

*The Localization of the Origin of Voluntary Impulses [À propos de la Localisation d'Origine des Impulsions Volontaires].* (L'Encéph., March, 1926.) Fontecilla, M.

In a very compressed paper the author advances the view that the cerebral cortex is subordinate to a double nucleus situated at the third ventricle, having two aspects—vegetative and personal.

W. D. CHAMBERS.

## 2. Psychology and Physiological Psychology.

*Verbalization in Multiple Choice Reactions.* (Psychol. Review, November, 1926.) Rexroad, C. N.

This article shows the results of a series of experiments in multiple choice reactions, and presents data that are readily interpretable only if it be assumed that the individual is almost constantly making verbal responses, and that these responses play a large part in setting off overt responses.

WM. McWILLIAM.

*Playing School—A Compensatory Mechanism.* (Psychol. Review, November, 1926.) Lehman, H. C., and Witty, P. A.

In this article the authors continue a comparison of the study of play in white and negro children, taking as their subject "playing school." It is shown that girls of both races engage in this activity much more commonly than boys. That negro children participate in playing school more frequently than white children, and that both race-groups participate less frequently in this activity as age increases.

The writers suggest that the negro children engage in playing school more commonly than white children because this activity symbolizes to them knowledge, power and prestige, which they are unable to achieve in the world of actuality. This form of make-believe play may be a compensatory activity.

WM. McWILLIAM.

*Recent Work of Pawlow and his Pupils.* (Arch. of Neur. and Psychiat., April, 1927.) Gant, W. H.

### 1. Conditioned Reflexes.

Pawlow considers all acts to be reflex, and distinguishes two kinds of reflex—the inborn, physiological, unalterable or unconditioned reflex, and the acquired, usually called psychic or conditioned reflex. The flow of saliva resulting from the sound of a bell alone, because it formerly accompanied feeding, is a conditioned reflex. In order to form the conditioned reflex, the conditioning stimulus must be associated with the unconditioning stimulus a certain number of times (twenty or more, depending on the dog and other conditions). The conditioning stimulus must always precede the unconditioning stimulus. An example of what is called a conditioned reflex of the second order is given by blowing a whistle at the same time as a conditioning stimulus formed by a light is given. Soon the whistle

produces a flow of saliva when sounded by itself, although the whistle itself has never been followed by feeding. A reflex of the third order is shown by using the defence reflex. Instead of an electric stimulus to the sole of the foot a conditioning stimulus by means of a skin irritator is used. Then the skin irritator is combined with the noise of bubbling air through water, but no electric current is used. Soon the bubbling sound is sufficient to cause howling and withdrawal of the foot. This is a reflex of the second order. Now the bubbling is repeated simultaneously with a whistle for several days, and soon the whistle acquires the property of a conditioning stimulus, causing the dog to howl and withdraw his foot. This is a conditioned reflex of the third order.

Frequent successive repetitions of positive conditioning stimuli not interrupted by other stimuli caused the dog to become irritable and excited. If negative conditioning stimuli were used, the dog became sleepy and fell asleep. When conditioning stimuli were repeated too often without intervals for rest, or a too difficult problem was presented, the dogs showed symptoms resembling neurasthenia—whining, refusing to eat, disinclination to work. These dogs recovered with rest and rectal injection of potassium bromide. When the cortex of a cerebral hemisphere is removed it is impossible to form the defensive conditioned reflex. Krasnogorski, a pupil of Pawlow's, working with young children found that they developed conditioned reflexes much more quickly than dogs, and retained them for a longer period. He found it impossible to develop conditioned reflexes in children under 2 weeks of age. Abnormalities in conditioned reflexes in children indicate a disturbance in the balance between inhibition and stimulation. Imbeciles develop conditioned reflexes with difficulty; neurotic children develop them more quickly than normal children and lose them more quickly.

### 2. *Sympathetic Nervous System.*

Orbeli considers that the efferent sympathetic fibres have a direct influence on the central part of the spinal reflex arc. The sympathetic nervous system exerts a profound influence over the physico-chemical changes occurring in skeletal muscle, accompanied by a modification of the functional ability of that muscle. These changes influence the conditions of the motor end-plate, calling forth transformations in the efficiency of the corresponding muscles. This forms a sort of regulatory mechanism for the expenditure of muscle strength, and governs the conduction of impulses by the motor nerves.

### 3. *Epilepsy.*

Speransky found that slight freezing of the cerebral cortex of the dog causes epileptic convulsions after from two to five hours, followed by death in from twelve to fifty hours. If the frozen part is removed immediately after freezing, no symptoms result (except in the case of the motor cortex). Transplantation of a part of the frozen brain to the subdural space of a healthy dog causes symptoms of epilepsy and death. Speransky thinks that an autoneurotoxin

is formed, which passes into the blood, causing hyperkinetic symptoms. An intense motor excitement, although not epilepsy, is produced by injection of from 150–300 c.c. of defibrinated blood from the ill animal into the blood of a healthy dog. Working on these autoneurotoxins, he found that the brain substance of transplants from frozen cortex was rapidly disintegrated by normal cerebro-spinal fluid; the vessels, etc., persisted long after the brain substance had vanished. Speransky concludes that in local disease of the nervous system, destruction of the brain substance occurs in the affected part, and products of this destruction pass in the fluid to other parts of the brain; hence a diffuse encephalitis may be set up. He points out that the sclerosis of the cornu ammonis which occurs in epilepsy and various encephalitides is due to the fact that the fluid bathes this part of the brain on three sides with autoneurotoxins.

G. W. T. H. FLEMING.

*Psychology and Culture.* (*Psychol. Bull.*, vol. xxiv, No. 4, May, 1927.) Willey, M. M., and Herskovits, M. J.

This paper summarizes the recent work of anthropologists and ethnologists on the progress of culture—that is, anthropology from the social aspect—and emphasizes the value of this work for the psychologist. It is in four sections—the definition of culture, the morphology of culture, the mechanisms of culture, and methods in the study of culture. Reference is made to 148 publications on the subject—admittedly an incomplete list. W. D. CHAMBERS.

*Concepts of Trait and Personality.* (*Psychol. Bull.*, vol. xxiv, No. 5, May, 1927.) Allport, G. W.

The author criticizes the vague and varied meanings attached to such words as “trait” and “personality” by psychologists, and proceeds to set out his own views, including what he considers to be the basic requirements for the study of personality. There are 46 references to publications. W. D. CHAMBERS.

*Studies in Sex Differences.* (*Psychol. Bull.*, vol. xxiv, No. 5, May, 1927.) Allen, C. N.

After a concise review of recent publications on this subject, the author concludes that few, if any, of the so-called “sex differences” are due solely to sex; that the social training of the sexes is different and produces differential factors, interests, etc.; and that there is a large number of variables which have not been controlled, and which make previous conclusions on the subject uncertain. References to 74 publications are given. W. D. CHAMBERS.

*Psychology in Industry.* (*Psychol. Bull.*, November, 1926.) Viteles, Morris S.

This article reviews developments during recent years in the application of psychology in industry. A bibliography of 360 titles follows, referring mainly to books and to articles in technical journals. W. D. CHAMBERS.