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**Article**

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# Typification of the name *Litsea mackeei* (née Lauraceae) and its reassignment to the synonymy of *Osmanthus austrocaledonicus* var. *austrocaledonicus* (Oleaceae)

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## Abstract

The protologue of *Litsea mackeei* states that its holotype is at P. However, two specimens bearing the type number appear to exist at P, the second specimen belonging to a species different from the first and bearing as well a label with a different collection number. Fortunately, a clear indication of which plant Kostermans was describing is provided by his handwritten annotation of the isotype at L. A lectotype is therefore chosen, the name is synonymized with *Osmanthus austrocaledonicus* var. *austrocaledonicus* and the origin of this unlikely error is discussed.

**Keywords:** nomenclature, New Caledonia

## Introduction

Lauraceae is an important family in New Caledonia with 50 autochthonous species (Morat *et al.* 2012; Munzinger & McPherson 2016), several being large trees used as timber (Sarlin 1954) or of ecological importance for the structure of humid forest vegetation (Jaffré *et al.* 2012; Birnbaum *et al.* 2015; Pouteau *et al.* 2015). The genus *Litsea* Lamarck (1792: 574) was revised by Kostermans in Flore de la Nouvelle-Calédonie et Dépendances (1974), who retained 14 species, and published a few years later an additional species, *Litsea mackeei* Kostermans (1977: 95). This latter is classified as a narrow endemic species by Wulff *et al.* (2013) and was proposed as Vulnerable on the IUCN red list by Jaffré *et al.* (1998) but is not currently retained (IUCN 2017), although it is officially protected in the North Province of New Caledonia (Anonymous 2008).

*Litsea mackeei* was described from a single collection from Tinip, between Ouaco and Gomen, an area where the vegetation is strongly threatened by anthropogenic fires, and thus relocating that species for conservation purpose should be considered a priority. However, it is not clear how to recognize this plant, which has not been seen since its description forty years ago.

## Searching for the type of *Litsea mackeei*

In the protologue (Kostermans 1977), a holotype is cited in P and an isotype in L (Fig. 1). The literature citation given by Kostermans is erroneous in that Guillaumin's publication dates from 1959 (not 1950), and the citation "*Endiandra* ?—Tinip (5.463)" is on page 174 (not 171). Notably, the plant is stated in the diagnosis to have opposite leaves, a feature that is not uncommon in *Endiandra* Brown (1810: 402), while *Litsea* is a genus with alternate or very rarely subopposite leaves in New Caledonia (Kostermans 1974), although elsewhere they can be opposite to subverticillate (Rohwer 1993).

We further note that while an unambiguously labelled sheet of *MacKee 5463* could not be found in P, the L sheet was easily located and a scan of it is available on JSTOR. This L sheet conforms to the protologue in its possession of opposite leaves and is annotated by Kostermans as type material of this species, although in contrast to his protologue he indicates that this L specimen is the holotype, not the isotype (Fig. 2).

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**Litsea mackeei** Kostermans, *sp. nov.*

— ? *Endiandra*, Guillaumin, Mém. Mus. nat. Hist. nat., ser. B, 8 : 171 (1950).

*Arbuscula, ramulis hornotinis minutissime pulverulente pilosis, foliis oppositis, rigide coriaceis, glabris, oblongis, obtusis basin versus attenuatis, acutis, utrinque lævibus, supra nervis deest, subtus nervo mediano prominulis, nervis erecto-patentibus gracillimis non prominentibus, prope marginem arcuato-conjunctis, petiolis sat crassis; inflorescentiis axillaribus, minutissime pulverulente pilosis, pedunculis communibus sat crassis, ramulis decussatis in bractearum axillis, floribus ignotis.*

Typus : *MacKee 5463* (holo-, P; iso-, L).

**FIGURE 1.** Part of the protologue of *Litsea mackeei*.

Surprisingly Kostermans (1974: 116) already cites in the Flore de la Nouvelle-Calédonie *MacKee 5463* from "dôme de la Tiébaghi, 300-600 m (bout., Mai)", identifying it as *Adenodaphne triplinervia* Kostermans (1974: 115). In fact, the P collection that he then considered as *MacKee 5463* (P00579460) is identified in his hand as *A. triplinervia*, has *alternate* leaves, and bears two labels (Fig. 3), one indicating "5463" with a short morphological description but without locality, while the second indicates "4833 p.p., Dôme de la Tiébaghi, 300-600 m" (apparently in a different hand). Although no annotation "*Endiandra ?*" appears on the specimen, an annotation by Guillaumin reads "*L.* cfr. *racemiflora* Dänik.", which means this specimen was considered as *MacKee 4833* by Guillaumin (1959) who cited it as *L.* cfr. *racemiflora* Dänik. (page 174, a few lines below his citation of 5463 as ? *Endiandra*).

In Paris, another sheet of *MacKee 4833 p.p.* (P00579455) from Dôme de la Tiébaghi, is annotated as a syntype of *Litsea longepedunculata* Kostermans (1974: 102). An obvious duplicate is deposited in L (L1800814) and was probably identified there by Kostermans, but is wrongly cited in the flora as from "pente ouest du Mt. Kaala (fl. mâle, juin)" (Kostermans 1974: 103).

*MacKee 4833A* [P00237035] is cited by Lescot (1980: 26) as *Homalium decurrens* (Vieillard 1866: 105) Briquet (1898: 50) (Salicaceae, ex-Flacourtiaceae), and is in flower, in conformity with MacKee's fieldbook (Table 1).

**TABLE 1**. Data from field book of MacKee (seen in Paris) and destination of duplicates (from a MacKee book in NOU).

| Date and location | MacKee's number, notes on morphology and destination of duplicates |
|---|---|
| 14 June 1956, Dôme de Tiébaghi, pente W 500-600 m | **4833**: Shrub 1.5 m, leaves dark green above, light green below, flower buds green.<br>**4833A**: Shrub 2 m, leaves dark green above, light green below, flowers pink.<br>-> Principal series in P, duplicates in A, E, GB, K, L, UC, US |
| 19 Oct. 1956, Tinip, between Ouaco and Gomen, 10 m. | **5463**: Shrub 1 m, leaves dark green above, light green below, flower buds green.<br>-> Principal series in P, duplicates in A, GB, K, L |

As noted above, the L collection of *MacKee 5463* was identified by Kostermans in 1976 as *Litsea mackeei* (L0036741, Fig. 2) and bears a red label as holotype annotated by Kostermans himself. However, we recognize this plant to be *Osmanthus austrocaledonicus* (Vieillard 1865: 345) Knoblauch (1936: 152) (Oleaceae), and in fact a K specimen identical with this one in L is cited by Green "*MacKee 5463*, Tinip, 19 oct. 1956 (bout.), K" in the list of specimens belonging to *Osmanthus austrocaledonicus* var. *austrocaledonicus* (Green 1998, page 36), an identification with which we agree. The herbaria A (Danielle Hanrahan pers. comm.) and GB (Claes Persson pers. comm.) do not have a duplicate of *MacKee 5463* under any of the names that might be applicable, in contrast to the notes in MacKee's book deposited in NOU (Table 1).

From the above evidence, we infer that a mistake was made by adding the lower-left label to the Paris specimen of *MacKee 4833* (P00579460), perhaps because the morphological descriptions of 4833 and 5463 are nearly identical (Table 1), varying only in the size of the plant (1 m versus 1.5 m tall). Guillaumin had correctly interpreted the number in 1959.

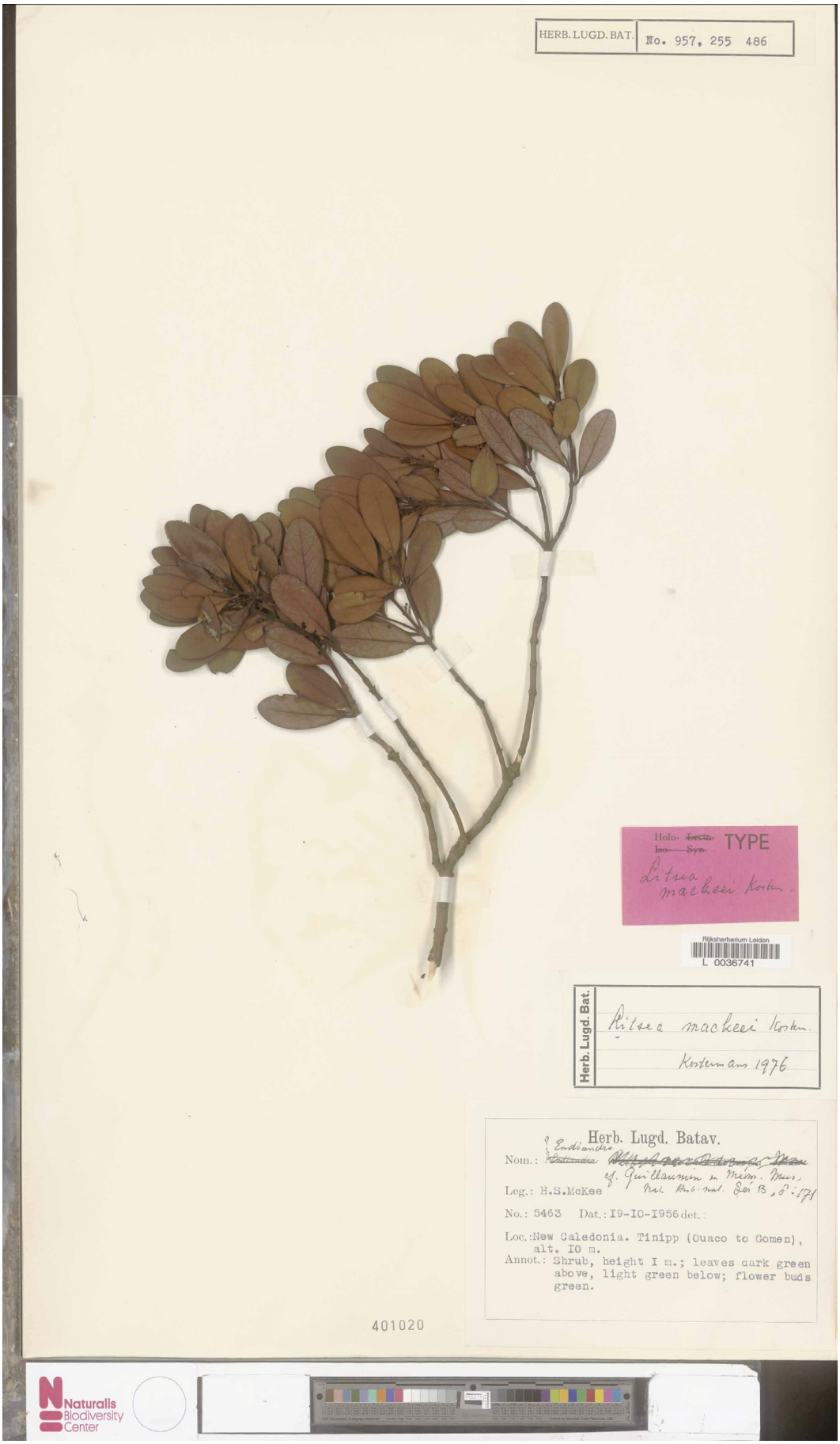


**FIGURE 2.** Specimen from L, cited in the protologue as an isotype of *Litsea mackeei* and annotated by Kostermans in his own hand.

**FIGURE. 3.** Unique specimen found in P bearing the number 5463. Two labels appear on it, the lower-right one with the number 4833, and the lower-left one with the number 5463.

In addition, it is clear from the above that MacKee made a mixed collection under his number 4833, part of which is *Litsea longepedunculata* (P00579455 & L1800814) and another part of which is *Adenodaphne triplinervi*a (P00579460). Someone saw the mistake and annotated (P00579460) as "4833 p.p." but these parts should be distinguished using *4833B* & *4833C* as there is already a *4833A* (Table 1).

A careful search for *MacKee 5463* among the New Caledonian Lauraceae at P, as well as among the New Caledonian *Osmanthus* housed there, failed to uncover a specimen belonging to the same gathering as that of the K and L duplicates. Nevertheless, Guillaumin almost certainly saw such a specimen at P, since he cites (Guillaumin 1959) both 4833 and 5463 (three lines apart) in his series "Plantes récoltées par M. MacKee" and states that MacKee sent his principal series to P (Guillaumin 1955: 324), in agreement with MacKee's book at NOU (Table 1).

Given that taxonomic diversity exists within the ostensibly original material of the protologue and that confusion exists in the literature concerning the identity of *MacKee 5463*, it seems advisable to choose a lectotype for the name *Litsea mackeei* Kostermans (McNeill 2014). Since the P sheet matching the two specimens unambiguously belonging to the type gathering cannot currently be located, we select the L sheet as lectotype and are thus led to the following nomenclatural conclusion:

***Osmanthus austrocaledonicus*** (Vieill.) Knobl. var. ***austrocaledonicus*** in Repert. Spec. Nov. Regni Veg. 41: 152. 1936.

= *Notelaea austrocaledonica* Vieill. in Bull. Soc. Linn. Normandie 9: 345. 1865.

Type:—New Caledonia, Wagap, *E. Vieillard 333* (BM n.v., G barcodes G00383443 & G00383454 [digital photographs!], JE barcode JE00002886 [digital photograph!], K barcode K000978711 [digital photograph!], L barcode L4175593 [digital photograph!], LE barcode LE00016097 [digital photograph!], MEL barcode MEL2409652 [digital photograph!], P barcodes, P00096706!, P00096707!, P00096708!, P00096709!).

= *Litsea mackeei* Kosterm. in Adansonia sér. 2, 17(1): 95. 1977, **syn. nov.**

Lectotype (designated here):—New Caledonia, Tinip, between Ouaco and Gomen, 10 m, *H.S. MacKee 5463* (L barcode L0036741 [digital photograph!]; isolectotypes K barcode K000939406 [digital photograph!], P not found).

Note : Green's statement (1998, page 34) that the holotype of *Osmanthus austrocaledonicus* var. *austrocaledonicus* is at P is the first step in a lectotypification, since 4 syntypes exist at P (McNeill 2014), all of them annotated by Green.

## Conclusion

Thus, in our interpretation, after publishing his flora treatment, Kostermans saw the specimen of *MacKee 5463* in L (L0036741), and influenced by the identification "*Endiandra*?" that he found in Guillaumin's publication (1959), he recorded that determination in his own hand on the specimen, Fig. 2, with the same page mistake as in the protologue of *Litsea mackeei*, Fig. 1. Guillaumin was a specialist of New Caledonia's flora, as he published no fewer than 131 publications dealing with its flora (Hamel 1978), including a revision of Lauraceae (Guillaumin 1925) and made the first complete identification key for the whole flora (Guillaumin 1948). Kostermans was a specialist of Lauraceae, but did not know New Caledonia's flora well (he never visited the archipelago). Thus, the most probable hypothesis is that Kostermans was persuaded that this plant was a Lauraceae because of Guillaumin's note "? *Endiandra*", and in that case it was obviously something unknown in the family. Unfortunately the plant is in bud so he could not check the flowers. However, this *MacKee 5463* collection belongs to *Osmanthus austrocaledonicus* var. *austrocaledonicus.*

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