# CUTANEOUS MYIASIS IN A BOX TURTLE*

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An adult box turtle, *Terrapene ornata*, was picked up on the Cimarron River due north of Oklahoma City on November 6, 1938. A wart-like growth was noticed on the jaw at the time but it was not examined carefully. The turtle was kept in the house as a children's pet for about a month before other cutaneous lesions were noticed and the specimen was brought into the laboratory.

The lesions were found to contain the larvae of a sarcophagid fly. The turtle was placed in a fly-proof cage with a woven wire floor above a pan of soil so that the pupal and adult stages could be observed. The lesions, five in all, were on the right side of the body and contained from 1 to 18 larvae with a total of 27. In spite of the large size of some of the lesions the turtle did not show any inconvenience from the infection while under observation. Two of the larvae removed for identification and preservation when the turtle was first examined, proved to be in the third instar. They measured 15 mm. in length and had a volume of about 0.2 cc.

For convenience the lesions were numbered in the order of their position on the body from the anterior end. The first lesion (Fig. 1) was located just posterior and slightly ventral to the angle of the jaws. It was a cone shaped projection about 4 mm. in height with an opening at the apex about 2 mm. in diameter. It contained one larva whose posterior end was always visible at the opening, indicating that its quarters were rather limited. When this larva left the host, three months after the turtle was picked up, the opening had enlarged to about 3 mm. to allow it to escape. After the larva left, the extent of the lesion was determined by probing. It was about 12 mm. in depth and extended under the mandible and the middle of the floor of the pharynx. There was no evidence of bleeding after the probing, the tissues being covered with tough, yellowish connective tissue.

The second lesion was located medial and slightly ventral to the front leg. The opening was a round hole that looked as though it had been made with a leather punch and measured 3 mm. in diameter. Behind the opening there was a bag-shaped cavity that contained three larvae, but the posterior end of only one could be seen at a time. The third lesion was similar and was located between the hind leg and the posterior border of the shell bridge. It contained one larva.

The opening of the fourth lesion was a broad slit measuring 10 mm. in length and located at the junction of the skin and the eighth and ninth marginal scutes. A part of the cavity and three or four of the larvae could be seen when the leg was pulled downward as far as possible. This lesion contained 18 larvae. After the turtle had been in captivity for three months all of the larvae had dropped out except those in this lesion. In order to get a better idea of what was taking place within the lesion, its direction and extent were determined with a probe and the shell was

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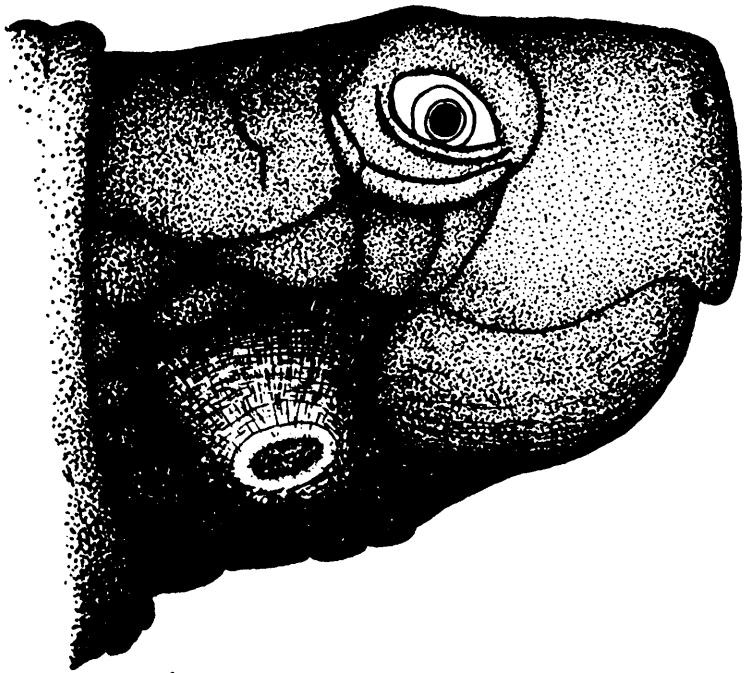
trepanned midway between the spinal and marginal scutes across the junction of the last two costal scutes. By clearing away the fascia and the connective tissue wall of the cavity the larvae were exposed (Fig. 2). For a short time some of them used the new opening for respiration while others still used the original. An 18 mm. circular cover glass was cemented into the opening in the shell and it served as an excellent window for observation. By the following day some of the larvae migrated into the new lesion, against the cover glass, and were feeding on exudate. Three days later the pressure of the larvae against the glass broke the seal. Some of the larvae pupated at this time and the congestion in the lesion was somewhat relieved. The original opening then closed up and the remaining larvae used the opening through the shell for respiration. Within two weeks after the trepanning was done, all of the larvae, after having fed avidly on fresh exudates, had pupated. The wound healed quickly and without any evidence of bacterial infection.



1 FIGURE 1

The opening of the fifth lesion was located at the junction of the skin and the eleventh marginal scute. This lesion contained four larvae. The opening closed up soon after the mature larvae had migrated to the soil.

One of the 25 pupae was preserved and from the remainder 11 adult flies were recovered. Attempts to breed the flies and induce a second infection in the turtle were unsuccessful. The adults were identified as *Sarcophaga cistudinis* Aldrich (1916). Observations made on the length of time of development in the turtle indicates that the period may be

somewhat longer than previously reported (Kipling, 1937). The turtle was kept in a heated room and the larvae were in the third instar when first examined. The first larva to leave the host pupated on the tenth day of observation. The last one left the host on the eighty-first day. The last larvae to leave were those from the largest and most crowded lesion. There is abundant evidence in studies on other parasites that crowding slows up development. The wide difference in rate of development probably is important from the standpoint of survival. The flies may not only live through the winter in the larval stage but by leaving the host at different ages as they do, some of the pupae and adults may have better chances of finding a suitable environment.

Until 1937, the range of *S. cistudinis* was believed to extend westward only as far as Mississippi. In that year it was reported from Stillwater, Oklahoma, and this is the second record of the fly in the Southwest.

## LITERATURE CITED

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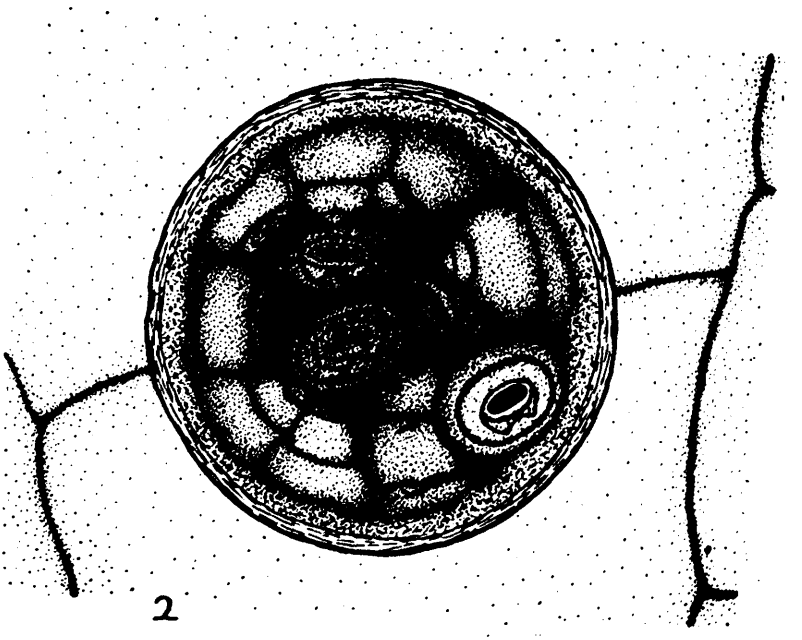


FIGURE 2