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Scinaia interrupta (A. DC.) comb. nov., an older name for S. turgida Chemin, and S. pseudocrispa (Clemente) comb. nov., an older name for S. forcellata Biv.-Bern. (Galaxauraceae, Rhodophyta)

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RÉSUMÉ

WYNNE, M. J. (1989). Scinaia interrupta (A. DC.) comb. nov., un nom prioritaire pour S. turgida Chemin, et S. pseudocrispa (Clemente) comb. nov., un nom prioritaire pour S. forcellata Biv.-Bern. (Galaxauraceae, Rhodophyta). *Candollea* 44: 129-136. En anglais, résumés français et anglais.

Ulva interrupta A. P. DC (1807) a longtemps été considéré synonyme taxonomique du type de *Scinaia forcellata* Biv.-Bern. (= *S. furcellata* (Turn.) J. Ag.). Le spécimen type d'*U. interrupta* a été localisé à G et examiné. La preuve est apportée que le spécimen de De Candolle correspond à un synonyme taxonomique d'une espèce européenne différente: *S. turgida* Chemin. Le binome *Scinaia interrupta* (A. DC.) Wynne comb. nov. est proposé à la place de *S. turgida.* On signale également que *Fucus pseudocrispus* Clemente (1807) qui a longtemps été accepté comme synonyme taxonomique de *S. forcellata,* a la priorité sur *S. forcellata* Biv.-Ber.

ABSTRACT

WYNNE, M. J. (1989). Scinaia interrupta (A. DC.) comb. nov., an older name for S. turgida Chemin, and S. pseudocrispa (Clemente) comb. nov., an older name for S. forcellata Biv.-Bern. (Galaxauraceae, Rhodophyta). *Candollea* 44: 129-136. In English, French and English abstracts.

Ulva interrupta A. P. DC (1807) has long been regarded to be a taxonomic synonym of the type of *Scinaia forcellata* Biv.-Bern. (= *S. furcellata* (Turn.) J. Ag.). The type specimen of *U. interrupta* has been located in G and examined. Evidence is presented that the De Candolle specimen is actually a taxonomic synonym of a different European species: *S. turgida* Chemin. The binomial *Scinaia interrupta* (A. DC.) Wynne comb. nov. is proposed to replace *S. turgida.* It is also pointed out that *Fucus pseudocrispus* Clemente (1807), which has long been accepted as a taxonomic synonym of *S. forcellata,* has priority over *S. forcellata* Biv.-Ber.

Introduction

Following HUISMAN's (1985) re-assessment of the *Scinaia* assemblage (Galaxauraceae, Rhodophyta) the genus *Scinaia* Bivova-Bernardi (1822) is recognized to contain about 39 species worldwide (HUISMAN, 1986; KAJIMURA, 1988). Three species are usually thought to have distributions in European waters: the type of the genus, *S. forcellata* Biv.-Bern. (= *S. furcellata* (Turn.) J. Ag.), *S. complanata* (Collins) Cotton, and *S. turgida* Chemin (CINELLI & CODOMIER, 1983; MAGGS & GUIRY, 1982; GALLARDO & al., 1985).

When J. AGARDH (1852) made the combination *Scinaia furcellata* (Turn.) J. Ag., he made reference to both *Ulva furcellata* of TURNER (1801) and *S. forcellata* Biv.-Bern., two taxa that have been accepted to be conspecific. DIXON & IRVINE (1970) pointed out that although these two taxa are conspecific, they are heterotypic and J. AGARDH's binomial must be regarded as a later homonym of BIVONA-BERNARDI's name and thus illegitimate.

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It came to my attention that other names in the literature that have been regarded as additional taxonomic synonyms of *S. forcellata/S. furcellata* pre-date BIVONA-BERNARDI (1822). J. AGARDH (1852), DETONI (1897), and SETCHELL (1914) presented lengthy lists of taxonomic synonyms for the type of the genus. Three such names, all published in 1807, are examined in this paper: *Ulva interrupta* of A. P. De Candolle and *Fucus pseudocrispus* and *F. stackhousei,* both of Clemente.

Historical background of Ulva interrupta De Candolle

Although the authorship of *Ulva interrupta* has been attributed to POIRET (1808) by various authors (DUBY, 1830; HARVEY, 1846; J. AGARDH, 1852; DETONI, 1897; SETCHELL, 1914), the name originated with DE CANDOLLE (1807), who described this species on the basis of a Bonnemaison collection made at Brest. The holotype (Fig. 1) is housed in G. In 1808 Poiret also provided an account of *Ulva interrupta* and indicated that the specimen was from De Candolle's herbarium and originated from the coast of Brittany. Poiret designated the name as "N.", implying that he believed it to be new with him. Another species description (namely, that for *Ulva radicata*) in the same publication by Poiret, immediately following that of *Ulva interrupta,* includes the information: "(Descrip. ex Decand. Mss.)". This fact supports the notion that Poiret had access to both De Candolle's herbarium and his manuscript but had not realized that De Candolle had described some of the species in the previous year. In 1815 De Candolle published his name *Ulva interrupta* again, including his earlier (1807) and POIRET's (1808) reference as well as *Ulva furcellata* as a taxonomic synonym.

Relationship between Scinaia forcellata and S. turgida

Contemporary workers (BOILLOT, 1972; CINELLI & CODOMIER, 1973; MAGGS & GUIRY, 1982) distinguish *Scinaia turgida* from *S. forcellata* primarily on the basis of the thallus surface in *S. turgida* having isolated pigmented cells among the colorless utricles in contrast to the clustered pigmented surface cells among the utricles in *S. forcellata.* Cystocarps in *S. turgida* are larger, in the range of 150-200 µm in diameter than those in *S. forcellata* which are 100-150 µm in diameter. Another distinction is that axes of *S. turgida* typically have constrictions, but constricted axes are of rare occurrence in *S. forcellata.* Axes of *S. turgida* are broader (2-4 mm in diameter) than those of *S. forcellata,* which are 1-3 mm in diameter, but the overlapping nature of these values is apparent. Another less reliable distinction is that thalli of *S. turgida* tend to have greater stature (to 15 cm) than those of *S. forcellata* (to 10 cm) (HISCOCK, 1986).

J. AGARDH (1842), in his recognition of *Halymenia furcellata* var. *subcostata,* made reference to the articulate, constricted nature of the axes and also placed significance on the fact that in *S. turgida* a central strand of filaments is detectable in dried specimens, his varietal name alluding to this feature. CHEMIN (1926), however, expressed the opinion that this difference was not always reliable and consequently chose the epithet *turgida* when he elevated the variety to specific status rather than use J. Agardh's varietal epithet. Chemin also observed differing modes of spore germination in these two taxa, namely, an adhesive disc mode in *S. turgida* and a filamentous type in *S. forcellata.*

Scinaia turgida is known to occur on the Atlantic coast of France, northern Spain, and in the western Mediterranean. Its distribution in the British Isles is restricted to the southern and western shores of England and most of Ireland except the east coast (DIXON & IRVINE, 1977; WHELAN & CULLINANE, 1979; MAGGS & GUIRY, 1982). DIXON & IRVINE (1977) indicated the provenance of the lectotype of *S. turgida* to be Tangier, which is based on their accepting J. AGARDH's (1842) specimen of the taxonomic synonym *H. furcellata* var. *subcostata* to serve as type. On the other hand in his account of *S. turgida* CHEMIN (1926) made his observations on specimens obtained from the Atlantic coast of France (Bay of Morlaix near Roscoff, Belle Ile, and Aber Ildut).

Observations on the type specimen of Ulva interrupta

An examination of the type specimen of *Ulva interrupta* De Candolle (Fig. 1) showed it to be a thallus 8 cm in height and consisting of dichotomously branching axes, with diameters of 1.8-3.2 mm. The presence of constrictions is conspicuous. This feature was mentioned in De Candolle's (1807) description and was the reason for his selection of the epithet *interrupta.* A small fragment of the type specimen was examined under the compound microscope, and it revealed that the alga was female. Cystocarps measured approximately 170-190 μm in diameter. The cortical surface was also examined and observed to be comprised almost exclusively of utricles with occasional and isolated smaller (pigmented) cells (Fig. 2). Thus, the conclusion of this examination of the type specimen is that it is fully compatible with *S. turgida* rather than *S. forcellata* as had been formerly accepted. Its provenance from Brest, the Brittany coast of France, is also fully compatible with the recognized distribution of *S. turgida.* Since DE CANDOLLE's (1807) description of *Ulva interrupta* has priority over CHEMIN's (1926) *S. turgida* and J. AGARDH's (1842) *Halymenia furcellata* var. *subcostata,* the following combination is in order:

Scinaia interrupta (A. DC.) Wynne **comb. nov.** Basionym: *Ulva interrupta* A. DC., 1807, p. 232. Taxonomic synonyms: *Scinaia turgida* Chemin, 1926, p. 102. *Halymenia furcellata* var. *subcostata* J. Agardh, 1842, p. 98. *Scinaia subcostata* (J. Agardh) Chemin ex Hamel, 1930, p. 85.

Several authors have pointed out how easily these two species [*S. interrupta* (including *S. turgida*) and *S. forcellata* (including *S. furcellata*)] have been confused. CHEMIN (1926) asserted that HARVEY's (1846) plate 69 purportedly of the type species reproduces exactly the outline of the other species. It is obvious that Harvey's concept of the species included both *S. forcellata* and *S. interrupta.* Similarly, MAGGS & GUIRY (1982) have also stated that they discovered a number of herbarium specimens labeled as *S. forcellata* that were in reality the other species. So perhaps it is not surprising that De Candolle's alga has long been accepted to be merely a synonym of *S. forcellata.* But its possession of three significant criteria all characteristic of *S. turgida,* namely, the constricted axes, the presence of isolated, small pigmented cells among the surface utricles, and the relatively larger cystocarps, all demonstrate that it is taxonomically identical to *S. turgida* rather than *S. forcellata.* This conclusion is further supported by the distribution data.

Status of Fucus pseudocrispus Clem. and F. stackhousei Clem.

Ulva furcellata was described by TURNER (1801). CLEMENTE (1807) described *Fucus pseudocrispus* and *F. stackhousei* from the coast of Spain. C. AGARDH (1822) transferred Turner's *Ulva furcellata* to *Halymenia,* at the same time placing *F. pseudocrispus* and *F. stackhousei* in its taxonomic synonymy, albeit the latter with a query. This taxonomic judgment was followed by later workers such as J. AGARDH (1852), DETONI (1897) and SETCHELL (1914). The fact is, however, that if one or the other taxon is indeed a taxonomic synonym of *Scinaia furcellata* Biv.-Bern. (1822), the publication by CLEMENTE (1807) has priority.

It was not possible to borrow the actual Clemente specimens, but photographs of these specimens were received from the Instituto Botanico A. J. Cavanilles, Madrid (MA). Two specimens are syntypes of *Fucus stackhousei* Clem. ("Fucus Stackhouse"). One specimen bears the provenance "En Cadiz", and it is hereby designated the lectotype (Fig. 3). By the profusely branched habit with narrow percurrent axes bearing short, irregularly arranged secondary laterals, it is clear that *Fucus stackhousei* Clemente has nothing to do with the genus *Scinaia* and it can be discounted.

Two other specimens represent syntypes of *Fucus pseudocrispus,* one bearing the provenance "Cadiz" corresponding to Clemente's "Cir. Gades". The lower specimen in Figure 4 is hereby designated lectotype of *Fucus pseudocrispus* Clemente. On the basis of the photographs these two specimens seem to be the same alga, with heights of about 3 cm, consisting of dichotomously branched axes, branched several times, with entire, non-constricted axes. The general habit is in agreement with that of *S. forcellata.* Accepting C. Agardh's taxonomic judgment and using the evidence provided by the photographs, I find it necessary to propose the following transfer:

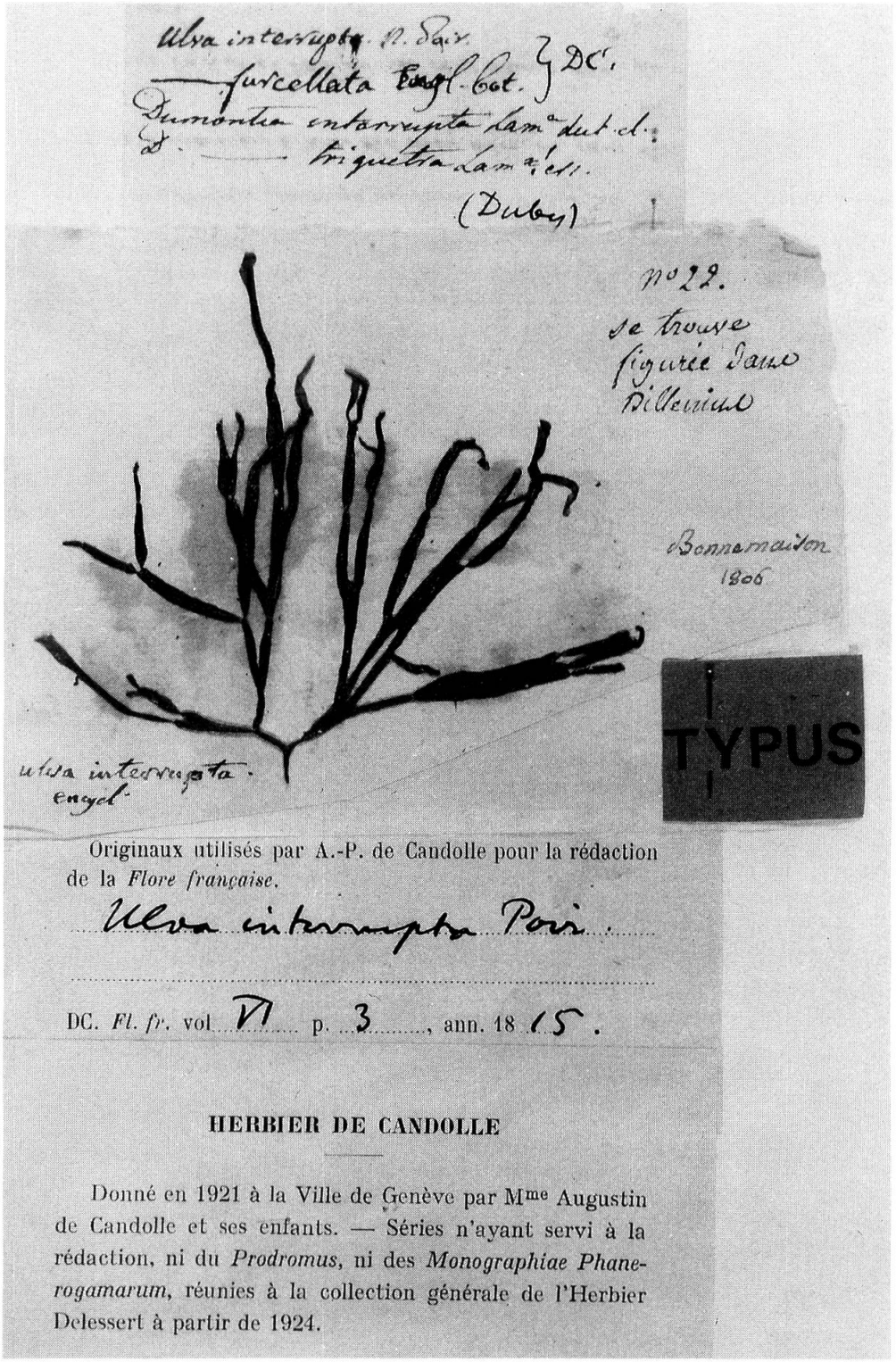

Fig. 1. — *Ulva interrupta* De Candolle. Holotype in G.

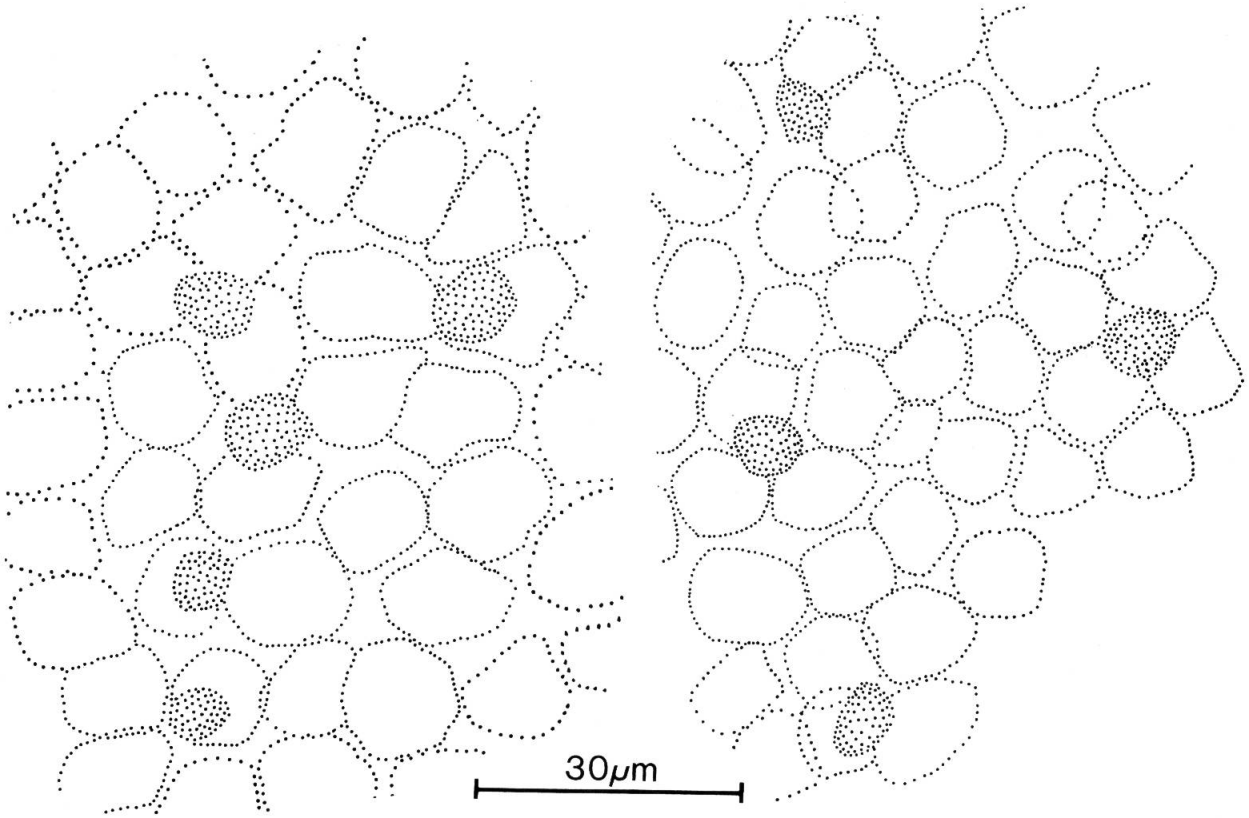

Fig. 2. — *Ulva interrupta* De Candolle; *Camera lucida* drawings of surface cells, showing isolated pigmented cells.

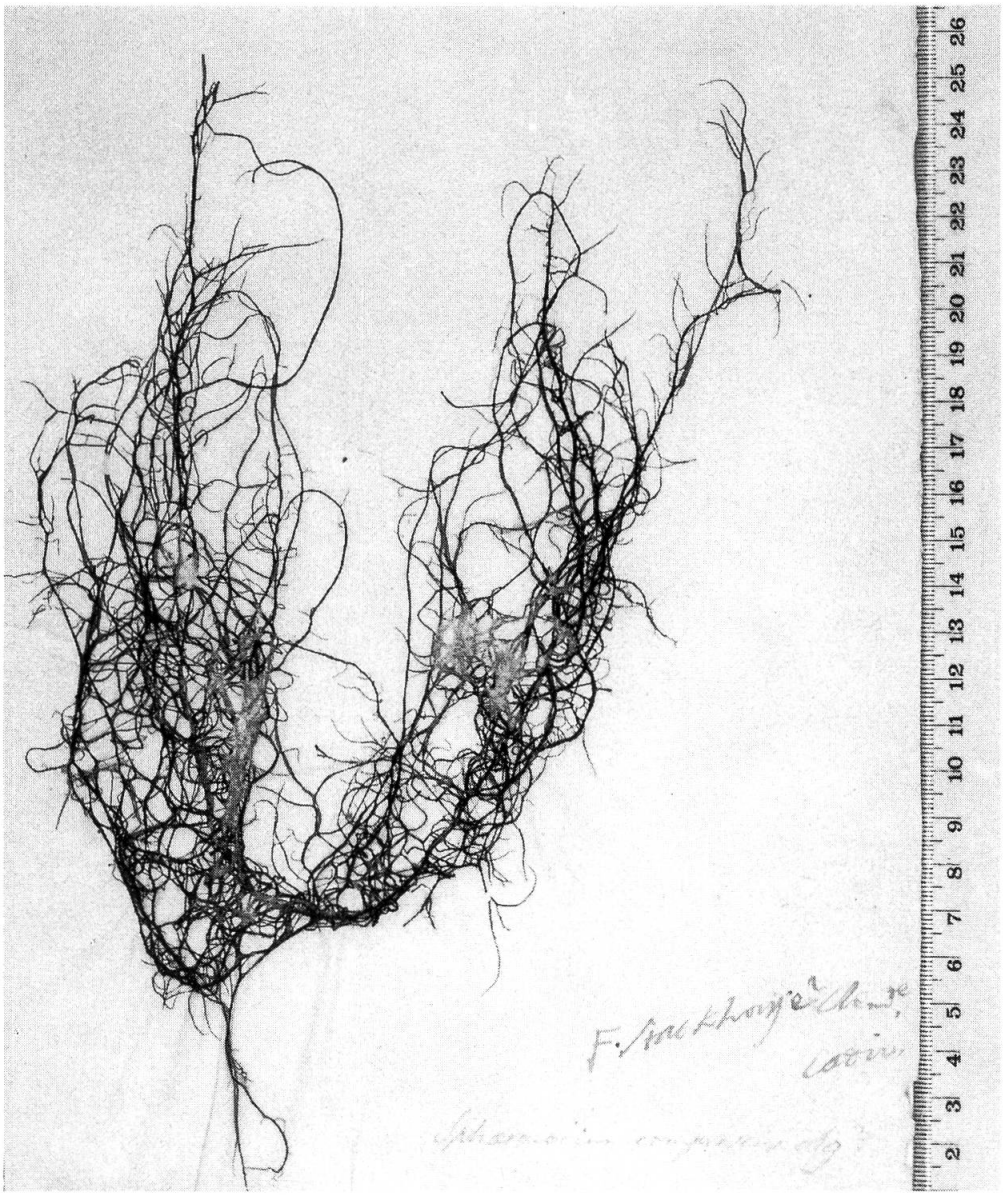

Fig. 3. — *Fucus stackhousei* Clemente. Lectotype specimen in MA.

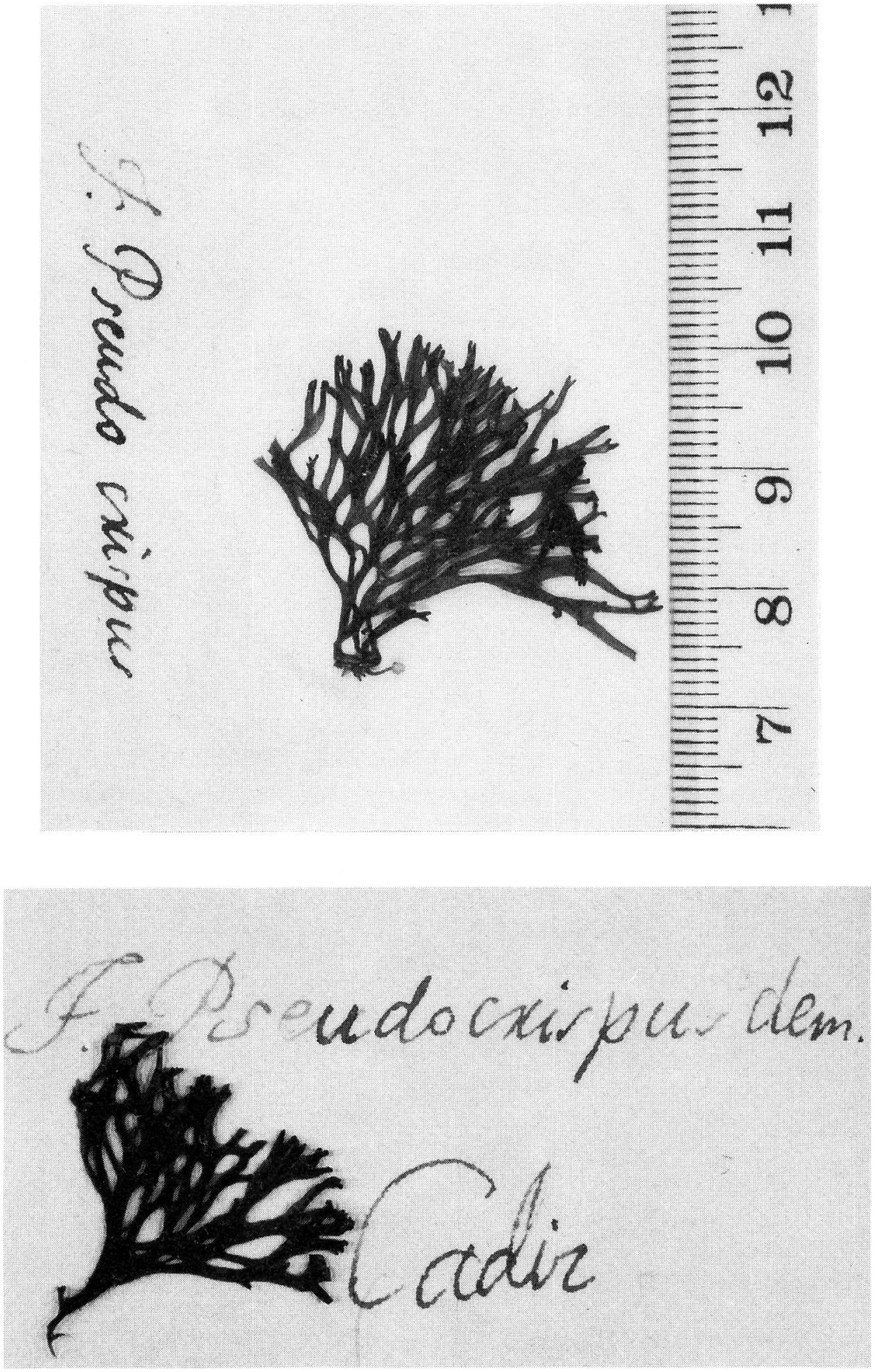

Fig. 4 — *Fucus pseudocrispus* Clemente. Syntypes in MA (lower specimen is designated the lectotype).

Scinaia pseudocrispa (Clemente) Wynne **comb. nov.** Basionym: *Fucus pseudocrispus* Clemente, 1807, p. 313. Taxonomic synonyms: *Ulva furcellata* Turner, 1801, p. 301. *Scinaia forcellata* Bivona-Bernardi, 1822, p. 232.

The subspecies recognized by MAGGS & GUIRY (1982) is also transferred:

Scinaia pseudocrispa subsp. **scandinavica** (Maggs & Guiry) Wynne **comb. nov.** Basionym: *S. forcellata* subsp. *scandinavica* Maggs & Guiry, 1982, p. 522, Figs. 5, 6, 12.

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