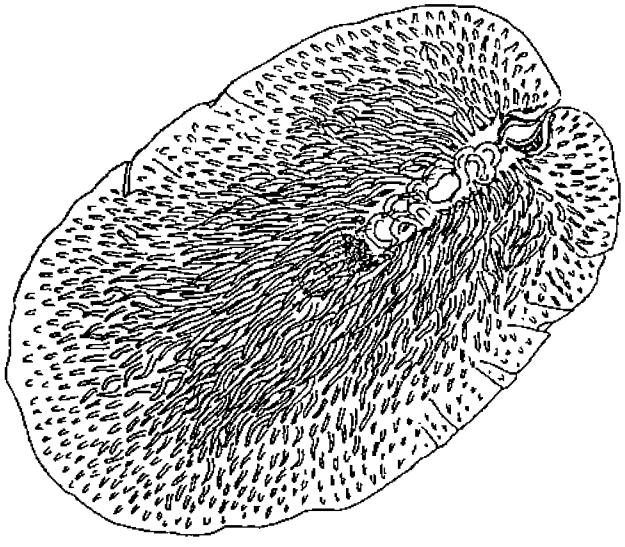
November, 1996 **SCAMIT Newsletter** Vol. 15, No.7

NEXT MEETING:	Recent Developments in Phyllodocid Taxonomy
GUEST SPEAKER:	Dr. Fred Pleijel, Swedish Museum of Natural History, Stockholm
DATE:	Tuesday, 14 January 1997
TIME:	9:30am to 3:30pm
LOCATION:	Worm Lab, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles



Thysanozoon californicum from Hyman 1953

JANUARY MEETING

We are taking a Holiday this December, there will not be a regular meeting during the month. The Christmas Party will serve as our gathering for December. Our next meeting will take place in January, where Dr. Fred Pleijel of the Swedish Museum of Natural History will be our guest speaker. He will be presenting and discussing recent results of his work on Phyllodocidae. His visit is scheduled to coincide with sampling efforts of several local groups, and he may have some live worms for us to examine during the meeting. As usual, come prepared with both questions and specimens.

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VISITING TAXONOMISTS

Over the next few months several visiting taxonomists will be in the southern California area to meet with various SCAMIT members and use the collections at LACMNH. SCAMIT plans to try to arrange our meetings around their schedules to allow them to participate as guest speakers.

November- Dr. Isao Hayashi will be visiting with SCAMIT members Larry Lovell and Leslie Harris and working on hesionids and paraonids. Unfortunately, his arrival is after the November meeting so Larry and Leslie will have to update us on his work at a future meeting.

January- Dr. Fredrik Pleijel from the Swedish Museum on Natural History in Stockholm will be here. One of his aims during the visit is collection of living hesionid and phyllodocid polychaetes from our area. He will be updating members with his recent work on Phyllodocidae.

February- Derek Ellis recently retired from the Biology department at the University of Victoria will be visiting southern Calif. The topic of discussion will be taxonomic intercalibration.

NEW LITERATURE

Andrew Mackie's dissertation on the taxonomy and phylogeny of spioniform polychaetes has been published. A copy of the abstract has been included with this newsletter. Several of the papers included as part of his thesis also appear in Elin Sigvaldadóttir's thesis (they were co-authors). Most of the papers have already been published in other journals so several members may have reprints.

Dr. Geoff Read recently posted on Annelida a message from Dr. Wilfried Westheide regarding the second revised edition of Gesa Hartmann-Schroeder's *Annelida. Borstenwuermer, Polychaeta* in *Die Tierwelt Deutschlands und der angrenzenden Meeresteile*. It is now available and includes a description of 558 species, including the archiannelids. New information on the ecology and biology of the German polychaete fauna has been added, along with new and improved illustrations. Because of the range extensions of these polychaetes beyond Germany's boundaries information concerning Arctic, North Atlantic, and North Pacific regions and other parts of the world has also been included. The price of the book is $298 DM. It may be ordered from:

Gustav Fischer Verlag
P.O.B. 100537
D-077705
Jena, Germany
fax: ++49-3641-626500

The publisher accepts American Express, MasterCard/Eurocard, and Visa credit cards.

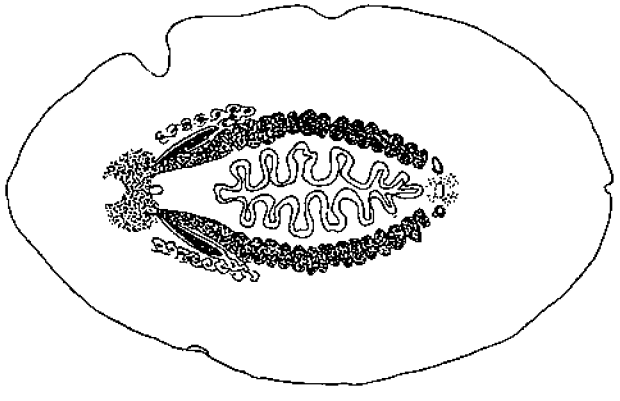
Comments on species recognition in the isopod genus *Synidotea* were provided by Poore (1996). He is at odds with Chapman and Carlton (1994), finding their synonymies within the genus not in accordance with his interpretations. They felt that many previously described species from various parts of the world were really one wide ranging species introduced by man into much of the world ocean. Poore disagrees, finding morphological evidence of endemism and suggesting the removal of several species from synonymy. He provides a listing of the species in the genus worldwide at the end of his paper.

A further shot in the ongoing war over the proper cladistic analysis of the isopods has been fired by Wilson (1996). The controversy began at the First International Crustacea Conference in Australia in 1990. At that event competing phylogenies were proposed by Wägele and Sieg, and by Brusca and Wilson (Brusca & Wilson, 1991) which diverged broadly in their basic premises. The two sides have hotly debated the main points (methodological approaches in particular) in the intervening years (Haszprunar 1992; Lorenzen 1993; Lorenzen and Sieg 1991; Meier and Whiting 1992; Pleijel et al 1992;

Wägele 1994, 1995; Wägele and Stanjek 1995). It is highly probable that neither side will ever concede the field, so we can expect a continuation of disagreement in future publications. Since the issues raised are rather fundamental to cladistic analysis, this debate is pertinent for all of us.

The most recent (November 1996) issue of the Journal of Crustacean Biology had a number of interesting articles, but only one dealt with animals which occur in the SCAMIT coverage area. Dumbauld et al (1996) reviewed the biology of two local thalassinid shrimp, *Neotrypaea californiensis* and *Upogebia pugettensis*, providing much new data on growth, reproduction, and general ecology.

A "new" older literature item has just come in as well. Prudhoe (1985) gives a complete review and revision of the polyclad flatworms - only a year after the second paper by Faubel, who did the same thing. The two treatments seem to be entirely separate in that Prudhoe neither cites nor appears aware of Faubel's papers (1983 and 1984) which completely revised the Acotylea and Cotylea, respectively. In consequence, we have a nomenclatural problem on our hands. Our local fauna, whose nomenclature in the SCAMIT list now reflects the revisions of Faubel, must be reexamined to determine the impact of Prudhoe's book. In a test case examined (*Koinostylochus burchami*) there was a definite difference between the two authors.



Koinostylochus burchami following Faubel 1983; *Discosolenia burchami* following Prudhoe 1985 (from Hyman 1953)

Don Cadien is reviewing the two revisions in an attempt to determine the size of the problem. We will have to meet again in 1997 to consider issues of flatworm taxonomy related to these nearly concurrent but non-overlapping treatments.

MINUTES FROM NOVEMBER 19 MEETING

Tony Phillips (CLAEMD) led the discussion of the Cirratulidae chapter of volume 6 of the MMS Taxonomic Atlas. Before the meeting Tony spent some time at the NHMLAC examining the type specimens described in this volume and comparing them to our locally reported cirratulid species. He also spent time staining the type specimens in methyl green and noted several differences not only between our local species stain patterns and those illustrated in the atlas, but also with the stain patterns he observed in the types and those illustrated by Blake.

Tony passed around at the meeting color illustrations of these stain patterns. Several members present at the meeting are having color xeroxes made of these patterns for their personal use. If other members that work with cirratulids would like a copy of these stain patterns it can be provided by the SCAMIT secretary at cost. Currently color xeroxing runs $.50 to $1.00 per page. There are about 10 - 12 pages. Hopefully, in the future with the aid of a computer and color printer SCAMIT will be able to provide its members color illustrations free.

The first group of cirratulids discussed belong to the genus *Chaetozone*. Several new species are described in the Atlas. Two of our common *Chaetozone*, *C. armata* and *C. corona*, have distinct enough characteristics with the placement and number of neuropodial acicular spines that stain patterns don't need to be relied upon to help differentiate these animals. However, our local *Chaetozone setosa* has never been considered a true *C. setosa* and has been suspected of being a complex of several species. Tony, Rick Rowe (CSDMWWD) and Larry Lovell (Private Consultant) all compared their *Chaetozone setosa*

stain patterns and found they had 3 different patterns, one of which matches that described for *C. setosa*. *Chaetozone setosa* has an intense stain on the prostomium, peristomium, ventrum and podial lobes with the dorsum remaining unstained. The other two stain patterns seen by Larry Lovell and Rick Rowe consist of a mostly unstained pattern and another pattern where the prostomium has a dark staining ring around the middle. Tony believes that the unstained "setosa" type animals may be *C. commonalis*, one of Blake's new species from the continental shelf of central California. It is a very commonly occurring species in the Santa Maria Basin. Blake describes this species as having distinctly shaped acicular spines posteriorly. The tip of the spines are drawn out into a fine tip that curves back on itself to adhere to the shaft, thereby forming a simple hood. More comparisons need to be made, but members may want to begin staining their *Chaetozones* (if not already doing so) and trying to separate out the different "setosa" types.

Chaetozone bansei is a new species described from shallow water off San Francisco Bay in sandy sediments. It is very distinct with a dorsal ridge extending posteriorly from the prostomium to setigers 4-7. The placement of the dorsal tentacles is medially at the end of this ridge. This species also has a very intense and distinct methyl green stain pattern. *C. bansei* is closely related to *C. acuta*, a shallow water species from Puget Sound.

Chaetozone columbiana, is another new shallow water species from the Columbia River with a distinct stain pattern where only the tip of the prostomium is unstained anteriorly.

Two other new closely related species are *C. hedgpethi* and *C. senticosa*. Both are described from shallow water embayments and have acicular spines first present from the middle of the body. However, each has a distinct methyl green stain pattern, different shaped prostomium and pygidium. Tony noticed on examination of *C. senticosa* a broad body with cinctures on the posterior that were not complete, very much as described and illustrated by Blake.

Blake's new species *Chaetozone lunula*, described from Half Moon Bay, is unusual in having bidentate and unidentate acicular spines. On pg. 298 Blake explains his reason for placing this species in the genus *Chaetozone* rather than *Caulleriella*. Tony examined the type specimen and was definitely able to see the bidentate spine as illustrated in figure 8.11D on pg. 297.

Both *Chaetozone gracilis* and *Chaetozone spinosa* have been reported by SCAMIT members in their benthic monitoring programs in the past. However, both these species occur in deep water and it is unlikely that either of these species would be encountered in regional monitoring surveys. *Chaetozone gracilis* is known only from its original record off Catalina Island in 4016 m. *Chaetozone spinosa* is described as occurring off northern California in lower slope depths greater than 2600 m. While *C. spinosa* was dropped from SCAMIT's species list *C. gracilis* is still listed, but will be deleted from the third edition.

Caulleriella gracilis Hartman 1961 (as *Chaetozone gracilis*) has been given a new name by Blake, *Chaetozone hartmanae*. Blake places this species in the genus *Chaetozone* because while the acicular spines are not unidentate they are not truly bidentate either, as defined for *Caulleriella*. The spines are curved with fine serrations at their tip. The remarks on pg. 292 describe Blake's reasoning in more depth. While several members agree with this they also believe that this species has enough distinct characters to perhaps warrant a new genus in the future. For the time being we will use the new name *Chaetozone hartmanae*. It should be noted that *C. hartmanae* is described from fine sand at a depth of 542 - 914m, however SCAMIT members report this species in fine to course sediments in 45 -110m. Tony remarked that he usually sees these worms with a mucous tube attached, an inflated thorax and an orange colored tint around their parapodia.

The next group of cirratulids discussed was *Caulleriella*. Our local *Caulleriella hamata* is distinguished from other species by the start of the neuropodial hooks from setiger 20-30, not from the first. Our other commonly reported *Caulleriella* species, *C. alata* is probably *Caulleriella pacifica*. In the remarks section on pg. 312 Blake discusses the differences between these two closely related species. Tony has reported this species from Marina del Rey in 6 - 12 m. He did notice that his animals had huge eyes compared with those illustrated for *C. pacifica*.

Caulleriella apicula is a new species described as having notopodial hooks that do not appear until setiger 80 or later. Also, it has a very pointed prostomium and no capillaries accompany the neuropodial hooks. It was found off the LA Harbor Light in shale at 24 m. While no SCAMIT member has reported any *Caulleriella* matching this description it is a likely possibility and members may want to keep their eyes open for it.

Caulleriella cristata is a new species described from central California in rocky intertidal habitats, which we shouldn't see locally in our benthic surveys. This species has a distinct elevated crest on its peristomium. Tony did notice an inconsistency in the figure 8.16 B of *C. cristata*. The dorsal tentacles are described in the text as arising from the posterior margin of setiger 1 and on the left side of the animal in the figure the dorsal tentacle is positioned on setiger 2. The first bundle of setae on the left should probably be deleted.

Caulleriella lajolla is another new species, which is described from the intertidal at La Jolla, Ca. It is distinct in having dorsal tentacles positioned at setiger 2 instead of 1. It also has a methyl green stain pattern with the tip of the prostomium and podial lobes staining intensely. When Tony stained the holotype he also observed dorsal bands of stain beginning on setiger 4 thru setigers 12-15, which is not described by Blake.

We did not spend any time discussing *Tharyx* species since no SCAMIT member has reported any cirratulids with the unusual knob tipped spines as described by Blake (1991) in So. Calif. material.

Our local *Monticellina dorsobranchialis*, which has an elongated prostomium and posterior capillaries with distinct sawtooth edge, has been described by Blake as a new species, *Monticellina cryptica*. Blake compared California specimens with *M. dorsobranchialis* specimens from the U.S. Atlantic coast and noticed several differences that led him to reassess his earlier synonymy (1991). *M. cryptica* differs from Atlantic species by having fewer and more widely spaced barbs on the cutting edge of its capillaries. The distribution described by Blake is continental shelf depths in 92-585 m. Tony and other SCAMIT members have reported this species as shallow as 30 m.

The cirratulid that we have been referring to as *Monticellina tesselata* has also been described by Blake as a new species *Monticellina siblina*. Our local *M. tesselata* has a prostomium where the dorsal posterior edge forms a distinct v-shaped groove between the dorsal tentacles. This gives the prostomium a wedge shape or lopsided diamond shape. The denticulations of the neuropodial capillaries are numerous and spaced close together, like the teeth of a comb. This species is not only a common polychaete in the LA Harbor area as mentioned by Blake on pg. 328, but SCAMIT members report it at 30 m offshore. Tony has reported it from 6 m in LA Harbor and at 77 m in Santa Monica Bay. Also, members report seeing this species with a tesselated tube like that described for *M. tesselata* on pg. 329 and illustrated on pg. 330. While *M. tesselata* is very similar to this species with regards to the denticulations on the neuropodial capillaries and the inflated posterior end, Blake has expanded *M. tesselata*'s original description to include a previously unreported diagnostic character. A middorsal ridge that is similar to a spionid caruncle is present from the posterior margin of the peristomium between the dorsal

tentacle bases down to about setiger 12. Several SCAMIT members have recently reported seeing animals that have this distinct ridge, which was probably overlooked during their original examination. Many of these animals were previously identified as *M. tesselata*. Based on Tony's recent observations smaller specimens have a less distinct ridge and larger animals tend to have branchiae wrapped around their bodies. Tony has reported these animals from 60-81 m in Santa Monica Bay and Larry Lovell has reported them at 60 m off Orange County near the outfall.

Blake also has 3 new combinations *Monticellina luticastella*, *Monticellina secunda*, and *Monticellina serratiseta*. These were all transferred from the genera *Tharyx* and *Aphelochaeta* based on the denticulations present on their capillaries. It is unlikely that members would encounter *M. luticastella* in benthic surveys since it is known only from the San Diego Trough at 1200 m. However, it has a unique anterior end and is not likely to be mistaken for another *Monticellina* species. It can be easily distinguished from other species by its short, thickened, and bluntly bilobed prostomium. Also, the branchiae are limited to the first 9 setigers.

M. secunda and *M. serratiseta* while described from Puget Sound may also occur in our area. Tony may have a worm that fits the description of *M. serratiseta*. This species has denticulated capillaries with slightly different looking serrated edges. The serration appears almost fibril like. Refer to Blake's illustration on pg. 326 figure 8.25 D.

The next group discussed was *Aphelochaeta*. The only *Aphelochaeta* species on our SCAMIT list that won't change names is *Aphelochaeta monilaris*. Its slender body with uncrowded anterior segments and moniliform middle segments is distinct enough for easy recognition. Tony has examined material from Puget Sound and observed much larger sized *A. monilaris* compared with our own local animals.

Blake describes several new species of *Aphelochaeta* in the Cirratulidae chapter. *A. elongata*, which is described from shallow water in Tomales Bay, has an elongated head region and a non-expanded posterior end. Tony has not seen any *Aphelochaeta* type worms fitting this description. Our common *Aphelochaeta* sp. C fits the description of Blake's new species *Aphelochaeta glandaria*, with its crowded anterior segments and expanded thoracic region with its glandular area that is creamy or light golden in color. This species also has a non-descript methyl green stain pattern, unlike most of the other species of *Aphelochaeta* that we encounter locally. On pg. 342 Blake remarks that local specimens of *A. phillipsi* have been called by SCAMIT *Aphelochaeta* sp. C. This is incorrect. *A. phillipsi* is another new species of *Aphelochaeta* from southern California. It has a distinct methyl green stain pattern and the anterior and posterior ends are more elongate with the segments not as crowded. Tony stained the type specimens of *A. phillipsi* and observed a different pattern than that illustrated by Blake on pg. 342 figure 8.33 A.

Aphelochaeta multifilis, which is described from the intertidal in San Diego, seems to be a sort of generic *Aphelochaeta* with nothing distinct about it and no stain pattern. Tony doesn't think he has seen any material that matches up with the description.

The description of Blake's new species *A. petersenae* does match one of our local types. SCAMIT members had been referring to this species as *A. multifilis* Type II of Blake from a previous meeting where Dr. Blake was the guest speaker. At that meeting in June of 1993 Blake described the unusual methyl green stain pattern of this species. Its prostomium stains intensely except for a clear ocular area that resembles a pair of goggles or mask. There is no stain pattern on the dorsum posterior to the tentacles, but the anterior ventrum has transverse bands of stain.

Another new species of Blake's that has a distinct stain pattern is *A. tigrina*. It has bands of stain on

the ventrum of the thorax and encircling the posterior end. The prostomium and peristomium are unstained. Also, stain spots in the middle of each segment start about setiger 20 and continue posteriorly on the ventrum. SCAMIT has referred to this species as *Aphelochaeta* sp. 1. Unfortunately, the posterior ends of these animals needs to be present to confirm the identity since the anterior stain pattern resembles that of other species.

The last of Blake's new *Aphelochaeta* species *A. williamsae* most likely occurs locally, but neither Tony nor any other SCAMIT member has yet to see anything that matches this description. It has a distinct stain pattern consisting of tight banding across ventral thoracic segments and a very squared peristomium with a small triangular prostomium. Now that we all know what to look for, perhaps, this too, will shortly be added to our SCAMIT species list.

We continued the meeting after lunch by discussing the genera of multitentaculate cirratulids. *Cirratulus* species are not very common in our benthic samples. Our common *Cirratulus cirratus* is not listed in Blake's key. Tony compared our local animal to the key and came up with *C. spectabilis*. However, members should probably hold off using the name until more comparisons can be made.

The only other *Cirratulus* species that we encounter locally is *C. multioculatus*. This species was originally in the genus *Chaetozone*, but Blake has transferred it to *Cirratulus* because of the presence of multitentacular filaments on setiger 1.

Besides *Cirriformia spirabrancha*, which is one of our common local species, Blake describes a new *Cirriformia* species in the Atlas. Both Tony and Rick Rowe have several specimens that fit the distribution of this new species *C. moorei*, but not the description. In Tony's specimens the tentacular filaments arise from setiger 2, rather than setiger 5 as described for *C. spirabrancha*, and the neuroacicular spines start at setiger 10 instead of setiger 40-45. Also, Tony has observed a methyl green stain pattern in his specimens. They have a bands of stain from the 1st setiger to the 70th continuing around from the dorsum to the ventrum. These provisional species seem to better fit the description of *C. tentaculata,* however, they can not be compared against the type specimens since they are missing.

The genus *Protocirrineris* was resurrected and redefined by Petersen (1991). The main diagnostic feature of the genus is the presence of tentacular filaments in groups or patches following setiger 1. In the Atlas, Blake describes a new species from material collected from the rocky intertidal of central California and the entrance of San Francisco Bay. This new species *Protocirrineris socialis* has tentacular filaments arranged in two groups from setigers 7-9, with the tentacles arising on setigers 5-7 on smaller specimens. The placement of the tentacular filaments is farther back than our two SCAMIT provisional species. [Refer to voucher sheets from newsletter vol. 14(1), especially the "remarks" section.] The filament patches are on setigers 3- 4 in *Protocirrineris* sp. A and setigers 4-6 on *Protocirrineris* sp. B. *P.* sp. A occurs at 77-84 m in Santa Monica Bay and *P.* sp. B occurs at 60 m. So far Tony only has a few local specimens available and until more comparisons can be made we will not be using Blake's new name.

In the Cirratulidae chapter Blake redescribes the holotype of *Cirratulus luxuriosa* from San Diego, which was later referred to *Cirriformia* by Hartman (1959). Blake places this species in the genus *Timarete*. This genus is similar to *Protocirrineris* with tentacular filaments arranged in groups posterior to setiger 1, but species of the genus *Timarete* also have posterior acicular spines, in addition to capillary setae. The other two species described in the Atlas, *T. perbranchiata* and *T. sp. A*, are also intertidal species. *T. perbranchiata* is from northern and central California and *T. sp. A* is from La Jolla.

The last genus discussed in the chapter is *Dodecaceria*. There are two species described in the Atlas, *D. concharum*, whose name has been recently contested with electronic interchange thru the newsgroup *Annelida*, and *D. fewkesi*. They are easily distinguished from each other by their habitat structures and the shape of their anterior ends. *D. concharum* has elongated anterior segments and bores into shells and calcareous structures whereas, *D. fewkesi* has crowded, shorter anterior segments and constucts a rock-like structure around its tubes. *D. concharum* is the only species reported by SCAMIT.

To conclude the meeting Tony had a few general remarks to make about the Cirratulidae chapter of the Atlas and the study of cirratulids in general. Overall Blake's key, descriptions and illustrations should be very useful to SCAMIT members. Cirratulids as a group contain a great deal of variability with regards to size and methyl green stain patterns. Tony believes that the preservation techniques used during collection may have some effect on not only the condition of the animals, but also the general body forms and prostomial shapes. Members need to keep in mind that the relative sizes of the species described in the chapter may not reflect the sizes of the material encountered in southern California. Also, the term moderate-sized species is not used consistently throughout the chapter. The term is used to refer to both specimens 8 mm long and 0.6 mm wide and 55 mm long and 2.5 mm wide.

A CORRECTION

In the last issue of the Newsletter I reported that *Synchelidium millsi* was being taken in San Francisco Bay. This proved to be in error. The status of the oedicerotid fauna of the Bay is currently being examined by the local monitoring staffs, but they have yet to fully apply the Bousfield and Chevrier paper discussed in the last issue. I apologize for a premature report. -Ed.

ADULT *Philine auriformis* DYING

During the November trawl series off Palos Verdes, we found the big *Philine auriformis* are dying out. The number of large specimens has been reduced by at least one to two orders of magnitude. Over the past few surveys empty shells and loose gizzard plates of *P. auriformis* have been increasingly common in the trawls. It appears that the first generation of invaders that took the southern California Bight by storm starting in late 1994 is dying of old age. Continued examination of fish taken in the same trawl catches as the snails have failed to find any significant predation on them by any species of fish. None of the big invertebrate predators (notably *Pleurobranchaea californica*) have had any indication of consumption of the larger *P. auriformis* upon palpation.

The size frequency shift in the snail population is very apparent; nearly all the animals taken are now small subadults. In the absence of evidence for predation on the animals their death can only be a result of starvation, disease, or senescence. The first two are highly unlikely since all the adults taken in the trawling have been robust and active (except a few damaged by the nets or skewered by urchin spines). If the assumption of death through senescence is correct, it appears that the life span of the species in our waters is about two years.

Is the invasion over? Not just yet. Although the adult population is in severe decline, the juvenile population is well entrenched. Few are retained in the meshes of the trawl nets, but a dense population is evident in benthic samples from the same area as the trawls. In August benthic samples the species was found nearly everywhere on the shelf and upper slope off Palos Verdes, with density in some areas reaching 60/m^2. Animal size differences suggest that at least three cohorts of *P. auriformis* are present in the area, and very tiny animals continue to appear.

A tiny specimen from 30m in the Gulf of the Farallons was recently examined (courtesy of

Kathy Langan - CSDMWWD) which demonstrates that even in northern California the species occurs off-shore as well as in bays.

NEW SPHAEROMATID ISOPOD

While reexamining old collections for additional β males of *Discerceis granulosa* I came across another species of *Paracerceis* from our area. The specimens, including a mature male and females, were taken intertidally at La Jolla from washes of surf-grass rhizomes in 1979. They had been identified as *P. sculpta* at that time. When the mature male was reexamined it obviously differed from *P. sculpta* in detail of the urosome. Initially it was differentiated by the broadened base of the uropodal exopods. *P. sculpta* has exopods which are slightly broadened basally, then are much the same width for most of their length, tapering only terminally. The present species has exopods which are wider basally than the endopod, and taper rapidly to a terminus which is less than half the terminal width of the endopod. Further examination showed other differences in the ♂ including:

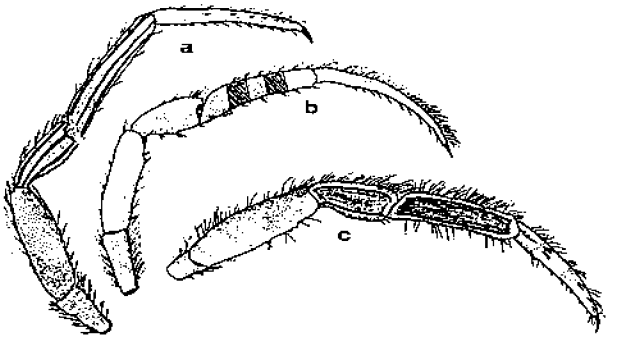
1. The terminal sinus had only two pair of teeth, the interior pair being long, flat on the side facing the sinus, and ending in sharp conical points. The smaller outer pair was nearly at the end of the pleotelson, and gave the pleotelson lobes a notched appearance.
2. The anteriodorsal margin of the uropodal exopod was finely dentate.
3. The dorsal ornament on the pleotelson was not a blunt mound at the end of the sinus, but was rather a tall acute spine.
4. The sinus broadened out basally into a round foramen overhung by a seta-bearded knob which bore the above acute spine on it's dorsal surface.
5. Ventrally the pleotelson had two vesicles on either side of the median sinus. These were not open either to the top or bottom of the pleotelson, but were clearly thin-walled hollow bubbles within the pleotelson.

A little searching turned up a reference to an undescribed species of the genus in Brusca (1980). He illustrated both the male and female of what he called *Paracerceis sp*. Based on shape of the sinus in the male and Brusca's brief description, this is the same animal. His specimens were from either Isla San Esteban or Isla San Pedro in the central Gulf of California. My La Jolla specimens enlarge the range.

For once females of the species are as easy to differentiate from congeners as are males. They can be separated on the basis of sharp teeth on the posterior medial margin of the uropodal exopods. Even small females have these teeth, which become larger and more distinct with age. Only one α male and a series of juvenile and adult females were present in the La Jolla collection. Since even *Discerceis* appears to have male polymorphism, it is likely that all *Paracerceis* will, like *P. sculpta*, prove to have several male morphs as well. More material is needed before the polymorphism question can be answered. A voucher sheet is in preparation. - Don Cadien

FIELD ID OF *Parapagurodes*

With the description of a new species of *Parapagurodes* from the Southern California Bight (McLaughlin and Jensen 1996) it is time for a field key to identify these animals while alive.



Pattern on third legs in live a.) *P. makarovi*, b.) *P. laurentae*, and c.) *P. hartae*

Species in this genus tend to live in carcinoecia which only cover their abdomens. Their legs are fully exposed at all times, and the species can easily be separated when live by leg color pattern. A hand lens may be necessary for the smallest individuals, but large ones can be identified with the naked eye.

Key to identification of live *Parapagurodes*

1. Carpi of walking legs with crimson bands separated by a clear area of the same width at midlength on the segment.....*P. laurentae*

Meri and carpi of walking legs striped in crimson, with or without violet patches.....2

2. Meri and carpi of walking legs with 4-5 thin longitudinal crimson stripes.....*P. makarovi*

Meri and carpi of walking legs with two thin crimson stripes flanking a central violet patch on mesial and lateral faces.....*P. hartae*

A laboratory key to preserved specimens is provided by McLaughlin and Jensen. The key by Haig does not include the new species, but can be modified to incorporate it as follows:

16. Dorsal surface of palm of right chela unarmed proximally: scattered spinules or spinulose tubercles distally and on fixed finger .....*Parapagurodes makarovi* McLaughlin & Haig 1973

Dorsal surface of palm of right chela armed proximally with one or more rows of widely spaced strong spines, these not extending onto fixed finger.....16A

16A. Dactyls of right and left chelae with row of spines in dorsal midline.....*P. hartae* McLaughlin & Jensen 1996

Dactyls of right and left chelae without row of spines in dorsal midline.....*P. laurentae* McLaughlin & Haig 1973

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Göteborg University
Faculty of Natural Sciences

Dissertation

TAXONOMY AND PHYLOGENY OF SPIONIFORM POLYCHAETES (ANNELIDA)

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Avhandling för filosofie doktorsexamen i zoologi vid Göteborgs Universitet (examinator professor Theo van Veen), som enligt den biologiska sektionsstyrelsens beslut kommer att försvaras offentligt kl 10:00 måndag den 3 juni 1996 i Zoologiska Institutionens föreläsningssal.

Mackie, Andrew S. Y. 1996. Taxonomy and phylogeny of spioniform polychaetes (Annelida).

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Abstract: The systematic relationships of some spioniform polychaetes are investigated through descriptions of new species, redescriptions and reassessments of established species, and cladistic parsimony analyses.

Trochochaeta diverapoda, from the Philippines, is redescribed from the syntypes and newly collected specimens fom Hong Kong. The species is redelineated and *T. orissae* considered a possible junior synonym.

Three new species of *Poecilochaetus* are described from Hong Kong and a standardized terminology presented for poecilochaetid setae. Relationships within the genus are difficult to evaluate because of the incompleteness of about half the known taxa. *Elicodasia* is newly synonymized with *Poecilochaetus*.

Within the Spionidae, about 25% of the known species belong to the *Prionospio*-complex of genera. The identities and zoogeographical distributions of seven species of *Prionospio* Malmgren (including the type species, *P. steenstrupi*) are reassessed; most having been variously misinterpreted and synonymised in the literature. *Prionospio multibranchiata* and *P. fallax* are recognised as valid, and are respectively removed from synonymy with *P. cirrifera* and *P. steenstrupi*. *Prionospio malmgreni* is regarded as indeterminable, while *P. malmgreni* var. *dubia* Day is newly designated *P. dubia* Maciolek. *Prionospio ehlersi* is redescribed and a closely related new species (*P. saccifera*) described from Hong Kong and the Red Sea.

A new genus and species of spionid, *Atherospio disticha*, is described from Scottish waters. The distinctive form of the neurosetal hooded hooks suggest a close relationship with *Polydora guillei* and *Pygospiopsis*.

The systematic position of the Aberrantidae is re-examined. Previously thought to be close to the Spionidae or Paraonidae, a revision of the only genus (*Aberranta*) instead suggests affinities with the Eunicida and the 'archiannelid' family Nerillidae. A new species is described from the Mediterranean and the generic diagnosis emended.

The phylogenetic relationships of spionid genera are estimated from parsimony analyses of morphological characters, with the Trochochaetidae, Poecilochaetidae and Uncispionidae as outgroups. Initial analyses including all known variation proved inconclusive due to high levels intrageneric polymorphism. Further analyses restricted to the type species of 26 genera indicated a possible division of the family into four groups. A revised analysis involving all 32 currently recognised genera, and including a number of species of questionable generic allocation, revealed five main groups. The cladistic results are discussed in relation to the present state of spionid taxonomy and to earlier literature classifications within the family.

Key words: Polychaeta, Spionidae, Trochochaetidae, Poecilochaetidae, Aberrantidae, taxonomy, phylogeny, parsimony analysis.

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