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Concerning Physics Aptitudes

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of the twenty-six samples these values increase in magnitude together. If one plots the values of the former, changing from one to eight times, and of the latter varying sixty times, the points are included within an angle of about 35° (with one exception). This approximate correspondence adds credence to the view—obtained on other grounds, that the water structure alters by the breaking of H bonds and that this is the chief cause of the variations in the adiabatic compressibility.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA

A SIMPLIFIED CONDUCTIVITY-RADIATION EXPERIMENT FOR THE ELEMENTARY LABORATORY

LESTER T. EARLS

In an attempt to fill a need for the laboratory approach to the physical processes of conduction and radiation of heat, the following two-part experiment is suggested:

The heat conductivity of a poorly conducting specimen (such as wool cloth) is measured by allowing heat to flow through it from a hot cup above into a copper receiving block below. Direct measurements permit the calculation of the coefficient of thermal conductivity with an accuracy which is adequate for the elementary laboratory work. The heat-absorbing characteristics of various surfaces are tested by using them to face copper blocks of similar dimensions, and radiating them with the heat and light radiations from either a cone-type radiant electric heater or a 200-watt electric light.

Typical data taken by elementary physics students in a three-hour laboratory period are presented and discussed.

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CONCERNING PHYSICS APTITUDES

C. J. LAPP

The search for physics aptitudes extends back to 1926 when eight were tentatively listed. The checking and rechecking of these have resulted in discarding of six. Of the many new aptitudes suggested and studied, four new ones have been discovered. The

inter-correlation, however, reduces the predictive value of the added new ones. Five of the aptitudes have been built into an experimental edition of a new test and it is now being experimentally used in the E.S.M.D.T. course in Pennsylvania and elsewhere. This test gives a correlation with Mechanics Cooperative Test, Form A, score of .72.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA

THE RATING OF PHYSICS TEACHERS IN THE PENNSYLVANIA SUMMER ENGINEERING DE- FENSE TRAINING PROGRAM

C. J. LAPP

Each physics teacher was given a subjective rating by a traveling physics supervisor after the teacher had been visited at least three times. After the teacher had been visited five times the physics supervisor rated the teacher objectively on a rating blank containing twelve items on a five point scale. Finally each teacher was rated on the basis of the achievement of his students as compared to the average achievement of all students in the program of equal ability after corrections had been made for aid received by those students in the research group.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA

SOME NEW LIGHT ON THE OLD PROBLEM OF LEARNING IN PHYSICS

C. J. LAPP

Educational psychologists have given significant facts concerning human forgetting. To combat forgetting an experimental research program was organized and carried out in the Summer of 1941 in the Pennsylvania Summer EDT in physics. Devices used to offset forgetting and produce achievement were highly successful.

STATE UNIVERSITY OF IOWA,
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