

in cats (young) loss of reflexes for 30-40 minutes; in cats (old) loss of reflexes for 50-70 minutes; in dogs, loss of reflexes for 75-90 minutes.

In the turtle transverse lesion of the cord usually does not abolish the reflexes except momentarily. This is also true for the pigeon. In other words, lesions of the dorsal roots produce the same shock effects on the spinal reflex mechanism of the limb involved as transverse lesion of the cord itself.

The present theories of spinal shock may be summarized under three heads, viz., (a) inhibition due to the trauma; (b) loss of tonus impulses to the reflex centers; and (c) lesions of the reflex arcs themselves.

The last theory is not applicable to these results. Either one or both of the other two may be applicable to the results here reported. That is the shock may be due to the temporary effect of absence of tonus impulses, or to irritation of inhibitory nerves, or to both of these.

The work is being continued with the purpose of determining this point.

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A NOTE ON THE OCCURRENCE OF TWO WEST
INDIAN FISHES AT BEAUFORT, N. C.

DURING August, 1907, the writer collected in the harbor of Beaufort, N. C., two fishes which are for the first time reported from this locality. Both forms are of the tropical and subtropical faunas. A small specimen of *Abudefduf saxatilis* Linn., was seined August 10, 1907, at the Fort Macon jetties. Its length is 2.25 inches. The other form is *Ulæma lefroyi* Goode. A number of these were taken in a dipnet at Pivers Island, August 3, 1907. The smallest fish measured 0.40 inch in length, the largest 0.52 inch.

In order to ascertain the identity of these small fish, which had evidently been hatched only a few days prior to their capture, they were placed in an aquarium of running sea water, and there they were successfully reared. During the first week they were fed on copepods and larval crustaceans which were strained from the tow; this food was then changed to grated oyster on which they thrived

vigorously. September 2, 1907, the smallest *Ulæma* measured 0.91 inch in length, the largest 1.12 inches; the rate of increase in length averaged 120 per cent. This method of rearing fry was employed this season for *Fundulus majalis*, which were hatched in the laboratory from eggs which had been artificially fertilized. The young *Fundulus* were reared until they had attained a length of 0.75 inch, when an accidental overflow of the aquarium permitted the fish to escape.

On August 21, 1908, on the landward side of one of the large shoals in the harbor, numbers of small specimens of *Ulæma lefroyi* were collected in a small seine of fine mesh.

For the opportunity of making these observations the writer is indebted to the Hon. Geo. M. Bowers, U. S. Commissioner of Fisheries.

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CATALYTIC REDUCTION OF FATS AND OILS

ABOUT four years ago it was shown by Paal and Amberger¹ that palladium could be obtained in a particularly active colloidal aqueous solution (hydrosol). Subsequently the senior author demonstrated² that this liquid, in presence of hydrogen, was capable of causing the catalytic reduction of nitrobenzene. The work has now been extended to include certain other substances,³ the most generally interesting of which are oleic acid and a number of oils.⁴

The acid, in the form of its potassium salt, is dissolved in water and mixed with a small quantity of the palladium solution; the liquid being then introduced into a gas-burette containing hydrogen, standing over mercury. Absorption of the gas commences immediately and the reaction is completed in a few hours. No heating is required. Oleic acid, under these conditions, is converted almost quantitatively into stearic acid. Castor oil, dis-

¹ Ber., **37**, 124 (1904); **38**, 1398 (1905).

² Ibid., **38**, 1406, 2414 (1905); **40**, 2209 (1907).

³ Ibid., **41**, 2273.

⁴ Ibid., **41**, 2282 (1908).