

which conferred the most intense passive hypersensitiveness in guinea pigs, and lowest in the serum (anti-"alkaline antigen") which conferred the lowest hypersensitiveness. With edestin the precipitin titrations were reversed. The rabbit serum prepared with "acid antigen," although more effective in sensitizing guinea pigs, gave lower precipitin titrations than either of the sera prepared against "unadjusted" or "alkaline antigen." The indications from these experiments are that modifications in the hydrogen-ion concentration may simultaneously affect anaphylactogenic and precipitinogenic potencies of different proteins differently. Some of the questions raised by these observations are being studied further.

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Experiments on vitamin A.

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These experiments relate chiefly to questions concerning the storage of vitamin A in the body and the bearing of this upon methods of examining foods to determine their relative richness in vitamin A.

Even at weaning time young animals may already have a considerable store of vitamin A in the body and thus be able to continue to grow for some time upon a diet carefully freed from vitamin A but adequate in all other respects. Young rats separated from their mothers at a uniform "weaning" age of four weeks show very different growth curves and survival periods on the same experimental diet free from vitamin A, according to the vitamin A content of the mother's diet. The differing stores of vitamin A in the bodies of experimental animals, even at early ages, has undoubtedly been a very large factor, not fully appreciated, in previous experiments dealing with this vitamin

and in attempts to determine the vitamin A content of different foods.

The body can also store vitamin A at later ages. Thus two male rats of the same litter and of the same weight at four weeks of age were placed on two diets one of which was richer in vitamin A because of containing a higher proportion of milk than the other. After completion of growth, both were placed at the same time upon the same experimental diet deficient in vitamin A, and the survival period was found to be nearly twice as long in the case of the one which had received the diet containing the larger proportion of milk.

Rats of the same litter grown to adult size on the same diet, showed strikingly uniform survival periods when placed at the same age on diets devoid of vitamin A, even though these latter experimental diets were made to vary widely in their mineral content.

The investigation is being continued in several directions: (1) by further experiments with rats transferred at different ages from adequate diet to diet devoid of vitamin A, (2) by experiments in which the vitamin stored in different organs and tissues is determined directly by dissecting animals of known age and dietary history and feeding the different parts, (3) by further studies of possible relationships between vitamin A and the mineral metabolism.

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Some modifications of Emil Fisher's micro-polarimeter.

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The quantitative determination of organic compounds by means of their optical activity is often convenient, and it is often necessary to employ small amounts of the solutions to be investigated.