Fay, L. D., A. D. Boyce and W. G. Youatt. 1956. An epizootic in deer in Michigan. Trans. North Am. Wildlife Nat. Resources Conf. 21:173-184.
Heezen, K. L. and J. R. Tester. 1967. Evaluation of radio-tracking by triangulation with special reference to deer movements. J. Wildl. Manage. 31(1): 124-140.
Karstad, L. H., A. Winter., and D. O. Trainer. 1961. Pathology of epizootic hemorrhagic disease of deer. Am. J. Vet. Res. 22(87):227-235.
Shope, R. E., L. G. MacNamara and R. Mangold. 1960. A virus-induced epizootic hemorrhagic disease of the Virginia white-tailed deer. J. Exptl. Med. 111, pt.1(2):155-170.
Sparrowe, R. D. and P. F. Springer. 1970. Seasonal activity patterns of white-tailed deer in eastern South Dakota. J. Wildl. Manage. 34(2):420-431.
Stupka, A. 1963. Notes on the birds of the Great Smoky Mountains National Park. Univ. Tenn. Press, Knoxville. 242 pp.

ABNORMALITIES OF MANDIBLES AND OF LIMBS IN WHITE TAILED DEER FROM VIRGINIA[1]

P. F. Scanlon
Department of Fisheries and Wildlife Sciences
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061

Five white-tailed deer (*Odocoileus virginianus*) with abnormally short mandibles (Brachygnathia inferior, "Parrot-mouth") were recovered during 1972-1973 from the deer herds on the Radford Army Ammunition Plants (RAAP) at Dublin and Radford, Virginia. Three of those animals also had limb deformities. Several reports of mandibular abnormalities in white-tailed deer are available (see Free et al. New York Fish Game J. 19(1):32-46, 1972, for references). Brachygnathia inferior has been reported in domestic ruminants (cattle and sheep) and is considered to be a genetically inherited defect. Recently, Dunn and Johnson (J. Dairy Sci 55(4):524-526, 1972) have shown that an abnormal chromosome number in a calf was associated with brachygnathia inferior. Reports are not available associating limb deformities with brachygnathia. Should these two conditions be associated and should they be inherited defects such information is of interest as the prospects of dually afflicted animals for survival are probably slim. Descriptions of the abnormal animals recovered are given below:

No. 1. This male animal was captured by tranquilizer injection. Shortening of the mandibles was such that the incisors made contact with the back rather than the front of the dental pad. The entire pad was exposed (2 cm) when the animals mouth was closed. At capture this animal weighed 41 kg and was 3 years old. It looked emaciated and has persisted in such a condition in captivity. There were no apparent limb deformities.

No. 2. This male fawn was captured within a short period of birth. Mandibles were severely shortened and incisors did not reach the dental pad. The extent of shortening of the mandibles was such that the ability to suckle was probably drastically durtailed. Both front legs were deformed producing a pronounced bow-legged stance and difficulty of locomotion.

[1]Presented at the 27th Annual conference of the Southeastern Association of Game and Fish Commissioners, Hot Springs, Arkansas. October 17, 1973.

Nos. 3 and 4. These were twin fetuses from a doe of normal appearance which was overdosed during a tranquilization attempt. The male fetus had shortened mandibles, rotation of both front limbs and the left hind foot had a club-foot appearance. The female fawn had shortened mandibles and rotation of both front limbs.

No. 5. This 6 year-old male had shortened mandibles but all limbs were normal. The extent of the shortening of mandibles was such that the incisors just made contact with the back of the dental pad and about 2 cm of the roof of the mouth was exposed when closed normally. The animal was in excellent physical condition (80 kg bodyweight).

Animals 1 through 4 were recovered from RAAP, Dublin, during the interval from January to May, 1972 from a population which numbered 350 to 400 the previous fall. Animal No. 5 was recovered from RAAP, Radford in July, 1973.

A BROWN PAPER TECHNIQUE TO DEMONSTRATE FAT IN BONE MARROW.*

Francis X. Lueth
Alabama Department of Conservation and Natural Resources
Division of Game and Fish

A simple technique to demonstrate fat in bone marrow is to take a sample of fat marrow, put it on kraft paper and heat it to a temperature approximately 200° F. The size of the spot on the paper is determined by the amount of fat in the marrow. It is suggested that the method might be used for determining fat in mandibular tissues.

INTRODUCTION

The color and consistency of bone marrow has been used as an indicator of "condition" in deer. (Chetum, E. L. 1949. Bone Marrow as an index of malnutrition in deer.) This is one of a number of methods used in Alabama to compare one herd with another, to compare the same herd from year to year, and as an indicator of the adequacy of the herds enviroment.

The words white, pink or red followed by solid, soft or gelatinous are adequate to describe the bone marrow to a deer biologist; but they have little impact upon a landowner or non-technician who wants some "figures" about his herd.

At one time, colored slides were taken as a permanent record of the condition of the bone marrow. These could be compared directly; but this proved to be time consuming - particularly when done as a routine field exercise. To actually measure the fat content of the marrow by the Soxlet either extract method is far too expensive for use on all specimens collected for condition studies.

A relatively fast and inexpensive method of measuring or recording the amount of fat was needed in Alabama - primarily for public relation purposes.

*A contribution of Pittman-Robertson Project, Alabama W-35