

investigation of individual cases. The book shows what can be accomplished in this direction. It will be objected that such an elaborate study cannot be conducted in every case, even if our existing prison staffs were vastly increased. But a modest increase in staff would enable something to be done in this way; and the additional expenditure would be amply justified, even on the lowest, the financial, ground. For there can be no doubt that "uninvestigated offenders are the most expensive luxury in which any community can indulge".

The question of the prevention of crime must not be overlooked. Abnormal psychic reactions are but exaggerations of the normal; and underlying neurotic motives, which might have been dealt with earlier, are the true causative factors in many cases of habitual criminality. Many of our neurotics are costly "carriers", and the evils which they produce could be, to some extent, mitigated by well-devised preventive measures.

It only remains to say that the edition is a limited one, and that the book is sold only to members of the legal, medical, and other professions having an interest in social problems.

M. HAMBLIN SMITH.

Genetic Principles in Medicine and Social Science. By LANCELOT HOGBEN. London: Williams & Norgate, 1932. Pp. 230. Price 15s.

THIS important contribution is especially useful and impressive as a warning against misapplied eugenics. Hogben attempts to separate the wheat from the tares in what we know of human inheritance. In one half of the book he considers how human genetics can best be studied quantitatively; in the other half he inquires how far—with our present knowledge—we may legitimately introduce genetical concepts into social science and politics.

He concludes that we need more research rather than more propaganda, scientific workers rather than legislative interferers, the atmosphere of the laboratory rather than that of the drawing-room, and an emphasis on the medical rather than on the political aspect of the problem.

Unfortunately, eugenics has got a bad name in many quarters. It has become identified at various times with snobberies of various kinds, obstruction to educational progress, anti-feminism, anti-semitism, colour prejudice and other movements, justification for which—if any—certainly does not derive from modern biology.

The very first duty of eugenics is to distinguish carefully between social and organic heredity. The mechanism of the one is education; of the other, sexual reproduction. Too many biological writers have failed to allow sufficiently for the former or have overlooked it altogether.

Hogben suggests that first studies should concern themselves with problems which eliminate, as far as possible, the elements of social heredity and that they should be quantitative. A study, such as that of pedigrees, for example, while it provides useful raw material for genetic analysis, cannot in itself supply crucial evidence.

A splendid opportunity to map human chromosomes and localize human genes is offered by the study of such serological differences as determine the various blood-agglutination groups, and by the correlation of these blood-groups with other conditions that are found to be associated with them. Colour-blindness—found in every twentieth male—affords a similar opportunity of investigating points of reference in the *X* or sex chromosome, being a disease which obeys Nasse's Law and follows that chromosome.

Hogben rightly reminds us that mental defect is not a single clinical entity ; that all the evidence points against such mental defect as is hereditary being due to a single recessive gene ; and that insufficient attention has been paid to the pre-natal environment as a factor that may simulate the influence of heredity.

He concludes—rather too readily perhaps—that late child-bearing is a *major* ætiological factor in mongolism, and that order of birth may exercise an important influence on the physique of children. This he deduces from the facts that the average age of the mothers of mongol children is about 40, and that such children appear more often after several previous pregnancies.

In the chapter on “ The Growth of Human Populations ”, Hogben criticizes Pearl's theory that human population growth is a biologically self-regulating process fitting neatly into a graph which Pearl used to describe the growth of populations of the fruitfly—*Drosophila*—cultured in pint milk-bottles. He considers that the factors inherent in social organization play an important part. One such factor is contraception, and on this he has some provocative remarks to make. He points out that the probability of offspring resulting from coitus depends upon at least four factors: (1) Fœtal viability, (2) viability of the sperm, (3) viability of the ovum, (4) and coincidence of the rhythms of sexual excitability and ovulation. Considering all the circumstances, Hogben suggests that the probability of conception, instead of being nearly unity, is more probably of the order of one-fiftieth or less. In the era of biological invention which we may now look forward to, the danger to expect is a decline of population—especially in the highly industrialized countries—rather than a Malthusian plethora.

In a valuable—now topical—chapter on “ The Concept of Race ”, Hogben points out that we do not as yet know what constitutes a race ; we have no evidence that such a thing as a pure race—in which no intercrossing between widely separated groups has occurred—exists ; we have equally little evidence that certain races, culturally more primitive, are inferior, or that intercrossing between widely-separated groups is likely to produce socially harmful consequences.

To modify legal and social institutions on the basis of our present ignorance about race is to build on a quagmire. This is sufficiently obvious from the facts that Hogben presents to us.

In eight important chapters Hogben succeeds in critically evaluating what we do actually know about human inheritance. To the experimental geneticist he recommends an attitude of scepticism, an emphasis on quantitative methods, and a selection of problems in which social heredity plays a minimum part. He warns against the social application of principles that are premature and have no biological justification.

The average psychiatrist will find the mathematical formulæ—with which the book teems—well beyond him. None the less, no one concerned with problems of mental disorder can afford to ignore such a contribution.

Although it is almost ungracious to criticize the style of the book, one cannot help feeling that it is unnecessarily involved even for the complex problems that are considered in it.

HENRY HARRIS.