ments and patient manipulation that could be devised, the result being a value for Joule's equivalent which at once acquired authority in the light of the evidence produced, and largely confirmed the corrections already advanced by Rowland and others. A main cause of discrepancy had been found to be the variation of the thermal capacity of water with the temperature; and by an investigation in which this variation was determined, Griffiths elucidated and correlated fundamentally the work of previous observers, from Joule onward. Of special importance also, in the domain of chemical physics, was an investigation of the depression of the freezing point of water by very dilute admixture of dissolved substances, wherein he verified, with all the refinement of absolute physical determinations, that the change of freezing point ran exactly parallel to the electric conductivity when the dilution of the electrolyzable salt was comparable to that of gases, being twice as much per molecule as the standard value of the depression for non-electrolytes.

The Buchanan medal is awarded to Mr. William Henry Power, C.B., F.R.S. Mr. Power's services to hygienic science and practise have extended over a period of more than thirty years, and have been of the most distinguished kind. He has himself personally conducted successful inquiries into the causes of the spread of various diseases, and has obtained results which have proved of the greatest benefit to mankind. Moreover, in his long connection with the medical department of the Local Government Board he has planned and directed numerous general and local investigations whereby our knowledge of disease, and of the methods of coping with it, have been greatly increased. The medical reports issued by the Local Government Board, which are universally regarded as among the most important contributions of our time to this subject, have for many years past been either written by him or owe much to his editorial criticism and supervision. It is not too much to say that no living man in this country has advanced the cause of scientific hygiene more than Mr. Power, or is more worthy of the distinction of the Buchanan medal.

SCIENTIFIC BOOKS

Research in China. Volume I., Part 2. *Petrography.* By Eliot Blackwelder. Carnegie Institution of Washington, Washington. 1907.

Rocks from northern and central China are described microscopically in this portion of the report; their field relations and stratigraphy have been given in Part 1 of this volume. The method of treatment is as individual specimens arranged according to geographical distribution, that is, by districts of which eleven are recognized. Their further arrangement is by geological age, mode of formation, and finally by petrographic character. The report is, therefore, a detailed statement of observations and data, with little attempt at general or comprehensive summary of results. The material collected is not considered sufficient for such a treatment.

The Khin-Gan district of the mountain range by that name in northwestern Manchuria, so far as seen from the Chinese-Eastern Railroad, appears to be made up largely of igneous rocks. In addition to a gray biotite-granite there are black quartz-porphyry, hornblende-porphyry, feldspar-porphyry and gray hornblende-granite.

In the western portion of the Liau-Tung peninsula in southern Manchuria the rocks observed belong to several distinct systems: The T'ai-shan gneissic complex; the Ta-ku-shan schists, quartzites and marbles; the Sinian sedimentary series including quartzite conglomerate and psammites of Cambro-ordovician age, besides igneous rocks in dikes. These are rhyolite porphyries, andesitic and basaltic porphyries, more or less altered.

In the neighborhood of Peking a small ridge

of greenish aporhyolite occurs. It appears to have been at one time a glassy rock.

The western Shan-Tung district contains rock formations ranging from the oldest Pre-Cambrian to early Mesozoic (?), consisting of rocks of metamorphic, igneous and sedimentary origin. The oldest rocks are gneisses and schists. Embracing biotite-gneiss, biotitic-hornblende-gneiss, hornblende-gneiss, and schists of similar composition. With these are associated biotite granites. The limestones and shales forming the Sinian system present features of interest in the oolitic concretions that have been extensively developed, and have subsequently undergone recrystallization into aggregates of coarser crystals, and in the conglomeratic character of some of the limestone interformational conglomerates. These sedimentary rocks are described in detail. Associated with the Sinian series are basaltic and dacitic porphyries, besides syenitic and quartz-syenite porphyries in dikes and intruded sheets. The carboniferous strata overlying the Sinian series are traversed by dikes and sheets of various kinds of rocks, and by some extrusive flows of basalt. The commonest rocks are basalts and syenite-porphyries, with some dacites and andesites. There is also less commonly gabbro and peridotite.

In western Chï-Li there is a complex of gneisses, schists, granites and porphyries covering extensive areas. So far as evidence was found, the metamorphic rocks appeared to be mostly of igneous origin; in one instance there was proof of a sedimentary source. This complex is followed by the Ta-yang series of limestones, with shale and quartzite, of Algonkian age; and by the sedimentary rocks of the Sinian system.

The Wu-T'ai district consists mostly of metamorphosed Algonkian sediments, some of which are highly altered, while others are but slightly changed, resembling in places Paleozoic rocks. The more metamorphosed series called the Wu-T'ai system consists of mica-schists, gneisses, garnet-schists, chlorite-schists, quartzites, marble, schistose conglomerates, arkoses, etc. With these are some eruptive rocks, more or less metamorphosed: granite, augen-gneiss, hornblende-schists, quartz-porphyries, etc. The less metamorphosed series, the Hu-T'o system, consists of slates, graywackes, limestones and quartzites, with fewer igneous rocks, in dikes, both basic and acid. The district also contains rocks of the Sinian system.

The rocks of the Ts'in-ling district are mostly sedimentary; either highly metamorphosed or only slightly altered. There are also large intrusions of granite and occasional dikes of other igneous rocks. The same may be said of the Han River district, the rocks of which are described in considerable detail.

The Yang-Tzï Gorge district is chiefly sedimentary rocks of Paleozoic age, with local exposures of Mesozoic and Pre-Cambrian terranes. They are strongly but not intensely folded, and are not notably metamorphosed, except the oldest formations.

The report closes with a résumé of literature containing descriptions of the rocks of China, which shows that very little has been done in this direction. Mr. Blackwelder's report is a valuable contribution to the petrography of the region, and it is to be regretted that he was not in a position to pursue his studies more thoroughly and systematically, and that no chemical analysis of the best of his material was undertaken.

J. P. IDDINGS

Annual Reports of the Progress of Chemistry for 1906. Issued by the Chemical Society. Vol. III. London, Gurney and Jackson. 1907. Pp. 387. Price $2 net.

The development of chemistry in many different directions is so very rapid that it is impossible for any one to keep informed even with regard to the important work which is published in the various fields. The reports of progress which are published annually, by the London Chemical Society, serve, therefore, a very useful purpose in bringing together a summary of the really important advances of the science during a given year. The divisions of the present volume are: General and Physical Chemistry, by Alexander Findlay; Inorganic Chemistry, by P. P. Bedson; Organic Chemistry—Aliphatic Division,