rise in plasma potassium and hematocrit value occurred after the presentation of food. The significance of these rises was tested by pairing the mean value obtained for each subject within the last interval before, and the first interval after, the presentation of food. A t value of 5.32 was obtained for the differences between the paired hematocrit values, and a t of 4.34 was obtained for the potassium values. Each t is associated with 5 degrees of freedom, and both exceed the value necessary for significance at the 1 percent level.

The curve for plasma potassium obtained after handling, and its similarity to that obtained after the presentation of food, suggests that a rapid rise in plasma potassium concentration may have occurred within 2 minutes after the onset of handling. However, no samples were obtained in this interval, and direct evidence for this view is not presented here. In the case of hematocrit value, there is much evidence in the literature that a rise in hematocrit value occurs within 1 to 2 minutes after introduction of a variety of stimuli (*4*). It is therefore probable that, after handling, such a rise occurred before the fall shown in Fig. 1.

The initial rise in plasma potassium after the presentation of food is followed within 20 minutes by a marked, rapid fall below the prefood level and is then followed by a slow rise to prefood levels. The initial rise in hematocrit value is followed by a slow decline, which levels off in 60 to 80 minutes.

Plasma sodium concentration rises slowly after both handling and eating, reaches a peak within 20 to 60 minutes, and then slowly declines.

In a further study, plasma glucose concentration was followed in four of the animals in an experimental session similar to that described above. However, food was presented to the animals 30 minutes after the onset of handling, and samples were obtained at ½, 12, and 25 minutes after handling commenced and at 5, 15, and 25 minutes after the presentation of food. Plasma glucose determinations were made by the Somogyi-Shaffer-Hartmann titration method (*5*). No systematic changes in plasma glucose concentration were found to occur during the experimental sessions, and the mean of the variations which did occur was within the error of the method—that is, between 2 to 3 mg percent.

The variations in plasma potassium concentration that were found, in this study, to follow handling and eating in the well-trained goat are similar to previous results obtained after administration of adrenaline in other species (*6*). However, the lack of change in plasma glucose concentration following handling and eating suggested that effective quantities of circulating adrenaline are not present under these conditions. To obtain more evidence for this hypothesis, blood samples were taken from four of the catheterized animals at 5, 15, and 25 minutes before, and at the same times after, intracatheter injections of adrenaline chloride (*7*). It was found that, although injection of 50 μg of adrenaline produced an average peak increase in hematocrit value of 17 percent, (approximately the same increase as the average rise previously found following eating), it also produced a concurrent average peak rise of 24.4 percent in plasma glucose concentration.

Thus, although variations in concentrations of plasma potassium and sodium are found after handling and eating in the well-trained goat, these changes apparently are not mediated by the release of adrenaline. The occurrence of significant variations after handling and eating also suggests that suitable controls for these effects may be necessary in studies of blood electrolytes in vivo.

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References and Notes

1. These studies were conducted during the tenure of a research fellowship of the Social Science Research Center of Cornell University, and of a research fellowship of the U.S. Public Health Service.
2. F. Courtice [*J. Physiol.* (*London*) 102, 290 (1943)] estimates the blood-volume–weight relationship in the goat to be about 70 ml/kg. On the basis of this estimate, the blood loss per animal during an experimental session was calculated to range from 1.5 to 2.0 percent of total blood volume.
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Early Sexual Maturity in the Female Short-Tailed Weasel

Delayed implantation in some of the Mustelidae has long been recognized (*1*). The age at which females first breed is not so well known. The female stoat (*Mustela erminea*) is said to first come into oestrous and ovulate spontaneously in May or June, before it is fully grown. Further ovulations take place at intervals of not less than a month before the next spring, when the animals become pregnant for the first time. Many first-year females mate at oestrous, but matings prove sterile outside of the limited breeding season (*2*). Young females of *Mustela frenata* mate when they are 3 or 4 months old, so that all females of this species may produce young in the spring, when they are about 1 year old (*3*).

Fig. 1. Blastocysts of *Mustela erminea cicognanii*. The vesicles are partially collapsed but are as near perfect as one usually recovers in fresh animals. The inner cell mass in both embryos is slightly depressed (× 52).

A female *Mustela erminea cicognanii* taken at Ithaca, New York, on 22 July 1956 was a young of the year. The skull and skeletal characters of this specimen, compared with those of young of known age, testify to its immaturity (*4*). Seven blastocysts were flushed from the uterine horns (Fig. 1). These, only slightly collapsed, measured 400 to 750 μ in diameter. The circular inner cell mass has a diameter approximately one-third that of the embryo. The hand-sectioned ovaries show well-developed corpora lutea. Although the female of this species may mate when it is 3 months old (possibly less), males do not become sexually mature until the late winter or early spring of their second year. This is the first positive evidence that the female short-tailed weasel may have a productive mating in its first summer.

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