THE LOWER SONORAN COCHINEAL.

IT is well known to residents and travellers in the Southwest that the cacti of that region furnish a kind of cochineal, but whether it was identical with the commercial insect long remained in doubt. The purpose of the present note is to separate and define the Lower Sonoran form, which has hitherto remained nameless. Four kinds of cochineal have came to my notice, as follows:

(1) *Coccus cacti*, L., of tropical Mexico and southward. The type locality is Surinam.

(2) *Coccus tomentosus*, Lam. (*opuntiæ*, Licht.) of the Mexican tableland south of the Tropic of Cancer.

(3) *Coccus tomentosus* subsp. *newsteadi*, subsp. nov.' of the Lower Sonoran in Arizona, Texas and northern Mexico.

(4) *Coccus tomentosus* subsp. *confusus*, Ckll., of the Upper Sonoran in New Mexico and Colorado.

The subsp. *newsteadi* was first described by Mr. R. Newstead in the *Entomologists' Monthly Magazine*, April, 1897, pp. 75–76, from specimens imported to Kew Gardens on *Opuntia fulgida* from Arizona. He intended at first to name it as distinct, but finally treated it as *tomentosus*. It is a fair intermediate between *tomentosus* and *confusus*, both structurally and geographically. It has the spines and glands about as in *tomentosus*, but averages smaller, with the antennæ usually 6-segmented, and the cottony secretion abundant, much as in *confusus*. It occurs in Wabash Creek Cañon, near Flagstaff, Arizona (*Ehrhorn*), La Puerta Rancho, in Tamaulipas (*Townsend*), Point Isabel, Texas *Townsend*), etc.

There is no probability that either *newsteadi* or *confusus* can be used commercially. (See Bull. 3, Tech. Sec., Div. Ent., Dept. Agriculture, p. 35.)

T. D. A. COCKERELL.

MESILLA PARK, N. M., October 8, 1898.

THE ENDOWMENT OF AMERICAN ARCHÆOLOGY.

TO THE EDITOR OF SCIENCE: I should like to make a suggestion through SCIENCE to all the universities and organized societies of the United States that a strong and systematic effort be made to celebrate that point in the age of the world called the year 2000 A. D. by a fund of $2,000,000, whose interest would be devoted to a study of the archæology of America. The money and the willingness to give and to use it are in plenty, and among scientific needs there is nothing that can compare. The splendid monuments of antiquity, rapidly fading away, especially in Mexico, Central America and Peru, offer the greatest rewards.

Two strong expeditions or parties ought to be kept in the field constantly. A committee of the schools and colleges should plan the work systematically, and arrange a method for making results accessible to all the public, by descriptions, models, photographs, etc. The suggestion is respectfully submitted.

W. S. PROSSER.

AUBURN, CAL.

THE SENSE OF SOLIDITY.

TO THE EDITOR OF SCIENCE: Having had frequently the following experience, I record it with the hope that it may call forth either analogous experiences from others or some explanation.

On falling asleep with any weight in my arms I have noticed that on waking at a certain stage of drowsiness the feeling of solidity has entirely vanished. It is not only that the sensation of weight is very much dulled, but the sense of continuity in the held body is gone. Indeed, it often seems as if the hole between the parts whose contact is actually experienced could be felt. The contrast with ordinary experience is so great that it serves to bring out very effectually the fact that ordinarily in holding an object we have not only a sense of contact and of weight, but also a sense of 'filling-in,' of tactile solidity or continuous extension. In the experience referred to, the contact sensations also appear to have a granular rather than a continuous character.

JOHN DEWEY.

UNIVERSITY OF CHICAGO,
October 21, 1898.

SCIENTIFIC LITERATURE.

The Free Expansion of Gases. Edited by J. S. AMES, PH.D. Scientific Memoirs. New York, Harper & Brothers.

A few months ago the pleasing announcement