

PROCYNOCEPHALUS PINJORII, SP. NOV. A NEW FOSSIL
PRIMATE FROM PINJOR BEDS (LOWER PLEISTO-
CENE), EAST OF CHANDIGARH*

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ABSTRACT—The paper records the presence of *Procynocephalus* Schlosser, a cercopithecoid from the Pinjor beds (Upper Siwaliks) exposed east of Chandigarh. This is a new species which has affinities with the Chinese form *Procynocephalus wimani* Schlosser, found in comparatively old horizon. This is the first record of the genus from the Siwalik region where it lived in the Pleistocene or even earlier.

INTRODUCTION

While engaged in systematic collection of vertebrate fossils from Upper Siwaliks of Punjab and Haryana the author found a very well preserved primate mandible with complete dentition. Considering the extreme rarity of fossil primates, particularly well preserved specimens, this find assumes considerable importance. The specimen is of particular interest as it shows close affinities with Chinese form, *Procynocephalus wimani* Schlosser, recovered from an older horizon containing a *Hipparion* fauna, (Equivalent to Dhokpathan or Tatrot stages), whereas the form described here comes from younger Pinjor beds.

northwest of Bunga (76°58', 30°40') in tehsil Naraingarh, district Ambala, Haryana State. The matrix consists of soft sand-rock of earthy grey colour in which the fossil was loosely embedded. The beds here dip towards NNE, the angle of dip varying from 10 to 15 degrees. They are succeeded by the Lower Boulder Conglomerate towards north, and are faulted against the Tatrots towards the east, near Sabilpur (76°59'30"; 30°41'). A thorough search in the surrounding area did not prove fruitful, though it yielded proboscidean limb bones and tusk pieces about a kilometre south east of this locality. The fossil locality lies in the middle part of the Pinjor sand-rock zone.

LOCALITY AND STATE OF PRESERVATION

The fossil was recovered from the middle part of the Pinjor stage, about a kilometre

GEOLOGY

The rocks in this area consist mainly of Upper Siwaliks and have been classified as under by Sahni and Khan (1959):

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Alluvium and sub-recent conglomerates (T ₅)	..	Holocene
River Terraces (T ₂ -T ₄)	..	Upper Pleistocene
River Terrace (T ₁)	..	Middle Pleistocene
Upper Boulder conglomerate	..	Middle Pleistocene
Unconformity		
Lower Boulder conglomerate	..	Lower Pleistocene
Pinjaur	..	Upper Pliocene
Tatrot		

The hills lying north of Rattewali and Moginand consists of Upper Siwaliks which abut northward against the Nahans due to a reverse fault. Westwards the lower hills comprising of Upper Siwaliks are separated from the Nahans by the intervening *Dun* gravels.

DESCRIPTION

Suborder : ANTHROPOIDEA

Family : CERCOPITHECIDAE

Genus : PROCYNOCEPHALUS Schlosser

PROCYNOCEPHALUS PINJORII n. sp.

(Pl. 6, fig. 1-4)

The specimen consists of well preserved mandible but for the missing ascending portions of the ramii. The entire lower dentition

is intact. The small size of the canines indicates considerable attrition or may be due to the specimen being a female. The incisors are slightly chipped off at the front and so are the premolars at the sides. The entire dentition is well worn indicating a mature individual accustomed to a herbivorous diet. The specimen appears to have suffered some distortion with the result that the right ramus has become slightly twisted clockwise. The canines are much abraded and are now nearly of the same height as the incisors. The ramii are massive, nearly vertical, smooth and slightly grooved beneath the last molars and incisors (due to their roots). One mental foramen is seen on each side of the mandible below M₁ and another lies in front, about 15 mm beneath the incisors. The ramii diverge antero-posteriorly at the base but when viewed dorsally the dentition is nearly parallel and makes the anterior arc between the canines. The symphysis is round and pointed.

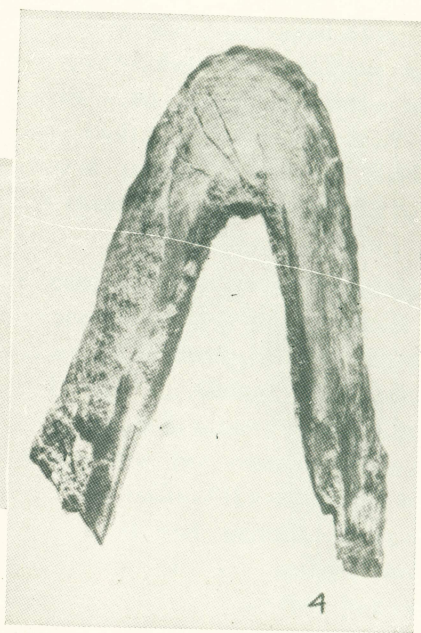
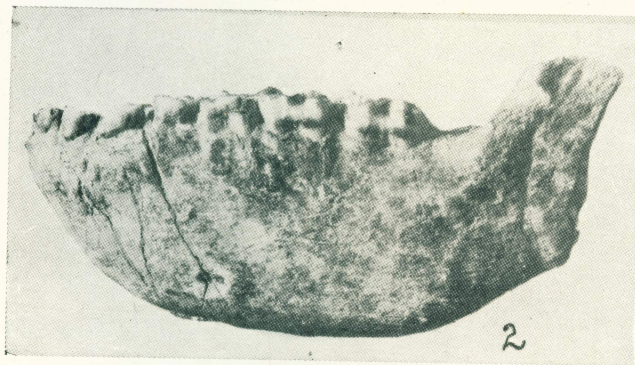
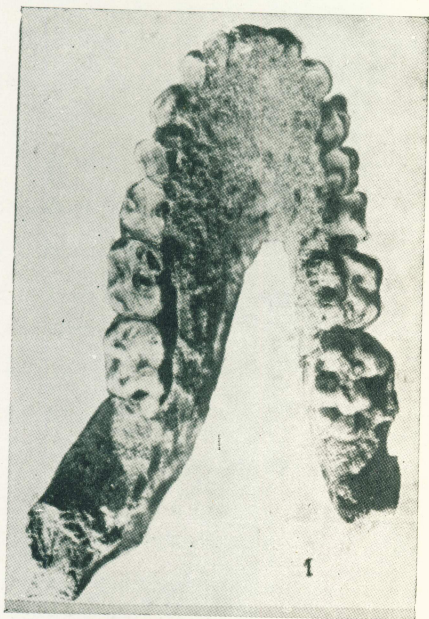
Measurements

Length of the inferior teeth I ₁ to M ₃	70 mm
Width of the symphysis between the right and left canines on the inner side	17 mm
Width of the symphysis between the right and left M ₁ on the inner side	26 mm

EXPLANATION OF PLATE 6

1. *Procynocephalus pinjorii* n. sp. From the Upper Siwaliks, Pinjor stage, Lower jaw, from above.
2. *Procynocephalus pinjorii* n. sp. Lower jaw, lateral view.
3. *Procynocephalus pinjorii* n. sp. Lower jaw, front view.
4. *Procynocephalus pinjorii* n. sp. Lower jaw, ventral view.

All figures about 2/3 natural size



VERMA : PROCYNOCEPHALUS PINJORII SP. NOV.

Depth of ramus at M_1	32.5 mm
Depth of ramus at P_4	27 mm
Position of the mental foramen from the base of M_1	24.5 mm
Width of the mandible at the posterior ends of M_3	37 mm
Length of M_1 to M_3	39 mm
Length of M_3	18.5 mm
Breadth of M_3	12 mm
Length of P_3 to P_4 at the base of the crown	16 mm
Breadth of P_3	7 mm
Breadth of P_4	5 mm
Length of P_4 at the base of the crown	7.5 mm
Height of the right canine	5.5 mm
Length of the right canine	6 mm
Breadth of the right canine	4.5 mm
Height of I_1	4.5 mm
Length of I_1	6.5 mm
Breadth of I_1	4.5 mm

G. S. I. Type No. 18453

Horizon : Pinjor stage

Locality: 1 kilometre N.W. of Bunga village, Ambala District, Haryana State.

DISCUSSION

The general frame of the mandible at once separates it from the higher apes and hominids both living as well as extinct. The elongated jaw and the structure of the dentition indicate affinity with the genus *Papio*. Among the living *Papio*, the species exhibited in the Indian Museum, Calcutta, were examined. Although the specimen under description shows some

affinity with these, the living forms are either too large or much more evolved and thus our species is distinct from these forms. The various species of *Papio* (*Parapapio* Broom) described from South Africa are either large or smaller forms and seem to have little in common with the specimen under description. Of the two extinct forms from the Upper Siwaliks described by Lydekkar, the species *Papio*-*subhimalayanus* (H. von Meyer) is based on the characters of the skull and no description of its mandible is available, whereas the other species *Papio falconeri* (Lydekkar), has a mandible which is much more elongated and narrow with P_4 thinner, and M_3 smaller, than those in the present specimen.

The third species from the Upper Siwaliks *Papio babouin* (Desmarest), again appears to be a smaller and somewhat different form than the one under description. The length of the space occupied by the molar series is almost the same as in the two forms but in *Papio babouin* the symphysis is less elongated, canine larger, and the last molar possesses one hind talon against two of present specimens. Evidently the present mandible does not belong to this species.

There remains one genus *Procynocephalus* Schlosser, represented by a single species *Procynocephalus wimani* Schlosser, from the *Hipparion* fauna of Honan in China. Our specimen resembles this genus in many respects. Characters common to the two mandibles are elongated symphysis, flanks of the mandible nearly vertical, ungrooved and smooth, a foramen present beneath the foremost incisors and another below the middle of the line joining M_1 and P_3 on the outer side of both ramii. Characters of the teeth are also more or less similar and the two mandibles are of nearly the same size.

The following measurements illustrate points of difference (and similarity) between *Procynocephalus wimani* and the present specimen :—

	<i>Procynocephalus wimani</i>	<i>Procynocephalus pinjorii</i> (present specimen)
Length of the inferior teeth I ₁ to M ₃	78 mm	70 mm
Height of the canine	15 mm	5.5 mm
Length of P ₃₋₄ at the base of the crown	18.5 mm	16 mm
Length of M ₁₋₃	39 mm	39 mm
Length of M ₃	17 mm	18.5 mm
Width of M ₃	10.5 mm	12 mm
Height of the mandible beneath C	29 mm	28 mm
Height of the ramus beneath M ₂	29 mm	37 mm
Distance of the left M ₂ from right M ₂ on the inner side	20 mm	27.5 mm

From the above it is evident that our specimen approaches very closely the form described from China but is different in several specific characters. Accordingly, the new form is being named *Procynocephalus pinjorii* after the horizon from which it was recovered.

DIAGNOSTIC CHARACTERS

Procynocephalus pinjorii possesses small incisors and canines (the latter being not very distinct from the former in shape and size). P₄, though it is much elongated from the base and reaches up to the root of the canine, does not cover it as is the case with *Procynocephalus wimani*. The ascending bars of the ramii begin much more

posteriorly to M₃ and are directed backwards making an angle of about 120° with the level of the dentition. The inner slope of the symphysis is more elongated as compared to *Procynocephalus wimani* and commences almost at the posterior end of M₁. The depth of the ramii is also greater than that of *P. wimani*.

CONCLUSIONS

It is likely that this form descended from the Chinese form and had extended its geographical distribution up to the Siwalik region before the beginning of Pleistocene or even earlier, as the two regions are not far from each other. A thorough search in the earlier horizons of the Siwaliks may establish the existence of the Chinese form as well.

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