

Comments regarding
the identity and typification
of two species of *Cynorkis* Thouars
(Orchidaceae, Orchidioideae, Habenariinae)
from the Mascarene Islands

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Comments regarding the identity and typification of two species of *Cynorkis* Thouars (Orchidaceae, Orchidioideae, Habenariinae) from the Mascarene Islands

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typification correction.

ABSTRACT

Comments and corrections on two recent papers regarding the nomenclature and typification of some *Cynorkis* Thouars from Mauritius and La Réunion are presented, namely the identity of *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb and the typification of *Cynorkis micrantha* (Frapp. ex Cordem.) Schltr. The typification of *C. arnottoides* Rchb.f. is also mentioned.

RÉSUMÉ

Commentaires concernant l'identité et la typification de deux espèces de Cynorkis Thouars (Orchidaceae, Orchidioideae, Habenariinae) des Mascareignes.

Des commentaires et des corrections sur deux articles récents concernant la nomenclature et la typification de quelques *Cynorkis* Thouars de l'île Maurice et de La Réunion sont fournis, à savoir l'identité de *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb et la typification de *Cynorkis micrantha* (Frapp. ex Cordem.) Schltr. La typification de *C. arnottoides* Rchb.f. est aussi mentionnée.

MOTS CLÉS

Orchidaceae,
Cynorkis,
Île Maurice,
La Réunion,
Flore des Mascareignes,
correction de typification.

INTRODUCTION

Two recent papers (Pailler & Baider 2024; Pailler *et al.* 2024) in *Adansonia* reassess the nomenclature of two species of orchids, as treated in the recently published orchid part of the *Flore des Mascareignes* (Hermans & Cribb 2021; Hermans & Cribb 2023). The publication of the orchid volumes of the *Flore des Mascareignes* not only saw the completion of the *Flore* itself but also established a benchmark of current knowledge of the orchids from the archipelago. The Orchidaceae accounts aimed to summarise current knowledge and to stimulate further debate and research on the family. We were fully aware that, considering the quantity of information and complexity, some of our taxonomic decisions would be controversial and lead to constructive discussion. In this context we would like to comment on some of the arguments recently put forward by Pailler and his coauthors in the papers mentioned above. Notes on an earlier re-interpretation of several *Cynorkis* from the Mascarenes (Pailler *et al.* 2022a, b) have been addressed previously (Hermans & Cribb 2023: addendum 339–340).

THE IDENTITIES OF *AMPHORKIS INERMIS*
THOUARS AND *ARNOTTIA MAURITIANA* A.RICH.
(CF. Pailler & Baider 2024)

Hermans & Cribb (2021: 108; 2023: 195) recognised a variable and relatively widespread *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb and treated *Arnottia mauritiana* A.Rich. as conspecific with it. Pailler & Baider (2024) argue that there are two distinct entities: *Cynorkis inermis* almost exclusively endemic to Mauritius and *C. mauritiana* (A.Rich.) Pailler & Baider largely endemic to La Réunion.

Although they refer to the *Flore des Mascareignes* account (Hermans & Cribb 2023), the synonymising of *Arnottia mauritiana* with *Cynorkis inermis* was first published in 2017 (Hermans *et al.*: 38). This decision was based on dissections, measurements and thorough research of available material and also followed the concept of several other authors and herbarium annotations (Richard 1828: 30, Kraenzlin on *Boivin* 1073 (G Herb. Barbey-Boissier), *Commerson* ? s.n. in Herb. Richard P[P00738183], etc.). This interpretation was followed by Pailler *et al.* (2018: 101) and Pailler & Henze (2020: 109).

In more recent work Pailler & Baider (2024) recognised two separate species based upon their interpretation of the types, associated material, and an analysis of herbarium material. They considered *Cynorkis inermis* to differ from *C. mauritiana* in several characters, namely, by the lanceolate leaves (vs oval-oblong), shorter floral bracts, smaller non-resupinate, marbled (“marbrée” according to Du Petit-Thouars’ description) flowers (vs resupinate, purple), broadly oblong lateral sepals (vs spatulate-oval). Their comparative table shows all floral segments to be distinctly smaller by a third to a half (Pailler & Baider 2024: 163). Although Du Petit-Thouars (1822: table 1 b.2, t. 5) recorded his *Cynorkis inermis* (as *Amphorchis inermis*) from Mauritius and La Réunion, the authors postulated

that the species has almost exclusively been found, but not recently, in Mauritius whilst *Cynorkis mauritiana*, despite its name, is almost exclusively endemic to La Réunion where it is relatively common (there are recent records from Madagascar too (Hermans 2024a: 389; 2024b: 59).

It is clear that the Du Petit-Thouars plate (Du Petit-Thouars 1822: t.5) (Fig. 1) of *Cynorkis inermis* shows the flowers with the lip uppermost and at least some of the flowers of the type material P[P00693148] appear so as well. In this context it is important to understand the methods used by Du Petit-Thouars (1758–1832): he spent several years botanising in Madagascar, La Réunion and Mauritius, returning to France in 1802 (Hermans 2000) but his main work and illustrations of the orchids from the region did not appear until twenty years later (Du Petit-Thouars 1822). There is no doubt that the plates for this work were drawn by him from herbarium material; some of his plates are mirror images of the herbarium plants. All considered, his drawings are remarkably accurate but the natural position of the lip of his *Cynorkis inermis*, which is often recurved in living plants (Fig. 2), can become uppermost in dried and pressed material, the lip also withers soon after anthesis and virtually disappears, with the other tepals remaining and appearing non-resupinate when pressed. This characteristic is very obvious in microscopic examination of the different flowers of the type P[P00693148]. The lip of *Cynorkis inermis* is quite variable in shape and can range from simple to somewhat three-lobed towards the apex or base; this variability was also noted by Moore in Baker (1877: 339). Richard’s description and illustrations show the same variation (Richard 1828: 30, pl. 7), as explained in Hermans *et al.* (2017: 38). There are several examples of typical ‘*Cynorkis mauritiana*’ from La Réunion appearing non-resupinate on herbarium sheets (*Ferard* 2461 [CBNM]; *Goudot* s.n. [1833] [G]; *Schlieben* lo 851 [M]; *Cordemoy* s.n. [MARS087757]; *Bosser* 21279 [P00738207]; *Bosser* 21359 [P00738347]; *Cadet* 4803 [P00738198]; *Commerson* s.n. [P00693160]). The rachis is somewhat pyramidal but can be more elongated, especially in young plants. In addition, dissection of the Thouars type P(P00693148) showed at least the lower flowers to be resupinate and the shape of all flower parts, including the column, being clearly that of ‘*Cynorkis mauritiana*’, as described later by Richard as *Arnottia mauritiana*. There are also several examples of Thouars’ illustrations showing flowers resupinate when they are non-resupinate in living material and vice versa (e.g. *Polystachya fusiformis* t. 86, *P. cultriformis* t. 87 (Du Petit-Thouars 1822).

INTERPRETATION OF HERBARIUM MATERIAL
AND MEASUREMENTS

Pailler & Baider (2024), to a great extent, have distinguished *Cynorkis inermis* and *C. mauritiana* on a comparison of leaf and flower-size, with *C. inermis* being considerably smaller in its floral and vegetative parts. Their measurements are based upon eight herbarium specimens (Pailler & Baider 2024: 163, table 2). Unfortunately, when other specimens are included the distinction between their taxa is less clear-cut. During research on the orchid flora of Madagascar and

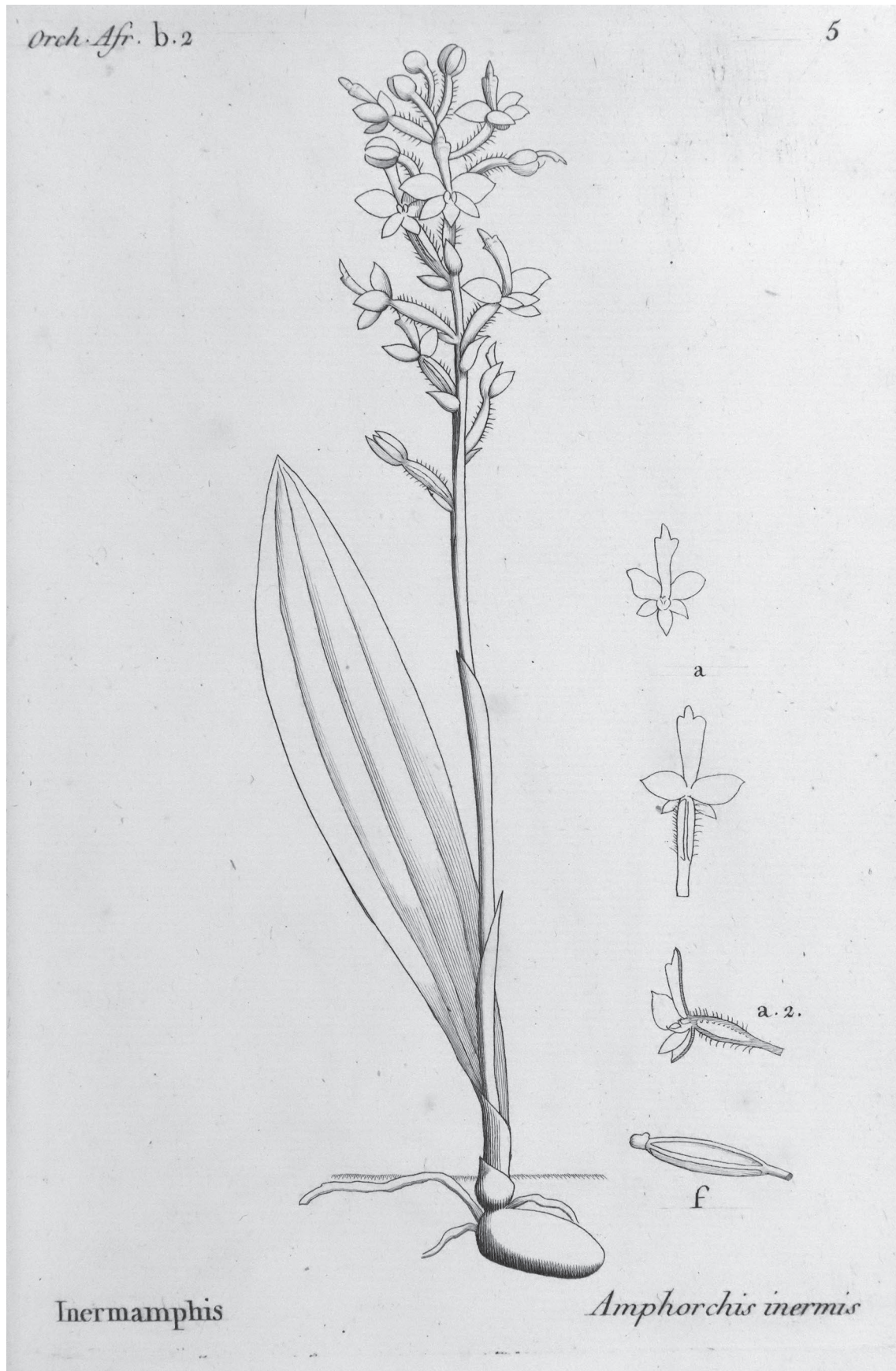


FIG. 1. — Du Petit-Thouars' plate (1822: t.5) of *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb.



FIG. 2. — Inflorescence of *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb in La Réunion, showing the elevated and withering lip (photo: J. Hermans).

the Mascarenes we have dissected, drawn and recorded many plants of *Cynorkis inermis/mauritiana*. It is clear that a number of specimens we have examined have larger or smaller leaves and flowers than those shown in their table 2 (Pailler & Baider 2024: 163). For example, the type of *Cynorkis inermis* (Thouars 4 (P00693148) has an ovary 8 mm long (vs max. 6.6 mm according to Pailler & Baider), lateral sepals 3 mm wide (vs 2.3 mm max.), and petals that are 1.9 mm wide (vs max. 1.2 mm), Du Petit-Thouars' illustration shows a relatively long broad leaf (Du Petit-Thouars 1822: t. 5). Other examples from Mauritius include: *Gungadurdoss & Sevathian* 26967 (MAU0019451), with leaves 19 mm wide (vs max. 15 mm) and lateral sepals c. 6 mm long (vs max 5.3 mm); *Bouton?* Herb. Montpellier (MPU1417314) with a leaf 16 mm wide (vs max. 15 mm); other Bouton collections (BR0000641070), herb. Hooker K, (MAU001535), which have a broad range of leaf and flower measurements; plants from d'Alleizette's herbarium (CLF354014) all with broad leaves and relatively large flowers; a watercolour at K by James William Duncan (1835-1915) from Mauritius accompanying herbarium material, also from Mauritius (Fig. 3), clearly showing a typical '*Cynorkis mauritiana*',

coincidentally with some of the older flowers appearing to have the lip uppermost. In La Réunion some plants of *Cynorkis mauritiana* have smaller leaves and/or flowers than the parameters given for '*Cynorkis inermis*', including *Schlieben* lo 851 (M) and *Schlieben s.n.* (MAU012310), *Cordemoy s.n.* (MARS087648, MARS087757) and *de l'Isle s.n.* (P00738200).

CONCLUSION

We remain confident that *Cynorkis inermis* and *C. mauritiana* are part of the same morphologically variable species. We consider the cause of this variability to be that specimens are peloric or semi-peloric. A similar kind of variability has also been recognised for example in *Cynorkis paradoxa* (Frapp. ex Cordem.) Schltr., which incidentally has been confused on several occasions with *C. inermis* in herbaria. Another well-known example is that of the Asian *Habenaria dentata* (Sw.) Schltr., where peloric (spurless), semi-peloric (short-spurred) and normal forms (long-spurred) are common, which have all been named as distinct species. The proposition that *Cynorkis mauritiana* is largely endemic to La Réunion and *C. inermis* to Mauritius (but not seen recently and possibly extinct) is not supported by the extensive herbarium material and other sources that have been examined.

If living plants of a *Cynorkis* with the lip uppermost, marbled flower colour, narrow leaves and small flowers without a spur were to be found in Mauritius, we might change our opinion but as it has been established that Du Petit-Thouars' type specimen of *C. inermis* is not significantly different from *C. mauritiana* it could then be that there is another, unnamed species involved, but we cannot see evidence showing that Du Petit-Thouars' *Cynorkis inermis* is not the same as Richard's *C. mauritiana*.

TYPIFICATION OF *HEMIPERIS MICRANTHA*
(FRAPP. EX CORDEM.) SCHLTR.
(CF. Pailler *et al.* 2024)

It is clear that the large genus *Cynorkis* is polyphyletic and contains a number of species that may belong elsewhere. Ongoing genetic work will undoubtedly unravel this compound group.

The taxonomic position and nomenclature of *Cynorkis micrantha* (Frapp. ex Cordem.) Schltr. are complex, as outlined by Pailler *et al.* (2024). The treatment of this particular species by Hermans & Cribb (2021, 2023) contains errors, some of which have already been addressed (Hermans & Cribb 2023 addendum) and we are grateful to Pailler and his coworkers for their suggestions. Their neo-typification of *Hemipерis micrantha* with Pailler 167 (REU007364), however is questionable: Frappier in Cordemoy (1895: 239) was rarely specific on the material used in his descriptions, in this instance his protologue has simply: '*Hab., etc... ? vu sec. spont. (herbier du Mus. de la Reun.*' In line with the interpretation of other Frappier and Cordemoy herbarium material, it can be assumed that Frappier described plants that became part of the Cordemoy herbarium, initially in La Réunion but later transferred to



FIG. 3. — Herbarium sheet K[K001552919], showing a watercolour by Duncan of *Cynorkis inermis* (Thouars) Hermans & P.J.Cribb and a Bouton specimen, both from Mauritius (courtesy Royal Botanic Gardens, Kew).

the Aix-Marseille Université (MARS) herbarium. During our research, two specimens from the Cordemoy herbarium (MARS and K) were found to correspond with the protologue and, being associated with the author and his herbarium and matching more recent material, were therefore chosen as lectotypes (Hermans & Cribb 2021: 103, not 2023 as stated in Pailler *et al.* 2024: 150). The two specimens were annotated by Cordemoy as *Hemiperis*, (*Habenaria*), (*Bescherellia*) *aphylla*, an unpublished name which was probably initially intended for the plants, they are without much doubt part of original material used by Frappier. Pailler *et al.* (2024: 150) dismissed the lectotypification because it was: ‘collected in 1896, after the (1895) publication of the basionym’ [*collecté en 1896, après la publication du basionyme en 1895*]. This statement is incorrect: the specimen of ‘Cordemoy 9’ at K [K001551482] is part of a small group of orchid material acquired in 1896 and 1897 by the Kew herbarium, together with Cordemoy’s handwritten labels. The label on ‘Cordemoy 9’ is annotated by Robert Allen Rolfe (1855-1921), then curator of the orchid herbarium at Kew, as ‘Com. Dr. Cordemoy 1896’ and ‘*Id of Reunion*’, the same note being found on other specimens obtained at the same time. The ‘Com.’ is an abbreviation of ‘*communicavit*’ and clearly refers to the date the specimen arrived at Kew and not to its date of collection. Therefore, it is more than likely to have been collected before 1895. The MARS lectotype ‘Cordemoy 9’ was examined by us in P, when the Cordemoy herbarium was on loan to Jean Bosser but before it was recently mounted and re-arranged at REU. This unmounted specimen comprised several plants, labels and notes, including one separate note with the date 22 March 1897 but this is not in Cordemoy’s handwriting and is likely to be a later addition. We have tried to verify this MARS specimen but notwithstanding several requests for information to REU we have received no indication of its whereabouts since it was mounted. The Cordemoy/Frappier herbarium material is original and strongly associated with protologue, therefore, according to the nomenclature code (Turland *et al.* 2018), under article 9.3, 9.8, 9.11, 9.12, 9.19 the designated lectotypes ‘Cordemoy 9’ are valid and should be followed; the lectotype takes precedence over the neotype unless there is serious conflict with the protologue.

Pailler *et al.* (2024: 150) also stated, without providing details, that the description of the species by Hermans & Cribb (2023: 118) appears erroneous compared with the protologue and type. In common with all descriptions in modern Floras, our text was based not only on the protologue and type but also on all of the additional herbarium material, dissections, drawings, descriptions, living material and photographs. As a result, the description gives the full range of measurements and characteristics of the species, which as to be expected goes in some respects beyond the protologue.

LECTOTYPIIFICATION OF *CYNORKIS* *ARNOTTIOIDES* RCHB F.

Pailler & Baider (2024: 164) considered that the Reichenbach herbarium lectotype of *Cynorkis arnottiioides* Rchb f.

(1855: 213), which we now believe to be the same as *Cynorkis paradoxa* (Frapp. ex Cordem.) Schltr. (1915: 401), with the former having nomenclatural priority, is misidentified. According to our drawings and measurements, the identity of the designated lectotype (Reichenbach: W Herb. Orchid Nr 0046815) is correct but recently discovered herbarium material of *Cynorkis arnottiioides* has come to light which makes our lectotypification incorrect. This will be addressed in a forthcoming paper.

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