they are found to be more numerous in the dark-adapted retina than in the light-adapted one, the extent of their presence is more or less in correspondence with the conditions responsible for the regeneration and the bleaching of visual purple.

When sections of light-adapted eyes of field mice are compared with sections of dark-adapted ones, the droplets occur in considerably reduced numbers in the sections of the light eye as compared with those in the dark eye; and the histological comparison corresponds closely with that found in the gecko eye under the same conditions. However, a comparative study of light and dark-adapted eyes of Eremias (a diurnal lizard possessing cones only) shows a total absence of these droplets under both conditions.

The exclusive presence of these droplets in rod retinæ, as well as the difference which exists between eyes kept in darkness and those exposed to light, is highly suggestive that they are concerned with the appearance and disappearance of visual purple under the two respective conditions, although it would be premature to say definitely that they represent a histological picture of this pigment.

A more complete account of these experiments and of additional ones will be forthcoming.

The intermediate host of schistosoma japonicum in China.

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The snail which acts as the intermediate host of *Schistosoma japonicum* in Japan has been known since 1913 to be *Blanfordia nosophora*. No intermediate host for the parasite has heretofore been described for China. We selected the endemic region about Soochow, in Kiangsu Province, for our search. Our method

consisted of first finding a case of the disease and then hunting in the neighborhood of the patient's home for a snail somewhat similar to *Blanfordia nosophora.* On August 11, 1922, such a snail was found in large numbers on the shore of a small terminal canal near which many cases of schistosomiasis japonica resided. Examination of these snails by crushing their shells revealed a five per cent. infection with cercariae morphologically similar to that of *Schistosoma japonicum.* A mouse immersed in water containing these cercariae was found, thirty-one days later, to harbor adult forms of *Schistosoma japonicum* in the portal and mesenteric veins. Snails of this type were exposed to miracidia of *Schistosoma japonicum* and at intervals thereafter were killed, and showed in serial section the development of the sporocyst and cercaria forms of the parasite.

The snail which acts as the intermediate host of *Schistosoma japonicum* in the Soochow district is an operculate gasteropod averaging 6.4 mm. in length by 3.0 mm. in breadth. Its shell is acuminate in form, has seven spirals, is dextrally coiled, is of dense consistency and has closely set ridges running perpendicular to the spiral groove of the shell. Its shell differs from that of *Blanfordia nosophora* in its greater density, its ribbed surface and its greater breadth in proportion to its length. These features place the Chinese intermediate host in a different genus from the Japanese host. Owing to the difficulty of correctly classifying the members of the genus to which this snail apparently belongs, we have referred it for classification to an expert malacologist, Mr. Bryant Walker of Detroit.

The snail was found in the Soochow district on the shore of small canals, particularly terminal ones. It was usually found just above the water's edge, and in fewer numbers just beneath the surface of the water. It preferred secluded spots protected from the sun. It was not found in the rice fields, probably because in this district the fields are from four to six feet above the level of the canals, and are therefore too dry for the snail's existence.

In order to check up by biological phenomena the morphological similarity of the forms of *Schistosoma japonicum* developed from Japanese and Chinese material, we exposed the Japanese intermediate host to miracidia from a Chinese patient, and the Chinese intermediate host to miracidia from a dog infected with

cercariae obtained from specimens of *Blanfordia nosophora* from Japan. In both cases serial microscopic sections of snails so exposed showed the successful penetration of the snail by the miracidia. The biological similarity of the Japanese and Chinese forms of *Schistosoma japonicum* is therefore demonstrated.

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Factors controlling the electrolyte and water distribution in the blood.

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In combining the known facts to form an inclusive quantitative expression of the phenomena of electrolyte and water distribution we have assumed for the blood the validity of the following physico-chemical laws:

I. At and near the neutral point all strong alkalies are in the form of salts. At blood reaction therefore the total base may be represented as BP + BA, when BP represents the alkali protein salts, BA the salts bound by the alkali with other negative radicles, chiefly Cl' and HCO_3'.

II. The law of Donnan governing the influence of non-permeating ions on the distribution of permeating ions on the two sides of a membrane holds for the membranes of the blood cells. Donnan's theory has been provided with a sound basis of experimental proof by Donnan, by Proctor and Wilson, and especially by Loeb's recent study on the osomotic and electrical behaviors of protein solutions.

III. The osmotic activity of each solute is proportional to the ratio $n : N$, of gram molecules of solute to gram molecules of water. The presence of the serum proteins, according to the vapor tension determinations of Neuhausen, does not affect the