

Key to the NEP *Rhachotropis* (modified from Bousfield & Hendrycks 1995) with Arctic and NWP species excluded – D. Cadien 15 April 2006

1. Pigmented eyes present.....2
Pigmented eyes lacking.....10
2. Telson long, distally notched.....3
Telson of medium length, cleft 40% or more.....4
3. Pleonite 3 dorsally with 3 ridges, but lacking teeth; urosomite 1 with a large dorsal tooth.....*barnardi* Bousfield & Hendrycks 1995
Pleonite 3 dorsally with 3 ridges terminating in teeth; urosomite 1 with 3 ridges, the central one bearing a tooth.....*boreopacifica* Bousfield & Hendryckx 1995
4. Pereonite 7 with posteriodorsal cusp or tooth.....5
Pereonite 7 lacking posteriodorsal cusp or tooth.....7
5. Pleonite 3 bearing both teeth and ridges dorsally.....6
Pleonite 3 ridged but lacking teeth.....*minuta* Bousfield & Hendrycks 1995
6. Pereonite 7 bearing a small cusp on posterior margin.....sp A Velarde 1987§
Pereonite 7 bearing a large tooth on posterior margin.....*oculata* Hansen 1888
7. Pleonite 3 dorsally unornamented, lacking cusps, ridges or teeth.....8
Pleonite 3 bearing cusps, ridges, or teeth.....9
8. Pleonite 1 with a single dorsal tooth; pleonite 2 with a dorsal tooth flanked by cusps.....*conlanae* Bousfield & Hendrycks 1995
Pleonite 1 with a dorsal tooth flanked by cusps; pleonite 2 with a single dorsal tooth.....*luculenta* Barnard 1969
9. Pleonite 3 with a central ridge flanked by toothed ridges.....*inflata* Sars 1882
Pleonite 3 lacking teeth, but with 3 ridges, the 2 lateral ones serrate
.....sp SD1 Velarde 2006§
10. Pleonites 1 & 2 with a lateral tooth.....*gubilata* Barnard 1964
Pleonites 1 & 2 lacking lateral teeth.....11
11. Telson long, distally notched.....12
Telson medium to long, cleft 25% or more.....14
12. Urosomite 1 lacking dorsal tooth.....*natator* (Holmes 1908)
Urosomite 1 with dorsal tooth.....13
13. Pleonite 3 with 3 dorsal ridges; urosomite 1 tooth large.....*clemens* Barnard 1967
Pleonite 3 with dorsal tooth, but no ridges; urosomite 1 with a small tooth
.....*distincta* (Holmes 1908)
14. Pleonite 1 with dorsal ridges.....15
Pleonite 1 lacking dorsal ridges.....17
15. Urosomite 1 with dorsal ridges; with or without teeth; coxa 1 with ventral notch or notches.....16
Urosomite 1 toothed but lacking ridges dorsally; coxa 1 ventral margin entire, lacking notches.....*cervus* Barnard 1955
16. Urosomite 1 dorsally ridged, but without tooth; coxa 1 with posteroventral notch.....*americana* Bousfield & Hendrycks 1995
Urosomite 1 with 3 dorsal ridges, the central one toothed; coxa 1 with both antero- and posteroventral notches.....sp CS2 Cadien 2004§

17. Pleonite 1 with 3 small teeth; telson cleft 50%.....*multesimis* Barnard 1967
 Pleonite 1 with a large tooth; telson cleft 30-35%.....17
18. Pleonite 2 with 3 dorsal teeth, the middle largest; pleonite 3 with 3 ridges, but no teeth.....*calceolata* Bousfield & Hendrycks 1995
 Pleonite 2 with one small tooth; pleonite 3 with a posterior cusp, but lacking ridges.....*ludificor* Barnard 1967

Rhachotropis is the most speciose genus of eusirids in both the NEP and in the SCB. The animals are vigorous swimmers, and feed raptorially. During the Vertical Distribution Study we found several of these deep in the sediment. This puzzling result was clarified when we recognized that such deep occurrences were always associated with a large seapen in the core. It became evident that the *Rhachotropis* were perching on the seapens, using them as hunting outposts, and were dragged along when the pens retracted into the sediments during sampling. Bousfield & Hendrycks (1995) present a key to the genus in the NEP, which includes nearly all forms. They do not, however, include three provisionals which I have listed above, one of which is reported by SCAMIT agencies. I will modify their key to include the additional forms. We may discover there are additional provisional species locally. Ron Velarde has another species he has isolated from the San Diego collections which does not have the same tooth/carina formula on the pleonites as other local species. He has not yet prepared a sheet on the animal, but I will try to include it in the key based on his description of the formula.

Eusiroides monoculoides is a shallow water species which is reef, turf, or algal associated. It has been taken infrequently in southern California. The local form is, however, almost certainly not the same as Haswell's *E. monoculoides* from Australia. We still retain the name as initially reported by J. L. Barnard from our area. This species, like some others (i.e. *Colomastix pusilla*) are known to differ in some respects from their exotic nominate congeners, but no one has yet codified these differences. Eventually we should create provisionals for such forms (as with *Cerapus* sp A and sp B instead of *C. tubularis*) for materials from the NEP. You can do this if you are so inclined. The local form is illustrated in Barnard 1964b (Fig. 1).

The genus *Eusirus* is represented in the NEP by several species, only one of which is so far reported from the SCB. Bousfield & Hendrycks provide a key to the genus in the North Pacific, but do not include *E. longipes*, which they believe does not occur here. They do, however, reproduce Sars figure of *E. longipes*, which can be referred to in identification of *Eusirus* specimens from the SCB. The differentiation of *E. hirayamae* Bousfield and Hendrycks 1995 from *E. longipes* seems poor.