

DATE: November 10, 1976

To : File

FROM : Joshua Lederberg

SUBJECT: 1937-38 Course in Comparative Biochemistry

As this was mentioned so strongly by Regnery - and was also mentioned by <sup>Giese</sup>~~Giese~~ - I tried to track down some record of it.

Not until 1942-43 is Tatum mentioned as being responsible for any course in biology and at that time there is a cross-reference to Chemistry 245 with no specific listing in Biology!

Nor is there any mention of such a course in the annual reports of the department between 1937-39. The 42-43 notation lists the chemistry faculty and under it "with the cooperation of E.L. Tatum, Assistant Professor of Biology".

As Regnery had also talked a good deal about the Drosophila eye color hormone work, I tried to get a clearer record on that and on the question of the competition for priority. Ed's 1941 paper refers to Butenandt 1940 as having anticipated him. Furthermore, Kikkawa also published in Genetics (paper submitted April 1941) on essentially the same subject including the isolation of kynurenine.

Ephrussi 1942 recalls the accidental discovery of the bacterial production of the hormone in the 1939 paper that I had overlooked. This certainly must have reinforced Ed's fascination with comparative biochemistry (a bacterial product functioning as an insect eye color hormone), with serendipity, and with the use of pathway analysis as Butenandt did as an easy approach to the delineation of biochemical intermediates. All this would of course have jibed very easily with Ed's previous work on nutrition.

Recall that Tatum's 1936 paper was on the identification of thiamine as a bacterial vitamin. By 1936 we already have the review by B.C.J.G. Knight which has an unimpeccable evolutionary outlook. At that time he was able to refer to Schopfer's 1935 work on thiamine for phycomyces and he predicts that bacteria will be found to have vitamin requirements but evidently Tatum's paper was the first to establish that. A number of other bacterial requirements but none of them vitamins had been established by that time. Also it had been shown that some bacteria can synthesize vitamins.

(I don't know whether Johne's bacillus nutrition has been worked out - it is an early example of syntrophism.)

Knight's 1947 review may be helpful in illuminating the background of these kinds of studies. And of course recall that Lwoff had been working on this problem since the early 30's. Perhaps look at his Nobel Lecture. Fildes 1934 is credited with the idea that parasitism is caused by loss of enzymes necessary to synthesize cell material. By 1945 the Peterson review could no longer offer a historical perspective, it was so swamped with entries.

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