

characteristic minerals. Here it is clear that the formation of one or other of these silicates depended solely on temperature, and in no wise on depth; but in the book before us sillimanite figures as a distinctive mineral of the deepest zone, and cyanite and staurolite of the middle zone. We are led to suspect that the author has overrated the influence of pressure as a factor in metamorphism. Such experimental data as we possess go to show that even very high pressures may not displace greatly the temperature-limits of stability of the rock-forming silicates.

Apart from such considerations, more or less theoretical, the work is a mine of valuable information. The classification at least serves its purpose as a standard of comparison, and the systematic treatment of the structures of crystalline schists will be especially useful.

A. H.

PLANT LIFE OF MARYLAND.

Maryland Weather Service. By F. Shreve, M. A. Chrysler, F. H. Blodgett, and F. W. Besley. Vol. iii., *The Plant Life of Maryland.* Pp. 533. (Baltimore, U.S.A.: Johns Hopkins Press, 1910.)

THE weather service of the American State of Maryland, maintained by the Johns Hopkins University, Maryland Agricultural College, and the United States Weather Bureau, receives a broad interpretation. The first volume of the series dealt with the physiography and meteorology of the State, the second presented the results of many years' study of the climate and weather of Baltimore and vicinity, while the third is connected with the former in so far as vegetation is dependent upon physiography and climatic conditions. The main purpose of the present volume is to present an ecological description of the vegetation, which is demarcated into three zones. The coastal zone spreads inland as far as the "fall-line"; thence to a contour line of 1500 feet extends what is designated as the "midland" zone, and a mountain zone comprises land above that altitude. The term, "fall-line," it may be noted, is nowhere explained; reference to another source shows that at the junction of the Cretaceous or Cenozoic with older formations the rivers have falls or rapids.

The division into these three zones is suggested by the occurrence in the central counties of many species having a wide range, coupled with the appearance of a conspicuous southern floral element in the coastal zone, and an appreciable admixture of northern elements in the mountain zone; these facts throw some light upon the historical sequence of events. As for the details, these are well elaborated, and due consideration is given to the limits imposed by soil constitution, both physical and chemical, and by topography. Climatic conditions are extremely favourable to tree growth, so that forests are important in each of the zones. Originally extensive forests of white pine and pitch pine existed in the western part of the State, but now the white pine is limited to isolated specimens. The converse process is seen in southern Maryland, where scrub pine spreads over

land cultivated before the Civil War; this is a first stage that is altered by the incursion of oak, and later by hickory. Apart from the forests, the various marsh regions in the coastal zone are interesting, also the serpentine barrens and Susquehanna gravels in the midland zone. To make the survey more complete, sections are devoted to agricultural and forestry matters, and an account of the floristic geography with a list of plants is supplied by Dr. F. Shreve. The text is illustrated by a considerable number of excellent photographs and by a few maps that would be more useful if the scale were larger. The volume is highly creditable to Dr. Shreve and his associates, and will take rank with the best local ecological studies.

OUR BOOK SHELF.

Salvarsan or 606 (Dioxy-Diamino-Arsenobenzol): its Chemistry, Pharmacy, and Therapeutics. By Dr. W. H. Martindale and W. W. Westcott. Pp. xv+77. (London: H. K. Lewis, 1911.) Price 5s. net.

IN this little book, the authors summarise all the essential information contained in the numerous publications that have appeared up to date on the Ehrlich-Hata remedy for syphilis. "Salvarsan" is the trade name given to the compound—which is chemically dioxy-diamino-arsenobenzol—synthesised by Ehrlich and his collaborators, and first introduced under the designation "606." Ehrlich has for some time past been studying the effects of various anilin dyes and organic compounds of arsenic on trypanosomes and other protozoan parasites. In quick succession he brought out more or less effective remedies, such as trypan red for bovine piroplasmiasis (Texas fever), atoxyl and arsenophenylglycine for trypanosomiasis of man and animals, and, finally, "606" for spirillosis, diseases caused by spirillar micro-organisms, such as relapsing fever and syphilis.

S. Hata, of Tokio, conducted researches with "606" on the spirochaetes of relapsing fever in rats and mice, and subsequently on the spirillosis of fowls. The drug was found to be extraordinarily efficacious, and it was an obvious further step to try it on syphilis, another spirochaete disease, with correspondingly successful results. Mercury has been used for centuries as a remedy, the one remedy, for syphilis, but a proper course of treatment with it extends over months, and it is impossible to make many patients realise the necessity for this, and hence the disease relapses, with, in many instances, dire results. With salvarsan, however, it is claimed that a single dose will in many instances effect a cure, an enormous advantage.

There can be little doubt that in salvarsan we have a most potent remedy for the cure of syphilis, though whether it will do all that has been claimed for it time alone can show. Unfortunately the drug is toxic, and requires to be administered in a special manner; it is not altogether free from danger in particular cases, and is contra-indicated in some of the worst forms of syphilis, e.g., when the nervous system is involved. In the book under review, the authors give complete directions for the preparation and administration of the drug, and epitomise the precautions to be taken and the contra-indications for its use, and it should prove a very useful guide for the practitioner. Summaries of some of the principal contributions on the remedy are included, and a full bibliography is appended.

R. T. H.