



Fig. 3.—Biota, identified in thin section, from the Tepetate Formation. **A**, thin section containing the planktonic foraminifera *Catapsydrax* sp. (A), *Subbotina yeguaensis* (Weinzieri and Applin, 1929) (B), and *Acarinina rohri* (Brönnimann and Bermudez, 1953) (C). **B**, thin section containing *Subbotina gortanii* (Borsetti, 1959) (A), and *Turborotalia* sp. (B). **C**, thin section containing *Subbotina corpulentai* (Subbotina, 1953) (A), *Acarinina* sp. (B), and *Subbotina yeguaensis* (Weinzieri and Applin, 1929) (C). **D**, thin section containing the benthic foraminifera *Neorotalia* sp. (A), *Pseudophragmina (Proporocyclina) flitensis* (Cushman, 1917) (B), and coralline debris (C). **E**, thin section containing *Asterocyclina aster* (Woodring, 1930) (A), and *Pseudophragmina* sp. (B).

ances on the anterolateral margin to no anterolateral spines at all; from having orbits placed on the margins of the anterior edge of the carapace (fronto-orbital width to maximum carapace width ratio of about 100%) to orbits positioned well-within the anterior edge of the carapace (fronto-orbital width to maximum carapace width ratio of 60%); and from hexagonal to square to round dorsal carapace shapes (see illustrations in Guinot 1989). Thus, the specimen described below, which is known only from a rather poorly preserved dorsal carapace, easily falls within the range of morphology ascribed to *Carcinoplax*. *Carcinoplax* as currently defined is an Indo-Pacific genus, with fossil occurrences in the same general region. Thus, we questionably refer the specimen to *Carcinoplax*, based upon its broad orbits placed at the margins of the anterior edge of the carapace; equant carapace; apparent lack of anterolateral spines; and Pacific occurrence, until better material can be recovered. It differs from other species of *Carcinoplax* in possessing a notch between the front and the orbits. If the specimen were to be confirmed as a member of *Carcinoplax*, the record of that genus would be extended into the Eocene; currently the oldest known occurrences are early Miocene (Karasawa 1993).

The possibility of the specimen being a juvenile of *Amydrocarcinus dantei* was considered. However, examination of growth trends in *Carcinoplax* spp. (Guinot 1989) indicates that patterns of change during growth in the relative position of the orbits and proportion of the fronto-orbital width exclude the new specimen as a juvenile of *A. dantei*. In species of *Carcinoplax*, the fronto-orbital width itself and the ratio of the fronto-orbital width to maximum carapace increase with age (Guinot 1989). Those features in the new specimen are large, and in the much larger, presumably adult *A. dantei* they are much smaller, showing the opposite trend. Thus, it seems more likely that the new specimen is a member of a distinctive taxon.

?*Carcinoplax* sp.
(Fig. 4J)

Description of material.—Carapace nearly square, slightly wider than long, maximum length about 96% maximum width, regions moderately defined as swollen areas, weakly vaulted transversely and longitudinally. Front projected well beyond orbits, appearing to have been straight, about 38% maximum carapace width. Orbits deep, sinuous, with blunt projection near inner-orbital angle, outer-orbital angle produced into triangular, forward-directed spine; fronto-orbital width about 100% maximum carapace width. Anterolateral and posterolateral margins confluent, too poorly preserved to indicate if there were spines or other ornamentation. Posterior margin broad, rimmed, 60% maximum carapace width.

Protogastric regions long, very weakly inflated; mesogastric region with very long anterior process, widening posteriorly, somewhat inflated posteriorly. Urogastric region depressed, with concave lateral margins, about as long as wide; cardiac region pentagonal, apex directed posteriorly, with two tubercles positioned aside one another anteriorly, posterior half depressed well below level of anterior half; intestinal region very

short, poorly differentiated. Hepatic region flattened. Epibranchial region arcuate, beginning at anterolateral angle, arcing anteriorly and terminating along urogastric region. Mesobranchial region flattened; metabranchial region depressed well below level of mesobranchial region, so that posterior portion of mesobranchial region and anterior half of cardiac region together form a transverse ridge behind which the carapace is steeply depressed.

Measurements.—Measurements (in mm): maximum carapace width = 5.2; maximum carapace length = 5.0; fronto-orbital width = 5.2; frontal width = 2.0; posterior width = 3.1.

Material examined.—MHN-UABCS/Te14/66-78.

Occurrence.—WP37.

Discussion.—The specimen is poorly preserved, and the anterolateral margins appear to have exfoliated some of the outer cuticle layers. Thus, it is difficult to determine whether or not the anterolateral margins may have been ornamented with spines. However, it is clear that the front is quite projected in advance of the orbits and that the orbits possess a blunt projection on the inner-orbital angle; these features may be diagnostic when better preserved material is collected.

Brachyura family, genus, and species indeterminate
(Fig. 4K)

Description of material.—Carapace appearing to have been wider than long, surface granular; posterolateral margins longer than anterolateral margins, converging markedly posteriorly; posterior margin about 35 % maximum carapace width. Carapace width two prominent transverse ridges; one ridge across epibranchial and mesogastric regions; second ridge across metabranchial and cardiac regions.

Remainder of carapace and appendages unknown.

Measurements.—Measurements (in mm) on the sole specimen: carapace width = 16.6; carapace length > 12.0; posterior width = 6.4.

Material examined.—MHN-UABCS/Te/8/68-419.

Occurrence.—WP39.

Discussion.—The transverse ridges on this specimen are very prominent; however, no other diagnostic features of the carapace are preserved. The front, orbits, anterolateral margins, and other important details are all missing; thus, it is impossible to classify this specimen. Taxa with prominent carapace ridges such as are possessed in this specimen include members of the Retroplumidae Gill, 1894; however, the narrow posterior margin and posteriorly converging posterolateral margins are not seen in retroplumids. Schweitzer et al. (2006) described a new species of *Paracorallicarcinus* Tessier et al., 1999, which is typified by transverse carapace ridges; however, that species is rectangular, much wider than long, and lacks the posteriorly converging posterolateral margins seen in the new specimen. The taxon most similar to the new specimen is *Carinocarcinoides* Karasawa and Fudouji, 2000, species of which possess transverse ridges on the dorsal carapace, a carapace that is not