of which this is a continuation appears to have reached a tenth edition.

Section ii. is on the transmission of power. The first example is a screw-driver, and the second a sewer rod coupling. Another example is a cash conveyor, which, as money is power, is no doubt an example of transmission of power. On the next page is a viscosimeter, though what power is transmitted in this case is less obvious. Nor would one naturally expect four examples of acoustic telephones to be found under this heading.

Section vii., on hydraulic power and appliances, commences with some very sketchy ideas for wave motors, and then describes a fog-horn buoy. There is no reasonably good account of any one of the important class of water turbines, but there is a quite impossible design for a "multinozzle turbine," and next to this a duplex steam feed pump. There is a figure of a Venturi meter, but the description does not explain its action, and the curiously inaccurate statement is made that the differential velocity produces a differential pressure in two tubes with mouths turned in "opposite" directions, and ends with the very misleading statement that "the measurement is made by a meter." The reader would not realise that the Venturi tube is the meter, and that what the author probably mistakes for a meter is a recorder.

Section viii., on air power, motors and appliances, contains the "pneumatic ball puzzle," an "aërial top," "grain elevators," "a magic ball," a "megascope," a "sailing wagon," a "tail-less kite," and a "sail-rigged merry-go-round"; but nothing about the air-compressors, air-motors, and pneumatic tools which are now so important.

Enough has been said to indicate the general character of the work. Many useful and important devices are described amongst many others which are mere inventors' schemes. There may be readers who like an olla podrida of this kind.

Perhaps the most curious section, and we think the longest, is that on perpetual motions. About these the author does not seem to have quite made up his own mind. He does warn the reader in the preface that the problem is "unsolvable." But later, p. 363, he remarks that "attempts to solve this problem would seem, so far, only to have proved it to be thoroughly paradoxical," a statement which would hardly get many marks in a science examination. Further, we are told on the next page that, although admitting difficulties in the way of its discovery, "many eminent mathematicians have favoured the belief in the possibility of perpetual motion"; also that "it is evident, therefore, that even mathematicians are not agreed."

Modern Theory of Physical Phenomena, Radioactivity, Ions, Electrons. By Augusto Righi. Authorised translation by A. Trowbridge. Pp. xiii + 165. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1904.) Price 5*s.* net.

IT is an interesting sign of the times that so many books have appeared during the last few months with the object of explaining in non-technical words the recent development of physical science. Part of the interest shown in these subjects by the general reading public is, no doubt, of the unintelligent and wonder-seeking order, which classes the more striking discoveries of natural science with the latest sensation of the law courts, or the cost of the flowers at a Transatlantic ball. But it is fair to hope that some, at all events, of those who read of the advance of knowledge do so with a desire to comprehend the method, as well as to admire the results, of scientific research. A more widely spread application of the open-minded and truth-seeking methods of science to the problems of individual and collective life is, for the sake of the community, greatly to be desired.

The little book before us deals in a light and interesting manner with the conceptions of the physical world which have been used of late in investigating the phenomena of light, electricity, and radio-activity. It states the results of recent inquiries in a clear and intelligible manner, and, if the account of the methods used in reaching the results sometimes seems inadequate, the difficulty of explaining those methods to non-scientific readers may be urged as an excuse.

After an introduction, the book contains chapters on electrolytic ions and electrons; electrons and the phenomena of light; the nature of the kathode rays; the ions in gases and solids; radio-activity; mass, velocity, and electric charge of the ions and of the electrons; and the electrons and the constitution of matter. The volume ends with a useful bibliography of the subjects considered.

The translation, on the whole, is well done, though a certain want of crispness in the literary style is felt in places.

In a future edition one or two corrections would be advisable. The period of vibration of light cannot be "expressed by a fraction whose numerator is unity and whose denominator is a number of fifteen places" unless it is understood that "a fraction" is a fraction of a second. The usual figure given to illustrate the opposite deflection by a magnetic field of the α and β rays from radium exaggerates greatly the deflection of the α rays compared with that of the β rays. This exaggeration is legitimate, in fact, necessary, in a diagrammatic representation; but it should be pointed out in the text, or misconception of the relative magnitudes of the two effects is sure to follow. In Thomson's method of determining the properties of the ions produced by the incidence of ultra-violet light on a metallic surface, the exactness is limited not only by the differing velocities of the ions, as stated in the book. Probably the ions are produced, not solely at the metallic surface, but also in a layer of the gas of finite thickness in its neighbourhood. Thus the distance from the surface reached against the influence of a magnetic field may be different for different ions even if their velocities be the same.

The Journal of the Royal Agricultural Society. Vol. lxv. Pp. clxvi + 392. (London: Murray, 1904.)

THE *Journal* of the Royal Agricultural Society makes its appearance this year in a rather slimmer form than usual, due, however, more to the use of a thinner paper than to a curtailment of the printed matter. The affairs of the society bulk largely as usual, taking up more than half the present volume, while the miscellaneous articles, to which the ordinary reader turns, only occupy about 150 pages. The volume is, in fact, burdened far too much with reports of council meetings and committees, which have lost all interest for the members by the time the annual volume reaches them, and which would be much more to the point if circulated as "proceedings" immediately after the meetings and not reprinted here.

The volume opens with a vivacious and readable account of Sir Humphry Davy by Mr. H. B. Wheatley, who well brings out the charm and fascination of Davy's personality. But we cannot help thinking Mr. Wheatley rates Davy's agricultural work altogether too highly; if any man is to be called "father of the science" it is De Saussure, and not Davy, who can be identified with no new discovery or novel point of view in agricultural science. In this respect Davy was somewhat like Liebig; both were great men who had the power of getting the world to listen to them, and when they turned their attention to agriculture the influence they wielded, each in their

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