origin and presented in a similar all-round way. The later exercises under this head are listed according to their distribution in the United States and not primarily according to the class to which they belong.

Taken as a whole, however, the volume has few elements of weakness and many of strength. It has been tested in practise with beginning pupils and hence is not too advanced or specialized. It is a most valuable contribution to educational geography and ought to help strengthen and humanize physical geography teaching in our high schools, and it should be remembered that for many years such work has been unhuman, if not at times almost inhuman.

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The Principles of Electro-deposition. A laboratory guide to electro-plating. By SAMUEL FIELD, A.R.C.Sc. (Lond.), F.C.S. New York, Longmans, Green & Co. 1911, 12mo. Pp. xv + 383.

This is one of those manuals designed for the purpose of interesting further the purely technical worker, so that he may be led to learn something at least of the principles upon which the operations he observes daily are based.

After considering the apparatus for the production, regulation, and measurement of the electric current; plating with copper, nickel, iron, tin, zinc, silver, gold and brass are taken up in detail, from the theoretical as well as the practical viewpoint, the methods of preparing the object for plating, as well as the finishing, after that process is complete, also being considered. This is followed by several chapters on the methods for the qualitative and quantitative analysis of the substances employed in the various processes.

Whether the worker will actually gain the knowledge which the author hopes he may is a question, for much depends upon the elementary knowledge which can be assumed to be in the possession of the reader. One thing is quite certain, however,—the readers, or at least some of them, will find their interest greatly aroused by a perusal of this book, even though it may not be thoroughly understood; with the result that they may be led to seek some school where a thorough training in the subject may be acquired. Books of this type are of the greatest value, for it is to them that we must look for the first step in that great advance in industrial work—the perfect combination of theory and practise.

J. L. R. M.

SCIENTIFIC JOURNALS AND ARTICLES

ANNOUNCEMENT is made of the establishment of *The Journal of the Washington Academy of Sciences.* It is to be a semi-monthly publication and will be sent to subscribers on the first and fifteenth of each month, or during the summer may appear on the fifteenth only, as double numbers. The first number will be issued about July 15, but after 1911 the volumes will correspond to the calendar year. The present *Proceedings of the Washington Academy of Sciences* will be discontinued after the completion of the current volume. The *Journal* will be a medium for the publication of original papers and a record of scientific work in Washington. It will accept for publication (1) brief papers written or communicated by resident or non-resident members of the academy; (2) abstracts of current scientific literature published in or emanating from Washington; (3) proceedings and programs of the affiliated societies, and (4) notes of events connected with the scientific life of Washington. The editors are: George K. Burgess, Bureau of Standards; Barton W. Evermann, Bureau of Fisheries, and Frederick Leslie Ransome, Geological Survey. Illustrations will be used only when necessary, and will be confined to text figures or diagrams of simple character. The editors, at their discretion may call upon an author to defray the cost of his illustrations, although no charge will be made for printing from a suitable cut supplied with the copy.

THE contents of the *Astrophysical Journal* for June are as follows: