Euclymeninae Reported from the Bight ’98 Program

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The author identified all specimens of Euclymeninae from the Bight ‘98 project. This workshop presents the taxonomic characters and techniques used to identify those specimens. Dependable morphological characters and methyl green staining patterns were used to identify material to species level.

Malmgren erected the family Maldanidae in 1867. Arwidsson (1907) subsequently divided the family into five subfamilies; Euclymeninae, Lumbriclymeninae, Maldaninae, Nicomachinae, and Rhodininae. Three additional subfamilies have recently been proposed. Clymenurinae by Imajima and Shiraki (1982a), Notoproctinae by Detinova (1985), and Boguinae by Wolf (1983) in moving the family Boguidae (Hartman and Fauchald 1971) into the Maldanidae. Important taxonomic publications on the family are by Arwidsson (1907), Day (1967), Fauchald (1977), Imajima and Shiraki (1982a, 1982b), and Rouse (2000). For the purposes of this project the subfamilies presented in Fauchald (1977) are followed retaining the later proposed Clymenurinae within the subfamily Euclymeninae.

The Euclymeninae are characterized by having both anterior and posterior ends with plaques and the anus terminally oriented. A cephalic rim, keel, and nuchal slits are present on the prostomium. The margin of the posterior plaque may be smooth, crenulate, or bordered by anal cirri and the anal cone may be projecting beyond the rim or low and not projecting beyond the rim. Some taxa have segmental collars or well-defined glandular areas in the thorax. Notosetae are capillary. Anterior neurosetae can be either acicular spines or rostrate uncini. It is thought that some species may drop their rostrate uncini and add acicular spines as they get older. These traditional characters have not been wholly adequate to identify specimens encountered in regional monitoring programs.

The Euclymeninae are well-represented in southern California coastal shelf sediments. However, the tendency for them to fragment when collected has been a problem for taxonomists attaining species level identifications. Some particularly large specimens of certain taxa may have only their rear ends collected due to their large size and vertical head-down

orientation in the sediments. When this occurs, programs that do not count these posterior fragments will miss the opportunity to add information on rarely or incompletely sampled taxa to their database.

Attaining complete specimens for taxonomic analysis begins in the field. Gentle screening of sediment samples or use of a float table in the field will help keep fragmentation to a minimum. The amount of fragmentation is directly related to water pressure and rough handling. Use of a relaxant prior to fixation is recommended to further prevent fragmentation when the animals are exposed to Formalin. Subsequent handling by sorters and technicians performing biomass measurements are another possible cause of fragmentation. If the object is to have specimens that can be identified, then care must be taken prior to the taxonomy to provide material in good condition. As the old saying goes "Garbage in, garbage out!" or in this case "fragments in, no species IDs out"! Your database will be much cleaner and analyses more meaningful when a higher percentage of animals can be identified to species.

Methyl green staining procedures follows those generally discussed by SCAMIT members at numerous meetings. A working solution dark enough to stain in a reasonable amount of time (10-15 minutes), but weak enough to see animals through the solution to pull them out was used. As the solution becomes weaker through use and uptake by animals, additional stock solution of darkly mixed stain is added to bring the working solution back to working strength. There are no methyl green solution formulas suggested and each taxonomist must decide what works best for them in their particular working conditions to achieve workable staining of adequate strength. In any case there is usually some destaining that will need to take place before some staining patterns will be discernable. Just as morphological character states develop and change with size and maturity, so do methyl green staining patterns. Juvenile patterns will look different or incomplete until placed in context with the overall development of the adult pattern.

Bight ’98 Euclymeninae

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Axiothella rubrocincta	(Johnson 1901)
Axiothella sp.	
Clymenella complanata	Hartman 1969
Clymenella sp. A	of Harris 1985
Clymenura columbiana	(E. Berkeley 1929)
“*Clymenura*” *gracilis*	Hartman 1969
Euclymene campanula	Hartman 1969
Euclymene ? *grossa newporti*	Berkeley and Berkeley 1941
Euclymeninae sp. A	SCAMIT 1987
Isocirrus longiceps	(Moore 1923)
Maldanella robusta	Moore 1906
Petaloclymene pacifica	Green 1997
Praxillella gracilis	(M. Sars 1861)
Praxillella pacifica	E. Berkeley 1929

Axiothella sp., *Clymenura columbiana*, *Euclymene* ? *grossa newporti*, and *Maldanella robusta* have not been previously reported by POTW monitoring agencies and are not in Edition 3 of the Taxonomic Listing of Soft-Bottom Macro- and Megainvertebrates from Infaunal and Epibenthic Monitoring Programs in the Southern California Bight. Of the Euclymeninae taxa listed in Edition 3, only *Euclymene delineata* was not reported for the Bight ’98 project. Further discussion with the original POTW’s reporting *E. delineata* (LACSD and Hyperion) indicate that these were misidentified specimens from the 70’s and the labs longer include that name in their species lists.

Key to the Subfamilies* of Maldanidae from Southern California

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1. Both cephalic and anal plaques absent **2**

1. At least an anal plaque present **3**

2. Rostrate uncini in double rows, posterior segments with encircling collars **Rhodininae**

2. Rostrate uncini in single rows, posterior segments not collared **Lumbriclymeninae**

3. Cephalic plaque absent, anal plaque present **Nichomachinae**

3. Both cephalic and anal plaques present **4**

4. Anus dorsal **Maldaninae**

4. Anus terminal **Euclymeninae**

*** This key follows the subfamily classification as presented in Fauchald (1977).**

Key to the Euclymeninae of Southern California

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1. **Neurosetae absent on setiger one** ***Maldanella robusta***
1. **Neurosetae present on setiger one** **2**

2. **Setiger four with deep encircling collar** **3**
2. **Setiger four without collar** **4**

3. **Acicular spine count for setigers 1-3:1, 1, 1; 4-5 transverse folds on cephalic plaque; lateral edges meet in V-shape at rear of prostomium** ***Isocirrus longiceps***
3. **Acicular spine count for setigers 1-3: 1, 1 / 2, 1 / 2; single transverse fold on cephalic plaque; lateral edges rounded at at rear of prostomium** ***Clymenella complanata***
3. **Acicular spine count for setigers 1-3: 2, 2 / 3, 3 / 4; two transverse folds on cephalic plaque; lateral edges rounded at rear of prostomium** ***Clymenella*** **sp. A of Harris 1985**

4. **Methyl green stain on setigers 4-7 is well developed on both pre and post setal areas** **5**
4. **Methyl green stain on setigers 4-7 is well developed on the pre setal area only** **8**

5. **Methyl green stain on setiger 8 on both pre and postsetal areas** **6**
5. **Methyl green stain on setiger 8 on presetal area only** **7**

6. **Neurosetae of setigers 1-3 with 4-8 neurosetae; dorsal pores absent, ventral pores on setigers 7-9** ***Axiothella*** **sp.**
6. **Neurosetae of setigers 1-3 with single neurosetae; dorsal pores absent, ventral pores on setigers 6-9** ***Euclymene*** **?** ***grossa newporti***
6. **Neurosetae of setigers 1-3 with 2-4 neurosetae, dorsal pores on setigers 7-9, ventral pores on setigers 7-9** ***Petaloclymene pacifica***

7. **Prostomium with long thin anterior palpode** ***Praxillella gracilis***
7. **Prostomium with short rounded anterior palpode** ***P. pacifica***

8. Methyl green stain after setiger 8 with racing stripes
Euclymeninae sp. A SCAMIT 1987

8. Methyl green stain after setiger 8 without racing stripes 9

9. Methyl green staining area better developed in early thoracic setigers, with lateral unstained line in segments 1-4, thickened presetal flanges develop in posterior segments
Euclymene campanula

9. Methyl green staining area better developed in later thoracic setigers, lateral unstained line absent, presetal flanges absent in posterior segments 10

10. Glandular band on setiger 8 a complete band of similar size to previous segments, slight lateral notches present on prostomium
Axiothella rubrocincta

10.Glandular area on setiger 8 a complete band, better developed ventrally than on previous segments; lateral notches absent on prostomium *Clymenura gracilis*

10. Glandular area on setiger 8 ventral, spade-shaped; lateral notches present on prostomium *Clymenura columbiana*

Bight ’98 Taxa Ranking by Family Levels

1.	Spionidae	29287	Polychaeta
2.	Sabellidae	9792	Polychaeta
3.	Capitellidae	9281	Polychaeta
4.	Amphiuridae	7841	Ophiuroidea
5.	Lumbrineridae	6572	Polychaeta
6.	Terebellidae	5783	Polychaeta
7.	Mytilidae	5353	Bivalvia
8.	Maldanidae	4608	Polychaeta
	(Euclymeninae 3770 81.8 % of Maldanidae)		
9.	Cirratulidae	4593	Polychaeta
10.	Ampharetidae	4039	Polychaeta