

*Mooreonuphis bajacalifornica*, a new onuphid (Polychaeta: Onuphidae) epizoic on the thorny oyster, *Spondylus princeps unicolor*

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**Abstract:** A new onuphid polychaete, *Mooreonuphis bajacalifornica* n. sp. is described based on specimens recovered from the epibiota of the thorny oyster *Spondylus princeps unicolor* Sowerby, collected at Puerto Escondido, Baja California Sur, México. *M. bajacalifornica* has strap-like branchiae beginning from setiger 15-27, and cirridorm ventral cirri on setiger 1-6. Yellowish bidentate subacicular hooks begin a setiger 13-20. Setiger 1-5 possess two types of tridentate pseudocomposite hooks, and stout simple hooks. Observations on morphological variations are presented, as well as a key to the species of *Mooreonuphis* known from the Mexican coast.

Fauchald (1982) revised the onuphid genera *Onuphis*, *Nothria* and *Paradiopatra* based on type material, and established three new genera, among them *Mooreonuphis* which is characterized by possessing compound spinigers in the anterior segments. Species of *Mooreonuphis* are restricted to American waters, five of them are known for México (Salazar-Vallejo, in press). In the present paper *M. bajacalifornica* n. sp. is described, a key to those species in this genus reported from México is included, and morphological variations is discussed.

*Spondylus princeps unicolor* is the thorny oyster of the Gulf of California. This organism is known for Cedros Island, Baja California, and from Concepción Bay, Gulf of California, to Jalisco, México (Keen 1971). This is the first report of a epizoic organism on *S. princeps unicolor* in Mexican waters. The species of Onuphidae herein described, was epizoic upon thorny oysters, collected in a shrimp by-catch at 30 meters depth in Puerto Escondido, Baja California Sur, México (111° 30'N, 25° 10'W). The type material of this polychaete species, *Mooreonuphis bajacalifornica*, is deposited in the National Museum of

Natural History, Smithsonian Institution (USMN), Additional specimens are in the author's collection (JAL).

*Mooreonuphis bajacalifornica* n. sp.  
(Fig. 1 A-D; 2 A-D)

**Material examined:** Holotype (USMN 119526) and 15 specimens (USMN 119527); 7 specimens (JAL—ONUP 12).

**Description.** The holotype is incomplete with 139 setigers, 46 mm in length and 1.5 mm in width. The body is ventrally flattened, dorsally concave. The body is yellow in alcohol, with transverse black dorsal line on the posterior part of each segment, diminishing in width throughout the posterior region.

The prostomium in short, rounded, with a pair of globose palpi, and a pair of minute eyes between the bases of the lateral inner and outer occipital antennae. The occipital ceratophores are well developed, covering half of the prostomium, each with 4 rings, basal 3 short relative to the larger distal one. The styles of the outer lateral antennae exceed

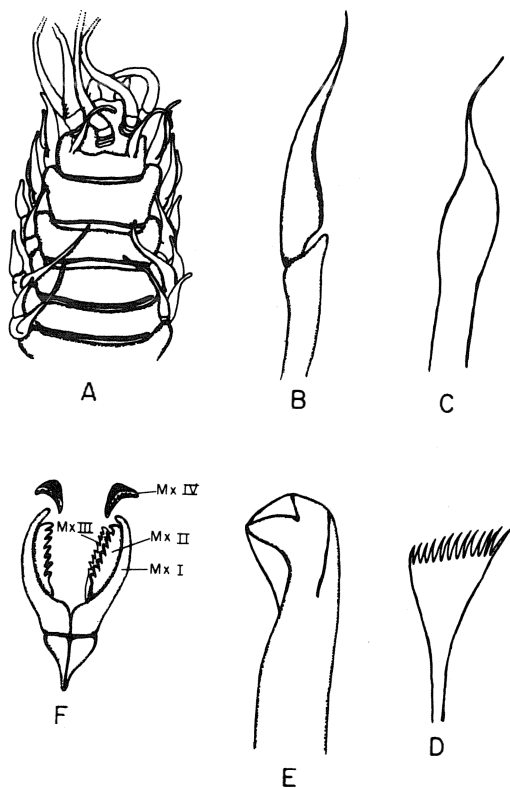


Fig. 1. *Mooreonuphis bajacalifornica* n. sp. (Holotype). A. Dorsal view of anterior end; B. Composite spiniger; C. Aciculum; D. Pectinate seta; E. Subacicular hook; F. Maxillary apparatus. Scale bar in microns.

setiger 13, the right inner lateral exceeds setiger 18, the median antennae reaches setiger 21, and the left inner lateral exceeds setiger 14. The peristomium is shorter than the prostomium, the peristomial cirri thin and reaching anterior part of the prostomium (Fig. 1A).

The first parapodium is well developed (Fig. 2A). Presetal lobe rounded, with a distal notch, postsetal lobe and the dorsal and ventral cirri all digitiform. The ventral cirri are cirriform through setiger 6, from setiger 7 these are rounded and reduced.

The branchiae are well developed and born in the dorsal cirri base (Fig. 2B), appear on setiger 19, and are simple and slender, to the end of the fragment.

The anterior five setigers possess tridentate pseudocomposite hooks, some with short (Fig. 2C) and some with long appendages (Fig. 2D), simple limbate setae and tridentate simple hooks (Fig. 2E). All hooks with anterior

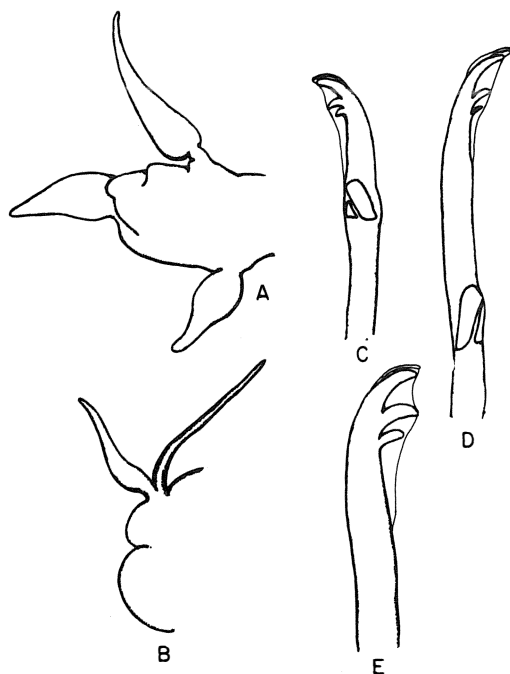


Fig. 2. *Mooreonuphis bajacalifornica* n. sp. (Holotype). A. First parapodium anterior view; B. Middle parapodium anterior view; C. Pseudocomposite hook from first parapodium; D. Pseudocomposite hook from same; E. Stout simple hook from same. Scale bar in microns.

hoods. Composite spiniger (Fig. 1B) are present in inferior fascicles of setigers 6 to 19. Two acicula with pointed tips are present in each parapodium from setiger 6 (Fig. 1C). Hooded bidentate subacicular hooks (Fig. 1E), two per parapodium, appear from setiger 20. Distally straight pectinate setae with 13 well developed teeth (Fig. 1D) present in middle and posterior parapodia.

The maxillary apparatus is light yellow, the mandibles white; maxillary formula:  $M \times 1 = 1 + 1$ ,  $Mx \text{ II} = 7 + 8$ ,  $Mx\text{III} = 0 + 7$ ,  $Mx\text{IV} = 6 + 8$  (Fig. 1F).

The tube is cylindrical, internally fibrous and are cuticular or chitinous externally, with a covering of sand grains and shell fragments.

**Remarks.** There is some variation in the first occurrence of subacicular hooks, branchiae and the most posterior occurrence of the composite spinigers. The subacicular hooks appear from setiger 13 to 20, the branchiae from setiger 15 to 27, and the composite spinigers disappear in setigers 12 to 19. In most

specimens, composite spinigers are replaced by subacicular hooks; in one specimen, however, subacicular hooks and composite spinigers occurred together in the same setiger. There were abnormalities in Maxilla III in three of the specimens of *Mooreonuphis bajacalifornica* examined. In onuphids the right Maxillae III and IV are normally fused (Hartman 1944: 45), but in the holotype and one other specimen, the Maxilla III and IV were also fused on the left side, in another specimens examined both and left Maxilla III and IV were free.

**Discussion.** *M. bajacalifornica* n. sp. is closely allied to *M. stigmatis* (Treadwell, 1922) and *M. yeleronis* (Fauchald, 1980); all three have stout simple hooks in the anterior

setigers, and simple strap-like branchiae beginning posterior to setiger 10. The most evident difference between these species is the number of segments with cirriform ventral cirril; 4 in *M. stigmatis*, 3 in *M. yeleronis* and generally 6 (5 in two specimens) in *M. bajacalifornica* n. sp. Also, the stout simple hooks occur in setigers 1-5 in *M. bajacalifornica*, setigers 4-5 in *M. stigmatis* and between setiger 4 to 8 in *M. yeleronis*.

**Etymology.** The species name refers to the collecting area of Baja California Sur.

**Type locality.** *Mooreonuphis bajacalifornica* n. sp. is reported only from Puerto Escondido, Baja California Sur, México (111° 30' N, 25° 10' W).

#### Key To *Mooreonuphis* species from Mexico

1. With two or more branchial filaments . . . . . 2  
with only one branchial filament . . . . . 3
2. Stout simple hooks in anterior setigers; ventral cirri cirriform on the first 7 setigers . . . . *M. microbranchiata* (Fauchald, 1968)  
Stout simple hooks absent: ventral cirri cirriform on the first 9 to 10 setigers . . . . *M. nebulosa* (Moore, 1911)
3. Stout simple hooks in anterior setigers . . . . . 4  
Stout simple hooks absent . . . . . 5
4. Ventral cirri cirriform on setiger 1-4; stout simple hooks on setiger 4 and 5 . . . . . *M. stigmatis* (Treadwell, 1922)  
Ventral cirri cirriform on setiger 1-6, stout simple hooks on the first 5 setigers . . . . . *M. bajacalifornica*
5. Ventral cirri cirriform on setigers 1-3; subacicular hooks from setiger 17: pseudocomposite hooks tridentate . . . . .  
. . . . . *M. cirrata* (Hartman, 1944)  
Ventral cirri cirriform until setiger 3, subacicular hooks from setiger 13; some pseudocomposite bidentate hooks present . . . . .  
. . . . . *M. guadalupensis* (Fauchald, 1968)

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#### RESUMEN

*Mooreonuphis bajacalifornica* n. sp., un nuevo poliqueto onúfido, es descrito con base en 23 especímenes extraídos de la epibiotia del ostión espinoso *Spondylus princeps unicolor*, colectado en Puerto Escondido, Baja California Sur, México. Esta especie tiene sólo un filamento branquial por parapodio, ganchos subaciculares amarillos y bidentados, los primeros setigeros con dos tipos de ganchos pseudo-compuestos tridentados, algunos de ellos con el apéndice corto, y otros con el apéndice

largo. Se presentan algunas observaciones sobre su variación morfológica, además, se incluye una clave de las especies de *Mooreonuphis* reportadas para las costas mexicanas.

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