



Fig. 7 *Hyracodon petersoni* Wood, SMNH P1204.1, incomplete mandible with I₁, I₂, and alveoli for I₃, both C, left P₃ to M₃, right P₂ to M₃; left lateral view, × 1.



Fig. 8 *Hyracodon petersoni* Wood, SMNH P1204.1; occlusal view, $\times 1$.

MEASUREMENTS (in millimetres)

	<i>Length</i>	<i>Width</i>
SMNH P1179.2		
Right P ³ to M ³	80.1	—
Right P ³	14.0	18.0
Right P ⁴	15.7	20.4
Right M ¹	17.0	18.7
Right M ²	19.5	20.8
Right M ³	16.8	19.2
SMNH P1204.1		
Left I ₂ to M ₃	133.3	—
Left I ₂ , crown	5.1	6.3
Left C, at base of crown	6.7	5.9
Right P ₂	12.6	8.8
Left P ₃	14.9	12.0
Left P ₄	15.3	11.9
Left M ₁	13.8	12.1
Left M ₂	19.5	12.9
Left M ₃	19.9	13.1

REMARKS

It is difficult to recognize valid distinctions in the upper dentition between *H. petersoni* and *H. priscidens*. Apart from the smaller size of *H. petersoni*, there is the metaloph of P⁴, which curves posterad at its free end, thus keeping the median valley open until the crown is deeply worn. The posterad extension of the ectoloph on M³ is shorter in *H. petersoni*, and is directed posterad, not posterobuccad.

If the mandible referred tentatively to *H. petersoni* really belongs to that species, some other differences may be noted from *H. priscidens*. These include the relatively narrow cheek teeth, and the slightly more recurved end of the protolophid.

Family Rhinocerotidae Owen, 1845

FAMILY CHARACTERS

Medium to large-sized perissodactyls, most of which have large heads, heavy bodies, and relatively short limbs; the manus is tetradactyl to tridactyl and the pes tridactyl. Various genera since Miocene time have one or two horns of agglutinated hair resting on the nasal bones. The dental formula is $\frac{3-0 \ 1-0 \ 4 \ 3}{2-0 \ 0 \ 4-3 \ 3}$. I¹ when present is in the form of an anteroposterad-orientated, chisel-like blade. Upper and lower premolars are submolariform to molariform except P₁¹, which are smaller and simpler. M¹ and M² have quadrate crowns, with buccal margin formed by strong ectoloph, which gives rise to transverse protoloph and metaloph, and extends posterad of metaloph; M³ is trianguloid, the posterobuccal margin formed by continuous ectoloph and metaloph. Lower molars with trigonid and talonid each with L-shaped crest, that of

trigonid formed by anterad protolophid and linguad metalophid, and that of talonid by anterad hypolophid and linguad entolophid; the hypolophid does not reach the metaconid; M₃ without a hypoconulid spur.

Trigonias Lucas, 1900

GENERIC CHARACTERS

Relatively primitive rhinocerotids of medium size. Dentition $\frac{3 \ 1 \ 4 \ 3}{2 \ 0 \ 4 \ 3}$. Chisel shape

of I¹ moderately developed. Upper premolars highly variable, ranging from those with lingual ends of protoloph and metaloph joined, to those in which the two crests are quite separate lingually, as in the molars; P² is usually the most molariform. Upper molars, and lower premolars and molars, are characteristically rhinocerotid. Manus tetradactyl.

Trigonias osborni Lucas, 1900

REFERRED SPECIMENS

ROM 1733 (Fig. 9), incomplete left maxilla with P¹ to M¹. ROM 5920 (Fig. 10), incomplete right maxilla with P¹ to M¹. Both from the Hunter Quarry.

SPECIFIC CHARACTERS

Unworn upper premolars (P²-P⁴) with hypocone not connected to protocone or metaloph; with wear, hypocone unites with protocone before joining metaloph, leaving median valley open posteriorly; no hypostyle. M³ with slight angle at junction of ectoloph and metaloph. Lingual cingulum present on upper premolars but not on molars.

DESCRIPTION

The following account is based on ROM 1733. P¹ has a shallow, broad lingual re-entrant. P² to P⁴ are moderately worn. P² has the anterior arm of the protocone not reaching the ectoloph (paracone), but the posterior arm is narrowly connected to the metaloph and the posterior side of the hypocone; hypocone and metaloph are narrowly separated; lingual margin of crown is not oblique. P³ is like P² but larger, and relatively wider; the protoloph is connected to the ectoloph, but the protocone, hypocone, and lingual end of metaloph are all well separated from each other; the lingual margin of the crown is oblique, curving posterobuccad around the hypocone. P⁴ is very similar to P³ but distinctly wider buccolingually; the free lingual end of the metaloph is bifid; the hypocone is relatively small and is connected to the cingulum; the lingual margin of the crown is more oblique than that of P³. M¹ is more worn than P⁴; there is a trace of a lingual cingulum between protocone and hypocone.



Fig. 9 *Trigonias osborni* Lucas, ROM 1733, incomplete left maxilla with P¹ to M¹; occlusal view, × 1.

MEASUREMENTS (in millimetres)

	<i>Length</i>	<i>Width</i>
ROM 1733		
Left P ¹ to M ¹	103.6	—
Left P ¹	19.6	13.2
Left P ²	19.5	22.8
Left P ³	21.0	28.7
Left P ⁴	24.3	34.2
Left M ¹	29.4	34.9

REMARKS

The structure of the upper premolars, especially P², is very similar to that of *Trigonias taylori* Gregory and Cook (1928), particularly in the short metaloph, which is free or almost free from the hypocone and the more or less isolated hypocone. Wood (1931) and Scott (1941) recognized *T. taylori* as a distinct species, but it seems to me to be in the same status as the numerous other "species" or "subspecies" described by Gregory and Cook (1928) from Colorado, which are all interrelated by the highly variable structure of the upper premolars. If *T. taylori* is to be recognized as a valid species or subspecies, the Cypress Hills specimens should be assigned to that taxon.

Trigonias ?osborni Lucas, 1900

REFERRED SPECIMENS

SMNH P1637.1 (Fig. 11), right maxilla and portion of jugal, with P² to M³; Calf Creek. SMNH P1637.2 (Fig. 12), left maxillary fragment with P¹ to M¹; Calf Creek. SMNH [no number] (Fig. 13), left mandibular ramus with symphysis, left P₁ to M₃, right I₁ and I₂; Hunter Quarry.

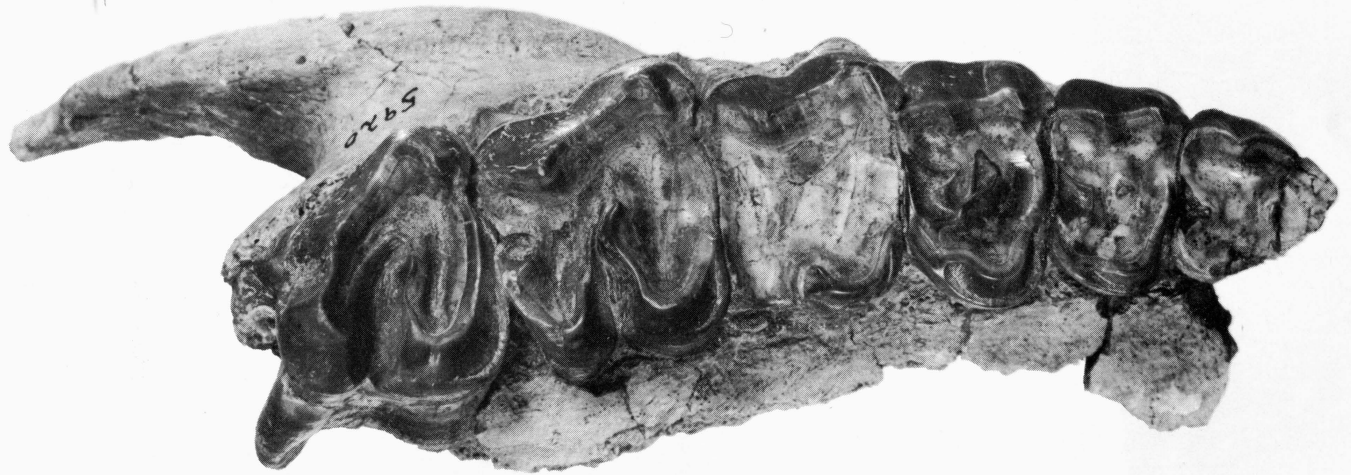


Fig. 10 *Trigonias osborni* Lucas, ROM 5920, incomplete right maxilla with P¹ to M¹; occlusal view, × 1.



Fig. 11 *Trigonias tesborni* Lucas, SMNH P1637.1, right maxilla and portion of jugal, with P² to M¹; occlusal view, × 1.