allotment by the committee on grants for research.

13. An appropriation of $500, or such portion thereof as may be needed, was made from the treasurer's funds, for paying the honoraria of the members of the committee on grants for research. (See 3, above.)

14. An appropriation of $250 from the treasurer's funds was made, to care for the honoraria of the members of the committee on prize award. (See 9, above.)

15. The committee looked with favor on holding the meeting of December, 1932, at New Haven.

16. A report from Dr. Gregory D. Walcott, chairman of the committee on Source-Books, was accepted and referred to the council.

17. Dr. J. McKeen Cattell was named to represent the American Association at the approaching Centenary Meeting of the British Association for the Advancement of Science, to be held at London, September 23–30, 1931.

18. Dr. Robert A. Millikan was named to represent the American Association in connection with the American cooperation with the Royal Institution, for the approaching Faraday Centennial Celebration.

19. The executive committee favored having general-interest lectures at 4:30 on the afternoons of Tuesday, Wednesday, Thursday and perhaps Friday, as general sessions of the association, also general-interest lectures at general sessions on the evenings of Wednesday, Thursday and Friday.

BURTON E. LIVINGSTON,
Permanent Secretary

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A METHOD OF INJECTING THE COELOM OF SMALL ANNELIDS

IN the course of experiments involving the injection of various solutions into the body cavity of Lumbriculus, a microdrilous oligochaete, some modifications of the apparatus and methods described by Knower[1] were found to be advantageous.

Small glass bulbs and tubes similar to those described by Knower, but averaging about eight inches in length and with the right angle bend one half to three quarters of an inch from the end of the bulb, were used. In this work, however, the microinjector was held in a support consisting of a wire loop so shaped that adequate freedom of movement was possible (Fig. 1). This loop was attached to an adjustable burette clamp the jaws of which held a microburner inserted into a small cork. This burner was so placed that it pointed directly toward the microinjector bulb.

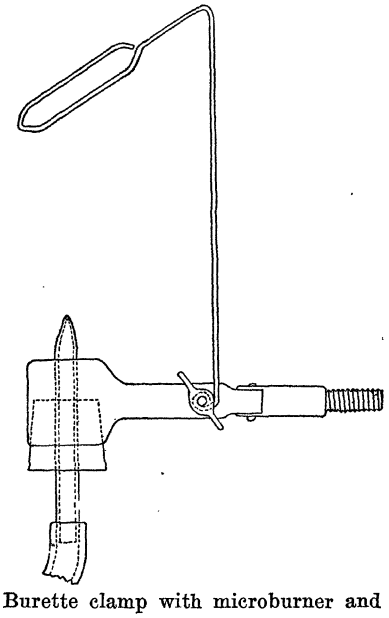

FIG. 1. Burette clamp with microburner and wire-loop-holder for microinjector bulb. One half actual size.

A rubber tubing leading to this burner was passed through a spring clamp of medium size. To keep the jaws of this clamp from completely closing down on the gas line a short piece of glass rod was fastened between them with sealing wax (Fig. 2, W). Consequently each time the clamp was allowed to close it left a small lumen in the constricted portion of the gas line. The clamp was adjusted so that when it was closed against the glass rod a flame about one half inch in length remained as a pilot light. The main gas cock was set to produce a flame which would just envelop the microinjector bulb when the spring clamp was opened. The spring loop of this clamp was slipped on the left fork of the stage of a Spencer convertible microscope in such a way that the jaws of the clamp were above and one of the finger grips rested against the upright part of the arm (Fig. 2). The clamp was held in this position by a wire wrapped around the microscope arm and slipped over the inner finger grip. In this position it could be opened by pressure exerted by the base of the index finger of the left hand, even when the other fingers were pressing down on the center of the microscope stage.

A special stage was made from a block of paraffin the ends of which had been cut so that they would

[1] H. McE. Knower, *Anat. Record*, 2: 207.

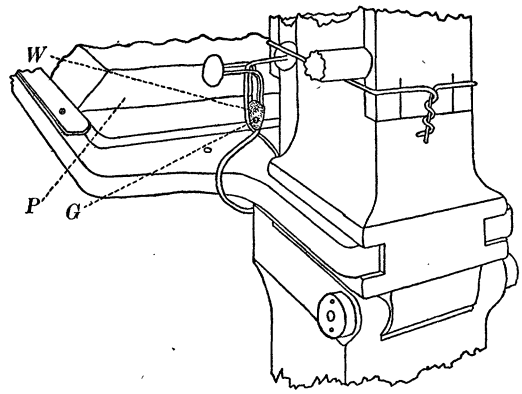

FIG. 2. Portion of binocular microscope showing method of attaching spring clamp for control of gas to microburner. Glass rod (G), held in place by wax (W), keeps clamp partially open. P, special paraffin stage.

slide under the stage-holders (Fig. 2, P). Parawax cakes are of a convenient shape and satisfactory consistency for this purpose. A straight, shallow groove, about two inches long and parallel to the front of the microscope, was cut in the center of the stage.

The injection procedure was as follows.

A microinjector, with bulb not over half filled with the liquid to be injected, was placed in the wire holder. The ring stand, carrying this bulb and the microburner, was placed at the right of the microscope at such a distance that the range of the pipette was over the groove in the paraffin stage. An individual previously anesthetized in one eighth of 1 per cent. chloretone was then transferred to the stage in a medicine dropper. After most of the solution had been removed, the worm was stretched out in the groove with the tip of its prostomium a short distance from the left end. A microscope slide or cover-glass was then placed over the anterior end of the worm, leaving several segments exposed anterior to the point at which it was planned to make the injection. A cover-glass proved the more satisfactory since its flexibility made it possible to vary the pressure exerted on the worm even though the latter did not quite fill the groove. With a few flashes of the gas flame the bulb was slightly warmed until the solution began to flow slowly in drops from the tip of the pipette. The cover-glass was then held down firmly with one or two fingers of the left hand, while with the right the end of the pipette was carefully inserted into the coelom of the worm and pushed anteriorly three or four segments from the point of entrance. Without removing either hand, the base of the index finger of the left hand was lightly pressed several times against the outer finger grip of the spring clamp to give brief flashes of heat to the bulb. If the bulb was heated too rapidly the side toward the flame became so soft that it could not withstand the pressure created within.

This method has the advantage that worms are held firmly in place while the solution is injected with a minimum of injury. The method of warming the bulb makes it possible to control carefully the flow of the injection-solution while both hands are at the same time occupied with other tasks. In addition the holder is simple, easily made and consequently more readily obtainable and less expensive than the type used by Knower.

LEONARD P. SAYLES

TUFTS COLLEGE

SPECIAL ARTICLES

THE VIRUS OF LARYNGOTRACHEITIS OF FOWLS

INFECTIOUS laryngotracheitis or infectious bronchitis of fowls has been recognized as a distinct and definite disease since 1924. The disease has become so highly destructive in the United States and Canada that it menaces the poultry industry in certain regions. There is no record of its occurrence in other countries.

The disease is now being studied with material obtained from four sources—two in New Jersey, and two in California. The poultry raising districts in California from which part of the material came have suffered severely from the affection during the past four years.

Bacteriological study having failed to reveal a consistent visible microorganism in association with the lesions of the disease, and spleens and livers, proved to contain the causative agent, having been bacteriologically sterile, a filterable virus was sought for and found in the inflammatory exudate contained in the tracheas of infected fowls.

Seven filtrations from the exudate have been made through five different Berkefeld "V" filters, and it was shown that infectious material was present in six of the seven filtrates. Of five filtrations made through Berkefeld "N" filters, three proved infectious and two non-infectious. In one of the five instances, the same material passed through a "V" filter was active. As yet no infection has been secured with material passed through Seitz filters. The incubation period of the filtrate inoculations has been the same as that of inoculations of non-filtered suspensions of the exudate.

Experiments on antibodies for the virus are in progress. Complete inactivation or neutralization of the virus has already been obtained when mixed with