methods, given in such a well-known text-book, would greatly assist the adoption of a uniform technique.

In the portion of the book devoted to soil bacteria, the activities of protozoa and other micro-organisms are mentioned, but greater emphasis should have been given to the close interrelation that exists between bacteria and other organisms in the soil. The close connexion found to exist in field soil between the rapidly changing numbers of bacteria and active amœbæ illustrates the fact that the bacteria must be considered as a part of the complex population of the soil.       H. G. THORNTON.

*Mine Examination Questions and Answers. Compiled from Examinations for Positions of Mine Inspector, Mine Foreman, Assistant Foreman, Fireboss, Hoisting Engineer, Safety Inspector and Shotfirer.* By Prof. J. T. Beard. Part 1. Pp. viii + 258. Part 2. Pp. vi + 259–546. Part 3. Pp. vi + 547–872. (New York and London : McGraw–Hill Book Co. Inc., 1923.) 3 parts, 37s. 6d.

THE object of the work under notice is, as stated by the author in his preface, that of " enabling candidates to pass successful examinations for positions of responsibility in coal mining," and it consists of a set of answers to no less than 2975 questions, set in examinations in the various coal-mining states of the United States of America and in Canada for various grades of colliery officials. Opinions will certainly differ as to whether this is the best way of qualifying a man for the duties that he will have to perform after he has passed such examination ; it may readily be granted that a man, gifted with an exceptional memory, might get off by rote the whole of the answers to the questions given in these three volumes and would thus with ordinary luck pass successfully any of the examinations referred to, but it is also very certain that this fact would not qualify him to hold a position as a responsible underground official. The educational value of such a book is therefore very questionable. At the same time the work has been well done. Prof. Beard has been the Principal of the School of Mines, International Correspondence Schools, Scranton, Pa., Secretary to the State Board of Mining Examiners, Iowa, and has held many other positions that qualify him thoroughly for the work that he has undertaken, and his book may be used with every confidence in its accuracy. It must, however, be borne in mind that coal mining methods, legislation, and nomenclature are so different in the United States from what they are in Great Britain that many of the answers given would prove seriously misleading to British candidates for similar positions in the latter country.

*The Properties of Matter.* By Prof. Basil C. McEwen. Pp. vi + 316. (London : Longmans, Green and Co., 1923.) 10s. 6d. net.

As a text-book, this work differs from its predecessors in the order of treatment of the subjects. Commencing with the First Law of Thermodynamics and the more general Principle of the Conservation of Energy, a logical sequence leads to the study of the kinetic theory of matter, which is most easily treated in connexion with the gaseous state. The continuity of the gaseous and liquid states supplies the natural transition to a detailed study of liquids, and solids are dealt with last

of all. The reviewer can recommend this order from his own experience in lecturing to university students, and is of the opinion that the first half of Prof. McEwen's book reaches a high standard of excellence. Some parts of the latter half are not quite so satisfactory. The chapter on capillarity seems somewhat elementary and does not contain many references to modern work. The distinction between surface tension and surface energy is not well brought out. The chapter on solids is very short, and should be greatly expanded when a new edition is called for. We hope the author will then include an account of the crystalline structure of solids as revealed by X-ray analysis.     H. S. A.

*Medical Climatology of England and Wales.* By Dr. E. Hawkins. Pp. xiv + 302 + 149 charts. (London : H. K. Lewis and Co., Ltd., 1923.) 25s. net.

EVERY practitioner of medicine is frequently required to recommend a climate suitable for convalescence or for a chronic disease ; few doctors can acquire from experience the geographical and meteorological knowledge to enable them to give adequate consideration to this important detail of treatment. Dr. Edgar Hawkins provides a volume on the subject, based on his own experience and the information derived from numerous meteorological publications. The main arrangement of the book is geographical, therapeutic indications following the descriptions of the geology and climate of various districts and towns. There is also a separate chapter on therapeutics of the English climate, in which the classification is based on diseases. In one appendix the health resorts are tabulated according to seasonal suitability, and in the other the waters of the various Spas are described.

In spite of the complexity of the subject, information with regard to locality or disease can readily be found, and reference is facilitated by the inclusion of a large number of meteorological charts and the addition of a well-prepared index. The book will be of considerable value to physicians and others interested in medical climatology.

*The Elements of Co-ordinate Geometry.* By S. L. Loney. Part 2 : *Trilinear Co-ordinates, etc.* Pp. viii + 228. (London : Macmillan and Co., Ltd., 1923.) 6s.

THIS part of Prof. Loney's " Co-ordinate Geometry " contains, in order, chapters on cross-ratio geometry, trilinear and areal co-ordinates, tangential equations, reciprocation, projection, and invariants of conics. Methods of teaching geometry have advanced considerably in the last twenty years, and the arrangement adopted by Prof. Loney would scarcely be accepted as the natural one now. Trilinear and areal co-ordinates are here introduced from the purely metrical point of view. Now it would be more customary to read the chapters on projection and reciprocation first and then to treat trilinears and areals as particular cases of homogeneous co-ordinates.

Coming from an experienced teacher of mathematics, the book gives all necessary assistance to a student reading its subject-matter for the first time in the order treated. Abundant examples are given, but those on homogeneous co-ordinates include a greater proportion of metrical questions than a present-day teacher would endorse (*e.g.* pp. 85-87, Nos. 1, 2, 6, 7, 16, 17, 20, 22, 23, 24).