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MEDALS OF THE NATIONAL ACADEMY OF SCIENCES¹

PRESENTATION OF THE DANIEL GIRAUD ELLIOT MEDAL AND HONORARIUM TO RICHARD SWANN LULL

THOUGH I was not a member of the committee that made this award, I heartily concur in the propriety of it, and am especially glad that the long-continued and admirable labors of Professor Lull are receiving recognition which, though belated, will undoubtedly be welcome.

The award is made especially for the monograph on "The Horned Dinosauria or Ceratopsia," which is a very comprehensive and thorough piece of work. After an introduction on the stratigraphy of the formations in which remains of these incredible monsters have been discovered, and a section on their geographical distribution, which ranges from Mongolia to South America, the body of the work is given up to a description of the material scattered through the various

¹ Presented at the annual dinner, Washington, D. C., April 25, 1939.

museums of the United States and Canada. Then follows a description of the habitats and manner of life of these great reptiles, upon the problems of which much light was thrown by the Mongolian discoveries, the American Museum expeditions having collected several nests of *Protoceratops*, a small dinosaur of this group, in which many eggs were found just as they had been left by the mothers. Some of these were near to hatching and contained recognizable embryonic skeletons. Then finally there is a discussion of the evolution of this group throughout the Upper Cretaceous period, in which the great quantity of material is marshalled in an orderly way and their mutual systematic relations admirably discussed.

It should be added that the committee also had in mind the great body of Professor Lull's work on fossil mammals and his artistic achievements in the way of restoring these long-vanished creatures.

It is to me a particular pleasure to recognize the fine Yale tradition in vertebrate paleontology, which

the form and the dimensions of the principal parts of the instrument are shown in the accompanying figures.

The preferred points of opening the chest in an adult cat have been either the right second intercostal space or the right fifth intercostal space; the former because the movement there of the cephalic lobe is slight; the latter, chosen for manipulation of the ventral thin edge of the lung. In either case the pectoral muscles were divided and retracted (cat anesthetized with urethane), exposing intercostal muscles and the ribs. An opening barely large enough to admit the plate is made through the parietal pleura and the instrument, controlled by the handle, is introduced into the pleural cavity, then adjusted so that the cylinder stands between the two adjacent ribs. A piece of dental rubber dam somewhat larger than the plate and having a hole cut in the center to fit when stretched over the cylinder, is applied to the external face of the plate before the instrument is introduced into the chest. Fixation of the window in the thoracic wall is accomplished by screwing a flange upon the threaded cylinder down to the level of the ribs, thereby drawing the plate with its rubber mantle snugly against the internal surface of the thoracic wall. Two small lugs on the edges of the plate impinge upon the margins of the ribs, so that any tendency toward twisting of the window is prevented. By these means the window is incorporated in the chest wall, joints are sealed, and it moves with the movements of the wall in respiration, unless fixed, as it can be, by clamping the handle to the animal carrier.

Air that entered the pleural cavity when the window was inserted is removed by suction through an exhaust tube, whose bore opens internally immediately beneath the cover glass. When the last air is drawn out the surface of the lung strikes the glass with a noticeable clink. Clamping the suction tube maintains the vacuum. The cover glass, set in Canada balsam on a shoulder of the cylinder, is placed eccentrically in order to give room in the cylinder for the handle, the exhaust tube and a tunnel (Fig. 1, a). The latter goes very

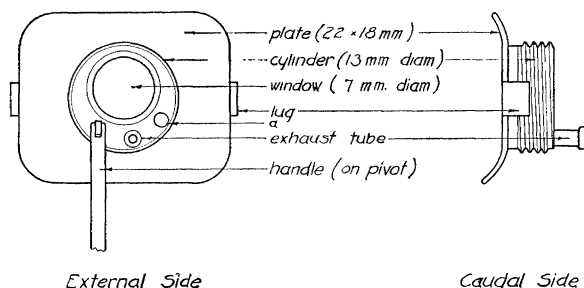


FIG. 1. Thoracic window.

obliquely to open beneath the cover glass and provides a way for experimental procedures, quartz rod lighting, etc.

Observations have been made with the binocular

microscope and with a skin microscope; illumination for the former being an arc lamp, for the latter a 6-volt bulb. From both these sources of direct light the glare has been a disadvantage, controlled somewhat by the

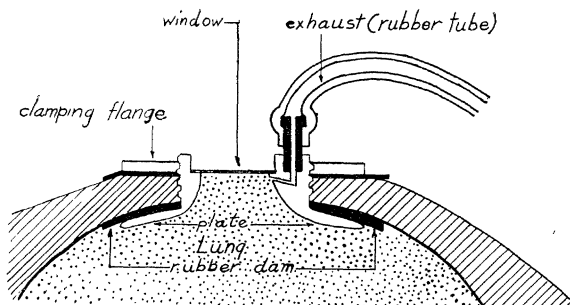


FIG. 2. Schematic transverse section of thoracic wall with thoracic window adjusted.

use of polaroid film. Experiments with quartz rod transmitted lighting are in progress. Good views of the superficial air sacs and alveoli have been obtained and a motion picture has recently been made recording such phenomena as could be brought forth with low power magnification and arc lamp illumination. With higher power lenses the capillary nets could be observed. Studies by means of the thoracic window are in progress and will be communicated in later publication.

ROBERT J. TERRY

WASHINGTON UNIVERSITY, ST. LOUIS

BOOKS RECEIVED

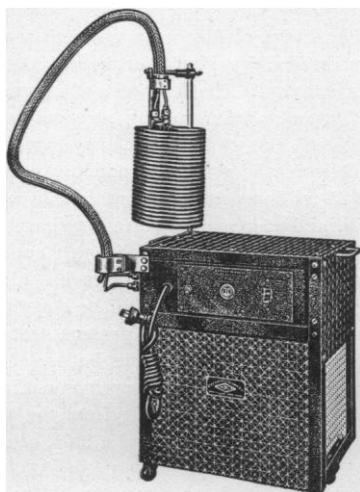
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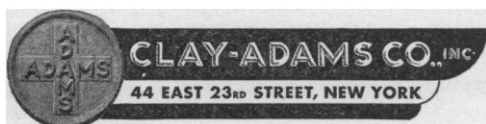
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