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The Effect upon Amphibian Differentiation of Feeding Iodofibrin, Iodoedestin and Iodogliadin.

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Previous work by the writer[1] showed that the blood proteins, serum albumen and globulin, when fed to normal, thyroidectomized, or hypophysectomized frog larvae, exert no effect upon differentiation; but when properly iodized these same substances greatly accelerated the differentiation changes incident to metamorphosis. It will be recalled that thyroidectomized and hypophysectomized tadpoles do not metamorphose, but permanently retain their larval characters unless fed, injected, or transplanted with thyroid.

Iodofibrin.

Ten grams of pure fibrin from beef blood was pulverized and mixed with five grams of KI and two and a half grams of KIO_3. To this mixture was added a solution containing 2 cc. of concentrated H_2SO_4 and 300 cc. of water. The material was heated in a water bath at 90°—100° C. for 4 hours and stirred frequently. It was then filtered, washed first with water and then with dilute NH_4OH, followed by washing with water, alcohol and ether. The resulting product was iodofibrin.

Thirty completely hypophysectomized *Rana sylvatica* tadpoles averaging 30 mm. total length and showing no indications of metamorphosis were fed iodofibrin. Within 24 days, the entire culture, with the exception of 7 larvae which died at various stages of transformation, had differentiated to the stage where the animals had fore and hind limbs, frog mouth and marked tail resorption. All of the animals died at this stage of transformation.

A control culture of 30 hypophysectomized larvae fed non-iodized fibrin showed no metamorphic change at the end of 30 days feeding. The same experiment was repeated on completely thyroidectomized tadpoles with similar results.

Iodoedestin and Iodogliadin.

These 2 proteins were purchased in Germany and the method of iodization is unknown to the writer. Two series of 20 animals each, of thyroidectomized and hypophysectomized frog larvae,

were fed iodoedestin and iodogliadin. Every third day a small quantity of algae were fed along with the iodized proteins. The hind limbs of the animals grew rapidly at first, but later, limb growth slowed down and metamorphic changes progressed slowly. It required 3 months of continuous feeding to bring the animals of these cultures to the same stage of metamorphosis as that which resulted from 20 days feeding with iodofibrin.

It was noted that considerable of the iodine split off from the edestin and gliadin after the powdered material had been in the water for an hour. Such was not the case with iodofibrin. It seems probable that the method of iodization employed has much to do with the activity of iodized proteins in accelerating amphibian transformation.

[1] Swingle, W. W., *Biol. Bul.*, 1923, xlv, 229.

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The Effect of Forcing Fluids, upon Survival after Bilateral Epinephrectomy.

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Previous work done by several investigators has shown that the administration of certain solutions may result in prolongation of life beyond the usual period in epinephrectomized animals. Stewart and Rogoff[1], working on dogs, report that intravenous injections of Ringer's Solution and dextrose prolonged life. Zwemer[2], working on cats, in this laboratory, was able to keep double operated animals alive for considerable periods by administering orally 5 per cent solution of glucose. This work suggested the possibility that forcing fluids containing various substances might prove beneficial in the treatment of adrenal insufficiency. Zwemer and Swingle have noted and commented upon the symptoms of dehydration which appear after bilateral epinephrectomy in cats, and, the fact that animals, presenting marked symptoms, eagerly drink large quantities of water up to within a few hours of death.

The procedure followed in the present work was to remove the left adrenal and after a lapse of 5 to 10 days extirpate the remaining glands. Untreated cats subjected to this procedure generally