



Fig. 3.—**A–D:** *Icriocarcinus xestos* Bishop, 1988. **A**, dorsal view of holotype, SDSNH 26038, showing a complete dorsal carapace from which the cuticle has been exfoliated. **B–D**, SDSNH 102078, collected from the Point Loma Formation on College Boulevard at SDSNH Locality 3405; **B**, dorsal carapace showing two intra-orbital spines; **C**, enlarged view of the dorsal carapace showing the contrast in surface texture and groove development seen on the cuticular surface as opposed to that on the exfoliated specimens; **D**, ventral surface. **E, F:** *Ommatocarcinus macgillivrayi* White, 1851, CBM-ZC 2042, deposited in the Natural History Museum and Institute, Chiba, Japan. **E**, dorsal carapace, note extremely long eyestalks; **F**, ventral surface. **G:** *Lithophylax trigeri* A. Milne Edwards and Brocchi, 1879, dorsal carapace, BSP 1988 III 196. Scale bars = 1 cm.

**TABLE 6.** Measurements (in mm) taken on the dorsal carapace of *Icriocarcinus xestos* Bishop, 1988.

L = maximum carapace length measured from base of front; W = maximum carapace width measured between bases of outer-orbital spines; FOW = fronto-orbital width; PW = posterior width measured from outer edge of posterolateral reentrant; L2 = length from base of front to position of maximum width; FW = width of base of front.

Specimen Number	L	W	FOW	PW	L2	FW
SDSNH 26038 (Holotype)	21.0	33.5	33.5	21.1	6.7	-
SDSNH 26113 (Paratype)	20.0	35.2	35.2	-	5.0	1.5
SDSNH 102078	24.2	42.6	42.6	24.0	5.7	2.3
KSU D309	20.1	35.0	35.0	-	5.5	1.9

surfaces; and flattened ischia of pereopods 2–5 (after Jenkins 1975). These similarities are especially compelling, given that *Icriocarcinus* is Late Cretaceous in age, and *Ommatocarcinus* is known from the Miocene to Holocene (Jenkins 1975). Thus, there is very strong evidence that *Icriocarcinus* is indeed a member of the Goneplacidae, perhaps particularly closely related to *Ommatocarcinus* and related genera.

#### Genus *Icriocarcinus* Bishop, 1988

**Type species.**—*Icriocarcinus xestos* Bishop, 1988, by monotypy.

**Diagnosis.**—As for species.

#### *Icriocarcinus xestos* Bishop, 1988 (Fig. 3A–D, 4)

*Icriocarcinus xestos* Bishop, 1988, p. 247, fig. 2, fig. 3A–D. Schweitzer et al., 2002, p. 21.

**Emended diagnosis.**—Carapace wider than long; regions defined by deep grooves; front long, extremely narrow, widening slightly distally; fronto-orbital width occupying maximum carapace width; orbits sloping obliquely and posteriorly; two intra-orbital spines; male abdomen with all somites free; filling entire space between coxae of fifth pereopods; somite 3 widest of all somites, with transverse keel.

**Emended description.**—Carapace wider than long, maximum length measured at base of front about 60 percent maximum carapace width measured at base of outer-orbital spines which are positioned one-quarter to one-third the distance posteriorly; regions well-defined by deep grooves; carapace flattened transversely, moderately vaulted longitudinally. Front long, extremely narrow, weakly downturned, widening slightly distally, spatulate tip. Eyestalk well-calcified, extending longitudinally from beneath front. Orbits extremely wide, fronto-orbital width occupying entire frontal margin of carapace; appearing to be a short orbital fissure where groove defining lateral margin of protogastric region intersects margin; orbit with two intra-orbital spines, one at about half the distance distally to outer-orbital angle from axis, other spine about half the distance distally between the first intra-orbital spine and outer-orbital spine, both intra-orbital spines blunt, directed anterolaterally; outer-orbital spine long, sharp, directed laterally at base, curving anterolaterally at tip; orbital margin sinuous, sloping posteriorly so that outer-orbital angle is one-quarter to one-third the distance posteriorly. Lateral margins sinuous, with weak indentations where grooves separating regions intersect them, with three large

tubercles along margin of metabranchial region. Posterolateral reentrants large. Posterior margin rimmed, very weakly concave centrally.

Protogastric regions trapezoidal, narrow end oriented posteriorly. Mesogastric region with long, straight, anterior process terminating well before front; mesogastric widening posteriorly, three-sided, with concave lateral margins and very convex posterior margin. Metagastric region about as wide as posterior-most mesogastric region, anterior margin very concave, posterior margin nearly straight, lateral margins converging slightly posteriorly. Urogastric region depressed below level of metagastric region, much wider than long, well-defined laterally by grooves. Cardiac region well defined anteriorly and laterally by deep grooves, weakly inflated anteriorly, flattening posteriorly, becoming weakly inflated into spherical swelling at posterior tip. Intestinal region poorly differentiated.

Hepatic region shorter than wide, with transverse swelling bearing a central spherical node. Epibranchial region wider than high, parallel to hepatic region, with central node; spherical mesobranchial region positioned between epibranchial and mesogastric regions. Metabranchial region very large, inflated towards lateral margin, flattening toward posterior margin.

Specimens with preserved cuticle covered with very fine, scale-like granules, granules occasionally merging to form scabrous ridges; exfoliated specimens with very broad, flattened grooves between smooth carapace regions.

Sternum about as wide as long. Sternites 1 and 2 fused, forming triangular unit, no evidence of suture. Sternite 3 broader than sternite 2, suture 2/3 complete, surface of sternite 3 broadly concave. Sternite 4 long, sternal suture 3/4 expressed as a notch in margin and shallow depression extending toward axis; sterno-abdominal cavity extending to anterior end; marked episternal projection. Sternite 5 directed laterally, sternite 6 directed posterolaterally, both with episternal projections. Sternite 7 about as long as wide. Sternite 8 not visible in ventral view.

Male abdomen with concave lateral margins, all somites free; filling entire space between coxae of fifth pereopods; somite 3 widest of all somites, with transverse keel.

Chelae long, weakly heterochelous. Merus of cheliped much longer than high, with spines on upper margin; carpus about as long as high; manus of cheliped much longer than high, with two or three keels on inner and outer surfaces; upper surface with spines; fingers long; occlusal surfaces with blunt tipped, black teeth and tips; movable finger with spines on upper surface. Pereopods 2–5 with long, flattened ischia. Pereiopod five with obovate propodus and lanceolate dactylus.

**Measurements.**—Measurements (in mm) on the dorsal carapace of specimens of *Icriocarcinus xestos* are presented in Table 6.

**Material examined.**—SDSNH 26038 (holotype); SDSHN 26040, 26101, 26202, 26113 (paratypes); SDSHN 50548, 102078; KSU D309, 310.

**Discussion.**—Specimens of *Icriocarcinus xestos* exhibit a range of preservation styles. One style is with the cuti-