SOME ABNORMAL ANTLERS AND HORNS OF DEER AND ANTELOPES IN THE COLLECTIONS OF ZOOLOGICAL SURVEY OF INDIA

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(With 2 plates)

CONTENTS

I—INTRODUCTION

I have come across a few abnormal antlers of deer and antelopes (Artiodactyla) in the collections of the Zoological Survey of India. While not being uncommon, these abnormalities differ in detail from the earlier records which, though not many, are scattered in the Zoological literature. The length has been measured along the outer curvature and the circumference immediately above the burr. The collection numbers given below are Z.S.I. Registered Numbers.

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II—OBSERVATIONS

1. **Axis axis** Erxleben

(Pl. 14, Figs. 1 & 2)

Material.—No. 15306 ; left antler ; no history.

Description.—Has the normal single brow-tine and single trez-tine ; the deformity is in beam proper. Has developed on its back side a massive outgrowth throughout the length ; this structure arises from the burr and terminates abruptly at level of tip of trez-tine. Is well developed throughout, but is maximum about the middle ; is wavy and continuous, with a few well marked depressions ; has a longitudinal furrow on each side horizontally between the beam proper and the outgrowth. Length of antler 74.6 ; circumference 17.2 cm.

Apparently it looks like deposition of foreign matter on the beam, but on closer examination it appears to originate from the beam itself.

2. **Cervus unicolor** Kerr

(Pl. 14, Figs. 3-6)

Specimen 1. (Fig. 4) :

Material.—No. 15307 ; frontal bone with 2 antlers ; no history.

Description.—Both antlers abnormal. Are short, stumpy and heavy ; the left antler is stouter ; right somewhat flattened. Brow-tines arise normally, but right one longer than left ; the latter possesses a small flattended branch at base ; at the points of origin of brow-tines are a number of tubercles on main beam. Trez-tine of right antler arising near tip as a small protuberance. Left trez-tine has a small branch at its tip. Left main beam, after forming the trez-tine, dividing and giving an additional branch lying parallel to trez-tine. Left antler : length 61.5 ; circumference 20.4 cm. Right antler : length 51.75 ; circumference 16.75 cm.

Specimen 2. (Fig. 5) :

Material.—No. 10338 ; skull with 2 antlers ; *donor.* Maharaja of Dungarpur ; no other history.

Description.—Left antler normal, bearing one brow and one trez-tine. Right antler abnormal, thus : Massive ; somewhat flattened ; with normal brow-tine. Beam, instead of giving rise to a single trez-tine, branches into 6 abnormal tines—the inner or lowermost branch is probably the normal trez-tine ; other 5 tines appear to be abnormal branches of beam proper. Of these 5 branches, the outer 2 fused throughout ; at sites of origin of each of the 5 branches, a cup-like depression present on the beam. On the beam is a furrow which continues from base of brow-tine to the abnormal tines. Left antler : length 78·75 ; circumference 15·5 ; length of the trez-tine 33·75 cm. Right antler : length 74·5 ; circumference 16·25 ; length of the individual abnormal tines (from below upwards) 16·2 ; 19·2 ; 23·0 ; 17·2 ; 14·5 ; 9·0 cm.

Specimen 3. (Fig. 6) :

Material.—No. 153322 ; skull with 2 antlers ; no history.

Description.—Specimen massive, left antler normal, having one brow and one trez-tine ; Right antler abnormal : Brow-tine normal ; abnormality occurs at point of origin of trez-tine. Right beam gives rise to 3 branches, instead of a single trez-tine, diverging in different directions, making it difficult to determine the actual trez-tine and the prolongation of the beam proper. Left antler : Length 76·8 ; circumference 19·0 ; length of the brow-tine 40·2 ; length of the trez-tine 24·6 cm. Right antler : length 71·2 ; circumference 19·2 ; length of the brow-tine 38·8 ; length of the abnormal tines (from below upwards) 22·1 ; 23·1 ; 26·8 cm.

3. **Antelope cervicapra** Linnaeus

(Pl. 15, Figs. 1 and 2)

Specimen 1. (Fig. 2) :

Material.—No. 194 ; skull with 2 horns ; no history.

Description.—Left horn normal. Right one abnormal, thus : Is devoid of spiralling and bends backwards and downwards in a bold sweep, tending to go to the left side over the shoulder with the tip everted. Measurement of the spiralled one along the course of spiralization is about the same as that of the non-spiralled one along curve ; thus the relative length is the same in both cases. Left horn, length 48.0 ; right, length 68.5 cm.

Specimen 2. (Fig. 3) :

Material.—No. 197 ; skull with 2 horns ; no history.

Description.—Left horn normal. Right horn abnormal thus : Curves round in a circular sweep, the tip ending bluntly near base ; as well as outer covering are pressed severely at tip. Left horn, length 50.0 ; right, length 22.0 cm.

4. **Gazella gazella arabica** Lichtenstein

(Pl. 15, Fig. 4)

Material.—No. 3308 ; skull with 2 horns ; *don.* Zool. Garden, Calcutta.

Description.—Normal horns are simple, straight, slightly directed backward, and possess bony core, with outer annulated horny covering. Present specimen is abnormal thus : Right horn : Other covering lost, but its bony core shows a normal appearance. Left horn : After coming straight upward three-fourths of its course, bends downwards posteriorly at a right angle ; at the bend the bony core damaged. Left horn, length 7·2 ; right, length 10.0 cm.

III—DISCUSSION

The causes of deformities of horns and antlers have been discussed by a number of authors. Sterndale (1886), Morris (1891), Rörig (1901), Clarke (1916), Moore (1931), Darling (1937) and Wislocki (1952) are of the opinion that injuries in any part of the body may create the deformities of horns and antlers. Dixon (1934), however, recognises no connection between a malformed antler and a body injury and this view is also supported by Robinette and Jones (1959). These last named authors are of the opinion that in some cases antler deformation probably results from a direct injury during early growth.

The effect of unilateral castration on the development of antler was marked by Penrose (1924) ; but by similar experiment Jaczewski (1952) found that the symmetry of the antler in subsequent seasons was not influenced. Deraniyagala (1953) accepts the popular view that the deer nibble the tender sprouting antler that is in velvet until; excited by the

saline taste, they suddenly bite off the tip, but it is difficult to accept this view, for otherwise most deer would have abnormal antlers. Whatever may be the exact cause, the extant views mentioned above may be summed up as injury-reflex.

IV—Summary

Some abnormal horns and antlers of *Axis axis* Erxl. *Curvus unicolor* Kerr, *Antelope cervicapra* L., and *Gazella gazella arabica* Licht. are described.

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