

NEW DUTCH MARINE ALGAE I

BY

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A considerable number of algae which had not been recorded earlier from the Dutch coast, have been collected during the last years. Partly these finds have been published already by VELDKAMP (1950), KOSTER (1952) and DEN HARTOG (1953). In this paper I will deal with some other interesting marine algae, eight Phaeophyceae and two Rhodophyceae.

Remarkable enough, all new finds thus far published, turned out to be large or medium-sized species. In this paper the majority of the algae mentioned are medium-sized; only 3 microscopical algae are recorded. VAN GOOR (1923) gives in his Algal flora only 20 microscopical species of which there are 14 native of our coast. From this we may infer that under this category many acquisitions to our flora still are to be expected.

I am much indebted to Dr J. TH. KOSTER for her valuable advice. Further I am grateful to A. F. MULDER for allowing me to record some of his observations.

Ectocarpus confervoides (Roth.) Le Jol. **f. pygmaea** (Aresch.) Kjellm.

The author found this form in July 1952 in a very dense, matted growth on the stipes of *Laminaria digitata* near Den Helder. The alga was also observed on the laminae, although in much smaller quantities. The Dutch specimens agree very well with the descriptions, given by BØRGESEN (1903), JONSSON (1903) and LUND (1941).

The form is widely distributed in the northern Atlantic. Records from the American Pacific coast are also known.

Giffordia mitchellae (Harvey) Hamel

Synonyms: *Ectocarpus mitchellae* Harvey, *Ectocarpus virescens* Thuret.

Hitherto this alga has only been found on drifting objects, washed ashore on our coast (LUCAS, 1950). However, it is a native of the Dutch waters too. In October 1951 the species was collected by MULDER and the author on *Codium fragile* in the oysterbasins of Yerseke, Island of Zuid-Beveland, and on stones in the *Fucus serratus*-belt at Gorishoek, Island of Tholen.

Giffordia mitchellae occurs along the Atlantic coast of France, the British coast of the Channel and in the Mediterranean. Further it has been recorded from California and the Caribbean Sea. The Dutch localities are the northernmost known to the author.

***Giffordia sandriana* (Zanard.) Hamel**

Synonyms: *Ectocarpus sandrianus* Zanard., *Ectocarpus elegans* Thuret.

This species, which was known in Holland from drifting objects only, was collected by MULDER and the author in the Zuid-Bevelands Kanaal, in October 1951. It grew as an epiphyte on other algae, especially on *Dasya pedicellata*. In the Rijksherbarium there is another specimen, which had been collected in September 1941 by BRAKMAN in the Kanaal door Walcheren on stones in shallow water. The alga is known from the Atlantic coast from France up to the Danish waters and the Swedish West coast. It occurs also along the Scotch coast (BØRGESEN and JONSSON, 1908) and in the Mediterranean.

***Ulonema rhizophorum* Foslíe**

FOSLIE (1894) as well as HAMEL (1935) and NEWTON (1931) record this little alga as an epiphytic species on the fronds of *Dumontia incrassata*. As the last mentioned species is common in spring near Den Helder in small, littoral pools, in April 1952 a great many specimens were collected and checked on the presence of *Ulonema*, without any result however. In May of the same year the writer was more successful in collecting in the same locality a great number of *Dumontia* infected by *Ulonema* which formed little round brownish spots with a diameter of 1 to 3 mm. Also in June the species was common. It disappeared in July, together with the host. The specimens studied in May bore unilocular sporangia, originating from the basal cells of the erect filaments. The plurilocular sporangia, unknown to FOSLIE, but pictured by HAMEL and NEWTON, lacked in the Dutch material.

Ulonema rhizophorum probably is a widely distributed species which is known from Great Britain, France and Norway. In the Netherlands it is presumably not limited to Den Helder.

***Giraudia sphacelarioides* Derbès et Solier**

This little alga, unknown from the Dutch waters up to the present, was collected twice on the seadike of Den Helder in June 1950. In both cases they were young specimens growing on the shells of living *Littorina obtusata*, and covering them with a dense brown layer.

Giraudia sphacelarioides is a Mediterranean-Atlantic species, reaching its northern limit at the Norwegian west coast (LEVRING, 1937). According to HAMEL (1937), it is fairly rare in the Channel. Also in the Dutch waters it must be considered a very rare species.

***Petalonia zosterifolia* (Reinke) Hamel**

Although this alga is recorded in this paper for the first time it is by no means rare along the Dutch coast. The writer collected the species on the seadike of Oude Schild (Island of Texel), near Den

Helder, on the Hondsbosse Zeewering near Petten and on the northern mole of Ymuiden. It was found near Den Helder mainly on wood-work, forming together with *Bangia atropurpurea* f. *fuscopurpurea* and *Urospora isogona* the vegetation of the splash-zone.

Contrary to both last mentioned species, it was also found, in the littoral belt, and even rather numerous on the stones near low water mark, in the *Polysiphonia-Chaetomorpha*-association. The species prefers localities exposed to the surf.

Though the majority of the specimens was collected in winter, the species was observed also in summer. The growth-period of the species depends to a high degree on the weather conditions.

The species is widely distributed in the northern Atlantic; it is also recorded from the North American coast of the Pacific.

Desmotrichum undulatum (J. Ag.) Reinke

In June 1952 this species was discovered by the author in the Island of Schiermonnikoog. Most of the collected plants were young. Only two fertil specimens were among them.

The sterile plants are filiform and 5–12 mm long. The smallest specimens are 60–80 μ broad, the larger 300–500 μ . The alga consists of 10–15 cell-rows and is 2 cell-layers thick. It bears a good number of hairs.

The thallus is ribbon-shaped in the fertile specimens and consists of 2–4 cell-layers. The plants have a length of 75 and 18 mm and a breadth of 3–4 and 2 mm respectively. The largest plant bears abundant unilocular as well as plurilocular sporangia; among them a few scattered hairs can be observed. The other plant possesses unilocular sporangia in the basal part only.

The species was collected in a large creek through the Oosterkwelder at Schiermonnikoog. It was attached to rhizoms of *Zostera marina*, together with *Ectocarpus confervoides* f. *siliculosa*, *Petalonia fasciata*, *Leathesia difformis*, *Polysiphonia urceolata* and a few other algae.

In the herbarium of the author another specimen is preserved, collected by him near Oosterend, Island of Terschelling, in July 1950.

Desmotrichum undulatum occurs in the northern part of the Atlantic as well as along the North-American Pacific coast.

Desmarestia viridis (Müll.) Lamour.

Mr MULDER sent to the author a fine specimen of an alga, which could be identified as *Desmarestia viridis*. It was collected in April 1952 on a pontoon at Wemeldinge, Island of Zuid-Beveland, slightly below the waterlevel.

This annual species attains its development in spring and early summer.

The species is common in the northern Atlantic, along the European coast as well as on the coast of North America.

Antithamnion plumula (Ellis) Thuret

The occurrence of this alga along the Dutch coast has been stated in July 1952 by the author. Before that time the species had been

seen on drifting objects, washed ashore on the beach (LUCAS, 1950). In 1952 some specimens were collected on a pontoon in the port of Vlissingen, Island of Walcheren, ca 1 m below water level.

Antithamnion plumula is widely distributed in the northern Atlantic and in the Mediterranean. According to BØRGESEN and JONSSON (1908) it is probably a cosmopolite.

Ahnfeltia plicata (Huds.) Fries

This species had been collected twice on the seadike of Den Helder. The first find dates from May 1952 when several specimens were discovered near mean low watermark of springtide in the *Polysiphonia-Chaetomorpha*-association, already described by VAN GOOR (1923). This association which occurs between mean low water mark of neap tide and mean low water mark of spring tide is characterized by *Polysiphonia urceolata* f. *roseola*, a species which is often dominant, *Chaetomorpha aerea*, *Cladophora rupestris* and a considerable number of other algae. *Ahnfeltia* prefers the lowest place in this vegetation, where it is accompanied especially by *Chondrus crispus*, *Phyllophora membranifolia* and a number of Bryozoa and Hydrozoa. This vegetation resembles somewhat the "*Ahnfeltia-Phyllophora* formation" which was described by KYLIN (1907) from the West coast of Sweden.

Ahnfeltia was found growing exclusively on the upper-surface of flat stones, in dense, rigid, dark, purplish coloured tufts, originating from a violet-blue coloured crust. That crust was closely attached to the substrate. Stones covered by "*Polydora-mud*" were clearly avoided. The height of the tufts varies from 3–5 cm. According to ROSENVINGE (1931) *Ahnfeltia* is increasing in length in the Danish waters circa 3 cm in one year. Therefore we may suppose the Dutch specimens have surely an age of a year. Many plants were densely overgrown by specimens of the Bryozoan *Electra pilosa*, the Hydroid *Laomedea* spec., young specimens of *Mytilus edulis*, whereas the Amphipod *Jassa falcata* had built its tubes between the fronds.

The other find was a single specimen, densely overgrown with *Laomedea*, collected near Huisduinen in July 1952 in a similar vegetation at the same level.

All plants appeared to be sterile. The area of *Ahnfeltia* is very extended. The species is characterized by BØRGESEN and JONSSON (1908) as boreal-arctic, for it occurs along the European as well as the North-American Atlantic coast. Further, *Ahnfeltia* is recorded from the North-American Pacific coast (SETCHELL and GARDNER, 1903) and from Karachi (ANAND, 1943).

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