amplification of the writing point is effected. After some experimenting two little BB shot split and mounted on silk thread in the usual way (7) were found effective counterpoises. These are held after adjustment by a smear of colophonium wax placed over the loop.

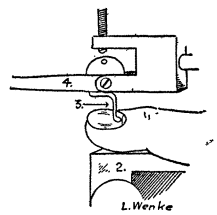

FIG. 2. Finger Placement and Dispatching Lever.
2 Adjusting arm for finger support
3 Nail Pad
4 Lever Arm

Preliminary to taking records the student acting as subject is seated at the laboratory table in such a position that the right forearm rests comfortably upon the table. The ball of the finger (preferably the index finger although any finger will serve) is slipped up on the adjusting screw arm (2), the thumb then rests comfortably on the base of the stand and the other three fingers are flexed and rest naturally upon the table under the palm. The double clamp (9) carrying the dispatching lever (4) can then be lowered so that nail pad (3) will press gently upon the fingernail. By adjusting the little counterpoise weights (7), just the proper pressure can be made to impinge upon the nail so that the finger will throb at each heart beat. After a few minutes when complete muscular relaxation is attained the throbs become more and more pronounced, and with a little experience excellent records showing all phases of typical heart cycles are obtained. It is obvious that if more weight is needed to accentuate the throb, the little lead weights should be moved outwards on the lever arm (6). It is also clear that if the throb in the

FIG. 3. Typical Sphygmogram.
Note the sharp amplitude, well-defined dicrotic notch with pre- and post-dicrotic phases in most instances.

finger needs to be amplified it is only necessary to reduce the length of the short arm of the writing lever by slipping the silk thread nearer the fulcrum at (10). By making these adjustments it has been possible to obtain excellent records of considerable amplitude on the smoked kymograph drum (8).

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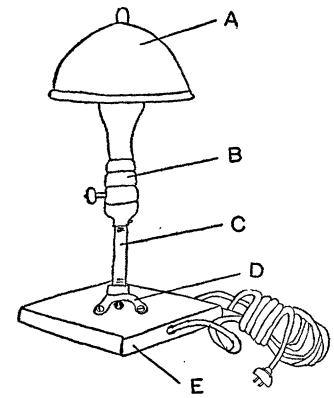
AN ECONOMICAL LABORATORY TABLE LIGHT

A VERY satisfactory table lamp for microscopic work in elementary courses in biology may be made at a small fraction of the cost of such lamps as sold by the regular dealers. The materials, with the exception of the brass shade, may be bought in any hardware store, and may be assembled in half an hour by a janitor or student assistant. The appearance of the finished product, as shown in the figure, is quite good.



The base, *E*, is a wooden block about 6 x 6 x 1 inches in size, with a one-inch hole through the exact center, under the column of the lamp, a quarter-inch hole running from the center of one edge of the base to the central hole; this makes it easy to run the flexible cord, which may be of any desired length, to the base of the socket, *B*. The switch-socket is screwed to the end of a 3 x 5/8 inch gas-pipe "nipple," *C*, which, in turn, is attached to the base, directly over the central hole, by what the electricians call a "crow-foot," *D*, used by them to attach hanging lights to ceilings.

An ordinary inside-ground bulb gives very satisfactory results, though a "daylight" glass bulb would, of course, be better.

The brass shade, *A*, keeps the light out of the student's eyes. The base and iron-work may be painted with black enamel paint or finished in any way desired.

The cost of the outfit is about as follows: brass shade, .45; nipple, .05; crow-foot, .05; switch-socket, .20; 8 ft. flexible cord, .20; plug, .05; base and paint, 05; *total*, $1.05, not including bulb.

This type of lamp has an advantage over the usual type of microscope lamp in that it not only illuminates the microscopic object but also gives a good light upon the student's note-book. It is light and compact and is easily removed from the table when not needed.

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