

methods of labeling specimens. The first requires the use of an electric stylus and transfer paper. The second employs the more usual materials of quick-drying enamel, turpentine and a fine brush. Although both are excellent methods the author considers the one herein described to have many additional merits to recommend it. The printing or typing of the symbols is done on paper under normal conditions of a typewriter or smooth table top; thus assuring that they will be well formed and legible. All printing or typing can be done at one time. The label and "varnish" are both easily and simply applied. The "varnish" does not smear the symbols. The "varnish" is acid, alkali, alcohol and waterproof, thus permanently preserving the surface of the label in addition to holding it to the specimen. The equipment and materials employed are simple, cheap and easily obtained. The surface of a specimen needs no previous preparation, such as filing a rough surface or etching glass, as the "varnish" will stick to anything.

This method has been in use in the author's laboratory for a number of years. The labels on specimens of fossils and rocks, some with rough and porous surfaces, in constant use in student exercises show no signs of damage after several years' handling.

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### A SIMPLE DEMONSTRATION OF THE CONDITIONED RESPONSE

WHILE the technique of establishing a conditioned response is theoretically simple, laboratory manuals usually omit this important principle in their experiments on learning. The reason for the omission is probably to be found in the difficulty encountered in securing unequivocal results within a short space of time by means of equipment ordinarily available.

The writer has regularly employed the following procedure in demonstrating conditioning to groups of students. Because of the ease and speed of the technique, it has been a useful adjunct to lectures on learning. The necessary apparatus includes a golf ball, a screen, consisting of an 8- by 10-inch cardboard clamped to an 18-inch support, and a "clicker" (any device capable of making a sharp click). The subject seats himself by a table upon which he extends his right arm palm downward. The experimenter holds the golf ball in full view about 14 inches above the extended hand and instructs the subject to avoid inhibiting his natural response to the falling ball. Having dropped the ball several times, allowing the subject to withdraw his hand to avoid being hit, the experimenter next drops the ball from behind the screen which is fixed at about the same height. It is important to have the screen so adjusted that the subject has just time enough to respond to the sight of the falling ball. This is the

response to be conditioned. The experimenter now makes several clicks from behind the screen as the subject's hand lies extended, and all may observe that the sound by itself elicits no visible withdrawing reaction. At this point the experimenter gives eight to twelve simultaneous presentations of the original and substitute stimuli. This is accomplished by holding the "clicker" in one hand and the ball in the other, both hands being behind the screen. The coordination may take a small amount of practice, but it is easily learned. The click alone is then capable of eliciting the withdrawing reaction. By repeatedly presenting the click without reinforcement from the falling ball, it is possible to demonstrate extinction. A few additional reinforcements can then re-establish the conditioning. Should the subject voluntarily inhibit the conditioned response, the fact may be revealed by dropping the ball without the accompaniment of the auditory stimulus. In this case the ball will strike the extended hand.

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