

PROCEEDINGS  
OF THE  
NATIONAL ACADEMY OF SCIENCES

Volume 4

OCTOBER 15, 1918

Number 10

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*MEASURING THE MENTAL STRENGTH OF AN ARMY*

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Communicated by R. Pearl. Read before the Academy, April 23, 1918

Committees of the American Psychological Association and the Psychology Committee of the National Research Council prepared between April and August, 1917, various psychological methods for the selection and classification of recruits in the Army and Navy. In August, 1917, the Surgeon General on recommendation of Majors Victor C. Vaughan and William H. Welch of the National Research Council accepted for trial certain methods which had been devised especially for the psychological examination of men enlisted in the United States Army. Dr. Robert M. Yerkes, Chairman of the Psychology Committee of the National Research Council was appointed on August 17, Major in the Sanitary Corps, to organize and direct this new branch of the service for the Medical Department.

During the initial development of this service, Major Yerkes worked under the immediate administrative supervision of Major Pearce Bailey, Chief of the Division of Neurology, Psychiatry and Psychology. Plans were speedily prepared and the necessary authorization secured from the Secretary of War for thorough trial of the proposed methods in four National Army cantonments. For this work sixteen psychologists were commissioned first lieutenants in the Sanitary Corps, and twenty-four others were given civil appointment by special authorization of the Secretary of War. The psychological staff of each camp consisted of ten men.

Between October 1 and December 1, 1917, nearly 100,000 drafted men, students in Officers' Training Camps, and officers of camps or divisions were examined. In December the work was officially inspected by an officer of the Medical Corps. The reports of this inspectional officer supplemented importantly the statistical data supplied during progress of work by Major Yerkes. As the results of psychological examining indicated clearly the value of the work for the elimination of men mentally defective, the balancing of organi-

sations in mental strength, the classification of men for the assistance of personnel officers in the camps, and the indication of men of exceptional intelligence to be charged with special responsibility or sent to Officers' Training Camps, and as all reports of the inspector were favorable, the Surgeon General in December 1917 recommended to the Secretary of War the continuance and the extension of psychological examining to the entire army. This recommendation, after careful inquiry concerning the value of the work by the Training Committee of the War College Division of the General Staff, was approved by the Secretary of War who directed the Surgeon General to prepare a plan for the proper conduct of the proposed work.

A comprehensive plan was promptly prepared by the Staff of the Section of Psychology, Division of Neurology, Psychiatry and Psychology. This plan provided for suitably trained personnel, special psychology building in each camp, and necessary apparatus and printed materials. It was fully approved by the Secretary of War, Jan. 19, 1918, and the Surgeon General was authorized to create a Division of Psychology in his office, and to put the plan of psychological examining into effect.

A school for military psychology was immediately organized in connection with the Medical Officers' Training Camp, Fort Oglethorpe, Georgia, in which a maximum of 100 student officers and approximately 100 psychologists enlisted in the Medical Corps could be trained simultaneously during a period of two months. This school was opened February 4 with Captain William S. Foster, San. C., N.A. as senior instructor. Between this date and July 1, 1918, approximately 70 officers of the Sanitary Corps and 250 men enlisted in the Medical Corps were given special training in military psychology.

Plans for suitable psychology buildings were prepared and duly submitted to the Quartermaster General. Subsequently the Equipment Committee of the General Staff disapproved the expenditure for these buildings pending Congressional appropriation for the purpose, and by special request of the Secretary of War, existing buildings were assigned for psychological examining in most of the divisional training camps.

The necessary apparatus and printed materials for the examining of 500,000 soldiers were speedily prepared, and during April and May, psychological examining staffs were organized in twenty-five National Army and National Guard camps. During the month of June additional apparatus and printed materials were manufactured for the examining of 1,000,000 soldiers.

On July 1, 1918, psychological examining was in progress in twenty-eight army camps and in three General Hospitals. Seventy-nine officers of the Sanitary Corps were on duty in these stations, and in the Division of Psychology, Surgeon General's Office. Approximately 100 non-commissioned officers and privates of the Medical Corps especially trained in military psychology had been assigned to duty in examining stations, and somewhat more than 100 were in training at the school of military psychology,

Fort Oglethorpe. Up to April 27, 1918, when new methods were put into use, approximately 140,000 soldiers had been examined. On July 1, 1918, 600,000 had been examined. Of this number, slightly more than 0.25% had been recommended by psychological examiners to psychiatrists for discharge because of mental deficiency, and about 0.5% had been recommended for assignment to service organizations for development battalions because of mental inferiority.

Psychological examinations which were originally conducted in wards of Base Hospitals, are now made in a psychology building located usually in the Depot Brigade. In this building, drafted men are examined promptly on reporting to camp. Their intelligence ratings are immediately transmitted to the Personnel Officer of the camp. All cases of mental deficiency, or those for which psychiatric examination is indicated as desirable, are referred to the psychiatrist.

The aim of the Division of Psychology, Surgeon General's Office, is to develop a psychological center in each military training camp to which all psychological problems of military assignment, training, discipline, morale, and intelligence may be referred by officers of the line or staff. Such a center exists in twenty-five camps, and the service is being extended as rapidly as available personnel permits.

(Publication approved by the Board of Publications, Office of the Surgeon General.)

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*THERMO-ELECTRIC ACTION WITH THERMAL EFFUSION IN METALS: A CORRECTION*

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Communicated August 3, 1918

The last paragraph of my paper in these PROCEEDINGS for April, 1918, dealt incorrectly with the effect of 'hypothesis (B)' the hypothesis that free electrons in the interatomic spaces of an unequally heated metal bar have a tendency like that which in ordinary gases produces the phenomena of thermal effusion.

In a common gas the condition of equilibrium maintained by thermal effusion is not  $p$  constant but  $p \propto T^{\frac{1}{2}}$ , where  $T$  is the absolute temperature. In dealing with the free electrons, for which the  $R$  of the equation  $pv = NRT$  may not be a constant, we have as the condition which thermal effusion tends to create

$$p \propto (RT)^{\frac{1}{2}} \quad (1)$$

whence

$$dp = \frac{p}{2} \left( \frac{dR}{R} + \frac{dT}{T} \right). \quad (2)$$