

COMPARATIVE STUDY OF SOME DENTITIONS OF *SELENOPORTAX VEXILLARIUS* PILGRIM AND *SELENOPORTAX LYDEKKERI* PILGRIM
(ARTIODACTYLA, BOVIDAE, MAMMALIA)

MUHAMMAD AKHTAR, ASIA NASEEM AND ABDUL REHMAN

Department of Zoology, University of the Punjab, Lahore, Pakistan

Abstract: Pilgrim (1937) based this genus upon a collection from the various localities of Pakistan and India. This collection comprised a skull lacking the maxilla and dentition and most of the basicranium (A.M.N.H. No. 19748), many isolated teeth and a left horn-core (Brit. Mus. No. M. 24028). Pilgrim (1937) referred all these specimens to the genus *Selenoportax* Pilgrim and added one species in it, *S. vexillarius* Pilgrim. Lydekker (1884) described and figured seven different specimens under the name *Boselaphus* sp. from Punjab, no exact locality has been mentioned by him. These specimens were maxilla, mandible and isolated teeth. Pilgrim (1910) established the species *Boselaphus lydekkeri* on this material. However, Pilgrim later (1937) transferred all these specimens to the genus *Selenoportax* and species *S. lydekkeri*. Gentry (1974) proposed that referred teeth of a supposed species *S. lydekkeri* must be regarded as of uncertain identity. Recently, more material of the genus *Selenoportax* has been collected from the Siwaliks. This material consists of two fragmentary crania, mandible and many isolated teeth. These specimens are referred to the genus *Selenoportax* in three species, *S. vexillarius*, *S. lydekkeri* and a third new species *S. dhokpathanensis*. In general, the main difference seen between two species, *S. vexillarius* Pilgrim and *S. lydekkeri* lies in the size of upper teeth, M₃ and mandible. There is no difference in the structure of the teeth. The teeth referred to species *S. vexillarius* are comparatively smaller than those of *S. lydekkeri* and are somewhat less hypsodont and have comparatively weaker median basal pillars in the upper molars. *Selenoportax lydekkeri* which was considered doubtful by Gentry (1974) has been regarded as a valid species of the genus *Selenoportax* Pilgrim.

Key words: *Selenoportax*, *Boselaphus*, Siwaliks.

INTRODUCTION

The genus *Selenoportax* is known since 1937 when Pilgrim studied and described the Siwalik Bovidae in the American Museum of Natural History (Am. Mus.). He added one species *S. vexillarius* in it. Lydekker (1884) described and figured seven different specimens under the name *Boselaphus* sp. from the Siwaliks. These specimens were maxilla, mandible and isolated teeth. Pilgrim (1910) erected the species *Boselaphus lydekkeri* on these specimens. However, Pilgrim later (1937) transferred all these specimens to the genus *Selenoportax* and species *Selenoportax lydekkeri*. Recently, more material of *Selenoportax* has been collected from the Middle Siwaliks. This material comprises mandibles and many isolated upper and lower teeth, M₃ and mandible. These specimens are referred to species *S. vexillarius* and *S. lydekkeri*. The main difference seen between two species lies

in the size of upper teeth, M_3 and mandible. There is no difference in the structure of the teeth. The species *Selenoportax lydekkeri* which was considered doubtful by Gentry (1974) has been regarded as a valid species of the genus *Selenoportax* Pilgrim. The classification is based on Simpson (1945).

Systematic Account

Order:	Artiodactyla Owen
Suborder:	Ruminantia Scopoli
Infraorder:	Pecora Linnaeus
Superfamily:	Bovoidea Simpson
Family:	Bovidae Gray
Subfamily:	Bovinae Gill
Tribe:	Boselaphini Simpson
Genus:	<i>Selenoportax</i> Pilgrim, 1937

Type species

Selenoportax vexillarius Pilgrim 1937.

Included species

- i. *Selenoportax vexillarius* Pilgrim, 1937
- ii. *Selenoportax lydekkeri* Pilgrim, 1937
- iii. *Selenoportax dhokpathanensis* (new species)

Type

A skull lacking maxilla and dentition and most of the basicranium, Am. Mus. No. 19748.

Locality

Hasnot, district Jhelum, Punjab, Pakistan.

Horizon

The Nagri stage of the Middle Siwaliks.

Diagnosis

Cheek teeth large, strongly hypsodont, enamel very rugose, upper molar quadrate, with strong and divergent styles, median ribs well developed, strongly developed medial basal pillars on upper and of moderate size on the lower molars.

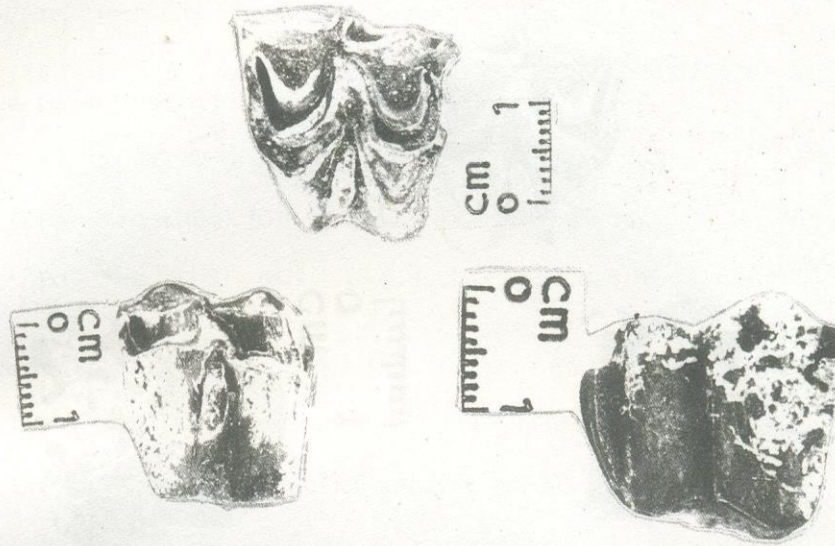


Fig. 1: *Selenoportax vexillarius*, an isolated right M² (P.U.P.C. No. 85/9) from Hasnot, district Jhelum, Punjab, Pakistan. A, Crown view; B, Inner view; C, Outer view.

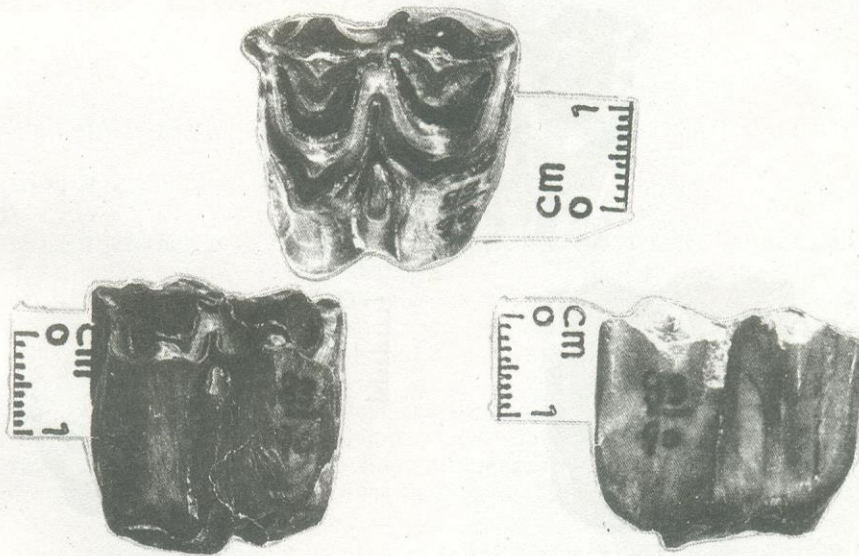


Fig. 2: *Selenoportax lydekkeri*, an isolated left M¹ (P.U.P.C. No. 83/90) from Hasnot, district Jhelum, Punjab, Pakistan. A, Crown view; B, Inner view; C, Outer view.

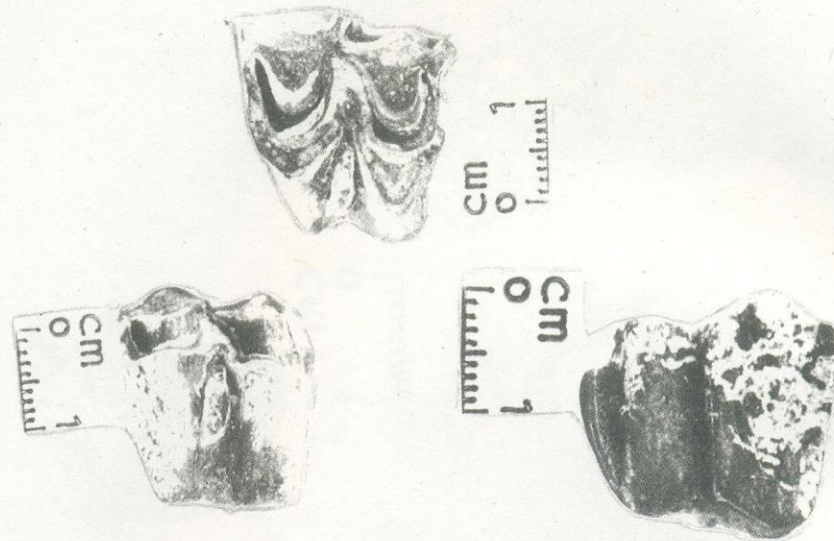


Fig. 3: *Selenoportax vexillarius*, an isolated right M² (P.U.P.C. No. 83/93) from Hasnot, district Jhelum, Punjab, Pakistan. A, Crown view; B, Inner view; C, Outer view.

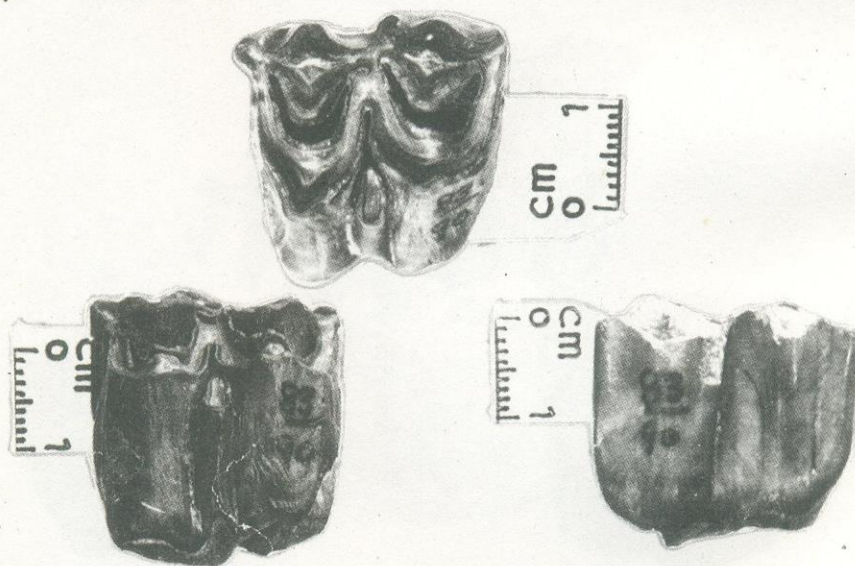


Fig. 4: *Selenoportax lydekkeri*, an isolated right M² (P.U.P.C. No. 85/6) from Hasnot, district Jhelum, Punjab, Pakistan. A, Crown view; B, Inner view; C, Outer view.

Material referred to Selenoportax vexillarius

P.U.P.C. (Punjab University [Lahore] Paleontological Collection) No. 83/81 - a damaged left mandible with M₂₋₃.

P.U.P.C. No. 83/82 - a part of right mandible with M₃.

P.U.P.C. Nos. 83/640, 85/8, 85/16, 85/101 - lower molars.

P.U.P.C. Nos. 83/91, 83/93, 83/638, 85/7, 85/9 and 85/12 - isolated upper molars.

Material referred to Selenoportax lydekkeri

P.U.P.C. Nos. 83/90, 85/13 and 85/38 - isolated upper molars.

P.U.P.C. No. 83/84 - a part of left mandible with M₂.

P.U.P.C. No. 83/267 - a left M₃.

Locality

Hasnot, district Jhelum, Punjab, Pakistan for all specimens except P.U.P.C. Nos. 83/640 and 83/638 which come from Dhok Pathan, district Chakwal, Punjab, Pakistan.

Horizon

Middle Siwaliks for all specimens.

Description (Figs. 1-5)

The teeth referred to *S. lydekkeri* are all of left side and fairly worn, in all the median basal pillars are also worn. P.U.P.C. No. 83/13 is damaged internally; it shows an enamel island between the central cavities - a result of advanced wearing. In all the three the antero-external cusp is slightly longer and more flat than the posteroexternal. The width of the teeth diminishes with height. Externally the length increases slightly with height as in Geol. Surv. Ind. molar No. B 206 and American Museum of Natural History (A.M.N.H.) No. 19957 described and sketched by Lydekker (1884) and Pilgrim (1937) respectively. In general, the upper teeth are much larger than those of *S. vexillarius*. The lower teeth show only slight difference of size. This is evident also from the figures drawn and measurements given by Pilgrim (1937).

A very prominent feature of the teeth in *S. vexillarius* is the rugosity of enamel. In some, however, it is less evident but this appears to be due to weathering. The median basal pillar is prominent in all the upper molars. P.U.P.C. No. 83/638 is a right M², while the other are very probably M¹. The M³ (P.U.P.C. No. 83/638) is of an old individual. It compares favourably with A.M.N.H. No. 19844, described by Pilgrim (1937). Its basal pillar is also worn down. The other teeth 83/93 appears to be of a



Fig. 5: *Selenoportax vexillarius*, a left mandible with M_{2-3} and roots of P_3-M_2 (P.U.P.C. No. 83/81) from Hasnot, district Jhelum, Punjab, Pakistan. A, Crown view; B, Inner view; C, Outer view.

relatively younger individual; it is the right molar. P.U.P.C. No. 83/81 is a left mandible with M_2 , M_3 and roots of P_3-M_1 . This also shows the same basic features. Like Am. Mus. No. 19514, a median basal pillar is present in M_2 but not in M_3 . However, in P.U.P.C. No. 83/82 and 83/640 a median basal pillar is present which suggests that it is a variable feature. The talonid of M_3 is narrow as in A.M.N.H. No. 19514.

Table I: Comparative measurements (mm) of M^1 referred to *Selenoportax vexillarius* and *Selenoportax lydekkeri*.

	<i>S. vexillarius</i>		<i>S. lydekkeri</i>	
	83/9*		83/10*	85/38
L	22		27.5	26.6
W	24		28	26
W/L index	109		102	98
H	20		21	27
H/W	83		75	104

Abbreviations used: L, maximum preserved antero-posterior length; W, maximum preserved width of the crown; H, maximum preserved height of the crown.

*The numbers mentioned below the species names are P.U.P.C. Nos.

Table II: Comparative measurements (mm) of M^2 referred to *Selenoportax vexillarius* and *Selenoportax lydekkeri*.

	<i>S. vexillarius</i>								<i>S. lydekkeri</i>					
	83/91	83/93	83/116	83/638	85/7	85/12	95/5	96/3	83/90	85/6	85/37	86/201	87/195	95/1
L	25.7	23	23	23	23.5	25	24	25	28.5	29.5	27	28	27.2	28
W	23.8	22.6	20	24	22	26	22	23	28.7	29	27	26.5	27.2	27
W/L index	93	98	87	104	94	104	92	92	101	98	100	95	101	96
H	21	23.4	28	22	22.4	20	27	28	23	28	32	28	25	37
H/W index	88	103	140	92	102	77	123	122	80	96	118	106	91	137

For abbreviations and other details, see Table I.

Table III: Comparative measurements (mm) of M_1 referred to *Selenoportax vexillarius* and *Selenoportax lydekkeri*.

	<i>S. vexillarius</i>			<i>S. lydekkeri</i>	
	82/98	83/96	96/11	85/26	87/144
L	21	22	20	25.5	27
W/L	15	13	12	12	16
W/L index	71	59	60	47	59
H	16	21.5	19	20	24
H/W index	107	165	158	166	150

For abbreviations and other details, see Table I.

Table IV: Comparative measurements (mm) of M_2 referred to *Selenoportax vexillarius* and *Selenoportax lydekkeri*.

	<i>S. vexillarius</i>			<i>S. lydekkeri</i>
	83/81	83/84	86/198	85/106
L	27.5	26	29	33.3
W	15	14	13	15
W/L index	54	50	55	45
H	26	26	27	40
H/W index	173	186	208	267

For abbreviations and other details, see Table I.

Table IV: Comparative measurements (mm) of M_3 referred to *Selenoportax vexillarius* and *Selenoportax lydekkeri*.

	<i>S. vexillarius</i>			<i>S. lydekkeri</i>
	83/81	83/82	86/298	96/8
L	36	36	35	39.5
W	15	14	8	17
W/L index	42	39	23	43
H	30	30	9	27
H/W index	200	214	112	159

For abbreviations and other details, see Table I.

DISCUSSION

Pilgrim (1937 and 1939) based the genus *Selenoportax* upon a collection from the Siwaliks of Pakistan whose type specimen is a skull lacking maxilla and most of basicranium. This is in the collection of the A.M.N.H. No. 19748. Pilgrim (1939) also referred many isolated teeth from Dhokpathan formation, and a left horn-core which was described and figured by Lydekker (1855). Pilgrim (1937) referred all these specimens to the genus *Selenoportax* and added one species in it, *Selenoportax vexillarius*.

Lydekker (1884) described and figured seven different specimens under the *Boselaphus* sp. from "Punjab", no exact locality has been mentioned by him. These specimens were maxilla, mandible and isolated teeth. Pilgrim (1910) established a species *Boselaphus lydekkeri* on this material. However, Pilgrim (1937) transferred all these specimens to the genus *Selenoportax* and species *S. lydekkeri*.

Gentry (1974) proposed that referred teeth of supposed species *Selenoportax lydekkeri* must be regarded as of uncertain identity. Now more material of *S. lydekkeri* has been collected from the Siwaliks by the author. This material comprises, two fragmentary crania, mandibles and many isolated teeth. These specimens are referred to *Selenoportax* in three species, *S. vexillarius*, *S. lydekkeri* and a third new species *S. dhokpathanensis* (Akhtar, 1992).

In general, the upper teeth of *S. lydekkeri* are much larger than those of *S. vexillarius*. The main difference seen between two species lies in the size of upper teeth, M_3 and mandible. There is no basic difference in the structure of the teeth. The teeth referred to species *S. vexillarius* are comparatively smaller than those of *S. lydekkeri* and are somewhat less hypsodont and have comparatively weaker median basal pillars in the upper molars.

Similarly, M_3 of the species *S. lydekkeri* is about 40 mm long while those of *S. vexillarius* are 33 or 34 mm long. The other lower teeth show only slightly difference of size (Tables I-V). This is evident also from the figures drawn and measurements given by Pilgrim (1937).

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