

Dr. H. E. Miller performed post-mortem examinations on a number of the animals and stated that no mosquitoes were found in the air passages. While blood loss was no doubt an important factor, it is the writer's opinion that the death of the stock may have been due to the injection of a toxin by the mosquitoes as well as to the loss of blood.

In the case of the larger herds the cattle apparently protected themselves to some extent by bunching closely together, and those which had access to the canal stayed in the water up to their heads, and very little loss occurred in these herds. Smudges and applications of grease and oil were extensively used, and no doubt prevented greater death losses.

Psorophora columbiae is one of the smaller species of the genus. The eggs are laid on the soil and hatch quickly when submerged. Thus, great swarms of adults emerge almost simultaneously when egg-bearing areas are flooded. The species is usually of little importance as a pest of man. In this outbreak, however, it is reported that men who were making smudges and otherwise looking after stock had to wear heavy coats and blankets to protect themselves, and some of them stated that they were sick for several days from the bites of the mosquitoes.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

AN ILLUMINATOR TO FACILITATE THE TRACING OF X-RAYS

IN studying x-rays of the organs of speech it is frequently necessary to make tracings of the films. Manufactured illuminators, intended for viewing films, are inadequate for tracing. They provide no surrounding board to which materials may be fastened; they are not convenient to work on; they heat up rapidly; and they are expensive.

The illuminator shown in the figure can be made cheaply and has none of these disadvantages. It con-

sists primarily of an ordinary drawing board which can be tilted to any convenient angle by shifting the support (B). The strip (A) prevents objects from sliding off. A removable glass (D) of the appropriate size is set in the center of the board. Clear or opalescent glass may be substituted at will. (C) is a piece of clear glass between the bulb and the surface glass to deflect and absorb the heat. It, also, is removable to permit easy changing of the lamp. The tin reflector spreads at the sides to allow free ventilation. This illuminator has been used for several hours at a time without getting hot.

Masks of black paper, to cover all but the parts being traced, are provided and may be pinned to the board. By their use lines in the x-ray which seem to have been obliterated by overexposure can frequently be found and traced.

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A LARGE RESPIROMETER¹

IN making some studies of the catalase, nitrogen and carbohydrate changes in asparagus roots after various treatments to break dormancy it was thought desirable to have some information on the respiration while these changes are going on.

Many difficulties were experienced in finding a respirometer which could be satisfactory. Nothing found in the literature described containers large enough to hold the plant roots which were being studied. The usual NaOH containers were too small to hold the amount of carbon dioxide given off in a 48 hour period, and more frequent weighing and measuring was not thought worth while.

After many different set-ups were made and several

¹ Contribution No. 113, Department of Horticulture, Kansas Agricultural Experiment Station.

