adipose tissue was obtained by subcutaneous aspiration indicate that the cell size is greatly increased and that total cell number may also be increased.

REFERENCES

- Durnin, J. V. G. A., and Rahaman, M. M. (1967). Assessment of amount of fat in the human body from measurements of skinfold thickness. *British Journal of Nutrition*, **21** 681.
- Hirsch, J., and Gallian, E. (1968). Methods for the determination of adipose cell size in man and animals. *Journal of Lipid Research*, **9**, 110.
- , Knittle, J. L., and Salans, L. B. (1966). Cell lipid content and cell number in obese and non-obese human adipose tissue (abst.). *Journal of Clinical Investigation*, **45**, 1023.
- with adrenocortical carcinomas (ages 1 and 27 years), and one with the 11-hydroxylase defect form of congenital adrenal hyperplasia. 97 normotensive patients and healthy persons did not show 1-oxygenated steroids on systematic analysis of urinary steroids by two-dimensional chromatography.

Growth Hormone Production During Puberty in Hypopituitarism. P. H. W. Rayner. The pubertal growth spurt has in the past been attributed to gonadal and adrenal androgens and oestrogens. Though it is recognized that the pituitary output of growth hormone (GH) after provocative stimulation is increased during puberty, the relative importance of GH and sex hormones in linear growth promotion remains undecided. Several workers have shown that testosterone administration promotes an increased GH production in sexually retarded males, and pre-treatment with oestrogen is known to enhance the pituitary GH response to arginine infusion.

We have assessed GH production after pituitary stimulation in 5 patients with hypopituitarism (4 males and 1 female), both before and during puberty. In 3, the aetiology of the pituitary defect was unknown, one followed head injury and one had a chromophobe adenoma. In 3 cases an isolated deficiency of GH was present and in 2 it was combined with thyrotrophin deficiency.

When assessed before puberty between 10 and 13½ years all were growing at less than 3.0 cm./year, and all produced levels of plasma GH measured by radio-immunoassay of less than 9 ng./ml. Puberty occurred spontaneously with accelerated rates of linear growth ranging from 5 to 9 cm./year. Further assessment during puberty showed increased levels of plasma GH in all cases ranging from 10 to 50 ng./ml.

These findings confirm that there is a direct interplay between the gonadal hormones and the pituitary GH-releasing system and suggest that the secretory pattern of GH is dependent on the concentration of circulating gonadal hormones. Gonadal hormones may promote linear growth by increasing the production of pituitary growth hormone.

Concentration of IgE Immunoglobulin in Serum of Children and its Clinical Significance. C. B. S. Wood. The single radial diffusion method of measuring protein concentration has been adapted for the measurement of IgE immunoglobulin in serum, by increasing its sensitivity using a sandwich technique. Sera from a series of allergic and non-allergic children have been studied and the concentrations of IgE in the sera of allergic children were found to be significantly raised. Atopic asthmatics who were below average in weight tended to have high IgE concentrations. The majority of asthmatic children who responded to disodium cromoglycate had high serum IgE concentrations, but a small minority were identified in whom response was good but the IgE concentration was not detectably raised.

Absorption of Antibiotics in Cystic Fibrosis.

H. B. Valman (introduced by B. Wharton). 40 children with cystic fibrosis were given cloxacillin or erythromycin, and the serum protein unbound levels, i.e. the biologically active fractions, were determined 1½ and 4 hours after the administration of cloxacillin and 2 and 4 hours after erythromycin. These levels were compared with the concentration of antibiotics required to inhibit the growth of 7 strains of *Staphylococcus pyogenes* isolated from the same patients. The average serum levels did not differ significantly from those previously reported in normal children receiving similar doses, indicating that there was no malabsorption of the antibiotics in the group of patients with cystic fibrosis. However, in some individuals the serum unbound levels did not exceed the level required to inhibit the growth of the patient's own staphylococci *in vitro*. This suggests that some children with cystic fibrosis need higher than conventional doses of oral antibiotics for elimination of their staphylococci.

Changes in Major Vessels During Growth and After Operation.

C. L. Berry.

Plasma Insulin, Glucose, and Cortisol Levels During and After Exchange Transfusion.

H. V. Price (introduced by O. P. Gray). Hypoglycaemia is a recognized complication of erythroblastosis fetalis. 21 exchange transfusions were studied. The group as a whole showed a steady rise in plasma glucose and insulin levels. Response in individual babies varied widely, particularly the insulin. These changes could not be correlated with plasma cortisol, birthweight, gestation, jaundice, or severity of the haemolytic disease. Plasma cortisol levels varied with each infant but no consistent rise was seen.

Steroid-Endocrine Hypertension.

R. W. H. Edwards. The occurrence of hypertension as a facet of Cushing's syndrome has often been noted and remarked upon, and generally ascribed to over-secretion of mineralocorticoid. It is now interesting to rediscuss the matter because of the recent association of urinary 1-oxygenated steroids with hypertension. Patients showing hypertension and excretion of 1-oxygenated steroids include two who might be said to suffer from idiopathic hypertension (ages 1 week and 2 years), two