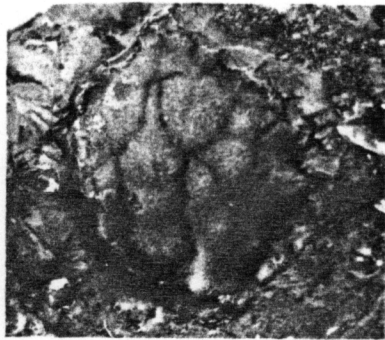


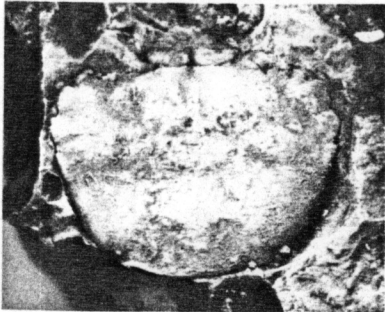
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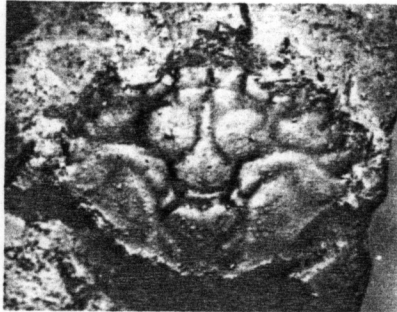
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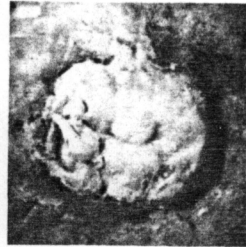
9



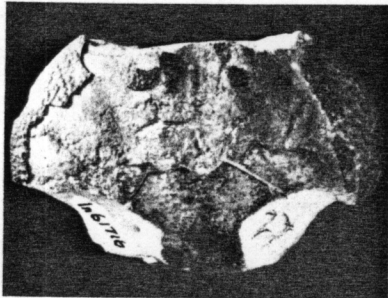
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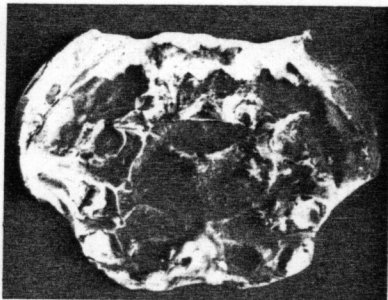
4



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5



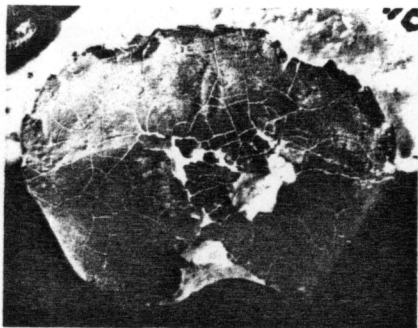
6



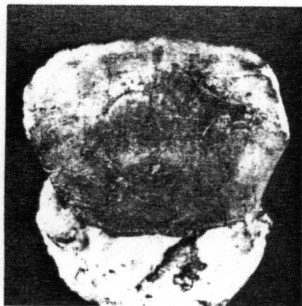
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8



13

another, flattened and rather oblong in outline with only the forward angle sharp and slightly upturned, the hinder margins are rounded. The fifth spine, abraded on all specimens examined, was probably triangular. The posterolateral margins run straight back, converging to the distinctly ridged posterior margin which is about as wide as the front and slightly concave. The front, which takes up about a half of the orbitofrontal margin, is slightly produced and nearly straight with a small V-shaped median notch; it is separated by an oblique cleft from the upper orbital margin. The orbits are deep and broadly ovate and the thin upper orbital margin is pierced by two notches.

The regions are usually not well defined, but sometimes may be slightly tumid. The cervical furrow is very weak; from small pit on either side of the midline it runs towards the lateral margin in two forwardly directed loops. The mesogastric lobe is subtriangular in outline and the tip of its slender anterior process extends fractionally beyond the protogastric lobes to the level of the outer orbital spine. In some, especially larger specimens, small ovate frontal lobes coalesce with the protogastric lobes. The urogastric lobe is depressed, but otherwise confluent with the subpentagonal cardiac region; the depression is accentuated by a slight ridge bordering fairly deep, oblique muscle scars. A low forwardly curving ridge, steeper anteriorly, extends across each epibranchial lobe.

The dorsal surface is densely crowded with fine granules which become coarser towards the margins and particularly on the surface of the lateral spines: interspersed anteriorly are numerous pits slightly larger in diameter than the surrounding granules.

On the ventral surface the front curves downwards and backward to meet the head of the rather narrow epistome, the ridged margins of which meet in a point. The subhepatic and pterygostomial regions are finely granulated and a line of coarser granules accentuates the pleural suture. The buccal margins are slightly convex and bounded by a smooth ridge continuing round the sternal border.

One specimen has a swelling on the right-hand metabranchial lobe similar to that caused by the parasitic isopod, *Bopyrus*; it appears to be very unusual among xanthid crabs.

Discussion. Of the four Palaeocene species of *Panopeus*, *P. jerseyensis* Roberts, from the Vincentown Formation is known only from limb fragments; the others are of Danian age and have well-defined regions. *P. estellensis* Rathbun is also represented by limb fragments from the Eocene of Alabama; *P. vincentinus* Bittner, from the Italian Vincentian Formation, also has well-defined regions. By and large *P. kemp* is more closely allied to *P. africanus* A. Milne-Edwards, but all the lateral spines of this Recent West African species are triangular in outline. The present distribution of *Panopeus* extends along the Atlantic coasts of Africa, the East and West coasts of North America and the Pacific Ocean.

Family GONEPLACIDAE Macleay, 1838
Subfamily CARCINOPLACINAE H. Milne-Edwards, 1852
Genus BRANCHIOPLAX Rathbun, 1916

Type species. *Branchioplax washingtoniana* Rathbun, 1916 by original designation.

Range. Palaeocene to Oligocene.

Branchioplax concinna sp. nov.

Plate 105, figs. 3, 9

?1898 *Diaulax* sp. Carter, p. 20.

Derivation of name. From the Latin, handsome.

Diagnosis. The carapace is subhexagonal with three anterolateral spines; cervical and branchio-cardiac furrows weak and the front is straight with a U-shaped median notch.

Material. Ten carapaces. Holotype, BM In.61729 (Pl. 105, fig. 9). Horizon J, Barton Beds, Christchurch Bay; Paratypes, BM In.61731, In.61732; JSQ J/2 (Pl. 105, fig. 3). J/3-J/5, J/59, and J/60; ?SM C.2947; Middle Headon, 'Royden Beds' (*Voluta geminata* Zone), Whitecliff Bay, I.o.W.

Horizon and locality. Horizons A2, A3, and J, Barton Beds, Christchurch Bay; Middle Headon Beds, Whitecliff Bay, I.o.W.

Description. The carapace is subquadrate in outline, a little wider than long and widest at the posterior angles. In longitudinal section it is depressed between flattened ridges across the mesogastric and epibranchial lobes and a similar ridge across the metabranchial lobes. The lateral margins are straight, hardly at all indented by a cervical notch and diverge to broadly rounded posterior angles. The posterior margin is slightly convex and about twice the width of the front. The front occupies about one fourth of the very wide orbitofrontal margin, it is produced, weakly convex on either side of an obscure median notch and has weak ocular constrictions; the broadly sinuous upper orbital margin terminates in a short spine not extending beyond the orbital margin. A narrow beaded rim extends round the frontal border, continuing along the anterolateral margin and part way down the posterolateral margins.

Apart from the median portion of the post cervical, the furrows are poorly defined. There is a distinct depression between flatly rounded ridges extending discontinuously across the epibranchial and mesogastric lobes anteriorly and metabranchial lobes posteriorly. The anterior process of the ovate mesogastric lobe lies between small epigastric lobes at the base of the front. Small nodes representing the mesobranchial lobes are situated close to the narrowest part of the broadly pentagonal cardiac region.

The surface ornament is composed of fine, densely crowded granules.

Discussion. While close to *P. depressus*, *P. bartonensis* differs in having a rather more extended, less downturned front with sides slightly constricted before passing into the upper orbital margin and a more strongly developed outer orbital spine, also the transverse ridges are subdued and the lobes more clearly defined.

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