USE OF THE SCAPULA AS A MEANS OF DIFFERENTIATION BETWEEN THE MEARNS' COTTON-TAIL AND THE AUSTRALIAN IMPORTED AND DOMESTIC HARE[1]

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Frequently some difficulty is encountered in distinguishing between cotton-tail rabbits, hares, and cats when skinned carcasses are offered for sale on the market. Not infrequently cats have been sold in lieu of rabbit, both in markets in Ohio and in restaurants (Ontario). In the past, cotton-tails have been sold in the markets of Ohio, but this has been prohibited by law in recent years, and the animal is protected as any other game species. More recently hares have been imported from Australia to be sold in competition with the domestic hares and rabbits.

Cats may be differentiated from rabbits and hares by size and shape of the scapula (figures 1–4) and by differences in the lower, hind-leg bones. Cats have a generally broader and larger scapula than do the hares and rabbits. Furthermore, the tibia and fibula are separate in cats, while in rabbits and hares the fibula fuses to the tibia—only about one-third of the fibula remaining as a recognizable bone.

It was decided to study the cotton-tail rabbit and the Australian imported hare in an effort to ascertain what readily accessible structure might be used to separate these two forms, and what criteria might best serve this end.

The Australian hare is reportedly derived from the Western European Hare *Lepus europaeus occidentalis*, while the Domestic Hare is derived from the same basic stock *Lepus europaeus* Pallas, and may be considered to have essentially the same origin. Through selective breeding some changes in structure have become established in the different strains of domestic hares. The cotton-tail is not, however, thus closely related to either of the above forms, but is a New World species *Sylvilagus floridanus mearnsi* (Allen).

Fourteen specimens of Australian imported hares and 22 specimens of the Mearns' cotton-tail were provided by the Ohio Division of Wildlife and a single specimen of domestic hare was contributed by Mr. Newton Deaton, of Eaton, Ohio, for this study.

A careful study of the scapula was made to determine essential differences in structure between *Lepus europaeus* and *Sylvilagus floridanus mearnsii.*

OBSERVATIONS

In general shape and outline of the scapula, the hares and cotton-tail are very similar. The axillary border is strongly produced from the neck of the scapula to the inferior angle and is even more emphasized in some of the domestic forms. The coracoid process in both the Australian hare and the cotton-tail are virtually alike, so that any seeming dissimilarity may fall within the range of individual differences. Minor differences in the medial and inferior angles as well as the vertebral border, likewise fall within the range of individual differences.

One striking and important feature along with a minor feature of the scapula are characteristic, however, and these may serve to separate the cotton-tails from the hares. The scapular spine of the Australian and domestic hares is produced laterally and somewhat ventrally from the lateral surface of the scapula, and terminates in a broadened ridge (figs. 1 and 3, A and B), while in the cotton-tail the scapular spine terminates abruptly in a narrow edge, the broadened ridge lacking, (fig. 2) and this is diagnostic for Mearns' cotton-tail.

In addition to the above characteristic, the acromion is less well-developed in the cotton-tail than in the hare, and to a limited extent, the metacromion appears to be somewhat less durable and more delicate than is the case with the hares.

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[1]Contribution from the Ohio Cooperative Wildlife Research Unit.

DISCUSSION

The above information may add but slightly to our present knowledge in the field of comparative anatomy, but it does establish an important criterion upon which to base separation of the hare and cotton-tail.

Such information may now be employed by wildlife law enforcement agents in cases of illegal possession or sale of cotton-tails, and may facilitate examination of legally sold non-game species.

In addition it may serve as a guide to detection of fradulent sale of cats in lieu of rabbits.

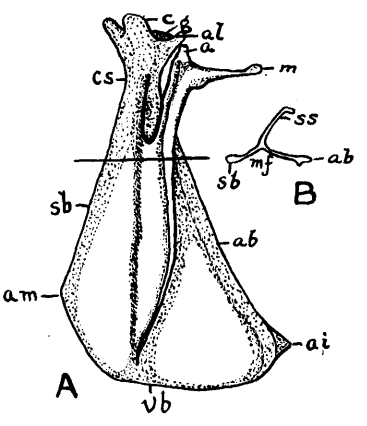


Fig. 1

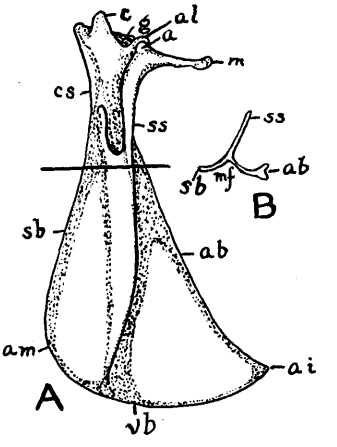
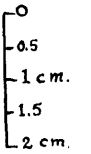


Fig. 2



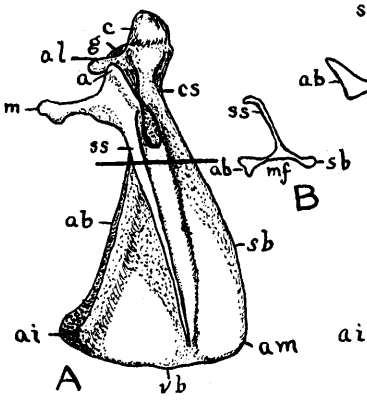


Fig. 3

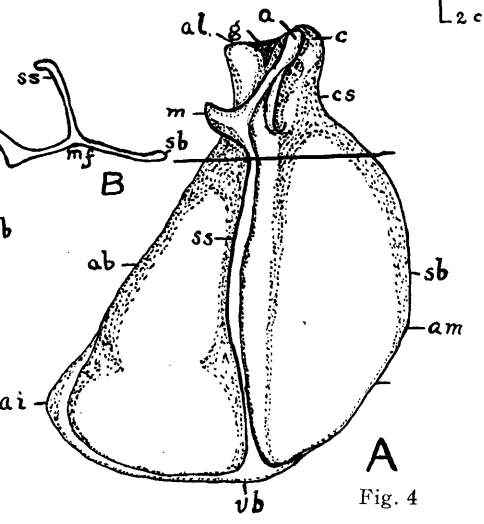


Fig. 4

FIGURE 1. Australian hare.
FIGURE 2. Cotton-tail rabbit.
FIGURE 3. Domestic hare.
FIGURE 4. Common cat.

A, lateral surface of scapula; B, cross-section through scapula at the line of A; a, acromion; ab, axillary border; ai, inferior border; al, lateral angle; am, medial angle; c, coracoid process; cs, neck of scapula; g, glenoid cavity; m, metacromion; mf, medial surface; sb, superior border; ss, scapular spine; vb, vertebral border.