

tions regarding the energy requirements of human beings. It is known that boys, prior to the age of puberty have a basal metabolism 20% higher than that of adults. This period corresponds to the first 60 days in the life of the rat, and examination of the calorific intake shows a decline after this period which goes on steadily as the animal approaches maturity. This seems to indicate that the basal metabolism of rats may follow a course similar to that of human beings, but no proof of this assumption has been submitted as yet.

These observations illustrate the intimate relationship between the requirements of growing tissue and the instinctive appetite of the animal. While it is not yet certain whether the appetite regulates itself by variations in the growth impulse of the tissues, apparently the tissue metabolism creates the demand for energy which is followed by a response in the appetite, when the tissues are making new additions to their mass.

SUMMARY.

(1) The butter fat, purified by the method of Osborne and Mendel, still contains traces of nitrogenous compounds.

(2) The growth factor in the butter fat is unable, alone, to bring about the normal growth increment in young animals.

(3) Butter fat shows no nutritive superiority, compared to lard, in feeding experiments of short duration. In prolonged experiments there is a slight improvement as compared with the results obtained with lard.

(4) Dried yeast preparations contain sufficient quantities of the accessory growth factor to sustain growing animals for a short time. For prolonged feeding experiments, fresh whole yeast or autolysed yeast liquor is essential for the maintenance of the normal growth rate.

(5) The growth-promoting factor can be isolated from hydrolysed yeast by means of phosphotungstic acid. This method entails a partial diminution in the activity of the growth accessory. It can also be removed from autolysed yeast with Lloyd's reagent, but larger quantities are necessary than those previously stated necessary for the removal of the antineuritic vitamine. The accessory growth factor is similar to, and most probably identical to the beri-beri vitamine.

(6) Prolonged ingestion of the activated Lloyd reagent causes an inhibitory effect of the growth of the animal, due to toxic properties of the inassimilable silicate.

(7) The extraction of the commercial casein preparations with boiling alcohol to render them accessory-free does not affect the nutritive properties of the protein itself. Commercial preparations of caseins, egg albumen and fibrin are vitamine-free.