

vegetation of grasses with a number of other small plants, their roots being matted together in an almost continuous mass, possessing a certain degree of elasticity. During the rainy seasons this stratum absorbs a considerable quantity of water, getting thus much softer and offering less resistance to the underlying loam and its downward thrust. The whole mass is therefore in a state of plasticity, and consequently a sliding motion begins more or less as if it were a glacier. The slope not being uniform in all its parts, nor the disintegration of the rock everywhere of the same depth and degree, it follows that the sliding too will be unequal, and so an extraordinarily complicated system of stresses and counter-stresses is developed, which of course causes the surface to take a wrinkled or wavy appearance. I have tried in vain to find numerical values for the limits of sloping which allow of the formation of these surface-waves or ledges; the fact is that it depends to a considerable degree on the interior conditions of the soil and subsoil, which are not visible from outside. The lowest slope, however, that I

have seen covered with ledges, was between 8° and 10° , the steepest 45° . The total amount of sliding soil is in some places far from being insignificant. I remember a locality in this neighbourhood, where there was twenty-five years ago a shallow depression, in which during each rainy season a small pool formed with *Najas microdon*, A.Br., *Wolffia Welwitschii*, Hegelm., and even *Marsilea subangulata*, A.Br. This depression has gradually been filling up, and is now on the verge of disappearing altogether, the material having been derived from a grassy slope on its northern side, which is covered by finely developed ledges.

My observations refer to the valley of Caracas; but as identical causes must be at work in other countries, it appears to me that everywhere the formation of ledges on mountain-slopes and hill-sides will probably depend, first of all, on the conditions of the ground and its vegetation, the action of earthworms being of secondary importance.

Caracas, January 6.

A. ERNST.



FIG. 1.

A MOVABLE ZOOLOGICAL STATION.

IN Bohemia, much attention has been given for more than twenty years to the study of the fauna of ponds and lakes, but the work has been rendered difficult by the impossibility of the organisms being examined instantly in their habitats. The transportation of the material a long way has led to most of the finer objects being de-

stroyed. Last year, a little movable station, suitable for real biological work, constructed after a sketch drawn by Dr. Ant. Fritsch, was presented by Mr. Ferdinand Perner to the Committee for the Physical Exploration of Bohemia; and there is good reason to hope that the use of this structure may be attended by important scientific results. There is room (12 square metres) for from two to four workers. The building consists of eighty pieces, the

total weight being 1000 kilogrammes. Two windows on the northern side are closed by wooden covers, which, when opened, present two ample working tables. The building-up of the station at the first place to which it was sent (a pond near Biechovic) required two hours and a half.

The scientific work began in the second half of June, and since that time, every week or fortnight, Dr. Fritsch with his assistants has visited the station. After the temperature of the air, and of the water on the surface and at different depths, has been noted, the surface fauna is taken by a tow-net (Fig. 2, 1). This contains mostly Copepods, Rotators, and *Daphnia kahlbergensis*, Schoedler. Then the fauna at a depth of 1 metre is taken by a net fixed on a long bamboo (Fig. 2, 2). The net contains generally the genera *Daphnia*, *Bosmina*, and *Leptodora*. Next, the fauna at a depth of 2 metres is taken by a long net (Fig. 2, 3), on which weights are fixed, and which is drawn out of the water by a string that closes the net by tightening it in the centre. This manipulation prevents the fauna from a depth of 2 metres

from being mixed with that of the higher portions of the water. Large Daphnids are found here in great numbers. The same instrument is used in deeper parts of the pond. Mud is carried up by a strong net (Fig. 2, 4), and washed in sieves (7 and 8). The *Allona leydigii* is a common appearance there. These operations finished, the littoral fauna at various places is taken, consisting most commonly of large *Sida* and *Lynceus*. Fishing has been carried on in the same way by night, in January, under the ice-cover. Sometimes carp (*Cyprinus carpio*) have been taken at night, that the contents of their alimentary canal might be examined. The living material acquired in this manner is carefully killed by osmic and chromic acids, and preserved in strong alcohol.

The investigations will be continued throughout the year, and the results afterwards published in the *Archiv für naturwissenschaftliche Landesdurchforschung von Böhmen*. The station will, by and by, be transferred to some of the ponds in Southern Bohemia, or to one of the mountain lakes.

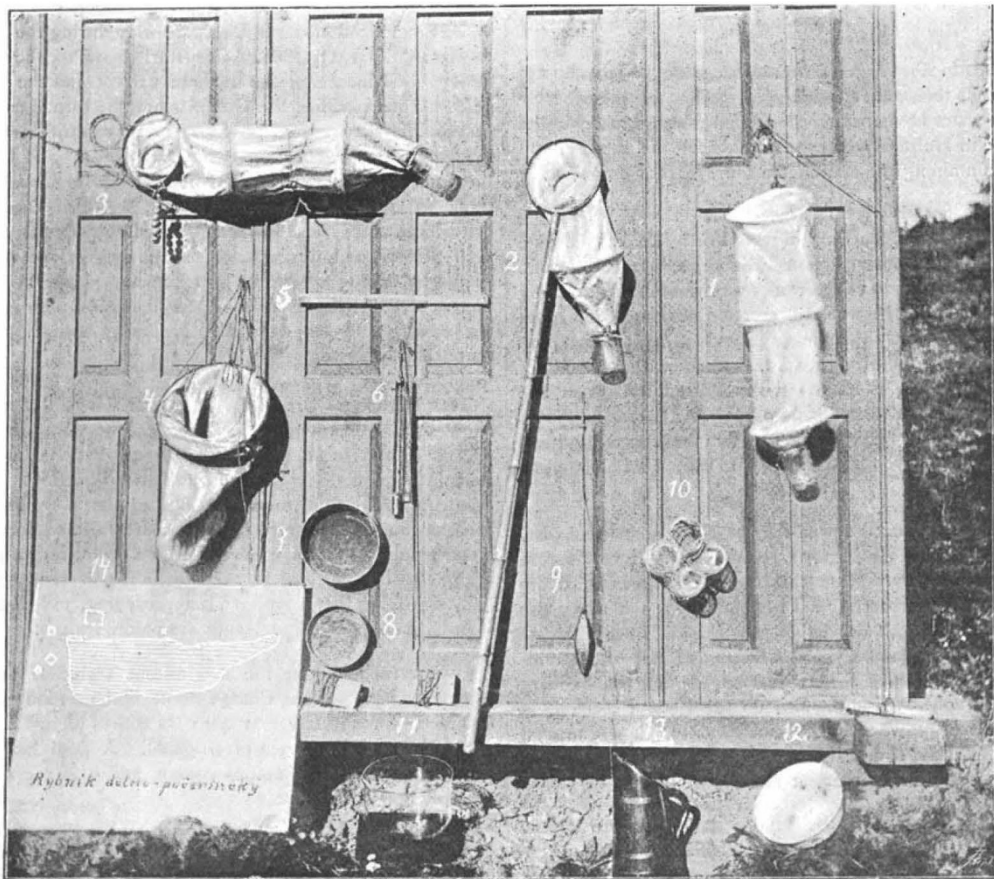


FIG. 2.

NOTES.

ARRANGEMENTS are being made by the Berlin Academy of Sciences for an interesting scientific undertaking. During the summer of this year a ship is to be despatched for the investigation of the pelagic fauna of the Atlantic, especially along the coast from Greenland to Brazil. Prof. Hensen, of Kiel, will be at the head of the party, which is expected to start in July.

THE death of M. G. Meneghini is announced. He had been Professor of Geology at Pisa from 1849, and died at the age of 78.

WE have also to record the death of Dr. Heinrich Ernst Karl von Dechen, the eminent geologist and mineralogist, well known for his numerous works on geology. He was born at Berlin on March 25, 1800, and died at Bonn on February 15.