

Luísa Maria de Paula Alves Bezerra

**Revisão nomenclatural das espécies de *Rhynchosia* Lour.
(Leguminosae, Papilionoideae, Phaseoleae) ocorrentes na
América Central e América do Norte**

Relatório de Pós-doutorado,
modalidade PD III, realizado na
Universidade Estadual Paulista
(Unesp), Instituto de Biociências,
Departamento de Biodiversidade e
Bioestatística

Supervisora: Profa. Dra. Ana Paula Fortuna Perez

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Relatório Final de atividades

O presente relatório descreve as atividades realizadas durante o desenvolvimento do projeto “Revisão nomenclatural das espécies de *Rhynchosia* Lour. (Leguminosae, Papilionoideae, Phaseoleae) ocorrentes na América Central e América do Norte” na modalidade PD III, realizado junto ao Departamento de Biodiversidade e Estatística, do Instituto de Biociências, Unesp – campus Botucatu.

1. Resumo das atividades realizadas no decorrer do desenvolvimento do projeto

1.1. Participação em bancas

1. MANSANO, V. F.; CÂNDIDO, E. S.; **BEZERRA, L. M. P. A.** Participação em banca de Gildean Macedo Nascimento. Revisão taxonômica das espécies de *Calopogonium* Desv. e *Teramnus* P. Browne (Leguminosae, Papilionoideae, Phaseoleae) ocorrentes na América do Sul. 2023. Exame de qualificação de mestrado acadêmico em Biologia Vegetal do Departamento de Biodiversidade e Bioestatística do Instituto de Biociências de Botucatu, Unesp).

2. FORTUNA-PEREZ, A. P.; MANSANO, V. F.; **BEZERRA, L. M. P. A.** Participação em banca de Gildean Macedo Nascimento. Revisão taxonômica das espécies de *Calopogonium* Desv. ocorrentes na América do Sul e *Teramnus* P. Browne ocorrentes no Brasil (Leguminosae, Papilionoideae, Phaseoleae). 2023. Exame de defesa de dissertação de mestrado acadêmico em Biologia Vegetal do Departamento de Biodiversidade e Bioestatística do Instituto de Biociências de Botucatu, Unesp).

3. FRAZÃO-NUNES, A., CÂNDIDO, E.S., **BEZERRA, L. M. P. A.** Participação em banca de Beatriz Barcelos Costa Lira. Estudos taxonômicos e morfométricos de táxons do complexo *Eriosema simplicifolium* (DC.) G.Don (Leguminosae, Papilionoideae). 2024. Exame de qualificação de mestrado acadêmico em Biologia Vegetal do Departamento de Biodiversidade e Bioestatística do Instituto de Biociências de Botucatu, Unesp).

1.2. Participação em eventos

Participação no “8th International Legume Conference” realizado nos dias 06/08/2023 – 11/08/2023 em Pirenópolis, Brasil, com apresentação dos trabalhos:

BEZERRA, L. M. P. A.; CANDIDO, E. S.; VARGAS, W. ; TORKE, B. M. ; LEWIS, G. P. ; Fortuna-Perez, A. P. Taxonomic revision of *Rhynchosia* Lour. (Leguminosae, Papilionoideae, Phaseoleae) in South America. In: 8th International Legume Conference (8ilc), 2023, Pirenópolis, GO. 8th International Legume Conference, 2023. Modalidade: Poster.

BEZERRA, L. M. P. A.; CANDIDO, E. S.; VATANPARAST, M. ; AJAO, A. A. ; BOATWRIGHT, J. S. ; MOTEETEE, A. N. ; VARGAS, W. ; STIRTON, C. H. ; BARKER, N. P. ; LEWIS, G. P. ; TORKE, B. M. ; PEZZINI, F. F. ; Fortuna-Perez, A. P. Studies within Cajaninae (Leguminosae, Papilionoideae): Towards a new generic classification for *Rhynchosia*. In: 8th International Legume Conference (8ilc), 2023, Pirenópolis, GO. 8th International Legume Conference, 2023. Modalidade: apresentação oral.

1.3. Atividade de docência

Atuação como professora conferencista, no período de 01/08/2023 – 01/11/2023, junto ao departamento de Bioestatística e Biodiversidade, do Instituto de Biociências, Unesp – campus Botucatu. Foi ministrada a disciplina Sistemática Vegetal com carga horária de 60 horas para as turmas FCA1123TA e FCA1123TB do curso de Engenharia Agrônômica.

1.4. Atividades de pesquisa

1.4.1. Expedições de campo

Participação em expedições de campo junto aos demais membros do laboratório de Sistemática Vegetal da Unesp – campus Botucatu, nos municípios de Botucatu/SP e Ouro Preto/MG. Nessas expedições foram coletadas espécies de *Rhynchosia*, assim como da família Leguminosae como um todo.

1.4.2 Análise de material de herbário

Toda os espécimes de *Rhynchosia* do herbário BOTU, assim como as coleções que foram adquiridas via empréstimo de vários herbários do Brasil, foram revisados e as atualizações de identificações foram realizadas.

1.4.3. Produção bibliográfica

BEZERRA, L. M. P. A.; CANDIDO, E. S; VARGAS, W.; TORKE, B. M.; LEWIS, G. P.; FORTUNA-PEREZ, A. P. 2024. Taxonomic revision of *Rhynchosia* Lour. (Leguminosae, Papilionoideae, Phaseoleae) in South America. *Phytotaxa* 643: 001-067.

BFG – LEGUMINOSAE. 2024. Assembling the Brazilian flora: overview of Leguminosae diversity. *Brazilian Journal of Botany*, v. 1, p. 1.

Anexo I

***Rhynchosia* from Central and North America: a nomenclatural review**

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Abstract

Rhynchosia Lour. has a pantropical distribution with two main centers of diversity, one in Africa and the other in American continent. The genus comprises approximately 260 species, in which ca. 60 occurs in the neotropics. The only existing nomenclatural review for the Central and North American species of is outdated and presents confusing data related to the type specimens, authorships and protologues. In this way, we performed the most comprehensive nomenclatural study of the *Rhynchosia* species occurring in Central and North America, in which 33 species with their respective synonyms' names were analyzed followed by nomenclatural comments and notes on geographic distribution and etymology.

Introduction

Rhynchosia is the largest genus of Cajaninae subtribe, with approximately 260 species distributed pantropically (POWO 2024). Its main centers of distribution are Africa, with around 140 species, and the Americas, with about 60 species (POWO 2024), occurring in tropical and subtropical regions of both hemispheres (Gear 1978; Schrire 2005; POWO 2024).

The first major taxonomic revision of the genus, which addressed only the American species, was published by Gear in 1978, recognizing 51 species. Although this study made a significant contribution to the understanding of the neotropical species of *Rhynchosia*, new species for the American continent have been described since then, and several nomenclatural issues still need to be clarified.

The recent taxonomic revision of *Rhynchosia* species occurring in South America, conducted by Bezerra et al. (2024), recognized 27 species for the region and provided several nomenclatural updates. Nonetheless, despite the taxonomic treatments performed thus far, it is notable that for the 41 *Rhynchosia* species occurring in Central and North America, there is a significant amount of outdated and incorrect data, including uncertain information regarding nomenclatural types and protologues.

Thus, a comprehensive nomenclatural review of the *Rhynchosia* species occurring in Central and North America is presented here, in which in which 33 species with their respective synonyms' names were analyzed. For each taxon, data from the protologues

are provided along with corresponding nomenclatural comments, as well as notes on geographic distribution and etymology.

Material and Methods

The nomenclature review consisted of examining specimens from both national and foreign herbaria, as well as consulting virtual herbarium collections. The identity of the species was established through their original diagnoses and comparisons with the type material. The abbreviations of the species authors' names were made according to the IPNI website (www.ipni.org).

The nomenclatural types were examined in person or through the analysis of high-resolution images available on digital platforms such as speciesLink (<http://www.splink.org.br>), JABOT (<http://jabot.jbrj.gov.br/v3/consulta.php>), and JSTOR (plants.jstor.org), or in the virtual collections of the herbaria. Information on the scientific names of *Rhynchosia* species was consulted through websites such as Tropicos (<http://www.tropicos.org/>), The Plant List (<https://wfo.plantlist.org/plant-list>), the International Plant Names Index (<http://www.ipni.org/>), the Global Biodiversity Information Facility (GBIF), Plants of the World Online (POWO), and the Legume Data Portal (<https://www.legumedata.org/>). Protologues were accessed through the Biodiversity Heritage Library website (<http://www.biodiversitylibrary.org/>). Information on the geographical distribution and preferred habitat of the species was obtained from the specimen labels, personal observations, and literature.

The species *Rhynchosia calycosa*, *R. diversifolia*, *R. edulis*, *R. erythrinoides*, *R. minima*, *R. phaseoloides*, *R. reticulata* and *R. senna* were not included in this work as it was nomenclaturally treated by the author in the taxonomic revision of *Rhynchosia* for South America (Bezerra et al. 2024).

Results and Discussion

Nomenclatural treatment

Rhynchosia Lour., Fl. Cochinch. 425, 460. 1790, nom. cons.

Type species: *Rhynchosia volubilis* Lour., Fl. Cochinch. 2: 460. 1790. CHINA, “Habitat inculta prope Cantonem Sinarum”, s.d (fl.), *Loureiro 562-1* (Holotype: P 00150846 [digital image!]).

Dolicholus Medik, Vorles. Churpfälz. Phys.-Ökon. Ges. 2: 354. 1787. nom. rej.

Type species: *D. flavus* Medik., nom. illegit. (*Dolichos minimus* L.).

Cylista Aiton, Hort. Kew. 3: 36, 512. 1789. nom. rej.

Type species: *C. villosa* Ait., = *Rhynchosia hirta* (Andrews) Meikle & Verdcourt. *Arcyphyllum* Elliott, J. Acad. Nat. Sci. Philadelphia. 1(2): 371–372. 1818.

1. *Rhynchosia amabilis* Grear, Mem. New York Bot. Gard. 31(1): 56–58. 1978. Type: MEXICO, Chiapas, Gloria, Triunfo, Escuintla, at secondary growth, roadside, January 1949 (fr.) *E. Matuda 18563* (Holotype: MEXU 00141289 digital image!; isotypes: MEXU 00175927 digital image!)

Nomenclatural notes: *Rhynchosia amabilis* was described by Grear (1978). The type material comes from the municipality of Escuintla, Chiapas state.

Distribution and habitat: *R. amabilis* occurs in Mexico, Guatemala and Belize.

2. *Rhynchosia americana* (Mill.) Metz, Cath. Univ. Amer., Biol. Ser. 16: 126–127. 1934.

Basionym: *Lathyrus americanus* Mill. Gard. Dict. (ed. 8) 19. 1768. *Dolicholus americanus* (Mill.) Vail, Bull. Torrey Bot. Club 26(3): 111. 1899. Lectotype (designated by Grear 1978): MEXICO, Veracruz, w/o date (fl./fr.) *Houstoun w/o number* (BM 000799988 digital image!).

Rhynchosia menispermoidea DC., Ann. Sci. Nat. 4(1): 102–103. 1825. *Glycine menispermoides* (DC.) Spreng., Syst. Veg. 4: 270. 1827. *Phaseolus menispermoideus* (DC.) Eaton & Wright, Man. Bot. 353. 1840.

Nomenclatural notes: *Rhynchosia americana* was first described as *Lathyrus americanus* by Miller (1768). Grear (1978) cited the collection “*Houstoun w/o number*”

housed in BM herbarium as the holotype. However, as the type herbarium, the specific location from Veracruz and the collection number were not mentioned on the protologue, Grear unintentionally lectotypified the specimen at BM with barcode 000799988.

Distribution and habitat: *Rhynchosia americana* occurs in the USA, southeastern Texas, and Mexico.

3. *Rhynchosia caribaea* (Jacq.) DC., Prodr. 2: 384–385. 1825.

Basionym: *Glycine caribaea* Jacq., Collectanea 1: 67. 1786. Type: Collected “Ex insulis Caribaeis...”, 1789 (fl./fr.) *Jacquin*. (Lectotype [designated by Grear 1978]: Plate 146 in *Jacquin’s “Icône Platarum Rariorum”*).

Rhynchosia gibba E. Mey., *Linnaea* 7: 170. 1832. *Copisma gibbum* (E. Mey.) E. Mey., *Comm. Pl. Afr. Austr.* 137. 1836. Type: SOUTH AFRICA, Cape, Uitenhage, 1829 (fl.), C. F. Ecklon & C. L. P. Zeyher 1667 (Lectotype: HAL 0119588 digital image!; isolectotypes: HAL 0119589 digital image!, HBG 519181 digital image!, JE 00003390 digital image!).

Rhynchosia acuminata Eckl. & Zeyh. *Enum. Pl. Afr. Austral.* 253. 1836.

Rhynchosia gazensis Baker, *Legum. Trop. Africa* 2: 475. 1929.

Nomenclatural notes: *Rhynchosia caribaea* was first described as *Glycine caribaea* by *Jacquin* (1786). As the author did not mention any specimen as type in the protologue, *Grear* (1978) designated the Plate 146 in *Jacquin’s “Icône Platarum Rariorum”* as the lectotype of *R. caribaea*.

Distribution and habitat: This species is Native to Africa continent. It was introduced in the New World, occurring in Canary Island, Cuba and Mexico Gulf.

4. *Rhynchosia cinerea* Nash, Bull. Torrey Bot. Club 22(4): 149–150. 1895. *Dolicholus cinereus* (Nash) Vail, Bull. Torrey Bot. Club 26(3): 112. 1899. Type: UNITED STATES, Florida: Lake County, Vicinity of Eustis, July 1894 (fl./fr.) *G. V. Nash 1336* (Lectotype [designated by Grear 1978]: NY 00026909 digital image!; isolectotypes: BAB 00000487 [fragment] digital image!, E 00279789 digital image!, G 00367744, 00367756 digital image!, GH 00063790 digital image!, LE 00014577 digital image!, MICH 1104293 digital image!, MSC 0092725 digital image!, NDG 27823 digital image!, NEB-V-

0000389 digital image!, P 00708590, 00708591 digital image!, US 01049709 digital image!).

Nomenclatural notes: *R. cinerea* was described Nash (1895). In the protologue the author only mentioned the collection number, but did not cite which herbarium the holotype is housed. In this way, all specimens of this collection are syntypes (Turland et al. 2018, Art. 7.11, Ex. 13). Thus, when Grear (1978) cited the collection “*Nash 1336*” housed in the NY herbarium as the holotype, he unintentionally lectotypified this collection.

Distribution and habitat: *Rhynchosia cinerea* is restricted to Florida, United States.

5. *Rhynchosia cytisoides* (Bertol.) Wilbur, *Rhodora* 64(757): 60. 1962.

Basionym: *Lespedeza cytisoides* Bertol., Mem. Reale Accad. Sci. Ist. Bologna 2: 278. 1850. Lectotype (designated by Grear 1978): Plate 6 in volume 9 of Bertoloni’s *Miscellanea Botanica* (1851).

Pitcheria galactoides Nutt., J. Acad. Nat. Sci. Philadelphia 7(1): 94–95. 1834.
Rhynchosia galactoides (Nutt.) Endl. ex Walp. Repert. Bot. Syst. 1(5): 790. 1843.
Rhynchosia pitcheria Burkart, Darwiniana 11(2): 268. 1957. Lectotype (designated by Grear): UNITED STATES, Alabama: Nuttall’s herbarium, w/o date (fl.) *T. Nuttall w/o number* (Lectotype: BM 000799986 digital image!; isolectotype (or syntype?): E00279788 PH00030838 NY)

Pitcheria galactoides α Torr. & A. Gray, Fl. N. Amer. 1(2): 286. 1838. Lectotype (designated here): UNITED STATES, Florida, w/o date (fl./fr.) w/o collector (Lectotype: NY 00026729 digital image!)

Pitcheria galactoides β *parvifolia* Torr. & A. Gray, Fl. N. Amer. 1(2): 286. 1838. Lectotype (first-step designated by Grear 1978, second-step designated here): UNITED STATES, Alabama, 1831 (fl./fr.) *H. Gates w/o number* (Lectotype: NY 00026730 digital image!; isolectotype: NY 00026731 digital image!)

Nomenclatural notes: *R. cytisoides* was first described as *Lespedeza cytisoides* in 1850 by Bertoloni. In the protologue the author didn’t provide any information about the type species. In this way, Grear (1978) unintentionally lectotypified the Plate of Bertoloni when he cited it as holotype.

The same happened with the synonym *Pitcheria galactoides*, no information about the type species was given in the protologue. Thus, when citing the species housed in BM (BM 000799986) as holotype, Grear unintentionally lectotypified this collection.

Torrey & Gray (1838) cited two varieties of *Pitcheria galactoides*. One of them, which was not mentioned by Grear, is *P. galactoides* α . As no information about the type species was provided in the protologue either, we designate here the collection NY 00026729 as lectotype of *P. galactoides* α . The other variety is *Pitcheria galactoides* β *parvifolia*. Grear (1978) unintentionally lectotypified the collection NY 00026730 but, as there are two sheets of this collection in NY, a second-step lectotype is needed. In this way, we have chosen the specimen with barcode NY 00026730 as lectotype of *P. galactoides* β *parvifolia*.

Distribution and habitat: *Rhynchosia cinerea* is restricted to United States, occurring in Florida and Alabama.

6. *Rhynchosia delicatula* O. Téllez & M. Sousa, Novon 10(3): 257–259. 2000. Type: MEXICO: Jalisco, Municipio la Huerta, a 3 km de las oficinas de la Fundación Ecológica Cuixmala A. C. rumbo a El Mirador, 19°25'49"N, 104°58'41", November 1997 (fl./fr.) *J. Calónico S. et al. 5633* (Holotype:: MEXU 01011099 digital image!; isotypes: MEXU 01011003, 00965346 digital image!, MO 337699 digital image!)

Nomenclatural notes: *Rhynchosia delicatula* was described by Oswaldo Tellez (2000) and Mario Sousa. The authors mentioned in the protologue that the type material (“*J. Calónico S. et al. 5633*”) is housed in MEXU herbarium, but there are three sheets of this collection in this herbarium. One of them is written “holotype” and the others two “isotype”. As the author did not distinguish them in his publication, the collection annotated as the holotype (MEXU 01011099) is here designated as lectotype of *R. delicatula*.

Distribution and habitat: *Rhynchosia delicatula* is restricted to Mexico.

7. *Rhynchosia difformis* (Elliott) DC. Prodr. 2: 384. 1825.

Basionym: *Arcyphyllum difforme* Elliott, J. Acad. Nat. Sci. Philadelphia 1(2): 372. 1818.

Dolicholus lewtonii Vail, Bull. Torrey Bot. Club 26(3): 113–114. 1899. *Rhynchosia lewtonii* (Vail) Small, Man. S.E. Fl. 714. 1933.

Dolicholus tomentosus var. *undulatus* Vail, Bull. Torrey Bot. Club 26: 113. 1899.

Glycine tomentosa var. *volubilis* Michx., Fl. Bor. Amer. 2: 63. 1803. *Rhynchosia tomentosa* var. *volubilis* (Michx.) Torr. & A.Gray, Fl. N. Amer. 1: 285. 1838.

Nomenclatural notes: *Rhynchosia difformis* was first described as *Arcyphyllum difforme* by Elliot (1818) and was later transferred to *Rhynchosia* by de Candolle (1825). The epithet "difformis" refers to its distinctive variation in leaf morphology, a key trait used in its identification.

Distribution and habitat: This species occurs in United States and Mexico.

8. *Rhynchosia discolor* M.Martens & Galeotti, Bull. Acad. Roy. Sci. Bruxelles 10(2): 199. 1843. *Dolicholus discolor* (M.Martens & Galeotti) Rose, Contr. U.S. Natl. Herb. 10: 101. 1906.

Dolicholus drummondii Vail Bull. Torrey Bot. Club 26: 116. 1899. *Rhynchosia drummondii* (Vail) K.Schum. Just's Bot. Jahresber. 27(1): 496. 1901.

Rhynchosia australis Rose Contr. U.S. Natl. Herb. 8: 48. 1903. *nom. illeg.*

Rhynchosia cuernavacana Rose Contr. U.S. Natl. Herb. 8: 313. 1905. *Dolicholus cuernavacanus* (Rose) Rose, Contr. U.S. Natl. Herb. 10: 101. 1906.

Rhynchosia discolor var. *lanceolata* Grear Mem. New York Bot. Gard. 31(1): 97. 1978.

Nomenclatural notes: First described by Martens and Galeotti (1843), *Rhynchosia discolor* is well-differentiated by its characteristic bicolored leaves, a trait central to its identification within the genus. Historically, the species has been subject to various reclassifications, which explains a considerable list of synonyms.

Distribution and habitat: *Rhynchosia discolor* can be found in Belize, El Salvador, Guatemala and Mexico.

9. *Rhynchosia elisae* O. Téllez, Contr. Univ. Michigan Herb. 20: 235. 1995. Type: MEXICO, Nayarit, Tepic, km 5.4 de la terracería a El Cuarenteño, camino que empieza a 500 m al W de El Izote, carretera a Jalcocotán, 21°29' N 104°59' W, bosque mesófilo, January 1990 (fl.) V. Téllez 12583 (Holotype: MEXU 00636764 digital image!; isotype: BM 000931754 digital image!, CAS 0004332 digital image!, ENCB 008660 digital image!, F 0059800F digital image!, GH 00058565 digital image!, IBUG 0133769 digital image!, IEB 000080097 digital image!, MEXU 00636765 digital image!, MICH 1229029, 1104295 digital image!, MO 125144 1104295 NY 00079857 digital image!).

Nomenclatural notes: *Rhynchosia elisae* was described in 1995 by Oswaldo Tellez. Since then, no significant nomenclatural revisions were made, as the name was applied correctly.

Distribution and habitat: *Rhynchosia delicatula* is restricted to Mexico.

10. *Rhynchosia latifolia* Nutt. ex Torr. & A. Gray, Fl. N. Amer. 1(2): 285. 1838. *Phaseolus latifolius* (Nutt. ex Torr. & A. Gray) Eaton & Wright, Man. Bot. 353. 1840. *Dolicholus latifolius* (Nutt. ex Torr. & A. Gray) Vail, Bull. Torrey Bot. Club 26(3): 114. 1899. Type UNITED STATES, Arkansas, w/o date (fl./fr.) *T. Nuttal w/o numer* (Lectotype [designated by Grear 1978]: BM 000799987 digital image!; isolectotypes: K 000900425 000900426 digital image!, NY 00026910 digital image!).

Rhynchosia latifolia β Torr. & A. Gray, Fl. N. Amer. 1(2): 285. 1838. Type: UNITED STATES, Texas, Sand Hill, w/o date (fl.) M. C. Leavenworth w/o number (Holotype: NY 00026923 digital image!)

Rhynchosia torreyi Vail Bull. Torrey Bot. Club 22(11): 459. 1895.

Dolicholus torreyi (Vail) Vail, Bull. Torrey Bot. Club 26(3): 113. 1899.

Nomenclatural and taxonomic notes: In the protologue of *Rhynchosia latifolia* the author cited “Forest of Arkansas, *Nuttal! Dr. Leavenworth!*” and “Red River, Louisiana, *Dr. Hale!*”. The collection of Dr. Leavenworth refers to the holotype of the synonym *Rhynchosia latifolia* β (NY 00026923). The other two collection are syntypes, in this way, Grear (1978) lectotypified *R. latifolia* when he cited the collection *Nuttal w/o numer* (BM 000799987) as being the holotype.

Distribution and habitat: *Rhynchosia latifolia* is restricted from United States. Tropicos mentions that this species also occurs in Mexico, but in this work this occurrence was not confirmed.

11. *Rhynchosia longeracemosa* M. Martens & Galeotti, Bull. Acad. Roy. Sci. Bruxelles 10(2): 198–199. 1843. *Dolicholus longeracemosus* (M. Martens & Galeotti) Rose, Contr. U.S. Natl. Herb. 10(3): 101. 1906. Type: MEXICO, Cordillera, Veracruz, June 1840 (fl./fr.) *H. G. Galeotti 3322* (Lectotype [first-step designated by Grear 1978, second-step designated here]: K 000082223 digital image!; isolectotypes: G 00367746 digital image!, K 000082222 digital image!, LE 00002547 digital image!, P 00708615 digital image!)

Nomenclatural and taxonomic notes: In the protologue of *Rhynchosia longeracemosa* the author mentions the collection “*Galeotti 3322*” but did not specify which herbarium the holotype is housed. Therefore, all specimens of this collection are syntypes (Turland et al. 2018, Art. 7.11, Ex. 13) and Grear (1978) erroneously lectotypified the collection from K when cited it as holotype.

In addition, there are two sheets of *Galeotti 3322* in K, one of them (K 000082223) is written "holotype" and the other (K 000082222) isotype. As Grear (1978) did not distinguish them in his publication, the type designation made by Grear (1978) should be treated as the first-step lectotypification and, following Turland et al. (2018: Art. 9.17), a second-step lectotype is needed. In this way, we have chosen the sheet K 000082223 as lectotype of *Rhynchosia rojasii*.

Distribution and habitat: *R. longacemosa* has a wide distribution in Central America. It occurs in Belize, Costa Rica, Salvador, Guatemala, Honduras, Mexico and Nicaragua. In North America is restricted to Mexico.

12. *Rhynchosia macrocarpa* Benth., Pl. Hartw. 11. 1839. *Dolicholus macrocarpus* (Benth.) Rose, Contr. U.S. Natl. Herb. 10(3): 101. 1906. Type: MEXICO, Aguas Calientes, April 1839 (fl./fr.) *K. T. Hartweg 58* (Lectotype [first-step designated by Grear 1978, second-step designated here]: K 000082217 digital image!; isolectotypes: BM 000833701 digital image!, E 00296692 digital image!, GH 00063806 digital image!, K

000082218 digital image!, LD 1223595 digital image!, LE 00002548 digital image!, NY 00026927, 00026928, P 00708616 digital image!).

Nomenclatural and taxonomic notes: In the protologue of *Rhynchosia macrocarpa* the author did not provide any information about the type species. In this way, when Grear (1978) cited the collection “Hartweg 58”, which is included in the original material, as holotype he unintentionally lectotypified this collection. Furthermore, there are two sheets of this collection in K. Although Grear (1978) annotated one of them as the “holotype” (K 000082217) and the other as isotype (K 000082218), he did not distinguish them in his revision. Therefore, this type designation made by Grear (1978) should be treated as the first-step lectotypification and, following Turland et al. (2018: Art. 9.17), a second-step lectotype is needed. In this way, we narrow the lectotypification to the specimen annotated by Grear as holotype (K 000082217).

Distribution and habitat: *R. macrocarpa* is restricted to Mexico.

13. *Rhynchosia michauxii* Vail, Bull. Torrey Bot. Club 22(11): 458–459. 1895. *Dolicholus michauxii* (Vail) Vail, Bull. Torrey Bot. Club 26(3): 112. 1899. Type: UNITED STATES, Florida, Orange County, Sanford, August 1895 (fr.) *G. V. Nash 2314* (Lectotype [designated by Grear 1978: NY 00026913 digital image!; isolectotypes: AC 00319926 digital image!, DAO 000424314 digital image!, E 00279790 digital image!, F 0059797F digital image!, GH 00063792 digital image!, K 000900431 digital image!, LE 00014578 digital image!, MICH 1104297 digital image!, NDG 27816 digital image!, NEB-V-0000390 digital image!, OS 0000294 digital image!, P 00708617, 00708618 digital image!, PH 00024240 digital image!, US 00004686 digital image!).

Rhynchosia menispermoidea Chapman, Fl. So. U. S. 105. 1860. Lectotype (designated here): UNITED STATES, Florida, Charlotte Harbor, w/o date (fl.) *J. L. Blodgett w/o number* (Lectotype: NY 00026912 digital image!; isolectotype: GH 00063791 digital image!)

Nomenclatural and taxonomic notes: In the protologue of *Rhynchosia michauxii* the author cited four collections: “Charlotte Harbor, Blodgett”, “Tampa, A. H. Curtiss, No. 659”, “DeLand, Hulst”, “Sanford, Lake Co., G. V. Nash, No. 2314 in Herb. Columbia

College”. When Grear (1978) cited the collection “Nash 2314” housed in NY herbarium as the holotype he unintentionally lectotypified this collection.

In the protologue of *Rhynchosia menispermoidea* the author cited the collection location and collector (“Charlotte Harbor, South Florida, *Blodgett*”) but did not mention the herbarium that houses the holotype. In this way all specimens of this collection are syntypes and one of them should be lectotypified. Although Grear written “holotype” in the NY sheet (NY 00026912) and “isotype” in GH’s sheet (GH 00063791), he didn’t make any type designation in his publication. Therefore, the sheet NY 00026912 is here designated as the lectotype of *R. menispermoidea*.

Distribution and habitat: This species is restricted from Florida, United States.

14. *Rhynchosia monticola* Grear, Mem. New York Bot. Gard. 31(1): 92–94, f. 24. 1978. Type: GUATEMALA, Huehuetenango, San Miguel Acatan, bushy hillside, 6300 feet, August 1934 (fl./fr.) *A. F. Skutch 1014* (Holotype: F 933687 not seen; isotypes: A 00063807 digital image!, NY00026929 digital image!).

Nomenclatural and taxonomic notes: *Rhynchosia monticola* was described by Grear in 1978. The type material comes from the municipality of San Miguel Acatan, Huehuetenango department, Guatemala

Distribution and habitat: This species occurs in Guatemala and in Chiapas, Mexico.

15. *Rhynchosia nelsonii* (Rose) Grear, Mem. New York Bot. Gard. 31(1): 99. 1978.

Basionym: *Dolicholus nelsonii* Rose, Contr. U.S. Natl. Herb. 10(3): 101. 1906. Type: MEXICO, Oaxaca, Between Tlaliscatilla, Guerrero & Tlapancingo, December 1894 (fl.) *E. W. Nelson 2052* (Holotype: US 00004688 digital image!).

Rhynchosia jalapensis Standl. & Steyer., Publ. Field Mus. Nat. Hist., Bot. Ser. 23(2): 57–58. 1944. Type: GUATEMALA, Jalapa: Between Jalapa and san Pedro Pinula, rocky slopes, December 1939 (fr.) *J. A. Steyermark 32945* (Holotype: F 0059801F digital image!)

Nomenclatural notes: *Rhynchosia nelsonii* was first described as *Dolicholus nelsonii* by Rose in 1906 based on the collection “*Nelson 2052*”. In 1978 Grear carried out the gender transfer to *Rhynchosia*.

Distribution and habitat: This species occurs in Costa Rica, Guatemala, Honduras, Mexico and Nicaragua.

16. *Rhynchosia nipensis* Urb., Symb. Antill. 9(4): 456. 1928. Type: CUBA, Oriente, Sierra de Nipe, in thickets at Rio Piloto, April 1919 (fl.) *E. L. Ekman 9497* (Lectotype [designated by Grear 1978]: S S-R-9727 digital image!; isolectotypes: NY00026935 digital image!, SI002523 [fragment] digital image!).

Nomenclatural notes: In the protologue of *Rhynchosia nipensis* Urban (1928) cited two collections: *Ekman 9497* and *Ekman 2170*. He mentioned that the collection *Ekman 9497* refers to the type, but did not specify which herbarium the holotype is housed. In this way, all specimens of this collection are syntypes (Turland et al. 2018, Art. 7.11, Ex. 13) and Grear unintentionally lectotypified the specimen at S with barcode S-R-9727 when cited it as holotype.

Distribution and habitat: This species is endemic to the Sierra de Nipe, Cuba

17. *Rhynchosia parvifolia* DC., Mem. Leg. 367. 1825. Type: DOMINICAN REPUBLIC, In St. Domingo., w/o date (fr.) *C.L.G. Bertero* w/o number (Lectotype [designated by Grear 1978]: G not seen; M 0240774 digital image!)

Dolicholus parvifolius (DC.) Vail, Bull. Torrey Bot. Club 26(3): 108. 1899.

Leucopteron parvifolium (DC.) Small, Man. S.E. Fl. 713. 1933.

Nomenclatural notes: *Rhynchosia parvifolia* was described by De Candolle (1825). It was unintentionally lectotypified by Grear (1978) when erroneously cited the collection of *Bertero* as holotype.

Distribution and habitat: *Rhynchosia parvifolia* occurs in Cuba, Dominican Republic, Florida and Haiti.

18. *Rhynchosia portobellensis* Beurl. Kongl. Vetensk. Acad. Handl. 1854: 121. 1856.
Type: PANAMA, Cónon, Porto Bello, April 1826 (fl.) *J. I Billberg s.n.* (Holotype: S-R-9730 digital image!; isotype: SI 002524 digital image!).

Nomenclatural notes: *Rhynchosia portobellensis* was described by Beurling (1854). It received this name because the holotype was collected in Porto Bello.

Distribution and habitat: This species is restricted from Porto Bello, Panama.

19. *Rhynchosia potosina* Brandegee, Univ. Calif. Publ. Bot. 4(11): 181. 1911.
Dolicholus potosinus (Brandegee) Standl., Contr. U.S. Natl. Herb. 23: 497. 1922. Type: MEXICO, San Luis Potosi, Guascama, November 1910 (fr.) *C. A. Purpus 4845* (Holotype: UC 148386 digital image!; isotypes: BAB 00000494 [fragment] digital image! F 0059803F digital image!, GH 00063811 digital image!, M 0240780 digital image!, M 0240781 digital image!, MO 356288 digital image!, US 00004829 digital image!).

Nomenclatural notes: *Rhynchosia potosina* was described by Brandegee (1911).

Distribution and habitat: This species is restricted to Mexico. The nomenclatural of *R. potosina* has remained stable since its original description.

20. *Rhynchosia precatória* (Humb. & Bonpl. ex Willd.) DC., Prodr. 2: 385. 1825.

Basionym: *Glycine precatória* Humb. & Bonpl. ex Willd., Enum. Pl. Hort. Berol.: 755. 1809. *Dolicholus precatórius* (Humb. & Bonpl. ex Willd.) Rose, Contr. U.S. Natl. Herb. 10: 101. 1906.

Indigofera volubilis Milne, Descr. Cat. Rar. Pl.: 56. 1773.

Rhynchosia bicolor Micheli, Mém. Soc. Phys. Genève 34: 264. 1903.

Dolicholus vailiae Rose, Contr. U.S. Natl. Herb. 10: 101. 1906.

21. *Rhynchosia pringlei* Rose, Contr. U.S. Natl. Herb. 3(5): 316. 1895. Type: MEXICO, Oaxaca, Las Sedas, dry limestone hills, September 1894 (fl.) *C. G. Pringle 4900* (Lectotype [designated by Grear 1978]: US 00004828 digital image!; isolectotypes: A 00063813 digital image!, BAB 00000496 [fragment] digital image!, BM 000833702

digital image!, C 10012340 digital image!, CM 1096 digital image!, E 00383719 digital image!, F 0059804F digital image!, G 00367748 digital image!, GH 00063812 digital image!, GOET 005265 digital image!, HBG 519168 digital image!, K 000082215 digital image!, LE 00002550 digital image!, M0 240782 digital image!, MEL 2472517 digital image!, MEXU 00095990 digital image!, MIN 1002158 digital image!, NY 00026931 digital image!, P 00709018 digital image!, PH 00024247 digital image!, S S12-10103 digital image!, SI 002526 digital image!, US 00004828 digital image!, UVMVT 026494 digital image!).

Nomenclatural notes: In the protologue of *Rhynchosia pringlei* Rose cited three collections: “Smith 265”, “Nelson 1552” and “Pringle 4900”. As the author didn’t specify the holotype in the protologue, Grear (1978) designated the US specimen with barcode 00004828 from the “Pringle 4900” collection as the lectotype of *R. pringlei*.

Distribution and habitat: This species is endemic to Mexico.

22. *Rhynchosia prostrata* Brandegee, Zoë 5(11): 246. 1908. Type: MEXICO, Puebla, Esperanza, June 1907 (fl.) *C. A. Purpus 2479* (Lectotype [designated by Grear 1978]: UC 101729 digital image!; isolectotypes: BAB00000497 [fragment] digital image!, BM 000833703 digital image!, F 0059805F digital image!, GH 00063814 digital image!, MO 125146 digital image!, US 00004827 digital image!).

Nomenclatural notes: In the protologue of *Rhynchosia prostrata* Brandegee (1908) wrote “Collected at Esperanza, Puebla. No. 2479” and didn’t specify the collector and the herbarium that houses the holotype. The only known collection that carries the information cited in the protologue is that of *C. A. Purpus 2479*. As there are some duplicates of this collection in others herbarium, when Grear (1978) cited the UC specimen with barcode UC 101729 as holotype he unintentionally lectotypified it.

Distribution and habitat: This species is endemic to Mexico.

23. *Rhynchosia pyramidalis* (Lam.) Urb., Repert. Spec. Nov. Regni Veg. 15: 318. 1918.

Basionym: *Dolichos pyramidalis* Lam., Encycl. 2: 296. 1786. *Dolicholus pyramidalis* (Lam.) Britton & P.Wilson, Sci. Surv. Porto Rico & Virgin Islands 5: 415. 1924.

Abrus lusorius Vell., Fl. Flumin. 7: 302. 1829. Type: BRAZIL, Rio de Janeiro, s.loc, no date (fl.), *Vellozo s.n.* (Holotype: R 123456 digital image!; isotype: M 001234567 [fragment] digital image!).

Nomenclatural notes: *Rhynchosia pyramidalis*, originally described as *Dolichos pyramidalis*, was later transferred to the genus *Rhynchosia* by Urban (1918). Discrepancies in the application of epithet and type specimen documentation have led to ongoing debates in the literature, underscoring the need for comprehensive phylogenetic studies to clarify the species' placement within the genus.

Distribution and habitat: This species occurs in Central and Northeast Mexico.

24. *Rhynchosia quercetorum* Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 555. 1937. Type: COSTA RICA, San Jose. Santa Maria de Dota, December 1925 (fl.), *P. C. Standley & J. Valerio 43431* (Holotype: US 00004826 digital image!; isotypes: F 0059806F [fragmente] digital image!).

Nomenclatural notes: Described by Standley (1937), *Rhynchosia quercetorum* was based on specimens from Costa Rica. The epithet has been consistently applied since its publication, with no significant nomenclatural revisions. However, the species' variability across its range has prompted some discussions about potential synonyms or infraspecific taxa, though no formal changes have been made.

Distribution and habitat: *Rhynchosia quercetorum* occurs in Colombia, Costa Rica and Panama.

25. *Rhynchosia reniformis* DC., Prodr. 2: 384. 1825.

Trifolium simplicifolium Walter, Fl. Carol.: 184. 1788. *Arcyphyllum simplicifolium* (Walter) Elliott J. Acad. Nat. Sci. Philadelphia 1: 371. 1818. *Dolicholus simplicifolius* (Walter) Vail Bull. Torrey Bot. Club 26: 144. 1899. *Glycine simplicifolia* (Walter)

Elliott Sketch Bot. S. Carolina 2: 234. 1823. *Rhynchosia simplicifolia* (Walter) Alph.Wood Class-book Bot.: 321. 1861. *nom. illeg.*

Nomenclatural notes: The name *Rhynchosia reniformis* remained stable since its publication, with no significant nomenclatural revisions. The reniform shape of the leaves, a key characteristic, is reflected in the specific epithet.

Distribution and habitat: This species is restricted to United States, occurring in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Texas.

26. *Rhynchosia rosaurae* Rzed., Phytoneuron 49: 1. 2017. Type: MEXICO, Querétaro, cerca de El Carrizal, municipio de Jalpan, *J. Rzedowski 48103* (Holotype: IEB).

Nomenclatural notes: First described in 2017, *Rhynchosia rosaurae* honors Rosaura Rzedowski, a notable botanist in the field. Since its publication, *R. rosaurae* has remained taxonomically stable, with no recognized synonyms or significant nomenclatural changes reported.

Distribution and habitat: *Rhynchosia rosaurae* occurs in Northeast Mexico.

27. *Rhynchosia sousae* Fortunato, Phytotaxa 178: 147. 2014. Type: MEXICO. Veracruz: San Andrés, Cerro del Vigía, selva alta perennifolia, October 1974 (fr.), *Calzada 1597* (Holotype: MEXU 00168035 digital image!).

Nomenclatural notes: Introduced by Fortunato (2014), the name has been consistently applied, with no notable synonyms or changes in its taxonomic standing reported to date.

Distribution and habitat: This species is restricted to Mexico.

28. *Rhynchosia stenophylla* Urb. & Ekman, Ark. Bot. 22A(8): 48. 1929. Type: HAITI, Hispaniola, Presqu'île du nord-Ouest, Baie de Henne, July 1925 (fr.), E. L. Ekman 4529 (Holotype: S-R-9733 digital image!; isotypes: NY 00026938 digital image!, S12-16603 digital image!, SI 002530 [fragment] digital image!).

Nomenclatural notes: Originally described in 1929, *Rhynchosia stenophylla* was named by Urban and Ekman based on specimens collected in Haiti. The specific epithet refers to the narrow leaves that characterize the species.

Distribution and habitat: *Rhynchosia stenophylla* is endemic to HAITI.

29. *Rhynchosia swartzii* (Vail) Urb., Repert. Spec. Nov. Regni Veg. 15: 320. 1918.

Basionym: *Dolicholus swartzii* Vail, Bull. Torrey Bot. Club 26: 108. 1899. Type: FLORIDA, "Key West, climbing on trees, all seasons, damp places", w/o date, Blodgett s.n. (Lectotype: NY not seen; isolectotype: NY 00026933 digital image!).

Rhynchosia gundlachii Urb., Symb. Antill. 5: 374. 1908. Type: MEXICO, Nuevo León, Cirba prope Santiago, 1899, *J. C. Gundlach 3* (Isotype: NY 00026933 [fragment] digital image!).

Nomenclatural notes: Originally described as *Dolicholus swartzii* by Vail (1899), the species was later transferred to the genus *Rhynchosia* by Urban (1918). The specific epithet honors the botanist William Swartz, who made significant contributions to the study of Caribbean flora. Since its transfer, *R. swartzii* has maintained a stable nomenclature, with no significant synonyms or taxonomic alterations reported.

Distribution and habitat: *Rhynchosia swartzii* is primarily distributed across the Caribbean, occurring in Bahamas, Belize, Cuba, Florida and Mexico Southeast.

30. *Rhynchosia tamaulipensis* Grear, Mem. New York Bot. Gard. 31(1): 101. 1978. Type: MEXICO: Sierra Madre Oriental, Dulces Nombres, Nuevo Leon, August 1948 (fl.), *F. G. Meyer & D. J. Rogers 2959* (Holotype: MO not seen).

Nomenclatural notes: Described by Grear (1978), *Rhynchosia tamaulipensis* is named in reference of the Tamaulipas region of Mexico, where the type specimens were collected.

Distribution and habitat: *Rhynchosia tamaulipensis* is distributed in northeastern Mexico, particularly in the state of Tamaulipas.

31. *Rhynchosia tarphantha* Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 4: 214. 1929. Type: MEXICO, San Sebastian, West of Hacienda del Ototal, Sierra Madre Occidental, March 1927 (fl.), *Y. Mexia 1802* (Holotype: F 579894 digital image!; isotypes: BM 000833700 digital image!, CAS 0027100 digital image!, CAS 0004333 digital image!, G 00367745 digital image!, GH 00063817 digital image!, MICH 1104300 digital image!, MO 125147 digital image!, NY 00026932 digital image!, UC 350662 digital image!, US 00004820 digital image!, US 00997214 digital image!).

Nomenclatural notes: First described by Standley (1929), *Rhynchosia tarphantha* has maintained a stable nomenclature since its publication, with no recognized synonyms or significant taxonomic revisions.

Distribution and habitat: This species occurs in Southwest Mexico.

32. *Rhynchosia tomentosa* (L.) Hook. & Arn., Compan. Bot. Mag. 1: 23. 1835.

Basionym: *Glycine tomentosa* L., Sp. Pl.: 754. 1753. *Leptocyamus tomentosus* (L.) Benth., Trans. Linn. Soc. London 18: 209. 1839. *Kennedynella tomentosa* (L.) Steud., Nomencl. Bot. 1(2): 845. 1840. *Dolicholus tomentosus* (L.) Vail, Bull. Torrey Bot. Club 26: 112. 1899.

Nomenclatural notes: Originally described as *Glycine tomentosa* by Linnaeus (1753), the species was later transferred to the genus *Rhynchosia* by Hooker and Arnott (1835). The specific epithet "tomentosa" refers to the dense, hairy texture of the plant, which is a key identifying feature.

Distribution and habitat: *Rhynchosia tomentosa* can be found in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee and Virginia.

33. *Rhynchosia yucatanensis* Grear, Mem. New York Bot. Gard. 31(1): 103. 1978. Type: MEXICO, Yucatan, 1917 (fr.), *G. F. Gaumer 24332* (Holotype: F 0059809F digital image!; isotype: US 00004817 digital image!).

Nomenclatural notes: First described by Grear (1978), *R. yucatanensis* is named to reflect its origin in the Yucatán Peninsula of Mexico. The specific epithet emphasizes the species' geographic and ecological context.

Distribution and habitat: The distribution of *R. yucatanensis* range from Southwest Mexico to Guatemala.

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