The respiration of tumour tissue is increased by thionine in similar concentration. With Jensen rat sarcoma, increases of 48–146 per cent were observed in phosphate- and in bicarbonate-media containing glucose; in lactate, contrary to Dodds and Greville's experience with dinitro-*o*-cresol, both thionine and pyocyanine cause a fall.

A marked difference also exists between the behaviour of these three reagents towards the aerobic lactic acid formation in tumours; this is accelerated by dinitro-*o*-cresol[6], diminished by pyocyanine[4] whilst with thionine I find that it is possible to increase the tumour respiration by 146 per cent with little or no effect on the aerobic glycolysis. It may be mentioned that methylene blue in solution of high bicarbonate concentration at *p*H 7·6 caused an increase of respiration of the tumour, accompanied by a slight increase of aerobic glycolysis in some experiments. On the other hand, the more positive system, toluylene blue, in higher concentration, has been found, like ferricyanide[8], to lessen aerobic acid formation. These experiments are being continued and extended to other oxidation-reduction systems.

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Glutathione and Vitamin C in the Crystalline Lens

IN a recent letter, Evans[1] disagrees with our observation that a considerable part of the iodine-reducing substance in the crystalline lens is ascorbic acid[2].

In support of the view that the lens contains an insignificant amount of ascorbic acid, Evans refers to a biological test in which she added crystalline lens to the scurvy-producing basal diet of a group of guinea-pigs, and states that the experimental animals survived no longer than the negative controls, which "indicates that the lens contains only small amounts of ascorbic acid". On account of the present interest of these observations, we wish to point out that in a paper[3] not referred to by Evans we reported a demonstration of the presence of ascorbic acid in the lens of the ox by means of a biological method. It was observed at the time that the curative biological test gave no evidence of the presence of ascorbic acid in the lens, because the experimental animals died before the negative controls, presumably owing to a toxic action of the lens. The same objection holds against the prophylactic method which was apparently used by Evans.

In our final test, therefore, the tooth structure method was used, and the results indicated the presence of a considerable amount of ascorbic acid in the lens. It should be noted that the lens was given to the animals in doses calculated from the 2-6-dichlorophenolindophenol titre to contain 2·7 mgm. of ascorbic acid. Ground desiccated tissue was used and suspended in water for dosing from a pipette. If the lens is added to the diet (as in Evans's experiment), a serious error may be introduced by the oxidation of the ascorbic acid present.

Evans suggests that the Okuda iodine titration method is fairly accurate for estimating the glutathione content of crystalline lens, but also reaches the contradictory conclusion that the lens possibly contains another iodine-reducing substance apart from glutathione or ascorbic acid. In this connexion it may be observed that the rapid reduction of 2-6-dichlorophenolindophenol by an acid extract of the lens indicates the presence of a substance or substances *which ipso facto can also reduce iodine*. Therefore the iodine titration of the lens extract gives a measure not of the content of glutathione alone, but also of the glutathione and the indophenol-reducing substances together.

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Hormonal Interruption of Broodiness in Hens

THE separation of particular hormones effecting broodiness in hens, which is very important from the economic point of view, has been studied by Hertwig and Schwarz[1] with negative results: menformon in quantities of 500 mouse units had no influence upon the interruption of broodiness.

In these experiments four groups of brooding hens and those which had discontinued their broodiness and yet were not laying eggs were used. Different hormones were administered, for a period of ten days. Prolan A, pituitrin and distilled water were administered subcutaneously and the thyroid gland by mouth. Prolan A was given in increasing doses up to a total of 1,600 mouse units; the second group was given dried cattle thyroid gland (0·5 gm. daily) and the third group, pituitrin (Dr. Heisler, Chrast, Czechoslovakia, 0·5–1·0 c.c.) amounting in all to 8 c.c., that is, 48 pigeon units. The fourth group, serving as control, received the same amount of distilled water.

The results show that: (1) the hormones in the amounts given had no influence upon the interruption of broodiness during the experimental period and seven days afterwards. (2) Thyroid gland produced heavy moulting on the fifth day of the experiment and this was continued for a period of seven days. However, the same quantity of thyroid substance had no effect upon the moulting of the breeding hens. (3) The hen from the prolan group, which was not broody but was not yet laying eggs, started to lay five days earlier than the others. (4) The pituitrin administered to hens in such large doses, which were large enough for a man, had no effect upon health, broodiness, or laying.

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