

spotted moray. Perhaps the most interesting things which came from the surface of the banks were a number of calcareous spheres three or four inches in diameter. They were composed of thin concentric layers and were apparently of organic origin. Further than this no explanation of their origin was forthcoming.

Alfred Russel Wallace has pointed out how typical the Bermudan terrestrial fauna is of an oceanic island. Only three indigenous vertebrates are present otherwise than birds. It is significant that the only mammal is winged, a bat. He expresses surprise at the small number of insects described. Since the publication of his book the list has been swelled to over three hundred. That a considerable proportion are not indigenous is evident from the fact that twenty species were found en route for Bermuda on one ship sailing from New York. The gulf stream flowing within one hundred miles to the west of Bermuda, the drift of the surface water from the south and west, and the West India hurricanes were no doubt the important agents in bringing animal life from the North American continent.

J. E. KIRKWOOD,

Corresponding Secretary.

THE ELISHA MITCHELL SCIENTIFIC SOCIETY OF
THE UNIVERSITY OF NORTH CAROLINA.

THE 159th meeting of the society was held in the chemical lecture room, Tuesday, 7:30 P.M., March 14, 1905. The following papers were presented:

PROFESSOR A. S. WHEELER: 'Normal Paper.'

PROFESSOR W. C. COKER: 'The Mutation Theory.'

PROFESSOR J. E. MILLS: 'Chemical Affinity: A Method for Distinguishing Chemical Energy from Simultaneous Physical Energy Changes.'

ALVIN S. WHEELER,

DISCUSSION AND CORRESPONDENCE.

NATURAL MOUNDS.

IN Dr. Brauner's interesting article on 'Natural Mounds' in *SCIENCE* for March 31, he mentions the fact, in connection with the distribution of these mounds in the Mississippi Valley, that they follow up the valley of the Arkansas and of the Neosho rivers across

Indian Territory into southeastern Kansas. These mounds are exceedingly abundant in southwest Missouri also. They are a characteristic feature of the landscape in Lawrence County, Mo. (second tier of counties from Kansas and from Arkansas), where the writer lived for many years. They are abundant both in the timber and on the prairies, but are more noticeable on the prairies because of the fact that on them the prairie grasses give place to taller forms of vegetation. Before the lands were put in cultivation these mounds were from one to three feet high, and usually twenty to thirty feet in diameter. On newly reclaimed land crops grow much more luxuriantly on the mounds than elsewhere. Corn is usually the first crop planted on new lands in that section, and it is usual for corn on mounds to grow nearly twice as tall as on surrounding areas the first year. This difference in growth gradually disappears as cultivation continues.

These mounds have probably originated from different causes in different regions. In southwest Missouri their origin is probably due to the following cause: The soil of the region has been formed from the decay of the great sub-carboniferous limestones. Where these strata are exposed in cliffs there may occasionally be found concretions of flint several feet in diameter. The flint is broken into rather small fragments, which fall apart more or less when the surrounding limestone disintegrates into soil. The flint resists disintegration far greater than the limestone. These masses of flint fragments later become prominent as mounds by the more rapid denudation of the surrounding soil containing comparatively little flint. This theory is strengthened by the fact that the material forming the mounds to a depth of several feet consists very largely of small flint stones.

W. J. SPILLMAN.

U. S. DEPARTMENT OF AGRICULTURE.

SPECIAL ARTICLES.

AN ALTERNATIVE INTERPRETATION OF THE ORIGIN
OF GYNANDROMORPHOUS INSECTS.

THE occasional occurrence in the groups of ants, bees, wasps and butterflies of individuals