formed of hemispherical envelopes of vapor, which rise from the nucleus itself, dissolve themselves in the coma, and are gradually repelled from the sun so as to form the material of the tail.

The turning point in the motion of these dust particles which are repelled towards the sun may be thus defined. The gravitational repulsion of the nucleus, the gravitational attraction (or repulsion) of the sun, and the repulsion due to the pressure of light-waves, are balanced against each other. These dust particles are gradually dispersed into space. The radiation of negative corpuscles from the sun, superposed upon the other causes above mentioned, seems to furnish a full explanation of the phenomena of the comet.

FRANCIS E. NIPHER

BARITE IN GEORGIA

IN the Friday, December 21, 1917, issue of SCIENCE, on page 611, under the title of "Chemical industries of the United States," you quote from the annual report of Franklin K. Lane, Secretary of the Interior,

> Before the war 40,000 tons of barite were imported from Germany for the manufacture of lithopone. Now five companies are producing this article from deposits in Tennessee, Kentucky, Virginia and Missouri.

This quotation is incorrect in that over 50 per cent. of the barite produced in the United States comes from deposits near Cartersville, Georgia. There are three companies in the Cartersville district that have produced over 20,000 tons apiece during 1917, while the total output from this dictrict could be conservatively estimated at 75,000 tons during 1917. You do not mention that any barite at all is mined in Georgia, and I feel that this should be brought to the attention of the public, as it is an injustice to this mining district, as they are the largest producers of this mineral in the United States.

WILBUR A. NELSON

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MANGANESE IN ALBERTA

MY attention has been directed to an article in SCIENCE, January 4, 1918, page 20, describing a large deposit of manganese occurring in the Cypress Hills, Alberta. Permit me to say, through the medium of your valuable magazine, that the Geological Survey has no information regarding a deposit of the nature described. During the summer of 1917 an examination was made by a member of the staff of the Geological Survey of a deposit of low-grade manganese in the Cypress Hills about 55 miles from Maple Creek and 15 miles from Govenlock station on the Canadian Pacific railway. Three samples gave on analysis 8.24, 18.45 and 17.59 per cent. of managanse. A shipment of 500 pounds of the material was tested in the Ore Dressing and Metallurgical Laboratories of the Mines Branch and the conclusion was reached that it is of too low a grade to be worked economically under present conditions.

WILLIAM MCINNES,
Directing Geologist

SCIENTIFIC BOOKS

Studies on the Variation, Distribution, and Evolution of the Genus Partula. The Species Inhabiting Tahiti. By H. E. CRAMPTON. *Carnegie Institution of Washington.* 1916.

This work has an interest for the student of evolution in any group, quite apart from its special interest to the conchologist. Such variable non-mobile land shells scattered widely among oceanic islands offer a field in many aspects most favorable for compilation of statistics bearing on speciation. Also, a very large series of material has been studied and adequately described and figured.

Evolutionary writers frequently attempt to balance an imposing structure of hypothesis on a few inadequate facts. The paper under discussion seems to have gone to the other extreme in laying the *Partula* variation almost entirely to the innate tendency to vary. The statement that "the originative influence of the 'environment' seems to be little or nothing" (p. 12) is perhaps justifiable, but that "isolation proves to be a 'condition' and not a 'factor' in differentiation of forms belonging to this genus" is weakened when we

read that "with only one exception, each group of islands has its own characteristic species which occur nowhere else.

"The same correlation between geographical and specific discontinuity is displayed by the species of the different islands of one and the same group for each member possesses distinct species not found in the others" (p. 11); and that the various varieties are confined within rather easily definable geographic limits.

It would seem that the isolation factor had been so taken for granted as to be overlooked. It has certainly not been the only, perhaps not a necessary, factor. For instance (p. 309), we find mention of "two absolutely independent varieties [of *P. otaheitana*], *rubescens* and *affinis*, which have almost identical geographical limits; yet they stand in the sharpest possible contrast to one another." A very intensive study of these two varieties would, in the reviewer's opinion, almost surely show some slight difference of habit, of adaptation to the same environment, otherwise being too far separate to interbreed freely, one of them should have crowded the other out.

Perhaps, the conclusion of the widest interest, if not of the greatest importance, is found in the following statement. "The evidence tends to prove that the dominant geological process in South Pacific regions has been one of subsidence, which has progressively isolated various mountain ranges previously connected, so that they have become separate island-masses, which, in their turn, have been subsequently converted into the disconnected islands of the several groups."

John T. Nichols

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SPECIAL ARTICLES

FURTHER EVIDENCE RELATIVE TO THE VARIETAL RESISTANCE OF PEANUTS TO SCLEROTIUM ROLFSII

During 1916 data were collected[1] which indicated that there is a marked difference in the susceptibility of peanut varieties to the attacks of *Sclerotium Rolfsii*.

The soil in the plots where the peanut rotation experiment is being conducted has been proven to be thoroughly infested with *Sclerotium Rolfsii*, and the Valencia variety has shown great susceptibility to the attacks of this fungus; therefore, at the writer's suggestion, the use of the Valencia variety for the rotation experiment was discontinued, and commercial seed of the Virginia Bunch variety was substituted for use in 1917. Plots one and three, each about one third of an acre in size, were planted for the 1917 test. Plot one had grown peanuts continuously since 1910, while plot three had grown peanuts in 1911 and 1914.

It was observed that some of the supposed Virginia Bunch plants had a procumbent habit of growth, and when these plants began to blossom the suspicion that they were of the Virginia Runner variety was confirmed. As these two varieties are supposed to be merely selections of erect and procumbent types of plants from the same original variety, the presence of the Virginia Runner plants in the 1917 plantings might be due either to a slight mixture of the commercial seed, or a failure of the Virginia Bunch variety to be in all cases well fixed.

The two plots were under observation until the crop was harvested, November 9, 1917. During this time the writer found one Virginia Bunch plant in each plot which had wilted, and examination disclosed the coarse, white mycelium of *Scelerotium Rolfsii* about the base of the stems, thus indicating that the wilting was due to this fungus, as had been proven in many cases in 1916.

The fact that none of the Virginia Runner plants wilted confirms the data collected in 1916 to the effect that this variety is practically immune to the attacks of *Sclerotium Rolfsii*.

The resistance of the Virginia Bunch variety in 1917 was much greater than in 1916, as shown by the fact that in 1916, out of a

[1] McClintock, J. A., "Peanut-wilt caused by *Sclerotium Rolfsii*," *Journal of Agricultural Research*, Vol. VIII., No. 12, pp. 441–448, March 19, 1917.