

LE PRINCE BONAPARTE

MEMBRE DE L'INSTITUT

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NOTES  
PTÉRIDOLOGIQUES

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FASCICULE XII

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NEW SPECIES  
OF  
HYMENOPHYLLACEAE  
FROM MADAGASCAR  
BY  
CARL CHRISTENSEN

# INTRODUCTION

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His Highness, Prince Roland Bonaparte, forwarded to me in the summer of 1919 for determination a lot of Hymenophyllaceae collected in Madagascar by M. H. Perrier de la Bâthie and M. d'Alleizette. Among the specimens examined were several belonging to the section *Microgonium* which apparently were undescribed. I, therefore, undertook a thorough revision of all the African specimens to which I had access and which belong to the said section. My result is laid down in this small paper, which His Highness wished should be included in the series: Notes Ptéridologiques. The type-specimens of all species here described as new are in Herb. Bonaparte, *Trichomanes fulgens* only excepted. Besides the species belonging to the section *Microgonium* three other species of *Trichomanes* and one of *Hymenophyllum*, all from Madagascar, are described as new.

For the permission of publishing these new species in "Notes Ptéridologiques" my most sincere thanks are due to His Highness, Prince Bonaparte, as also for the permission of illustrating the species by exact figures. Such drawings give a better understanding of similar small species than the most detailed description.

Copenhagen, June 1920.

Carl Christensen.

## Trichomanes L.

### Subgenus *Didymoglossum* Desvaux.

Among the Hymenophyllaceae from Madagascar received from S. A. I. ROLAND BONAPARTE are a series of species belonging to the section *Microgonium* of the subgenus *Didymoglossum*. The right determination of them is rather difficult and most authors having greatly misunderstood them. The monographer of the family, VAN DEN BOSCH, whose most valuable and exact works have been too much overlooked by pteridologists, made several African species of the group, which I, in Index Filicum, referred to three species: *T. cuspidatum*, *T. erosum* and *T. Lenormandi*, making falsely the latter identical with *T. Kirkii* Hook. Since the time of V. D. BOSCH the following species have been described: *T. Barklyanum* Baker from Mauritius, *T. Hildebrandtii* Kuhn and *T. microphyllum* Gies. (= *T. Giesenhagenii* C. Chr.), both from the Comoros.

In 1913 Mr. W. A. GODDIJN, began the publication of a new edition of V. D. BOSCH's Synopsis accompanied by the original drawings of V. D. BOSCH illustrating essential characters of his proposed species. (Mededeelingen van Rijk's Herbarium. Leiden n° 17, 1913). Till now only the first part has been issued, still it is to be hoped that the publication will be continued. The published part contains fortunately the species of the group *Microgonium* and by consulting this work I was enabled to determine the specimens at hand with certainty. Only in one instance I am doubtful, whether the name *T. Lenormandi* is rightly applied to the species so named below, or the name ought to be applied to the species described below as *T. pygmaeum*.

All the species dealt with below belong to § *Microgonium* that is characterized by its glabrous fronds, while the

species of the group *Hemiphlebium* have ciliate fronds. Still I think this grouping of the species is rather artificial. Among the species from the South-east African islands *T. Barklyanum* Bak. and *T. Giesenhagenii*, known to me from descriptions and illustrations alone, belong to § *Hemiphlebium*, all the others to § *Microgonium*.

The subgenus is apparently richer in species on the islands than on the African continent; the following continental species have been described: *T. erosum* Willd., *T. aerugineum* V. d. B. and *T. palmicola* V. d. B., all from West Africa; the latter differs scarcely from *T. erosum*, while *T. aerugineum* certainly is a good species, differing from *T. erosum* by the lack of an intramarginal vein and closely related to *T. fulgens*, described below; it was by KUHN and by myself (Index) referred to *T. erosum*; also *T. Mettenii* C. Chr. (*T. subsessile* Mett.), from West Africa, is perhaps a species of the subgenus, although it totally lacks spurious veins. *T. Robinsonii* Baker from Natal is closely related to the American *T. montanum* but scarcely identical. All these species, *T. erosum* excepted, is unknown to me.

Below I give a key to all the species known from the African Islands in the Indian Ocean, including also those known from descriptions only (*T. Barklyanum*, *T. Giesenhagenii*, *T. Hildebrandtii*).

1. Fronds peltate, 3—4 cm broad, closely appressed to the soil ..... *T. Hildebrandtii* Kuhn.
- Fronds not peltate ..... 2.
2. Margins of frond ciliate; fronds small, entire ..... 3.
- Margins glabrous (*Microgonium*) ..... 4.
3. Spurious veins none ..... *T. Barklyanum* Bak.
- Spurious veins numerous ..... *T. Giesenhagenii* C. Chr.
4. Intramarginal vein absent .... *T. fulgens* C. Chr. sp. n.
- Intramarginal vein present ..... 5.
5. Spurious veins continuous, rarely interrupted, united with the distinct, continuous intramarginal vein; veins more or less flabellate; mouth of indusium dilated  
*T. cuspidatum* Willd.
- Spurious veins interrupted, rarely united with the less distinct, often flexuose intramarginal vein; veins pinnate; base of frond cuneate ..... 6.

6. Frond subentire to pinnatifid, the segments rarely more than 3—4 mm long; spurious veins short; mouth of indusium very slightly dilated..... 7.
- Frond deeply pinnatifid with linear segments 3—4 cm long; spurious veins long..... *T. Kirkii* Hook.
7. Frond 1—2 cm long by 1—3 mm broad, entire or with 1—3 lateral short segments; spurious veins few
- T. pygmaeum* sp. n.
- Frond 1—2 cm long and broad, pinnatifid or bipinnatifid; spurious veins numerous. *T. Lenormandi* V. d. B.

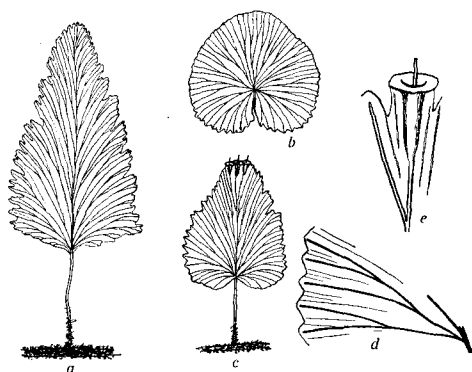


Fig. 1. *Trichomanes fulgens* n. sp. a—c, three leaves, nat. size; d, fragment, showing veins and spurious veins; e. sori; d—e, magnified. — C. Chr. del.

***Trichomanes fulgens* C. Chr. spec. nov. — Fig. 1.**

*T. erosum* (?) C. Chr. On the ferns of the Seychelles and the Aldabra Group, in Trans. Linn. Soc. II. Bot. 7: 411, 1912, non Willd.

Rhizomate setaceo intricato ac basi stipitis tomento rufosusco dense vestito. Stipite  $\frac{1}{2}$ —2 cm longo; lamina glabra, nitida, diaphana, variabili: orbiculari cum sinu profundo angusto, sive cordiformi sive ovato-oblonga basi truncata, 1—1,5 cm lata, 1—5 cm longa, subintegra vel plus minusve serrata, undulato-repanda vel irregulariter lobata. Venis flabellatis vel subpinnatis, repetito-furcatis, densis. Vena intramarginali nulla; venulis spuris inter duas venas

2—4, satis longis, continuis. Soris ad apicem frondis 2—5, immersis; indusio angusto, cylindrico, ore manifeste dilatato.

While determining the ferns of the "Sealark" Expedition I was much in doubt, whether this plant might be referred to *T. erosum* or to *T. cuspidatum*, and I suggested in the paper quoted above that it probably was specifically different from both. That this really is the case my present studies have shown. It differs from both species by the absence of an intramarginal vein and by the cordate or broadly truncate base of the lamina. From *T. sublimbatum* C. Müll. and *T. aerugineum* V. d. B., which likewise have no intramarginal vein, it differs by the shape of the lamina. The spurious veins resemble those of *T. cuspidatum*.

Hab. *Ins. Seychelles*: Silhouette, Gardiner (Herb. C. Chr.).

**Trichomanes pygmaeum** C. Chr. sp. nov. — Fig. 2. 11—13.

Species minutissima, affinis *T. Lenormandi* V. d. B., a quo differt: fronde lutescenti viridi, fragili, integra vel sparse pinnatifida, lineari-lanceolata vel oblanceolata, vix 2 cm longa, 1—3 mm lata, costa mediana simplici vel 2—4 venulas laterales simplices distantes emittente; vena intramarginali distincta, tenui, subrecta, sæpe interrupta; venulis spuriis in parenchymate perpaucis brevibus sed manifestis. Soris 1—4, apicularibus ad costam mediam et venulas laterales; indusiis campanulatis, apice vix dilatato.

My figures give an idea of this tiny plant, which I originally believed to be the true *T. Lenormandi* V. d. B., this species was said by the author to have fronds 1,5—3 cm long by 2,25—4 mm wide, thus not much larger than *T. pygmaeum*, but otherwise his description agrees better with the following species, to which I apply his name. From this *T. pygmaeum* differs by its more campanulate indusia, its scarcely flexuose or undulate intramarginal vein, its much fewer spurious veins, and by colour, although it is probable that the pale yellowish colour and the fragile texture are due to age.

*Madagascar*. Région floristique de l'Est. Sur le stipe de *Cyathea hirsutifolia* R. Bonaparte sp. nov.\* — *H. Perrier de la Bâthie* n° 7984, Septembre 1912.

\* Conf. Notes ptéridologiques fasc. V, pag. 46, where this little *Trichomanes* is mentioned as an "Hymenophyllum épidendre".



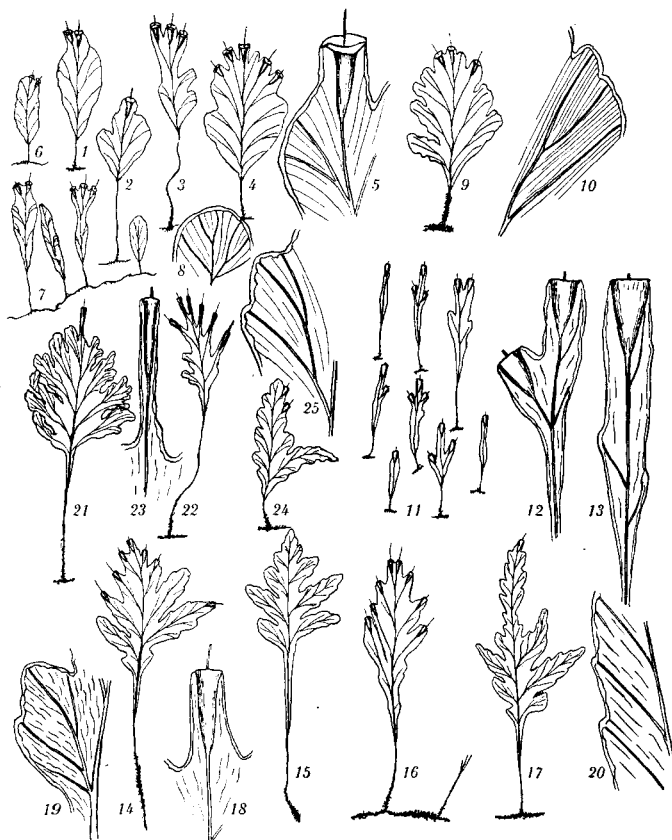


Fig. 2. 1—5, *Trichomanes cuspidatum* Willd.; 1—4, four leaves, nat. size; 5, fragment with sorus magnified, showing intramarginal vein and the straight, continuous spurious veins; 6—8, *f. minor* of the same. — 9—10, var. *densestriata* n. var. of the same species; 9, leaf, nat. size, 10, fragment magnified. — 11—13, *T. pygmaeum* n. sp. 11, 8 leaves, nat. size.; 12—13, blades of two soriferous leaves, showing sori and spurious veins, magnified. — 14—20, *T. Lenormandi* V. d. B. 14—17, four leaves of different shape, nat. size. 18, sorus magnified. 19, fragment magnified. 20, ditto more magnified. — 21—23, *T. Lenormandi* var. *angustiloba* n. var. Two plants, nat. size, and sorus magnified. 24—25, *T. Lenormandi* var. *subcuspidatum* n. var. Plant, nat. size, and fragment magnified. —

C. Chr. del.

**Trichomanes cuspidatum** Willd. — Fig. 2. 1—10.

— V. d. Bosch, Syn. Hym. ed. Goddijn, Meded. Rijk's Herb. Leiden n° 17: 27 fig. 15. 1913.

To this species I refer all specimens that have a distinct intramarginal, continuous vein, from which run shorter or longer, rarely interrupted spurious veins parallel to the true veins. The fronds are variable in shape and size; generally they have a broadly cuneate base, rarely long decurrent; fan-shaped fronds as those of *T. Bojeri* Hook. et Grev. Ic. Fil. tab. 155 I have not found among the specimens from Madagascar. The stipe of full-grown leaves is so long as the lamina but in smaller leaves often much shorter. The veins are flabellate or, in narrower leaves, pinnate. The sori are confined to the upper edge of the frond; the indusia have the mouth distinctly dilated and a narrow cylindrical tube.

The following specimens I regard as rather typical, although some of them look rather different; especially remarkable is a short-stalked form (n° 7745 D), which has not only the rhizome and stipe but also the midrib rather densely rufo-tomentose.

*Madagascar*: Région floristique du Centre. Massif de Manongarivo, vers 1600 mètres d'altitude. Bois très secs. Cime à lichens. Sur les troncs. *H. Perrier de la Bathie* n° 7443, Mai 1909.

— Ibidem, de 1200 à 1600 mètres d'altitude. Sur les troncs, n° 7768, Mai 1909.

— Ibidem, vers 1200 mètres d'altitude. Sur les troncs et les pierres, n° 7745 D, Juin 1909.

— Ibidem, entre 1000 et 1600 mètres d'altitude. Bois dans la mousse, n° 7776 part.; sans date.

— Ibidem, dans la mousse, sur les pierres ou les troncs, n° 7738 A part.; sans date.

The following form is perhaps worthy of the name forma *minor*. Frond much smaller, ovate-oblong or oblong-lanceolate, more long-cuneate at base, the lamina 0,5—1 cm long, under 0,5 cm broad. — Fig. 2. 6—8.

*Madagascar*: Région floristique du Centre. Massif de Manongarivo, entre 1000 et 1600 mètres d'altitude. Rocailles humides. *H. Perrier de la Bâthie*, n° 7766, Mai 1909.  
— Ibidem, dans la mousse, sur les pierres ou les troncs.  
— N° 7738 B part., Mai 1909.

A more distinct variety is

Var. **densestriata** var. nov. — Fig. 2. 9—10.

Frond about as in the typical form, more deeply lobate with undulate-repand edges, thicker in texture. Spurious veins very dense and numerous, 6—8 or more between two true veins.

*Madagascar*. Mandraka, forêts, dans la mousse, à la base des arbres. *d'Alleizette* n° 231 M, Août 1906.

### **Trichomanes Lenormandi** V. d. Bosch.

Ned. Kr. Arch. 5<sup>2</sup>: 144, 1861; Meded. Rijk's Herb. Leiden n° 17: 33, fig. 21; C. Chr. Ind. Fil. 643, excl. syn. *T. Kirkii* Hook. — *T. erosum* var. *laciniata* Mett.; Kuhn, Fil. Afr. 34 (an part.?). — Fig. 2. 11—25.

To this species I refer several specimens, which seem to agree very well with the original descriptions and figures of V. d. Bosch except in size. My figures give a better idea of the species than any description; the largest specimens are 4—5 cm long (incl. stipe) and nearly 2 cm wide, deltoid or oblanceolate in outline, the base long decurrent. From *T. cuspidatum*, with which it is often confounded, it is very different by its distinctly pinnate venation with most of the sori lateral, the more indistinct, characteristically flexuose intramarginal vein, that is often interrupted, and by the numerous short spurious veins in the parenchyma, which rarely are united with the intramarginal vein; further by its cylindrical indusia, the mouth of which is very slightly dilated. By this latter character it also differs from the West African *T. erosum*, to which METTENIUS referred it as a variety.

*Madagascar*: Régions floristiques de l'Est et du Centre. Forêt d'Analamazoatra, vers 800 mètres d'altitude, Épiphyte. *H. Perrier de la Bâthie*, n° 6143, Décembre.

*Madagascar*: Région floristique du Centre. Environs du Mout. 1600 mètres d'altitude. Sur les troncs. *H. Perrier de la Bâthie*, n° 7960, Novembre 1912.

— — Massif de Manongarivo, entre 1000 et 1600 mètres d'altitude. Bois, dans la mousse, sur les pierres ou les troncs. *H. Perrier de la Bâthie* n° 7738 B part., Mai 1909; n° 7776 part., sans date.

To *T. Lenormandi* I refer the following two varieties:

Var. *angustiloba* var. nov. — Fig. 2. 21—23.

In habit like the type, but frond often crisped and the veins more flabellate, the sori are placed at the tips of segments that are very narrow, so that the sori appear to protrude beyond the leaf-tissue; they are, however, margined by a narrow wing of leaf-tissue. A single leaf of n° 7732 is deeply pinnatifid with irregular, crisped segments, some of which are much lengthened (nearly 2 cm long by 1.5—2 mm broad) and are again pinnatifid with 1—2 threadlike secondary segments.

*Madagascar*: Région floristique du Centre. Massif de Manongarivo, entre 1000 et 1600 mètres d'altitude. *H. Perrier de la Bâthie*, n° 7732 et 7738 part., Mai 1909.

Var. *subcuspidata* var. nov. — Fig. 2. 24—25.

A critical form, more thin-leaved than the two former and the spurious veins are fewer but much longer and often united with the intramarginal vein as in *T. cuspidatum*, still there are also shorter free spurious veins which very rarely are found in *T. cuspidatum*. Further it differs from that species and from *T. erosum* by its indusia, which agree very well with those of *T. Lenormandi*.

*Madagascar*: Région floristique du Sambirano. Grande Terre. Montagnes à l'Est d'Ambo . . . , vers 300 mètres d'altitude. Sur les troncs de fougères arborescentes. *H. Perrier de la Bâthie*, n° 7733, Septembre 1908.

**Trichomanes Kirkii** Hook. Syn. Fil. 78. — Fig. 3.

BAKER believed this to be the same as *T. Lenormandi* V. d. B., and unfortunately I followed him in "Index Filicum" and united it with the species of VAN DEN BOSCH. I have a specimen from the Comoros, leg. *Humboldt* n° 1552,

which perfectly corresponds to BAKER's description, and it is, as is shown by the accompanying figures totally different from *T. Lenormandi*.

In general habit it resembles much more *T. digitatum* and its allies, but really it belongs to the section *Microgonium*, although not closely related to any known species. The figures give an idea of the shape of the lamina, which is rather variable. The linear, crenate segments contain several very oblique veins, that at the tips are united by a continuous, intramarginal spurious vein, and between the veins are several manifestly longer or shorter spurious veins. The sori are placed either at the apex of short primary segments in the upper part of the lamina, or at the apex of short secondary segments from the upper edge of the lower and larger primary segments. The cylindrical indusium has a widened mouth, but is scarcely two-lipped.

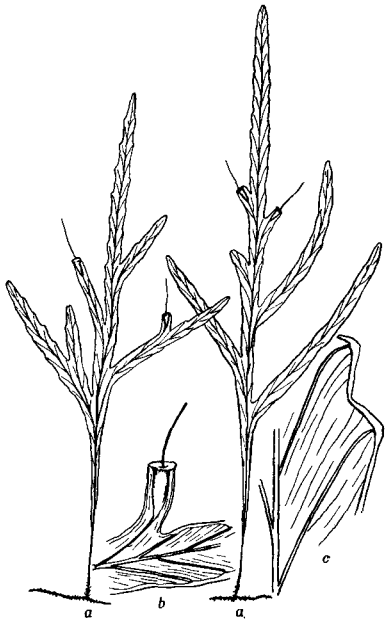


Fig. 3. *Trichomanes Kirkii* Hook. a, a, two plants, nat. size; b, fragment, with sorus,  $\times 4$ ; c, fragment, more magnified, showing spurious veins. — C. Chr. del.

**Trichomanes Bonapartei** C. Chr. spec. nov. — Fig. 4.

Species parva subgeneris *Gonocormi* sect. *Microtrichomanis* Prantl, Hym. 51, rhizomate filiformi rufo-piloso, repente; stipite vix 1 cm longo; lamina lutescenti-viridi, diaphana, plana, e basi longe cuneata (stipite sursum late alato) subito dilatata late ovata, sub 2 cm longa ac lata, ad alam sub 1 mm latam pinnatifida; pinnis 2—3-jugis, integris vel

furcatis vel inferioribus maximis antice pinnatifidis, sterilibus subacutis. fertilibus apice singulum sorum ferentibus; venis

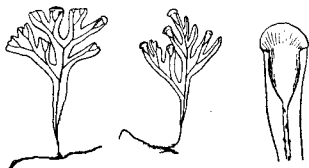


Fig. 4. *Trichomanes Bonapartei* n. sp. Two leaves, nat. size; the sterile tips of the left-hand figure were all broken off; Sorus, magnified. — C. Chr. del.

prominulis, pinnatifidis vel furcatis, setis minutis crassis parce instructis; soris in apice laciniae immersis, urceolatis, ore dilatato, rotundato; receptaculo incluso.

This little new species resembles very much in habit, size and cutting *T. intramarginale* Hook. et Grev. Ic. tab. 221, but otherwise it is widely

different, and I think I am right in placing it under the section *Microtrichomanes* Prantl. From all species of that group it differs chiefly by its broad-winged stipes; from *T. digitatum*, the only African species of that group it differs moreover by the non-ciliate margins.

*Madagascar*: Région floristique du Centre. Massif de Manongarivo, vers 1200 mètres d'altitude. Sur les troncs et les pierres. *H. Perrier de la Bâthie*, n° 7745 B, Juin 1909.

***Trichomanes pachyphlebium* C. Chr. sp. nov. — Fig. 5.**

*Trichomanes* e sectione *Davalliopsidis*, rhizomate? (erecto?); stipite folii examinati 10 cm longa, 1 mm crasso, griseo, stricto, glabro, lineis angustissimis bimarginato. Lamina ovato-oblonga, 15 cm longa, medio 6 cm lato, rigida, fere coriacea, crassa, luce transeunte vix translucida, laete-viridi, ad paginam superiorem praesertim ad rachin costasque pilis rufis articulatis brevibus sparse onusta, bipinnatifida-tripinnatisecta. Pinnis parum obliquis, alternis, sessilibus, decurrentibus, ita rachi anguste alata, e basi postice cuneata, antice rachi parallela aucta, 1,5 cm lata, versus apicem sensim attenuatis, fere ad costam pinnatifidis. Pinnulis obliquis, approximatis, oblanceolatis vel oblongis, basi postice cuneata decurrentibus, per alam ad costam augustam conjunctis, pinnatifido-lobatis, 2—2½ mm latis. Lobis falcatis, approximatis, subacutis, 4—5 utroque latere, integris vel raro indistincte et inaequaliter bidentatis. Vena mediani pinnularum basi decurrente; venis lateralibus valde

obliquis, immersis, crassissimis, lobos ad apicem percurrentibus, indivisis vel rarius furcatis. Soro uno in quaque pinna — vel in pinnulis basalibus superioribus interdum binis — lobum basalem anteriorem occupante, basi parenchymate marginato; involucri urceolato, ore integro vel interdum indistincte bilabiato; receptaculo breviter exserto.

*Madagascar*: *Humboldt* n° 451. (Muséum d'Hist. naturelle, Paris).

The type-number of this new species was referred by BAKER (*Journ. Bot.* 1884, p. 140) as a variety to *T. rigidum* Sw., from which species it certainly is abundantly

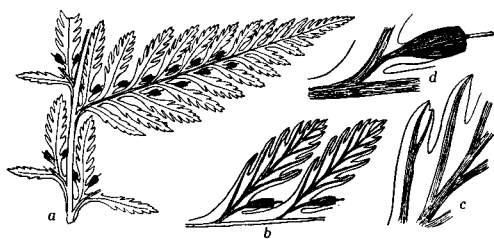


Fig. 5. *Trichomanes pachyphlebium* n. sp. a, Pinna from the middle of the leaf, nat. size; b, two pinnulæ,  $\times 2$ ; c, fragment showing venation; d, sorus, more magnified. — C. Chr. del.

different, although belonging to the same group of species. From all the numerous forms referred to *T. rigidum* it differs very much by its very thick and close veins and its very thick texture. In these characters it agrees very closely with the American *T. elegans* Rich. to which our species is intimately related, but *T. elegans* has an ovate lamina with the basal pinnæ the largest, it is dark green and its rachis is rather broadly winged, while *T. pachyphlebium* has the basal pinnæ somewhat shortened, is light green and its rachis is very narrowly margined only by a foliaceous wing. It is also less divided with the tertiary lobes as a rule entire — in *T. elegans* deeply cleft, but notwithstanding these differences the whole aspect of the plant and all essential characters agree so closely with *T. elegans* that the two species must be grouped together into a special group, which VAN DEN BOSCH has named *Davalli-*

*opsis*. The discovery of another species of this group in Madagascar is very interesting. — Exceptionally the basal superior pinnulæ bear a sorus on the inner side.

**Trichomanes cornutum** C. Chr. sp. nov. — Fig. 6.

*Eutrichomanes?* rhizomate?; stipite folii examinati stricto, subangulato, sordide brunneo, 10 cm longo, 1,5 m crasso,

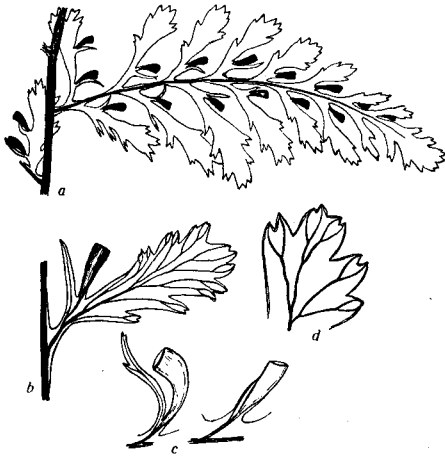


Fig. 6. *Trichomanes cornutum* n. sp. a, Pinna from the middle of the leaf, nat. size; b, a middle pinnula,  $\times 2$ ; c, two soriferous segments, the left-hand from a lower, the right-hand from an upper pinnula; d, fragment, more magnified, showing the outer furcations of the veins and the thickened margins. — C. Chr. del.

pilis brevissimis, castaneis, crassis superne sparse onusto. Lamina (incompleta?) ovato-oblonga, ad 25 cm longa, medio 10 cm vel ultra lata, sicca brunneo-olivacea, textura tenui sed firma, praeter rachim pilis castaneis articulatis perpau-  
cis instructam glaberrima, bipinnata-tripinnatifida. Pin-  
nis alternis, paulo obliquis, 1,5—2 cm inter se distantibus, sessilibus, inconspicue decurrentibus, oblongis, mediali-  
bus circiter 5 cm longis, 2,5 cm latis,

superioribus inferioribusque brevioribus, apice lato lobato vel dentato obtusis. Pinnulis alternis, obliquis, sessilibus, decurrentibus, circumscriptione obovato-cuneatis, in parte superiore 5—8 mm latis, irregulariter pinnatisectis vel lobato-dentatis: supra basin antice segmentum singulum (raro segmentis binis, rarissime ternis) bifidum soriferum emittentibus, parte maxima superiore sterile sublobatis, lobis bidentatis. Venis distinctissimis, incrassatis, prominulis, repetito furcatis, furcaturis in dentes transeuntibus convergen-



tibus. Marginibus incrassatis. Segmento antico sorifero pinnularum superiorum integro, in solum singulum terminantibus, eodem pinnularum inferiorum bifido, ramo antico sorifero, postico lobo sterili integro vel interdum dentato, angusto, sæpe curvato. Indusio exserto vel basi anguste marginato, sæpe incurvo vel recurvato, cylindrico, vel potius anguste turbinato, ore integro; receptaculo incluso.

*Madagascar*, leg. *Humblot* n° 280. (Muséum d'Histoire naturelle, Paris).

This most remarkable species was by *BAKER* (*Journ. Bot.* 1884, p. 140) referred to *T. rigidum* Sw. as a variety; if the specimens under *Humblot* n° 280 examined by *BAKER* are identical with that described above, his determination is very surprising. Our new species is very remotely related to *T. rigidum*, and to other species of the group of *T. rigidum*, a group represented by several species in Madagascar and the Mascarenes. *T. cornutum* is, I am inclined to believe, rather a species of the section *Cephalomanes*, and possibly related to *T. auriculatum* Bl. Still it differs from that species as well as from all other known species of *Cephalomanes* by its fully bipinnate lamina, by its venation, which is more flabellate than pinnate with the outermost branches of a pair characteristically convergent; the margins are distinctly thickened, and the tips of the veins are often united with the margin. The basal upper pinnules bear generally two, rarely three, fertile segments on the anterior side, while all other pinnules are constantly unisorous. I have not found a trace of an exserted receptacle, and it seems improbable that they all are broken off; all known species of *Cephalomanes* have the receptacle exserted and very long. The specific name alludes to the sterile segment below the sori, which is distinct in the lower pinnules becoming gradually smaller in the upper pinnules and finally not at all developed in the 2—3 last pairs of pinnules. Unfortunately the rhizome is unknown to me; it is probably erect, thus agreeing with most species of *Cephalomanes*, not with *T. auriculatum* that has a scandent rhizome.

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**Hymenophyllum veronicoides** C. Chr. sp. nov.

Parva, stipite setiformi, tereti, glabro, atrofusco, 2 cm longo. Lamina lanceolata, 4 cm longa, vix 1 cm basi lata, glabra, fusca, tripinnatifida. Rachi sursum anguste alata. Pinnis 15-jugis, deltoideis, 4—5 mm longis, costa alata; pinnulis inferioribus subpinnatifidis, superioribus furcatis; segmentis ultimis obtusis vel leviter emarginatis, sub 1 mm longis, plus minusve convolutis. Soris ad tertiam partem superiorem frondis aggregatis, 3—4 pro pinna; indusiis duplo vel triplo quam segmento fructifero latioribus, valvis rotundis.

This new species seems to be very distinct. The whole leaf resembles strikingly a fruiting plant of some small annual species of *Veronica*, because the large somewhat inflated indusia are crowded at the upper third of the leaf as are the capsules of *Veronica*. The narrow leafy parts of the segments are rolled over the thick medial vein. The dried plant is of the same characteristic brown colour as *H. fumarioides*.

*Madagascar*: Région floristique du Centre. Massif de Manongarivo, vers 1400 mètres d'altitude. Bois secs. Au pied des troncs dans les endroits obscurs. *H. Perrier de la Bathie*, n° 7775.

Another specimen, n° 7774, from quite the same locality is no doubt belonging here; it is in size, colour and crowded sori like the type, but the lamina is narrowed downwards and the leafy parts of the segments as well the wing to the rachis are broader and all rolled over the vascular parts.