

A NOTE ON NEW CALEDONIAN EPACRIDACEAE

RUDOLF SCHMID

Department of Botany, University of California, Berkeley 94720

SUMMARY

Thirty pre-1975 and 22 post-1974 collections of *Epacridaceae* from New Caledonia are added to the exsiccatae in Virot's 1975 revision of New Caledonian *Epacridaceae*. A collection of *Styphelia cordifolia* purported to be New Caledonian is shown to be of Australian origin.

The herbaria at RSA (Rancho Santa Ana Botanic Garden, Claremont, California) and UC (University of California, Berkeley) contain appreciable Pacific Basin material as the result of the collecting efforts of present and former students and staff at these institutions: Sherwin Carlquist, Larry E. DeBuhr, and Robert F. Thorne at RSA; Adriance S. Foster, Elmer D. Merrill, Raymond B. Phillips, and Rudolf Schmid at UC. UC, it might be noted, is especially rich in Philippinese specimens deposited by Merrill since he spent 6 years at Berkeley immediately after leaving Manila in 1924. Both RSA and especially UC, of course, contain much duplicate Pacific Basin material from other collectors. For example, Isadore Franc's personal collection of New Caledonian plants eventually went to Gustave Henri Bonati and, after his death, was sold 'quelque peu clandestinement' to UC (Guillaumin, 1930, 1967, the latter the source of the quotation).

Of particular relevance to New Caledonian *Epacridaceae* are the collections of Adriance S. Foster (1901–1973—see Gifford, 1973 and Kaplan et al., 1977). From 5 May through 16 July 1956 Foster collected 223 numbers from New Caledonia (210 of these are identified in Guillaumin 1957), of which a full 60 numbers were of *Epacridaceae* (57 of these are identified in Guillaumin 1957, and 48 in Virot 1975). Foster was a well-known anatomist and morphologist, the author of two textbooks on these topics. Late in his career he became particularly interested in leaf venation. Not surprisingly the distinctive, essentially palmate venation of the epacrids caught his attention, but although he prepared material of various *Epacridaceae* for anatomical study (Foster's slides now in my possession), he never published on it.

Virot's 1975 revision of New Caledonian *Epacridaceae* contains an excellent and detailed discussion of vegetative and reproductive organographic variability, as well as a comprehensive key to the 3 genera and 20 species (of which 2 species are introduced—see below) in this region. For various reasons a fair amount of pre-1975 material of *Epacridaceae* is not listed in the exsiccatae in Virot (1975). Consequently, according to Virot's epacridaceous criteria and concepts, I determined and compiled the following listing of New Caledonian *Epacridaceae* at RSA and UC*, with emphasis on the collections by Foster:

* Unless indicated all material is reproductive, with flower buds, open flowers, and/or fruits.

1. *Styphelia behrii* (Schlechtendal) Sleumer
No material at RSA and UC.
2. *Styphelia floribunda* (Brongniart & Gris) Sleumer
New material: *Franc 834/835*, s. loc., s. date (UC), *3016*, s. loc., s. date (UC).
Dupl. det. Viro (1975): *Balansa 2190* (UC); *Thorne 28190* (RSA).
3. *Styphelia coryphila* (Guillaumin) Sleumer
New material: *Franc 3109*, s. loc., s. date (UC), *s.n.*, s. loc., s. date (UC).
Dupl. det. Viro (1975): *Thorne 28213* (RSA: isotype of *Leucopogon violaceo-spicatus* Guillaumin!).
4. *Styphelia longistylis* (Brongniart & Gris) Sleumer
New material: *Musselman et al. 5278*, Lac en 8, Plaine des Lacs, 19-V-1977 (UC); *Phillips & Schmid 3148*, Lac en 8, Plaine des Lacs (210 m), 23-VII-1978 (NOU, OKL, UC).
Dupl. det. Viro (1975): *Foster 14, 17, 61, 72* (UC); *Franc 407 Sér. A. (XI-1913), 1660 Sér. A* (UC); *Guillaumin & Baumann-Bodenheim 6500, 8349* (RSA); *MacDaniels 2525* (UC); *McKee 2652* (UC); *McMillan 5140* (UC).
5. *Styphelia albicans* (Brongniart & Gris) Sleumer
New material: *Foster 3*, Dumbéa Barrage, 5-V-1956 (UC), *219*, Forêt de Thy, 16-VII-1956 (date from Foster's collection book, improperly given as 5-V-1956 on specimen) (UC); *Franc 3104*, s. loc., s. date (UC); *McKee 4373*, Mt. Dzumac, 14-IV-1956 (UC); *Musselman et al. 5098*, Creek Pernod, Plaine des Lacs, 11-V-1977 (UC), *5168*, Mt. des Sources (900 m), 14-V-1977 (UC); *Stone 10596*, Mt. des Sources (750 m), 28-VIII-1971 (RSA).
Dupl. det. Viro (1975): *Baumann-Bodenheim 14904* (RSA); *Buchholz 1153, 1732* (UC); *Foster 4, 32, 43, 44, 45, 46, 47, 48, 85, 195* (UC); *Franc 62 Sér. A, 3105* (UC); *Guillaumin & Baumann-Bodenheim 11327* (RSA); *McKee 2013, 4094, 4095* (UC); *McMillan 5112, 5195* (UC); *Stauffer & Pennington 5704* (RSA, UC); *Thorne 28468, 28591* (RSA).
6. *Styphelia enervia* (Guillaumin) Sleumer
New material: *McKee 4920*, Vallée de la Tontouta, 15-VII-1956 (UC); *Phillips & Schmid 3260*, Vallée de la Tontouta (90–110 m), 18-VIII-1978 (K, NOU, NY, OKL, RSA, UC, US).
Dupl. det. Viro (1975): *Balansa 2747* (UC: isotype!); *Baumann-Bodenheim 15536* (RSA); *McKee 3493* (UC); *Thorne 28461* (RSA).
7. *Styphelia pancheri* (Brongniart & Gris) F. von Mueller
New material: *Franc 441*, s. loc., s. date (UC); *Musselman et al. 5083*, near Plum and Baie des Pirogues, 10-V-1977 (UC), *5242*, Mt. Dzumac (1000 m), 17-V-1977 (UC), *5410*, Mt. Do (1000 m), 24-V-1977 (UC); *Stone 10564*, Mt. des Sources (350 m), 28-VIII-1971 (RSA).
New material doubtfully placed: *Foster 89*, Forêt de Thy (ca 400 m), 24-V-1956 (sterile) (UC), *145*, Col de Parari, 11-VI-1956 (sterile) (UC). Both specimens were determined by Guillaumin (1957) as *Leucopogon salicifolius* Brongniart & Gris, a synonym of *S. pancheri* according to Viro (1975). However, according to Viro (1975), *S. pancheri* and several other New Caledonian species of *Styphelia* are not identifiable from sterile material.
Dupl. det. Viro (1975): *Buchholz 1618* (UC); *Foster 10* (UC); *Guillaumin & Baumann-Bodenheim 12823* (RSA); *McKee 4372* (UC).
Foster collections det. Viro (1975) but not seen by me: *Foster 49, 56, 84*.
8. *Styphelia veillonii* R. Viro

- Dupl. det. Viro (1975): *Foster 51, 52* (UC).
 Foster collections det. Viro (1975) but not seen by me: *Foster 25*.
9. *Styphelia dammarifolia* (Brongniart & Gris) F. von Mueller
 New material doubtfully placed: *Foster 42*, Mt. des Sources, 10-V-1956 (sterile) (UC), *50*, Col de Mouirange, 14-V-1956 (sterile) (UC). Both specimens were determined by Guillaumin (1957) as *Leucopogon dammarifolius* Brongniart & Gris, a synonym of *S. dammarifolia*. However, according to Viro (1975), *S. dammarifolia* and several other New Caledonian species of *Styphelia* are not identifiable from sterile material.
 10. *Styphelia balansae* R. Viro
 New material: *Foster 33*, Mt. des Sources, 10-V-1956 (sterile, but clearly this species on basis of the exceptionally large leaves attaining 35 × 4.8 cm) (UC).
 Dupl. det. Viro (1975): *Balansa 2184* (UC: isotype!); *Thorne 28688* (RSA).
 11. *Styphelia macrocarpa* (Schlechter) Sleumer
 - a. Variety *macrocarpa*
 Dupl. det. Viro (1975): *Thorne 28636* (RSA).
 - b. Variety *breviloba* R. Viro
 New material: *Pancher s.n.*, s. loc., s. date (in flower and mostly bud) (UC).
 Dupl. det. Viro (1975): *Hürlimann 1540* (RSA); *Le Rat 28* (UC); *McKee 4658* (UC); *Thorne 28724* (RSA).
 12. *Styphelia cymbulae* (Labillardière) Sprengel
 New material: *Anonymous (?Balansa) s.n.*, s. loc., s. date (UC); *Cohic s.n.*, Isle des Pins, 1956 (UC); *Foster s.n.*, near Yaté, 1956 (probably 6-May) (UC), *142*, Col de Parari, 11-VI-1956 (UC), *152*, Mt. Ignambi, 12-VI-1956 (UC); *Franc 67*, no specific locality ('terrains ferrugineux flancs des montagnes dans les broussailles') (300–500 m), X-XI-1905 (UC), *67 bis*, Vallée de la Dumbéa (200–500 m), X-1905 (UC); *Musselman et al. 5096*, near Col de Mouirange (ca 200 m), 11-V-1977 (UC), *5171*, Mt. des Sources (900 m), 14-V-1977 (UC); *Phillips & Schmid 3060*, near Col de Mouirange (ca 200 m), 20-VII-1978 (NOU, RSA, UC).
 New material doubtfully placed: *Cohic s.n.*, Prony, Plaine des Lacs, 22-VI-1956 (sterile) (UC). Determined by Guillaumin (1957) as *Leucopogon cymbulae* Labillardière, a synonym of *S. cymbulae*. However, according to Viro (1975), *S. cymbulae* and several other New Caledonian species of *Styphelia* are not identifiable from sterile material.
 Dupl. det. Viro (1975): *Balansa 3241* (UC); *Buchholz 1722* (UC); *Foster 7, 19, 26, 28, 53, 83, 111, 120, 129, 130, 132, 135, 136, 138, 139, 141, 147, 176, 179* (UC); *Franc 152 Sér. A, 1573 Sér. A, 2383* (UC); *Germain s.n.* (UC); *Guillaumin & Baumann-Bodenheim 10140, 10685, 12351, 15536* (RSA); *MacDaniels 2181* (UC); *McKee 1953, 2086, 4238, 4276, 4562, 4604* (UC); *McMillan 5026, 5062* (UC); *Thorne 28019* (RSA, UC), *28053, 28096, 28164, 28490, 28597* (RSA).
 Foster collections det. Viro (1975) but not seen by me: *Foster 37, 150* (no such number in Foster's collection book), *174, 175*.
 13. *Epacris pauciflora* A. Richard
 No material at RSA and UC.
 14. *Dracophyllum involucreatum* Brongniart & Gris
 New material: *Franc 131*, Mts. des Koghis (400–800m), s. date (UC); *Phillips & Schmid 3152*, Grand Lac, Plaine des Lacs (210 m), 23-VII-1978 (NOU,

- UC); *Schmid & Phillips 1978–35*, Grand Lac, Plaine des Lacs (210 m), 23-VII-1978 (NOU, UC).
 Dupl. det. Viro (1975): *Baumann-Bodenheim 15378* (RSA); *Franc 1518 Sér. A* (UC).
15. *Dracophyllum alticola* Däniker
 No material at RSA and UC.
16. *Dracophyllum verticillatum* Labillardière
 New material: *Pancher s.n.*, s. loc., ?1870 (UC); *Schmid 1978–164*, Mts. des Koghis (375 m), 26-VIII-1978 (NOU, UC); *Vieillard s.n.*, s. loc., s. date (UC).
 Dupl. det. Viro (1975): *Balansa 3238, 3239* (UC); *Baumann-Bodenheim 15644* (RSA); *Foster 81* (UC); *Franc 2385* (UC); *Hürlimann 1869* (RSA); *McMillan 5094* (UC); *Thorne 28091, 28175, 28515* (RSA).
17. *Dracophyllum balansae* R. Viro
 New material: *McKee 2608*, Plaine des Lacs, 19-VI-1955 (UC).
 Dupl. det. Viro (1975): *Baumann-Bodenheim 15053* (RSA).
18. *Dracophyllum cosmelioides* Pancher ex Oliver
 New material: *Franc 1549 Sér. A*, Prony, Plaine des Lacs, XII-1913 (UC).
 Dupl. det. Viro (1975): *Foster 15* (UC); *Franc 1825 Sér. A* (UC).
19. *Dracophyllum ramosum* Pancher ex Brongniart & Gris
 New material: *Cronquist & Moore 11615*, between Rivière Bleue and Ouenarou (ca 150 m), 8-X-1978 (RSA); *Cronquist et al. 11625*, Mt. Dzumac (850 m), 11-X-1978 (RSA); *Franc s.n.*, s. loc., s. date (UC); *Musselman et al. 5175*, Mt. des Sources (900 m), 14-V-1977 (UC); *Phillips & Schmid 3295*, Rivière Bleue preserve (ca 150 m), 20-VIII-1978 (NOU, OKL, RSA, UC); *Schmid & Phillips 1978–106*, Rivière Bleue preserve (ca 140 m), 20-VIII-1978 (NOU, UC); *Stone 10598*, Mt. des Sources (300–400 m), 28-VIII-1971 (RSA).
 Dupl. det. Viro (1975): *Buchholz 1212, 1484* (UC); *Foster 2, 27* (UC); *Franc 608, 1868, 2420, 3108* (UC); *Guillaumin & Baumann-Bodenheim 7866* (RSA); *MacDaniels 2478* (UC); *McKee 2010* (UC); *McMillan 5159* (UC); *Thorne 28058* (RSA, UC), *28195, 28274, 28281* (RSA).
20. *Dracophyllum ouaiemense* R. Viro
 No material at RSA and UC.

Material excluded from Epacridaceae: *Franc 1760*, misidentified as '*Leucopogon* sp.', = *Melaleuca gnidioides* Brongniart & Gris (Myrtaceae).

Of the 3 genera and 20 species of *Epacridaceae* listed above and by Viro (1975) for New Caledonia, two taxa are introduced: *Epacris pauciflora* A. Richard and *Styphelia behrii* (Schlechtendal) Sleumer (see Viro 1975). In addition, both at RSA and UC there is a collection of a third possible introduction of *Epacridaceae* for New Caledonia, namely:

Styphelia cordifolia (Lindley) F. von Mueller: *Foster 1–9*, shrub 1 m tall, edge of cliff, Dumbia [sic] Barrage, Tea Tree Gully, New Caledonia, 5-V-1956 [sheets at RSA and UC initially determined by the synonym *Leucopogon cordifolius* Lindley].

This purported New Caledonian collection, however, is of very doubtful origin for several reasons: (1) Neither this collection nor this species are mentioned in Guillaumin's (1957) publication on Foster's New Caledonian collections nor in Viro's (1975) revision of New Caledonian *Epacridaceae*. Foster himself apparently

supplied (correctly!) the determination of this collection. (2) This collection is not listed in Foster's collection book from New Caledonia. Foster did make his first 12 New Caledonian collections (numbered 1 through 10, 10a, 10b) on 5 May 1956 at Dumbéa in the vicinity of the dam ('Barrage'), but *Foster 1–9* is not listed among these, although 5 other collections of epacrids are (see above and item '7' below). (3) 'Tea Tree Gully' is, to my knowledge, no locality in New Caledonia, but is definitely one in Australia, being about 15 km northeast of Adelaide (information from an Australian Tourist Commission map and a collection of *Styphelia cordifolia* at RSA, *Southcott B220*). (4) Foster actually visited Australia prior to New Caledonia and lectured at Sydney, Canberra, and Adelaide (Mrs. Helen Foster, pers. comm. 1980; Kaplan et al., 1977). In Australia he collected a few *Epacridaceae*: *S. longifolia* R. Brown, in Manheim, New South Wales, on 3 March 1956 (*Foster s.n.*, at RSA, UC), and *S. cordifolia* (Helen Foster, pers. comm.).

The collection *Foster 1–9* of *Styphelia cordifolia* thus most assuredly is not New Caledonian, but was collected in Australia, perhaps in the vicinity of Adelaide, South Australia, and then later mistakenly attributed to Dumbéa, New Caledonia. In addition to the above facts, the following seems relevant to this conclusion: (5) *Foster 1–9* seems an interpolated number, perhaps meaning collected in the vicinity of collections 1 through 9. Curiously, Foster's few other interpolated numbers were designated 'a' and 'b' (e.g., see item '2' above). (6) 'Dumbéa' on the label of *Foster 1–9* is misspelled 'Dumbia' but is correctly spelled on his other 12 collections from this site and date. This again suggests a subsequent interpolation. (7) In Foster's collection book the name '*Leucopogon cordifolium*' [sic] was inexplicably added for 3 collections of *Styphelia*, namely, *S. albicans* (*Foster 3, 4*) and *S. pancheri* (*Foster 10*).

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