

tasks relate to such "human endeavors" as medicine, education and business, psychological preparation may be important.

The great public loathes definitions; but it is apt in affixing labels. It has—without any prompting from "science"—stuck the label "psychology" on hypnotism, mind-reading, ghosts, communion with the dead and a dozen magical and medical formulas. From clinical theorists it has eagerly learned to apply the same tag (with "new" prefixed) to the shocking practices of the psychoanalyst. And it has been frequently instructed of late to use the label for various jobs undertaken in business and in the schools by persons whose academic or professional training has included studies of psychology, in tests and in the Pearsonian statistics.

The more seasoned sciences and arts still have their "boundary disputes," but they do not insist that every performance of the scholar or the artisan be set down to the credit of a science or profession. The surgeon skilfully carving the family roast is not doing surgery; nor the zoologist eliminating bad stock from his private herd, zoology; nor the botanist in his lettuce-bed, botany; nor the embryologist, turning an extra penny in the poultry-yard, embryology. Why should psychologists encourage the impression that anything which concerns "human nature" is psychology; that psychology covers the field of "human experience, behavior and personality," or that it is whatever the student of psychology seriously undertakes? What would become of zoology if it professed to compass all of man's varied interests in life, or of physics if it similarly extended its present domain?

The war has shown us how many things beside the concern for his own science or art a trained or skilled man may, when occasion offers, usefully turn his hand to; but we are still tempted to confuse—at least in the case of psychology—the subject and its outside uses, applied science and science applied, the tasks of the science and the man trained by the science applying himself to extra-psychological tasks. The confusion is natural in the great public, which labels but does not define: it is inexcusable in the spokesman or the zealous apologist for the science.

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SCIENTIFIC BOOKS

Outline of Psychology. By WILLIAM McDUGALL. New York, Charles Scribner's Sons. 456 pages.

MCDUGALL'S "Outline of Psychology" offers a marked contrast to the numerous psychological texts that have appeared recently in America. Other system-writers, almost without exception, recognize

the validity of the physical "cause-and-effect" relation in the realm of mental phenomena. Professor McDougall expressly denies the possibility of interpreting the sequence of mental events as "a mechanical chain of cause and effect," and asserts that the fundamental category of psychology is "purposive striving" (p. vii).

As explained in the preface, the present volume does not attempt to set forth in sequence the principal facts and laws of the science; it is a carefully constructed train of reasoning, designed to demonstrate the truth of the author's teleological concept, which he terms the hormic theory (p. 71). Viewed in this light, rather than as a systematic treatise, there can be no question but that the book fulfills its purpose remarkably well. The fundamental thesis is definitely stated at the outset and the supporting arguments are marshaled point by point throughout the book.

After outlining the alternative theories and indicating the difficulties of the mechanistic position, the author proceeds to examine the characteristics of animal behavior. He cites Jennings's example of the amoeba in pursuit of a smaller amoeba and the latter's ultimate escape to prove that even in the simplest known creatures behavior is essentially purposive. In successive chapters the behavior of insects, lower vertebrates and mammals is examined with the same result. Especial stress is laid on the fact that an instinct is not a mere grouping of reflexes but a unified act which serves to accomplish some definite purpose in the animal's life history.

The transition to human psychology is somewhat marred by a chapter (VII) entitled "Behavior of the natural man," which speculates upon the behavior of an assumed non-social being, "Mowgli," somewhat after the fashion of the eighteenth century social contract literature. This is the only departure from the empirical method. The remainder of the book is taken up with a detailed examination of man's mental activities, such as attention, imagining, emotions, disposition and temperament, and belief, concluding with the growth of intellect in general and the organization of character. Throughout these successive stages the purposive nature of mental activity is emphasized; the organism's behavior is portrayed as a constitutional *striving* to attain an end, dimly foreseen in the lower species, distinctly pictured in the higher human realm. This *conative* tendency is coupled with the *cognitive*; the two together complete "the description of mental activity in its double aspect of knowing and striving" (p. 266).

As already stated, McDougall's work is radically opposed to the general trend of American psychology. Contemporary writers for the most part accept the causal principle in what McDougall would call its mechanistic form. They assume that the activity of

the nervous system, including the brain, is describable in terms of physicochemical processes, and that the principles or modes of mental activity are in some manner closely related to the modes of neural activity. Even the radical behaviorist, in denying the scientific character of the "mental," merely emphasizes the supremacy of "natural law." To McDougall, on the other hand, mental activity belongs to a distinctly different type from inorganic activity. Organic behavior does not follow the resultant of forces—it pictures the future and operates to attain a desired end.

The teleological theory offered in this book is closely related to the vitalistic theory in biology. Each assumes a mode of activity distinct from the strictly causal sequence of events—a factor which somehow guides the flow of energy and determines the outcome. It is precisely at this point that the teleological conception is open to challenge. The arguments of Driesch for an organic entelechy have been seriously questioned by leading biologists. Similarly, Professor McDougall's colleagues will question his teleological interpretation of response. The present volume offers no suggestion as to the *manner* in which the hormic activity works. The author merely states that the end is foreseen and that the activity proceeds till the purpose in view is accomplished. But is this true? Certainly the adult who has endeavored to twitch his ears without prior training finds that the purpose to accomplish this result does *not* attain the appropriate goal, no matter how intense or prolonged the striving. And so with the lower types of behavior. "Instinctive activity," says McDougall, "strives toward a goal, a change of situation of a particular kind, which alone can satisfy the impulse and allay the appetite and unrest of the organism" (p. 119). In pre-Darwinian days the instincts might well have been defined in these teleological terms, but natural selection indicates an alternative explanation—evolution of traits by racial "trial and error"—which seems both intelligible and plausible. Such questions of fact and interpretation will have to be thoroughly threshed out before the real value of McDougall's work can be determined.

Perhaps the weakest point in the present volume is the author's vagueness in defining his fundamental concepts. The reader will ask for a more lucid description of *striving*, *conation* and *foresight* than is given. There is also throughout the book a certain dogmatic insistence upon the cardinal doctrine of teleology, coupled with an all too frequent use of the adjectival method of refuting opponents. ("Loftily assert," p. 28; "impossible," "obviously absurd," p. 84; "fantastic theories," p. 128; "lofty attitude," p. 194; "the extravagant behaviorist doctrine," p. 289.)

On the other hand, the evidence for non-mechanistic

activity is ably presented and deserves careful and unprejudiced study on the part of investigators, to whatever school they may belong. Professor McDougall's formulation of the hormic theory (p. 71-3) raises teleology from metaphysical speculation to a real psychological problem, and his explanation of the nature of free-will (p. 46-8) gives that time-worn theory a new meaning.

Of special interest is the discussion of the seven marks which the author believes distinguish the behavior of organisms from the physicochemical activities of inorganic matter (pp. 44-46, 56). These are: (1) spontaneity of movement; (2) persistence of activity; (3) variation of direction of persistent movements; (4) termination of the activity when a particular change in situation is brought about; (5) preparation for the new situation; (6) improvement in the effectiveness of behavior; and finally (7) the fact that "purposive action is a total reaction of the organism," rather than a specific reflex or group of reflexes. These characteristics, taken together, afford perhaps the best synthetic view of the teleological conception of behavior.

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Historia de la Influencia Extranjera en el desenvolvimiento Educativo y Científico de Costa Rica. Por LUIS FELIPE GONZALEZ. Imprenta Nacional, San José de Costa Rica, 1921. 8vo, pp. (6) + XI + 320, 24 plates, each containing four portraits.

THE title of this clearly printed volume accurately describes its contents, which are concerned with the rôles played by various European and American nations in the educational and scientific development of the most liberal and progressive of the Central American republics—Costa Rica. It is a centenary volume, issued in the year when these republics celebrated the hundredth anniversary of their independence of Spain. It is divided into two parts.

The first part comprises eight chapters, 61 pages and, in the words of the author, analyzes the different factors which have determined the national culture during the first two thirds of the century of separate existence.

The universities of Spanish colonial America were those of Mexico, Guatemala, León, Santa Fé de Bogota, Lima and Cordoba. They possessed the same medieval culture peculiar to those of the mother country. Essentially conservative, they gave pre-eminence to ecclesiastical studies and scholastic philosophy, that mistress of theocratic Spain, with her bookish and memorizing systems, narrowness of spirit, filled with preoccupation and routine that offered not the least impulse to scientific investigation.