Professor Smith's work is certainly a good book for good students, and as such is to be heartily welcomed. H. L. WELLS.

SCIENTIFIC JOURNALS AND ARTICLES.

The Botanical Gazette for August contains the following papers: 'The Nascent Forest of the Miscou Beach Plain,' by W. F. Ganong, being the fourth contribution to the ecological plant geography of the province of New Brunswick; 'The Development and Anatomy of Sarracenia,' by Forrest Shreve; 'Physiologically Balanced Solutions for Plants,' by W. J. V. Osterhout; 'The Appressoria of the Anthracnoses,' by Heinrich Hasselbring; '*Nereocystis Luetkeana*,' by Theodore C. Frye, being a biological study of this giant kelp; 'New Species of Castilleja and Senecio,' by J. M. Greenman. The September number contains the following papers: 'Differentiation of Sex in Thallus Gametophytes and Sporophytes,' by A. F. Blakeslee, being a general discussion of sexuality in all the plant groups; 'The Development of the Bouteloua Formation,' by H. L. Shantz, being the second contribution from his study of the mesa region east of Pike's Peak; '*Cortinarius* a Mycorhiza-producing Fungus,' by C. H. Kaufmann, in which a new species of the genus is described that is connected with three forest symbionts belonging to different families; 'A New Fungus of Economic Importance,' by R. E. Smith and Elizabeth H. Smith, being a new genus (*Pythiacystis*) parasitic on lemons and causing a decay of green fruit trees and in the storehouse.

DISCUSSION AND CORRESPONDENCE.

DISCONTINUOUS VARIATION AND PEDIGREE CULTURE.

REFERRING to the recent address of Dr. D. T. MacDougal, on 'Discontinuous Variation and Pedigree Culture' (published in *The Popular Science Monthly* for September), the following points may be worth considering:

The species is the unit of the taxonomist, and the study of species and their relations to environment form the basis of the science of distribution.

The species, as thus considered, is a kind of animal or plant as it has developed and as it appears in a state of nature. To know a species as it appears is not to know it completely, as all species develop differently under changed conditions or freed from the stress of competition. Under domestication, or under new chemical or physical conditions, all species are plastic, and all may assume forms the same species can never assume in its original habitat.

The field naturalist can not therefore know everything about any species, no matter how many individuals he may examine. Neither can a garden naturalist, for the forms he deals with must be 'reduced to the ranks' before they are comparable to the species occurring in the wild.

It is presumable that those naturalists know most about species as they are, who have given most time and thought to their study. They may not, however, know better than any others how species originate, nor possess the clue to the main causes or significance of their varying forms.

Yet it is fair to say that as the taxonomist of species finds in practically every case a geographical element in the development; as he finds that segregation and selection have apparently been accompaniments of nearly all changes in species, and as by these same agencies all species can be appreciably changed by the will of man, he may not unreasonably suppose that segregation and selection have each taken some part in that life-adaptation which we call organic evolution.

As a zoologist personally acquainted with Dr. de Vries the writer has great reverence for the noble modesty, the patient, intelligent and epoch-making perseverance which have characterized his work. On the other hand, he is obliged to hesitate at the acceptance of the more sweeping parts of his theory, and to question the assumption that the discoveries of de Vries in plant mutation disclose the actual method of species-forming, general or universal, in all branches of life.

As matters are the species that exist in nature must furnish us our conception of species. The species actually covering the earth are