Species of Pinnixa Known to Occur on the California Shelf

Family Pinnotheridae de Haan, 1833

Genus Pinnixa White, 1846
(Readers Digest Version)

Diagnosis.-Pinnotherids in which the carapace is wider than long (width:length ratio ranging from 1.5-3.0); frontal margin nearly transverse, with median groove. Orbits ovate, typically filled by eyes; eyestalks very short. Third maxillipeds with a small but distinct ischium and a large merus; palp relatively large, about equal in length to the ischium and merus together. Third pair of walking legs longer and usually more robust than other pairs. Abdomen of 7 free somites in both sexes.

California species of Pinnixa.-The following species are known to occur on the California shelf:

Pinnixa barnharti Rathbun, 1918 - endosymbiont of holothuroids
Pinnixa faba (Dana, 1851) - endosymbiont of bivalves
Pinnixa sp.1, Pt. Loma - association unknown P. forficulamana n. sp.
Pinnixa franciscana Rathbun, 1918 - occurs in burrows of various invertebrates
Pinnixa hiatus Rathbun, 1918 - association unknown
Pinnixa littoralis Holmes, 1894 - endosymbiont of bivalves
Pinnixa longipes (Lockington, 1877) - predominantly associated with polychaetes
Pinnixa sp.2, Pt. Loma - association unknown P. minuscula
Pinnixa occidentalis Rathbun, 1893 - known to associate with echiurids; other associations possible
Pinnixa schmitti Rathbun, 1918 - associated with a wide variety of invertebrates
Pinnixa tomentosa Lockington, 1877 - occurs with tubicolous polychaetes of several families
Pinnixa tubicola Holmes, 1894 - occurs with tubicolous polychaetes of several families
Pinnixa weymouthi Rathbun, 1918 - known only from single specimen, Monterey Bay

Zmarzly
6/19/91
11/8/93

Key to California Species of *Pinnixa*

1A Carapace strongly convex, 1.5 times wider than long, and strongly calcified (stony) (Fig. 1) . . . . . *barnharti*

1B Carapace flat or slightly convex, more than 1.5 times wider than long, and not strongly calcified. 2

2A Dactylus of third walking leg about one-half length of propodus (Fig. 2A) 3

2B Dactylus of third walking leg nearly equal to or exceeding propodus in length (Fig. 2B) 7

3A Distal tip of dactylus of fourth walking leg falls short of or just reaches distal end of merus of third walking leg when both legs are extended (Fig. 3A). . . . 4

3B Distal tip of dactylus of fourth walking leg reaches beyond (in most cases well beyond) distal end of merus of third walking leg when both legs are extended (Fig. 3B). 5

4A Postero-ventral margin of ischium of fourth walking leg with 2-3 large tubercles (best viewed by standing animal on its anterior end and looking directly down on posterior aspect of ischium); fourth walking leg completely surrounded by long setal fringe (Fig. 4). . *longipes*

4B Postero-ventral margin of ischium of fourth walking leg without tubercles; no setal fringe surrounding fourth walking leg. . . . . *tubicola*

5A On third walking leg, ventral margin of propodus smooth; dactylus smooth and strongly curved (Fig. 5A). 6

5B On third walking leg, ventral margin of propodus bicarinate, the carinae granulate to serrate; dactylus spinous and slightly curved (Fig. 5B) . . . . . .tomentosa

6A MALE: Fixed finger of chela slightly deflexed relative to line defined by ventral margin of propodus, inner margin coarsely serrated; inner margin of dactylus of chela toothless (may bear small tooth in juveniles). FEMALE: Fixed finger slightly deflexed; slight gape visible between opposable margins of fingers of chela when fingers tightly closed (Fig. 6). . . . . littoralis

6B MALE: Fixed finger of chela straight relative to line defined by ventral margin of propodus; inner margin coarsely serrated; inner margin of dactylus of chela with a blunt triangular tooth. FEMALE: Fixed finger nearly straight; opposable margins of fingers of chela meet tightly, without a gape (Fig. 7) . . . . . faba

7A Antero-lateral aspect of carapace smooth and round, without an acute, granulated, or serrated ridge (Fig. 8A) 8

7B Antero-lateral aspect of carapace with a granulated or serrated ridge (Fig. 8B). 10

8A Fingers of chela toothless 9

8B Dactylus of chela with a single small triangular tooth at midlength (Fig. 9). . . . . weymouthi

9A Fingers of chela long, about twice as long as palm; tip of dactylus of fourth walking leg falls short of distal end of carpus of third walking leg when both are extended (Fig. 10) . . . . . forficulamana, n.sp.

9B Fingers of chela short, about as long as palm; tip of dactylus of fourth walking leg definitely exceeds distal end of carpus of third walking leg when both are extended (Fig. 11) . . . . . minuscula, n.sp.

10A Fixed finger of chela angled obliquely downward relative to line defined by ventral margin of propodus (deflection stronger in males than females) (Fig. 12) . . . . . occidentalis

10B Fixed finger of chela straight or curved upwards; not deflexed 11

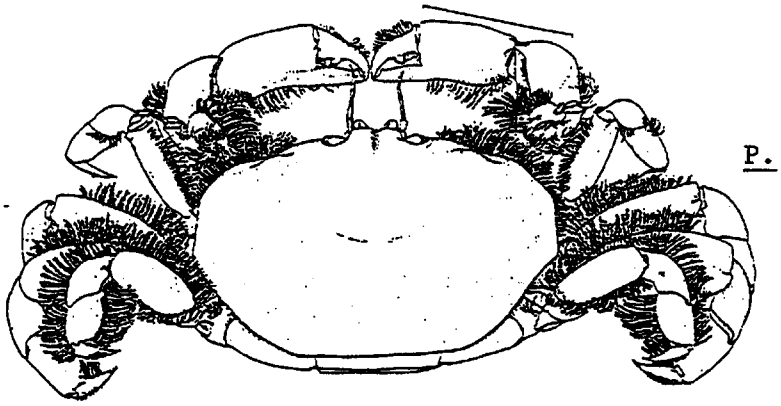
Couplet 11 continued on the next page

11A Anterior face of chela with line of well spaced tubercles just above ventral margin, confined largely to fixed finger; rest of palm smooth, without scattered granules (Fig. 13). . . . . hiatus

11B Anterior face of chela with line of densely packed granules forming a ridge just above ventral margin on fixed finger and palm; dorsal margin of propodus also granulated; in females, anterior face of palm may also have a transverse row of granules in mid-section (Fig. 14). . . . . franciscana

11C Anterior face of chela entirely smooth, without granules (mature males) or with a line of coarse granules just above ventral margin of propodus and scattering of large granules over rest of propodus (females and immature males) (Fig. 15). . . schmitti

Fig. 1



P. barnharti

Fig. 2

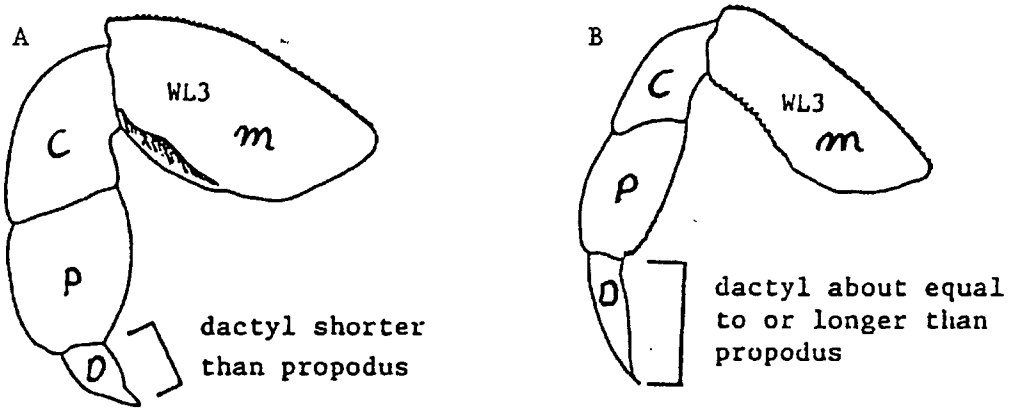
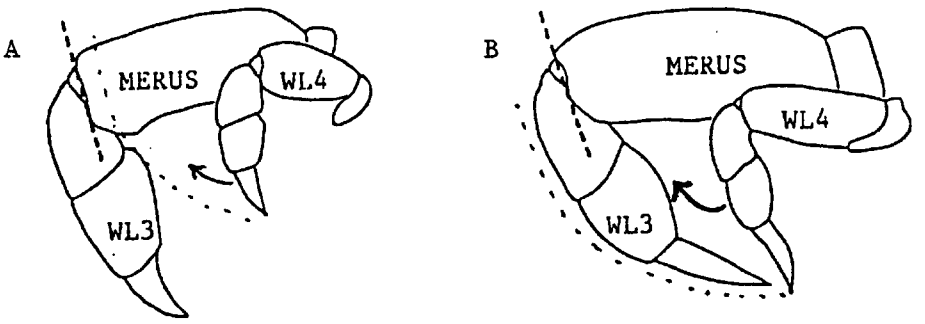


Fig. 3



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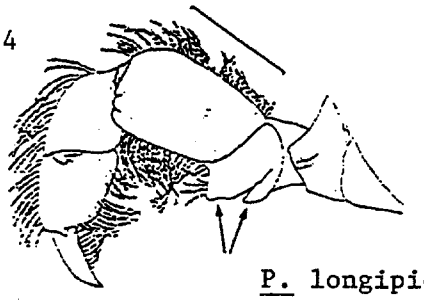


P. longipies

Fig. 5

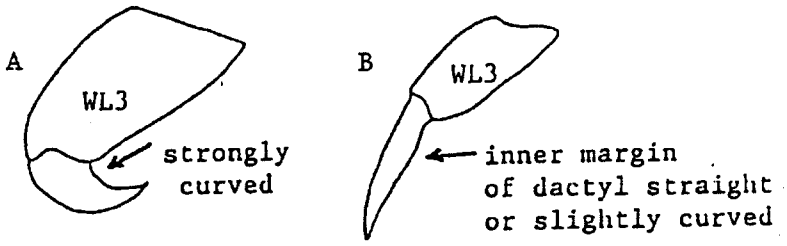
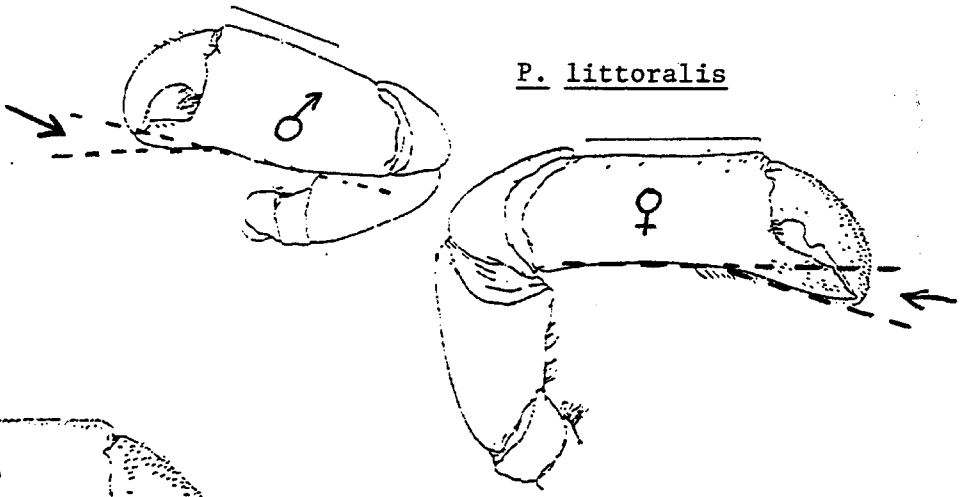


Fig. 6



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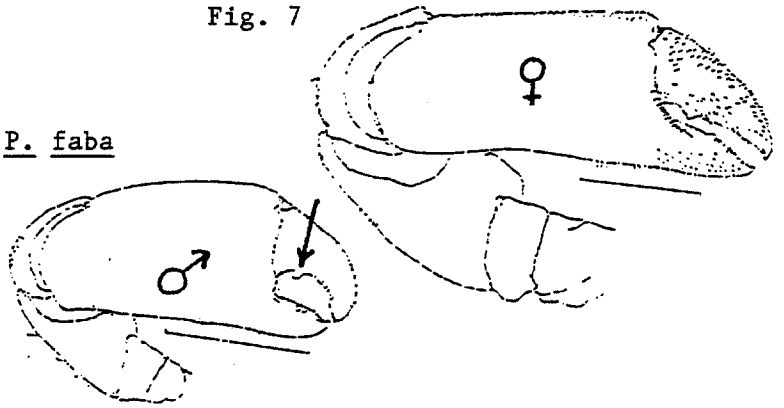

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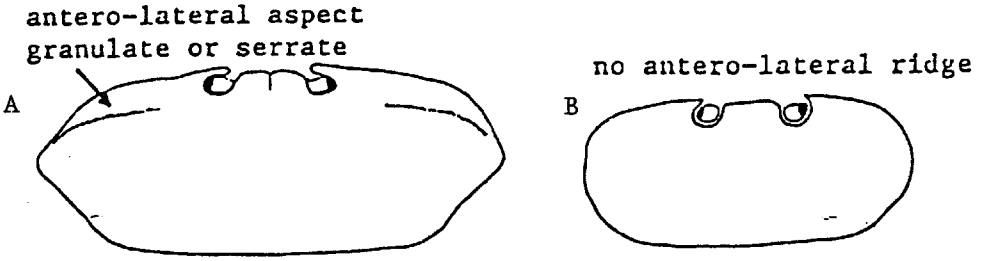
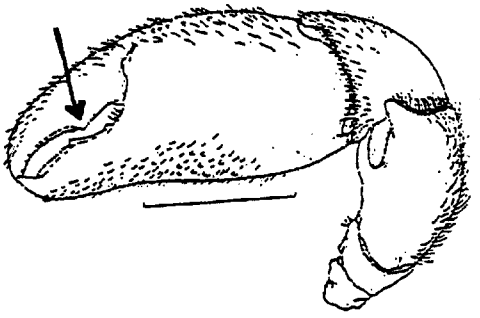
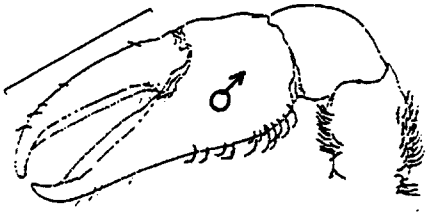


Fig. 9



P. weymouthi

Fig. 10



P. forficulamana

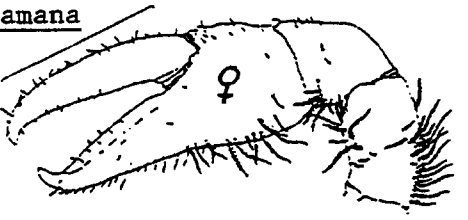
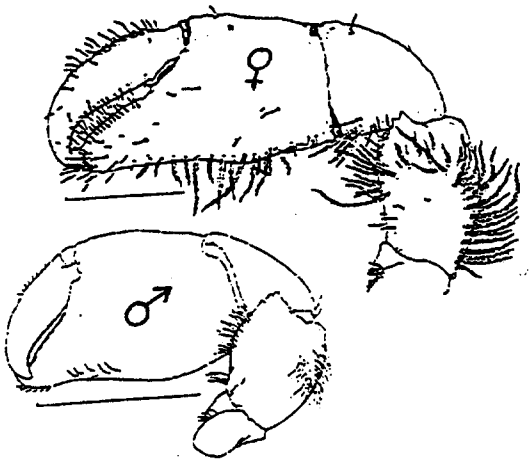


Fig. 11



P. miniscula

Fig. 12

P. occidentalis

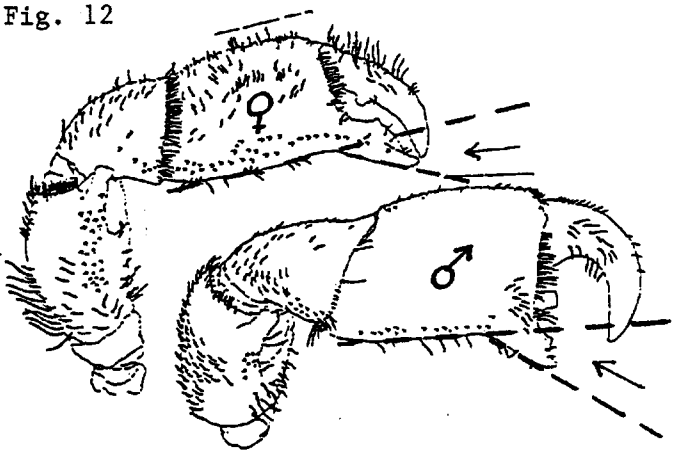
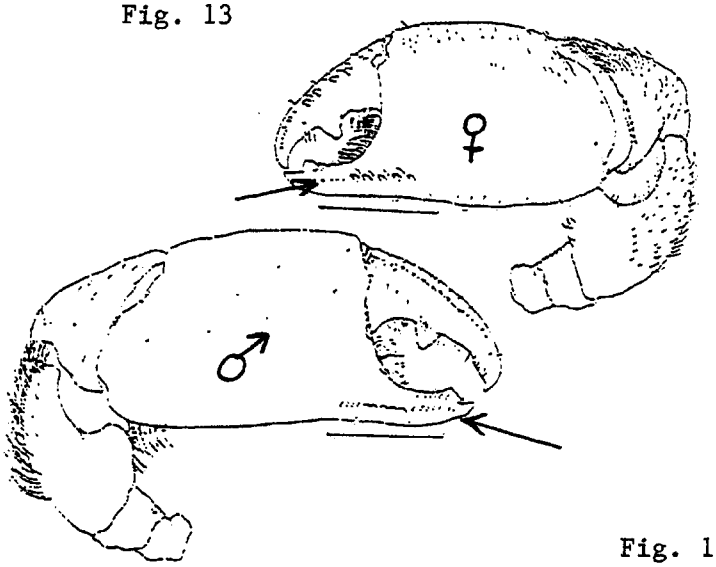
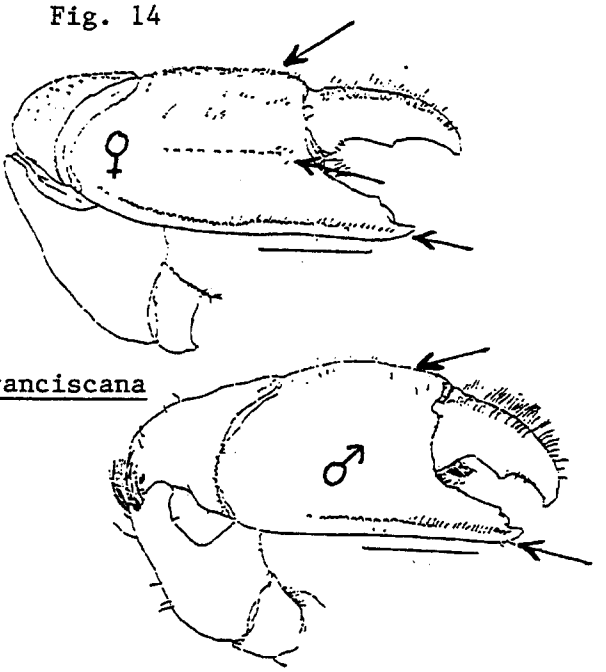


Fig. 13



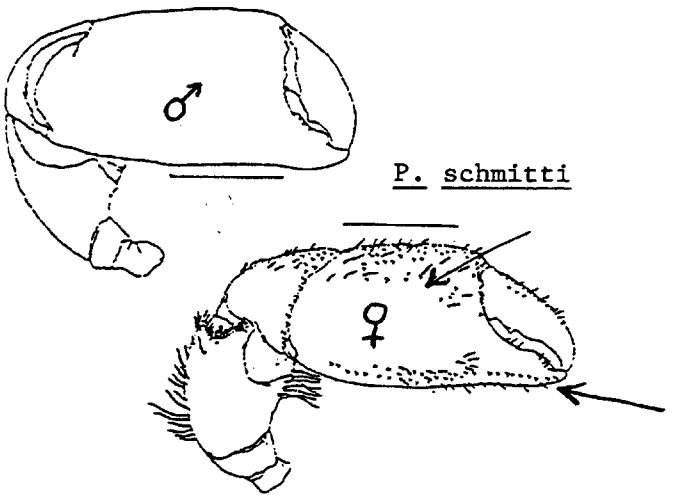
P. hiatus

Fig. 14



P. franciscana

Fig. 15



P. schmitti