and states that frogs attack carp by "sticking fast" to their heads. Possibly naturalists, unknown to me, may have already thrown light on the origin of a tale which hitherto I have regarded as a fisherman's story of the conventional type.

On March 29 my son directed my attention to a large golden carp (*C. auratus*) lying in shallow water near the edge of a pond in my garden with a frog or toad apparently resting on its head. The fish appeared to be very sluggish, and made no attempt to escape from a landing-net with which it was easily brought to shore. On examination it was found that the head of the fish was held tightly by a medium-sized common toad (*Bufo vulgaris*), which had obtained a very firm grasp by inserting its fore-limbs as far as the second, or elbow, joint into the sockets of the eyes of the unfortunate fish. The ghoulish-looking toad lay on the top of the fish's head facing its tail, and with its hind legs hanging in front of the fish's mouth. At first the appearance of the eyes of the fish led me to think they had been ruptured, but closer examination showed they were merely displaced and turned partially round owing to the pressure exerted by the intrusion of the toad's limbs between the eyes and their sockets.

On carefully withdrawing the toad's fore-limbs, which were inserted to the extent of about 1 inch within the eye-sockets, the eyes returned to their normal position apparently uninjured, but during their displacement the fish must have been quite blind. No effort of the fish could have rid itself of the toad after it had once obtained the remarkably firm grasp which has been described, and it appears very probable that the fish would have died in a short time. How the toad in the first instance obtained a hold in the sockets of the fish's eyes appears very puzzling, but a probable reason for its attempt to obtain a grasp, and for it holding on when a grasp was obtained, may perhaps be found in the unreasoning instinct which toads appear to possess at spawning time of grasping something firmly with their fore-limbs. A few years ago in the same pond referred to above I found a toad embracing a water-logged puff-ball so firmly that it required considerable force to release the fungus from the amphibian's grasp.

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The Atomic Weight of Nickel.

IN a recent number of NATURE (February 14, p. 367) Dr. Barkla gave reasons, based on experiments in connection with secondary Röntgen radiation, for assigning to nickel a new atomic weight. Dr. Barkla studies the penetrating power of secondary Röntgen radiation, shows that it depends on the atomic weight of the element, and from the values found for nickel, in comparison with those found for copper and iron, he argues that nickel appears to have the atomic weight of 61·3 instead of the usually accepted value of 58·7.

Prof. McClelland (Trans. Roy. Dub. Soc., vol. ix., part i., 1905) showed that the intensity of secondary β radiation from different elements for the same exciting primary β rays depended on the atomic weight, and that a small difference in atomic weight could be detected in this way. According to Dr. Barkla, nickel has an atomic weight somewhat greater than cobalt, instead of the value, slightly less, given by chemists. If this were so, the intensity of the secondary β radiation from nickel should exceed that from cobalt.

I have recently repeated the observations of Prof. McClelland, using a very sensitive apparatus. Cobalt and nickel gave practically the same secondary radiation; if there is any difference, that given by cobalt is slightly the greater. The values found for these elements, compared with those obtained for copper and iron, correspond with their relative positions in the table of atomic weights. These results obtained with secondary β radiation do not, therefore, point to the conclusion suggested by Dr. Barkla, and are in good agreement with the chemical determination of the atomic weight of nickel.

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Light Sense-Organs in Xerophilous Stems.

IN view of the recent work of Haberlandt on the light sense-organs of leaves, it may be of interest to record the discovery of similar organs in xerophilous stems. Certain of the epidermal cells of the young stems of the Ephedreæ have on their external wall conical structures of the nature of papillæ, the core of the papilla being mucilaginous. This structure acts as a collecting lens focussing the incident rays of light, and a definite area of the cytoplasm of the back wall of the cell is thereby illuminated. Fig. 1, which is a photomicrograph taken

FIG. 1.—*Ephedra Altissima* showing Light Spots.

in diffuse light of a mounted preparation of epidermis, shows the appearance of these light spots as seen under 1/6 objective.

Of any object held in the path of the incident rays an image is formed by each of these light sense-organs.

Fig. 2 is a similar preparation to Fig. 1, but shows in each light spot the image of a hand held at a distance of about 2 feet in front of the microscope.

In the xerophilous Ephedreæ, where the assimilatory work is performed by the stems, and in correlation with

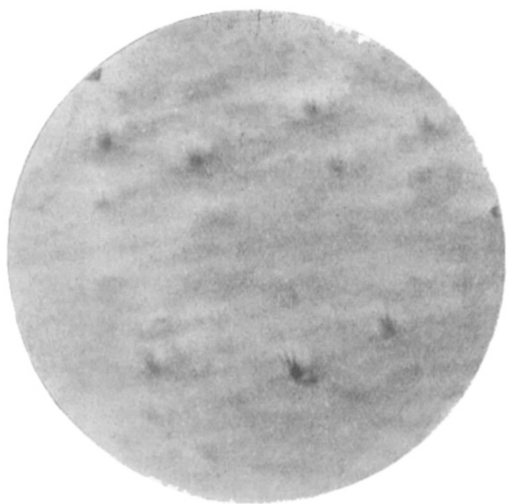

FIG. 2.—*Ephedra Altissima* showing image of hand in each Light Spot.

which the histological character of the cortex is markedly similar to that found in the mesophyll of a leaf, the existence of such structures as these light sense-organs so characteristic of leaves is not by any means unexpected.

An examination of other stems is in progress.

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