the use of this reagent, excepting the one statement in separating Ba, Sr, Ca—from Mg, that 'advantage is taken of the fact that magnesium carbonate is not precipitated in the presence of ammonium salts and ammonium hydroxid.' Surely the common explanation of these group separations—the successive breaking down ammonium double-salts in order of their instability by the reagents ammonia, ammonium sulphide, ammonium carbonate and disodium phosphate—is better than no explanation. It may be objected that recent research has disproved, or at least rendered improbable, the existence in solutions of ions indicating ammonium double-salts. At all events, an explanation on the lines of the above quotation regarding magnesium ion might be given.

In brief, this book can be cordially recommended to those students who are trained from the start by lectures based on Ostwald's 'Grundlinien der anorganischen Chemie,' and are taught to look at chemical phenomena chiefly in the light afforded by the dissociation theory.

E. Renouf.

Laboratory Companion for Use with Thurston's Inorganic Chemistry. By W. A. Thurston, F.R.S., Lecturer on Chemistry in Clifton College, London, Edward Arnold. 1901. Pp. 110.

The author says in his preface that this little book is a reprint of most of the experiments in Part 1 of his 'Inorganic Chemistry' and is to be used only as a laboratory companion. It is intended to be used before the study of qualitative analysis is commenced, 'and may replace such work altogether in the case of those who leave school at an early age.'

Evidently it is impossible to criticise this book without a knowledge of the text-book which it accompanies. It is very different from American laboratory manuals. The author holds it 'most important that the connection between physics and chemistry should be insisted on from the earliest stages.' The first thirty-nine experiments are purely physical with exception of one on the hardness of water, which explains permanent and temporary hardness, and gives methods for determining the hardness of water; and this before a single experiment on chemical change has been made.

The experiments given in the remainder of the book are of more chemical nature, and are interesting, but seem to lack logical sequence; it is to be supposed, however, that this seeming fault would disappear if the book was used in connection with the author's lectures, and that we have in the book those experiments which he considers to be of particular theoretic or practical interest to young students. However, the book cannot be recommended as a manual in connection with the text-books in actual use in this country.

E. Renouf.

Chemical Lecture Experiments. By Francis Gano Benedict, Ph.D., Instructor in Chemistry in Wesleyan University. New York, The Macmillan Company. 1901.

This book of 435 pages contains brief, clear instructions for performing a great number of lecture experiments. The instructor who has little apparatus at his disposal and turns to Newth or Heumann for help in illustrating his lecture often finds it impossible to show the experiments described, for lack of apparatus. The author has rigorously excluded all costly apparatus, and has yet succeeded in giving so many brilliant and instructive experiments as practically to cover the whole course. This renders his book invaluable to instructors in schools and in the smaller colleges. But this is not all; any lecturer who glances through the book will find much that is new and striking. Especially is this true of the experiments on metals, which have received such scant attention in the earlier books. The reviewer has Dr. Benedict's book in use and finds it a valuable supplement to Newth and Heumann.

Edward Renouf.

GENERAL.

'The Fauna and Geography of the Maldive and Laccadive Archipelagoes, being the account of the work carried on and of the collections made by the expedition during the years 1899 and 1900,' is now in course of publication in 'Cambridge at the University Press.' Part I. of the first volume appeared

several months ago, and Part II., it is announced, 'will be published on April 15, 1902.' The work is edited by 'J. Stanley Gardiner, M.A., fellow of Gonville and Caius College and Balfour student of the University of Cambridge.' The part issued contains, besides the introduction, excellent reports on the physiography of the archipelagoes in question and on the Hymenoptera, Land Crustaceans and Nemerteans. The work will be more fully noticed when completed.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *Journal of Comparative Neurology* for December. 1. Shinkishi Hatai, 'On the Mitosis in the Nerve Cells of the Cerebellar Cortex of Fœtal Cats,' shows: (1) The germinal cells of the nervous system of the fœtal cat present a modified form of the heterotypical mitosis of Flemming, (2) the number of the chromosomes represented by internodes of segmental filaments is 16, (3) all of the 'Halospindel' and a part of the central spindle are derived from the nucleolar substance, the central spindle containing the linin in great abundance. 2. Alice Hamilton, M.D., 'The Division of Differentiated Cells in the Central Nervous system of the White Rat.' The number and position of the dividing cells in later developmental stages (at and near birth) are described and compared with the results of other workers. Regarding the nature of the dividing cells, the author concludes: (1) There are at least two kinds of dividing cells in the central nervous system of the white rat, one small the other large, (2) neuroglia cells are derived from the small cells, nerve cells from the large ones, (3) dividing cells found in the gray matter and fiber tracts of the brain and cord are not indifferent cells, but are partly differentiated and it is possible to tell which are to become neuroglia cells and which nerve cells, (4) mitotic figures are occasionally found in multipolar nerve cells and in spongioblasts. 3. C. H. Turner, 'The Mushroom Bodies of the Crayfish and their Histological Environment.' A description of the supra-œsophageal ganglion of the crayfish, in the course of which it is shown that the mushroom bodies and the central bodies of the brains of crayfish and insects are homologous structures and that both of these organs are also present in worms. The first article is illustrated by one plate, the second by two, and the third by four.

PLANS have been made for a new engineering quarterly, which is to be known as the *Harvard Engineering Journal*. The first number, which will appear on March 1, will consist largely of a description of Pierce Hall, the new enginering building, and of the engineering department.

THE two journals devoted to geographical education that have hitherto existed in this country have been merged, and will appear, beginning with January, as the *Journal of Geography*, devoted to the advancement of geographical education. The new journal will be edited by Richard E. Dodge, professor of geography, Teachers College, Columbia University, and hitherto editor of the *Journal of School Geography;* Edward M. Lehnerts, professor of geography, State Normal School, Winona, Minn., and formerly editor of the *Bulletin* of the American Bureau of Geography, and Dr. J. Paul Goode, instructor in geography, University of Pennsylvania, Philadelphia, Pa. The *Journal of Geography* will appear ten times a year, with 480 pages to the volume. It will be 7 x 10 inches in size, and extensively illustrated. The editors will be aided by a large number of associate editors, representing different phases of geography. The journal will be published by the J. L. Hammett Co., Boston and New York, and will be printed at Lancaster, Pa.

SOCIETIES AND ACADEMIES.

AMERICAN MATHEMATICAL SOCIETY.

THE eighth annual meeting of the American Mathematical Society was held at Columbia University on Friday and Saturday, December 27–28, 1901. A single day's sessions no longer suffice for the extensive programs of the Society's more prominent meetings. In providing for a two-day meeting it was hoped to gain ample time for the presentation of papers, but the long program completely filled the four sessions. Fifty-nine members were in attendance, a number exceeding all