

should be made, as it is, at the end of the chapter on time and space. But, leaving aside all captious criticism, it is safe to say that 'Properties of matter' is one of the best introductory text-books of physics of which we are as yet possessed.

Whether the lectures on 'Recent advances in physical science' can be used in the classroom, may be questioned. Of the value of the book for collateral reading, there can be no question. This is well enough shown in the fact that we now have the third edition. The desire to deduce much of our knowledge of physical principles from Newton's writings is apparent on many pages of the book, and has given rise to a discussion which is referred to in the preface.

The 'Practical physics,' of which we are promised three volumes, — the first only giving an account of general physical processes, — is intended as a guide for laboratory work. The explanations are clear, and the matter and instruments referred to are such as one actually meets in practice. The book is given up to a description of the ways to measure length and mass; the determination of density; the testing of the laws of elasticity, tenacity, and capillarity; and the measurement of atmospheric pressure, time, and the force of gravity. At the end is given an appendix on the selection, conduct, and discussion of operations suitable for the physical laboratory. The other volumes planned are to be devoted to electricity and magnetism, and heat, light, and sound. It is to be hoped that the succeeding volumes may equal that already published, which is the best book, for its purpose, we know of.

The school world is certainly to be congratulated on the addition to its literature of two such books as 'Properties of matter' and 'Practical physics.'

#### METHODS OF BACTERIA CULTURE.

THE need of a book in English, giving information as to the best methods of bacteria culture and observation, is a growing one; and, before opening the work under consideration, we were led to hope that it would fill, in a satisfactory manner, the vacancy that now exists.

We are disappointed in it, however, and for these reasons. A large number of methods and materials are described, staining-fluids are

given, and authors mentioned; but the whole is thrown together with little or no criticism, and the beginner is as likely to adopt the wrong as the right method of procedure. Particularly is this the case in that portion of the book giving the methods of staining the bacillus of tuberculosis. These methods have been pretty well tested and sifted out; and there is no reason why they should all be given at length, with no more criticism of their value than we find here. As far as investigation yet shows, Koch's or Ehrlich's methods are the ones which are to be absolutely relied upon. Gibbs's double method of staining is absolutely worthless, as the author should know.

The preface to the book states the author's hope that it will be of value to "American investigators, and assist them in adding their share . . . to the mass of facts concerning bacteria;" but surely it would have aided the student still more if he had been informed that all the materials for culture-media and staining-fluids can be obtained in this country as well as abroad.

The form of the book, being of thick paper, and opened with difficulty, is exceedingly inconvenient; and we cannot condemn too strongly the fact that over one-third of the space is taken up by the references, which are printed in the same type as the text.

#### THE PERMIAN REPTILES OF BOHEMIA.

OF this excellent work, we have now before us the first volume, and the first part of the second one, containing the *Stegocephali Cope* (*Labyrinthodontia autorum*); in all, two hundred and fourteen quarto pages text, and sixty plates, some of them folding. The present work is not only the best ever given on the subject, but one of the most valuable publications which has ever appeared in paleontology. The Lyell prize, awarded to the author by the Geological society of London, is one testimony to its excellence. The plates are among the best we have ever seen, and were all drawn by the author himself.

After an introduction showing the geological position of the fossils, a preliminary review of the fossils found is given, which consist of the following species: *Stegocephali*, 43; *Dipnoi*, 2; *Pisces*, 31; *Insecta*, 1; *Arachnoidea*, ?; *Myriapoda*, 3; *Crustacea*, 5; *Mollusca*, 1.

This is followed by a detailed history of the

*The technology of bacteria investigation.* By CHARLES S. DOLLEY, M.D. Boston, *Cassino*, 1885. 12+263 p. 12°.

*Fauna der gaskohle und der kalksteine der permformation Böhmens.* Von Dr. ANT. FRITSCH. Band 1., ii., 1. Prag, 1879-85. 4°.