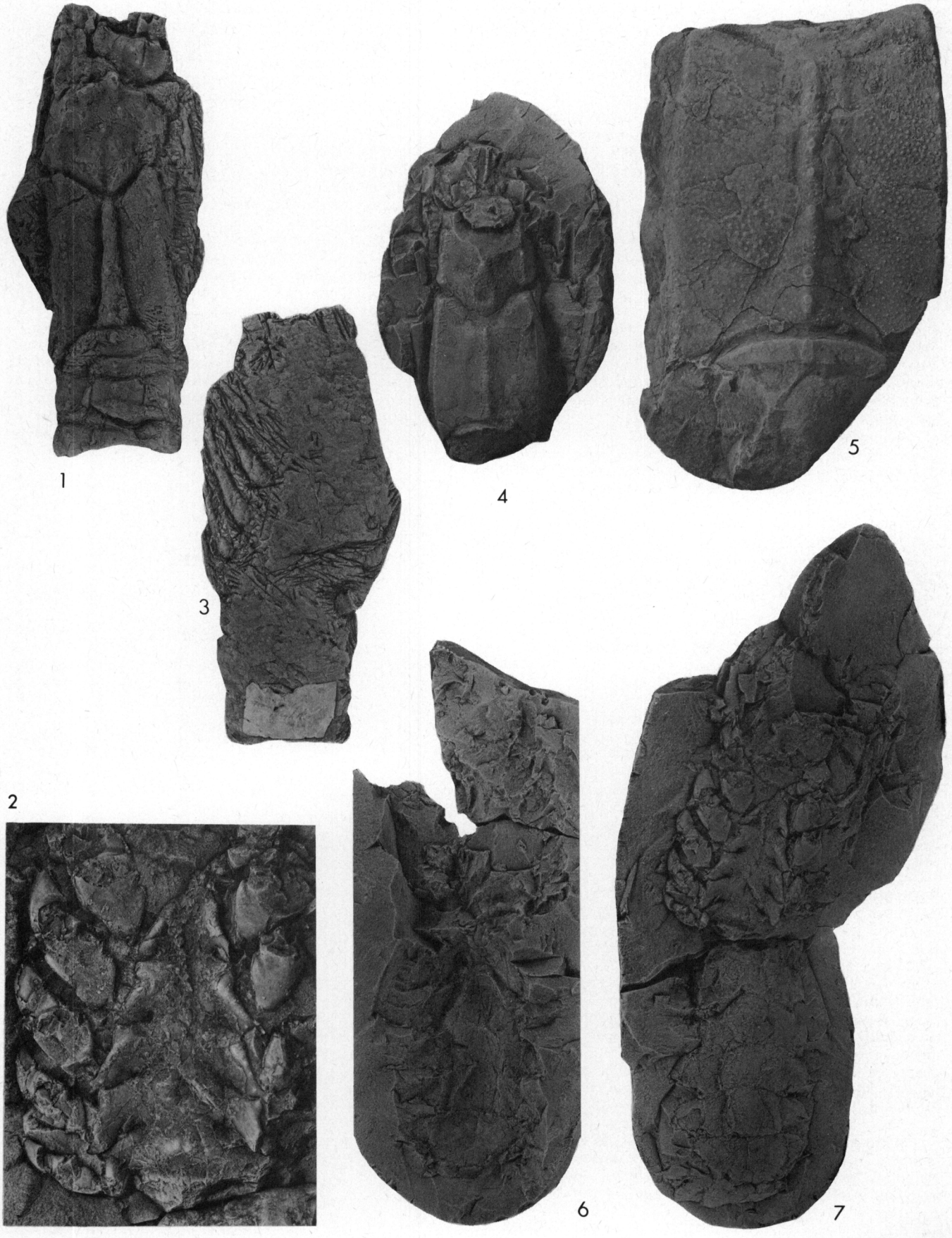
1
2
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margin. There is no evidence of a weakly calcified, soft termination which is often observed on palinurids but it may very well have existed.

Occurrences. Linuparus vancouverensis has been collected from the following localities in Canada:

1. 3.2 km up Puntledge River, Vancouver Island, British Columbia; syntype GSC 5964, 5964a, Nanaimo Group, Late Cretaceous; collected by G.W. Taylor, 1889. [Haslam Formation, or the underlying Comox Formation, late Santonian to early Campanian.]

2. Northwest side of Hornby Island, British Columbia; syntype GSC 5965, 5965a, Late Cretaceous; collected by W. Harvey, 1893. [Probably Spray Formation but possibly Northumberland Formaton, late Campanian to early Maastrichtian.]

3. Hornby Island, British Columbia; hypotypes GSC 5967, 5967a, Late Cretaceous; collected by Robbins, 1896. [Probably Spray Formation but possibly older Northumberland Formation or intervening Geoffrey Conglomerate, late Campanian to early Maastrichtian.]

4. Comox River*, Vancouver Island, British Columbia; hypotypes GSC 5966, 5966a; Late Cretaceous; collected by J.B. Bennett, 1895. [Haslam Formation or underlying Comox Formation, late Santonian to early Campanian.]

5. Comox River*, Vancouver Island, British Columbia; GSC 5972, 5972a, holotype of Hoploparia bennetti; Late Cretaceous; collected by J.B. Bennett, 1895. [Haslam Formation or underlying Comox Formation, late Santonian to early Campanian.]

Infraorder ANOMURA H. Milne Edwards, 1832

Family CALLIANASSIDAE Dana, 1852

Genus Callianassa Leach, 1814

Callianassa whiteavesi Woodward, 1896

Plate 5, figures 1-3, 6, 7

Callianassa whiteavesi Woodward, 1896, p. 223; Woodward, 1900, p. 435; Whiteaves, 1903, p. 319; Rathbun, 1926a, p. 107, Pl. 20, figs. 6-8a, b.

Description. Major chela rectilinear and large for the genus. Height of manus about two thirds length. Outer and inner surfaces smooth and uniformly convex. Lateral margins flattened. Propodus and dactylus ornamented by a row of evenly spaced punctate nodes along lateral margins. Dactylus about two thirds total length of manus. Dactylus and fixed finger both elongate triangular; fixed finger slightly shorter than dactylus. Dactylus ornamented along inner margin by a row of evenly spaced punctae. Fixed finger bordered along inner margin by a distinct ridge ornamented by a row of evenly spaced punctate nodes. Carpus broader than long; equal in height to propodus. Lower margin curved, narrowing proximally.

Minor chela rectilinear and large for genus. Length and height of manus approximately one half those of major claw. Height of manus about two thirds length. Inner and outer surfaces smooth and uniformly convex. Lateral margins of manus, dactylus and fixed finger flattened. Dactylus about equal in length to manus; finger four fifths length of dactylus. Dactylus and propodus ornamented on lateral margins by a row of evenly spaced punctate nodes. Dactylus ornamented along inner margin by a row of evenly spaced punctae; sulcus on occlusal surface. Carpus rectilinear; longer than broad and equal in height to propodus. Slight curvature of lower margin.

Remarks. The species was described by Woodward (1896) and cited without further description by Whiteaves (1903) and Rathbun (1926). Material not included in the type series includes fairly well preserved major chelae as well as a fragmented minor chela and the mold of a minor chela. Woodward's description was based on casts of major chelae which include only fragments of the remainder of the skeleton. The additional material permits expanded description of the major chela in that most of the skeletal material has been preserved.

Comparison of the new material with the syntypes reveals distinct variations of the size and shape of the major chelae within the species. Although the general shape of the manus is rectilinear, the length to height ratios reflect a variation in shape from square to rectangular (Table 3, Fig. 7). These variations are consistent with the paratypes identified by Woodward.

In describing the species, Woodward (1896, p. 223) stated that "the fixed thumb of the propodus is shorter than in any of the species hitherto recorded, and the movable

*There is no Comox River on Vancouver Island. This is probably the Puntledge River which flows out of Comox Lake, thus the specimens were collected probably from the Haslam Formation or possibly the Comox Formation, late Santonian to early Campanian.

PLATE 5

All figures x1, unless otherwise indicated

Figures 1-3, 6, 7. Callianassa whiteavesi Woodward

1. Mold of the exterior of the upper surfaces of major and minor chelae, GSC 61421, x2.
2. Lower surface of propodus and dactylus of major chela, GSC 61415, x3.
3. Nearly complete first pereiopod, syntype GSC 5818a, x3.
6. Major chela of first pereiopod, syntype GSC 5818b, x3.
7. Minor chela of first pereiopod, GSC 61417, x3.

Figures 4, 9, 10. Linuparus canadensis (Whiteaves)

4. Left lateral view of pleurae on second and third abdominal somites of holotype GSC 5057, x1.5.
9. Sternal view of GSC 61414, x1.5.
10. Sternal view of hypotype GSC 5968.

Figures 5, 8. Linuparus vancouverensis (Whiteaves)

5. Oblique view of abdomen of hypotype GSC 5966a, x2, showing spinose pleural margin.
8. Sternal view of hypotype GSC 5966a, x1.5.