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

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ABSTRACT—The paper records the presence of *Procyncephalus* Schlosser, a cercopithecid from the Pinjor beds (Upper Siwaliks) exposed east of Chandigarh. This is a new species which has affinities with the Chinese form *Procyncephalus 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, *Procyncephalus 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.

LOCALITY AND STATE OF PRESERVATION

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

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-recnt
conglomerates (T₃)  .  .  Holocene
River Terraces
(T₃-T₄)  .  . Upper Pleistocene
River Terrace (T₁)  .  . Middle Pleistocene
Upper Boulder
conglomerate  .  .  Middle Pleistocene

Unconformity
Lower Boulder
conglomerate  .  . Lower Pleistocene
Pinjaur  .  . Upper Pliocene
Tatrot

The hills lying north of Rattewali and Mogenand 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 : PROCYNOCHEPHALUS Schlosser
PROCYNOCHEPHALUS 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 I₁ to M₃  .  .  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 M₁ on the inner side  .  .  26 mm

EXPLANATION OF PLATE 6

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

All figures about 2/3 natural size
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 Lydekker, 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 (Lydekker), 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 Hipparchion 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 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 *Procyncephalus wimani* and the present specimen:

<table>
<thead>
<tr>
<th></th>
<th><em>Procyncephalus wimani</em></th>
<th><em>Procyncephalus pinorii</em> (present specimen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of the inferior teeth I₁ to M₃</td>
<td>78 mm</td>
<td>70 mm</td>
</tr>
<tr>
<td>Height of the canine</td>
<td>15 mm</td>
<td>5.5 mm</td>
</tr>
<tr>
<td>Length of P₃-₄ at the base of the crown</td>
<td>18.5 mm</td>
<td>16 mm</td>
</tr>
<tr>
<td>Length of M₁-₃</td>
<td>39 mm</td>
<td>39 mm</td>
</tr>
<tr>
<td>Length of M₃</td>
<td>17 mm</td>
<td>18.5 mm</td>
</tr>
<tr>
<td>Width of M₃</td>
<td>10.5 mm</td>
<td>12 mm</td>
</tr>
<tr>
<td>Height of the mandible beneath C</td>
<td>29 mm</td>
<td>28 mm</td>
</tr>
<tr>
<td>Height of the ramus beneath M₂</td>
<td>29 mm</td>
<td>37 mm</td>
</tr>
<tr>
<td>Distance of the left M₂ from right M₂ on the inner side</td>
<td>20 mm</td>
<td>27.5 mm</td>
</tr>
</tbody>
</table>

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 *Procyncephalus pinorii* after the horizon from which it was recovered.

**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.

**ACKNOWLEDGEMENTS**

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