VIRGINIA SOCIETY OF ORNITHOLOGY

THE fourth annual meeting of the Virginia Society of Ornithology was held at Alexandria on March 9 and 10. On the afternoon of Friday, March 9, there was a program of papers by members, followed by the second annual dinner at 7 P. M. Greetings were given from their respective organizations by Dr. T. S. Palmer, secretary of the American Ornithologists Union; Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution, and Dr. Harold C. Bryant, of the National Park Service, formerly a member of the Cooper Ornithological Club. A brief talk was given also by Mrs. Leo D. Minor, of the Audubon Society of the District of Columbia.

On Friday night invitation addresses were given by Dr. Harry C. Oberholser and Arthur H. Howell, biologists with the Biological Survey. On Saturday morning the members took a field trip along the Mt. Vernon Memorial Highway from Washington to Mt. Vernon, seeing hundreds of waterfowl along the Potomac.

All officers were reelected as follows: Ruskin S. Freer, Lynchburg College, Lynchburg, *president;* Chas. O. Handley, Commission of Game and Inland Fisheries, Richmond, *vice-president;* Dr. Florence Hague, Sweet Briar College, Sweet Briar, *secretary;* John B. Lewis, Amelia, *treasurer;* Dr. J. J. Murray, Lexington, *editor, The Raven,* the monthly bulletin of the society. Mr. M. G. Lewis, of Salem, and Mr. A. O. English, of Norfolk, were reelected members of the executive committee.

At the business meeting a resolution was adopted opposing baiting of wild fowl within 100 yards "of any blind, battery or other device from which these birds may be taken legally."

RUSKIN S. FREER,
President

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A FOOT-FOCUSSING DEVICE FOR THE BINOCULAR DISSECTING MICROSCOPE

IN connection with a study of the internal structure of winter buds carried out by the senior author under a dissecting microscope, the need for focussing the instrument with the foot while manipulating the object or the dissecting implements with both hands became evident. Since there was no machine for such a purpose on the market at that time, the device described in this article was planned and made by the authors in the spring of 1932. It has been in use in the botanical laboratory of the University of Iowa since that time.

As an indication that a device of this kind is actually needed, two rather recent articles describe foot-focussing machines. In 1930 Crafts suggested a device whereby movement of the foot was transmitted to the microscope adjustment by a double cord running over two grooved wheels. This cord ran up through the table, the whole apparatus being stationary.[1]

In 1932 La Rue called attention to the need of an apparatus of this kind and described a device by which the microscope barrels could be raised by a cord running over the wheel of the hand adjustment. This cord connected at the lower end to a foot pedal placed on the floor. The barrels were lowered by a rubber band when pressure on the foot pedal was released.[2]

[1] A. S. Crafts, "Some Accessories for the Dissecting Microscope," *Plant Physiology,* 5: 430–431, 1930.

[2] C. D. La Rue, "A Device for Focussing the Dissecting Microscope with the Foot," SCIENCE, 76: 104–105, July 29, 1932.

Both of these devices have very obvious limitations in regard to their general use and are probably intended mainly as temporary expedients.

Reference to the accompanying diagram will indicate how the machine developed by the authors functions. Movement of the foot pedal A raises or lowers a brass plunger within the metal shell B. This plunger is connected to the wire C, which moves inside the flexible wire cable D. This wire cable connects at the top to the microscope by means of the support E. The wire inside the cable continues up to the arm F, which clamps on the adjustment shaft by means of a set screw. This set screw can be readily adjusted so that the arm is just tight enough to the shaft to turn it when the foot pedal is raised or lowered, but at the same time is loose enough to allow for turning of the hand adjustment wheel.

Throughout a period of about two years' use this machine has been found to possess the following advantageous characteristics: (1) The parts are very simple. (2) It can very quickly be attached or removed from the microscope. (3) It is light in weight and the attached machine can be carried from place to place. (4) It is automatically adjusted to different table heights or to changes in the position of the foot pedal. (5) The foot can be removed from the pedal without changing the focus. (6) Its action is free from jerks and catches. (7) One stroke of the pedal gives a focussing distance of about the thickness of an ordinary lead pencil. (8) Since the hand and foot adjustments can be used at the same time the general focus can be changed with the hand to allow for an examination of a variety of objects of

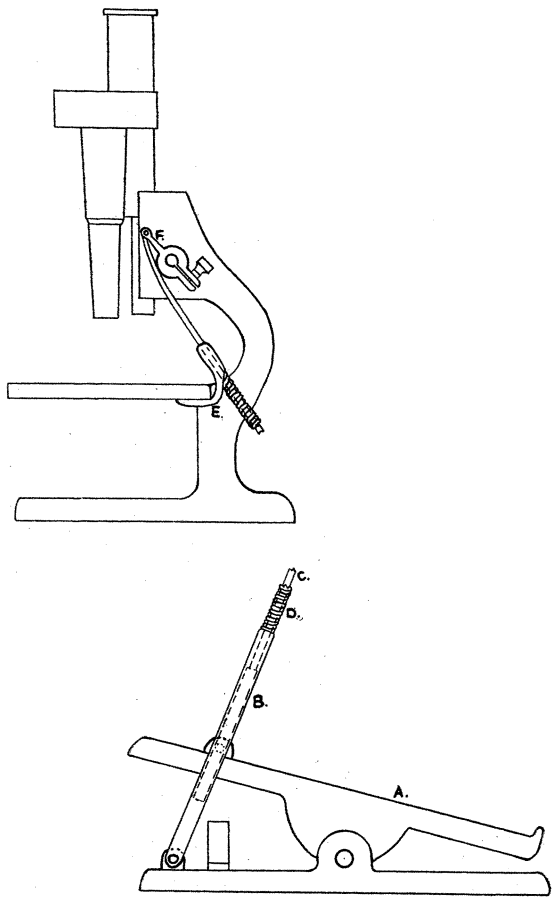

FIG. 1

different thickness, without necessitating any change of the set-up.

It has been suggested that this instrument would be of value in such work as making tissue transplantation in zoological research. It has been of value to the authors in the study of small flower parts in plant taxonomy. It would seem to be a great time-saver in any sort of work where much time is spent in using a dissecting microscope.

It has also been suggested that this device would be of value attached to the fine adjustment of an ordinary microscope for such purposes as making blood counts, or in following the movements of motile organisms, such as protozoa or bacteria.

The investigators in the various fields of research who have felt the need of such a device will be interested to know that the attachment described here, somewhat modified to allow for adjustment to the standard makes of dissecting microscopes, will be put on the market in the near future by the Spencer Lens Company, of Buffalo, N. Y.

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A SIMPLE AND INEXPENSIVE RESPIRATOR FOR SMALL ANIMALS

IN experiments involving opening the thoracic cavity of white rats, collapse of the lungs frequently resulted in death from asphyxiation. Viability depended partly on the point of entrance to the cavity. The animal recovered more frequently after a dorsal than after a ventral incision. Because of the nature of the operation, it was impossible to use the principle of the Drinker respirator, so positive pressure through the trachea was employed to keep the lungs distended.

The respirator is an inexpensive device consisting of a small respirator chamber (capacity 70 ml) attached to a double-acting pump (Fig. 1). The chamber, preferably made of glass, is tapped at five points; one end is covered by a sheet of thin rubber in which a hole is made to admit the muzzle of the animal; a safety valve serves two purposes, easing the suction on the lungs and drawing in fresh air from the outside at each stroke. A mercury manometer is valuable in detecting leakage in the system. The amount of air being pushed into the lungs at one stroke may be regulated by fastening the handle of the pump to the desired radius on the drive-wheel.

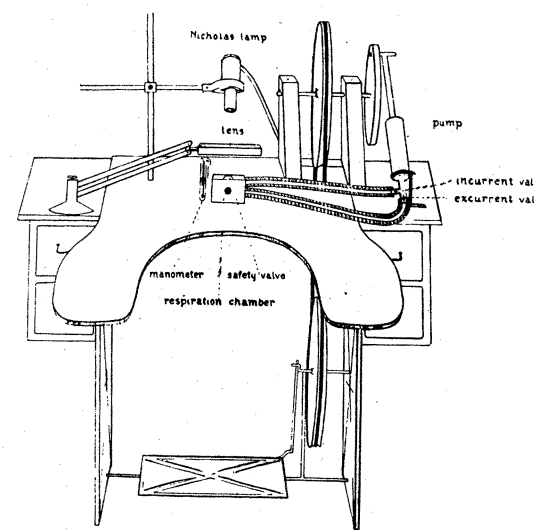

FIG. 1

The whole apparatus is conveniently supported on top of a sewing machine frame by two wooden standards, through the top of which the shaft rotates. The fly-wheel is connected with the treadle wheel by leather belting. It is a simple matter to keep the strokes synchronized with the breathing rhythm of the animal. Slight inflation of the stomach usually occurs, but in only a few cases does it become extreme enough to actually harm the animal.