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## Orchidaceae of Îles de la Société (Polynesia Française). Actualized checklist

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### ABSTRACT

Checklist of Orchidaceae of The Society Islands (French Polynesia) are gathered and presented. Presence of 20 genera, 27 species, 3 subspecies, 8 varietas and 2 taxonomic forms of native species and 2 genera with sole naturalized species of Orchidaceae are confirmed from the archipelago.

**Key words:** Flora, Orchidaceae, The Society Islands, French Polynesia

### 1. INTRODUCTION

Îles de la Société (Polynesia Française) consists of islands of coral and volcanic origin. The islands geographical situation within the equatorial and tropical climatic zones, specific geological and hydrological conditions, together with its biological isolation have obviously influenced the disparate character of the flora and fauna of these areas. The characteristic feature of the flora of many Polynesian islands is its big diversity on particular islands resulting from the differences in exposure to weather conditions (humid or dry windwards). Îles de la Société consists of two island groups, geologically older the so-called Îles Sous le Vent (Leeward Islands): Huahine, Raiatea, Tahaa, Bora Bora, Maupiti, Tupai, Maupihaa, Motu One and Manuae and geologically younger Îles du Vent (the Winward Islands): Tetiaroa, Maiao, Mo'orea, Mehetia and Tahiti. (Margońska & Szlachetko 2010). Îles de la Société never had connections to the main/continental land. The natural migration of living organisms took place mostly by sea and partially by air (seabirds or the so-called aeroplankton). Out of approximately 495 species of indigenous vascular plant e.g. Tahiti has as many as approximately 224 endemic

species, constituting almost 45% of the entire flora of the island. On the other hand, there are no fewer than approximately 375 naturalized (more or less consciously by people) plant species.

Because of the archipelago unique weather (microclimates), physical and geographical conditions, isolation and remarkable flora, especially because of currently strong anthropopressure, Îles de la Société and its living organisms undoubtedly deserve a study and protection.

## 2. ALPHABETIC CHECKLIST OF GENERA WITH SPECIES

### Native species

#### 1. *Bulbophyllum* Thouars, *nom. cons.*, Hist. Orchid.: t. 3. 1822.

GENERITYPE: *Bulbophyllum nutans* Thouars, *typ cons.*

##### 1.1. *Bulbophyllum tahitense* Nadeaud, Enum. Pl. Tahiti: 36. 1873.

DISTRIBUTION: E Polynesia - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora).

##### 1.1.1. *Bulbophyllum tahitense* ssp. *butaudianum* Marg. Acta Soc. Bot. Pol. 81(1): 11-16. 2012.

DISTRIBUTION: E Polynesia - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora).

#### 2. *Calanthe* R.Br, *nom. cons.*, Bot. Reg. 7: t. 573. 1821.

GENERITYPE: *Calanthe veratrifolia* (Willd.) R.Br. (= *Calanthe triplicata* (Willemet) Ames).

##### 2.1. *Calanthe tahitensis* Nadeaud, Énum. Pl. Tahiti: 37. 1873.

2.1.1. *Calanthe tahitensis* var. *typica* F.Br, Occas. Pap. Bernice Pauahi Bishop Mus. 9: 14. 1930.

2.1.2. *Calanthe tahitensis* var. *deltoidea* F.Br, Occas. Pap. Bernice Pauahi Bishop Mus. 9: 15. 1930.

2.1.3. *Calanthe tahitensis* var. *marquisensis* F.Br, Bernice P. Bishop Mus. Bull. 84: 177. 1931.

DISTRIBUTION: Oceania - the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa) and Marqueses.

##### 2.2. *Calanthe triplicata* (Willemet) Ames, Philipp. J. Sci. 2: 326. 1907.

DISTRIBUTION: Madagascar, Mauritius, Seychelles; SE Asia; Australia, Oceania - Marianas, Vanuatu, New Caledonia, Fiji, Samoa, Caroline Islands, Wallis and Futuna Islands, French Polynesia (the Society Islands – Tahiti, Mo'orea, Raiatea, Huahine).

2.2.1. *Calanthe triplicata* var. *gracillima* (Lindl.) N. Hallé, in Szlach. et al., Fragm. Florist. Geobot. 43: 41. 1998.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea, Huahine) and The Austral Islands.

3. *Cirrhopetalum* Lindl. *nom. cons.*, Edwards's Bot. Reg. 10: t. 832. 1824, *nom. nud.* Gen. Sp. Orchid. Pl.: 45, 58. 1830.

GENERITYPE: *Cirrhopetalum thouarsii* Lindl. (= *Cirrhopetalum umbellatum* (G. Forst.) Reinw.).

3.1. *Cirrhopetalum umbellatum* (G.Forst.) Reinw., in Hook. & Arn, Bot. Beechey Voy.: 71. 1832.

DISTRIBUTION: E Polynesia - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora).

4. *Corymborkis* Thouars, Nouv. Bull. Sci. Soc. Philom. Paris 1: 318. 1809.

GENERITYPE: *Corymborkis corymbis* Thouars.

4.1. *Corymborkis veratrifolia* (Reinw.) Bl., Coll. Orchid.: 125. 1859.

DISTRIBUTION: S and SE Asia, Australia, Oceania - Solomon Islands, Vanuatu, Fiji, Tonga, Samoa, the Society Islands (Tahiti, Mo'orea).

5. *Corysanthes* R.Br. Prodr. Fl. Nov. Holland.: 328. 1810.

GENERITYPE: *Corysanthes fimbriata* R.Br.

5.1. *Corysanthes minuta* (Drake) Schltr., in Schumann & Lauterbach, Fl. Schutzgeb. Südsee, Nachtr.: 82. 1905.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea).

6. *Crepidium* Bl., Bijdr. Fl. Ned. Ind. 8: 387. 1825, *emend.* Szlach, Fragm. Flor. Geobot, Suppl. 3: 123. 1995;

GENERITYPE: *Crepidium rheedii* Bl.

6.1. *Crepidium resupinatum* (Forst. f.) Szlach., Fragm. Flor. Geobot, Suppl. 3: 131. 1995.

DISTRIBUTION: Asia: Indonesia, Papua New Guinea; Oceania - Solomon Islands, Vanuatu, Fiji, Tonga, Samoa, Cook Islands, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora), The Austral Islands.

7. *Dendrobium* Sw, *nom cons.*, Nova Acta Regiae Soc. Sci. Upsal. 6: 82. 1799.

GENERITYPE: *Dendrobium moniliforme* (L) Sw, *typ. cons.*

7.1. *Dendrobium biflorum* (G.Forst.) Sw., Nova Acta Regiae Soc. Sci. Upsal. 6: 84. 1799, non *Dendrobium biflorum* A.Rich, Ess. Fl. N. Zel. 167. 1832. (= *Dendrobium cunninghami* Lindl., Bot. Reg. 21: sub.t. 1756. 1835., non *Dendrobium cunninghami* Steud, Nomencl. Bot. Ed. 2, 1: 490. 1840., *nom. illeg.*).

DISTRIBUTION: New Guinea and neighbouring islands; Oceania - Solomon Islands, Vanuatu, Fiji, Samoa, New Caledonia, the Society Islands (Mehetia, Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora, Maupiti).

**7.2. *Dendrobium emarginatum*** J.W.Moore., Bernice P. Bishop Mus. Bull. 102: 24. 1933.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Raiatea, Mo'orea).

**7.3. *Dendrobium involutum*** Lindl., J. Proc. Linn. Soc, Bot. 3: 15. 1859.

DISTRIBUTION: Oceania - Cook Islands, Vanuatu, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora), Austarl Islands.

**8. *Dockrillia*** Brieger, in Schlechter, Orchideen 1(11-12): 745. 1981.

GENERITYPE: *Dockrillia linguiforme* (Sm.) Brieger.

**8.1. *Dockrillia crispatum*** (G.Forst.) Rauschert, Repert. Sp. Nov. Regni Veg. 94: 446. 1983.

DISTRIBUTION: E Polynesia - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea).

**9. *Eria*** Lindl., Bot. Reg. 11: t. 904. 1825.

GENERITYPE: *Eria stellata* Lindl.

**9.1. *Eria rostriflora*** Rchb.f., in Seemann, Fl. Vit.: 301. 1868.

DISTRIBUTION: Oceania - Solomon Islands, New Caledonia, Guam, Vanuatu, Fiji, Samoa, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora).

**10. *Habenaria*** Willd., Sp. Pl. 4: 44. 1805.

GENERITYPE: *Habenaria macroceratitis* Wild.

**10.1. *Habenaria marquisensis*** F.Br., Bernice P. Bishop Mus. Bull. 84: 179. 1931.

DISTRIBUTION: Oceania - the Society Islands, Marqueses.

**10.1.1. *Habenaria marquisensis* ssp. *hallei*** Kras & Marg., Ann. Nat. Mus. Wien. ser. Bot. 111 B.: 171-173. 2010.

DISTRIBUTION: Oceania - the Society Islands (endemic to Tahiti – confirmed by Margońska, in Kras & Marg. 2010).

**10.2. *Habenaria tahitensis*** Nadeaud, Enum. Pl. Tahiti: 38. 1873.

DISTRIBUTION: Oceania - the Society Islands (Tahiti), Marqueses (confirmed by Margońska, in Mar., Kras & Saw. 2009.).

**10.2.1. *Habenaria tahitensis* var. *fredjacqi*** Marg., Biodiversity: Research and Conservation. 19. 11-14. 2010.

DISTRIBUTION: Oceania - the Society Islands (endemic to Tahiti).

**11. *Liparis*** L.C.Rich. *nom. cons.*, Orch. Europ. Annot. 21, 30, 38. 1817 (repr. in Mem. Mus. Hist. Nat, Paris, 4: 43. 1818).

GENERITYPE: *Liparis loeselii* (L.) L.C.Rich. (*Ophrys loeselii* L.).

DISTRIBUTION: Oceania - Cook Islands, the Society Islands (Tahiti, Mo'orea, Raiatea), Marquises, The Austral Islands.

**11.1. *Liparis clypeolum*** (G.Forst.) Lindl., Gen. et Sp. Orchid. Pl.: 29. 1830.

**11.1.1. *Liparis clypeolum* var. *marquisensis*** F.Br, Bull. BISH op. Mus, Honolulu No. 84, 174. 1931.

DISTRIBUTION: Oceania - Marquises.

**11.1.2. *Liparis clypeolum* var. *rapensis*** F.Br., Bull. BISH op. Mus, Honolulu 84: 174-175. 1931

DISTRIBUTION: Oceania - the Austral Islands.

**11.1.3. *Liparis clypeolum* var. *tahitensis*** F.Br, Occas. Pap. Bernice Pauahi BISH op. Mus. 9: 21. 1930.

DISTRIBUTION: Oceania - the Society Islands (Tahiti).

**11.1.4. *Liparis clypeolum* ssp. *cuspidata*** (Ridl.) Marg., in Marg. & Szlach., Orchidaceae of Tahiti (Polynesia Française). Gdańsk University Press. 140 pp., 2010.

DISTRIBUTION: Oceania – endemic to the Society Islands (only Tahiti).

**12. *Microtatorchis*** Schltr., in K.M.Schumann & C.A.G.Lauterbach, Fl. Schutzgeb. Südsee, Nachtr.: 224. 1905.

GENERITYPE: *Microtatorchis perpusilla* Schltr.

**12.1. *Microtatorchis paife*** (Drake) Garay, Bot. Mus. Leafl. 23: 187. 1972.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea) and The Austral Islands.

**13. *Moerenhoutia*** Bl., Coll. Orchid.: 99. 1858 (1859).

GENERITYPE: *Moerenhoutia plantaginea* Bl. (= *Moerenhoutia commelynae* (Lindl.) Schltr.)

**13.1. *Moerenhoutia commelynae*** (Lindl.) Schltr., Bot. Jahrb. Syst. 56: 450. 1921.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea, Raiatea).

**14. *Nervilia*** Comm. ex Gaud.-Beaupre, *nom. cons.* Voy. Uranie Phys. Frey, Bot.: 422. 1829.

GENERITYPE: *Nervilia aragoana* Gaudich. typ. cons.

**14.1. *Nervilia aragoana*** Gaudich, Voy. Uranie Phys. Frey, Bot.: 422. 1829.

DISTRIBUTION: Africa, S and SE Asia, Australia, Oceania - Marian Islands, Solomon Islands, Vanuatu, New Caledonia, Horne Islands, Fiji, Niue, Samoa, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora).

**15. *Oberonia*** Lindl. *nom. cons.*, Gen. Sp. Orch. Pl.: 15. 1830.

GENERITYPE: *Oberonia iridifolia* (Roxb.) Lindl., *typ. cons.* (=Cymbidium iridifolium Roxb. =*Oberonia mucronata* (D.Don) Ormerod & Seidenf.).

**15.1. *Oberonia equitans*** (G.Forst.) Mutel., Soc. Roy. Centr. Agric. Sci. Arts Dépt. Nord: 84. 1837.

DISTRIBUTION: Oceania - Solomon Islands, Vanuatu, New Caledonia, Fiji, Tonga, Samoa, Cook Islands, Tuamotus, the Society Islands (Mehetia, Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora, Maupiti) and The Austral Islands.

**15.2. *Oberonia tahitensis*** Lindl., Fol. Orchid. 8 (Oberonia): 2. 1859.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea - newly recorded in 2007 by Margońska (Marg. & Szlach. 2010.)).

**16. *Parapteroceras*** Aver., Bot. Zurn. 75(5): 723. 1990 & Konsp. Sosud. Rast. Fl. Vietnam 1: 134. 1990.

GENERITYPE: *Parapteroceras elobe* (Seidenf.) Aver. (=Pteroceras elobe Seidenf.).

**16.1. *Parapteroceras papuanum*** (Schltr.) Szlach., Ann. Bot. Fenn. 40: 67. 2003.

DISTRIBUTION: New Guinea; Australia (Queensland); Oceania - Solomon Islands, Vanuatu, New Caledonia, Fiji, Cook Islands, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa), The Austral Islands.

**17. *Peristylus*** Bl., *nom. cons.*, Bijdr. Fl. Ned. Ind. 8: 404. 1825.

GENERITYPE: *Peristylus grandis* Bl.

**17.1. *Peristylus societatis*** (Drake) N.Hallé, Orchidophile (Asnières) 40: 1481. 1980.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Raiatea).

**18. *Phaius*** Lour, Fl. Cochinch. 2: 517, 529. 1790.

GENERITYPE: *Phaius tankervilleae* (Banks ex L'Hér.) Bl.

**18.1. *Phaius tahitensis*** Schltr., Univ. Calif. Publ. Bot. 12: 161. 1926, *nom. nov. pro Calanthe grandiflora* Nadeaud, Énum. Pl. Tahiti: 37 n. 27. 1873.

**18.1. 1. *Phaius tahitensis* f. *typica*** F. Brown, Bern. P. Bishop Mus. Occ. Paper, Honolulu, 9, 4: 13. 1930.

**18.1. 2. *Phaius tahitensis* f. *obtusa*** F. Brown, Bern. P. Bishop Mus. Occ. Paper, Honolulu, 9, 4: 13. 1930.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo,orea, Raiatea, Tahaa, Huahine).

**19. *Phreatia*** Lindl., Gen. Sp. Orchid. Pl.: 63. 1830.

GENERITYPE: *Phreatia elegans* Lindl.

**19.1. *Phreatia matthewsii*** Rchb.f., Otia Bot. Hamburg.: 55. 1878.

DISTRIBUTION: New Ireland, Bougainville Islands, Oceania - Solomon Islands, Vanuatu, New Caledonia, Horne Islands, Fiji, Samoa, the Society Islands (Tahiti, Mo'orea, Raiatea, Huahine, Bora Bora).

**19.2. *Phreatia tahitensis*** Lindl., J. Proc. Linn. Soc., Bot. 3: 62. 1859.

DISTRIBUTION: Philippines, Oceania - Caroline Islands, the Society Islands (Tahiti, Raiatea, Tahaa).

**20. *Stichorkis*** Thouars, Nouv. Bull. Sci. Soc. Philom. Paris 1: 318. 1809.

GENERITYPE: *Epidendrum cespitosum* Lam. (= *Stichorkis cespitosa* (Lam.) Thouars ex Marg.) non *Stichorkis disticha* (Lam.) Pfitz, designated by Rasmussen 1997: 390.

**20.1. *Stichorkis cespitosa*** (Lam.) Thouars ex Marg., Nouv. Bull. Sci. Soc. Philom. Paris 1: 318. 1809, emend. in Szlach, Marg. & Kułak, Acta Soc. Bot. Pol. 77(1): 35. 2008.

DISTRIBUTION: Madagascar and neighbouring islands; India, Sri Lanka to SE Asia; Australia, Oceania - Solomon Islands, Vanuatu, New Caledonia, Fiji, Samoa, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora), The Austral Islands.

**21. *Taeniophyllum*** Bl., Bijdr. Fl. Ned. Ind. 7: 355. 1825.

GENERITYPE: *Taeniophyllum obtusum* Bl. (= *Taeniophyllum pusillum* (Willd.) Seidenf. & Ormerod).

**21.1. *Taeniophyllum elegantissimum*** Rchb.f., Otia Bot. Hamburg.: 53. 1878.

DISTRIBUTION: Oceania - endemic to the Society Islands (Tahiti, Mo'orea).

**21.2. *Taeniophyllum fasciola*** (G.Forst.) Seemann, Syn. Pl. Vit. (Viti: Acc. Gov. Miss. Fijian Isl. 1860-61, 443) 13. 1862 & Bonplandia 10: 297. 1862.

DISTRIBUTION: Oceania - Marian Islands (Guam), Solomon Islands, Vanuatu, New Caledonia, Fiji, Tonga, Pitcairn, Horne Islands, Samoa, Cook Islands, the Society Islands (Tahiti, Mo'orea, Raiatea, Tahaa, Huahine, Bora Bora, Maupiti), The Austral Islands.

## Naturalized species

**1. *Spathoglottis*** Bl., Bijdr. Fl. Ned. Ind. 8: 400. 182.

GENERITYPE: *Spathoglottis plicata* Bl.

**1.1. *Spathoglottis plicata*** Bl., Bijdr. Fl. Ned. Ind. 8: 400. 1825.

The species is occurred in various ecosystems and was also found as an epiphyte. Particularly abundantly and impressively looks in meadow ecosystems, where there was never an orchid element on the islands Îles de la Société.

DISTRIBUTION: S and SE Asia; naturalized in tropical and subtropical regions of Africa, Australia, the Americas and Oceania - Solomon Islands, Vanuatu, New Caledonia, Horne



Islands, Tonga, Niue, Samoa, Fiji, the Society Islands (Tahiti, Mo'orea, Huahine, Raiatea, Tahaa) and Marquises.

**2. *Vanilla*** Plum. *ex* Mill., Gard. Dict. Abr. ed. 4. 1754.

GENERITYPE: *Vanilla mexicana* Mill. (= *Epidendrum vanilla* L, Sp. Pl. 2: 952. 1753).

**2.1. *Vanilla planifolia*** Jacks. *ex* Andrews, Bot. Repos. 8: t. 538. 1808.

The orchid was escaped plant from cultivation, however today is treated as naturalized at many places of Polynesia Française. It even was described from Îles de la Société as separate species - as *Vanilla tahitensis* J.W.Moore, Bernice P. BISH op Mus. Bull. 102: 25. 1933.

DISTRIBUTION: Indigenous in SE Mexico, Central America and the West Indies. Pantropically cultivated and often naturalized. Oceania - Fiji, the Society Islands (Tahiti, Mo'orea, Huahine, Raiatea, Tahaa), The Austral Islands, Marquises.

### Escaped taxa

**1. *Arundina*** Bl., Bijdr. Fl. Ned. Ind. 8: 402. 1825.

GENERITYPE: *Arundina speciosa* Bl.

**1.1. *Arundina graminifolia*** (D.Don) Hochr., Bull. New York Bot. Gard. 6: 270. 1910.

DISTRIBUTION: Sri Lanka, India, Burma, China, Laos, Vietnam, Thailand, Cambodia, Malaysia and Oceania.

**2. *Phaius*** Lour., Flora Cochinchinensis 2: 517, 529. 1790.

GENERITYPE: *Phaius tankervilleae* (L'Hér.) Bl.

**2.1. *Phaius grandiflorus*** Rchb. f., Ann. Bot. Syst. 6: 459. 1862.

DISTRIBUTION: Pantropically cultivated and sometimes escaping. Oceania - the Society Islands (Mo'orea, Raiatea, Tahaa, Huahine).

**3. *Vanda teres* x *hookeriana***

DISTRIBUTION: Pantropically cultivated and often escaping. Oceania - the Society Islands (Tahiti).

### 3. CONCLUSIONS

Orchidales of Îles de la Société belongs to as many as 7 subfamilies: Epidendroideae Lindl., Orchidoideae, Thelymitroideae (Lindl.) Szlach., Tropidioideae (Pfitz.) Szlach., Spiranthoideae Dressl., Vandoideae Endl., Vanilloideae (Lindl.) Szlach. However each genera are usually represented by only just one or two (rarely more) species. The most of orchid species are endemic to Oceania or Îles de la Société and also through it very highly endangered plants.



**References**

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