

picture consonant with the findings in acute anaphylaxis in the rabbit—the usual picture of a chronic interference with the circulation; namely, anasarca and greatly dilated right heart.

5. In the guinea-pig dying in acute anaphylaxis, the pulmonary circulation offers no increased resistance to the passage of fluid through it.

29 (1404)

The effect of oxidation on Wassermann antigen.

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In 1914 the authors had occasion to prepare some lecithin by MacLean's method (*Journal of Pathology and Bacteriology*, 18, p. 490). The method (an elaborate one) consists essentially of numerous precipitations out of ether and water, by means of acetone, of the alcoholic extracts of dried beef heart. The purified precipitate is finally dried in vacuo over sulphuric acid. Throughout the work air is excluded so far as possible.

In the present work from 6½ kilos of lean pressed beef heart, about 8 grams of purified lecithin were obtained. The lecithin had a yellowish white waxy appearance and upon analysis was found to contain 4.06 per cent. phosphorus and 1.93 per cent. nitrogen. The nitrogen and phosphorus are in the ratio of one to one. It had an iodine number of seventy. Throughout the procedure every precaution was taken to exclude air by replacement with CO₂ so as to prevent oxidation as far as possible. Some of the lecithin was put in tubes in vacuo, and some in carbon dioxide gas.

The lecithin separated in this way is not true lecithin, but a mixture of true lecithin and kephalin. It possesses however all the properties of the substance generally alluded to as lecithin.

The samples of lecithin put up in tubes have been tested in the Wassermann reaction at various times during the last four years. It has been found that the antigenic property of those tubes which remained perfectly sealed was preserved and remained

of practically the same titer as it was at the beginning. On the other hand, a considerable number of the tubes developed small cracks which admitted some air. The dried antigen in these tubes changed in appearance, becoming very dark and confluent. This presumably oxidized lipid was found to have lost its antigenic value entirely and also to have developed considerably more anticomplementary property than the original had.

The properties of the original preparation as an antigen were about equal to those of the usual lecithin extracted from beef heart. Complete fixation was obtained at a dilution of about 1-180,000 of the lipid. Slight anticomplementary effect was evident at a dilution of 1-7,500. This gives a ratio between antigenic and anticomplementary doses of about 1-25.

MacLean's reason for devising this method of obtaining a pure lecithin was to avoid the oxidation of the unsaturated fatty acid radical in the lecithin. From our observation the same process, oxidation, is what ordinarily results in the loss of antigenic value; antigen can be preserved indefinitely under anaërobic conditions. It is possible that this indicates that the antigenic value is dependent on the presence of the unsaturated fatty acid radical (oleic acid).

30 (1405)

Changes in the concentration of the carbon dioxide of the blood following changes in the circulation through the medulla oblongata.

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It is desirable and even necessary, in attempting to estimate the rôle of the afferent nerves in the regulation of the respiratory movements¹ to investigate more carefully the effects upon respiratory movements of changes in the volume of blood flowing through the medulla oblongata.²

¹ Pike, F. H., and Coombs, Helen C., *American Journal of Physiology*, 1918, vol. 45, p. 569; this journal, 1918, vol. xv., p. 55.

² Pike, F. H., *Science*, 1918, xlvii., pp. 121-122.