with, say, a current density of 5 amperes per 100 sq. cm. and an E.M.F. of 5.5 volts. Now when a cell is constructed of given dimensions, and filled with a solution at a certain concentration and temperature, the voltage required to produce a given current density is fixed by the conditions. It is true that the potential fall at the electrode is a very important factor in metal separations but this fall is determined directly by the current density. The voltage at the cell terminals is of no consequence in the analysis. From the directions for each process the prescribed voltage given by the author may be entirely omitted and must be in order to make the directions self-consistent.

In discussing the various processes the probable experimental error is not discussed, but fortunately figures are often given showing the results of actual analyses and from these the probable accuracy of the different methods under favorable conditions may be estimated.

Especial attention is given to the deposition of metals on a mercury cathode and to the use of rotating electrodes. The latter device, which permits an analysis formerly requiring several hours to be carried on now in a few minutes, was invented by v. Klobukow in 1886 but has only been generally adopted within the last few years. Its efficiency is apparently due merely to the relative motion of electrode and electrolyte which prevents the depletion of the electrolyte in the neighborhood of the electrode and also perhaps by mild attrition produces a more coherent film of metal. It is therefore possible to use a very high current density without the formation of loose or poorly adhesive films.

In the chapter on the history of electroanalysis it is interesting to learn that even in 1801 it was proposed to separate the metals by electrolysis, and that in 1860 Lucknow deposited the metals quantitatively and separated them from one another by means of the current, and even determined lead and manganese by depositing them as peroxides at the anode.

Besides chapters on the determination and separation of metals there are others on the determination of halogens and nitric acid, on electrolytic oxidation and on combustion of organic compounds by electrical heating. There is an index, and each chapter is introduced by a short bibliography. The volume is of a convenient size, is bound in flexible covers and is an excellent specimen of bookmaking.

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SCIENTIFIC JOURNALS AND ARTICLES

The American Museum Journal for April contains a well-illustrated article by Barnum Brown on "The Trachodon Group" of two mounted skeletons of these strange dinosaurs. There is a plate of the large African elephant head, obtained by the Tader expedition and mounted by Mr. Lang. Under "Ethnological Loan Collections" is a description of the exhibit illustrating the life of the Ojibwa Indians deposited in a branch of the public library where it is seen by children to whom the story of Hiawatha is told during the "story hour." Recent museum publications are noticed and announcements made of the various lecture courses.

The Bulletin of the Charleston Museum for March under "Museum Records" notes the progress in caring for the collections and tracing the history and records of material that has been accumulating for more than a century and includes "the fossil man of Guadeloupe," the Elliott Herbarium and specimens noted by Holbrook, and Audubon and Bachman.

The Evolution of the Elephant, by Richard S. Lull, forming Guide No. 2 of the Yale University Museum comprises 44 pages, with many illustrations and four maps of distribution of fossil and living forms. It includes a general discussion of the characters and affinities of the Proboscidea, the evolutionary sequence of the genera and species and the indicated migrations of the Proboscidea which led to their present distribution.

The Museums Journal of Great Britain for March has an article on "Museums of Elementary and Higher Grade Schools," by

Herbert Bolton, pointing out their usual mixed character and lack of relation to the school curriculum and suggesting how they may be made of real value. G. A. Dunlop describes "Drying Plants without Pressure" by the use of fine sand or boxwood sawdust, the latter material preserving many of the natural colors and much of the texture of flowers and leaves. It is pointed out that care should be taken in using sawdust owing to its irritating effect on the mucous membrane of the eyes and air passages. There is an account of the exhibit of "British Grown Trees in the Natural History Museum." Among the many "Notes" is one to the effect that the London and North-Western Railway is gathering material to be ultimately displayed in a railway museum.

The Museum News of the Brooklyn Institute for April contains articles on "The Giant Stork, or Jabiru," "Zuñi Silver Working," and "Lizards in Human Stomachs." The section devoted to the Children's Museum discusses "Elementary Physics as a Subject for Children's Museum Instruction" and notes the various living animals at the museum.

A NEW psychological journal, *Le revue psychologique,* has been established at Brussels under the editorship of Mlle. I. Ioteyko, M.D.

SOCIETIES AND ACADEMIES

THE NATIONAL ACADEMY OF SCIENCES

THE scientific program of the meeting of the National Academy of Sciences held in Washington on April 21, 22 and 23 was as follows:

"A Proposed International Atlas of Land Forms," by W. M. Davis.

"The Geological Age of the Santa Cruz Beds of Patagonia with Restorations of Santa Cruz Mammals" (with lantern illustrations), by W. B. Scott.

"The Biological Station for Research, at Agar's Island, Bermuda" (with lantern illustrations), by E. L. Mark.

"The Cytological Basis of Heredity and the Determination of Sex" (with lantern illustrations), by E. B. Wilson.

"On the Functions of the Parathyroid Glands in their Relation to Calcium Metabolism and to Tetany," by W. G. MacCallum and C. Voegtlin (introduced by W. H. Welch).

"Supplementary Atmospheres," by T. C. Chamberlin.

"Great Tangential Movements of the Earth's Crust," by Bailey Willis (introduced by Ira Remsen).

"Some Results of the Magnetic Survey of the United States," by L. A. Bauer (introduced by R. S. Woodward).

"The Metasilicates of Lime and Magnesia—An Application of Physical Chemistry to Minerals," by E. T. Allen (introduced by R. S. Woodward).

"The Exact Measurements of Quantities of Heat, up to 1,500° Centigrade," by W. P. White (introduced by R. S. Woodward).

"Spermatogenesis in the Bee and in the Wasp," by E. L. Mark and Manton Copeland.

"Biographical Memoir of Alpheus Hyatt," by W. K. Brooks.

"Perceptions, Ideas and Hallucinations," by J. McK. Cattell.

"Application of Periodic Solutions of the Problem of Three Bodies to the Motion of the Moon," by F. R. Moulton (introduced by E. H. Moore).

"Biographical Memoir of Asaph Hall," by G. W. Hill.

"The Elevated Reefs of Mombasa and Adjacent Coast," by A. Agassiz.

"The Pelagic Fauna of Victoria Nyanza," by A. Agassiz.

"Recent Work of the Smithsonian Astrophysical Observatory," by C. G. Abbot (introduced by Chas. D. Walcott).

"The Hydration of Ions in Solution," by E. W. Washburn (presented by A. A. Noyes).

"Radiant in the Star-group in Taurus" (with lantern illustrations), by Lewis Boss.

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 442d meeting was held on March 21, 1908, with President Stejneger in the chair.

The first paper was by Professor W. J. Spillman, on "Fixation of Breed Characters in Animals and Plants." He first illustrated the manner of behavior of a character pair (non-albinism and albinism). The character of the population from the second to the tenth generation of the descendants of a Mendelian hybrid was illustrated by lantern slides for different methods of selection. First, with no selection, it was shown that with close