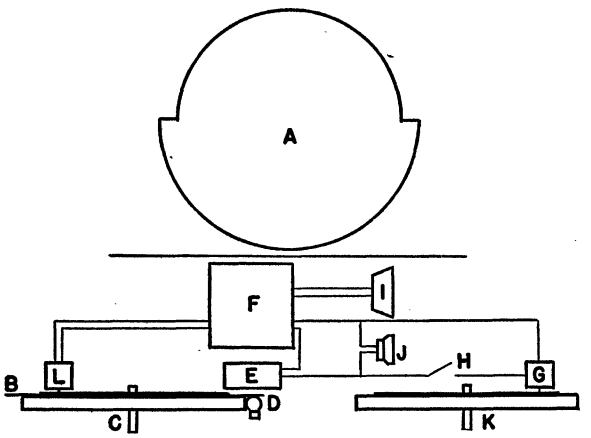

FIG. 1. Schematic of apparatus for copying isolated sounds from a phonograph record. A, shape of shield; B, projecting portion of shield; C, playback turntable; D, 32 c.p. lamp; E, photoelectric relay; F, amplifier; G, cutting-head; H, switch; I, loud speaker; J, head-phones; K, cutter turntable; L, electric pick-up.

from this lamp falls upon the cell of the photoelectric relay, E. The relay is put across one side of the line conducting the output of the amplifier, F, to the cutting-head, G, and is adjusted to close the circuit when the cell is activated. A switch, H, also breaks the circuit.

The original phonograph record is placed on top of the shields, played into the amplifier and heard in its entirety in the loud speaker, I, while the line from the relay to the cutter is tapped by a pair of head-phones, J. The shields are adjusted until the sound selected for recording is heard in the head-phones as one of the intermittent tones admitted by the relay. This selected portion is recorded in isolation by closing the switch, H, during the interval which immediately precedes the sound, and by opening it as soon as the sound has been cut.

With the present apparatus sounds of duration less than .39 sec. are recorded conveniently. Sounds of longer duration may be recorded with the same arrangement by decreasing the length of the projecting portion of the shields or by mounting the shields, relay and light upon a slower speed turntable than that used for playing the original record. In psychophysical work which does not demand the presentation of stimuli in rapid succession, the device may be adapted to any electric phonograph and used without recording the sounds.

GRANT FAIRBANKS
STATE UNIVERSITY OF IOWA

DEMONSTRATION APPARATUS FOR SMALL INSECTS

THE apparatus here described has proved useful for the public exhibition of small biological specimens. A six-foot model was in use as part of the recent Vermont Conservation Commission's exhibit at the Sportsman's Show in Burlington and attracted a great deal of interest. The apparatus in this instance was used to display specimens of insects which form an important part of the food of the brook trout. By the use of ten lenses of several sizes fifteen different forms were shown.

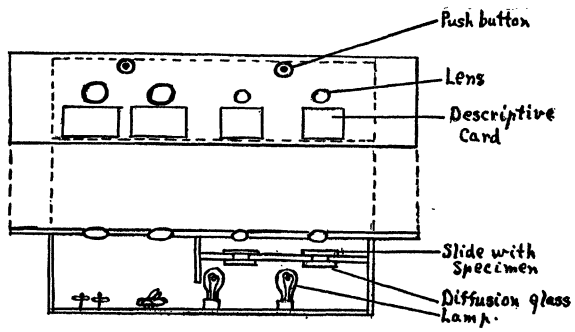

FIG. 1. Top and side views of demonstration apparatus.

The apparatus consists primarily of a box into the upper lid of which the lenses are fastened; the illumination is furnished by fifteen-watt electric lamps which can be turned on by the observer by pushing a button mounted on the lid by the lens. Large objects, such as adult insects, are illuminated with indirect light, and a reading glass lens of about a six-inch focal length is used to magnify them. Small objects, such as larvae, which one would ordinarily examine under a dissecting microscope, are mounted on a baffle board close to a dissecting lens. Light passes up through a small hole in the baffle board. It was found that best results were obtained when the opening on the lower side of the board was covered by a piece of opal glass which helps to diffuse the light without cutting down its intensity too greatly. The push button control of the lights eliminates the danger of overheating and the consequent destruction of balsam preparations. Descriptive labels placed beside the lenses help to convey the story to the layman observer.

WM. HUDSON BEHNEY
UNIVERSITY OF VERMONT

BOOKS RECEIVED

CROWTHER, J. G. *Soviet Science.* Pp. x + 342. 15 plates. Dutton. $4.00.

KELWAY, PHYLLIS. *Hedge Folk in Twilight.* (Field mice, dormice, shrews, hedgehogs, owls). Pp. xi + 178. 21 plates. Longmans, Green. $2.50.

SOUTHWELL, R. V. *An Introduction to the Theory of Elasticity; For Engineers and Physicists.* Pp. viii + 509. 120 figures. 3 plates. Oxford University Press. $10.00.

SUTTON, RICHARD L. AND RICHARD L. SUTTON, JR. *An Introduction to Dermatology.* Second edition. Pp. xvi + 566. 190 figures. Mosby. $5.00.