

crew of 26, and a number of the scientific staff will sail with her from the Thames. The vessel will call at Cardiff, where her bunkers will be filled with patent fuel. She will then proceed to Cape Town and will take on board Sir Douglas Mawson, the leader of the expedition, and the remaining members of the scientific staff. Captain Frank Hurley has been appointed official photographer to the expedition. Mr. W. J. Griggs, who has been in the service of the P. and O. Company, has been appointed chief engineer of *The Discovery*. Captain Hurley accompanied the Antarctic expedition of 1911-14 as official photographer, and afterwards acted in a similar capacity with the *Endurance* expedition, under Sir Ernest Shackleton, in 1914-17. In the war, Captain Hurley served as official photographer to the Australian forces. He carried out exploratory work in New Guinea and recently made a flight from Australia to Europe.

UNIVERSITY AND EDUCATIONAL NOTES

THE University of Pennsylvania has received a gift of \$500,000 from Edward B. Robinette, Philadelphia banker and trustee of the university, for the establishment of three professorships. The gift was the third made by Mr. Robinette during the year. The first was of \$250,000 to the Robinette Foundation and later an additional \$250,000 was given for any use needed.

By the will of James B. Wilbur, Chicago banker and a summer resident of Manchester, Vermont, a trust fund of between \$2,000,000 and \$3,000,000 has been left to the University of Vermont, subject to the condition that the university limit its number of students.

Two Paul Williams research fellowships of \$1,000 have been established at Purdue University, one for the X-ray laboratory and one for the optical laboratory.

DR. JOHN FARQUHAR FULLER, JR., of St. Paul, Minnesota, who in 1928 received a three-year appointment as fellow of Magdalen College, has been appointed head of the department of physiology at Yale University. Dr. Farquhar will attend the Thirteenth International Physiological Congress in Boston in August and will then return to Oxford. He will begin his work at Yale on July 1, 1930.

APPOINTMENTS to professorships in the school of mines of Columbia University are of Dr. Thomas Thornton Read, in mining and metallurgy, and of Dr. Eric Randolph Jette, now associate professor of chemistry in New York University.

DR. K. LARK-HOROVITZ, professor of physics at Purdue University, has been appointed director of the laboratory of physics. Dr. G. E. Reed has been appointed assistant professor.

DISCUSSION

A MECHANICAL PARALLEL TO THE CONDITIONED REFLEX

It is common knowledge that when a person eats, his "mouth waters." It is well known that this mouth watering is apt to occur also when one merely catches sight of delicious food. The first reaction is an unconditioned (native, unlearned) reflex; the second is a conditioned (acquired) reflex. In the first reaction the food substance stimulates the sense organs in the mouth which, in turn, evokes a salivary reflex established before birth; in the second reaction the sight of food has been substituted for the contact of the food with the mouth. Nevertheless, in both cases substantially the same reaction follows.

It is believed by increasing numbers of students of human and other mammalian behavior that the conditioned reflex, with its power of substituting one stimulus for another, is the basic mechanism not only of ordinary habits but of the entire mental life. For some years this view has been vigorously advanced in this country by the behavioristic psychologists. In Russia, where the movement originated, its activity

has been characteristically experimental in nature. Thanks largely to the labor of the Russian reflexologists during the last quarter century there now exists a very substantial body of knowledge tending strongly to support this view.¹ As a result, psychologists more and more are looking to the conditioned reflex as an explanatory principle by means of which to understand the more complex forms of behavior and as a practical means of more effectively molding human nature in the education process. Physiologists, facing in the opposite direction, are stimulated to explore the still more basic physical and chemical processes upon which the conditioned reflex itself depends.

The belief of the reflexologists and the behaviorists that the mental life is essentially a function of various complex organizations of conditioned reflexes offers a challenge to the attempt at a synthetic verification. Logically, if it were possible to construct non-living

¹ The most significant summary of the Russian experimental results now available to English readers is the recent translation of I. P. Pavlov's great work, "Conditioned Reflexes." Oxford University Press, 1927.