

## THE NETHERLANDS NUDIBRANCHIATE MOLLUSCA

by

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In preparing a small Handbook of the Netherlands Opisthobranchiate Mollusca (Fauna van Nederland, Afl. VIII, Sijthoff, Leiden, 1936), in cooperation with Miss Tera van Benthem Jutting, the present author studied, as his part of the work, the Nudibranchia. As some results of his studies might be of more general interest, they are given here.

The southern North-Sea is rather poor in animal life and it is always interesting to note, what species can live under the rather bad ecological conditions it affords. The number of species diminishes further as one enters the Waddenzee or (before 1932) the Zuiderzee.

Though as a rule the sandy Dutch coasts are not suitable for Nudibranchs, there are found some on the stone-covered dikes and quays, on the wooden landing-places, shooings and piles in the harbours, whereon they can creep and where their hosts, coelenterates and algae, find a solid underground. Such are the harbours of den Helder and others, the "Hondsbossche Zeewering", the piers of IJmuiden, Scheveningen, the dikes at West-Kapelle and along the "Zeeuwsche stroomen".

The shutting off of the Zuiderzee (on the 28th of May 1932) forms from the biological standpoint a most interesting ecological experiment. It now contains almost fresh water, 0.3—1.0 g Cl per l (cf. Havinga in: Vakblad voor Biologen, XVII, Dec. 1935, p. 64—73, and in: De Biologie van de Zuiderzee tijdens haar Drooglegging, 4, 1936, p. 5—14; see also: Driemaandelijksch Bericht betreffende de Zuiderzeewerken, XVI, 4, Oct. 1935, p. 7, etc.). Before it was dammed off it contained among others that most curious species of our coasts, *Corambe batava*. This has not been found since. Further it contained (cf. van Benthem Jutting, 1922 c, 1936): *Elysia viridis*, *Lamellidoris*

*bilamellata*, *Embletonia pallida*, *Tergipes despectus*, *Aeolidia papillosa*. Of course these all have disappeared now from the Zuiderzee. Only the brackish-water species par excellence *Embletonia pallida* has since yet been found in the small Amstelmeer and in the inland waters round

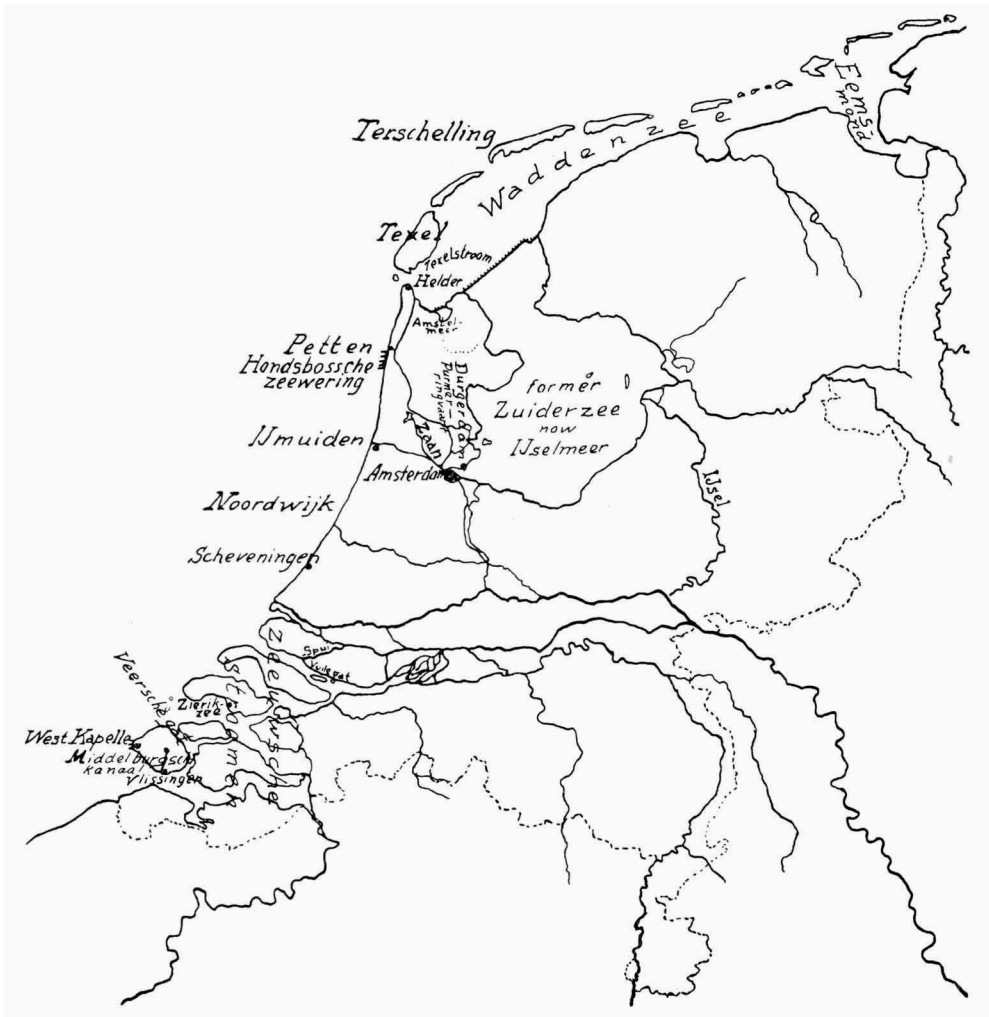


Fig. 1. The Netherlands with indication of the places where Nudibranchiate Mollusca were found.

Amsterdam that at present are often more brackish than the Zuiderzee (or IJsselmeer as it is called now), deriving their salt water from the North-Sea water entering the sluices at IJmuiden (cf. Wibaut-Isebree Moens in: Nederl. Kruidk. Arch., 44, 1934, p. 146—192).

The fields of sea-grass (*Zostera marina*) all over the world are in a bad condition; those of the Waddenzee are moreover probably partly changing their place as a result of the changed conditions there. It was on this sea-grass too that many species were found (cf. van Goor, 1919).

Below a list is given of all the species hitherto found on the Netherlands coasts, with their literature.

It is an interesting historical fact that from this same poor Netherlands coast the first really good and scientific descriptions of Nudibranchs were given, namely by the two well-known pioneers in this branch of Science: Baster and Bomme!

Dr. Job Baster (1709—'75) was a physician in his native town, Zierikzee. He was a pupil of Boerhaave, a friend of Linnaeus and of Hans Sloane (whom he had to thank for his election as a Fellow of the London Royal Society in October 1737). He published the results of his investigations on the animals living in the sea-arm near Zierikzee in his: *Opuscula subseciva de animalibus et plantis 1759—'65* (Netherlands: *Natuurkundige Uitspanningen 1762—'65*).

Leendert Bomme (1727—'88) was a merchant, Director of the Insurance and Commerce Companies in Middelburg, a man of distinction in this his native town. He was interested in astronomy, physics and especially in natural history and from his hand there appeared many contributions in the "Verhandelingen uitgegeven door het Zeeuwsch Genootschap der Wetenschappen te Vlissingen" (For Nudibranchs see Part I, 1769, p. 394 and Part III, 1773, p. 283). He was, like Baster, a member of this Society nearly from its beginning (1768) and in 1780 he was honoured by the Society for his services rendered to science with a silver medal.

Which were the species studied by these two gentlemen? It was possible to trace the present name of almost all of the species described in their papers.

Finally some remarks are given on the Netherlands species of *Eubbranchus* [*Galvina*], while a complete list of the literature on the Netherlands Nudibranchiate Mollusca closes the paper.

#### LIST OF THE NETHERLANDS NUDIBRANCHIATE MOLLUSCA

**Elysia viridis** (Montagu), Zeeuwsche stroomen, den Helder, former Zuiderzee (Horst, 1900; Dorsman, 1913; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1927; id. & Engel, 1936).

**Tritonia plebeia** Johnston, near Terschelling? (Van Haren Noman, 1878; De Man, 1879; Maitland, 1897; Dorsman, 1913; Van Benthem Jutting et Engel, 1936).

**Palio dubia** (Sars), den Helder (Engel 1929; Van Benthem Jutting & id., 1936).

**Acanthodoris pilosa** (Müller), Zeeuwsche stroomen, IJmuiden, den Helder, Terschelling (Bomme, 1773 (het Eegeltje, met eene ster op de stuit); Bennet & Van Olivier, 1826; Waardenburg, 1827; Maitland, 1854, 1897; Herklots, 1859; Hoek, 1876; De Man, 1879; Vosmaer, 1881; Schepman, 1884; Dorsman, 1913 (with a (wrong) picture of *Doris fusca* Müller); Vernhout, 1916; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936).

**Lamellidoris** [= **Onchidorus**] **aspera** (Alder & Hancock), Texelstroom, 1 specimen?, reported as seen on *Tapes* (Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. et Engel, 1936).

Whether *L. muricata* and *L. aspera* differ, as Hoffmann (1926, p. 13, 14) gives it, must be seriously doubted. See Larsen, Skr. Norske Vid. Akad. Oslo, I, 1925, p. 31; Alder & Hancock, 1854, Mon. VI, Fam. 1, Pl. 9, 1855, Mon. VII, App. p. II; Meyer & Möbius, Fauna Kieler Bucht, 1865, p. 73; Müller, Zool. Dan., 1789, Pl. LXXXV, Fig. 4. Mr. Winckworth writes me: "I have seen a great many living *Lamellidoris* and kept them alive and feel quite certain that Larsen is right."

**Lamellidoris** [= **Onchidorus**] **bilamellata** (L.), Zeeuwsche stroomen, West-Kapelle, IJmuiden, Hondsbossche Zeewering, den Helder, Waddenzee, Texelstroom, Texel, former Zuiderzee (Maitland, 1854, 1897; Herklots, 1859; Dorsman, 1913; Heinsius & Jaspers, 1913; Vernhout, 1916; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927, 1936; id. & Engel, 1936). It is an open question whether *Doris fusca* Müller 1788, Pl. XLVII, Fig. 6 is this species, as Iredale and O'Donoghue (Proc. Malac. Soc., XV, p. 219) presume.

**Goniodoris nodosa** (Montagu), den Helder (seen 1 specimen Sept. 1919) (Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936).

**Ancula cristata** (Alder), IJmuiden, den Helder (Maitland, 1897; Dorsman, 1913; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1924, 1927, 1936; id. & Engel, 1936; Vorstman, 1924).

**Corambe batava** Kerbert, former Zuiderzee till Durgerdam, except near the mouths of the IJsel, Marsdiep, Waddenzee, den Helder (Kerbert, 1886, 1918; Hoek, 1887, 1888; Maitland, 1897; Van Breemen & Redeke, 1907; Tesch, 1913; Weber, 1919; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, c, 1927, 1936; id. & Engel, 1936, Vorstman, 1924). This is not *C. sargassicola*, it belongs perhaps to *Corambella* Balch, as the

notaeum is not sinuated behind. Miss Van Benthem Jutting intends to give an extensive study on the large material she possesses.

**Cadlina laevis** (L.), Veersche gat, den Helder, (Maitland, 1854, 1897; Herklots, 1859; Hoek, 1876; Van Benthem Jutting & Engel, 1936).

**Dendronotus frondosus** (Ascanius), Zeeuwsche stroomen, den Helder, Terschelling, Eemmond (Bomme, 1773 (het hartshoorngelijk getakte zeeslakje); Bennet & Van Olivier, 1826; Waardenburg, 1827; Maitland, 1854, 1897; Herklots, 1859; Van Haren Noman, 1878; De Man, 1879 (*Tritonia* spec.); Vosmaer, 1881; Heinsius & Jaspers, 1913; Dorsman, 1913; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936).

**Antiopella cristata** (d. Chiaje), den Helder (Druyvesteyn, 1924; Engel, 1929; Van Benthem Jutting & id., 1936).

**Idulia [= Doto] coronata** (Gmelin), Zeeuwsche stroomen, den Helder (Bomme, 1769 (het gekuifde of gekroonde zeeslakje); Bennet & Van Olivier, 1826; Waardenburg, 1827; Maitland, 1854, 1897; Herklots, 1859; Dorsman, 1913; Heinsius & Jaspers, 1913; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1927; id. & Engel, 1936).

**Eubranthus [= Galvina] exiguus** (Alder & Hancock), Middelburgsch Kanaal, den Helder (Dorsman, 1913; Engel, 1929; Van Benthem Jutting & id., 1936). (The records of Van Benthem Jutting, 1922 a, and 1927 were *Embletonia pallida*; that of Vorstman, 1924 was *Tergipes despectus*).

**Embletonia pallida** Alder & Hancock, den Helder, brackish parts of former Zuiderzee, inland brackish waters near Durgerdam, canals of Amsterdam, Zaan, Purmerringvaart, Vuile Gat (between Tiengemeten and Beyerland) near the Spui; after the damming off of the Zuiderzee the species was found near and in the Amstelmeer and in the canals of Amsterdam (Kerbert, 1918; Van der Sleen, 1920, 1922; Romijn, 1922 (s.n. *Tergipes despectus*), 1923; Van Benthem Jutting, 1922 a (s.n. *Galvina exigua*), 1922 b, c, 1927, 1936; Engel, 1929; Vorstman, 1935; Van Benthem Jutting & Engel, 1936).

**Tergipes despectus** (Johnston), Zeeuwsche stroomen, IJmuiden, Hondsbossche zeevering, den Helder, former Zuiderzee (probably this is „het geknodste zeeslakje met vier hoornen” Bomme 1773; if so, *Psiloceros claviger* Menke 1844 is a synonym, likewise *Doris clavigera* Bennet & Van Olivier 1826, *Tergipes psilocerus* Van der Hoeven 1855,

Maitland, 1854, but not *Doris clavigera* Müller 1776, 1788, Gmelin 1791, Hoffmann 1926, which is a *Triopa*; perhaps *Tergipes claviger* Hoek 1876, Maitland 1897, Eliot 1910, Van Benthem Jutting 1922 c is this species, perhaps *Tergipes* spec. De Man 1879, but certainly *Tergipes claviger* Selenka 1871; as *Aeolis despecta* it is mentioned by Loman, 1922; Dorsman, 1913; and as *Tergipes despectus* by Maitland, 1897; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, c, 1924, 1927, 1936; id. & Engel, 1936; Hoffmann, 1926; but Romijn (1922) mentions an *Embletonia pallida* under this name, as could be verified, while "*Gravulina*" *exigua* Vorstman 1924 proved to be this same *Tergipes*).

**Cratena aurantia** (Alder & Hancock), den Helder, probably Zeeuw-sche stroomen, (this is most probably "het gevederde of zachtgedoornde zeeslakje" of Bomme 1773, later on called *Doris*, *Tergipes*, *Aeolis*, *Aeolidia pennata* Gmelin 1791, Cuvier 1817, Bennet & Van Olivier 1826, Menke 1844, Maitland 1854, 1897, Herklots 1859; the species is mentioned as *Aeolis rufibranchialis* by Hoek, 1893, as *Amphorina aurantiaca* var. *pallida* by Loman, 1893; Maitland, 1897; Dorsman, 1913; Vernhout, 1916; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936; Vorstman, 1924).

**Facelina coronata** (Forbes & Goodsir), Zeeuwsche stroomen, den Helder, Terschelling (Vosmaer, 1881; Loman, 1893; Maitland, 1897; Dorsman, 1913; Vernhout, 1916; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936; Vorstman, 1924).

**Facelina drummondi** (Alder & Hancock). This species is probably a synonym of the foregoing, which then has the priority. Den Helder (Dorsman, 1913; Vernhout, 1916; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1927; id. & Engel, 1936; Vorstman, 1924).

**Aeolidia papillosa** (L.), Zeeuwsche stroomen, Scheveningen, Noord-wijk, IJmuiden, Petten, den Helder, former Zuiderzee (Baster, 1760 (de ongeschaalde met zachte doorns bezette zee-slak, *Doris* sive *Limax marinus*, *spinis mollibus hirsuta*); Houttuyn, 1770; Bennet & Van Olivier, 1826; Waardenburg, 1827 (*Eolis cuvieri*); Maitland, 1854, 1876, 1897; Herklots, 1859; Hoek, 1876, 1887; Van Haren Noman, 1878; De Man, 1879; Heinsius & Jaspers, 1913; Dorsman, 1913; Van Goor, 1919; Van der Sleen, 1920, 1922; Van Benthem Jutting, 1922 b, 1924, 1927, 1936; id. & Engel, 1936; Schierbeek, 1930).

## SPECIES ERRONEOUSLY CITED

*Aplysia depilans* Bennet & Van Olivier 1826, Vernhout 1916. I have seen the last mentioned animal, which was a... *Dolabella!*

*Alderia modesta* Kerbert 1918. Mentioned from memory, identified after a hurried look at the specimen, which then dropped and was lost on a dusty floor, this species was afterwards quoted with doubt by Van der Sleen (1920, 1922) and by Van Benthem Jutting (1922).

*Coryphella rufibranchialis* Hoek 1893 is a mistake for *Cratena* [= *Amphorina*] *aurantia*, as Loman (1893) says.

*Archidoris tuberculata* Dorsman 1913.

Hoffmann 1926 mentions a series of species from the Netherlands coast, because he misinterpreted Maitland (1897), taking "mer du nord" for "Netherlands coast", which was not Maitland's intention. The species are the following: *Aplysia punctata*, *Limapontia capitata*, *Polycera quadrilineata*, *Archidoris tuberculata*, *Idulia (Doto) fragilis*, *Embletonia pulchra*. Erroneously considering Bomme's „geknodste zeeslakje met vier hoornen" (*Psiloceros claviger* Menke 1844) as identical with *Limacia* [= *Triopa*] *clavigera* (O. F. Müller), he quotes the last species from the Netherlands coast.

THE SPECIES DESCRIBED BY BASTER (1760) IN HIS  
"OPUSCULA SUBSECIVA", I, 2, p. 81 (NATUURKUNDIGE  
UITSPANNINGEN I, 2, p. 93)

In the Latin edition Baster describes a "*Doris* sive *Limax marinus*, *spinis mollibus hirsuta*". This is without doubt our *Aeolidia papillosa* (L.) (cf. Maitland, 1876). In the Netherlands edition the animal is called "de ongeschaalde, met zagte doorns bezette zeeslak", i.e. „the sea-slug, without a shell, covered by soft thorns". Linnaeus (1767) quotes Baster under his *Limax papillosus* (which last had been first described in the *Fauna suecica*, 1761, no 2093).

## THE SPECIES DESCRIBED BY BOMME

I. 1769, in: *Verhandelingen Zeeuwsch Genootschap*, I, p. 394.

The article is entitled: „Bericht wegens een zonderling zee-insect, gevonden aan eenige zeewieren, gevischt op het strand van het eiland Walcheren". Bomme calls the animal: „Het gekuifde of gekroonde zeeslakje".

The paper contains a very good description and figures of *Idulia* [*Doto*] *coronata* and its eggs, on what I presume to be a Hydroid, which he found in September 1768 on the coast of the isle of Walcheren. The Netherlands name means "the tufted or crowned sea-slug" and it was simply translated by Gmelin (1791) who names it *Doris coronata*.

II. 1773, in: Verhandelingen Zeeuwsch Genootschap, III, p. 283.

This article, with nearly the same title as the preceding, contains the descriptions of 5 species:

1. Some further remarks on the foregoing species, which Bomme kept alive in his jars from September 1768 till May 1769. In April he found another specimen of the same species and put it which the first. The two copulated and laid eggs, then died.

2. „Het hartshoorn-gelijk getakte Zeeslakje", which means „the antler-like branched sea-slug". Gmelin (1791, Syst. Nat. I, 6, ed. XIII, p. 3105) therefore names the animal *Doris cervina*, which is a synonym of *Dendro-notus frondosus* (Ascanius 1774). Bomme had found it in September 1771 on *Tubularia*. It did not livè long.

3. „Het gevederde of zachtgedoornde zee-slakje", which means "the pennate or soft-thorned sea-slug". Accordingly Gmelin (1791) calls it *Doris pennata*. Cuvier (1817) in a footnote puts it under *Tergipes*. It was quoted later by Bennet & Van Olivier (1826), Menke (1844), Maitland (1854, 1897), Herklots (1862). In spite of this vast literature nobody after Bomme saw the animal again, and it is the question, what species is meant by it! Bomme found many of them in May and June on hydroids. They measured  $\frac{3}{4}$  to  $\frac{3}{8}$  inch. It seemed related to the animal of Baster (*Aeolidia papillosa*), from which it differed, however, in the distinct head. The colour was white to red, the papillae darker red, but "I have found", says Bomme, "that the colour of these slugs shows itself according to the colour of the hydroids and polyps... from which I conclude that the food is the cause, I saw it change its colour, when I put it on other polyps". The eggs were laid in a round or oval purse-like body. They were found especially on *Tubularia*. The animals often crept against the surface of the water.

There is only one Netherlands species which unites all these characters in one and though the picture is not very beautiful, and could serve for all sorts of Aeolids, I have no doubt that the *Doris*, *Tergipes*, *Aeolis* or *Aeolidia pennata* (Gmelin) is the animal now known as *Cratena* [= *Cuthona* = *Amphorina*] *aurantia* Alder & Hancock 1842. Though for myself I am quite convinced, someone might doubt. Since the name



*aurantia* is in general use, though deprived by the severe law of priority of its tail and adorned twice with a new generic name, it seems best to give the name *Doris pennata* Gmelin 1791 only with a point of interrogation as a synonym of *Cratena aurantia*, lest it would have priority over the last name!

4. „Het geknodste Zee-slakje met vier hoornen”, which means: “the clubbed sea-slug with 4 horns”. It was identified with doubt by Gmelin (1791) with the *Doris clavigera* O. F. Müller 1776, which is our *Limacia* [= *Triopa* = *Euphurus*] *clavigera* (O. F. Müller) (about the name *Limacia* see Winckworth (1935, Proc. Malac. Soc. XXI, p. 323)), an identification which appears wrong by a simple comparison of the plates. This misinterpretation was followed by Bennet & Van Olivier (1826), who, however, gave Bomme’s description, and curiously enough by Hoffmann (1926), though as early as 1884 Menke pointed to the difference and made Bomme’s description the foundation of a new genus and species which he named *Psiloceros claviger*. Later authors put the animal in the genus *Tergipes* and accordingly named it: *Tergipes psilocerus* (Van der Hoeven, 1855; Maitland, 1854) or *Tergipes claviger* (Maitland, 1897; Eliot, 1910; Van Benthem Jutting, 1922 c). With all this ample literature on the species nobody had seen the animal itself, except Bomme! It was Selenka (1871), who, studying the development of a *Tergipes* from the Netherlands coast named it *T. claviger*. His animal certainly was *T. despectus* Johnston. Probably *Tergipes claviger* Hoek (1876) likewise. Was their identification (though unconscious of the name *Tergipes despectus*) right? I think it was, on the following grounds: the enlarged figure of Bomme gives the impression, by its lack of details, and the misdrawn somewhat club-shaped contour of the tentacles, to have been copied after the smaller figure 3A, which seems delineated *ad vivam*. Comparing these two figures further, we find that the smaller, probably the original drawing, shows only 9 papillae, which clearly are placed alternately on the left and on the right side of the back. In the enlargement their number has been doubled to 9 pairs! The fact that Bomme mentions this number in his description does not invalidate our reasoning, since it is possible that he made the enlarged drawing and the description both himself some time after the observation of the living animal! This is a weak point, but: there are only two possibilities, 1<sup>o</sup>: if the enlarged drawing is right, it is absolute impossible to identify the animal with any of the known Nudibranchs, no Aeolid possesses 4 distinct tentacles while the papillae form two simple rows of 9; 2<sup>o</sup>: if, however, the smaller figure is the right one, the identity with *Tergipes despectus* Johnston 1835 is complete. This is a common animal on the Netherlands coasts. Happily

there are no priority questions; moreover, because of the above mentioned weak point in our reasoning, we may only identify the two with some doubt. A survey of the Netherlands literature and synonymy of this species may be given here:

- ? het geknodste zeeslakje met vier hoornen, Bomme 1773.
- ? *Psiloceros claviger* Menke 1844 (after Bomme).
- non *Doris* (*Triopa* = *Limacia*) *clavigera* Müller 1776. (Zool. dan. prod. p. 299), 1788 (Zool. dan. I., p. 17), Gmelin 1791, Hoffmann 1926.
- ? *Doris clavigera* Bennet & van Olivier 1826.
- ? *Tergipes psilocerus* van der Hoeven 1855, Maitland 1854.
- ? *Tergipes claviger* Hoek 1876, Maitland 1897, Eliot 1910, van Benthem Jutting 1922 c.
- ? *Tergipes* spec. de Man 1879.
- *Tergipes claviger* Selenka 1871.
- *Aeolis despecta* Loman 1922, Dorsman 1913.
- non *Tergipes despectus* Romijn 1922 (was *Embletonia pallida*).
- *Tergipes despectus* Maitland 1897, van der Sleen 1920, 1922, van Benthem Jutting 1922 b, 1922 c, 1924, 1927, 1936, id. & Engel 1936, Hoffmann 1926.
- *Gravulina* (sic) *exigua* Vorstman 1924.

5. „de Zee-slak, die ik noem het Eegeltje, met eene ster op de stuit,” that is: “the sea-slug, which I call the little hedge-hog, with a star on its hinder-back.” In the description Bomme speaks of “Eegel-slakje” (hedge-hog-slug). It was named *Doris stellata* by Gmelin (1791). This is a synonym of *Acanthodoris pilosa* (Müller 1789). Bomme’s animals crept out of their jars and he found them on the flour “but they could not keep alive outside the sea-water.”

Summarising the results we get:

- „de ongeschaalde, met zachte doorns bezette zeeslak,” “*Doris*, sive *Limax marinus*, *spinis mollibus hirsuta*” Baster 1760, is *Aeolidia papillosa* (L.).
- „het gekuifde of gekroonde zeeslakje” Bomme 1769, *Doris coronata* Gmelin 1791, is *Idulia* [= *Doto*] *coronata* (Gmelin).
- „het hartshoorn-gelijk getakte zeeslakje” Bomme 1773, *Doris cervina* Gmelin 1791, is *Dendronotus frondosus* (Ascanius 1774).
- „het gevederde of zachtgedoornde zeeslakje” Bomme 1773, *Doris pennata* Gmelin 1791, is very probably *Cratena* (*Amphorina*, *Cuthona*) *aurantia*.
- „het geknodste zeeslakje met vier hoornen” Bomme 1773, *Doris clavigera*?

Gmelin 1791, *Psiloceros claviger* Menke 1844, is very probably *Tergipes despectus* Johnston.

„de zeeslak, die ik noem het eegeltje, met eene ster op de stuit” Bomme 1773, *Doris stellata* Gmelin 1791, is *Acanthodoris pilosa* (Müller).

ON EUBRANCHUS [= GALVINA] EXIGUUS  
(ALDER AND HANCOCK)

The fact that Löyning (1922, Vid. Selsk. Skr., I, Mat. Nat. Kl. No 6, p. 48) distinguished *E. exigua* and *E. pallida*, but in 1927 (Nyt Mag. Naturv., 65, p. 256) united them with *E. tricolor*, while Lemche (1935, Vid.

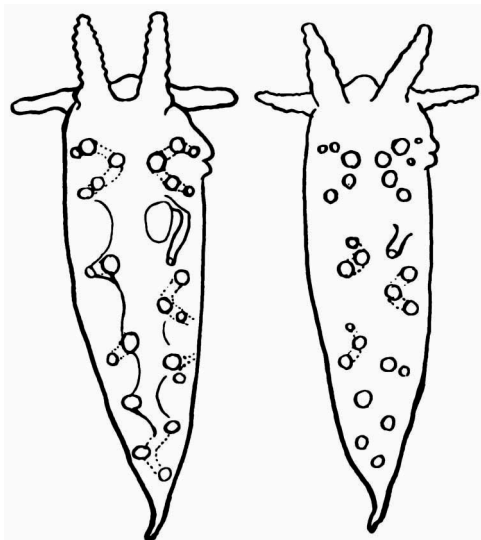


Fig. 2. *Eubranthus exiguus* (A. & H.).  
Diagrams of the liver-branches. Left figure of a 7 mm animal, right figure of a 5<sup>1</sup>/<sub>2</sub> mm animal, both found by Dr. G. J. van Oordt, 16-IV-1914 in the Middelburgsch kanaal on *Obelia*, with kidney-shaped egg-cases.

Medd. Dansk Naturh. For., 99, p. 142) again divided the genus into some species, made me investigate the Netherlands animals on their liverbranches, as far this was possible without destroying the unique specimens. The three animals were captured 16-IV-1914 by Dr. G. J. van Oordt in the Middelburgsch kanaal on *Obelia*. They showed the peculiar kidney-shaped egg-cases of *Eubranthus exiguus*. Only two could be used for investigation as one was exceedingly small and had been drying out earlier as it seemed.

My figures show the diagrams of the liverbranches drawn after Odhner's method, as a supplement to those of Lemche. One animal (left figure) was 7 mm long in alcohol, the second (right figure) was more contracted and measured only  $5\frac{1}{2}$  mm, in life they were probably of the same size. I only have given the parts of the digestive tract that were seen shining through the skin.

My animals agree most with Lemche's fig. 8a, which was made after *E. rupium* from Greenland.

We have here a species developing more dorsal papillae as it grows older and the „species” of neighbouring seas show the remarkable fact that each grows adult at a different stage of this line of development. It seems comparable to the foetalisation of Bolk and is the same phenomenon as I described it for *Astropecten irregularis* (Engel, 1934, Zool. Anz., 107, p. 23).

Thus it may be that these animals, though they agree exactly in the form of their liverbranches, are respectively an adult specimen of one species (*E. rupium*) and a young specimen of another: the common species (called *E. pallidus* by Lemche (1935, p. 146—147)). This young stage then has always been called *E. exiguus*. As there seems some doubt yet about this question and as the authors do not agree in the number of species to be included in the larger one, I have maintained the name *E. exiguus* here and in my work on the Netherlands Nudibranchiata.

#### A COMPLETE LIST OF THE LITERATURE ON NETHERLANDS NUDIBRANCHIATA <sup>1)</sup>

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<sup>1)</sup> This list is given in chronological order to show the gradual development of our knowledge of the group.

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