tion. (In some strains, the stimulation is more limited than in others.) It augments the potency of the follicle-stimulating hormone (FSH) judged either by increase in follicular development or in uterine weights. It is to be emphasized that one half unit or 0.0025 mg of the substance, when combined with 2 RU of FSH, doubles the uterine weight in immature hypophysectomized rats. Shedlovsky *et al.* do not report tests essential for establishing the freedom of their material from contamination with other hormones of the anterior hypophysis. The substance herein reported is free of follicle-stimulating effects when given in 600-fold the MED for repair of the interstitial tissue; no thyrotrophic hormone was detected at the 0.50 mgm level in the one-day-old chick thyroid weight test; no growth-promoting activity or adrenocorticotrophic effect was detected in hypophysectomized rats when injected at a total dose of 8 mg in 10 days; the local crop test for lactogenic hormone was negative at 0.68 mgm.

2. *Chemical characteristics.* The protein contained 14.2 per cent. of nitrogen with approximately 4.5 per cent. of tyrosine and 1 per cent. of tryptophane. The carbohydrate content remained constant on repeated ammonium sulfate fractionation; analysis showed 4.45 per cent. mannose and 5.86 per cent. glucosamine.

3. *Physical study* (cataphoresis) has indicated the homogeneity of the protein. The schlieren picture obtained in the Tiselius apparatus showed only one boundary by scanning the whole field after electrolysis for 90 minutes. The mobility of the protein was found to be -6.36×10^{-5} in phosphate buffer of pH 7.53 and ionic strength 0.05 at 1.5° C. Electrophoresis experiments showed the isoelectric point to lie between pH 4.6 – 4.8. It is to be noted that in contrast with our results, Shedlovsky *et al.* obtained a mobility of 0.66×10^{-5} at pH = 7.86 and an isoelectric point of pH 7.45. It may therefore be said that although proteins with similar biological properties have been isolated by two laboratories, the results from electrophoretic study are so different as to forbid identification of the substances in question.

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THE BLACKENING OF COOKED POTATOES

THE blackening of cooked potatoes is a different process from the darkening that occurs when raw peeled potatoes are exposed to air; the latter darkening is known to be due to melanin. Although both darkening processes are oxidations, the synthesis of melanin involves an enzyme whereas the other type does not require one. Potatoes which did not darken when kept in an atmosphere of nitrogen during boiling and cooling blackened when removed to the air.

Certain properties, including the ultraviolet absorption spectra of the pigments from the darkened raw and cooked potatoes, were compared. Those of the blackened cooked portions differed markedly from the melanin and, moreover, showed properties similar to flavones.

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SCIENTIFIC BOOKS

CATASTROPHISM VERSUS EVOLUTIONISM

The Material Basis of Evolution. By RICHARD GOLDSCHMIDT. 436 pp. New Haven: Yale University Press. 1940. Price $5.00.

THIS book contains the only basically new theory of organic transformation propounded during the current century. For notwithstanding the colossal literature concerning organic evolution which has accumulated since the publication of Darwin's "Origin of Species," only three main types of theories can be distinguished. One type is based on Lamarck's assumption of direct adaptation by inheritance of results of use or disuse of parts. Other theories are built on Darwin's principle of natural selection of the fittest variants produced by interactions of the organism's inherited structure with the external as well as internal environments. Theories of the third group assume autogenesis, that is, unfolding of the potentialities hidden in the organism, impelled by an urge toward development in a certain direction. According to all these theories organic transformation takes place by evolution, that is, gradually by accretion of more or less small changes. According to Goldschmidt, however, it occurs by cataclysmic upheavals rather than by summation of individually small steps.

Lamarckianism has become obsolete owing to its basic assumption having fallen short of experimental verification. Autogenesis has always been in conflict with the principle of causality in vogue in the materialistically-minded modern science. Darwinism underwent great changes because of the forward strides of genetics, but the unbroken continuity of ideas between the "neo-Darwinism" and Darwin's original theory is evident. The appearance of Goldschmidt's book connotes an at least temporary end of the undivided reign of neo-Darwinian theories. For Goldschmidt not only relegates natural selection to a place