

The nomenclatural and taxonomic status of *Jania sagittata* Blainville (Corallinaceae, Rhodophyta)

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Abstract – New evidence shows that *Corallina sagittata* J.V. Lamouroux and *Jania sagittata* Blainville (Corallinaceae, Corallinales, Rhodophyta) are based on the same type collection. Consequently, when *Corallina sagittata* is placed in *Jania*, the correct name is *J. sagittata* (J.V. Lamouroux) Blainville and not *Jania lamourouxiana* (Decaisne) J.H. Kim, M.D. Guiry & H.-G. Choi, as recently proposed.

Cheilosporum / Corallina / Corallinaceae / Corallinales / Jania / nomenclature

Résumé – De nouvelles preuves montrent que *Corallina sagittata* J.V. Lamouroux et *Jania sagittata* Blainville (Corallinaceae, Corallinales, Rhodophyta) sont basés sur le même type. Par conséquent, lorsque le taxon *Corallina sagittata* est placé dans *Jania*, le nom correct est *J. sagittata* (J.V. Lamouroux) Blainville et pas *Jania lamourouxiana* (Decaisne) J.H. Kim, M.D. Guiry & H.-G. Choi, comme cela a récemment été proposé.

Cheilosporum / Corallina / Corallinaceae / Corallinales / Jania / nomenclature

INTRODUCTION

The nomenclatural and taxonomic status of *Jania sagittata* Blainville (1834: 550, pl. 96, figs 2, 2a) (Corallinaceae, Rhodophyta) have been surrounded by uncertainty. When Kim *et al.* (2007: 1318) concluded that *Corallina sagittata* J.V. Lamouroux belonged to *Jania*, they thought that the prior existence of *Jania sagittata* Blainville precluded using the Lamouroux name as the basis for a combination in *Jania*. Kim *et al.* (2007: 1318) also felt that Blainville's name could not be applied with certainty to any entity.

The present study was undertaken to determine the basis and status of the name *Jania sagittata* Blainville, to determine whether there was any original material as defined in Art. 9.2, Note 2 of the *International Code of Botanical Nomenclature* (McNeill *et al.*, 2006) other than the two illustrations in Blainville, and to determine whether Blainville's name could be linked to *Corallina sagittata* J.V. Lamouroux.

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MATERIALS AND METHODS

Data were obtained from relevant publications of Blainville, Lamouroux and others, and from electronic resources. Searches for specimens labelled *Jania sagittata* by Blainville were conducted in the Département “Milieux et Peuplements Aquatiques” (in collections of the former laboratory “Biologie des Invertébrés Marins”) and in the “Département Systématique et évolution” (in algal collections of the “bâtiment de Cryptogamie”) (**PC**) at the Muséum national d’histoire naturelle, Paris; Blainville collections putatively are housed in both departments. The type of *Corallina sagittata* J.V. Lamouroux, currently in Lamouroux’s herbarium at the “Laboratoire de Biologie et Biotechnologies Marines”, Université de Caen (**CN**), also was examined. Herbarium abbreviations follow *Index Herbariorum*, formerly in print (Holmgren *et al.*, 1990) and now online (Holmgren & Holmgren, 1998 [continuously updated]). The *International Code of Botanical Nomenclature* (ICBN) cited is the Vienna edition (McNeill *et al.*, 2006).

RESULTS

Corallina sagittata J.V. Lamouroux

Lamouroux based *Corallina sagittata* on material from “l’Île-de-France” (= Mauritius). The protologue is commonly cited (e.g. Johansen, 1977: 178, Silva *et al.*, 1996: 229, Kim *et al.*, 2007: 1317) as occurring in Quoy & Gaimard (1824-1826: 625), but our evidence suggests that it first appeared in Lamouroux *et al.* (1824: 215).

Quoy & Gaimard (1824-1826) usually occurs in two bound volumes (text and atlas); the title pages of both are dated 1824. Sherborn & Woodward (1901: 392), however, determined that the Quoy & Gaimard text was published in 16 livraisons between 26 June 1824 and 14 June 1826. Lamouroux’s account of *Corallina sagittata* is on p. 625 in Livraison 15, published (Sherborn & Woodward 1901: 392) on 26 April 1826. By contrast, p. 215 in Lamouroux *et al.* (1824) is in part 1 of Tome 2 of *Histoire Naturelle des Zoophytes ou Animaux Rayonnés*, published (Sherborn & Woodward, 1906: 579; Evenhuis, 2003: 37) on 17 July 1824¹. The matter is not entirely clear-cut, however, because Lamouroux (in Lamouroux *et al.*, 1824: 215) cited two illustrations (pl. 95, figs 11, 12) (reproduced here as Fig. 1) of *Corallina sagittata* prepared for his later account in Quoy & Gaimard (1824-1826).

Unfortunately, Sherborn & Woodward (1901) did not provide precise publication dates for plates in the *Atlas*, and we have not been able to clarify the situation further. We cannot rule out, however, that plate 95 was completed but not yet published prior to 17 July 1824 when Lamouroux’s initial account of *C. sagittata* was published. This possibility is supported by the words “Lamouroux

1. Tome 2 of *Histoire Naturelle des Zoophytes ou Animaux Rayonnés* constitutes one of over 150 volumes of the *Encyclopédie Méthodique* published from 1782-1832. The title page of Tome 2 is dated 1824, but according to Evenhuis (2003: 37), Tome 2 was published in two parts: part 1 (pp. i-viii, 1-376), containing Lamouroux’s accounts of *Amphiroa* (pp. 49-53) and of *Corallina* (pp. 212-217) (including *C. sagittata*, p. 215), appeared on 17 July 1824, while part 2 (pp. 377-819), which includes Lamouroux’s accounts of *Jania* and *Melobesia*, appeared on 26 September 1827.

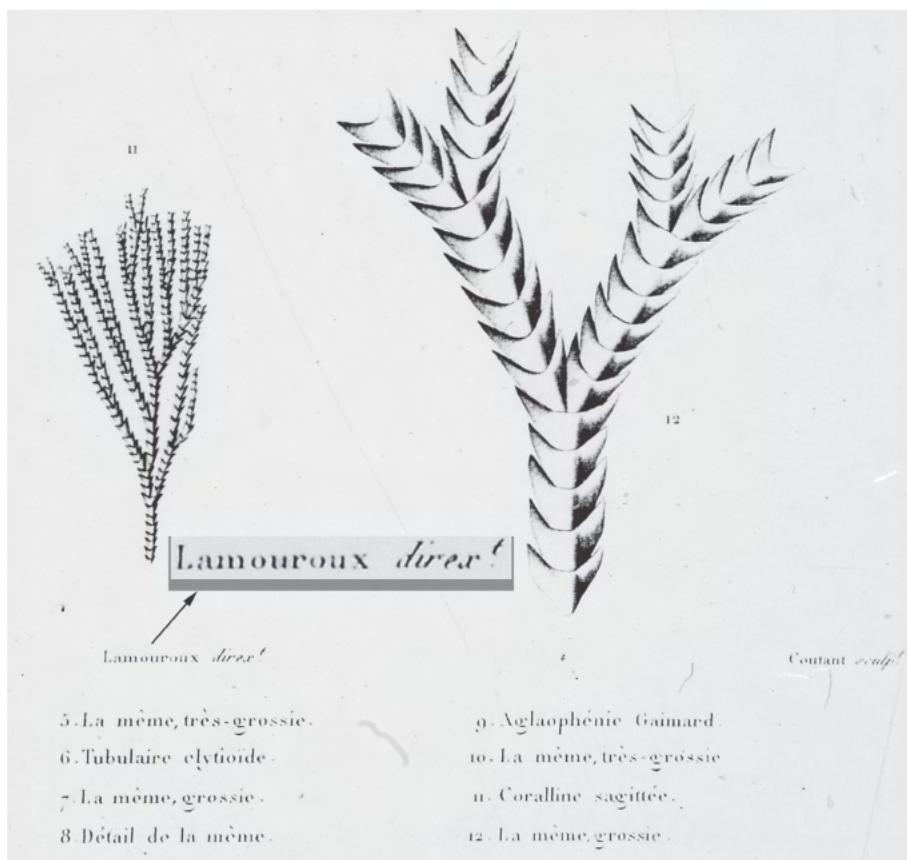


Fig. 1. The two illustrations cited by Lamouroux (in Lamouroux *et al.* 1824: 215) in the protologue of *Corallina sagittata*. Figures reproduced from Plate 95, figs 11 & 12 of the Atlas volume associated with Quoy & Gaimard 1824-1826. Legends to figs 5-10 below figures pertain to various invertebrate animals also shown on pl. 95. Note the phrase "Lamouroux direx^t". [=direxit, meaning directed or approved by Lamouroux] below left-hand drawing (enlarged as an inset).

"direx^t" [= *direxit*, meaning directed or approved by Lamouroux] which are printed below his fig. 11 on plate 95 (see Fig. 1)². Thus, Lamouroux definitely saw the plate before his death on 26 March 1825.

Lamouroux's herbarium contains a single Mauritius (l'Île-de-France) specimen (Fig. 2) of *Corallina sagittata*, treated here as the holotype. It consists of parts of two erect axes up to 35 mm long, each composed of numerous sagittate (arrow-head shaped) intergenicula, some with conceptacles. The illustrations on plate 95 in Quoy & Gaimard (1824-1826) (reproduced here as Fig. 1) closely resemble holotype material, but we cannot match them precisely to particular parts of the holotype.

2. The term *direx^t* [= *direxit*] (from the Latin) was commonly added to engravings of this period to indicate that the author had seen and approved the drawings. The phrase "Lamouroux *direx^t*" also occurs on other plates in Quoy & Gaimard (1824-1826) that relate to Lamouroux's account of the "polypiers flexibles".

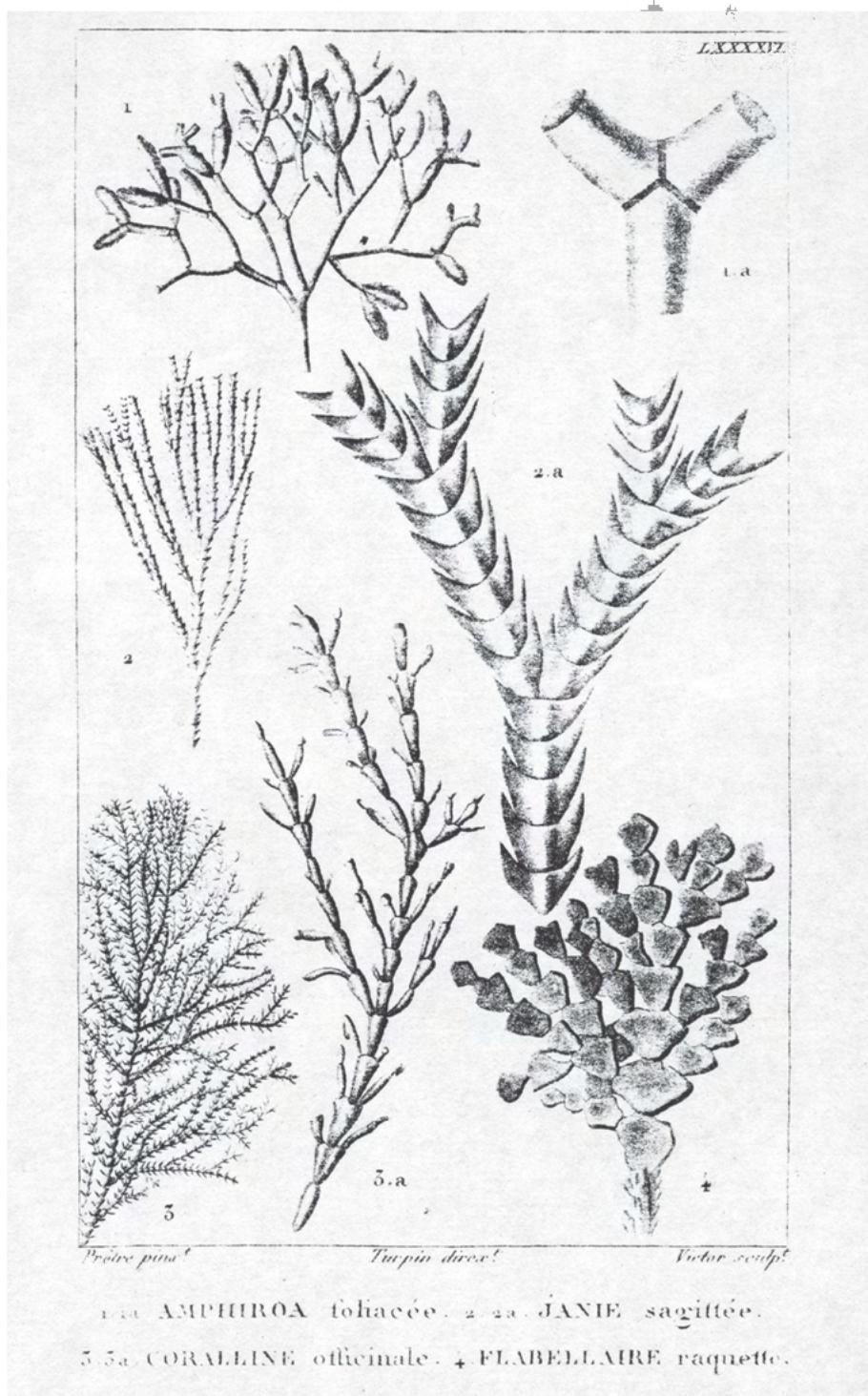


Fig. 2. Holotype of *Corallina sagittata* Lamouroux. Name and collection locality data written by Lamouroux. Name and locality data occur on a loose label associated to the holotype but are copied onto present figure. Enlarged inset (arrow) (without scale) shows intergeniculum morphology. Additional labels accompanying holotype not shown.

Corallina sagittata subsequently was transferred into *Arthrocardia* (Decaisne 1842a: 359, as “*A. sagittata*, Dne” without direct reference to Lamouroux), and then into *Amphiroa* (Decaisne 1842b: 125, as “*Amphiroa* (*Cheilosporum*) *sagittata*”, with direct reference to Lamouroux’s account in Quoy & Gaimard). Zanardini (1844a:187; 1844b: 1025) then elevated *Amphiroa* Section *Cheilosporum* Decaisne to generic rank [i.e. *Cheilosporum* (Decaisne) Zanardini] and explicitly designated *Corallina sagittata* as the type but without formally transferring it into the genus. Areschoug (1852: 545) subsequently effected formal transfer into *Cheilosporum* as *C. sagittatum* (J.V. Lamouroux) J. Areschoug.

Cheilosporum was recognized as a distinct genus until Kim *et al.* (2007) concluded that it was a heterotypic synonym of *Jania* (Lamouroux, 1812: 186). In

Fig. 3. Plate 96 reproduced from Blainville (1834). Blainville’s figs 2 and 2a are of “JANIE sagittée” (*Jania sagittata*).



Prêtre pince!

Turpin direct!

Victor sculpt.

1-1a AMPHIROA foliacée. 2-2a JANIE sagittée.

3-3a CORALLINE officinale. 4 FLABELLAIRE raquette.

transferring the type species of *Cheilosporum* into *Jania*, Kim *et al.* (2007: 1317-1318) thought they were precluded from using *Corallina sagittata* J.V. Lamouroux (the basionym of *Cheilosporum sagittatum*) as the basis for a name in *Jania* because of the prior existence of *Jania sagittata* Blainville (1834: 550). Consequently, Kim *et al.* (2007: 1317-1318) adopted the name *Jania lamourouxiana* (Decaisne) J.H. Kim, Guiry & H.-G. Choi (basionym: *Amphiroa lamourouxiana* Decaisne, 1842b: 125) as the next earliest available epithet, based, no doubt, on the publication of Johansen (1977: 178), who treated the types of *Amphiroa lamourouxiana* and *Corallina sagittata* as synonyms.

***Jania sagittata* Blainville**

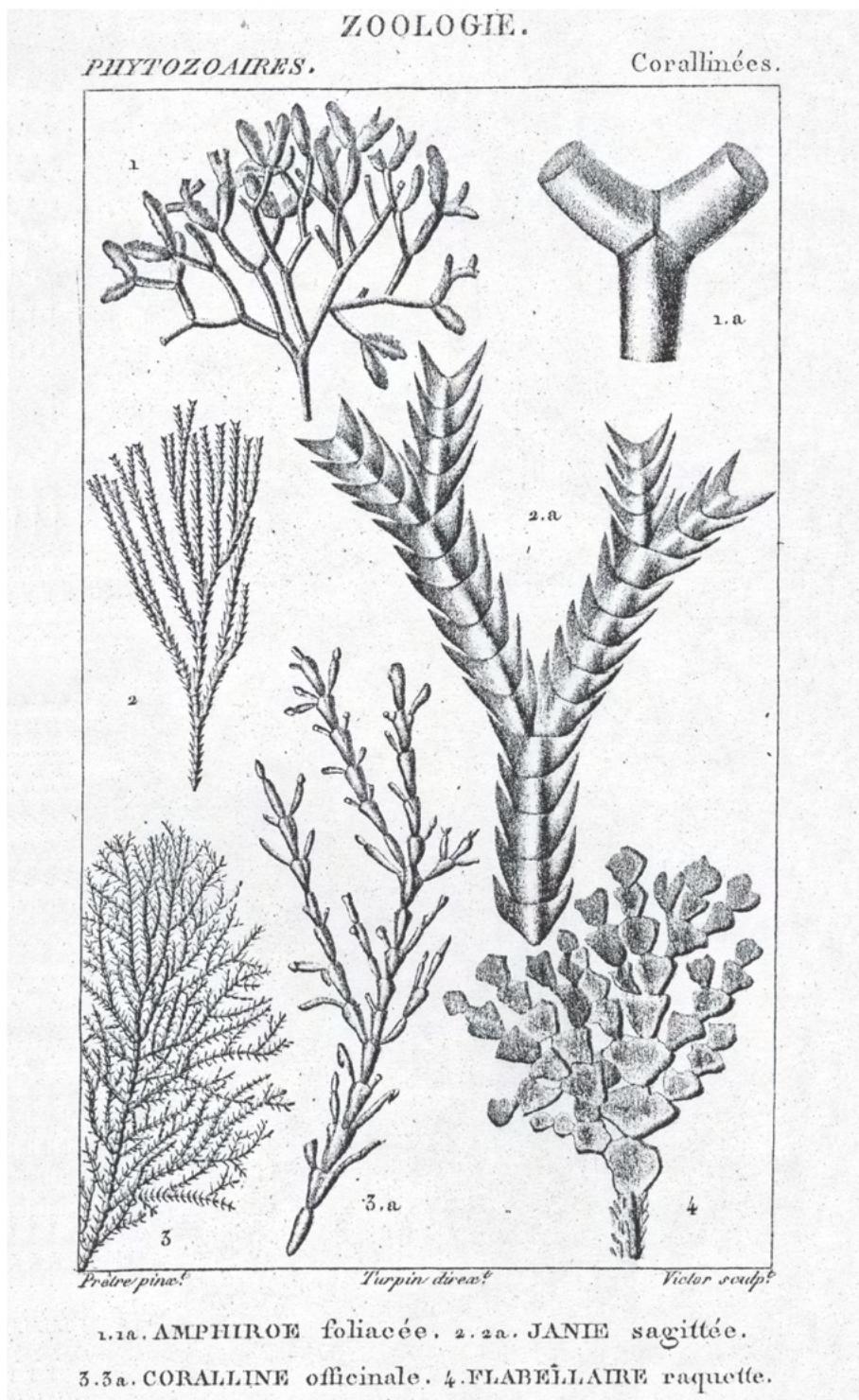
Jania sagittata Blainville (1834: 550, pl. 96, figs 2, 2a) (cited as pl. 65 on p. 550 but corrected to pl. 96 on p. 644 in the *Errata de citations des figures*) was published without a written description or diagnosis. Blainville (1834) did not cite specimens or indicate what material his illustrations were based upon. Kim *et al.* (2007: 1318) noted, however, that the name is validly published because Blainville (1834: pl. 96, figs 2, 2a) included two illustrations showing details aiding identification, thus meeting the requirements of ICBN Arts 42.3, 42.4, 44.1 and 44.2 (Mc Neill *et al.*, 2006).

Although Blainville specimens putatively occur in the Département “Milieux et Peuplements Aquatiques” (the former laboratory Biologie des Invertébrés Marins) and the Département “Systématique et évolution” (“bâtiment de Cryptogamie”) (**PC**) at the Muséum national d’Histoire naturelle in Paris, none labelled *Jania sagittata* by Blainville were found during the present study. Thus the problem of what material Blainville’s illustrations were based on remained unresolved.

The answer emerged from a search that showed that the illustrations of *Jania sagittata* in Blainville 1834 already had been published twice previously! Plate 96 in Blainville 1834 (reproduced here as Fig. 3) is virtually identical to an unnumbered plate (reproduced here as Fig. 4) entitled “ZOOLOGIE PHYTOZOAIRES Corallinées” published in Blainville 1830b³. Figs 2 & 2a on both plates are identical, and both are labelled with the non-Latin name “Janie sagittée”. Blainville 1830b accompanies a lengthy article (Blainville 1830a) on “zoophytes”. The text entry for *Jania* in Blainville 1830a (pp. 512-513) also is identical to that in Blainville 1834 (pp. 549-550), except that the single critical line beginning “La J. sagittée. *J. sagittata*”, just after the entry for *Jania micrarthrodia* on p. 550 in the 1834 version, is not present in the 1830a version. It seems likely that Blainville only noticed that the line was missing after publication of the 1830a account, correcting the error of omission in the 1834 account.

3. Although no number appears on the plate, Janie sagittée is listed in accompanying text[Blainville 1830a: 27 (in the Table des planches for the Zoophytes), 30 (in the Table alphabétique des planches des Zoophytes)] as occurring on plate 65. In Blainville 1834, the plate was numbered LXXXVI, but erroneously referred to as pl. 65 on p. 550; the error was corrected on p. 644.

Fig. 4. Unnumbered but otherwise identical plate (to that shown here in Fig. 3) reproduced from Blainville 1830b. Blainville’s figs 2 and 2a are of “JANIE sagittée” (*Jania sagittata*). 



Blainville did not identify the source of his figures of “*Jania sagittée*” in either the 1830 or 1834 publications, but indicated (Blainville, 1834: v) that he had visited the Lamouroux herbarium in Caen in the autumn of 1829. During the present study, however, we determined that Blainville’s 1830 figures 2 and 2a (reproduced here in Fig. 4) & his 1834 figures 2 and 2a (reproduced here in Fig. 3) are identical to and were copied without acknowledgement from plate 96, figs 11 & 12 of Quoy & Gaimard (1824–1826), the very figures (reproduced here as Fig. 1) cited by Lamouroux in Lamouroux *et al.* (1824) in the protologue of *Corallina sagittata*! Thus *Jania sagittata* Blainville and *Corallina sagittata* J.V. Lamouroux are based on the same original material and are homotypic synonyms.

DISCUSSION

Our results provide firm evidence that *Jania sagittata* Blainville (1834) constitutes a new combination for *Corallina sagittata* J.V. Lamouroux (in Lamouroux *et al.*, 1824), to be cited as *Jania sagittata* (J.V. Lamouroux) Blainville. The sole basis of Blainville’s name (the Lamouroux figures he copied without acknowledgement) constitutes an indirect reference back to the basionym (*Corallina sagittata*) and thus validates the new combination in accord with ICBN Art. 33.2.

Jania sagittata (J.V. Lamouroux) Blainville is the earliest available name for the Lamouroux species when it is placed in *Jania*. *Jania lamourouxiiana* (Decaisne) J.H. Kim, Guiry & H.-G. Choi (2007: 1317) (basionym: *Amphiroa lamourouxiiana* Decaisne, 1842b: 125) is not required as a substitute. When *Amphiroa lamourouxiiana* is treated as a heterotypic synonym of *Corallina sagittata* (see Johansen, 1977: 178), and when *Corallina sagittata* is placed in the genus *Jania*, both *Amphiroa lamourouxiiana* and *Jania lamourouxiiana* become heterotypic synonyms of *Jania sagittata* (J.V. Lamouroux) Blainville.

Acknowledgements. Sincere thanks are due Paul Silva and an anonymous reviewer for comments on the original manuscript. Paul Silva also provided further information on the Blainville publications. Jean-Loup d’Hondt, Département “Milieux et Peuplements Aquatiques”, Muséum national d’Histoire naturelle, Paris, determined that no Blainville specimens labelled *Jania sagittata* were present in his department. Trevor Phillips, Department of Botany, La Trobe University, kindly assisted with the preparation of Figs 1, 3 and 4.

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