



Fig. 12 *Trigonias osborni* Lucas, SMNH P1637.2, left maxillary fragment with P¹ to M¹; occlusal view, × 1.

DESCRIPTION

SMNH P1637.1 has the teeth somewhat cracked but otherwise well preserved. P² is very molariform, with well-developed protoloph and metaloph extending linguad from ectoloph and terminating in protocone and hypocone, respectively, near the lingual margin; there is a slight connection between the two cusps; the cingulum is strong, and continues from anterior around lingual to posterior margin of the crown. P³ is less molariform; the protoloph continues into the large protocone, from which the crest extends posterad into the hypocone; the metaloph, in contrast, is short, and ends abruptly buccal of the hypocone, leaving a posterior opening for the median valley; the cingulum is similar to that of P² but there is a slight interruption at the base of the protocone; the lingual margin of the crown is oblique. P⁴ is wider, but not much longer than P³; it has a continuous crest, consisting of protoloph, protocone, hypocone, and metaloph, enclosing the median valley; the cingulum is well interrupted on the lingual slope of the protocone, and the posterolingual margin of the crown is very oblique. M¹ and M² are similar to each other, with strong ectoloph bearing a prominent paracone, a slight parastyle, and a long posterad extension beyond the metacone; the oblique protoloph and metaloph are prominent, and there is a faint suggestion of an antecrochet on M¹; a minute trace of cingulum is visible between protocone and hypocone on M¹ but not on M². M³ is not quite fully erupted; it has a prominent paracone posterior to junction of protoloph with ectoloph; the latter crest then turns abruptly posterolingual parallel with the protoloph, and with a very slight angulation continues as a short metaloph.

SMNH P1637.2 is slightly smaller than P1637.1, but otherwise resembles it closely. The P¹ has a large re-entrant from the anterolingual margin. P² is molariform, as in P1637.1, but there is a cleft between the buccal end of the protoloph and the parastyle portion of the ectoloph. A similar difference exists between the otherwise similar P³ of the two specimens. P⁴ of P1637.2 also has the cleft, and the metaloph does not reach the hypocone, leaving the median valley open posterad as in P³. The M¹ is similar to that tooth in P1637.1, but the antecrochet is a little more distinct.

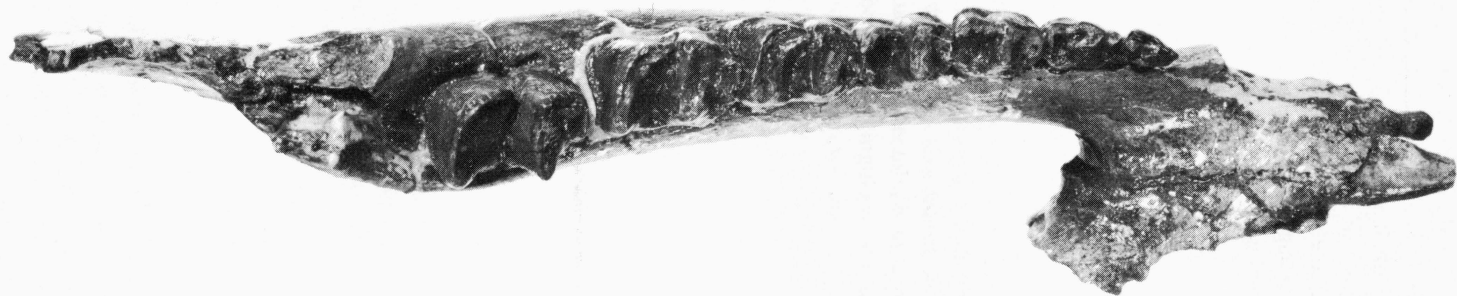


Fig. 13 *Trigonias osborni* Lucas, SMNH, left mandibular ramus with symphysis, right I₁ and I₂, left P₁ to M₃; occlusal view, × 0.6.

The uncatalogued SMNH mandible has a long, shallow symphysis reaching back to P₂. The incisors are typical, that is, small, knob-shaped I₁, and large, procumbent I₂; there appears to be a remnant of the alveolus of I₃. The P₁ is a small anteroposterior blade with a large middle cusp and small anterior and posterior cusps. P₂ is larger and more trianguloid, with the beginning of a talonid and a hypolophid. P₃ and P₄ are almost molariform, except that the metalophid is much higher than the talonid. The molars have the trigonid crest more angulate than that of the talonid, which is almost crescentic. M₃ is barely erupted and quite unworn.

MEASUREMENTS (in millimetres)

	<i>Length</i>	<i>Width</i>
SMNH P1637.1		
Right P ² to M ³	163.3	—
Right P ²	21.9	28.6
Right P ³	24.6	31.4
Right P ⁴	25.4	37.6
Right M ¹	32.2	37.0
Right M ²	38.5	43.5
Right M ³	34.6	40.1
SMNH P1637.2		
Left P ¹ to M ¹	113.2	—
Left P ¹	18.6	13.6
Left P ²	21.0	22.0
Left P ³	22.8	28.1
Left P ⁴	24.9	32.9
Left M ¹	34.7	36.8
SMNH [no number]		
Left P ₁ to M ₃	163.1	—
Left P ₁	13.3	8.0
Left P ₂	16.6	11.4
Left P ₃	19.6	15.0
Left P ₄	20.9	16.7
Left M ₁	27.1	19.6
Left M ₂	33.2	21.4
Left M ₃	36.2	21.2

REMARKS

These three specimens are very close to, if not conspecific with, *Trigonias osborni*. In the case of the upper dentitions the premolars do not show quite the same combination of cusps and crests seen in the type of *T. osborni*, although it is closer than to that of any other of the supposed species. Also the size is somewhat small for *T. osborni*. In the lower dentition the smaller size is almost the only difference from the corresponding teeth of typical *T. osborni*.

Trigonias, cf. osborni Lucas, 1900

REFERRED SPECIMENS

ROM 23182 (Fig. 14), incomplete skull with left I³, C, P¹ to M³, and right I², P¹ to M³. ROM 5933, right P³. ROM 5923, right P³ or P⁴. ROM 5922, left M¹ or M². All from the Hunter Quarry.

DESCRIPTION

The incomplete skull, ROM 23182, is badly shattered and not fully prepared, but has a nearly complete dentition. The right I² is a small blunt cone. The left I³ and C are represented by stumps. The diastema between the alveolus of C and the P¹ is of about the same length as the P¹. The latter tooth is ovoid in outline, with a well-developed main cusp and an anterior ridge; lingual to the main cusp is a short marginal crest; the posterior part of the tooth is broader and shelf-like, with a curved crest like a metaloph, much worn. P² is molariform, but the protoloph dies away buccally before reaching the ectoloph, and there is no connection between protocone and hypocone; the metaloph is continuous from ectoloph to hypocone, and is slightly crescentic, concave posteriorly; the lingual cingulum is briefly interrupted on the protocone slope. P³ is submolariform; the crown outline narrows linguad; the protoloph is a prominent crest, which does not quite reach the ectoloph, but continues posterad from the protocone to the hypocone; the metaloph arises from the ectoloph, but terminates, with a slight posterad curvature, well short of the hypocone, leaving a wide opening to the median valley; the lingual cingulum is interrupted at the base of the protocone. P⁴ is wider than P³ but about the same in length; it too narrows linguad; the protoloph originates on the lingual wall of the ectoloph and is connected to a prominent protocone, posterior to which the crest drops gradually to the cingulum, with only a vestige of the hypocone on the left tooth and none on the right; the metaloph is shorter than on P³ and the gap between it and the protoloph is wider; this tooth is not fully erupted. M¹ has only a faint antecrochet and M² none at all. M³ is just emerging through the rim of the alveolus; the ectoloph is short and the protoloph and metaloph are approximately parallel.

As mentioned under referred specimens, there are three isolated teeth in the ROM collection that are best treated under *Trigonias, cf. osborni*. ROM 5933 is a slightly broken right P³, of about the same size as the corresponding tooth on ROM 23182. It has the same oblique posterolingual margin and the continuous lingual cingulum. At this stage of wear the buccal end of the protoloph has not yet merged with the ectoloph. The protoloph continues to the prominent protocone, then turns posterad to terminate in a vestigial hypocone. The metaloph is joined to the ectoloph at the paracone; it is short, and curved slightly posterad, leaving a gap between its free end and the hypocone.

ROM 5923 is a larger tooth than ROM 5933, but shows an almost identical crown pattern. The lingual margin is a little more oblique than that of ROM 5933. The buccal end of the protoloph merges with the ectoloph at the anterobuccal corner of the crown. The protocone is prominent, and connected to the vestigial hypocone. The metaloph is short; it is orientated parallel to the protoloph, but does not meet the hypocone.

ROM 5922 is an incomplete molar, probably M¹ because of the presence of a rounded antecrochet on the protoloph. It closely resembles the corresponding teeth of ROM 23182.

MEASUREMENTS (in millimetres)

	<i>Length</i>	<i>Width</i>
ROM 23182		
Left P ¹ to M ³	±154.6	—
Left M ¹ to M ³	±83.5	—
Left P ¹	14.5	12.5
Left P ²	18.3	21.2
Left P ³	22.2	28.8
Left P ⁴	23.2	30.6
Left M ¹	30.3	34.4
Left M ²	33.5	38.7
ROM 5933		
Right P ³	—	29.3
ROM 5923		
Right P ⁴	22.0	30.0
ROM 5922		
Left M ¹	—	+34.4

REMARKS

The teeth of ROM 23182 resemble those of *Trigonias gregoryi* as described by Wood (1928), particularly in the association of a molariform P² with submolariform P³ and P⁴. *T. gregoryi*, however, is much larger in size. *T. precopei* and *T. preoccidentalis* of Gregory and Cook (1928) also show the combination of molariform P² with submolariform P³ and P⁴. Wood (*in* Scott, 1941) regarded both of these "species" as subspecies or varieties of *T. osborni*. The present material, therefore, would seem to fall within *T. osborni* in the broad sense, but because there is still uncertainty about the species of *Trigonias*, it seems appropriate at this time to designate the incomplete skull as *T. cf. osborni*. As to the three dissociated teeth, they so closely resemble the corresponding teeth of ROM 23182 that it seems proper to give them the same identification.

***Trigonias* species A**

REFERRED SPECIMENS

SMNH P1637.3 (Figs. 15, 16), an incomplete skull, lacking the zygomata and part of the basicranium; preserved dentition consists of left P¹ to M³ and right C to M³; Hunter Quarry.

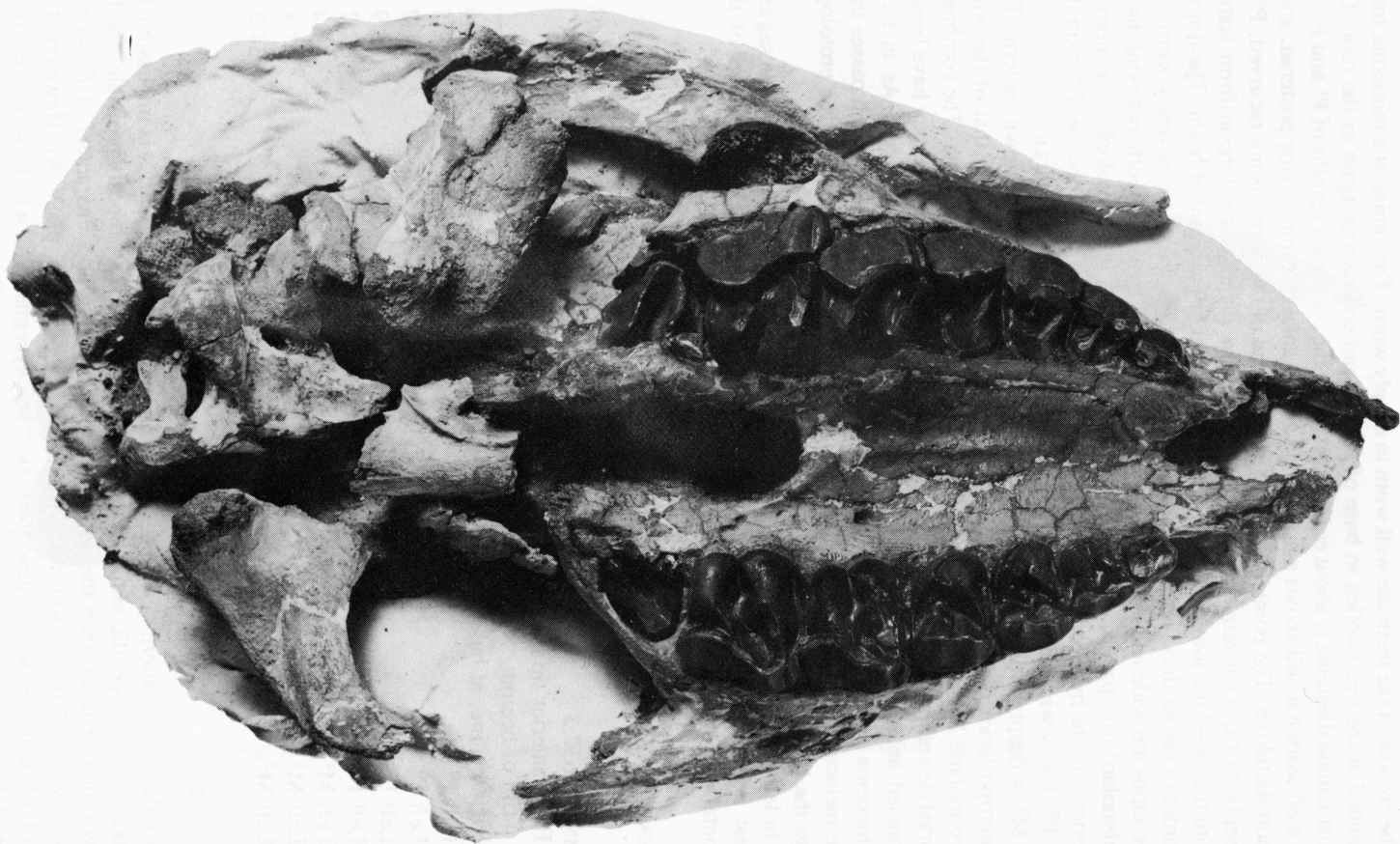


Fig. 14 *Trigonias*, cf. *osborni* Lucas, ROM 23182, incomplete skull with left I³, C, P¹ to M³, and right I², P¹ to M³; occlusal view, × 0.5.

DESCRIPTION

The crowns of the teeth are well worn to deeply worn. The canine is a miniature tusk, pointed at the tip, swollen to base of crown, and contracting again to the root. The post-canine diastema is about equal in length to the combined lengths of P¹ and P². P¹ is well worn but still shows a main cusp, a large anterior loph curving posterad, and a short metaloph. The pointed tip at the anterior end of the crown is not recurved. P² is deeply worn; what remains of the crown pattern suggests a submolariform status, with the metaloph joining the hypocone and closing off the central basin. The lingual border of the tooth is well rounded. P³ is wider than P²; it is not as severely worn, but the lophs are wide and confluent owing to wear. I interpret this tooth as having had a submolariform pattern, as in ROM 23182, in which the protoloph is continued posterad to the hypocone, and the metaloph does not reach the hypocone. P⁴ is similar to P³, but is wider and has a distinctly oblique posterolingual margin.

M¹ is deeply worn, and there is little vestige of the original crown pattern. The anteroposterior diameter of the crown is noticeably much less than that of the other two molars. M² is less worn, and much of the crown pattern persists. The combined parastyle and paracone form a prominent double-headed cusp. There may have been a rounded antecrochet on the protoloph. M³ is almost as worn as M². As in most rhinoceros dentitions the metastyle of M³ is not conspicuous; the ectoloph passes into the metacone by a broad angle, and continues more or less parallel to the protoloph into the hypocone.

In lateral view, the skull roof is seen to rise moderately to the occiput. The sagittal crest is poorly defined; it diverges anterad into the two superciliary crests of the frontal at a point above the anterior margin of the glenoid fossa.

MEASUREMENTS (in millimetres)

	<i>Length</i>	<i>Width</i>
SMNH P1637.3		
From anterior tip of nasals to dorsal rim of occiput	±400.0	—
Right canine, at base of crown	8.7	6.6
Left P ¹	17.1	12.5
Left P ²	18.6	21.2
Left P ³	18.3	28.9
Left P ⁴	22.4	32.7
Left M ¹	28.4	35.4
Left M ²	33.1	37.8
Left M ³	29.8	34.2

REMARKS

With the crown pattern of the premolars almost destroyed by wear, it is impossible to make a definite specific assignment of this specimen. If, as appears probable, the P² was submolariform, then the dentition could fall within the characters of *T. taylori* Gregory and Cook, as illustrated by those authors (1928, pl. V A). However, the skull of that species is described as “brachycephalic”, which would exclude P1637.3, so it is identified at this time as a species of *Trigonias*, probably new, but not suitable for definition.

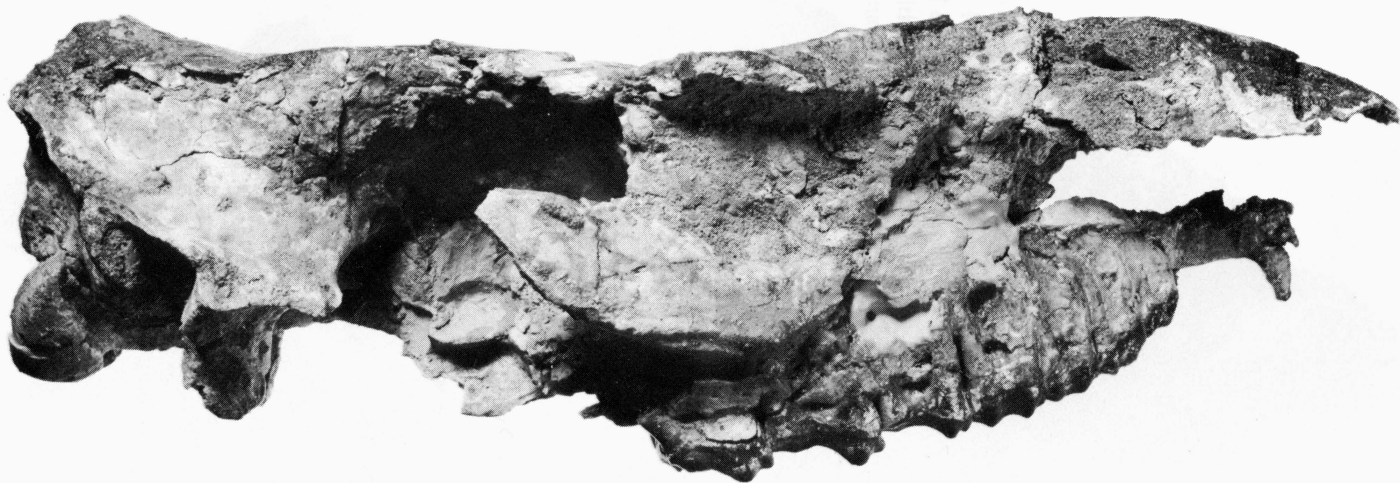


Fig. 15 *Trigonias*, species A, SMNH 1637.3, incomplete skull, with C to M₃; right lateral view, × 0.5.