

certaining the condition of all elements in the population, it is to be hoped that the observations taken in Britain and America will be capable of direct comparison—for, beyond doubt, the bulk of the population of the United States has a British ancestry.

SCIENTIFIC BOOKS

Mental Conflicts and Misconduct. By WILLIAM HEALY. Boston, Little, Brown & Company, 1917. Pp. 330.

Like earlier studies from the psychopathic institute attached to the Chicago Juvenile Court, this work emphasizes the need of painstaking inquiry into the experience and inner life of the individual delinquent, if the treatment given him is to be in any sense remedial. The present book illustrates the author's method of "mental analysis," a process somewhat akin to the "psychoanalysis" of Freud, though not making the same pretensions to penetrate to the very depths of the individual's make-up, and not operating with dreams, symbols or association tests, but by a straightforward conversational approach, in which the subject is sympathetically asked to tell "if anything is worrying him." This line of approach is especially indicated when the subject shows signs of an "inner urge" towards misdoing, without deriving any material benefit, but only painful consequences, from his misdoing. In such cases, there is reason to suspect a "mental conflict," which may be discovered by the analysis and then cleared up by proper handling, with the happy result that the misconduct ceases.

The mental conflict discovered by analysis is often of the following stamp. A young child, previously a good child, and often of good intelligence and from a good home, is incited by some bad boy or girl or older person to sex practices, and very often at the same time to stealing or truancy. The child rejects the sex practices, though often obsessed by the thought of them or by the bad words used in connection with them, but begins to steal or run away from home. The author interprets this to mean that an "inner urge,"

primarily directed towards sex behavior but prevented from finding an outlet there, escapes through the channel of stealing, etc., which has become accidentally associated in the child's mind with the sex matter. From such causes, quite a career of delinquency may be entered upon by children who are fundamentally normal and healthy-minded.

As judged from a series of two thousand juvenile recidivists, the per cent. of cases of delinquency in which mental conflict of this general type enters as a causative factor is about seven—more rather than less. It is not the "rough" type of juvenile offender that is here in question, nor the mentally defective. Usually the cases show good mentality and good social qualities. They are not moody and "shut-in," nor egocentric, nor, indeed, of any peculiar mental or temperamental type (unless, as is possible from the tests given, the imagery or mental representation of these individuals is unusually active and vivid). Heredity does not appear as an important factor; but it is rather the social or mental environment of the child that generates the conflict. Specially important in this regard is the lack of confidential relations between the child and his parents, leading the child to keep his difficulties to himself, when a frank discussion of them with a sympathetic adult would resolve the conflict.

The treatment appropriate to this species of delinquents is by no means punishment—an entirely superficial and notably unsuccessful reaction—but, first of all, mental analysis directed to discovering the genesis of the misconduct, and then "reeducation," including the giving of suitable information and the development of an intelligent attitude towards the causes of conflict; further, the establishment of confidential relations between the delinquent child and an adult adviser, and often the removal of features of the environment that suggest misconduct.

Psychologically, the author's case-material is of great interest, and the interpretation given, in terms of mental conflict, is likewise of considerable interest, though it does not

appear to fit all the cases equally well. To the reviewer, at least, a rather different "mental mechanism" would seem to fit the case histories better. In particular, the association between sex behavior and such other forms of misconduct as stealing and truancy is perhaps not so purely accidental and extraneous as the author assumes; for all of these forms of bad conduct typify for the child that life of "badness" which, perhaps because of its rebellion against authority and restraint, makes a certain appeal even to the "good" child. That is to say that the child does not resort to stealing as an outlet for dammed-up energy primarily directed towards sex behavior, but that, being incited to "badness" in several directions, and responding in some measure to the incitation, he follows the line that he is able to understand and follow with some success, leaving aside what he is not ripe for, though perhaps being mystified and obsessed by this latter.

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COLUMBIA UNIVERSITY

Telephone Apparatus. By GEORGE D. SHEPARDSON, Professor of Electrical Engineering, University of Minnesota. D. Appleton & Co. 1917. 337 pages, 115 illustrations.

Considering the marvelous rapidity of growth of telephony and the extent to which the telephone permeates the daily life of the modern business man, especially in America, where there is an average of one telephone to each ten persons, it is surprising how little is generally known concerning the history, construction or mode of operation of that wonderful device. This book presents an introduction to the development and theory of telephony for the educated classes of the public in general, and particularly for those engaged in telephonic operation or manufacture.

The book contains sixteen chapters, relating respectively to the following subjects: Introduction, Sound, Speech sounds, Telephone receivers, Telephone-receiver investigations, Telephone transmitters, Telephone-transmitter investigations, Signaling devices, Design of non-polarized signaling apparatus, Perma-

nent magnets and polarized apparatus, Design of polarized apparatus, Electromotive forces and currents, Principles of induction coils, Uses of induction coils in telephony, Condensers in telephony, Protective devices. The treatment is directly descriptive, abundantly illustrated by pictures and diagrams of the apparatus. The mathematical analysis is nearly all collected into the appendices at the end of the book, so that a non-mathematical reader can peruse all the chapters with very few interruptions.

The book deals mainly with telephonic apparatus, and the principles underlying its operation. Circuit arrangements are given relatively minor consideration, and radio-telephony is not included. A good set of indexes at the end of the volume greatly assists the reader.

A noteworthy feature of the book is the large number of collateral references indicated in footnotes throughout the text. The collection and collation of so much historical and technical material represents a large amount of labor. The insertion of this subordinate material makes the work of great value as a reference book to telephonists and students of telephony. Probably no other text-book on telephony in the English language contains such a wealth of electro-technical reference material. * A. E. K.

SPECIAL ARTICLES

ANESTHESIA AND RESPIRATION¹

THERE is much uncertainty as to the effect of anesthetics upon respiration. Some writers hold that anesthetics decrease respiration while others take the opposite view.² To clear up this confusion appears to be a necessary step toward a satisfactory theory of anesthesia.

¹ Preliminary communication.

² Cf. Höber, R., "Physik. Chem. der Zelle und der Gewebe," Ch. 8 und 9, 1914. Czapek, F., *Biochem. der Pflanzen*, Vol. I., S. 195 ff., 1913. Ewart, A. J., *Annals of Bot.*, 12: 415, 1898. Tashiro, S. and Adams, H. S., *Amer. Jour. of Physiol.*, 33 xxxviii, 1914. Appleman, C. O., *Amer. Jour. of Bot.*, Vol. 3, No. 5, May, 1916.