

be noticed in Table 2 that as long as the *lem* gene is present in homozygous, the enzyme activity is very low. However, the lack of xanthopterin-B does not necessarily indicate the presence of the enzyme, since, for instance, in the mutants "Striped" marking (*p*⁸) and "od-translucent" (*od*), these genes have also an effect of suppressing the accumulation of xanthopterin-B¹.

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Résumé

Nous avons démontré qualitativement chez le *Bombyx mori*, l'existence d'un ferment qui attaque la xanthoptérine-B, une substance fluorescente du type ptérinique qui se trouve dans les intégruments des larves de race jaune «lemon», et se transforme en une substance non-fluorescente. Le ferment se trouve dans les épidermes, tissus adipeux des larves et dans les œufs et cocons des *Bombyx* de type normal. Chez les mutants de la race jaune, l'activité du ferment est faible ou nulle dans bien des tissus. Cependant on ne peut pas nécessairement dire que la présence de ce ferment conduit à l'absence de la xanthoptérine-B, parce que l'accumulation de xanthoptérine-B est supprimée par l'action d'autres gènes chez les mutants «Striped marking» (*p*⁸) ou «od-translucent» (*od*). Dans ces derniers l'activité du ferment est en effet très faible.

¹ H. ARUGA, N. YOSHITAKE, and S. ISHIKAWA, J. Sericult. Sci. Japan 20, 399 (1951).

Concerning the Biogenesis of Lysergic Acid

Recently VAN TAMELEN¹ has proposed a biogenetic route to lysergic acid (VI, *R* = CH₃) having its origin in the coupling of a dihydronicotinic acid (or derivative) with a quinone imine derived from 5-hydroxytryptophan.

¹ E. E. VAN TAMELEN, Exper. 9, 457 (1953).

The present writer would like to suggest the relatively simple and direct biogenetic pathway to lysergic acid involving the condensation of tryptophan (I) with citric acid (III).

The transformation of IV → V by dehydration with accompanying loss of carbon dioxide is based on extensive precedent, e.g., the conversion of citric to itaconic acid¹ and the formation of desmethylaxerophthene in the synthesis of vitamin A acid².

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Merck & Co., Inc., Rahway, N.J., February 13, 1954.

Zusammenfassung

Ein biogenetischer Weg zur Lysergsäure, bestehend in der Kondensation von Tryptophan mit Zitronensäure, wird vorgeschlagen.

¹ R. ANSCHÜTZ, Ber. dtsch. chem. Ges. 13, 1542 (1880).

² N. L. WENDLER, H. L. SLATES, N. R. TRENNER and M. TISHLER, J. Amer. chem. Soc. 73, 719 (1951).

Oestrus Activity in Fat-Tailed Sheep During the Longest Days

The importance of day-length as a controlling environmental factor has been shown in poultry¹, old-world birds², and in a variety of mammals. Farm animals could be classified in this respect into three classes, those which are short-day breeders, such as sheep³ and goats⁴; those which are long-day breeders, such as poultry, including pheasants⁵; and those which are not particularly responsive to daylight environment, such as rabbits. The conventional view of photoreception is that light received by the eye starts an unknown

¹ E. O. Whetham, J. Agric. Sci. 23, 383 (1933).

² J. R. BAKER, Tabul. Biol. Berl. 15, 333 (1938).

³ E. S. E. HAFEZ, J. Agric. Sci. 42, 189 (1952).

⁴ T. H. BISSONNETTE, Physiol. Zool. 14, 379 (1941).

⁵ T. H. BISSONNETTE and A. G. CZECH, J. Wildlife Management 5, 383 (1941).

