This paper makes no pretense of being an exhaustive treatment of the subject under consideration. Its main object has been to point out as briefly as possible the danger of assuming that the coefficient of correlation is necessarily a satisfactory measure of all forms of relationship between two variable quantities, and at the same time to suggest a method of attack for determining in what way a particular relationship depends on the value of this coefficient.

CHARLES N. MOORE
UNIVERSITY OF CINCINNATI

AN ABERRANT ECOLOGICAL FORM OF UNIO COMPLANATUS DILLWYN

THE variety of *Unio complanatus* Dillw. which is here described was found at Songo Pond, about three miles south of Bethel, Me. The specimens from which it is described were collected in August, 1913. The pond is a headwater of the Crooked River, one of the larger tributaries of the Presumpscot. It lies in a glacial scoop in alluvial sand, and is fed by springs mainly. A small brook a mile long enters it also. The country rock is a granitic gneiss of the eastern range of Montalban gneisses, and the intrusive granites scattered here and there are of the same mineralogy. There is no limy rock in any form within many miles, a fact which will account for the peculiar structure of the shell. The specimens were picked up on a very gently sloping beach of round-grained sand, along the western shore of the pond, and in about two feet of water. The pond is about a mile and a quarter long, from north to south, and averages a quarter of a mile in width.

So far as I can determine, the soft parts of the animal are in every way normal for the species. The aberrancy occurs in the valves, and is in structure and in shape.

The largest of my specimens, and the largest I have seen in the course of eight summers' picking, measures two and three quarters by one and a half inches over all. The greatest thickness, from umbo to umbo, is three quarters of an inch. The following features are normal: hinge size and place, umbo size, place and shape, lateral and pseudocardinal teeth size and shape, scars, pallial line, and sculpture. Epidermis is of normal color, but thicker than usual, and overlaps the edge of the hard part of the shell up to 3/32 of an inch, being most extended at the siphonal region and along the anterior part of the ventral edge in many specimens.

The shape of the shell is almost identical with that of *Anodonta marginata* Say, being roughly rhomboidal. It does not resemble the specimens of *Unio complanatus* from other regions in the American Museum at New York, in this respect. From the posterior end of the hinge, the dorsal edge slopes ventrally, straight, at an angle between 35 and 40 degrees from the line of the hinge. This portion of the edge is nearly straight and about as long as the hinge. It rounds off into the small semicircle of the posterior end. In mature specimens there may be a slight flattening of the posterior end at the point where the mantle forms a pair of siphons by its folding and coherence, but this is not constant and I find it only in the largest specimens. The ventral edge is not a uniform curve, but approaches more or less to three straight lines, equal in length, each making an angle of about ten degrees with the line continuing the edge beyond it. The anterior end has the usual graceful elliptical outline, forming a large curve from hinge to ventral edge.

There are no rays visible on any of my specimens.

The most peculiar feature of the shell is the exceedingly small amount of mineral matter in it. When fresh the shells are horny and somewhat flexible, not unlike two layers of parchment pasted together, in texture. Alcoholic material and fresh are alike easily cut with a small shears, and there is no cracking. The thin nacreous layer breaks into small angular chunks, which adhere to the epidermis. I found only the faintest traces of a prismatic layer, in the largest specimens. Smaller ones fail entirely to show it. In my largest specimens there is at the umbo a larger amount of mineral matter, but even here it is hardly more in amount than at the margin in the normal shell of this species. The epidermis seems to me to be nearly twice as thick as in the normal type. In many specimens I found grains of

sand imbedded in the outer part of the epidermis, and apparently thoroughly encased.

This feature is quite obviously the result of the nature of the water in which the shells grew. There is no lime to be had save what little weathers out of the felspar of the country rocks: as these are largely soda felspars, this amount is indeed small.

If this be a variety worthy of a name, I would suggest that it be called *Unio complanatus* var. *mainensis*. It seems to be a form native to the granitic region of New England, and so far as I know is found mainly in western Maine. It is common throughout the ponds and lakes of Oxford county in that state. Since 1909 it has become so plentiful in Songo Pond that one can pick up ten dozen in half a hour, within three hundred feet along the beach. I have been in the habit of gathering it to boil for eating: it is quite palatable if cooked just the right time and with much salt.

My thanks are due to Dr. L. P. Gratacap, of the American Museum of Natural History, for aid in determining the shells, and to Professor F. Loomis, of Amherst College, for suggesting that the variety might be of general interest.

Stephen G. Rich
Ithaca, N. Y.

THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

A special meeting of the American Phytopathological Society and its Pacific Division, was held at the University of California, from August 3 to 5. Addresses of welcome were delivered by Dr. Herbert J. Webber, director of the Citrus Experiment Station and Dean of the Graduate School of Tropical Agriculture, Riverside, California, and Professor R. E. Smith, president of the Pacific Division of the society.

Dr. Haven Metcalf responded for the society.

The following program was presented:

International Phytopathology: Otto Appel, Dahlem, near Berlin, Germany. (Read by Dr. C. L. Shear. This will be published in full in *Phytopathology*.)

Pythiacystis Infection of Deciduous Nursery Stock: E. H. Smith, University of California, Berkeley, Calif.

A dieback of young deciduous trees, which occurred extensively in northern California the past two seasons, has been traced to a species of *Pythiacystis*, morphologically identical with *P. citrophthora*. Most of the root stock is apparently immune, but above the bud the bark is infected in one to several cankers, which often girdle the tree and kill back the whole top. Profuse gumming occurs. The fungus has been isolated from peach, almond, pear and plum, and the disease produced by inoculation in apple, pear, peach, almond, apricot, prune and cherry, all from one-year-old stock. Similar cankers have been produced by inoculation with *P. citrophthora* isolated from lemon fruit. A pythiaceous fungus has been twice isolated from almond cankers and successfully inoculated into almond, which readily develops an oospore stage. This has different characters of growth from the original strain, and a less degree of pathogenicity, but may ultimately be placed in the same species.

Two Eastern Forest Diseases which Threaten the Pacific States: Haven Metcalf, U. S. D. A., Washington, D. C. (with lantern).

The speaker exhibited lantern slides and specimens of the chestnut-bark disease (*Endothia parasitica*) and the white-pine blister rust (*Cronartium ribicola*). The danger which these diseases present to the cultivated chestnut of the Pacific states and to the native stand of five-leaf pines was indicated. Especially to be considered is the danger to the very valuable species *Pinus lambertiana* and *P. monticola*. The speaker advocated rigid state quarantines against nursery stock of the genus *Castania*, the 5-leaf species of pines, and the genus *Ribes*.

Beet Blight: R. E. Smith, University of California, Berkeley, Calif.

Specimens of diseased beets were exhibited and the methods being employed in the study of the disease were explained and illustrated. The structure of the diseased beets was dis-