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## Experimental liver necrosis: 1. Hexon bases.

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The following conclusions were reached as the results of the analysis according to the Wakeman-Kossel method for the determination of hexon bases of the normal and necrotic livers of dogs and horses in various stages of necrosis and of the same after autolysis for varying lengths of time.

Necrosis was induced in the case of the dog by means of the injection of hæmotoxic immune sera and in the horses by injections of bacterial toxins.

1. The dry solid content of the (*a*) scattered and of the (*b*) diffusely necrotic liver tissue showed no variation from that of the normal.

2. The nitrogen of the dry substance averaged 11 per cent. in the normal liver, 21.7 per cent. in those with scattered necroses (increase 95.4 per cent.) and 12.65 per cent. in the diffusely necrotic (increase 5.3 per cent.).

3. In the cases of scattered focal necroses the nitrogen precipitable by phosphotungstic acid after acid hydrolysis formed 11.3 per cent. and in the diffused necroses 30 per cent. of the total nitrogen as against 15 per cent. for the normal; a decrease of 25 per cent. for the first and an increase of 100 per cent. for the more advanced type of necrosis.

4. The normal dog's liver apparently possesses no hexon-splitting enzyme, or at any rate the arginase is held in abeyance by factors to be discussed in a later paper, since the nitrogen precipitable by phosphotungstic acid after hydrolysis with acids increased from 15 per cent. to 19.5 per cent. after autolysis for periods varying from 4–8 weeks. This increase (30 per cent.) was about equally divided between arginin and lysin.

5. The necrotic livers allowed to undergo autolysis showed approximately the same percentage loss of phosphotungstic-precipitable nitrogen (hexon) despite the extent of the necrosis.

In the focal necrosis the average was 28 per cent., in the diffuse necrosis 21 per cent.

6. No difference could be observed in the rapidity with which the necrotic liver underwent autolysis, the maximum was apparently reached in four weeks. This phase of the subject will be discussed in a later paper.

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## The action of nitric acid on the phosphorus of nucleoproteids and paranucleoproteids.

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The manner in which phosphorus is combined in the true nucleoproteids and in those known as the psuedo (para) nucleo-compounds or phospho-proteins has not as yet been definitely ascertained nor has it been determined that the phosphorus in both classes of compounds is similarly or otherwise combined. Burian[1] has, it is true, suggested that in true nucleic acids phosphorus is the bond between the No. 7 nitrogen of the purin bases and the remainder of the nucleic acid molecule, but this view is founded on the fact that the nucleic acids do not give the diazo reaction which he regards as characteristic of those purins in which there is no substitution of the imide hydrogen of nitrogen No. 7 of the purin skeleton, an explanation of the reaction that is rejected by Steudel who has pointed out that thymin gives the diazo reaction of Burian although it does not contain nitrogen in the No. 7 position.[2]

If Burian's suggestion were accepted it would establish a radical distinction between the manner in which phosphorus is held in nucleic acids and that obtaining in paranucleic acids, for in the latter there are no purin bases.

Whether we do or do not accept Burian's view, it is possible on other grounds to establish a distinction between the two classes of compounds in regard to the manner in which the phosphorus is combined in them. For this purpose nitric acid may be allowed

[1] *Ber. d. d. chem. Ges.*, vol. 37, p. 708 (1904).

[2] *Zeit. für physiol. Chem.*, vol. 42, p. 165 (1904).