milk at the 'flush'