SCIENTIFIC PROCEEDINGS

ABSTRACTS OF COMMUNICATIONS.

One hundred fourteenth meeting.

College of Physicians and Surgeons, New York City, March 16, 1921. President Wallace in the chair.

79 (1661)

Growth on diets containing more than ninety per cent. of protein.

By THOMAS B. OSBORNE and LAFAYETTE B. MENDEL.

[*From the Laboratory of the Connecticut Agricultural Experiment Station and the Sheffield Laboratory of Physiological Chemistry, Yale University, New Haven.*]

Although it has been demonstrated that a carnivorous animal can be kept alive and maintained in activity for considerable periods on an exclusive diet of meat it is not known whether growth as well as maintenance can proceed on a regimen entirely free from both fats and carbohydrates. Hammarsten has stated that omnivora and herbivora cannot survive on such a ration. The few experiments on record in relation to this problem have without exception been conducted on a wrong plan, the food mixtures being inadequare in respect to one or more essential factors. Our successful experiences in growing rats on foods extremely poor in fats[1] and in carbohydrates[2] respectively encouraged us to test diets containing only minimal quantities of *both*. The mixtures included protein 95 per cent., inorganic salts 5 per cent., along with a supply of vitamins A and B in the form of tablets of alfalfa (0.4 gm.) and dried brewery yeast (0.2 gm.) daily. On such diets, when casein furnished the protein component, animals have already grown to three times their weight at the beginning of the

[1] Osborne and Mendel, *J. Biol. Chem.*, 1920, xlv, 145.

[2] Osborne and Mendel, PROC. SOC. EXPER. BIOL. AND MED., 1921, xviii, 136.

trial. The vitamin-bearing substances were the only noteworthy sources of either fat or carbohydrate, and supplied 4–8 per cent. of the food eaten. Whether rats will attain adult size and normal function on such diets, furnishing protein as the almost exclusive source of energy and tissue substance, remains to be determined further. If future experiments prove as successful as those here described various problems of nutrition and physiological function can be approached from new experimental standpoints.

80 (1662)

The addition of yeast to a milk diet.

By PHILIP B. HAWK, CLARENCE A. SMITH, and OLAF BERGEIM.

[*From the Laboratory of Physiological Chemistry, Jefferson Medical College, Philadelphia.*]

The experiments were made on white rats, one group of rats being fed a diet of pasteurized milk and a second group being fed a milk and yeast diet. The rats receiving the yeast made more satisfactory growth gains than did the rats receiving no yeast. Inasmuch as milk has been shown to be low in the water-soluble "B" vitamine, which is present in high concentration in yeast, it would seem that yeast may be found to be an important dietary adjunct for use in baby feeding.

81 (1663)

The rate of fixation of complement at various temperatures.

By R. L. KAHN.

[*From the Bureau of Laboratories, Michigan Department of Health, Lansing, Michigan.*]

This investigation embraces three types of complement-fixing substances: (1) those elicited in rabbits due to injection of purified proteins; (2) those produced in the same animals due to injection of bacteria, and (3) those found in the serum of syphilitic patients. The antigens employed in the first two cases were specific, while