Hormonal and Metabolic Interrelationships in Malnutrition. R. D. G. Milner. Malnourished Jamaican infants between 8 and 22 months and weighing 3.2 to 8.6 kg. were studied. Clinically most infants had marasmic kwashiorkor: a few had marasmus and a few kwashiorkor. During recovery, they grew very quickly and were thus suitable patients in whom to study the hormonal changes associated with malnutrition and with the 'catch-up' growth characteristic of recovery.

Plasma concentrations of glucose, free fatty acids (FFA) α -amino nitrogen, insulin and growth hormone (GH) were measured in response to intravenous glucose (0.5 g./kg.), intravenous glucagon (0.1 mg./kg.) or to a mixture of the 10 essential amino acids given intragastrically (0.5 g./kg.). Venous blood samples were collected before and at 3, 10, 30, and 60 minutes after glucose or glucagon, and before and at 15, 30, 60, 120, and 180 minutes after the amino acid load. Each test was performed shortly after admission (sick infants) and again 6 to 12 weeks later, when the children had clinically recovered (well infants). Fasting levels of plasma FFA and GH were high in the sick infants and

fell on recovery, while insulin levels were low and rose with recovery.

Glucose tolerance was impaired in both sick and well infants. In the sick infants there was no insulin response to intravenous glucose, but in well infants a significant rise occurred at 3 minutes. Glucagon caused a rise in plasma glucose in both groups but failed to cause a significant rise in plasma insulin levels. Plasma GH rose following intravenous glucose or glucagon but the rise after glucose did not differ from that caused by the stress of 5 venepunctures, whereas that due to glucagon was greater. The amino acid load caused a similar rise in α -amino nitrogen in both groups which was maximal at 60 minutes. This was not associated with a significant change in plasma insulin levels, but a fall in plasma GH levels in both groups.

Insulin secretion is impaired in infantile malnutrition and does not become normal on recovery of the child. High fasting plasma GH levels in malnourished infants can be further stimulated by stress or glucagon or depressed by intragastric amino acids.

Use of Calcitonin in Man. M. Friedman.