

**CERVUS TRIPLIDENS LYDEKKER FROM TYPE LOCALITY DHOK PATHAN,  
CHAKWAL DISTRICT, PUNJAB, PAKISTAN**

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**Abstract:** A well preserved part of a skull with  $M^{1-3}$  of both sides and portions of palate and frontals is described from Dhok Pathan (Middle Siwaliks), Chakwal district, Punjab, Pakistan. The median basal pillar of the molars is an important feature of the species *Cervus triplidens* Lydekker. It is quite prominent in all the teeth and all show an advanced stage of wear in the specimen under study.

**Key words:** *Cervus triplidens*, palate, frontals, Middle Siwaliks, median basal pillar.

**INTRODUCTION**

**T**he cervids (Mammalia, Artiodactyla, Cervidae) are characterized by the presence of antlers and prominent lacrymal depressions anterior to the eyes that are occupied by the pre-orbital glands in the living deer. Many species of the Siwalik cervids have been reported from the Middle and Upper Siwaliks (Lydekker, 1876, 1884; Brown, 1926; Colbert, 1935; Azzaroli, 1954). Among these species *Cervus triplidens* Lydekker, *C. simplicidens* Lydekker, *C. sivalensis* Lydekker, *C. punjabiensis* Brown and *C. colberti* Azzaroli, are considered valid. The earlier identifications of these species were based on mandibular and maxillary fragments, isolated upper and lower molars and antlers fragments.

Recently Arif and Shah (1991) established a new species of cervids, *Cervus rewati* from the Upper Siwalik beds near Rewat, Rawalpindi district, Punjab, Pakistan. This new cervid is based on a right mandibular ramus bearing  $P_3-M_3$ . The diagnostic features of *C. rewati* are the small size of the teeth, presence of median basal pillars and well developed anterior folds on the molars.

The material under study is a part of a skull with  $M^{1-3}$  of both sides and portions of palate and frontals. This specimen is referred to the species *Cervus triplidens* Lydekker. The measurements are given in millimeters.

*Systematic Account*

Order

Artiodactyla Owen

Suborder	Ruminantia Scopoli
Infraorder	Pecora Linnaeus
Superfamily	Cervoidea Simpson
Family	Cervidae Gray
Subfamily	Cervinae Baird
Genus	<i>Cervus</i> Linnaeus
Species	<i>Cervus triplidens</i> Lydekker

*Holotype*

G.S.I. (Geological Survey of India) No. B 204, a right maxilla with M<sup>2-3</sup>.

*Locality*

Punjab.

*Horizon*

"Higher pliocene of Sub-Himalaya" Lydekker (1883).

*Diagnosis*

Molars hypsodont, with a large median basal pillar and rugose enamel.

*Material studied*

P.U.P.C. (Punjab University Paleontological Collection) No. 84/118, with M<sup>1-3</sup>.

*Horizon*

Middle Siwaliks.

*Locality*

Dhok Pathan, Chakwal district, Punjab, Pakistan.

*Description (Fig. 1)*

The specimen under description is a part of a skull with M<sup>1-3</sup> of both sides and portions of palate and frontals. The width of palate is 72 mm between the first molars, 75 mm between the second molars and 68 mm between the last molars. The height of the skull above M<sup>3</sup> is 90 mm and it slightly slopes anteriorly, as is the general rule.

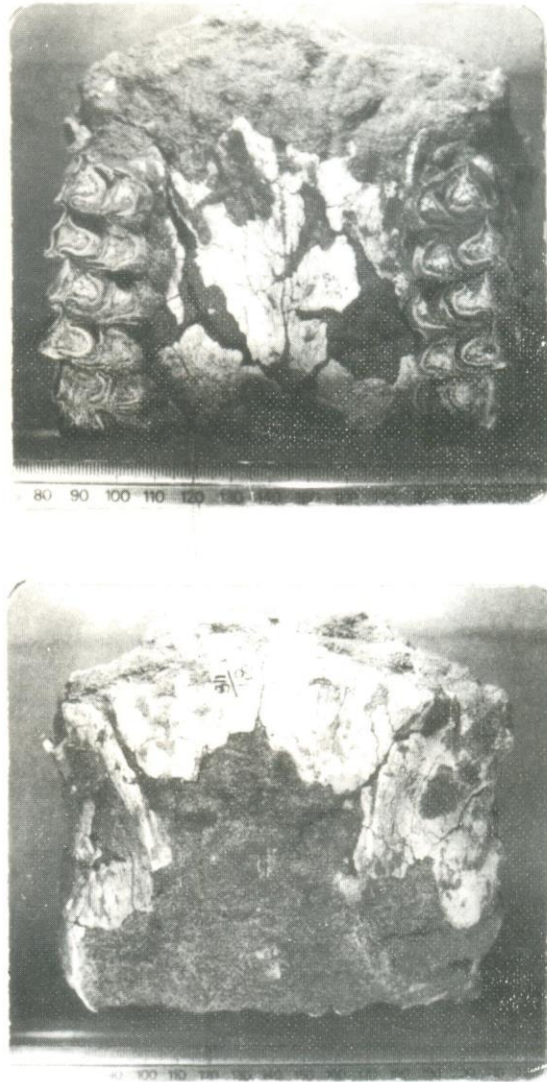


Fig. 1: *Cervus triplidens* Lydekker, a damaged skull (P.U.P.C. No. 84/118) from Dhok Pathan, Chakwal district, Punjab, Pakistan. A. Palatal view, B. Dorsal view.

The median basal pillar of the molars is an important character of this species. It is quite distinct in all the molars and all show an advanced stage of wear in the specimen under study.

#### DISCUSSION

The material under study is a part of a skull with  $M^{1-3}$  of both sides and portions of palate and frontals. The width of palate is 72 mm between the first molars, 75 mm between the second molars and 68 mm between the last molars. This is because, as usual, the tooth row is crescentic, as is also seen in Am. Mus. (American Museum of Natural History) No. 19792 described by Colbert (1935). This feature is not visible in the type specimen as the latter consists of two molars of one side only. The height of the skull above  $M^3$  is 90 mm and it slightly slopes anteriorly, as is the general rule.

The skull under study is of an old individual, while the one described by Colbert (1935) is less so and the type specimen is of a young individual. Lydekker (1876) says, "The specimens figured consist of the second and third molars of the right maxilla; the first of these is slightly worn, while the second is merely a germ, as yet untouched by wear". From his diagram it is evident that the vertical surfaces of opposite sides were not parallel. Thus, with wear the length and width ratio of the crown surface must change.

The Am. Mus. specimen No. 19792 is of an older individual and the specimen under study is the oldest one. Crown surface of  $M^3$  is perfectly squarish in the type specimen and the one described by Colbert (1935), while in the specimen under study the width is very slightly less than the length. This meagre difference can have no taxonomic value, it must be considered an individual difference concerned very probably with age of the individual.

The crown view of the teeth of the type specimen shows two pairs of crescents, which are the modified cusps. The transverse dimension of each cusp is very thin at the apex but gradually becomes thick towards the root. This is evident from Am. Mus. No. 19792 and the specimen under study. In the former the crescents are thick in the middle and thin toward the tips. With age cusps merge with each other. This feature shows its beginning in Am. Mus. No. 19792 and an advanced stage in the specimen under study. Anteriorly and posteriorly these cusps merge with each other.  $M^1$ , which is always the oldest molar, shows the maximum merger.

A median basal pillar of the molars is an important feature of this species. It is quite prominent in all the teeth and all show an advanced stage of wear in the specimen under study. In the type specimen these pillars are very well developed. However, they do not reach the tips of the crowns and are, therefore, unworn. In Am. Mus. No. 19792 they are well worn in  $M^{1-2}$  but not in  $M^3$ . In  $M^1$  of the latter this pillar shows the maximum wear so that it has merged with the anterointernal cusp (protocone). The same feature is evident in the specimen under study. According to Lydekker (1883), the species *Cervus triplidens* has a large median basal pillar to the molars. Another feature,

mentioned by early workers and shown by the present specimen, is the rugosity of the enamel. Matthew (1929) regards the fossils as inadequate of no correlation value.

Table 1: Comparative measurements (mm) of the teeth of *Cervus triplidens* Lydekker

Specimen Nos.	Length and Width		
	M <sup>1</sup>	M <sup>2</sup>	M <sup>3</sup>
P.U.P.C. No. 84/118	22 x 26	26 x 30	30 x 27
Am. Mus. No. 19792	20 x 24	24 x 26.5	26 x 26
G.S.I. No. B 204		20 x 23.7	25 x 25

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