

Electrical Apparatus-making for Beginners. By A. V. Ballhatchet. Pp. 164. (London: P. Marshall and Co., n.d.) Price 2s. net.

THE author has provided, at a moderate price, a very useful little book, which should do much to encourage the beginner to construct simple electrical apparatus with which to make a number of instructive experiments. The book is illustrated with a number of photographs of the apparatus described, which the author has himself constructed. In addition, there are good working drawings and diagrams of connections where these are helpful. The real utility and educational value of work of this kind to the beginner cannot be insisted upon too often. He has read of and perhaps seen professionally made apparatus, and he naturally supposes that nothing within his constructive power can be any good, and more especially is this the case if he is not already fairly accomplished in the use of tools. While his earlier efforts may not be much use to anybody else they are of immense value to him—that is, if he has any perseverance. He may gradually come to learn that rough-looking apparatus may really work up to a point well, and so begin to acquire that confidence in himself which is essential when, at a later stage, he has original ideas. He may then either make preliminary rough experiments to see if, with better work, they promise to succeed, or if he has become a good manipulator he may have discovered that he can carry out his own ideas quickly and with sufficiently good work in the essential parts to get better results than he could hope for if he depended entirely upon others to put his ideas into form.

C. V. B.

Guida allo Studio della Storia delle Matematiche.

By Prof. Gino Loria. Pp. xvi + 228. (Milano: Ulrico Hoepli, 1916.) Lire 3.

THE plan of this work is rather unusual, but quite good. The first part gives, among other things, references to first-rate works on history and historical method in general (*e.g.* Bernheim, Lavisse et Rambaud, Merz), besides works on the history of mathematics in particular. We also find here summaries of the contents of the more important journals dealing with mathematical history. The second part is more specialised; there are sections on manuscripts, biographies, editions of collected works, mathematical correspondence, bibliography, catalogues, and so on. There is a name-index for each part separately. The amount of information given is really remarkable, and it is well up to date; the author, too, has not shrunk from the disagreeable duty of pointing out works (such as those of Montucla, and even of M. Cantor) which must be used with caution.

There are a good many misprints, especially in English names and words (Raleigh, for instance, *passim*); we even find our familiar friend Bernouilli (p. 166); but few, if any, are serious, and the wonder is that they are not more numerous than they are.

G. B. M.

LETTERS TO THE EDITOR.

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A Suggestion with regard to Genera Splitting.

INDIVIDUAL systematic botanists and zoologists differ much in the principles which guide them with regard to the "splitting," or "lumping," of genera. Much can be said on both sides. The splitting into smaller genera of a genus overloaded with species should help to show the more intimate relationships of the species to each other. On the other hand, if the new genera have names unlike the original genus, the kinship of all the species originally included in the one genus is, to the casual observer, more or less masked. When a genus is very small in species a better grasp of their relationship with each other is probably gained by retaining them all under one generic name, even though morphological characters may well warrant placing each species in a distinct genus. In botany in Australia several hundred species are included in the genera *Eucalyptus* and *Acacia*. Unquestionably a better grasp of the kinship of the individual species is obtained by leaving all in the two genera named rather than in instituting new genera for various groups, but it is equally certain that some day a "splitting" systematist will erect new genera, which will not, I believe, help us in "memorising" the groups as wholes.

Some time ago, in discussing this question with my friend, Mr. G. M. Matthews, whose valuable work on the "Birds of Australia" is now in the press, I suggested that the letters of the Greek alphabet should be used, when genera splitting is decided on, as a prefix to the original generic name, thereby showing the common relationship of all the species to each other. May I make this suggestion here in your columns, and add, further, that the relationship would be still more clearly shown if the Greek symbol were used rather than a "translation" into English? The original genus (*i.e.* the "split" part, containing the original type species) would be best represented as α , though difficulty would arise in thus altering the original generic name; so, unless zoologists and botanists could come to some international agreement on the matter, it would probably be necessary to use no prefix in this portion of the "split," but add (*S.S.* = *sensu stricto*) to the simple generic name. The "splits" could then be β , γ , etc. To take the genus *Eucalyptus*, for example, we should have α -*Eucalyptus*, or *Eucalyptus* (*S.S.*), β -*Eucalyptus*, γ -*Eucalyptus*, etc. Such a method of splitting would be convenient and handy, would still show the broader relationships of the species, and would not interfere with those systematists who disapprove of splitting, since these need only drop the prefix.

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The Place of Science in Education.

THE question as to whether modern education should be classical and literary, or scientific, is one which apparently, in certain high quarters, is still controverted. This matter, once said John Stuart Mill, is very much like a dispute "whether a tailor should make coats or trousers." Replying in the philosopher's own words, "Why not both? Can anything deserve the name of a good education which does not include literature and science too? If there were no