J. Jpn. Bot. **95**(5): 259–272 (2020)

Phylogenetic Analyses for a New Classification of the *Desmodium* Group of *Leguminosae* Tribe *Desmodieae* 4. *Desmodium* and *Oxytes* in Oceania

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(Accepted on May 28, 2020)

Desmodium and *Oxytes* of Oceania were examined by molecular phylogenetic analyses together with morphological characteristics for construction of a new classification of the *Desmodium* group of *Leguminosae* tribe *Desmodieae*. New robust phylogenetic trees of tribe *Desmodieae* including the Oceanian species are presented based on chloroplast and nuclear ribosomal datasets. Four species from a polyphyletic *Desmodium* of Oceania were transferred to *Maekawaea* or *Oxytes*: *Maekawaea* H. Ohashi & K. Ohashi, gen. nov. with *M. macrocarpa* (Domin) H. Ohashi & K. Ohashi, comb. nov., *M. rhytidophylla* (F. Muell. ex Benth.) H. Ohashi & K. Ohashi, comb. nov. and *M. tenax* (Schindl.) H. Ohashi & K. Ohashi, comb. nov. and *Oxytes kaalensis* (Guillaumin) H. Ohashi & K. Ohashi, comb. nov. *Oxytes* was confirmed its generic status with new molecular evidence of *O. brachypoda*, *O. deplanchei* and *O. kaalensis*. (Continued from J. Jpn. Bot. **94**(2): 65–77, 2019)

Key words: Australia, chloroplast DNA, *Desmodium*, *Maekawaea*, molecular phylogenetic analysis, New Caledonia, nuclear ribosomal DNA, Oceania, *Oxytes*.

Desmodium Desv. in the sense of Ohashi (1973) (*Desmodium* s.l. hereafter) had been recognized as the largest and core genus in tribe *Desmodieae* (Benth.) Hutch. The polyphyletic nature of *Desmodium* s.l. was revealed by Jabbour et al. (2018) and Ohashi et al. (2018a, etc.). Many monophyletic genera were separated from *Desmodium* s.l. based on results of molecular phylogenetic analyses together with morphological and palynological studies in a recent system (Ohashi and Ohashi 2018a, b, Ohashi et al. 2018a, b, 2019a, b, 2020). Consequently, almost all native species of *Desmodium* s.l. in Africa and Asia are now attributed to different genera other than *Desmodium* s.s. (Ohashi and Ohashi 2018c, 2019, 2020). *Desmodium* s.l. of Oceania are, however, still incompletely reclassified to the current phylogenetic system. Most of the species were currently attributed to *Desmodiopsis* (Schindl.) H. Ohashi & K. Ohashi, *Grona* Lour., *Hanslia* Schindl., *Leptodesmia* (Benth.) Benth., *Oxytes* (Schindl.) H. Ohashi & K. Ohashi, *Pedleya* H. Ohashi & K. Ohashi, *Pleurolobus* J. St.-Hil., *Polhillides* H. Ohashi & K. Ohashi and *Pullenia* H. Ohashi & K. Ohashi (Ohashi and Ohashi 2018a, Ohashi et al. 2018a, b). Among the *Desmodium* s.l. remaining in Oceania,

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Appendix I

Taxon, GenBank accession number for 5′*trnK* intron, *ndhJ-trnF-trnL*, *trnT-trnL*, *trnG-trnS*, *trnQ-rps16*, *trnL-rpl32*, *rpl16* intron, *trnC-rpoB*, *ndhA* intron, ITS and ETS.

Desmodium kaalense: LC538116, LC538123, LC538130, LC538137, LC538144, LC538151, LC538158, LC538165, LC538172, LC538109, LC538179. *Desmodium rhytidophyllum* 1: LC538118, LC538125, LC538132, LC538139, LC538146, LC538153, LC538160, LC538167, LC58174, LC538111, LC538181. *Desmodium rhytidophyllum* 2: LC538117, LC538124, LC538131, LC538138, LC538145, LC538152, LC538159, LC538166, LC538173, LC538110, LC538180. *Desmodium tenax*: LC538115, LC538122, LC538129, LC538136, LC538143, LC538150, LC538157, LC538164, LC538171, LC538108, LC538178. *Oxytes brachypoda* 1: LC538114, LC538121, LC538128, LC538135, LC538142, LC538149, LC538156, LC538163, LC538170, LC538107, LC538177. *Oxytes brachypoda* 2: LC538113, LC538120, LC538127, LC538134, LC538141, LC538148, LC538155, LC538162, LC538169, LC538106, LC538176. *Oxytes deplanchei*: LC538119, LC538126, LC538133, LC538140, LC538147, LC538154, LC538161, LC538168, LC538175, LC538112, LC538182.

大橋一晶[a]，大橋広好[b]，根本智行[c]，那谷耕司[a]：**マメ科アコウマイハギ連アコウマイハギ群の分子系統学的解析 4. オセアニアのアコウマイハギ属**

広義の*Desmodium* (Ohashi 1973) は多系統であることが分かり，最近の分子系統学的解析の結果に基づいて多くの単系統の属に再分類されている (Ohashi and Ohashi 2018a, Ohashi et al. 2018b, etc.). しかし，オセアニアには広義の*Desmodium*に含まれているままの種が残っており，それらはニューカレドニア固有種*D. kaalense* Guillaumin，オーストラリア固有種 *D. macrocarpum* Domin，ニューギニア，オーストラリア，ニューカレドニアに分布する *D. rhytidophyllum* F. Muell. ex Benth.，ニューギニアとオーストラリアの *D. tenax* Schindl. およびオーストラリアとニューカレドニアの *D. varians* (Labill.) D. Don である．本研究では *D. macrocarpum* と *D. varians* を除く 3 種について，分子系統解析によって分類学上の位置を検討した．また，オセアニアの固有属である *Oxytes* (Schind.) H. Ohashi & K. Ohashi は *O. pycnostachya* の系統的位置に基づいて Ohashi et al. (2018b) によって設立されたが，その独立性を確証するために，この属を構成する 3 種のうちの残る 2 種 *O. brachypoda* (A. Gray) H. Ohashi & K. Ohashi と *O. deplanchei* (Harms) H. Ohashi & K. Ohashi を系統学的に解析し，その結果を示した．

Desmodium rhytidophyllum と *D. tenax* はオーストラリアの固有属 *Pedleya* H. Ohashi & K. Ohashi と *Pullenia* H. Ohashi & K. Ohashi に近縁であるが，独立したクレードを形成した．この 2 種と分子系統解析には含めることができなかった *D. macrocarpum* を独立属 *Maekawaea* H. Ohashi & K. Ohashi とした．新属名 *Maekawaea* は東京大学名誉教授前川文夫博士 (1908–1984) に献名した．一方，*D. kaalense* は系統的に *Oxytes* 属に含まれたことから，*D. kaalense* を *Oxytes* に組み変えた．

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