

PROTULA FROM THE

N E PACIFIC by Leslie Harris

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R. Rowe 10Feb99

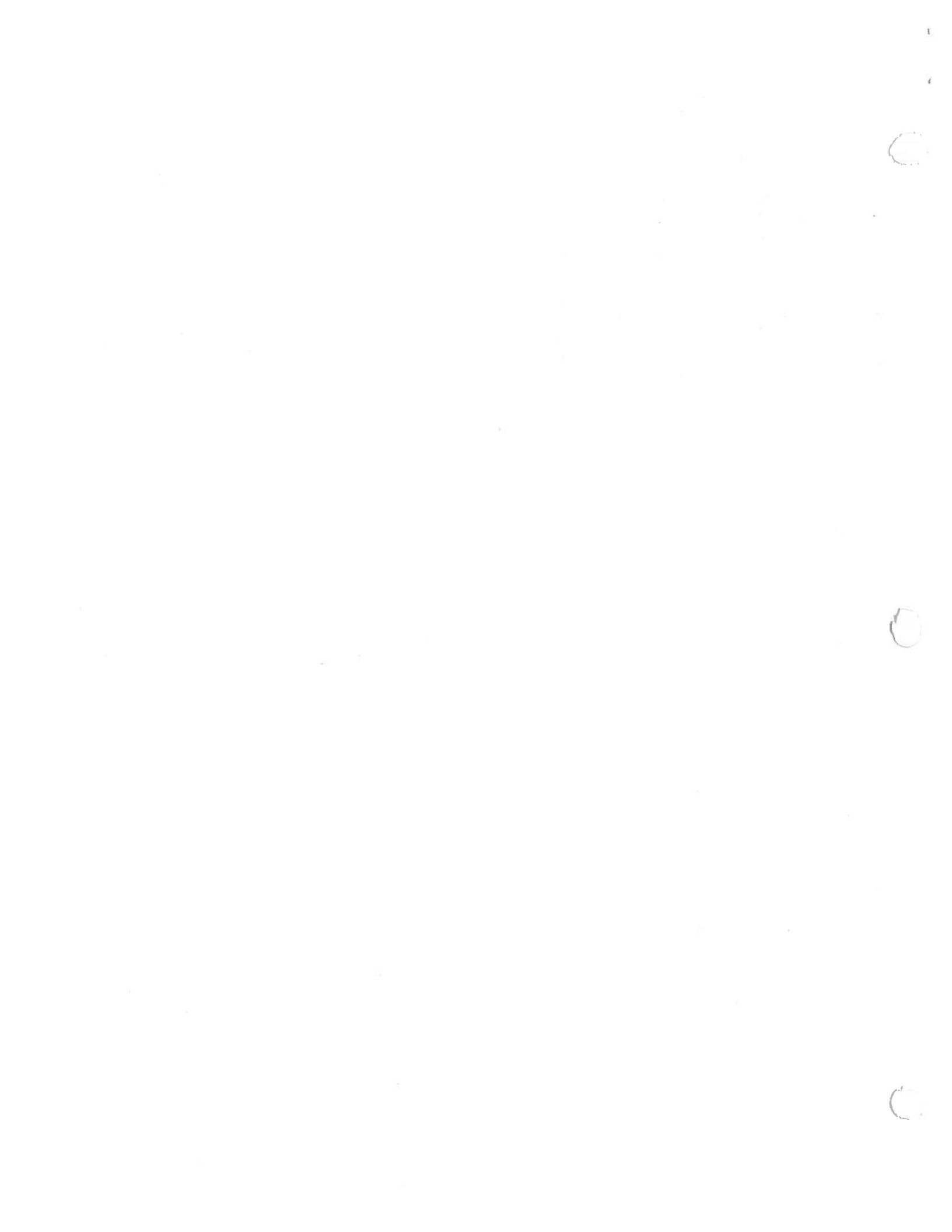
CHARACTER

P. ATYPHA
Bush 1904

P. PACIFICA
Pixell 1912

P. SUPERBA
Moore 1909

size	thorax 9 x 3 mm; longest branchiae 9 mm; specimen incomplete, only 12 abdominal segments	48 to 75 mm (body 38 to 60, crown 10-15) mm); 7 thoracic setigers, 83-110 abdominal segments	125 mm (body 88, crown 37), 16 mm at widest point; 7 thoracic setigers, 115- 120 abdominal segments
branchiae	elongated ventrally & involute, numerous (about 30 plus few rudimentary ventral ones) long, delicate (?), densely pinnate branchiae in each lobe	greenish w/ line of opaque white spots down outer side of each branchial rachis; crown w/ 1.5-2 spirals; interbranchial membrane connects lower 1/3 of gills; about 60 pairs; each rachis w/ small closely placed pinnae almost to tips	colorless; crown w/ 7-8 spirals; 320 prs. of bradioles in 1 specimen; interbranchial membrane connects about 1/5 of length; each rachis w/ narrow membranous border reaching nearly to tip; each rachis w/ double row of pinnae which continues nearly to tips
mouth region	not determinable	slight ridge at junction of branchiae & stout basal membrane which carries them; oral membrane arises from inner side of ridge; oral membrane continuous across median line & up each of the spirals; another, shorter, membranous lip on dorsal side of mouth	oral membranes w/in branchial bases, enclosing mouth & about 1/3 as high as interbranchial membranes; mouth trans- verse, corners bounded above by low rounded elevation, from between which a tongue- shaped process projects over mouth; ventral to it is soft irregular lip, and below this again a much larger firm triangular lip
ventral lobe of collar	collar rather deep irregular (multilobed); ventral lobes not mentioned	notched in median line, w/ deep fissure on each side	notch is wide & shallow, lateral notches deep & narrow
thorax		broad & flattened w/ nearly parallel sides; 7 setigers	depressed, broader anteriorly than posteriorly; 7 setigers
thoracic membrane	wide, does not form scalloped border along the sides	very wide, w/ entire margin which can extend past setae but is generally considerably crumpled	thin, greatly developed, margins appear to be entire but folded
abdomen		83-110 segments; last 30+ segments covered w/ calcareous-looking gland	calcareous incrustation occupies nearly circular area on dorsum of caudal end
thoracic setae	one form, slender, unequal (shorter ones the broader), capillary, those on collar fascicles not different from others	simple blades with sometimes a few setae of Apomatus-type posteriorly (i.e., bladed sickles)	1st fascicle in 2 ranks, other fascicles in 3 ranks of setae; setae pale yellow, narrowly bilimbate; more dorsal ones longer & posterior ones slightly curved
abdominal setae	in small fascicles, bent at base of the moderately broad tapered blade	somewhat sickle-shaped in anterior region, narrow terminal bladed ones posteriorly; about 13 setae in anterior, short, stout, somewhat sickle-shaped; 2 kinds of setae in posterior: long w/ narrow striated wing & shorter, more distinctly winged	seldom more than 12 shorter but otherwise similar to thoracic setae; setae at caudal end much longer, very slender capillary setae w/out limb



uncinigerous tori

extend from segment 3 to end of abdomen (Note: elsewhere in paper he says begin on 3rd setiger. LHH)

uncini

both thoracic & abdominal tori small, w/ thin uncial plates of similar size & form, apparently smooth, w/ only a long pointed terminal tooth, serrations but faintly visible on the exposed surface even under a high objective

w/ numerous small teeth, the posterior one long w/ bulbous extremity

small, w/ toothed margin very long, conspicuously elevated above & prolonged into a slender, blunt & slightly bifid process below & bearing 20-25 long, slender, acute teeth, of which 4-5 smaller ones are on inferior prolongation; no difference between thoracic & abdominal tori; abdominal tori w/ small group of simple spines at ventral end, which persist thru caudal region after the uncini have ceased; uncini numerous, not less than 350 on segment VIII

tube

white, calcareous, irregularly bent

Pixell's material did not include tubes

white, massive, walls 5-6 mm thick, outer diameter to 19 mm; older parts coiled, newer parts horizontal up to 145 mm; orifice perfectly terete, smooth, polished & thin

type locality

Pacific Grove

Departure Bay & Puget Sound

Pacific Grove, 40 fm; Monterey Bay

comments in original description

many characteristics distinguishing this from *P. superba* & other Pacific species; *P. atypha* Bush might be a young specimen of this same species (Note: Pixell's phrasing makes it uncertain if he is saying that *P. atypha* belongs to *superba* or *pacifica*. Presumably he is paraphrasing Moore 1909. LHH)

several species of *Protula* described from Pacific & is possible that *P. atypha* Bush or other smaller species may be young of this

Characters in bold are the ones Pixell included in his species diagnosis

This was included as an attachment to an E-mail forwarded from Leslie Harris on the SCCWRP LISTSERVR 2/10

