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ABSTRACT

The least weasel (*Mustela nivalis*) is a remarkably well adapted predator of mice and other small animals. Each kill is rather stereotyped, in that the weasel grabs the prey by the nape of the neck and bites through the base of the skull and/or throat, using its lithe body to "wrap up" and hold the prey. The least weasel will kill mice successively until it is too exhausted physically to kill more. Mice are always eaten from the head posteriorly until completely consumed.

The least weasel (*Mustela nivalis* L.), the smallest living carnivore, is an extremely well adapted and efficient predator. Its chief food item is mouse-size mammals; small invertebrates and birds also are eaten (Allen, 1940; Day, 1966, 1968; Hurrell, 1966). The weasel is long and slender (140-210 mm); males weigh between 60 and 90 g and females between 40 and 70 g. The short legs, tail, and ears allow it to travel freely along surface runways and burrows constructed by small mice. It is very agile and quick, with great variation in body movements and positions.

The observations and conclusions contained herein are the result of numerous observations of killing and feeding by members of a colony of least weasels maintained in the Michigan State University Live Animal Colony between 1966 and 1970 (see Heidt, 1970, for details of the colony). Llewellyn (1942) described killing and feeding; however, his observations were limited to only one weasel over a period of several days. Several additions and differences were found by the writer. Short (1961), Allen (1940), East and Lockie (1964), and Polderboer et al. (1941) described various aspects concerning the amounts of food consumed by least weasels.

The killing behavior of the weasel is rather stereotyped. The weasel generally seizes the prey at the nape of the neck and bites through the base of the skull and/or throat area. The weasel may first grasp a prey item almost any place on the prey's body in order to gain leverage for the neck bite, using its feet to manipulate the prey and commonly wrapping its long, slender body around the victim for more leverage. Llewellyn (1942) never observed his weasel to release its grip until the mouse was dead. However, in our colony the weasels commonly would drop a mouse after immobilizing it. At times they would play with the mouse much as a house cat might. If a second mouse was placed in the cage the weasel usually would immobilize the first and then catch and kill the second, returning to kill the first if it had not already died. The entire killing procedure is generally very rapid, ranging from 10 to 60 sec. The attack stimulus seems to be movement by the mouse, as weasels have been observed to pass within inches of a completely still mouse without seeming to see it. The weasel is a voracious killer in that it will kill one mouse after another until too exhausted physically to kill more. At one time when seven mice were placed in a cage with one weasel, the weasel immediately and systematically killed all seven and began a search pattern of the cage for more mice.

As stated previously (Heidt, 1970), killing in the least weasel appears to be innate, because young separated from their mother and litter mates before their eyes were open could kill mice at 50-60 days of age with no previous experience. However, these animals made several attempts before they were successful. In several cases it was observed that young were "trained to kill" by their mother (Heidt et al., 1968), and as a result these young were more efficient at an earlier age (40-45 days) in capturing and killing mice.

When feeding, a least weasel always begins by eating the brain and head, and then proceeds posteriorly until the entire mouse is consumed. Llewellyn (1942) found that if blood was present on the fur of a freshly killed mouse, the weasel would lick it off, but in no case did the weasel "suck the blood" from the prey. This finding is consistent with the writer's observations, and deserves to be emphasized because of misinformation concerning weasel feeding and blood sucking. It does not tear meat from the prey as many other carnivores do, but uses well developed carnasial teeth to slice meat from the food source. In addition, the weasel occasionally uses its front feet to manipulate the prey while feeding, an observation which is in contrast to Llewellyn's. Llewellyn also observed that if more than one mouse was present the weasel would finish eating the first before starting on another. The writer observed that in most cases the weasel would eat the head and brain of all available mice and then return to one of them and finish it. As in Llewellyn's study, if a great quantity of food was available, the nose, teeth, and tails were not eaten. Mice killed 24 hours earlier which had begun to decompose and smell were not touched unless the weasel had been deprived of food for some time.

On five different occasions large grasshoppers were given to five different weasels. In all cases the insects were killed either by a quick bite through the thorax or by beheading. In two cases the grasshoppers were ignored after being killed, whereas in the other three they were consumed totally or partially. In no case were the wings or legs eaten.

The weasel is very jealous of its kills and will readily chirp warnings and attack an intruder attempting to remove the killed prey. That it is extremely tenacious can be illustrated by the fact that if a dead mouse is held off the ground, a weasel will hang on with its mouth to the point of being lifted and swung back and forth several inches above the floor of the cage.

These observaions show that the least weasel is highly adapted for capturing and killing prey items. It often is maligned for alleged attacks on chickens and other small domestic animals, but actually benefits the farmer by annually

killing and destroying numerous small rodents which, if not controlled, can cause large economic losses.

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