mature or past maturity, a large amount of the stomach contents consisted of green vegetation from above the ground. It is not known how much of this vegetation might have been pulled underground to be eaten, but experiments with aluminum-coated grain showed that much of this type of food was gathered on the surface.

This information has led to field trials in surface baiting as a means of pocket gopher control. Although the results still are inconclusive, there is the possibility that under some conditions at least, surface baiting might replace the more laborious method of probing for underground burrows as a means of bait placement.

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SUMMARY

Mountain pocket gopher stomachs were collected during all months of the year from an area near Livermore, Colorado, and during the snow-free seasons, from Grand Mesa, Black Mesa, and other localities in western Colorado.

Food habits examinations disclosed that:

1. Above-ground vegetation made up a considerable part of the pocket gopher's diet during the period of the year when the plants were growing and were green and succulent.
2. Forbs were taken in preference to grasses during all periods of the year when both were plentiful.
3. Largest amounts of grass, consisting mainly of stems and leaves, were consumed during the growing season.
4. Grain baits were taken by gophers from the surface of the ground.

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A FIELD TECHNIQUE FOR ASSESSING PHYSICAL CONDITION OF SOME UNGULATES

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Several techniques for assessing the physical condition of deer in the field have been devised and applied in the management of deer populations. So far, most of these techniques have utilized deer killed either by shooting (Park and Day, 1942), or from natural causes (Cheatum, 1949). Furthermore, under special circumstances when it has been possible to obtain some measure of each sex and all age groups, the task has been time-consuming and expensive. For example, Rosen and Bischoff (1952) established norms for erythrocyte and hemoglobin counts in mule deer (*Odocoileus hemionus*), and ratings or indices to fat reserves have been used for white-tailed deer (*Odocoileus virginianus*) (Harris, 1945), and red deer (*Cervus elaphys*) (Riney, 1955). A simple field technique is needed to obtain some index to the physical condition of all sections of a population in areas where shooting is restricted to certain seasons and limited to certain sections of the population. Ideally such a technique could be applied at any time of year, to any sex or age group, and under existing game laws.

The technique here described is based on one of the many characteristics of inanition, the tendency of the animal to become thin as it drops in condition (Harris, 1945; Leopold, *et al.* 1951; Riney, 1955). Even a general estimate of the condition of a population can be valuable as one measure of response of a population to a given ecosystem (Riney, 1956).

Under most field conditions it is impossible to judge the physical condition of a deer precisely and in a way that will allow comparison with similar observations by other workers. However, sometimes populations are encountered that are in either extremely good or extremely poor condition, and

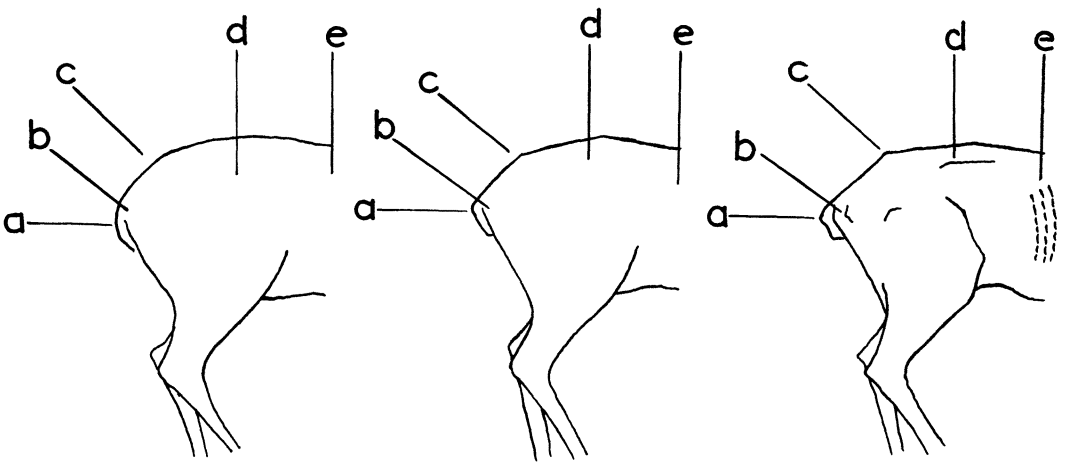

FIG. 1. General appearance of the hind quarters of deer in good, medium, or poor condition.

if sufficient care is taken, the proportion of animals of each recognizable sex and age group that fall into three general condition groups can be calculated for comparison.

As the fat reserves of the animal diminish, the tail (*a*, Fig. 1) appears more angular, the outline of a point of the pelvic girdle (*b*) can be seen, a distinct angle appears at the point indicated by (*c*), the lateral processes of the backbone vertebrae (*d*) can be seen as a faint line, and outlines of the ribs (*e*) are visible. If there are no angles corresponding to points *a* and *c* on the diagram, the deer are classed as in good condition (Fig. 1, left). If any one of the points indicated at *b, d,* or *e,* can be observed, the deer is classed as in poor condition (Fig. 1, right). Figure 1 (middle) represents the appearance of individuals that are not clearly in good condition or poor condition.

As with other field techniques of this type, certain arbitrary local rules will have to be followed if results are to be used for comparative purposes. For example, if red deer are observed from distances greater than 50 yards, it is necessary to use binoculars to see clearly enough to assess their condition. The maximum distance at which assessments are made will have to be determined separately for each species and in each area. A series of records should be complete, whether based on deer seen, or on deer shot, and whether for a day, a week, or a season. Sets of records can be kept either for deer observed or for deer killed; but these records should not be mixed.

This method of assessing condition is by no means as precise as the measure based on indices to fat reserves (particularly the weight of perinephric fat expressed as a percentage of the weight of the kidney) (Riney, 1955); but in New Zealand it has proved useful for many questions of management of populations where it is necessary to assess quickly conspicuous trends in condition, or for comparison of markedly different habitats. This or similar techniques can be used with but little extra time and expense if combined with other management techniques such as classification counts.

Species on which this technique has been successfully used are red deer, fallow deer (*Dama dama*), sambar (*Cervus unicolor*), feral goat (*Capra hircus*), chamois (*Rupicapra rupicapra*), and thar (*Hemitragus jemlaicus*) in New Zealand; and, in Africa, kudu (*Tragelaphus strepsiceros*), duiker (*Sylvicapra grimmia*), steenbuck (*Raphicerus campestris*), reedbuck (*Redunca arundinum*), roan antelope (*Hippotragus equinus*), sable antelope (*Hippotragus niger*), impala (*Aepyceros melampus*), and eland (*Taurotragus oryx*). Slight modifications are being developed for several other African species whose body conformation differs enough from deer and antelope to preclude use of the same criteria, e.g., cape buffalo (*Syncerus caffer*), giraffe (*Giraffa cameloparadalis*), and blue wildebeest (*Connochaetes taurinus*).

SUMMARY

A technique is described to facilitate recording the condition of live deer and several other ungulates. Each animal classified is arbitrarily placed in one of three condition classes, good, fair, or poor, and the evidence presented as the proportion of animals in each condition class at a given locality, in a given season. Although the technique has disadvantages associated with any "rating" technique, it is inexpensive and simple to use and has proved useful in New Zealand and in Africa, especially in situations where it is impractical to kill or trap a sample of the population to assess condition.

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CONTACT DERMATITIS INCURRED FROM COTTONTAIL STOMACH CONTENTS

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Cottontail rabbits (*Sylvilagus floridanus mallurus*), killed during the annual December census hunt at the Patuxent Research Refuge, are routinely autopsied and searched for parasites. A severe dermatitis of the hands was incurred by one of the parasitologists as a result of examining material from the alimentary tracts of these rabbits during the 1957–58 hunt. In 1958–59 the condition was observed again in this and an additional worker. The lesions were similar to those experienced with poison ivy. Both workers were known to be highly susceptible to ivy poisoning.

In order to ascertain what part of the rabbit was the sensitizing agent, patch tests were conducted on the two sensitized workers. The inside skin of the forearm was rubbed in 1-inch squares with moist cottontail fur, muscle, heart blood and contents of stomach, small intestine and cecum of one animal. These patches were covered with moist gauze and adhesive. The subjects, within 12 hours, showed strong reaction to the contents of the stomach, cecum, and small intestine; a weak reaction to fur; and no reaction to muscle and blood. The tests suggested that the dermatitis was due to something in the ingestia of the rabbit. To verify this, stomach contents of this animal were removed, dried, and examined with a dissecting microscope. It was seen that the main identifiable bulk of the stomach contents consisted of finely ground goldenrod, lespedeza, aster, and a small identifiable trace of poison ivy. Patch tests of the dried stomach contents made at this time continued to provoke a response. Patch application of fresh, pulverized goldenrod, lespedeza, and aster failed to cause skin reaction.

Since the observed lesions on the two workers were similar to those produced by severe ivy poisoning, it seems likely that the poison ivy in the stomach contents was the cause of the dermatitis. There is no reason to suspect that digestive enzymes or larval parasites could produce these phenomena. It is probable that poison ivy is a common item of the winter diet of the cottontail in Maryland. Recurrent attacks occurred in the two susceptible individuals during handling of approximately 120 rabbits whenever tears occurred in the surgical gloves worn for protection.

It has been observed (Trippensee, 1948) that the typical winter diet of the cottontail in New England is high in bark, roots, buds, and other parts of woody perennials. In New York State poison ivy constitutes from ½ to 2 percent of the diet of the Mearns cottontail (Martin *et al*, 1951). Petrides (1942) has observed that poison ivy was "so attractive to rabbits that practically every shoot not covered by snow was consumed."

Individuals normally sensitive to poison ivy should be careful when cleaning gut-shot cottontails during the hunting season. Thorough washing with soap and water directly after handling such an animal is a helpful prophylactic procedure.

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