

NOMENCLATURAL NOTES ON CLEMENTE'S ENSAYO

by
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Resumen

SILVA, P. C. (1992). Notas nomenclaturales sobre el Ensayo de Clemente. *Anales Jard. Bot. Madrid* 49(2): 163-170 (en inglés).

Las contribuciones ficológicas de Don Simón de Roxas Clemente y Rubio (1777-1827) no son muy conocidas. En una lista de algas marinas anexa a su libro *Ensayo sobre las variedades de la vid común que vegetan en Andalucía* (Madrid, 1807), Clemente describió 41 táxones nuevos, que entraron en la literatura ficológica cuando él envió ejemplares a Dawson Turner en Inglaterra y Carl Agardh en Suecia. Todos los autores ulteriores—con excepción de Jacob Agardh, que podía examinar los ejemplares en el herbario de su padre— dependieron de las opiniones sobre los táxones de Clemente publicadas por C. Agardh. Un estudio reciente del herbario de Clemente (en MA) por Javier Cremades (Universidad de Santiago) ha producido varias combinaciones nuevas. *Scinaia pseudocrispa* (Clemente) Wynne es un nombre superfluo porque *S. furcellata* (Turner) J. Agardh no es un homónimo posterior de *S. forcillata* Bivona-Bernardi y no necesita reemplazarse. Las combinaciones propuestas *Champia intricata* (Clemente) Cremades y *Laurencia tenerrima* (Clemente) Cremades están basadas en homónimos posteriores y, por esto, no son sostenibles. Es dudosa la aplicación del nombre *Dictyopteris ambigua* (Clemente) Cremades.

Palabras clave: Clemente, algas marinas, *Dictyopteris*, *Scinaia*.

Abstract

SILVA, P. C. (1992). Nomenclatural notes on Clemente's Ensayo. *Anales Jard. Bot. Madrid* 49(2): 163-170.

The phycological contributions of Don Simón de Roxas Clemente y Rubio (1777-1827) are not well known. In a list of seaweeds appended to his treatment of the varieties of grape (*Ensayo sobre las variedades de la vid común que vegetan en Andalucía*, Madrid, 1807), Clemente described 41 new species and varieties, which entered phycological literature when he sent specimens to Dawson Turner in England and Carl Agardh in Sweden. All subsequent authors (except Jacob Agardh, who had access to his father's herbarium) relied upon C. Agardh's published opinions of the Clemente taxa. A recent study of Clemente's herbarium (at MA) by Javier Cremades (Universidad de Santiago) resulted in several new combinations. *Scinaia pseudocrispa* (Clemente) Wynne is superfluous because *S. furcellata* (Turner) J. Agardh is not a later homonym of *S. forcillata* Bivona-Bernardi and need not be replaced. The intended combinations *Champia intricata* (Clemente) Cremades and *Laurencia tenerrima* (Clemente) Cremades are based on later homonyms and hence are untenable. The application of the name *Dictyopteris ambigua* (Clemente) Cremades is uncertain.

Key words: Clemente, marine algae, *Dictyopteris*, *Scinaia*.

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Don Simón de Roxas Clemente y Rubio (1777-1827) and his contribution to marine phycology have long been obscured by a fog of ignorance and uncertainty. His name itself has proved puzzling to some bibliographers. PRITZEL, in his *Thesaurus literaturae botanicae*, first entered this Spaniard's name as Roxas Clemente y Rubio, Don Simón de (Ed. 1, 1848: 253) and later provided a much reduced entry under Clemente, Simón de Rojas (Ed. 2, 1872: 64). The correction was based on the bibliographic entry in COLMEIRO (1858: 195-197), which Pritzel cited. STAFLEU & COWAN took the opposite course in their *Taxonomic literature*, first entering his name as Clemente y Rubio, Simón de Rojas (Vol. 1, 1976: 510) and later providing a much amplified entry under Roxas Clemente y Rubio, Simón de (Vol. 4, 1983: 953-954). Phycologists consistently and correctly cited him as Clemente (see, for example, various works by C. Agardh, J. Agardh, Gréville, and De Toni).

Clemente was born in the village of Titaguas, province of Valencia. After beginning his studies in theology, he turned to oriental languages and natural sciences. He studied under two successive directors of the Royal Botanical Garden in Madrid, Casimiro Gómez Ortega and Antonio José Cavanilles, and afterwards was employed as librarian of the Garden. Clemente undertook botanical exploration in the vicinity of Madrid, in the Sierra de Guadarrama, and in the region of Andalucía. He favored cryptogamic plants and collaborated with Mariano Lagasca and Donato García in publishing an introductory account of Spanish cryptogams (LAGASCA & *al.*, 1802). This first part of a projected series deals solely with ferns and mosses. Clemente was joined by a Catalan, Domingo Badía, in visiting Paris and London, where he established botanical connections. He developed a keen interest in useful and cultivated plants, thus confronting the indifference accorded these plants by most botanists (then and now).

Clemente's contribution to our knowledge of algae is represented solely by an annotated list of seaweeds that he had encountered in Andalucía, with cited localities ranging from Sanlúcar de Barrameda in the Atlantic through the Strait of Gibraltar to Cabo de Gata in the Mediterranean. This list was appended to a treatise on the varieties of grapes cultivated in that region (*Ensayo sobre las variedades de la vid común que vegetan en Andalucía...*, 1807). Clemente prefaced his list with some remarkably insightful comments. He did not subscribe to the idea, prevalent at the time, that seaweeds, when torn loose from the substrate, can be transported such long distances as to induce errors in biogeographic assessment. Rather, he thought that the source of cast-up algae was nearby rocks. When the waters of the Gulf of Cádiz retreated as far as a quarter of a league (somewhat more than 1 km) during the extreme low tides of the solstices and equinoxes, Clemente saw various species that he had never seen growing at higher levels. Noting that the vertical distribution of each component of the marine vegetation was limited by specific tide levels with a precision greater than the effect of altitude on terrestrial plants, he thought it was possible, after taking into account the tidal patterns in various parts of the world, to describe a universal scheme of marine vegetational geography. With regard to this idea, Clemente was a pioneer, although he died before he could develop it. The first universal scheme of intertidal zonation based on original studies made at a variety of rocky sites was not published until 1949 by STEPHENSON & STEPHENSON.

Clemente proposed 42 nomenclatural novelties in his list of Andalusian sea-

weeds, including 29 new species (16 in *Fucus*, six in *Ulva*, five in *Conferva*, and two in *Tremella*), 12 new varieties (all in *Fucus*), and a new combination (in *Fucus*). His descriptions are unusually detailed in comparison with those of his contemporaries, most of them with dimensions and supplemented by comparisons with previously described species. While Clemente's *Ensayo* was immediately acclaimed by agriculturists, being translated into French in 1814 and German in 1821, it remained largely unknown by phycologists and is rarely encountered in libraries, except perhaps in Spain. The earliest reference to it in phycological literature is to be found in TURNER (1811: pl. 140), who published the first illustration of *Fucus cabrera* Clemente, based on a specimen included in a large parcel of marine plants from the neighborhood of Cádiz sent to Turner by Clemente. It seems likely that this parcel contained specimens of several of Clemente's new species of *Fucus*, so that it is surprising that only two others were illustrated by Turner, namely, *Fucus floresius* and *F. corneus* var. *sesquipedalis* (TURNER, 1819: pls. 256 and 257 *iota*). A fourth species, *F. multipartitus* Clemente, was considered by TURNER (1819: pl. 215) to be a synonym of *F. granateus* Lamouroux (LAMOUROUX, 1805: 68, pl. XXXIII: figs. 3, 4), from the Atlantic coast of France and Spain, although LAMOUROUX himself (1813: 125) had combined the latter species with *F. ocellatus* Lamouroux (in DE CANDOLLE, 1802: 131, pl. 9: figs. 2, 3) as *Delesseria ocellata* (Lamouroux) Lamouroux, at present considered a taxonomic synonym of *Nitophyllum punctatum* (Stackhouse) Greville.

Two specimens accompanied by manuscript names also were sent to Turner by Clemente. One, named *Fucus subglobosus* by Clemente, was referred by TURNER (1811: pl. 136) to *Fucus bursa* (L.) Turner, now known as *Codium bursa* (L.) C. Agardh. The other, named *Fucus lichenoides* by Clemente, was mentioned by Turner in a footnote to his plate 135, in which he expressed suspicion that this alga, "which... covers the rocks at Cádiz with irregular patches", was only a juvenile stage of *Fucus tomentosus* auct., now known as *Codium tomentosum* Stackhouse. While Turner correctly surmised that *Fucus bursa*, *F. tomentosus* auct., and *F. lichenoides* Clemente ms all belonged to *Codium*, a genus described by Stackhouse but not recognized by Turner, he incorrectly assessed the nature of *F. lichenoides*. I have examined the Clemente specimens in Turner's herbarium (K, housed at BM) and found that while *F. subglobosus* was correctly assigned to *Codium bursa*, *F. lichenoides* is referable to *C. adhaerens* C. Agardh.

Contemporaneously, C. Agardh was receiving specimens of marine algae from Clemente and to a much greater extent from Antonio Cabrera, a priest living in Cádiz. In his synoptical treatments of algae, C. AGARDH (1817, 1820-1828, 1824) considered 28 of the 41 taxa described by Clemente, but for only half of these did he explicitly indicate that he had a Clemente specimen in hand. For nine taxa he cited a Cabrera specimen but not a Clemente specimen, leaving five taxa for which his concept may have been based solely on Clemente's descriptions. Except for J. Agardh, who had access to his father's herbarium, phycologists subsequent to C. Agardh relied upon his published interpretations. GREVILLE (1830: lvi), for example, in transferring *F. heredia* and *F. multipartitus* to the genus *Chondrus*, failed to mention Clemente, citing "*Sphaerococcus Heredia*, Ag. p. 215" and "*Sphaerococcus multipartitus*, Ag. p. 216" as basionyms. It is interesting to note that in the phycological bibliography preceding the text of Greville's *Algae britannicae*, which usually proves to be an excellent source of information on

obscure publications, only the French edition of the *Ensayo* is listed, with the date erroneously given as 1804. A similar bibliography in ENDLICHER (1843: 2), which is obviously based on Greville, has a nearly identical entry for Clemente, including the erroneous date and two additional orthographic or typographic errors. It is unlikely that Greville ever saw this book, and even more unlikely that Endlicher saw it. DE TONI (1889: XXII) cited the Spanish edition, which he may have seen, but the erroneous date 1887 is given.

As of 1989, only six of Clemente's new taxa provided names for currently recognized species, all *Rhodophyceae*, as follows:

Gelidium sesquipedale (Clemente) Thuret in Bornet & Thuret, 1876: 61 (*Fucus corneus* Hudson var. *sesquipedalis* Clemente, 1807: 317).

Halymenia floresia (Clemente) C. Agardh, 1817: XIX (*Fucus floresius* Clemente, 1807: 312).

Halymenia trigona (Clemente) C. Agardh, 1822: 211 (*Fucus trigonus* Clemente, 1807: 318).

Phyllophora heredia (Clemente) J. Agardh, 1842: 94 (*Fucus heredia* Clemente, 1807: 314).

Pterosiphonia complanata (Clemente) Falkenberg in Schmitz & Falkenberg, 1897: 443 (*Fucus complanatus* Clemente, 1807: 316).

Rytidhlaea tinctoria (Clemente) C. Agardh, 1824: 160 (*Fucus tinctorius* Clemente, 1807: 316).

In addition, the distinctness of *Gracilaria multipartita* (Clemente) W. H. Harvey, 1846: pl. XV (*Fucus multipartitus* Clemente, 1807: 311), which was placed in the synonymy of *G. foliifera* (Forsskål) Børgesen by BØRGESSEN (1932: 7-9), is suggested by the results of hybridization studies made by GUIRY & FREMHAINN (1986: 635-636).

DIXON & IRVINE (1970) expressed the opinion that *Scinaia furcellata* (Turner) J. Agardh (J. AGARDH, 1851) is a later homonym of *S. forcellata* Bivona-Bernardi (BIVONA-BERNARDI, 1822) and that the latter is therefore the correct name for this well-known species. WYNNE (1989), aware that *Fucus pseudocrispus* Clemente had been placed in the synonymy of this species by C. AGARDH (1822: 212), as *Halymenia furcellata* (Turner) C. Agardh, attempted to corroborate this taxonomic decision by examining the type. At the time he wrote to Madrid, however, the Clemente collections were in the process of being studied as part of a doctoral thesis by Javier Cremades, working under the direction of Prof. Pérez-Cirera at the Universidad de Santiago, Santiago de Compostela. On the basis of a photograph of the type specimen, Wynne concluded that *F. pseudocrispus* was indeed representative of *Scinaia furcellata* and therefore proposed the combination *S. pseudocrispa* (Clemente) Wynne. Subsequently, the same combination was proposed by CREMADES & PÉREZ-CIRERA (1990a).

Other new combinations resulting from Cremades's study of the Clemente collections were extracted from his doctoral thesis (CREMADES & PÉREZ-CIRERA, 1990b; Cremades in CREMADES & PÉREZ-CIRERA, 1990c). Because phycologists are being asked to abandon such well-known names as *Helminthora divaricata* (C. Agardh) J. Agardh, *Platysiphonia miniata* (C. Agardh) Børgesen, *Scytosiphon lomentaria* (Lyngbye) Link, and *Enteromorpha ramulosa* (J. E. Smith) Hooker in favor of *H. stackhousei* (Clemente) Cremades & Pérez-Cirera, *P. deli-*

cata (Clemente) Cremades, *S. simplicissimus* ('*simplicissima*') (Clemente) Cremades, and *E. muscoides* (Clemente) Cremades, respectively, they eagerly await the publication of Cremade's thesis with the documentation and discussion supporting these new combinations.

The combination *Scinaia pseudocrispa* and four other combinations of Clemente's species call for some remarks.

***Scinaia pseudocrispa* (Clemente) Wynne**

DIXON & IRVINE (1970) pointed out that *Scinaia forcellata* Bivona-Bernardi (BIVONA-BERNARDI, 1822: 232, syntype localities: Palermo and Napoli, Italy) has at times been confused with *S. furcellata* (Turner) J. Agardh (J. AGARDH, 1851: 422), a combination made by J. Agardh when he decided that *S. forcellata* was conspecific with *Ulva furcellata* Turner (TURNER, 1801: 301, pl. I: fig. A, type locality: Sherringham, Norfolk, England). Some subsequent authors erroneously attributed the combination to Bivona-Bernardi. Moreover, TREVISAN (1848: 105, adnot.) had previously cited "*Scinaia furcellata*, Bivona", but this binomial must be considered an invalidly published orthographic variant in accordance with Art. 75.1 of the International Code of Botanical Nomenclature and thus has no effect on *S. furcellata* (Turner) J. Agardh. DIXON & IRVINE (1970) were of the opinion that the two epithets "have the same derivation and ought, therefore, to be treated as mere orthographic variants." Rejecting *S. furcellata* (Turner) J. Agardh as a later homonym of *S. forcellata* Bivona-Bernardi, they concluded that the latter is the correct name for this species. In fact, the two epithets are not mere orthographic variants. As stated by Dixon & Irvine, Bivona-Bernardi took the epithets *forcellata* from the name given to this alga by IMPERATO (1599: 736), who informally referred to it as "la forcellata". As used by Imperato, *forcellata* is an Italian adjectival noun, related to the words *forca* (fork) and *forcella* (little fork or wishbone) (*furca* and *furcilla* in Latin). BIVONA-BERNARDI (1822) cited "*Forcellata*" as if it were a generic name, and in synonymy he listed a Latin phrase name from CUPANI (1713), "*Fucus forcellata, lumbricalis...*" As an epithet in a scientific name, *forcellata*, being a noun rather than an adjective, remains unchanged, regardless of the gender of the generic name. It may be noted that in the Latin edition of IMPERATO (1695), "la forcellata" is rendered by "*Furcellaria*". Had Bivona-Bernardi used this name as an epithet, its grammatical role as a noun would have been more obvious. The epithet *furcellata* used by Turner is an adjective that declines in agreement with the gender of the generic name.

Regardless of the interpretation of the legitimacy of *Scinaia furcellata* (Turner) J. Agardh, the combination *S. pseudocrispa* (Clemente) Wynne is superfluous since *Fucus trigonus* Clemente 1807, with equal priority, had been transferred earlier to *Scinaia* as *S. trigona* (Clemente) Trevisan (TREVISAN, 1848: 105, adnot.). C. Agardh had referred *F. trigonus* to *Halymenia* in 1822 on the basis of a specimen sent by Cabrera, but CREMADES & PÉREZ-CIRERA (1990c) showed that Clemente's type is referable to *Scinaia*. The correct name for the species formerly called *Halymenia trigona* is *H. elongata* C. Agardh (C. AGARDH, 1822: 209), based on a collection by Cabrera from the Gulf of Cádiz.

***Champia intricata* (Clemente) Cremades**

The intended basionym, *Conferva intricata* Clemente, is a later homonym of

Conferva intricata Roth (ROTH, 1806: 228), a name applied to an alga from the lake Zwischenahner in Oldenburg, Germany. This alga has never been reinvestigated and its identity remains unknown. Because later homonyms are illegitimate and not priorable, *C. intricata* Clemente cannot serve as a basionym. The binomial *Champia intricata* must be attributed directly to Cremades and must date from 1990. Hence, the correct name for the species in question remains *Champia parvula* (C. Agardh) Harvey (*Chondria parvula* C. Agardh 1824: 207, type locality: Cádiz).

Laurencia tenerrima (Clemente) Cremades

The intended basionym, *Fucus tenerrimus* Clemente, is a later homonym of *Fucus tenerrimus* Esper (ESPER, 1800: 198, pl. CX), a name applied to an alga from the Adriatic sent to Esper by Wulfen. This alga has never been reinvestigated. Esper's plate probably represents *Chylocladia verticillata* (Lightfoot) Bliding, a name whose basionym (*Fucus verticillatus* Lightfoot 1777) has priority over *F. tenerrimus* Esper 1800. Because later homonyms are illegitimate and not priorable, *F. tenerrimus* Clemente cannot serve as a basionym. The binomial *Laurencia tenerrima* must be attributed directly to Cremades and must date from 1990. Hence, the correct name for the species in question remains *Laurencia papillosa* (C. Agardh) Greville (*Chondria papillosa* C. Agardh 1822: 345, new name for *Fucus papillosus* Forsskål 1775, not *F. papillosus* S. G. Gmelin 1768, type locality: Red Sea).

Scytosiphon simplicissimus ("simplicissima") (Clemente) Cremades

The generic name *Scytosiphon* is masculine, despite the suggestion by the epithet of the displaced name, *lomentaria*, that it is feminine. That epithet is a generic name and remains undeclined regardless of the gender of the generic name.

Dictyopteris ambigua (Clemente) Cremades

NIZAMUDDIN (1981) has distinguished three species of *Dictyopteris* from Libya. In the first species [*D. membranacea* (Stackhouse) Batters] the sori are said to be scattered on either side of the midrib, in the second species (*D. polypodioides* sensu Lamouroux) they are linearly arranged on either side of the midrib, while in the third species (*D. tripolitana* Nizamuddin) they are obliquely transverse on either side of the midrib. NIZAMUDDIN (1981) recorded all three species from the Atlantic as far north as England and in various parts of the Mediterranean. The fact that none of the three species has geographic integrity suggests the desirability of reinvestigating the taxonomy of northeastern Atlantic *Dictyopteris*.

NIZAMUDDIN (1981) circumscribed the first species to include the types of both *Fucus membranaceus* Stackhouse (STACKHOUSE, 1795: 13, pl. VI, type locality: Sidmouth, Devonshire, England) and *F. polypodioides* Desfontaines (DESFONTAINES, 1799: 421, type locality: Algeria). Both of these names are later homonyms (of *F. membranaceus* N. Burman 1768 and *F. polypodioides* S. G. Gmelin 1768, respectively) and thus not priorable. Art. 72.2, Note 1 of the International Code of Botanical Nomenclature can be invoked to find legitimate names for later homonyms. In the case of *F. polypodioides* Desfontaines, *Ulva polypodioides*

A. P. De Candolle (*in* LAMARCK & DE CANDOLLE, 1805: 15) can be considered a legitimate new name. In the case of *F. membranaceus* Stackhouse, however, all intended combinations based on this name must be considered superfluous and hence illegitimate new names because the species to which the binomials were applied included the type of *Ulva polypodioides*. A legitimate new name was inadvertently supplied by LAMOUROUX (1809a: 332; 1809b: 129), who separated *F. polypodioides* from *F. membranaceus* when he established the genus *Dictyopteris*, changing the epithet of the latter specific name to *elongata*. Nizamuddin's first species should have been called *D. polypodioides* (De Candolle) Lamouroux (LAMOUROUX, 1809a: 332; 1809b: 129). If *F. membranaceus* and *F. polypodioides* are considered distinct species, the former should be called *D. elongata* Lamouroux. The second species as treated by Nizamuddin under the name "*Dictyopteris polypodioides* Lamouroux" has no name, and if it should turn out to be distinct from both *D. polypodioides* and *D. elongata*, it may prove to have as its name *D. ambigua* (Clemente) Cremades. Until northeastern Atlantic *Dictyopteris* has been reinvestigated, the application of Clemente's *Fucus ambiguus* remains uncertain.

The commemorative epithets chosen by Clemente are unorthodox. He is the only author to my knowledge who used unmodified family names (*Cabrera*, *Heredia*, *Lagasca* and *Stackhouse*) rather than family names in the genitive case, as recommended by the International Code of Botanical Nomenclature (Rec. 73C.1). In accordance with Art. 73.10, the epithets may be corrected, without change of author or date, to *cabrerae*, *herediae*, *lagascae*, and *stackhousei*. In another example of heterodoxy, Clemente commemorated Don Francisco Flores with the epithet *floresius*. This should be corrected to *floresii*. The currently used names affected by these changes are *Phyllophora heredia* (Clemente) J. Agardh, *Helminthora stackhousei* (Clemente) Cremades & Pérez-Cirera, and *Halymenia floresii* (Clemente) C. Agardh.

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