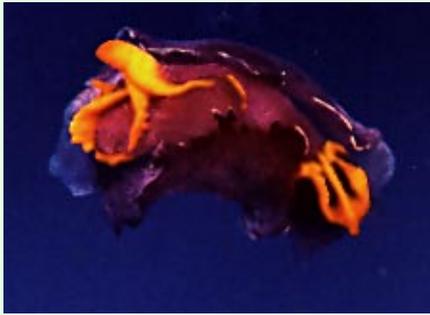


nudibranch NEWS 2:12

Feature Creature

Sagaminopteron ornatum
Tokioka & Baba 1964



This beautiful little cephalaspidean was found at Point Cartwright Sth East Qld in the intertidal zone. When placed in a container to be photographed it began swimming. The colour in the above image is poor. Steve Grail's image at the bottom of the page is a better indication of the animals true colouration.

This species has a wide Australian distribution as well as throughout the Indo-West Pacific. It reportedly feeds on an encrusting grey sponge and lays it's eggs in a series of small white gelatinous masses on the sponge.

Editors notes..

In this issue:

Dr. Irina Roginskaya presents an article on a Russian Opisthobranch. Bruce Potter with his video continues to capture nudibranchs from the Solomon Islands, this month possibly turning up a new species.

Dr. Richard Willan's "Nuts & Bolts" column has been very well received. This month he helps us understand more of the "science" behind the names.

Miquel Pontes regular feature "Mediterranean Nudibranchs" continues to expand our knowledge of the opisthobranch fauna of this fascinating region of the world.

Dave Behrens' Book Review each month comes up with books that we all "should" have in our collections.

Thanks to the rest of the "support team" throughout the last year. Valda Fraser, Dr. Sandra Millen, Nerida Wilson, Shireen Fahey, Neville Coleman, Darryl Potter, Bill Rudman, Mr Ono, Robert Burn, Leslie Newman, Steve Long and The Queensland Museum staff.



*Steve Grail photographed this pair of
Sagaminopteron ornatum
off Mooloolaba Sth Qld*

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opisthobranchs

RUSSIAN

dr irina roginskaya

Notes on *Limapontia senestra* (Quatrefages, 1844) in White Sea and Barents Sea. (Sacoglossa, Limapontiidae)

I.S. Roginskaya. P.P. Shirshov Institute of Oceanology, Moscow, Russia.

Cenia cocksi: Alder et Hancock, 1848:404-406, pl.19, fig.1; ***Acteonia cocksii***: Gascoigne, 1956:130; ***Limapontia cocksii***: Gascoigne, 1974:56; 1978:334; Roginskaya, 1987:154-154; ***Limapontia senestra***: Thompson in Brown, 1976:54-56.

Collection sites. Russian sector of the Barents Sea : Great Aynov Island (West Murman), Kharlov Island (Seven Island Archipelago, East Murman), Dalniye Zelentsy, Cape Kanin Nos (northern extremity of Kanin Peninsula); White Sea localities: Rugozero Inlet (Kandalaksha Bay), Sosnovets Island, Solovetskie Islands (Roginskaya, 1987).

Limapontia senestra is a widespread species in the littoral zone of the White Sea and is also one of the commonest slugs in the intertidal zone of Cape Kanin Nos and along the Murman coast of the Barents Sea.

These very active, black little sacoglossans (the body length in vegetative period rarely exceeds 3-5 mm), with a pair of characteristic tapering tentacles on the head (figs. 1, 2, 4, 7), form dense aggregations in the upper and middle littoral on the green filamentous algae *Acrosiphonia* and *Cladophora*. They feed on the cell content of these green siphonaceous algae.

The ground colour of the dorsal surface of adult animals in general is uniformly black or dark brown, often with characteristic mainly five white markings, reminding the white spots on the "five" of dominoes stones (fig. 1). The head tentacles are white, the sole of the foot - usually white, slightly greenish, by rare examples - dark-gray. Some specimens are more light-coloured, the dark pigment is rather scattered, and the green gut diverticulae and yellow ovotestis are visible through the semi-transparent skin. The pair of big black eyes is situated laterally behind the tentacles inside the clear pigment-free patches, with opaque white glands at the margin. The same white grains border the sole of the foot (fig. 4).

Watching the behaviour of these attractive lively slugs, with black superficial eyes, I involuntarily came to a suspicion, that, contrary to nudibranchs, these molluscs can see things and not only distinguish day from night. Their quick gracious movements are very purposeful. And the funny changing "face expression" of the head, when disturbed, recalling rubber masks, is startling.... In the course of feeding process the slug "rides" on a single filament of alga (fig. 4), thoroughly inspecting it by lips, then engulfs it in the mouth, pierces with radular tooth, sucks out the sap, advances farther along the filament and renews the procedure.

In summer months during low tide these molluscs on the flat sandy beaches near the White Sea Biological Station of Moscow State University (Rugozero Inlet, Kandalaksha Bay) can be seen practically in every small pool with rests of water and a moist cloudlet of a green filamentous alga, providing sufficient

humidity to endure hard times. Sometimes the tufts of green algae are looking almost black from the swarms of *L. senestra* (fig. 6). In more deep and large tidal pools, with dense thickets of *Enteromorpha* and encrusting filamentous algae covering the floor, *L. senestra* choose to shelter in the basal parts of *Acrosiphonia* and *Cladophora*, crawling on the "litter" and screwing in the interlacing of filaments, sand, detritus, sandy polychaete tubes, chironomids, minute mussels, diverse faecal pellets, etc. The "pillows" of filamentous algae, swarming with *L. senestra*, are often seen as a thick felt over mussel settlements, sometimes hold only by a thin lash to the ground, sometimes torn and freely floating, driven by surf. (Perhaps, this can be one of the ways of dispersion of this species?). The numerous *L. cocksii* slide amongst mussels, quickly boring in the soft silty ground and penetrating in the thickness of pillow.

In the intertidal zone of the Barents Sea *L. senestra* in large numbers were observed in rock tidal pools, with dense growth of *Cladophora rupestris* and *Acrosiphonia* on the floor amongst the stems of furoids.

The main spawning period of *L. senestra* in the White Sea and in the Barents Sea occurs in summer months: June-August. The mating slugs near the White Sea Biological Station appear from the beginning of June, when the



Fig. 1



Fig. 2

water temperature in the pools does not exceed 6-7 °C. In most specimens the extruded penis with transparent stylet can be seen. Unfortunately no egg-laying has been observed directly in White Sea location, but the obvious results of spawning can be appraised at the end of September when a new generation of *L. senestra* (0.8-2.2 mm in length) appears in the littoral zone together with adult specimens.

The most abundant population of *L. senestra* I had the luck to observe in rock tidal pools of arctic Cape Kanin Nos, where the intensive egg-laying of this sacoglossan takes place in July. Hundreds of gelatinous semitransparent ovoid egg-masses of *L. senestra* (with mean diameter 2.4mm) (fig.5), containing up to 30 bright yellow eggs, were attached to the basal part of green filamentous algae. Simultaneously the specimens collected in the field deposited egg-masses in captivity. (The mean diameter of uncleaved eggs - 160-200µ, the mean dimensions of egg capsules - 400x300µ). During low tide when in sunny days the tidal pools with *L. senestra* may be exposed to direct solar radiation for at least 6-8 hours a day, and sometimes even 12 hours a day, the water temperature in the pools can reach as high as 15- 22°C. The long exposure to the temperature unusually high for arctic region, together with continuous good illumination (endless polar day!) gives *L. senestra* an opportunity to accomplish reproduction in the course of rather short summer period.

Contrary to three other sacoglossans known from the White Sea and from Russian sector of the Barents Sea (*Alderia modesta*(L.), *Limapontia capitata* (Müller) and *L.depressa* Alder et Hancock) the embryonic development of *L. senestra* proceeds completely inside the egg-mass. The pelagic stage is absent. The just hatched crawling juveniles of *L. cocksii* differ from the adults in dimensions (body length 0.8-1.0mm) and in the absence of head tentacles. The two black eyes and the first radular teeth are formed still in the egg capsule (fig.3). In the course of embryonic development black pigment grains accumulate on the dorsal surface of the veliger and externally the colour of the spawn changes from yellow (in early spawns) to greyish – black (in late spawns). This helps to estimate visually the degree of maturation of embryos in the field, not disturbing the egg-masses. The mass hatching of crawling young *L.senestra* from the “black” spawns occurs at the end of July and in August.

And the last: I am forced according to the opinion of majority to use specific name *senestra* for this species, though I prefer the name *cocksii*, and agree with Dr. T. Gascoigne (1978), that *Acteonia senestra* was a teratological specimen and had to be rejected as *nomen dubium*.

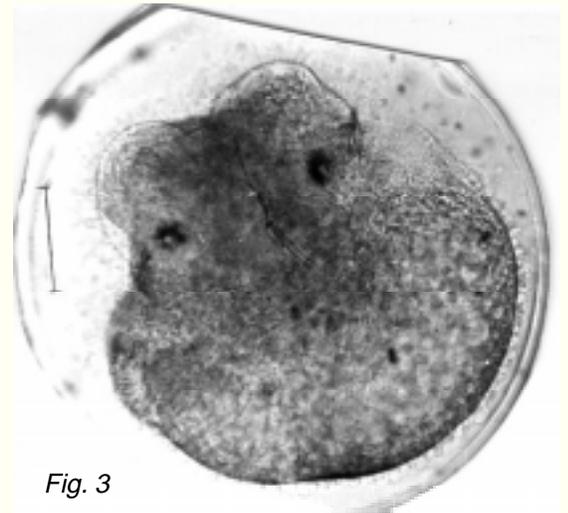


Fig. 3



Fig. 4



Fig. 5



Fig. 7



Fig. 6

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2. **Roginskaya I.S.** 1987. Order Sacoglossa, Order Nudibranchia. Pp(151-202. In: Mollusca of the White Sea. A review of fauna of the USSR edited by the Zoological Institute of the Academy of Sciences of the USSR , no.151 : 328pp.Nauka, Leningrad ?(In Russian).

feedback

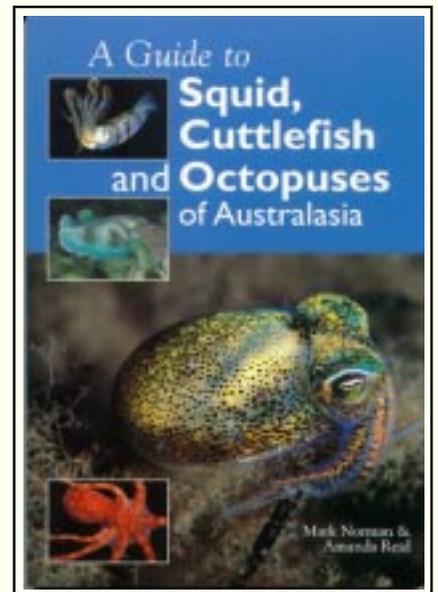
We've had a small "explosion" of various Nudis down here (Port Stephens) for some reason - surprising considering our water temp has suddenly nosedived to around 16C. They had pretty much vanished for the past couple of months, but now they're everywhere!

I found this site that may interest you - obviously not Nudis or Flattys, but of interest to most divers out there.... <http://grimwade.biochem.unimelb.edu.au/cone/index1.html>

Regards,
Bill Chambers Lake Macquarie Australia

Hi all - just a note to introduce a book "**A guide to Squid, Cuttlefish & Octopus of Australasia**", I thought you might be interested in. We will have the description on our Sea Challengers web site soon.

Dave Behrens USA



solomon islands

bruce potter

nudibranchs

I have sent you two nudibranchs. I think one is *chromodoris colemani*, even though it is different to many pictures I have, it is similar to one in one of the Japanese books. The other I cannot find in any of my books. Any ideas?



***Chromodoris colemani* Rudman, 1982**

Named in honour of Neville Coleman, well known Australian underwater naturalist. Known from the northern section of Australia's Great Barrier Reef (W&C, 1984, Debilus, 1996) this reportedly rare species grows to 25mm.

The body is coloured pale milky blue. The mantle is edged in pale orange or yellowish-brown. The main black lines the length of the body and there are several interrupted black streaks. Pale orange-brown stripes run between the black lines.

The rhinophores, when extended are large and the gills are vivid orange or blood red.

***Chromodoris* sp.**

Hopefully someone can identify this animal for Bruce. From the image it appears to have a reddish mantle margin, red upper section of the rhinophores, a white body covered in brownish spots and lines. Rhinophore sockets appear to be present. The gills appear to be whitish.



Glossodoris moloch Rudman, 1988

See Richard Willan's column, Page 54



Fig.1 © 1999 Marshall & Willan

dr richard willan

Specific names as nouns

Ceratosoma moloch (see page 53) is a very large chromodorid nudibranch from Queensland and northern New South Wales, the Solomon Islands, and possibly Indonesia. It is always subtidal and encountered rarely. What is immediately striking are the large, firm pustules, looking like warts or blisters, that cover the mantle and top of the foot. When crawling, the whole body has a slight side-to-side roll. My reason for mentioning this species here is not its bizarre appearance or peculiar locomotion but its specific name, *moloch*.

Anyone seeing this name would think it has to be a spelling mistake, but it is actually quite correct. Bill Rudman named it after the Australian Thorny Devil whose scientific name is *Moloch horidus*. That is, he used the generic name of the reptile as the specific name for the nudibranch. Technically that means he introduced the **specific name in the form of a noun** (a noun in apposition). Another nice example, is the tropical Atlantic nudibranch *Plocamopherus gulo*, named by Eveline Marcus after the Wolverine (*Gulo gulo*). And in eastern Australia we have *Roboastra arika*, named by Robert Burn after the Blue Waterlily. Words taken directly from other languages also come into this category (e.g. *Conus minnamurra* and *C. wallangra*). There are also names like *nucleola* and all those cowries Linnaeus named after mammals that I mentioned in previous articles in this series that are nouns too. These names add colour and historical perspective to the richness of the animal world. In fact there are hundreds of them in nudibranch nomenclature.

These specific names **cannot be changed** (in the sense of not being subject to mandatory changes), even if the species gets shifted into another genus. For example, if *Plocamopherus gulo* were shifted to *Polycera*, the specific name would have to remain as *gulo*.

Specific names can also be nouns in the genitive case. The most familiar examples are names honouring persons (**patronyms**). Again, these names never change, though there are rules dictating the proper ending to use to denote the sex and number of persons being honoured based on the genitive case in Latin grammar: an “i” is added to the end of the name for a man (e.g. *thompsoni* for Tom Thompson, or *roboi* for Robert Bolland); “ae” is added for a woman (e.g. *hunterae* for Judith Hunter); *orum* for several men or men plus women (e.g. *schupporum* for Mr & Mrs Schupp); *arum* for several women.

Another category of patronyms is names recalling ships, for example *challengeri* after the British research vessel “Challenger” or *sibogae* after the German research vessel “Siboga”.

Species can be named after the place where they were first found, for example *Janolus mokohinau* and *Heterodoris antipodes* refer to the Moko Hinu Islands (northern New Zealand), and to the antipodean occurrence, respectively

If one wants to be fanciful with a name, one can form names from abstract concepts (e.g. *Halgerda terramtuentis* or *Phyllidia polkadotsa*) or even use a random combination of letters to make a nonsense word. For example Eveline Marcus (1987) explained that *apefae* (in the combination *Hallaxa apefae*) was named after Alice Pruvot-Fol, using just the initials. Such specific names can be used as they are and must not be changed. All such words are considered as nouns in apposition.

Almost anything goes!. The *Zoological Code* merely requests authors to “exercise reasonable care and consideration in forming new names to ensure that they are chosen with their subsequent users in mind and that, as far as possible, they are appropriate, compact, euphonious, memorable, and do not cause offence” (I.C.Z.N. Recommendation 25C).

That these specific names were introduced as nouns and can never be subject to mandatory change makes them a boon in the rigidity of our computer age. The same cannot be said for names introduced as adjectives which will form the subject of my next article.

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Mediterranean

miquel pontes

nudibranchs

Janolus cristatus

Described in 1841 by Delle Chiaje, the *Janolus cristatus* is a medium sized nudibranch, growing up to 8 cm long. Its gender name *Janolus* is devoted to the two headed Greek god *Jano*.

Formerly known as *Antiopella cristata*, this *arminacean* has a very characteristic shape. The body colour ranges from translucent orange to bluish white. A single or double white line, sometimes discontinuous, can be found in the middle of the dorsum.

The dorsal appendixes, known as *cerata*, are translucent with white to iridescent blue tips. The observer can see a prolongation of the digestive gland inside the *cerata* that looks like a dark blue filament that branches near the coloured tip. These tips have no stinging *cnidosacs* inside, a trait that clearly differentiates this gender from the aeolids.

Cerata are considerably thicker in the *Janolus cristatus* than in the average nudibranch, and protrude from the limit among the foot and the dorsum, giving the overall appearance of a compact crown.

The rhinophores, sensory organs on the top of the head, are not retractile and are thicker at the base, showing many oblique to perpendicular grooves called *lamellae*. On the base of the rhinophores the diver can see a cauliflower-shaped sensitive organ known as 'crest', a trait that gives this species the name *cristatus* "with a crest".

The *Janolus cristatus* is not a common finding despite of its size. It can be confused with a similar species called *Janolus hyalinus* (Alder & Hancock, 1854) but this one is smaller, up to 10mm, and has no white lines on the dorsum. The diver can distinguish this nudibranch of the average *aeolid* thanks to its thick *cerata* and the cauliflower-shaped crest among the rhinophores.

It lives on dark rocky bottoms, at depths ranging from 5 to 15 meters, and feeds on bryozoan colonies of the gender *Bugula* and *Cellaria*. Some authors cite this species only on the western Mediterranean, but it has also been reported in Turkey and Atlantic Ocean. Adults and egg masses can be spotted easier in Summer.



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Internet:

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- NUDIBRANCHS OF THE BRITISH ISLES: <http://www.pictonb.freereserve.co.uk/nudibranchs/jancri.html>
- THE SEA SLUG FORUM: <http://www.austmus.gov.au/seaslugs/janocris.htm>
- M@RE NOSTRUM: <http://marenostrum.org/opisthobranchios/janolus>
- MEDSLUGS: http://medslugs.de/E/Mediterranean/Janolus_cristatus.htm



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Dave Behrens' Book Review

An Underwater Guide to Indonesia

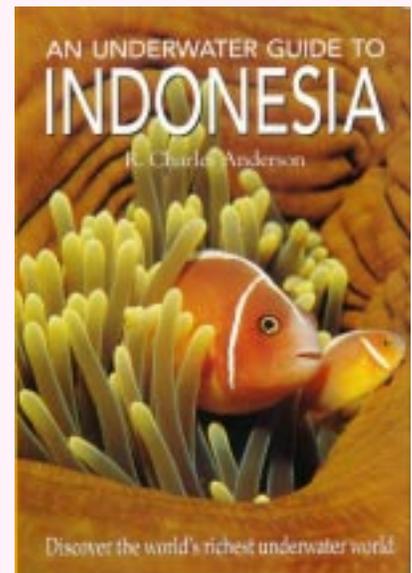
2000. R. Charles Anderson
Hardcover, 6 x 9 inches. 160 pages
University of Hawaii Press
\$23.95 USD

Finally, a field guide dedicated exclusively to the waters of Indonesia. It seems like many divers and snorkellers feel more comfortable carrying an identification guide with the name of the country, or island group, on its cover, rather than one that covers the geographical area of the entire Indo-Pacific. Well, friend and colleague Dr. Charlie Anderson has compiled a guide to both the fish and invertebrates of this island archipelago, containing 17,500 islands. When I received my copy the first thing I noticed were the superb colour photographs, filling the pages in large format, most either full or half page. I particularly like Charles' excellent discussion of marine habitats (mangroves, marine lakes, sea grass beds, and reefs), patterns of marine biodiversity, and coral reef creation. Throughout the text Charles describes the early research conducted in these areas and the historic biologists responsible for the classic works we rely on today. A real treat, because they include some of my favourite reef topics, are his chapters on symbiosis (mutualism, commensalism and parasitism), mimicry, camouflage, aposomatic coloration (warning colouration) and poisons, toxins and venom's. His great colour examples of each, clearly demonstrate each of these important ecological concepts.

The book includes exceptional colour photos and text on 212 of the most commonly experienced Indonesian reef species, all photographed in their natural habitat. Following the introductory text, the book is organized by taxonomic group – Plants, each invertebrate phylum, fishes, and then reptiles. While Indonesia has been lauded by some as having the greatest opisthobranch diversity on the globe, Charlie has given them equal coverage with the other invertebrate groups, including a half dozen species or so. Taken as a whole, this collection of species makes this book a valuable identification guide, with coffee table book quality.



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