ent one deals with economic minerals strictly, exclusive of metallic ores, and in the main of precious and ornamental stones.

The plan of the work is good, and the geological element in it is valuable; but the treatment is very unequal, some portions being well and fully presented, and others but inadequately. The work bears no date, and takes no note of some important recent developments, *e. g.,* that of monazite and the related rare earths. Its chemical formulas, too, are not modern. As a whole, the book is of interest in its suggestion of what might be, if the author's ideas were carried out more fully and comprehensively, errors and omissions corrected, and the treatment brought up to date.

G. F. K.

SOCIETIES AND ACADEMIES.

ONONDAGA ACADEMY OF SCIENCE.

At the October meeting of the academy, held in the Syracuse high school building, Dr. T. C. Hopkins presented an illustrated paper on the glaciers of Switzerland and Austria. The paper was based on field studies in the Alps during the past summer. It illustrated many features of the Alpine glaciers such as the snow fields, aiguilles, crevasses, moraines, gorges and the marked recession of many of the glaciers in recent years.

At the November meeting of the academy, held in the historical society rooms there were three papers on biological subjects:

1. *Diseases of Cultivated Flowering Plants:* George T. Hargitt.

The diseases were classified, according to the function disturbed, into three classes:

(*a*) *Disturbed Photosynthesis.*—The rusts are one of the commonest diseases of plant life and in the carnations it is caused by the fungus *Uromyces caryophyllinus,* one of the most serious diseases of this plant. *Darluca filum,* usually occurring in connection with this rust, is commonly considered as parasitic on the rust, but investigations seem to show it rather to be parasitic on the carnation. Plants affected by both the rust and *Darluca* are in worse condition than those affected only by the rust. The disease 'white legs' of the aster results in dwarfing, malformation and final decay. It is caused by nematode worms of the genus *Heterodera* or perhaps *Aphenenchus.* Leaf spot diseases, common in a great many plants, are caused by a number of different fungi.

(*b*) *Disturbed Transpiration.*—The rusts also cause a disturbance of the transpiration, which is usually the more destructive, due to the unguarded evaporation of water through the ruptures in the epidermis caused by the liberation of the spores. In carnations a disease called stigmonose is caused by the punctures of insects.

(*c*) *Interference with the Supply or Absorption of Water.*—The most destructive disease of this type is the aster wilt or stem rot. The characteristic effect is a wilting and a yellowish color first seen on one side of the plant, usually in one of the lower leaves. It is caused by the growth of a *Fusarium* fungus in the large water-carrying vessels, which are thus gradually clogged up. A more elaborate paper on this subject by Mr. Hargitt appears in the report of the Nebraska State Horticultural Society for 1903.

2. *Some Features of the Development of Flowering Plants:* Dr. J. E. Kirkwood.

The paper embodies the results obtained from the study of the embryology of about fifteen species of the Cucurbitaceæ. In all the forms examined the ovary begins by the invagination of a lateral shoot and the organs of the flower appear in the following order: sepals, petals, staminodia (when present) and carpels. In the early stages of embryonic growth the endosperm plays an important part by digesting the nucleus and nourishing the embryo.

3. *Bithynia tentaculata:* Albert J. May.

The gastropod *Bithynia tentaculata* was introduced into the United States from Europe and has become very abundant in New York. It was first noticed in this country in 1879, when specimens were taken simultaneously at Oswego and in the Champlain canal near Troy.

They seem to multiply and spread very rapidly. They are now reported from points all along the Hudson River and the Erie Canal. They are abundant in the Genesee and Niagara Rivers.

It is quite noticeable that wherever *Bithynia* appears the native forms appear to thin out rapidly.

The species is herbivorous, feeding on algæ and other plants. They are oviparous. The female deposits her eggs on stones and aquatic plants in a mass of gelatinous material which is covered with a tough elastic membrane. The eggs are laid in numbers varying from 15 to 25, in bands of two or three rows.

The December meeting of the academy in the high school building was addressed by Dr. C. W. Hargitt, on the subject of recent activities of Mt. Vesuvius. It was illustrated by photographs made during the last summer and ten years ago. The speaker illustrated many features such as the lava streams, the ash cone, the crater, the partially excavated Pompeii, and many of the small volcanic cones and associated phenomena in the vicinity of Vesuvius.

T. C. HOPKINS,
Corresponding Secretary.

THE CLEMSON COLLEGE SCIENCE CLUB.

THE Clemson College Science Club held its regular monthly meeting November 20, 1903. The first on the program was Mr. B. H. Rawl with a paper entitled 'Pasteurized Milk.' The speaker explained fully the objects desired to be accomplished in the pasteurization of milk. The differences between sterilization and pasteurization were pointed out. The speaker, while not minimizing the importance of pasteurization, emphasized the necessity of producing milk under sanitary conditions, thus preventing the entrance of harmful bacteria into the milk. This was considered more desirable than attempting to rid the milk of bacteria after their entrance by such processes as pasteurization, etc. Apparatus for pasteurizing in the home and on a commercial scale was described.

The next on the program was Dr. G. E. Nesom, whose subject was 'The Relation of Bovine Tuberculosis to Man.' This communication consisted largely of a selection of readings from a bulletin published by the author and papers published by Drs. Ravenal and Cary. The speaker referred to the distribution of tuberculous animals in the United States, the figures showing that Massachusetts contained the highest percentage. The number of tuberculous animals in the south and especially in South Carolina is relatively small. The speaker brought out the fact that there are no differences, morphological or otherwise, in the bacteria of human and bovine tuberculosis. The bacteria of bovine tuberculosis, however, are believed to be more virulent. Numerous experiments were cited to show the ability of bovine tuberculosis bacteria to cause the disease in man. The discovery and uses of tuberculin were pointed out. In view of the transmissibility of bovine tuberculosis to man, the speaker urged in conclusion the necessity of a thorough inspection of all animal products (meat and milk).

F. S. SHIVER,
Secretary.

DISCUSSION AND CORRESPONDENCE.

CONVOCATION WEEK.

THERE are various objects that may be achieved by a meeting of a body like the American Association for the Advancement of Science.

1. It must give opportunities for making the acquaintance of or renewing acquaintance with men whom one likes to know.

2. It must give opportunities for discussion of scientific subjects with those competent to discuss them.

3. It must give opportunities for learning of new discoveries and theories in the field of science, from those who are competent to describe them.

4. It may open the road to the publication of papers submitted, in such a manner as to command general public attention.

5. It may concentrate the influence of men of science, and give their views that power with the general public that can only flow from acknowledged authority.

The three objects first named may be measurably achieved at the meetings of every scientific society of specialists. The two objects last named can not be. They can be prosecuted only by a society for the promotion of all science: hence they should be specially cultivated by the American Association for the