graphical expression and reduction of results, and a number of algebraical summations for the later application of calculus from first principles.

The measurement of distance, mass, and time calls for little remark. The apparatus described is not novel, but is fairly complete, comprising as it does all the common instruments of precision and the precautions necessary for correct use. Here particularly the absence of theoretical considerations is noticed, the derivations of the units not receiving notice, *e.g.* no definition of the second is given.

The third chapter deals with measurements of small quantities by means of the optical lever, a rather uncommon experiment on a spirit-level, and a very good treatment by simple algebra of Amsler's planimeter.

Then follows a very limited introduction to velocity and acceleration, the only acceleration determined being *g* by the usual pendulum observations. Specific gravities and the calibration of weights are treated exhaustively.

The chapters on moment of inertia and elasticity are somewhat difficult, as the explanations are complex algebraically. The experiment on moment of inertia by torsional oscillations is sound, but the experiment for Young's modulus is open to serious error due to slipping in the grips at both ends. The definition of "brittleness" is misleading; those of flexure and rigidity are difficult but correct.

The chapter on viscosity includes a good description of Poiseulle's capillary-tube experiment.

The measurement of temperature is, on the whole, accurately and completely given. The statement that gas thermometers can be used up to 1700° C. is not, however, correct so far as accuracy is concerned. Again, for the resistance thermometers difficulty of experiment has led the authors to evade the sulphur point and to minimise its importance. Mercury-in-glass thermometers are fully treated.

The experiments on the expansion of rods are open to the objection that the temperature must be indeterminate near the ends. The absolute expansion of mercury and the cubical expansion of glass are given more successfully.

The difficult subject of calorimetry receives considerable attention and is sound. The method of mixtures, the bomb calorimeter, and the Junker calorimeter are described fully as pieces of apparatus most suitable for their respective purposes.

An extremely short chapter gives an introduction to the principle of the conservation of energy, and the book concludes with some useful tables of physical constants. L. B.

THE EDIBLE CRAB.

L.M.B.C. Memoirs. XVI. Cancer. By J. Pearson. Pp. xviii+209. (London: Williams and Norgate, 1908.) Price 6*s.* 6*d.*

IT is a remarkable thing, perhaps, that although the edible crab is of so much importance as an article of food, and is also an easily obtained subject for the study of the morphology of the brachyurous Crustacea, this is the first concise statement of its structure and habits that has been published in any language.

It might have been advisable if the editor of the series had departed from his usual practice and allowed in this case the use of a short subtitle to the memoir, such as "the edible crab," since the books that have been published upon "Cancer" in recent years are without number, whereas this is the only one on the crab.

The need of a memoir on the subject has long been felt, as the records of investigation are scattered and somewhat difficult of access; but Mr. Pearson has evidently devoted very great care and patience to the collection of all the available information, and, having added to it a great deal that is new, he has produced a work which will certainly prove to be one of very great utility.

The author has a liberal conception of what is necessary in a memoir concerning a single species, and he gives not only a detailed description of the external features and general anatomy, but also some important and useful notes on the histology and physiology. There are two surprising facts about Cancer which may be learned from this memoir. The one is that we know very little about the larval development of an animal that is so common and so useful, and absolutely nothing about its pre-larval stages. It may be that the early development follows a course that we might expect from our knowledge of these stages in other crabs; it may be that the study of these stages would not produce any facts of practical importance; but it is an object-lesson on unexplored fields of marine biological investigation that we have to confess to such ignorance about a familiar type. The second surprising fact, but not a new one to those who study fishery statistics, is that the value of the annual catch of crabs on the coasts of England and Wales alone is nearly 60,000*l.* But notwithstanding this fact we are indebted to the energy of Prof. Herdman and his colleagues for the greater part of the necessary funds for the production of a memoir which must prove to be of great economic value.

For the advanced student of zoology the memoir will undoubtedly prove of the greatest assistance when he comes to the dissection of the crab, and he will learn to appreciate the concise and, so far as we have been able to test them, accurate statements of anatomical facts and the thirteen beautiful plates by which the memoir is illustrated. It would have been better if the descriptions of the figures had been in many cases extended, so that the reader could see at a glance the principal points that each figure is intended to illustrate. When there are so many plates, and no less than six full pages of reference letters arranged in alphabetical order, the system adopted becomes rather tiresome to the reader. It would also have been useful to the student if Mr. Pearson had given a short statement concerning the other common crabs of the coast for which Cancer might be mistaken and the principal features which distinguish them. But the memoir may be heartily welcomed as it is, and Prof. Herdman and Mr. Pearson congratulated on its publication.