German Imperial Board of Health), which seem to show that the risk of infection from tuberculous milk is surprisingly small.

Clean milk, and methods of producing and controlling it, are dealt with at some length, and some interesting details are given respecting certified milk.

A long chapter is devoted to pasteurisation of milk, and this process is strongly advocated, under proper safeguards, such as labelling with the time, temperature, and date of pasteurising, as a general method for treating the milk supply if a pure milk cannot otherwise be guaranteed.

Singularly little is said respecting infants' milk depôts. In view of the comparison made by some between the United States and this country in this respect, we should have expected more information had this method of dealing with infant mortality the importance which some would ascribe to it. Altogether the book is a valuable one, and one to read, ponder, and digest.

R. T. HEWLETT.

OUR BOOKSHELF.

Theoretische Astronomie. By Dr. W. Klinkerfues. Neubearbeitung von Dr. H. Buchholz. Dritte verbesserte und vermehrte Ausgabe. Pp. xxxviii + 1070. (Braunschweig: F. Vieweg und Sohn, 1912.) Price 50 marks.

THE claims of Klinkerfues and Buchholz are readily admitted by all acquainted with the calculation of orbits. The classical treatises of Oppolzer and Watson having run out of print, it was most fortunate that this, the practical, side of gravitational astronomy was taken up by Buchholz, who extended the original work of Klinkerfues to make it fit to take the place of the former works. The plan of dividing the subject-matter into lectures (*Vorlesungen*) is still continued, although much is unsuitable for verbal exposition. Lecture 14, for example, extends to ninety pages, and gives, besides the general theory of the earth's rotation, all the formulæ necessary for the reduction of observations.

The greater part of this edition agrees exactly with the last, but the additions are well worthy of attention. The new preface runs to twenty pages, and gives a historical treatment of recent advances in the theory of orbits. Although Gylden's work in no way enters into the subject treated in the work, Buchholz has described at some length the claims of the great Swedish astronomer. We believe that posterity will give to Gylden the place which is due to one who did much for the cause of dynamical astronomy as applied to real, in contrast with merely ideal, problems. The criticisms of Bauschinger and others have led to Harzer's method not being developed, but the vector method of Willard Gibbs is retained. We are glad to see that Leuschner's method has been introduced. The method is

carefully explained, the formulæ are collected, and a considerable number of examples are worked out. The necessary new table is given, and Oppolzer's M- and N-tables have been reproduced.

An appendix gives the known errors in the works of Bauschinger and Oppolzer on the determination of orbits.

The greatest fault of the book is its bulk. For a work intended to assist in the numerical calculation of orbits it is almost essential that the auxiliary tables should be easily manipulated. This work could with advantage be divided into several volumes.

J. JACKSON.

New Contour Map of the Near and Middle East (The Land of the Five Seas). (London: G. W. Bacon and Co., Ltd.) Price 7s. 6d.

THIS wall-map includes the empires of Babylon, Persia, Parthia, Egypt, and Rome. It shows the routes of Alexander the Great, Pompey, and St. Paul, and illustrates classical history from the earliest times. The scheme of ten colours makes it possible to show with impressive clearness the close relation between land configuration and the spread of civilisation. The scale of the map is ninety-five miles to an inch. In the bottom left corner an inset orographical map of Palestine is provided. The size of the map as a whole—40 by 30 in.—will indicate that it is scarcely large enough for use in big classes, but it should prove of service to individual students in the higher forms of secondary schools.

The Tarn and the Lake. Thoughts on Life in the Italian Renaissance. By C. J. Holmes. Pp. xi + 48. (London: Philip Lee Warner, 1913.) Price 2s. 6d. net.

THIS essay of Mr. Holmes forms very pleasant reading; originally designed as an introduction to a few studies of Italian painting and sculpture, it overran its intended bounds and became eventually the present little volume. Entertaining analogies are drawn between certain communities of fish and certain societies of men, and though the appeal is more directly to anglers, all readers who appreciate literary expression will enjoy the essay.

LETTERS TO THE EDITOR.

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Pianoforte Touch.

THE question as to whether what is known as touch is due to any peculiarity, apart from the energy, with which the hammer strikes the strings, and, consequently, with which the fingers strike the keys, would appear to be determinable by direct experiment. Personally I have always held, probably with the majority of people, that touch is dependent on such peculiarities, but the evidence seems to be decidedly against it. A note was struck one hundred times in succession so as to produce sound of as nearly as possible the same intensity; on half these occasions it was struck in a pressing, or caressing, manner; in the other cases it was struck sharply; the different