NOTES ON PLATYCERIUM DESV. I.
NOMENCLATURE AND TYPIFICATION OF THE GENUS AND SPECIES IN DESVAUX'S ORIGINAL PUBLICATION OF 1827

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SUMMARY

Because of their size Platyceriums are in herbaria represented mostly by fragmentary specimens; often only nest-fronds or foliage fronds are represented in a mostly mutilated form. This, and the difficulty of placing Plukenet's pre-Linnean protologue and plate, the independent description of Platycerium alcicorne by both Willemet and Swartz, and the various interpretations of three of Desvaux's four species, have led to great confusion on identity and typification.

P. alcicorne Desv. (new name, 1827) is accepted as the correct name for the Madagascar and East African species. It is lectotypified by Plukenet's phrase-name Neuroplatyceros, etc. of which the type specimen after which the plate was drawn is in the Sloane Herbarium, London.

P. stemaria (Beauv.) Desv. is a species from West Africa; type material is in the De Jussieu Herbarium at Paris.

P. angustatum Desv. is an Australian species of which the type is in the Paris Herbarium; its correct name is P. bifurcatum (Cav.) C. Chr.

INTRODUCTION

Several efforts have been made in recent years to clear up the confusion on the typification, and its effect on nomenclature of the genus and species of Platycerium, and the identity of the latter, notably by Pichi-Sermolli (35), Tardieu-Blot (36), Morton (37), and Joe (38).

An examination of certain type specimens have brought to light new points of view which have induced me to contribute an assumedly better understanding of the situation.

Acknowledgments. I express my gratitude for general encouragement and support to professors Dr. R. E. Holttum and Dr. C. G. G. J. van Steenis; for individual information on technical problems to Mr. C. Jermy, London, Miss F. M. Jarrett, Kew, Dr. D. Meijer, Berlin-Dahlem, Dr. R. C. Bakhuizen van den Brink Jr, Leyden, to the Madrid Herbarium for photographs of a type, to Dr. E. A. C. L. E. Schelpe for supplying information on material which might have been studied by O. Swartz in the Thunberg herbarium at Uppsala, and to the directors of the Royal Botanic Garden, Kew, the Muséum d'Histoirre Naturelle, Phanérogamie, Paris, the Rijksherbarium, Leyden, the National Botanic Garden of Belgium, Brussels, and the Keeper of the British Museum (Nat. Hist.), London, for having access to their collections.

THE VALIDITY OF THE GENERIC NAME PLATYCERIUM

When Desvaux (1) defined the genus Platycerium in 1827 he included 4 species in it, 3 of which were originally described in Acrostichum; the fourth was originally assigned to Osmunda, as O. coronaria O. F. Miill. (2), in 1785, but 15 years later transferred to Acrostichum, as A. biforine by Swartz (3), who disregarded Müller's epithet.

Though the generic status of this first segregate from Acrostichum was never challenged,
according to Bower (4) due to the 'very distinctive vegetative characters which it presents', its name has been subject to two dissensions, both futile. In 1845 Fée (5) accepted the name Neuroplatyceros, taken from a phrase-name used by Plukenet (6) in a pre-Linnean work.

In 1899, and 1905, Underwood (7, 8) advocated the use of the name Alcicornium which Gaudichaud (9) had used in passing in his report on the Voyage of the 'Uranie', published 1826, p. 48 as follows: "... une fougère très-remarquable qui abonde sur les rameaux de tous les tamariniers: c'est l'acrostichum alcicorne, ou du moins une espèce ou variété du genre (alcicornium) qu'on ne manquera pas de faire de ces plantes dès qu'elles seront mieux examinées". The name Alcicornium, being used in a provisional sense, without description, and not definitely accepted by Gaudichaud, is clearly invalidly published. Moreover, Gaudichaud, in the same work withdrew the name Alcicornium in favour of Platycerium (9, p. 307) in 1828, one year after Desvaux's work was published.

Christensen (10), and of course Copeland (11) correctly adopted Platycerium; Ching (12) left it undecided pending decision by the Committee. In 1954 the Subcommittee for Generic Names of Pteridophyta unanimously voted against its conservation, as being unnecessary (13).

It was then not considered that there exists a literatim, post-Linnean reprint of Plukenet's 'Amaltheum botanicum', edited by Davies, Payne & Reimers, issued at London, 1769, antidating Desvaux. This makes, however, little difference as Plukenet's phrase-name cannot be considered to establish a genus in the sense of the Code.

In 1809 Schkuhr (14) published a replica of Plukenet's plate which he referred, with Plukenet's phrase-name, to the synonymy of Acrostichum alcicorne Sw.

THE TYPIFICATION OF PLATYCERIUM

As said above Desvaux referred four species to his new genus, literatim as follows:

PLATYCERIUM N. Neuroplatyceros Pluk., Schk. Frondes bifurmis; fertilibus api partim dense sporangiferis, partim nudis.

1. P. alcicorne N. Acrostichum alcicorne (SW., Fil., WILLD., Excl. syn., SCHK., Fil., t. 2 (PLUK., Am., t. 429, f. 2).

J. Smith (17) was the first to typify the genus in 1875 and he indicated Acrostichum alcicorne Sw. as the type species. His choice must be followed although this name is nomenclaturally illegitimate.

Christensen in 1906 (10, p. iii), followed by Copeland (11, p. 179) and some later authors, however, accepted Acrostichum alcicorne Willemet as the name of the type species. This name is an earlier homonym of A. alcicorne Sw. and based on a different type. As the type species must be selected from the original material, and Desvaux did not refer to Willemet's name, Christensen's typification is adverse to the Code and is to be rejected.

Pichi-Sermolli (35, p. 435) assumed that both A. alcicorne Sw. and A. alcicorne Willemet could not be properly identified and were for that reason, in his opinion, not eligible to be accepted as the type species. He thought it advisable to select Desvaux's second species, A. stemmario Beauv. for the purpose. As this is adverse to J. Smith's much earlier typification, and moreover, as will be shown later, A. alcicorne Sw. is well identifiable, Pichi-Sermolli's choice must also be rejected.
THE TYPIFICATION, IDENTITY, AND CORRECT NAME OF PLATYCYERIUM ALCICORNE (SW.) DESV.

Desvaux, whose four species are all good species, based P. alcicorne Desv. on Acrostichum alcicorne Sw. Fil. [= Syn. Fil. (15)], Willd. [= Sp. Pl. (16)], Excl. syn., adding Schk. Fil. t. 2, the latter being Plukenet’s plate.

Swartz’s excluded synonyms were Acrostichum stemaria Beauv., A. bifurcatum Cav., leaving Neuroplatyceros aethiopicus Pluk. as the only reference attached to the name A. alcicorne Sw. As Desvaux based his second species, P. stemaria, on the first excluded synonym, adding to it, with a question mark A. bifurcatum Cav., it cannot be questioned that Desvaux very intentionally based P. alcicorne on Plukenet’s description and plate; this is also shown by his adding the reference to Schkuhr’s reproduction of it. As to the exclusion of the synonyms mentioned by Willdenow: the latter gave an almost literatim version of Swartz’s treatment, and is thus irrelevant.

It follows indubitably that whereas Desvaux took the epithet ‘alcicorne’ from Swartz, that the type of P. alcicorne (Sw.) Desv. is bound up with the type of A. alcicorne Sw.; it will appear significant that Desvaux emphatically excluded all synonyms, except the reference to Plukenet’s description and plate.

Though Desvaux referred to Acrostichum alcicorne Sw. “Fil.” [= Synopsis Filicum, 1806] Swartz’s first description appeared five years earlier, namely in Schrader’s Journal of 1801 (3) which reads as follows (literatim):

*A. alcicorne, frondibus palmatis erectis, lacinii dichotomis lanceolatis obtusis versus apices fructiferis: primordialibus reniformibus lobatis venosis. *  
Neuroplatyceron. Pluk. am. phyt. t. 429. f. 2.

This fully confirms the typification given above. In his later Synopsis Filicum Swartz widened the circumscription, but Desvaux restricted it to Swartz’s initial concept.

Now the question arises whether Swartz based his description only on Plukenet’s plate, or whether he had also characters of herbarium material incorporated. In comparing his description with Plukenet’s plate, which depicts a poor, sterile Platycteriun-like foliage frond, it appears that Swartz must have had also other material, as he refers in his description also to fertile apices and to nest-fronds. It may be added here that Plukenet’s phrase contains no additional information and no reference to the country of origin of his material.

Fortunately, it was already pointed out by Carruthers (18) in 1900 that the actual specimen after which Plukenet’s plate was drawn, is preserved in the Sloane Herbarium in the Botany Department of the British Museum, in volume 102, fol. 194. It bears a label of Plukenet reading “Hemionitis platyceros ex Insula Johanna”; the latter island is one of the Comores, formerly frequented by sailing ships going east for victualing. The sheet bears also an annotation “Tab. 429. f. 2. RHS 54” which is the reference to Plukenet’s Amaltheum. The late Dr. Alston studied the specimen and indicated it as the type specimen of “Acrostichum alcicorne Sw. in Schr. Journ. Bot. 1800, pt 2, p. 11 (1801) non Willem. 1796”; furthermore there is a label of his identification ‘Platycteriun alcicorne (Sw.) Desv.’, and in pencil a reference to Carruthers’ observation.

The specimen is without the slightest doubt a slightly deformed sterile foliage frond of the Madagascarian—E. African species.

In the Sloane Herbarium there is another (beautiful, but also sterile) sheet of the same species in volume 92, fol. 70, which Plukenet described in his Mantissa (1700) 82 as “Felix sive Hemionitis multifida platyceros, etc.”; also this originated from Johanna I.

Swartz’s description of 1801 leaves also no doubt about the identity of A. alcicorne,
in mentioning characteristic characters of the Madagascan species, viz: erect, apically fertile fronds with obtuse ultimate lobes and reniform nest-fronds.

From his mention of the nest-fronds, which are, as said above, neither depicted by Plukenet nor present in the British Museum specimen, it must be deduced that Swartz must have had also for his 1801 description access to other material. It was of interest to find this out.

In Swartz’s own herbarium at Uppsala there are apparently no specimens of Platycerium. Dr. Schelpe after a visit to Uppsala confirmed this.

Another Uppsala herbarium from which Swartz might have obtained his additional information is that of Thunberg. At my request Dr. Schelpe kindly also investigated whether this contains Platycerium material. Thanks to his kind collaboration it appeared that in the Thunberg Herbarium three numbers are preserved, viz:

No. 24391 — A small plant with oblong nest-fronds and a small fertile frond. Sierra Leone; ‘Afzelius’ written on the reverse.
No. 24392 — Plant with no data on collector or locality. According to Schelpe certainly the West African species.
No. 24393 — A mature fertile frond; e Madagascaria; ‘Oldenburg’ written on the reverse.

Thunberg’s material belongs to two species, numbers 24391 and 24392 to P. stemaria (Beauv.) Desv., the last numbered 24393 to P. alcicorne (Sw.) Desv.

However, as nest-fronds are lacking in this specimen 24393 Swartz cannot have used this exclusively for his description in 1801.

Summarizing the above given facts and their discussion, it is clear, as Alston found out long ago, that the specimen in the Sloane herbarium, derived from Johanna I. in the Comores and depicted in Plukenet’s Amaltheum must be designated as the lectotype specimen of Acrostichum alcicorne Sw.

After having thus straightened out the typification and identity of the species, we must decide on its correct name and its synonymy.

On this there has been a much varied discussion by Underwood (8), Copeland (11), Pichi-Sermolli (35), Tardieu-Blot (36), and Morton (37). The lack of unanimity of opinion is partly due to the fact that these authors were not aware of many of the above given facts. Mostly, however, conflicting opinions were due to the uncertainty of the identity of the type and the fact that the name Acrostichum alcicorne Sw. 1801 is nominclaturally illegitimate, being a later homonym of Acrostichum alcicorne Willemet (19), published in 1796, (literatim) as follows:

\[ \text{Acrostichum (alcicorne) frondibus cuneiformibus lobatis: lobis dichotomis. N.} \]
\[ \text{Habitat in Madagascari.} \]
\[ \text{Stadtmannus plantam siccam dabat.} \]
\[ \text{Fructificatio non adest in meo specimine. In altero loborum aversam partem occupabat.} \]

The type specimen is not traced and the identity cannot be established beyond doubt. This is regrettable but otherwise irrelevant for our reasoning. The only thing which counts is that it is anyway an earlier homonym, preventing the legitimate use of Swartz’s epithet alcicorne in Acrostichum.

Copeland (11) obviously assumed that Desvaux must have known of Willemet’s publication, though Desvaux omitted any reference to Willemet’s paper. Copeland proposed as authority for Platycerium alcicorne: ‘(Will.) Desv.’, but this solution, though very practical, cannot be accepted, being at variance with Desvaux typification.

Mme Tardieu-Blot (36, p. 417) advocated to name the species in question P. alcicorne
Plate 1. *Acrostichum alcicorne* Desv. Type specimen in BM.
'(Will.) Tardieu', but this again must be discarded as this is a later homonym of *P. alcicorne* (Sw.) Desv.

The Note to Art. 72 of the 1966 Code provides the escape possibility for maintaining the illegitimate epithet *alcicorne* of Desvaux in the genus *Platycerium* as follows: *Platycerium alcicorne* Desv. must be considered a new name, dating from 1827.

There is one later heterotypic name for *P. alcicorne* Desv., viz *P. vassei* Poisson, 1910 (25). Poisson was curator of the Jardin des Plantes at Paris; his description is rather meagre but the details of the nest-fronds: "Frondes stériles lisses, étroitement appliqué sur le support et qui les rend convexes en avant, à nervures peu saillant, pas laciniées, mais ovulaires..." leave no doubt about the identity. He described the species from living material, "recu par Vassé a Moçambique", which he distributed to various botanical gardens; it could still be followed up at that at Hamburg where I could verify the identity of the specimens named so. There seems to be no dried type material.

THE TYPIFICATION, IDENTITY, AND CORRECT NAME OF *PLATYCERIUM STEMARIA* (BEAUV.) DESV.

The basionym of this is *Acrostichum stemaria* Beauv. 1804, based on a West African plant. In accommodating it in *Platycerium*, Desvaux included in it with a question mark *Acrostichum bifurcatum* Cav. 1799; this reference is here irrelevant and Cavanilles' name will be treated in the next chapter.

It is fortunate, that Beauvois (20) provided a good illustration and ample comments so that the identity leaves no alternative. He compared it with Pluknet's description and plate of *Neuroplatyceros* which he assumed to be a different species. On the other hand he assumed that a drawing of Commerson, in the possession of De Jussieu, of a plant from Madagascar provided with the MS name 'Stemaria' by Commerson represented his West African plant. Beauvois then had the courtesy to use Commerson's name for his new species: "...la plante n'ayant pas été publiée, j'ai pensé qu'on me saurait gré de la donner aujourd'hui, en lui conservant le nom que lui avait assigné Commerson."

This courtesy necessarily started confusion. It prompted Underwood (8) to typify *Acrostichum stemaria* Beauv., and thereby *Alicornium stemaria* (Beauv.) Underw. by the plate of the Madagascar plant: 'Madagascar, Commerson'.

This is of course unwarranted. *Acrostichum stemaria* Beauv. is based on the West African plant and the two sheets he used for his illustration are preserved in the De Jussieu Herbarium at Paris.

As could be expected the Commerson plate, and the pertaining Commerson material, both also preserved in De Jussieu Herbarium, belong to *P. alcicorne* Desv.

A homotypic synonym of *P. stemaria* was created by Fée (5) who, in 'reviving' *Neuroplatyceros* as a generic name to replace *Platycerium*, took *Neuroplatyceros aethiopicus*, of which the epithet is derived from Pluknet's publication, as conspecific with *P. stemaria*. His description, references, his beautiful plate, and his material which derived from West Africa, refer all to *P. stemaria*. As he cited: "V.S. in herb. Juss. et Bory, ex Palis.-Beauv." his type material is based on Beauvois' collection.

Fée misconstrued Pluknet's plate, and although in elaborate notes he seems to have had some doubt about the conspecificity of Pluknet's plate and his own material, the mistaken idea that Pluknet's plant came from Guinea induced him to decide the wrong way.

Hooker (24) did not accept Fée's *Neuroplatyceros* but transferred the epithet 'aethiopicum' to *Platycerium*; a decade later Hooker & Baker had this still in their Synopsis (25) but added a note: "A. stemmaria, Beauv. oldest name".
Morton (37) correctly explained the typification of *A. stemaria* Beauv., but regarded the earlier *A. alcicorne* Sw. as an 'unequivocal' synonym of Beauvois' name! I have therefore repeated the situation in full, also because all pteridologists of the last century and early part of this century have confused the names and identity of these two different species.

**THE TYPIFICATION, IDENTITY, AND CORRECT NAME OF *PLATYCERIUM ANGUSTATUM* DESV.**

This third species of Desvaux was a new one, for a species from Australia which R. Brown (21) had identified with 'Acrostichum alcicorne' Sw. Fil. p. 12 cum syn.' Desvaux who had himself an Australian specimen — preserved in the Paris Herbarium (marked 'Desvaux N. Hollandii'), his holotype specimen of *P. angustatum* Desv. — was clearly of opinion that R. Brown had erred in his identification and consequently described it as a new species, adding a reference to Brown's description expressing that he had the same species, but found it different from *P. alcicorne*.

From which provenance Desvaux got his specimen is not stated; he could have received a duplicate from Brown.

Brown's material in the British Museum, which he collected at Port Jackson, is typical for the Australian species.

Regardless of the clearness of the case, the Australian species has, obviously for reason of Brown's great authority, for nearly a century figured under the name *P. alcicorne* (Sw.) Desv., until almost simultaneously Underwood (8) (under *Alcicormium*) and Christensen (10) (under *Platycerium*) pointed out that the oldest name for the Australian plant was a species described by Cavanilles (22) in 1799 as *Acrostichum bifurcatum* Cav., antedating both names mentioned above.

I have seen photographs of the type specimen which is preserved in the Madrid Herbarium and is mentioned in Cavanilles’ text ('Puerto Jackson Née). Since Christensen’s Index of 1906 the name *Platycerium bifurcatum* (Cav.) C. Chr. has universally been accepted.

Another heterotypic synonym is already mentioned before under the genus, viz. *Acrostichum alcicorne* Gaud., nomen nudum, invalid. 1826, l.c. p. 48. In the same work, one year after Desvaux’s book had appeared, Gaudichaud correctly adopted (l.c. p. 307) *P. angustatum* Desv. for his Australian and — when taken in a broad sense — Timor material, but also added references to practically all other earlier references to *Platycerium*, Swartz, Willdenow, R. Brown, Beauvois, Plukenet, Schkuhr, and Cavanilles, concluding with 'Alcicormium vulgar Gaudichaud MSS' (sic), lumping all into one species.

**THE TYPIFICATION, IDENTITY, AND CORRECT NAME OF *PLATYCERIUM CORONARIUM* (MÜLL.) DESV.**

This fourth name of Desvaux would seem to require no discussion. Müller (2) described and figured it as *Osmunda coronaria*, based on a letter and material sent to him by Dr. König from Tranquebar (S. of Pondichery). It has not given rise to serious confusion in the past. König's descriptive notes and the drawing are sufficiently clear, though it must be admitted that the picture of the nest-frond is far from the actual shape and margin, and also the insertion of the fertile foliage fronds is certainly reconstructed from the herbarium in a way not found on a living specimen.

**CONCLUSION**

In Table 1 I have enumerated the various names applied by various authors in the past, and my own, of the three *Platycerium* species described by Desvaux which have
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<th>TABLE I.</th>
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<th>Australian species</th>
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<td><strong>ACROSTICHUM</strong></td>
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<td>Cavaniìles (1799) 22</td>
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<td>-</td>
<td>bif.</td>
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<td>O. Swartz (1801) 3</td>
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<td>-</td>
<td>-</td>
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<td>stem.</td>
<td>-</td>
<td>?</td>
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<td><strong>PLATYCErium</strong></td>
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<tr>
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<td>ang.</td>
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<td>aeth.(B)</td>
<td>alc. W. (B)</td>
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<td>aeth.</td>
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<td>-</td>
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<td>stem.(A)</td>
<td>bif.(A)</td>
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<td>stem.</td>
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<td>stem.</td>
<td>-</td>
<td>stem.</td>
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<tr>
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<td>-</td>
<td>-</td>
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<td>Tardieu-Blot (1959) 36</td>
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<td>stem.</td>
<td>-</td>
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<tr>
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<td>stem.</td>
<td>bif.</td>
<td>-</td>
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<td>vass.</td>
<td>stem.</td>
<td>-</td>
<td>stem.</td>
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<td>Joe (1964) 38</td>
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<td>stem.</td>
<td>bif.</td>
<td>-</td>
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<tr>
<td>Present paper</td>
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<td>stem.</td>
<td>bif.</td>
<td>alc. S.</td>
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**Generic names:**

(A) = Alcicornium Underwood
(B) = Neuroplatyce ros Fée

**Epithets:**

alc. W. = alcicorne Willemet
alc. S. = alcicorne Swartz
alc. D. = alcicorne Desvaux
stem. = stemaria Beauvois
ang. = angustatum Desvaux
bif. = bifurcatum Cavaniìles
aeth. = aethiopicum Fée
vass. = vassaei Poisson
given rise to confusion in the past. To cite this all in a formal way as references, indicating all misapplications (with including or excluding material, citations, or synonyms), seems to be too lengthy and elaborate and adding little value. The data in the table show more clearly the confusion of the past and must suffice for the purpose.

The essential results may then briefly be summarized as follows:

**PLATYCYERIUM**


Plate 1. — Fig. 1.


*P. vassei* Poisson, Rev. Hort. (1910) 530. — Type specimen: not extant, descr. after living material, latter seen in Hamburg under that name. Coll. Vasse, in Mozambique.

Nest-fronds round to reniform, never forming a bracket; in fully grown plants forming semi-globose mass applied to substratum. Foliage fronds stiffly erect, longer than nest-fronds, 2—3(—4) times dichotomously divided; broad-cuneate base not more than half the length of total frond; very regular and ± equal loriiform segments; ultimate lobes with bluntish tips, forming flabellate pattern. Sporangial areas several; initially median on the ultimate lobes; areas in mature leaves reach down to the ultimate sinus and can join opposite fertile patch round sinus, reaching from margin to margin however never covering apex.

Distribution: Madagascar, Comores and tropical East Africa (Mozambique, Tanzania).


*P. stemaria* var. laurentii De Wildeman, Miss. E. Laurent 1 (1905) 12, 2 (1905) t. 3. — Type specimen: Laurent, Eala, 25-1-04, in BR.

**Fig. 1. Platyceirium stemaria** (Beauv.) Desv. — Fig. 2. *P. alcicorne* Desv. — Fig. 3. *P. bifurcatum* (Cav.) C. Chr. — All × ½ (1. after Herb. De Joncheere B. C. 067, Oubanghi, Belg. Congo; 2. after W. Hutton s.n. Johanna I. (Comores), L. 908.316—180; KD 1188; 3. after Hines & Walford s.n., Paluma Ra., Townsville, Queensland, herb. Townsville University College).
Nest-fronds clearly elongated, forming bracket, distally rounded to truncate, repand or sinuate, never deeply lobed. Foliage fronds pendent, + as long as nest-fronds, (1—)2—3 times dichotomously divided; cuneate base broad + half total length of frond; ultimate lobes, especially the outer ones clearly divaricating and + triangular with subacute apex; division sometimes becoming irregular by random laciniations. Sporangial areas several; round the ultimate sinuses and extending up the inner edge of ultimate lobes, never reaching apex or outer margin.

Distribution: Tropical West and Central Africa.


Fig. 3.


Nest-fronds slightly elongated, forming small bracket when fully grown, distally distinctly lobed. Foliage fronds mutnat to pendent, much longer than nest-fronds, once or twice dichotomously divided; cuneate base long and narrow, + three quarters of total length of leaf; ultimate lobes loriform, to long romboid with subacute apex, not divaricating or forming flabellate pattern. Sporangial areas several; median on ultimate lobes, from outer to inner margin, reaching downwards and upwards when fully mature and then covering + entire ultimate lobe including apex.

Distribution: Eastern Australia and New Caledonia; if taken in a broad sense extending to Java and New Guinea.

REFERENCES