

**The Effects of Neighbourhood, School and Family Factors upon Juveniles before the Courts.** P. M. ASH, R. T. BENN, M. J. POWER, E. SHOENBERG (*Social Medicine Research Unit, London School of Hygiene and Tropical Medicine*)

Rates for juveniles before the courts have nearly doubled in a decade in England and Wales. Data from an epidemiological study of all the children in one community who make court appearances have been collected over nine years. Enumeration district delinquency rates for first court appearances by boys show wide and consistent differences over seven years. Similarly, such first appearance rates for schools show wide and consistent differences. No comparable data on the distribution of family disruption in the population of the study area are yet available, but an assessment of first offenders showed the majority of children to come from normal family circumstances, as defined.

Turning to second and later court appearances—boys repeatedly before the courts present a serious and intractable problem—showed that enumeration district delinquency rates were not specially related to reappearance; that school rates for second and later court appearances were possibly related to reappearance; and that family factors were definitely related. The inter-relationship of the three influences—neighbourhood, school, and family—on first and later court appearances has theoretical and practical implications that were discussed.

#### FOURTH SESSION (*Chairman: R. A. M. CASE*)

**Second Primary Cancers in Patients with Tumours of the Salivary Glands.** M. PATRICIA PRIOR (*Department of Social Medicine, University of Birmingham*)

This study forms part of a more extensive survey of multiple primary tumours currently under investigation in the Birmingham Regional Cancer Registry.

A method was outlined for computing expected numbers of second primary tumours, using morbidity figures from the Registry applied to the sample population expressed in terms of patient-years at risk. The significance of the difference between observed and expected numbers of tumours was assessed by means of the Poisson distribution.

A significantly increased number of breast tumours was demonstrated in women who had had salivary gland tumours. Certain other sites, skin in particular, also showed increases sufficient to merit further examination.

**Cancer of the Lung in Iron-Ore (Haematite) Miners.** J. T. BOYD and R. DOLL (*M.R.C. Statistical Research Unit, University College Hospital Medical School, London*)

The mortality of Cumberland iron-ore miners was studied by examining the death certificates of 5,811 men who died between 1948 and 1967 and had been resident in two local authority areas in which the great majority of the iron-ore miners lived. Comparisons of the iron-ore miners' experience with (1) that of other local men and (2) the relevant national experience provided an assess-

ment of the suspected occupational risk of lung cancer associated with haematite mining. During the 20-year period there were 42 deaths attributed to lung cancer among iron mine employees resident in the study area; 36 of these occurred in miners working underground, which was significantly greater than the number expected from local non-mining experience (20.6 deaths) or from national experience (21.5 deaths). In contrast to these findings, there was no evidence of any excess mortality from lung cancer among surface workers and, for iron miners as a whole, mortality from other cancers was close to normal. A parallel analysis of mortality among coal miners showed a deficit of deaths from lung cancer in line with other studies. The patterns of other respiratory mortality in the two local mining groups confirmed the existence of a substantial silicotic hazard associated with haematite mining in Cumberland.

These findings strengthen previous necropsy evidence and indicate that West Cumberland iron-ore miners who work underground experience an occupational hazard of lung cancer. They suggest that the miners suffer a lung cancer mortality about 70% higher than 'normal'. The risk may be due to the radioactivity of the air in the mines, which is somewhat greater than the recommended maximum permitted level (average radon concentration of 100 p Ci/litre against 30 p Ci/litre) or to a carcinogenic effect of iron oxide.

**Burkitt's Lymphoma and Sickle-cell Trait in Uganda.** M. C. PIKE (*Regius Department of Medicine, Oxford*)\*

Epidemiological evidence suggests a causal connection between malaria and Burkitt's lymphoma (BL). Children with haemoglobin AS (sickle-cell trait) are substantially protected against malaria; preliminary results were presented from a case-control study carried out in Uganda to test whether they are also protected against BL. The results so far suggest that children with AA are twice as susceptible to the tumour as those with AS, thus providing strong evidence for the malaria—BL connection.

The difficulties of choosing controls for this study, and the correct method of statistical analysis of case-multiple control studies, were discussed.

#### FIFTH SESSION (*Chairman: A. M. ADELSTEIN*)

**Migration in an Urban Population.** A. E. BENNETT (*Department of Clinical Epidemiology and Social Medicine, St. Thomas's Hospital Medical School*)

In July 1966 a private one-in-five random sample census of dwellings in the six northern wards of Lambeth was undertaken to provide a sampling frame for subsequent population surveys. The sample list of dwellings numbered 5,546 and full information was obtained from residents of 5,499 (99.2%); 18,347 individuals were identified by name, sex, year of birth, marital status and social class.

In February 1968, an age, sex, social class stratified random sample of 1,199 individuals was mailed a questionnaire for the initial stage of a survey of skin

\*Based on work done in collaboration with Dr. R. H. Morrow while on secondment to Makerere Medical School, Kampala, Uganda.