Evidence is continually increasing that in different coral-growing areas different processes have gone on and that since all coral islands have not been made in the same way no single, all-comprehensive theory is possible.

Dr. Guppy found at the Solomon Islands that, adjacent to the shore, corals grew vigorously, while outside of this zone there was a space where debris from the shore so fouled the water that no corals grew, while still farther out they grew finely. It is easy to see that the first zone would make a fringing reef, the zone affected by debris would be open water, and the outer zone a barrier reef, and thus these varieties of coral formation be produced without the conditions of either theory. Nor is it at all improbable that other methods of coral island making may be discovered as further investigations reveal new facts, and, while it may be regarded as most probable that Mr. Murray's theory will be held sufficient to explain the larger part of the coral formations of the globe, it is also probabable that Mr. Darwin's views will never be wholly set aside, but will always be needed to account for extensive groups of reefs and islands, while here and there all over the region of coral island making there will be found phenomena which require other explanation because of special peculiarities.

THE PROTECTION OF OUR WILD PLANTS AND ANIMALS.

BY JOHN GIFFORD, SWARTHMORE COLLEGE, PA.

A FEW years ago an association for the protection of plants was founded in Switzerland at Geneva. Tourists, and even botanists, were guilty of such vandalism that many feared the extermination of certain rare plants. By the dissemination of seeds and other means, however, many species have been protected by this society in Switzerland and elsewhere.

Although we have forestry associations in this country we have as yet done nothing toward the protection of rare plants.

In south Jersey, for instance, there are many unusual and beautiful species, but owing to the action of winds, fires and voracious botanists they are becoming gradually scarcer.

Along the beaches of the seashore the forests are destroyed for the building of resorts, in other places they are buried by moving sand dunes. The *Schizæa pusilla* is a little fern, which is not found elsewhere in the United States. It grows in three or four isolated patches in the low pine barrens of south Jersey. One patch has already been almost wholly destroyed by forest fires, and from the others hundreds of specimens are carried away by greedy botanists every September. The extinction of this species is only a question of a very few years.

This applies to almost every locality in the United States. There are few places which cannot boast of a few rare species.

The writer knows of one instance where a class of young botanists exterminated a patch *Aplectrum hiemale*, in a region where it was very rare, by eating the corms.

In spite of game protective societies, owing to the thoughtlessness of sportsmen, many of our wild animals have disappeared. A few deer still linger in the pines of south Jersey, but every season their number is remarkably lessened. Had they a place of refuge where they could always remain unmolested, their extinction could be prevented.

It is hoped that the Government may set aside in every state a tract of guarded land. A few acres showing the nature of the country in the wild state will be appreciated more in years to come than at the present time. There the trees may remain untouched, there remarkable and unusual plants may grow in safety, and there the wild animals may find a refuge. The advantages of such a scheme are too numerous to mention. The retaining of a typical portion of each kind of territory in every state, together with its plants and animals, guarded every day of the year, would not only delight the naturalists and lovers of nature, but would insure at least a small portion of forest country here and there, which tends to lessen in many ways the destructive forces of nature.

Dr. Charles Dolley and others of the American Association for the Advancement of Education have arranged to collect and preserve on their property at Avalon all the plants peculiar to the beaches of the Jersey coast. This is one of the objects of the association, and it hopes to control some land in the low pine barren region where no man will be allowed to botanize or hunt.

*See Westwood's Modern Classification of Insects on Larval Mycetophilidæ.

SILK SPINNING FLY LARVÆ.

BY H. GARMAN, LEXINGTON, KY.

IN a brief paper printed in *Science* recently a silk spinning cave larva was described by me and referred to the order Diptera. Its general appearance and its habit of making a thread are features in which it approaches the larvæ of Lepidoptera, a resemblance which has been commented on by others in conversation with me since. Yet the larva in question is unmistakably Dipterous, and it was part of my object in publishing the note to call attention in an indirect way to the fact long, but not very generally, known,* that larvæ of certain flies approximate the Lepidoptera, in spinning silken threads. In saying that they produce silk, I wish, however, to be understood as in no way implying that the threads have the exact chemical and physical properties of the silken fibres made by the silkworm. They are silk from the biological, not from the commercial point of view. They are produced by special glands differing little, if at all, from the silk glands of other insects, are employed by these larvæ for a purpose, and are not consequently to be compared with the trail of slime left by a slug or worm.

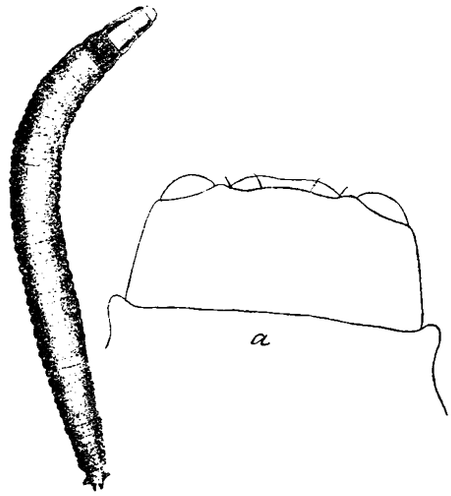

FIG. 1.

My attention was first attracted to such larvæ while making examinations of Kentucky caves. I have, however, been long familiar with other larvæ belonging to the same order, which habitually spin threads having a very important relation to their welfare. In small streams in McLean County, Illinois, occurs a larval Simulium which produces such threads. Another species is extremely abundant in rills in eastern Kentucky, where the rocks