

alleles at one locus. All the factors listed have two known alleles except the C-series, including black and tan, in which six are listed. The albino-like series, smoked—Burmese—Siamese in cats seems to have no clear analogue in dogs. One could wish that the author should some day consider the canine factors with the analogy of other mammals in view.

The book is finely produced with helpful colour-plates.

R. A. FISHER.

PAPERS OF THE ROYAL COMMISSION ON POPULATION. Vol. IV : Reports of the Biological and Medical Committee. H.M.S.O. 1950. Pp. iv 52.

The Biological and Medical Committee's terms of reference were "to formulate for the assistance of the Royal Commission on Population, the biological and medical factors relevant to the Commission's enquiry and generally to advise the Commission on the biological and medical aspects of the inquiry."

The Committee divided the field between (1) reproductive wastage and (2) human fertility. The first of the three papers in the present volume deals with *Reproductive Wastage* which is due to five main causes: induced and spontaneous abortion, stillbirths, neonatal mortality and mortality between 4 weeks and 12 months, accounting for a total wastage of from 15 to 22 per cent. of all children conceived. The uncertainty in the estimate is largely due to the difficulty of estimating the extent of abortion, which contributes a wastage of from 9 to 16 per cent. So far as the other groups are concerned, 2.3 per cent. is due to stillbirths, 2.0 per cent. to neonatal deaths, and 1.4 per cent. to deaths between 4 weeks and 12 months. The possible saving due to a reduction in spontaneous abortion is considered to be small, and while induced abortion could no doubt be materially diminished by an increased knowledge of birth control methods, this would not lead to an increased number of births. Stillbirths and infant deaths all show appreciable social grading, being greatest for Class V and least for Class I. If the social and medical welfare available to the two top classes were made generally applicable then it is considered likely that wastage from those sources could be reduced from  $5\frac{1}{2}$  to 4 per cent., giving an additional recruitment to the population of  $1\frac{1}{2}$  per cent. The actual extent to which this gain could be realised depends, as the authors point out, on whether parents tend on the average to produce families of a predetermined size or whether they are discouraged by infant deaths. The former would tend to cancel the effect of a reduction in death rates, while the latter would enhance the additional recruitment obtained. There would probably be some average gain, but it is uncertain just how much. Another effect, which might depress the expected gain, is that the social gradings observed may be due to genetic rather than environmental differences. In the opinion of the reviewer, the report, which concludes "that there is no satisfactory evidence to show that social class differences in survival have an hereditary basis", dismisses this possibility too readily. The facts discussed, while certainly consonant with the view that environment is the major influence, are by no means incompatible with a mainly genetic interpretation, in spite of assertions to the contrary. We do not know what would happen if we performed the crucial experiment of transferring at birth large numbers of children from Class V to a Class I environment, and conversely. Moreover, the death-rate from congenital malformations varies in the ratio of 1 : 1.4 from Class I to Class V. The

infant mortality rate varies in the ratio of 1 : 2·2 over the same range, and this latter variation is considered by the report to be "large." It therefore seems unreasonable of the Committee to regard the death-rate from congenital malformations as varying comparatively little and pointing to an absence of genetic factors. Actually, the disentangling of hereditary and environmental factors in this sort of situation is a very difficult proposition, and we can say little more than that there is a good *prima facie* case for the importance of both.

The second paper deals with *Reproductive Capacity and the Birth Rate*. It discusses the possibility that there has been a decline in actual reproductive capacity since the 1870's, and considers that the greater part of the reduction of the birth-rate is due to the spread of family limitation. Direct evidence of the existence of a decline in reproductive capacity is lacking. Some general considerations suggest that modern urban life brings with it a reduction of sexual activity as compared with the predominantly rural conditions of earlier times. It is thought that the greater nervous strain of town life and the increased number of alternative outlets for free time and energy might give rise to a decline. Again, certain statistical studies have shown a lower frequency of intercourse in urban, as compared with rural areas. On the other hand, the general improvement in diet and health, and the reduction of disease, might be expected to have the opposite effect. Moreover, evidence presented in Vol. I of the present series supports the hypothesis that the number of births which might be expected per married woman to-day, if contraception were not practised, is substantially the same as that achieved by Victorian married couples.

The final paper deals with *Involuntary Childlessness*. The main distinction here is between a failure to effect fertilisation and a failure of successful fertilisation finally to result in a live birth. Various contributory causes and curative procedures are discussed. There is no evidence that medically approved birth control methods impair intrinsic fecundity, but further investigation is required. Reliable data on this subject are difficult to obtain, but it is tentatively suggested that perhaps 15 to 20 per cent. of involuntarily childless matings are preventable by known methods.

The three papers taken as a whole, while collecting together much material having an important bearing on the problems in hand, place far too great an emphasis on the desirability of a mere increase in numbers. While it may well be true that certain measures will reduce much unnecessary reproductive wastage and promote fertility and childbearing, we have little information as to whether the net result would be, on average, eugenic or dysgenic. We do not wish to be thought to support those who oppose progress in social and medical welfare with some specious argument about interfering with Nature or preventing the survival of the fittest. On the other hand when measures are advocated, which if successful would result in an increase in quantity, it would have been wise to have enquired about the probable quality of the new recruits. NORMAN T. J. BAILEY.

THE TREND OF SCOTTISH INTELLIGENCE : A Comparison of the 1947 and 1932 Surveys of the Intelligence of Eleven-year-old Pupils. Publications of the Scottish Council for Research in Education, XXX. University of London Press, 1949. Pp. xxviii + 151. Price 7s. 6d.

In 1932 the Scottish Council for Research in Education conducted a Mental Survey of 11-year-old Scottish children, using a group intelligence