

A NEW PALEOCENE CATOMETOPE CRAB FROM
TEXAS, *TEHUACANA TEHUACANA*

A NEW CRETACEOUS CRAB, *GRAPTOCARCINUS*
MUIRI, FROM MEXICO

BY

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A NEW CRETACEOUS CRAB, GRAPTOCARCINUS MUIRI, FROM MEXICO

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THE FOSSIL crab genus *Graptocarcinus* Roemer is poorly represented in species as well as specimens. The first species of the genus, *Gr. texanus* Roemer,¹ was described in 1887. It occurs in the lower Cenomanian Buda limestone in the neighborhood of Austin, Travis County, Texas. The species has not been found as yet in the extensive Buda limestone outcrops outside of central Texas. Even in Travis County the crab is a rarity. Fortunately there are several topotype specimens available to the writer. These were collected and later generously contributed by that assiduous collector of the Comanche Cretaceous, Dr. F. L. Whitney. For convenience of comparison, *Graptocarcinus texanus* Roemer has been described and refigured below.

Rathbun² recorded the genus from the Oligocene of Oregon as *Graptocarcinus* (?), species. This specimen is an unidentifiable fragment, to judge by the figure. *Graptocarcinus* is a primitive Cretaceous genus and probably did not survive to the Oligocene. Rathbun's citation of the genus should be dropped because of its great uncertainty.

Graptocarcinus muiroi is the second known species of the genus. It extends the geographical range of the genus from central Texas to northeastern Mexico and the stratigraphic range from lower Cenomanian to Albian.

Tribe BRACHYURA

Subtribe DROMIACEA de Haan

Superfamily DROMIIDEA Alcock

Family DYNOMENIDAE Ortman

Genus GRAPTOCARCINUS Ferdinand
von Roemer, 1887

Graptocarcinus texanus, ein Brachyure aus der oberen Kreide von Texas: Neues Jahrb., Band 1, pp. 173-176, text fig., 1887.

¹ Roemer, Ferdinand von, *Graptocarcinus texanus*, ein Brachyure aus der oberen Kreide von Texas: Neues Jahrb., Band 1, pp. 173-176, text fig., 1887.

² Rathbun, M. J., 1926, The fossil stalk-eyed Crustacea of the Pacific slope of North America: U. S. Nat. Mus. Bull. 138, pp. 4, 6, 17, 88-89, 144, pl. 21, fig. 3.

Genotype, *Graptocarcinus texanus* Roemer from the lower Cenomanian Buda limestone of central Texas. Genotype by monotypy.

GRAPTOCARCINUS TEXANUS von Roemer

Plate 93, figures 1, 2

Graptocarcinus texanus von Roemer, Ferdinand, 1887, *Graptocarcinus Texanus*, ein Brachyure aus der oberen Kreide von Texas: Neues Jahrb., Band 1, pp. 173-176, text fig.

Whitney, F. L., Fauna of the Buda limestone: Univ. Texas Bull. 184 (Sci. Ser. 18), pp. 27-28, pl. 13, figs. 1, 2 [not 3], 1911.

Whitney, F. L., Fauna of the Buda limestone: Texas Acad. Sci. Trans., vol. 12, pt. 1, pp. 27-28, pl. 13, figs. 1, 2 [not 3], 1913.

Glaessner, M. F., Crustacea decapoda: Fossilium Catalogus I, pt. 41, p. 203, 1929.

Rathbun, M. J., Fossil Crustacea of the Atlantic and Gulf Coastal Plain: Geol. Soc. Amer., Spec. Paper 2, pp. 4, 9, 41, pl. 10, figs. 13-15, 1935.

Original description (translated and edited)

—Cephalothorax transverse-oval, one-fifth wider than long, of rounded pentagonal outline. A fine, raised, sharp, encircling margin separates dorsal from ventral surface. Dorsal surface moderately convex; flattening in the center. Front curves strongly down at the anterior and ends in a broad, obtusely pointed rostrum divided by a fine longitudinal groove in middle and with raised margins. Deeply emarginate orbits immediately adjoin the rostrum.

Entire surface of cephalothorax coarsely and densely granulate. Between the coarse grains or warts a few smaller granules are scattered. Wherever the warts are broken off at the tip they seem ring-shaped and somewhat deepened in the center.

Two pairs of converging grooves present on gently convex central surface of cephalothorax. Anterior pair longer and stronger, slightly curved inward and converging at obtuse angle of about 130 degrees. Grooves deeper and broader at their distal ends, becoming weaker proximally with junction barely visible and ends apparently not joining in some specimens. Posterior pair shorter and weaker, at first nearly parallel

to the anterior pair, but later bending suddenly back at an angle and simultaneously becoming weak, indistinct, and barely traceable. Surface of cephalothorax uniformly convex and devoid of any other sculpture. Characteristically without swellings corresponding to the various internal organs such as are more or less distinct in nearly all brachyuran genera. Neither the cardiac, gastric nor branchial region seems outlined in any way. Anterior pair of grooves is probably an indication of the cervical grooves which delimit the gastric region posteriorly and which are present in most Brachyura.

Ventral surface of cephalothorax obliquely bent inward and nearly smooth; finely granulate only toward front and posterior. Opposite anterior pair of dorsal grooves is a fine notch in the sharp margin separating dorsal and ventral surface which passes forward as a linear, fine groove in a flat arc.

Addition to description.—The grooves were well described by Roemer. New material, however, shows that the fine median groove of the rostrum splits upon leaving the posterior end of the rostrum and encloses a very acute angle. There are also 3 pairs of pits on the carapace (see pl. 93, fig. 2). One pit (paired) lies near the distal end of the cervical groove, about 2 mm. forward and inward from its end and forming a right angle. The other 2 pits (paired) are about halfway between the center and the lateral extremity of the carapace on a line connecting the two lateral extremities of the carapace.

A pair of fairly large epigastric swellings lies between the orbits at the posterior end of the rostrum. They are transverse in outline, confluent at the midline and the fine median groove of the rostrum passes over their junction and splits forming two grooves immediately posterior of the swellings.

The shape of the eyes is incorrect in Roemer's sketch; they are wider and less high than shown by him.

Type specimens.—Roemer's four types are presumably at the Geological Institute of either the University of Bonn or Breslau, Germany. Topotypes in U. S. National Museum, Washington, D. C.; Bureau of Economic Geology, The University of Texas,

Austin; Musée royal d'Histoire naturelle de Belgique, Brussels, Belgium.

Type locality.—Shoal Creek in northwestern part of Austin, Travis County, Texas.

Geologic horizon.—Buda limestone of Comanche series, Cretaceous (lower Cenomanian).

Distribution.—Found also in Buda limestone of Barton Creek in southwestern part of Austin and in first creek south of Manchaca, Travis County, Texas, and along Blanco River, Hays County, Texas.

GRAPTOCARCINUS MUIRI

Stenzel, n. sp.

Plate 93, figures 3-5

Description.—Carapace small, transversely oval in outline, one-third to one-fourth wider than long; greatest width posterior to center; lateral extremity rounded in outline; nearly flat in middle, sloping away steeply in all directions. Frontal rostrum obtusely pointed, descending steeply, divided by short and shallow median groove. Orbits narrow and long, each about 1 by 3 mm. in size; outer or lateral end of orbit above inner end of anterolateral margin. Rim of frontal rostrum, orbits, anterolateral edge, and posterior edge with a simple, smooth, raised margin. In front this margin extends to the lateral extremity of carapace but disappears upon entering the posterolateral edge. Posterolateral edge thickly rounded to obtusely angulated. Adjoining the raised margin is a shallow groove free of larger tubercles along the rim of the frontal rostrum and orbits and along posterior edge, but not along the anterolateral margins.

Surface of carapace uniformly covered with tubercles and smaller granules. Paired grooves in middle portion of carapace very poorly preserved; only anterior pair recognizable, apparently similar to that of *G. texanus* Roemer.

Subbranchial region of ventral surface of carapace separated from subhepatic and pterygostomian region by narrow, shallow, curved groove which extends to raised margin of anterolateral edge and produces in it a very shallow notch. Surface of subhepatic and pterygostomian region covered with fine granules. Surface of subbranchial region

covered with small granules in the anterior portion, but posterior portion adjoining posterolateral edge, covered uniformly with fine granules and larger tubercles not quite as large as those on the dorsum.

Dimensions.—Length 17.7 mm., width 13.9 mm., fronto-orbital width 8.9 mm.

Remarks.—This species differs from *G. texanus* Roemer only in minor, but evidently specific, details. *G. muiri* is one-half or less the size of *G. texanus*; it is also proportionately shorter and wider, the proportions of width to length being about 1.13:1 in *G. texanus* and 1.28:1 in *G. muiri*.

The raised margin of the carapace is simple and smooth in *G. muiri*, but in *G. texanus* it is studded with tubercles and granules similar to those of the dorsal surface. The groove adjoining this raised margin is free of larger tubercles in *G. muiri*; the same groove is present in *G. texanus* but it is very inconspicuous because it is not free of tubercles. The raised margin of *G. muiri* is not continuous around the entire edge of the carapace, being absent along the posterolateral edges; but in *G. texanus* the raised and tubercle carrying margin encircles the carapace completely.

Holotype.—Bureau of Economic Geology, University of Texas, Austin.

Type locality.—Choy Cave in Sierra del Abra between Las Palmas and Taninúl, at kilometre 550 on the railroad between Tampico and San Luis Potosí, State of San Luis Potosí, Mexico.

Geologic horizon.—Taninúl limestone, Cretaceous (Albian). The Taninúl limestone, according to Adkins,³ contains at Choy Cave the following additional fossils:

Eoradiolites aff. *E. quadratus* Adkins

Caprinula sp.

Chondrodonta cfr. *C. munsoni*

Gastropods

Pelecypods

Corals

This is a classic Mexican stratigraphic locality and has been mentioned by several authors.⁴ Muir's comprehensive summary is the latest description.

The holotype was collected by the late John M. Muir, outstanding expert on the geology of Mexico. His work on the geology of the Tampico region is especially important to paleontologists for his accurate account of type localities of fossils. *Graptocarcinus muiri* is named in his honor and to commemorate the many discussions of the geology of Mexico which were held at the Bureau of Economic Geology by John M. Muir and W. S. Adkins, C. L. Baker, J. B. Dorr, and the writer at the time Muir was writing his report.

³ Adkins, W. S., 1930. New rudistids from the Texas and Mexican Cretaceous: Texas Univ. Bull. 3001, p. 82.

⁴ Boehm, Georg, 1898. Ueber Caprinidenkalke aus Mexico: Deutsche geol. Gesell. Zeitschr., vol. 50, p. 325.

Boehm, Georg, 1899. Beitrage zur Kenntniss mexikanischer Caprinidenkalke, in Felix, J., and Lenk, H., Beitrage zur Geologie und Paleontologie der Republik Mexico, pt. 2, pp. 143-154, Leipzig.

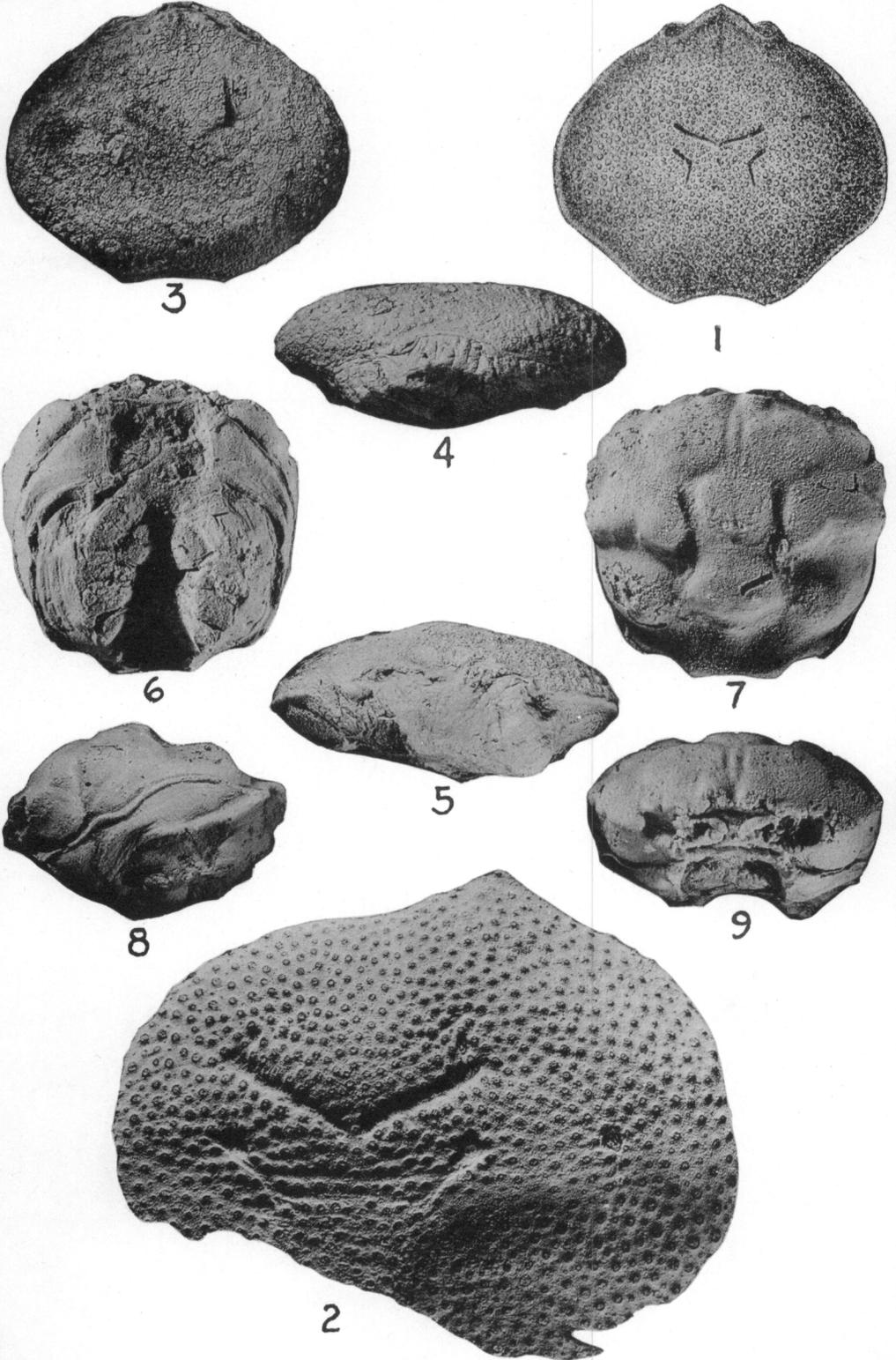
Burkhardt, C., 1930. Étude synthétique sur le Mésozoïque mexicain: Soc. Paléont. Suisse Mém., vols. 49-50, p. 192.

Muir, J. M., 1936. Geology of the Tampico region, Mexico, Amer. Assoc. Petr. Geol., pp. 36-38.

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EXPLANATION OF PLATE 93

- FIGS. 1, 2—*Graptocarcinus texanus* Roemer. 1, Copy of original type figure, dorsal view of carapace, $\times 1$. 2, Surface sculpture of part of a carapace, topotype specimen, $\times 3$. From Shoal Creek in northwestern Austin, Travis County, Texas; Buda limestone, Comanche series, Cretaceous (lower Cenomanian). (p. 550)
- 3-5—*Graptocarcinus muiri* Stenzel, n. sp., $\times 3$. 3-5, Dorsal, posterior, and frontal views of carapace, holotype. From Choy Cave in Sierra del Abra between Las Palmas and Taninúl, at kilometre 550 on the railroad between Tampico and San Luis Potosí, State of San Luis Potosí, Mexico; Taninúl limestone, Cretaceous (Albian). (p. 551)
- 6-9—*Tehuacana tehuacana* Stenzel, n. g., n. sp., $\times 3$. 6-9, Ventral, dorsal, left lateral, and frontal views of carapace, holotype. From Tehuacana Creek, about 1 mile southwest of the crossing of the Houston & Texas Central Railroad, about $3\frac{1}{2}$ to 4 miles south of Wortham, Limestone County, Texas; Wills Point formation, Midway group, Paleocene. (p. 546)



Stenzel - Cretaceous Crab and Paleocene Crab