hypertension should be polygenic. Recently work has been reported which suggests the importance of a single major gene locus on both a red cell sodium pump and blood pressure. It is thus of some interest to re-open the question as to the unimodality of blood pressure, bearing in mind that almost none of the original studies used formal statistical model fitting.

The present paper presents the results of fitting compound or mixture distributions to the data of two large studies, of men and women in Bergen (1950-1) and of men in Renfrew and Paisley (1972). Parameters of a simple normal or log-normal distribution, and of a mixture distribution (in which the means and proportions of the component distributions differed) were estimated by a maximum-likelihood procedure using the method of Newton-Raphson iteration. In general, differences in variances between the components of a mixture distribution produced no significant improvement in fit.

In both sets of data evidence was found for a sub-group with a higher mean pressure, this group being absent from young persons, appearing at about the age of 30, and rising in proportion until late middle-age, when they represented up to 20% of the population. The sub-group was found for both systolic and diastolic pressure distributions, the major difference being that the component distributions were log-normal for systolic pressures and normal for diastolic pressures.

Further evidence for a mixture distribution of blood pressure, in the form of anomalies of regression to the mean on re-testing, will also be presented.

90 COMPARISON OF DOC/SALT AND POSTDOC/SALT HYPERTENSION IN THE RAT

R. REID, G.B.M. LINDOP AND W. BROWN

Introduced by A.F. LEVER

Department of Pathology and MRC Blood Pressure Unit, Western Infirmary, G11 6NT

Unilateral nephrectomy followed by administration of deoxycorticosterone (DOC), 12.5 mg thrice weekly and a solution of 1% NaCl plus 0.2% KCl produces severe hypertension in the rat. If the treatment is stopped after 4 weeks the hypertension persists; this is post-DOC/salt hypertension. We studied rats hypertensive by four weeks treatment with DOC and salt, then divided them into two equal and matched groups. In one group the DOC and salt were continued, in the other they were discontinued. Animals in the second group drank tap water. The two groups were then studied in parallel. The 24-hour pressures were measured twice weekly and blood samples were also taken twice weekly for haematocrit estimation and blood film. When one meir of a matched pair became...