the chromosome complex of the germ cell, which is handed on from parents to offspring and from generation to generation.

Even now, at this stage of civilization, and with our present system of education, a large section of the public either ignore or do not possess any true appreciation of the fact that amentia is associated with, and is dependent on, defective numbers or defective development during early life of these all-important nerve cells, and that this defect is transmitted hereditarily. But until this is realized by all intelligent citizens, further progress along social and legislative lines in dealing with this serious problem of mental defect, not only in its severe, but in its milder, forms, will be very slow. The fact that amentia includes not only a low grade class, the idiot or imbecile, but also a higher grade class, some of whom (as Professor Berry states, p. 495) find their way into mental hospitals, and many others remain unsuspected in the community except in so far as their disordered, anti-social reactions arouse the suspicions of the expert—is very important and not infrequently overlooked. For it is the higher grade mentally defective individuals who not only threaten the stability of our social life, they also, by inter-marriage among themselves, and with normal citizens, threaten the future of our race.

The main theme of Professor Berry's stimulating book is well expressed in Professor Kennedy's short Introduction: "We have here an attempt to correlate material with function—errors of material with errors of function. Its core is the dogma—no neurone no mind."

So also, on the other hand, we must bear in mind Professor Kennedy's warning, that, as Professor Berry also insists, education is needed for the development of perfect neurones. Capacity to learn, to profit by experience, including education, is a marked feature of the human as contrasted with the animal brain, but in all cases, and more especially in man, if good endowment is lacking education must fail.

In view of the efforts which are now being made to spread some knowledge of genetics and some recognition of the aims of eugenics among our people, we shall all welcome the great help which Professor Berry's book will give to this cause, and his able demonstration of the fact that, in Professor Kennedy's words, "Control of human breeding must come before betterment in human brains."

C. J. Bond.

BIRTH CONTROL

Cooper, James F., M.D. (Medical Director of the Clinical Research Department of the American Birth Control League.) *The Technique of Contraception: The Principles and Practice of Anti-conceptional Methods.* New York, 1928. Pp. xvi. 271. Unpriced.

In the preface of this book we are told that it is written "exclusively for the medical profession," and that "copies of the book will be available only to physicians," thus leading one to anticipate a fine standard of accuracy and scientific presentation; an expectation which is not fulfilled.

The book contains no index; the bibliographical references are often incomplete, sometimes including the year of publication, but often not; and, throughout the body of the text, references are very seldom given to fundamental points which the author has adopted practically *in toto,* or with little modification, from European authorities without acknowledgment.

The book's claims for itself are very high, and if they are granted by the American physicians for whom the book is written, it can only be because American physicians are insufficiently documented about its European predecessors, owing to the restriction on the circulation of scientific literature due to the inclusion of Contraception among Obscenity in the Comstock Law, so that the leading text-books and reports freely circulated in Europe are not permitted to reach America..

As was said by the *American Journal of Obstetrics* of this volume, the "statistics are far from being convincing." The diagrams are so disproportioned and out of

drawing that some are misleading rather than helpful; in particular, the most important of them, that in the chapter headed "New Method for America," fig. 25, so distorts the relation of the parts that it leaves one wondering what purpose is served by its insertion; the degree of distortion will be obvious if fig. 25 is compared with the correctly-proportioned internal anatomy of these parts as shown in any standard human anatomy, such as Cunningham's *Text-book of Anatomy,* one of the Oxford medical publications.

The main thesis of the book, a consideration of the various factors of contraceptives, arrives after many words at the same fundamental principle as was first reasoned out and laid down as a definite principle by the present writer in 1918 in her little book *Wise Parenthood,* followed in 1923 by her fully documented and exhaustive treatise, *Contraception: Its Theory, History and Practice.*

In Dr. Cooper's book, after all the preliminaries have been waded through and we come to the chapter dealing with "A New Method for America," we find the same fundamental principle—a rubber cap for the woman and a chemical spermaticide, although readers would not gather that from anything he says. On the contrary, his account of the type of rubber cap chiefly used at the writer's clinic is so inaccurate and so fundamentally misleading as falsely to create the impression of a profound difference in method between his "new American" type and the principles as laid down by the writer.

When we turn to the type of cap used by Dr. Cooper in his "new method," we find that it is not new to Europe, although a variety of makers sell versions of it under a variety of different trade names; it is essentially the same type of cap as was invented and first used by a medical man in Europe in 1888, though no reference to this is given.

As the book is intended only for medical readers, further detailed consideration of technical points need not concern us here. Data from the American clinics are useful to add to those already collected by the English clinics. There is a similarity of particulars in the comparison of experiences of contraceptives before attending the clinics in Dr. Cooper's new book and in the table published in 1925 in the *First Five Thousand,* the Report of the British Pioneer Clinic, and the resemblances rather than the differences strike one, thus:

Nursing or Lactation shows 100 per cent. failure in both tables.

Safe Period shows 100 per cent. failure in both tables.

Coitus Interruptus shows 70 per cent. failure in Dr. Cooper's book and 80 per cent. in the London C.B.C. Clinic.

Sheath shows 50 per cent. failure in Dr. Cooper's book and 75 per cent. failure in the London C.B.C. Clinic.

Douche shows 100 per cent. failure in Dr. Cooper's book and 95 per cent. in the London C.B.C. Clinic.

and so on.

The degree of novelty in his work seems throughout to be so much emphasized by Dr. Cooper as to become rather irritating to European readers acquainted with the above facts.

Some of the fundamental principles involved in this work seem worthy of general eugenic consideration; one in particular, the fitting of those about to be married, which Dr. Cooper describes on page 140. For young couples his advice is the same as that in *Contraception,* namely, the use of condom for a month or so before the woman is fitted with a rubber cap; after stating this, Dr. Cooper becomes revolutionary and says he prefers to fit the woman at her first visit, and that he "prefers this procedure in all cases." He then describes the dilation of the woman's parts by rectal speculum or in other ways, mentioning that if the hymen is tough or resistant it may be snipped with scissors, and recommends that this procedure should be adopted by all young women *before* marriage. That is to say, the ancient and respected view that a bridegroom has a right

to anticipate technical virginity in his bride is to be over-ridden. While there may be many arguments in favour of outgrowing the mediæval and oriental attitudes of masculine ownership, typified by the demand for absolute virginity, nevertheless an unthinking plunge into the reverse idea of making the rupture of the hymen a crude and automatic prenuptial arrangement will rouse not only instinctive antagonism in the majority of the stabler members of the community, but might very well have unexpected and anti-eugenic reactions. It seems rather a pity, while the struggle for proper contraceptive instruction for married women is still subjected to violent antagonism by theologians, to add this needless fuel to the flames.

With one general thesis of the book, namely, the need for further research and observation on the theory and practice of contraception, we are in full agreement; but think, however, that a more precise and accurate grip of other people's work, and more recognition of European predecessors, also a more thoroughly scientific attitude of mind, are wanted before any very great advance is likely to be made.

One might summarize the position now as being that 'the cap and chemical method is best for the normal' was laid down as a fundamental principle in 1918 by the writer; and it is satisfactory that this book with its medical evidence and detailed research, in 1928, supports this and re-asserts that, 'in effect a cap and chemical is best.'

MARIE C. STOPES.

BATESON'S BIOLOGY

Punnett, R. C., F.R.S. (Ed.) *The Scientific Papers of William Bateson.* Cambridge, 1928. University Press. Two vols., pp. 450 & 503. Price £4-4-0.

THESE two volumes comprise practically all of Bateson's scientific contributions. In the first volume the papers deal mainly with variation, and include the introductory essay to *Materials for the Study of Variation.* The second volume contains the papers which appeared after the discovery of Mendel's laws, and are concerned more particularly with the results of experimental breeding. The plates, paper, printing, and binding are in the style at once excellent and unpretentious which we have learnt to expect from the Cambridge University Press; the only pity is that the price should be prohibitive.

As would be expected in a man of such pronounced views, controversy played a large part in Bateson's life; and it is interesting to have reprinted in these volumes Bateson's contributions to the scientific controversies into which he was drawn. Prodigious pains went to the preparation of his controversial papers, both in the collection of facts and in the marshalling of the argument. The late Lord Justice Bowen used to say that there was not a single fact in all the evidence of the celebrated Tichborne cases of which he (Lord Bowen) was not fully cognisant, and of which he was not prepared on the spur of the moment to give an immediate and correct account. Bateson conducted his controversies in a similar state of preparedness; his mastery of every relevant detail was marvellous. Added to this, his cautiousness of statement, his lucidity of expression, and, above all, his passionate demand for truth at all costs, made him a formidable opponent, and his contributions masterpieces of English prose at its best.

In his inaugural address to the University of Cambridge, on his admission to the newly created chair of Biology, Bateson used a phrase which aptly expressed much of his attitude towards science and his method in research. "Treasure your exceptions" was the advice he offered to beginners: it was also the guiding principle of his own investigations. It can be perceived at work throughout the thousand pages of the two volumes before us, from the first essay on *Balanoglossus* to his last review of his own genetic faith, the paper entitled "Segregation." It was the basis of his discontent with the easy assumptions of the later Darwinists; it is clearly the dominating motive in the *Materials for the Study of Variation.*