nitrous oxide is less toxic than freon. Further applications of the method were discussed, particularly the measurement of changes in effective pulmonary blood flow after feeding.

Changes in the excretion of 17-oxosteroids and corticosteroids in the urine during childhood and adolescence. Constance C. Forsyth, D. C. L. Savage, Eileen McCafferty (*introduced*), and Jenny Cameron (*introduced*). (*University Department of Child Health, 11 Dudhope Terrace, Dundee.*) There are few reports of accurate fractionation of adrenal metabolites in the urine of children. The authors studied the individual 17-oxosteroids and the α -ketolic metabolites of cortisol and corticosterone during a 24-hour period in 83 normal children and adolescents by paper chromatography using Bush systems. These normal results

were considered of physiological interest and would provide a basis on which the effect of various disease states on adrenal metabolism might be compared later. There was found to be an increase as the child grows older in the excretion of the total 17-oxosteroids, the 11-deoxy-17-oxosteroids and the 11-oxy-17-oxosteroids. The increase in excretion of the 11-oxy-17-oxosteroids is gradual, but that of the 11-deoxy-17-oxosteroids shows a sharp rise in later childhood probably related to the onset of puberty. There is a preferential degradation of the 17-oxosteroids to 5 α derivatives from puberty onwards. The excretion of the total 17-hydroxycorticosteroids and the metabolites of cortisol increases throughout childhood, and when expressed per 100 kg of body weight shows a close relation. The corticosterone metabolites, when expressed similarly, show a marked fall from infancy until the age of 4 years and thereafter correlate with body weight.