

A KEY TO THE ASTEROIDEA COLLECTED DURING THE BLM SURVEY OF
THE SOUTHERN CALIFORNIA BIGHT, 1975-1978

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1.	Marginal plates (supramarginals and inframarginals) large and conspicuous	3
-	Marginal plates not large and conspicuous	2
2.	Pedicellaria rare, not pedunculateOrder Spinulosida	5
-	Pedicellaria common, pedunculateOrder Forcipulatida	16
3.	Supramarginal plates smaller than inframarginals and similar in size to paxillaeOrder Platyasterida, <u>Luidia</u>	31
-	Supramarginal and inframarginal plates similar sized and larger than paxillae	4
4.	At least one hyaline or unpaired median tooth common to each pair of mouth plates: <u>or</u> supra-ambulacral plates reduced or absentOrder Valvatida	25
-	Hyaline or median teeth absent from mouth plates: supra-ambulacral plates present, not reducedOrder Paxillosida	33
5.	Mouth plates small, not spade-shaped.....	6
-	Mouth plates large and spade-shaped	7
6.	Oral surface with webbed, fan-like tufts of spinesFamily Asterinidae, <u>Patiria miniata</u>	
-	Oral surface without webbed spinesFamily Echinasteridae	9
7.	Marginal plates paxilliform, not covered by a membraneFamily Solasteridae	13
-	Marginal plates covered by a membrane, not paxilliform	8

- 8. Nidamental chamber present
..... Family Pterasteridae, Pteraster jordani
- No nidamental chamber present
..... Family Korethrasteridae, Peribolaster biserialis
- 9. Aboral plates with small spinelets, not covered with thick skin
.....Henricia 10
- Aboral plates covered with thick skin
..... Poraniopsis inflata flexilis
- 10. Rays flexible; 2 or more furrow spines on each
adambulacral plateHenricia polyacantha
- Rays rigid; 1 furrow spine on each adambulacral plate
near proximal end of ray 11
- 11. Papular areas larger than pseudopaxillae; few spinelets on
pseudopaxillae Henricia aspera
- Papular areas smaller than pseudopaxillae: many, delicate
spinelets on pseudopaxillae 12
- 12. Pseudopaxillae with 20 or more spinelets.....Henricia leviuscula
- Pseudopaxillae with less than 20 spinelets
..... Henricia leviuscula annectens
- 13. Rays 5; supramarginal and inframarginal paxillae
equal in size Lophaster furcilliger
- Rays more than 5; supramarginal paxillae
smaller than inframarginal paxillae 14
- 14. Supramarginal plates alternating with inframarginals
in a single linear series..... Heterozonias alternatus
- Supramarginal plates not in a linear series
with inframarginals Solaster 15
- 15. Aboral pseudopaxillae with 3-4 spinelets; suboral spines are
small, and are 1, 2, or none in number.....Solaster borealis
- Aboral pseudopaxillae with 7-10 spinelets, suboral spines are
prominent, and are 5-7 in number.....Solaster hypothrissus
- 16. Only straight pedicellaria present; prominent furrow spine
.....Family Zoroasteridae 17
- Straight and crossed pedicellaria present; no furrow spine
.....Family Asteroiidae..... 20

17. Internal ridge present that connects first two ambulacra with body wall..... Myxoderma 18
- Internal ridge absent Zoroaster 19
18. Terminal arm plate small (not ovoid); 1-2 papulae per area on aboral surface; plates and spines not covered by a membrane Myxoderma platyacanthum
- Terminal arm plate enlarged (ovoid); more than 2 papulae per area; membrane present.....Myxoderma sacculatum
19. Single large pedicellaria not present on second spine of adambulacral plates..... Zoroaster evermanni
- Single large pedicellaria present on second spine of adambulacral plates..... Zoroaster evermanni mordax
20. Adoral carinals present 22
- Adoral carinals not present Subfamily Pedicellasterinae 21
21. Inframarginal spines larger than supramarginal spines; podia quadriserial, biserial or both.....Ampheraster atactus
- Inframarginal and supramarginal spines are similar sized; podia biserial..... Anteliaster coscinactis
22. Rays more than 5; adambulacral spines without pedicellaria 23
- Rays 5; adambulacral spines with pedicellariaSubfamily Asteriinae24
23. One inframarginal spineSubfamily Labidiasterinae, Rathbunaster californicus
- Two inframarginal spines Subfamily Pycnopodiinae, Pycnopodia helianthoides
24. Both inner and outer inframarginal spines with crossed pedicellaria Stylasterias forreri
- Only outer of two inframarginal spines with crossed pedicellaria Astrometis sertulifera
25. 1-2 recurved hyaline teeth to each pair of mouth platesFamily Odontasteridae, Peridotaster crassus
- No recurved hyaline teethFamily Goniasteridae26

26. Body surface covered by thin skin Hippasteria spinosa
- Body surface not covered by thin skin 27
27. Unpaired (not recurved) median tooth common to each pair of mouth plates Pseudarchaster pusillus
- No median tooth 28
28. Pentagonal shape; aboral interradial areas without papulae Ceramaster 29
- Long rays (shape not pentagonal); aboral interradial areas with papulae Mediaster 30
29. Furrow spines 6 or more per plate proximally Ceramaster leptoceramus
- Furrow spines 5 Ceramaster patagonicus
30. Papulae in groups of 2-3; pedicellaria bivalved and longer than high Mediaster aequalis
- Papulae single; pedicellaria spatulate and higher than wide Mediaster tenellus
31. Paxillae quadrate 32
- Paxillae stellate Luidia asthenosoma
32. Pedicellaria present; body size small Luidia ludwigi
- Pedicellaria absent; body size large Luidia foliolata
33. Podia without suckers Family Astropectinidae 34
- Podia with suckers Family Benthoplectinidae 38
34. Inframarginal and supramarginal plates equal in size forming a vertical face to the ray 36
- Inframarginal and supramarginal plates unequal in size forming an angular face to the ray Dipsacaster 35
35. Inframarginals without spines; papulae absent from center of disc; madreporite with 1-2 paxillae Dipsacaster anoplus
- Inframarginals with spines; papulae present on center of disc; madreporite with many paxillae Dipsacaster eximus

- 36. Inframarginals separated from adambulacrals by actinal intermediate plates for all or part of the ray Thrissacanthias penicillatus
- Inframarginals touching adambulacrals plates, no actinal intermediate plates Astropecten 37
- 37. Paxillae small, 4-5 are equal in length to 2 supramarginal plates Astropecten verrilli
- Paxillae large, 3 are equal in length to 2 supramarginal plates Astropecten ornatissimus
- 38. Supramarginal plates with 2-3 long spines; large aboral spines surrounded by a circle of spinelets Nearchaster aciculosus
- Supramarginal plates with one long spine; circle of spinelets usually absent from large aboral spines Benthopecten acanthonotus