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Synopsis and typification of Mexican and Central American *Palicourea* (Rubiaceae: Palicoureeae), part I: The entomophilous species

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Abstract

The prominent but complex genus *Psychotria* (Rubiaceae: Psychotrieae) is one of the largest genera of flowering plants and its generic circumscription has been controversial for a long time. Recent DNA-phylogenetic studies in combination with a re-evaluation of morphological characters have led to a disintegration process that peaked in the segregation of hundreds of species into various genera within the new sister tribe Palicoureeae. These studies have also shown that species of *Psychotria* subg. *Heteropsychotria* are nested within *Palicourea*, which was traditionally separated by showing an ornithophilous (vs. entomophilous) pollination syndrome. In order to render the genera *Palicourea* and *Psychotria* monophyletic groups, all species of subg. *Heteropsychotria* have to be transferred to *Palicourea* and various authors and publications have provided some of the necessary combinations. In the course of ongoing research on biotic interactions and chemodiversity of the latter genus, the need for a comprehensive and modern compilation of species of *Palicourea* in its new circumscription became apparent. As first step towards such a synopsis, the entomophilous Mexican and Central American species (the traditional concept of *Psychotria* subg. *Heteropsychotria*) are covered here. These are enumerated and synonyms as well as an annotated list of type specimens are given. In addition, the new combination *Palicourea croceovenosa* (DWYER) A.C. BERGER is provided and a number of lectotypifications are made.

Key words: Rubiaceae, Palicoureeae, *Palicourea*, *Psychotria* subg. *Heteropsychotria*, synopsis, typification, Mexico, Central America.

Zusammenfassung

Die taxonomisch schwierige Gattung *Psychotria* (Rubiaceae: Psychotrieae) ist eine der artenreichsten Pflanzengruppen weltweit. Die Gattungsabgrenzung von *Psychotria* war lange ungeklärt. Erst aktuelle DNA-phylogenetische und damit verbundene morphologische Untersuchungen konnten schließlich zeigen dass hunderte Arten zu anderen Gattungen gehören, die zudem als eigener Tribus Palicoureeae von den Psychotrieae abzugrenzen sind. Zusätzlich erwies sich, dass *Psychotria* subg. *Heteropsychotria* zur Gattung *Palicourea* gehört, welche traditionell durch Vogelbestäubung (gegenüber Insektenbestäubung) unterschieden wurde. Damit *Palicourea* und *Psychotria* monophyletische Gruppen werden, müssen alle Arten von subg. *Heteropsychotria* zu *Palicourea* transferiert werden, was in vielen Einzelpublikationen der letzten Jahre teilweise durchgeführt wurde. Im Rahmen von aktuellen Untersuchungen über die Chemodiversität, Bestäubung und Herbivorie in dieser Pflanzengruppe zeigte sich, dass eine moderne Zusammenstellung aller *Palicourea*-Arten von Nöten ist, welche bisher noch nicht vorlag. Als erster Schritt einer neuen Gattungssynopsis werden in der vorliegenden Arbeit alle mexikanischen und zentralamerikanischen Arten der Gattung *Palicourea* im erweiterten Sinn behandelt, welche Insektenbestäubung aufweisen und traditionell daher *Psychotria* subg. *Heteropsychotria* zugeordnet wurden. Diese Arten, deren Synonyme und ein kommentiertes Verzeichnis der Typusbelege werden präsentiert. Des Weiteren werden die neue Kombination *Palicourea croceovenosa* (DWYER) A.C. BERGER und eine Reihe von Lektotypisierungen vorgeschlagen.

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Introduction

Woody Rubiaceae are characteristic elements in any tropical and subtropical rainforest. One of the most prominent groups is the hyperdiverse and pantropical genus *Psychotria* L. It includes at least 1,600 species (RAZAFIMANDIMBISON & al. 2014) and ranks among the top 10 of the largest plant genera (FRODIN 2004). The neotropical genus *Palicourea* AUBL. has long been considered closely related and was traditionally separated by flowers showing characters associated with hummingbird rather than insect pollination. Its species are typically found in the understory of undisturbed rainforests and are frequent at high elevations where *Psychotria* and related genera are less speciose (TAYLOR 1996b, 1997).

History of classification of *Palicourea* and *Psychotria*: *Palicourea* and *Psychotria* have long been classified in the tribe Psychotrieae. Recently, however, views shifted towards a narrower concept of *Psychotria* and Psychotrieae that peaked in the ongoing segregation of hundreds of species into a separate tribe, Palicoureeae (NEPOKROEFF & al. 1999, RAZAFIMANDIMBISON & al. 2014, ROBBRECHT & MANEN 2006). As one of the early workers, MÜLLER ARGOVIENSIS (1881) recognized that species classified in *Psychotria* comprise distinct groups, and that some are more closely related to *Palicourea*. He therefore segregated the genus *Mapouria* AUBL., which cannot be retained since it is congeneric with the type of *Psychotria*. Furthermore, he united *Palicourea* with the remaining species of *Psychotria* under the latter genus, which should have taken the name *Palicourea*. Using pyrene and seed characters, PETIT (1964, 1966) likewise recognized distinct groups within African *Psychotria*. He restricted the genus to species possessing an alcohol-soluble red seed coat pigment and pyrenes lacking preformed germination slits. Although his studies were restricted to African species, the proposed circumscription of *Psychotria* already anticipated the segregation of many species to *Palicourea*.

STEYERMARK (1972) again defined the genus *Psychotria* in a broader sense, but classified Neotropical species into two subgenera. He based *Psychotria* subg. *Psychotria* on caducous stipules, a stipular scar with ferruginous hairs, dried leaves of reddish-brown, grayish to black color, and pyrenes usually with a plane ventral and a 4–5-ridged dorsal side. In contrast, he diagnosed subg. *Heteropsychotria* STEYERM. by persistent stipules, a lack of ferruginous hairs at the stipular scar, rather greenish drying color, and pyrenes with the ventral side usually 1-carinate or sulcate. Thus, Steyermark's subg. *Psychotria* corresponds to *Mapouria* as circumscribed by Müller Argoviensis and *Psychotria* as circumscribed by Petit. In contrast, subg. *Heteropsychotria* corresponds to *Psychotria* (sensu Müller Argoviensis) and *Palicourea* in its modern circumscription.

Palicourea s.l.: Species of *Palicourea* and *Psychotria* subg. *Heteropsychotria* cannot be distinguished by vegetative or fruit characters (see, e.g., STEYERMARK 1972, TAYLOR 1996b). In addition, both show similar accumulation of alkaloids (BERGER & al. 2012, 2015, 2017), flavonoids (BERGER & al. 2016) and cyclotides (KOEHBACH & al. 2013). As traditionally defined, both deviate only in a suite of traits associated with pollination syndromes. In species of subg. *Heteropsychotria*, flowers are mostly arranged in open, somewhat grouped to densely capitate inflorescences with inconspicuously colored floral and/or involucre bracts and inflorescence axes. Flowers are usually sessile or subsessile and have small, white, greenish or yellow corollas with short and straight tubes in bee-pollinated species or white and long-tubed corollas in moth-pollinated species.

By contrast, species of *Palicourea* (s.trad.) are hummingbird-pollinated, frequently have long-pedunculate and open inflorescences, coloured inflorescence axes, large and long pedicellate flowers and vividly coloured corollas. These possess well-developed tubes with a gibbous, nectar accumulating swelling at their base, which is protected by an internal ring of hairs.

In many plant groups, ornithophilous flowers have repeatedly evolved from entomophilous ancestors and are not phylogenetically informative at the generic level (e.g., CASTELLANOS & al. 2004, FENSTER & al. 2004, PIRIE & al. 2016). Hence, it was hypothesized that pollinator shifts have occurred multiple times in *Palicourea* and that hummingbird-pollinated species (i.e., the traditional concept of *Palicourea*) repeatedly evolved out of bee-pollinated ancestors (i.e., the traditional concept of *Psychotria* subg. *Heteropsychotria*) or vice versa (e.g., TAYLOR 1996, 1997).

Starting with the work of ANDERSSON & ROVA (1999) and NEPOKROEFF & al. (1999), DNA sequence data indeed confirmed that *Psychotria* is paraphyletic and comprising of two major clades. One consists of *Psychotria* sensu Petit (*Psychotria* subg. *Psychotria* sensu Steyermark), the myrmecophilous Hydnophytinae, and a few Pacific species traditionally referred to segregates of *Psychotria*. The other clade comprises of species mostly assigned to *Palicourea* and *Psychotria* subg. *Heteropsychotria*. Subsequently, ROBBRECHT & MANEN (2006) classified the latter clade as the new tribe Palicoureeae, which was supported by all subsequent studies and is now widely accepted (e.g., PAUL & al. 2009, RAZAFIMANDIMBISON & al. 2014, SEDIO & al. 2013).

In order to render both *Palicourea* and *Psychotria* monophyletic groups, species of *Psychotria* subg. *Heteropsychotria* have to be transferred to an expanded *Palicourea*, the oldest available name for the genus. The combined group is well supported by vegetative and fruit characters and is variable in flower characters (RAZAFIMANDIMBISON & al. 2014). It is characterized by: 1) A greenish dried color (in contrast to reddish-brown or blackish in *Psychotria*); 2) persistent stipules that are united around the stem to form a sheath that usually bears two lobes or awns on each side (in contrast to interpetiolar, triangular and caducous in *Psychotria*); 3) fruits that are metallic blue or purple-black when mature (in contrast to red in *Psychotria*); 4) pyrenes with preformed germination slits and seeds without alcohol-soluble red seed coat pigment (in contrast to reversed character states in *Psychotria*).

Diagnosed as such, *Palicourea* includes around 800 species (RAZAFIMANDIMBISON & al. 2014). Most combinations transferring species of subg. *Heteropsychotria* to *Palicourea* have recently been provided in a number of publications. For example, TAYLOR & al. (2010), TAYLOR (2015a, 2015b) and TAYLOR & HOLLOWELL (2016) established a series of new sections within *Palicourea* and transferred the included species to the genus. Following a geographic approach, species occurring in the Guianas were transferred by DELPRETE & KIRKBRIDE (2016) and Mexican, Mesoamerican and Venezuelan species were transferred by BORHIDI (2011, 2017a, 2017b).

In the course of ongoing research on biotic interactions and a phytochemical characterization of species and clades of Costa Rican Palicoureeae and Psychotrieae (BERGER & al. 2011, 2012, 2015, 2016, 2017, BERNHARD & al. 2011, KOEHBACH & al. 2013, SCHINNERL & al. 2012), the nomenclature of Mesoamerican species was revised. As a result, two new combinations and a new name were proposed (BERGER 2017). In addition, after

considerable nomenclatural changes within *Palicourea*, the need for a new and comprehensive enumeration of Mexican and Mesoamerican species became apparent.

As a first step, the present paper covers the entomophilous species of *Palicourea*, which are referable to *Psychotria* subg. *Heteropsychotria* in its traditional sense. For all species, a list of synonyms and types are provided and critically reviewed, a new combination and many lectotypifications are made.

Material and methods

All Mexican and Central American species of *Palicourea* that show insect-pollinated flower syndromes are included in the present study. The species list was compiled from various publications including regional and overregional floras (e.g., LORENCE & TAYLOR 2012, TAYLOR 2014). In addition, extensive herbarium studies and fieldwork in Costa Rica in 2010, 2013, 2015 and 2016 were made. All retrieved species are enumerated and a complete list of homotypic synonyms is provided. Heterotypic synonyms are included as far as their types are from Mexico or Central America, or if the names appear on herbarium specimens, or in publications covering these areas. For all names, protologues were checked to verify or revise author and page citations, information on collectors and localities.

The type category applying to each name was assessed in accordance with the International Code of Nomenclature for algae, fungi, and plants (ICN, Melbourne code; MCNEILL & al. 2012). Notably, the code differs from previous versions by adopting a more rigorous definition of what may be considered a holotype. Following recommendation 9A.4 in the Tokyo and the Vienna Code, it was common practice to attribute the holotype of a name to the herbarium in which the respective author was based, regardless if any or multiple specimens were used there. The respective recommendation was deleted in the Melbourne Code. Therefore, if prior to 1958 no particular specimen was designated as (holo)type, all specimens cited in the protologue are syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; MCNEILL 2014, PRADO & al. 2015). Also, the definition of original material (ICN, Art. 9.3) makes clear that all duplicates in any herbaria should be considered as types, regardless if the author of a name has seen them.

For each name, a list of type specimens is provided. They were located using public herbarium databases as well as the JSTOR digital library (<http://plants.jstor.org/>). In addition, curators of herbaria housing relevant neotropical collections (e.g., STAFLEU & COWAN 1976–1988) were asked to locate and digitize specimens. Due to their historic importance, the Field Negatives as well as Inter Documentation Company microfiches of types were included wherever available. All retrieved information was managed with the JACQ herbarium database (<http://herbarium.univie.ac.at/database/>). For citation of type collections, localities have been simplified and ecological and morphological details have been omitted. Herbarium acronyms (THIERS 2017) are given for all specimens. If they are followed by an "!", specimens were seen physically or as high-resolution digital images. Otherwise, a "†" symbol indicates that the specimen was destroyed and "n.v." is used when specimens could not be located. After acronyms, barcodes or similar unique identifiers are given for each specimen exactly in the same form as they are given on the relevant websites. In addition, some peculiarities and historic background on collectors and specimens are discussed wherever appropriate.

In cases where an author of a name designated no holotype or the holotype or a previously selected lectotype was lost, a lectotype may be designated from among the original material (ICN, Art. 9.11). Prior to 2001, using the term "lectotype" was not mandatory for achieving a lectotypification (ICN, Art. 7.10, Art. 9.23). Hence, a mere citation of part of the original material of a previously published name as "type" or "holotype" has to be accepted as a lectotypification because both terms are correctable to lectotype (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; see also MCNEILL 2014, PRADO & al. 2015). Many such lectotypifications have been made inadverted and have gone unnoticed since, but may have priority over more recent lectotypifications. Concordantly, an exhaustive list of prior to 2001-publications was checked for such lectotypifications. In cases where a designation of a lectotype is found to refer to more than one specimen, the initial [first-step] lectotypification has to be accepted but may be narrowed to a single specimen by a subsequent [second-step] lectotypification (ICN, Art. 9.17). Based on the distribution and preservation of original materials a number of lectotypes and an epitype are designated and most second-step lectotypifications are completed here.

Synopsis of species

***Palicourea acicularis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 14 (2017)
 ≡ *Psychotria acicularis* C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 231–232, fig. 55 (1993).
 Types: Costa Rica. Puntarenas: Rincón de Osa, southwest of airstrip, 20–60 m, 20 July 1974, J.F. Utley & K. Utley 1036 [holotype: CR, lost or never deposited there?]; lectotype, designated here: MO MO-316990!; isolectotypes: DUKE 10000655!; F V0360793F!].

The protologue of *Psychotria acicularis* cites a holotype at CR and isotypes at F and MO. However, according to S. Lobo (pers. comm.), the type specimen curator at CR, the holotype is not present at CR. She also indicated that additional type collections by Utley & Utley are missing that ought to have been deposited at CR. In autumn 2016, I searched the entire collections of *Palicourea* and *Psychotria* at CR for the missing type and could not locate it either. The same holds true for all but one paratype cited in the protologue. Given that the herbarium CR is of moderate size, heavily consulted and largely digitized, the chance that the type specimen was misplaced and did not surface in the last decades is minor, which is a strong indication that the specimen is truly absent.

The labels of the isotypes tell that the respective collections were made in "A joint project of the Museo Nacional de Costa Rica and the Field Museum of Natural History". To my impression, this has led to expect the occurrence of a complete set of duplicates at CR, when in fact it may be incomplete or absent. In the protologue of *Psychotria acicularis*, only the MO duplicate bears an exclamation mark. This indicates that it was the only specimen seen by the author and that the occurrence of a CR and F duplicate was merely deduced from the label information. Due to whatever reasons, the holotype was never deposited at CR, or was subsequently lost. In both cases, a lectotype may be designated (ICN, Art. 9.11). Hence, the only specimen cited as seen in the protologue is here designated as lectotype.

Distribution: *Palicourea acicularis* is known from Costa Rica and Panama. It is common in the Golfo Dulce region in southern Costa Rica and appears to be rare elsewhere (TAYLOR 2014).

***Palicourea acuminata* (BENTH.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)

≡ *Psychotria acuminata* BENTH., Bot. Voy. Sulph.: 107 (1845)

≡ *Uragoga acuminata* (BENTH.) KUNTZE, Revis. Gen. Pl. 1: 299 (1891).

Types: Colombia, Cauca: Isla Gorgona, 11–14 Jan. 1837, G.W. Barclay 921 [lectotype (LORENCE 1999: 115–116) BM BM001008963! ("sheet 2", fertile) and BM001008964! ("sheet 1", sterile), mounted separately]. Syntypes: Colombia: Colombian coast, 1842, R.B. Hinds & A. Sinclair s.n. [K K000432855! (ex Herb. Bentham)]. Bolívar: Río Magdalena, vicinity of San Pablo, 1836–1843, K.T. Hartweg 1061 [GH 00095130!; K K000634980! (ex Herb. Bentham); LD 1692446].

= *Psychotria acuminata* var. *latifolia* BENTH., Pl. Hartw.: 193 (1845), syn.n.

Types: Colombia, Bolívar: Río Magdalena, vicinity of San Pablo, s.d., K.T. Hartweg 1061 [lectotype, designated here: K K000634980! (ex Herb. Bentham); isolectotypes: GH 00095130!; LD 1692446].

– *Psychotria cuspidata* sensu STANDLEY (1938), STANDLEY & WILLIAMS (1975), non BREDEM. ex ROEM. & SCHULT.

During the voyage of the H.M.S. Sulphur, G.W. Barclay, R.B. Hinds and A. Sinclair gathered around 2,000 plants, and G. Bentham enumerated these. In the epilogue, BENTHAM (1844–1846: 182) gives some information on the "original specimens" he used when describing his new species: collections from Hinds have been deposited in Bentham's private herbarium, specimens collected by Barclay are in W.J. Hooker's private herbarium and original specimens of Sinclair are in Hooker's private herbarium, with many duplicates of his collections likewise in Bentham's herbarium. The herbaria of both Bentham and Hooker are now at K, which stands in contrast to the general belief that the types of the Sulphur expedition are at BM (e.g., STAFLEU & COWAN 1976–1988). At BM, however, a set of 405 Barclay specimens is housed that was presented by W.T. Aiton, at that time director of K, and may have originated from Hooker's herbarium (MURRAY 1904: 86, 129).

The protologue of *Psychotria acuminata* gives two localities "Isle of Gorgona, and Colombian coast" without specifying further details. The corresponding collections are Barclay 921 (Gorgona Island) and Hinds & Sinclair s.n. (Colombian coast). An additional collection is mentioned that was not gathered during the Sulphur expedition: "Hartweg gathered on the Magdalena a form with broader leaves than either" [of the two above-mentioned collections]. Although BENTHAM (1845) gave a diagnosis, he has not provided a name, which was given in his *Plantae Hartwegianae* (BENTHAM 1839–1857: 193). By reference to his earlier diagnosis, *Psychotria acuminata* var. *latifolia* is validated there (ICN, Art. 38.1).

In subsequent publications, *P. acuminata* was considered to be based on a single gathering and one or the other was listed as the type collection (e.g., BORHIDI 2017, DELPRETE & KIRKBRIDE 2016, LORENCE 1999, LORENCE & TAYLOR 2012, TAYLOR 2015a). LORENCE (1999: 115–116) cited the type of *P. acuminata* as "*Barclay s.n.* (Holotype BM, *n.v.*)". By including the term "holotype", the statement has to be accepted as a valid (though unintentional) lectotypification (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; see also MCNEILL 2014, PRADO & al. 2015).

Two sheets of the respective collection are at BM. The first bears three sterile branchlets, an original hand-written label with collection details, and a printed label with collection

details typed on it. The second sheet bears two flowering branches and a similar printed/typed label. The sheets were later labeled "sheet 1" and "sheet 2". Both are to be treated as multiple preparations of one specimen (ICN, Art. 8.3). Later, the same collection was repeatedly designated as lectotype by DELPRETE & KIRKBRIDE (2016: 411), who overlooked the earlier designation by LORENCE (1999). For *Psychotria acuminata* var. *latifolia*, the specimen at K originating from Bentham's private herbarium is here designated as lectotype.

Palicourea acuminata has a broad distribution range and shows considerable morphological variation. Plants from the northern part of its range have, among other characters, a more rounded to corymbiform inflorescence compared to a more pyramidal inflorescence in southern parts of the range (TAYLOR 2015a). It appears that plants from Central America match the type of *Psychotria acuminata* var. *latifolia* more closely than the typical form as represented by the lectotype of *Psychotria acuminata*.

Distribution: *Palicourea acuminata* is known from Cuba, from southern Mexico to Bolivia, and from Venezuela, the Guayanas and Brasil (TAYLOR 2014, 2015a).

***Palicourea alajuelensis* C.M. TAYLOR**, Novon 20 (4): 486 (2010)

≡ *Coussarea austin-smithii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1286–1287 (1938), non *Palicourea austin-smithii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1333 (1938).

Types: Costa Rica, Alajuela: Zarcero, 1590 m, 6 July 1937, A.P. Smith 126 = H.E. Stork herb. no. 4226 [holotype: F V0068823F!; isotypes: MICH MICH1108121!; MO MO-2788950; WIS 00000994MAD!].

– *Coussarea zarceroana* STANDL., in herb. [F V0068823F!; MICH MICH1108121!; WIS 00000994MAD!].

The major sets of A.P. Smith's collections are at F and MO, with smaller numbers in additional herbaria (CASTO & BURKE 2010). Little is known about his botanical work and it remains unknown how he distributed his specimens. It is interesting to note that three main types of labels are found on his specimens, and it appears that all duplicates of a certain gathering have uniform labels and putative distribution history. Many collections bear large paper slips with extensive field notes in pencil, likely in Smith's hand (e.g., type specimens of *Symplocos austin-smithii* STANDL.). A second common label-type is what appears to be an exsiccatae series with partly preprinted labels entitled "Botanical Exploration in Costa Rica" (e.g., type specimens of *Lucuma austin-smithii* STANDL.).

Finally, the third common label types are printed labels giving reference to H.E. Stork's herbarium, as found on the types of *Coussarea austin-smithii*. The protologue gives the type collection as "Austin Smith 4226." However, an annotation at the MICH duplicate by H.K. Sharsmith in 1961 clarifies that Smith's original field collection number was 126 and 4226 was Stork's herbarium number. Similar labels specifying collection numbers are found on the types of *Bumelia austin-smithii* STANDL. (Smith 63 = Stork herb. no. 4163), *Lycianthes austin-smithii* STANDL. (Smith 17 = Stork herb. no. 4117) or *Persea austin-smithii* STANDL. (Smith 68 = Stork herb. no. 4168).

From the four above-mentioned examples, it appears that Stork, for whatever reason, added 4100 to Smith's collection numbers before distributing duplicates. Stork was

based at the Carleton College's herbarium (CARL), from where duplicates of Smith's collections were distributed. Coincidentally, the holotype of *Coussarea austin-smithii* at F is labeled as originating from the "Herbarium of Carleton College" and the duplicate at MICH "From the Herbarium of H.E. Stork."

Distribution: *Palicourea alajuelensis* is only known from northern Costa Rica (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea allenii* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 14 (2017)

≡ *Psychotria allenii* STANDL., Ann. Missouri Bot. Gard. 27 (3): 342–343 (1940a).

Types: Panama, Coclé: Vicinity of El Valle de Anton, 600–1000 m, 14 May 1939, P.H. Allen 1796 [holotype: F V0070160F!; isotypes: EAP 94773!; GH 00095009!; MO MO-312058!; NY 132555!; US 00138637!].

= *Psychotria quadrangulata* DWYER, Ann. Missouri Bot. Gard. 67 (2): 420–421 (1980b).

Types: Panama, Veraguas: NW of Santa Fé, 30 Mar. 1975, S.A. Mori & J.A. Kallunki 5363 [lectotype, designated here: MO MO-312057!; isolectotypes: F V0076693F! (ex MO 2598637, "sheet # 1/2"); PMA 1215! (ex MO 2598638, "sheet # 2/2")].

= *Psychotria santaritensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 424–427, fig. 78 (1980b).

Types: Panama, Colón: Santa Rita, near Agua Clara Weather Station, 23 Mar. 1972, J.D. Dwyer & A.H. Gentry 9565 [lectotype, designated here: MO MO-312059! ("sheet # 1/3"); isolectotypes: F V0076694F! (ex MO 2183828); PMA 651! (ex MO 2349608, "sheet # 2/3"); SCZ 12474!].

The protologues of both, *Psychotria quadrangulata* and *P. santaritensis*, state that the holotypes were deposited at MO. However, at the time of publication, several duplicates of both were accessioned at MO and J.D. DWYER (1980b) indicated none as types. The type designation in the protologue therefore refers to more than one specimen and they represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; see also McNEILL 2014, PRADO & al. 2015). In a repatriation project in 2001, "spare" duplicates were deaccessioned and distributed (C.M. Taylor, pers. comm.), but are still recognizable by MO accession numbers. Here, following the original intent of DWYER, the duplicates that remained at MO are designated as lectotypes.

Distribution: *Palicourea allenii* is known from La Selva, Costa Rica, and from Panama south to Peru (TAYLOR 2014).

***Palicourea andina* C.M. TAYLOR subsp. *panamensis* C.M. TAYLOR**, Novon 23 (4): 464–465 (2015a).

Type: Panama, Chiriquí: Vicinity of Fortuna Dam, along road N of lake, 1100 m, 8 Feb. 1987, G. McPherson 10427 [holotype: MO MO-1033089!].

Distribution: *Palicourea andina* subsp. *panamensis* appears to be confined to the Fortuna Dam (i.e., Edwin Fabrega Dam) area at the Bocas del Toro/Chiriquí border, western Panama. In turn, subsp. *andina* is not known from Mesoamerica, but occurs in the Andes from western Colombia to northern Bolivia (TAYLOR 2015a).

***Palicourea angustiflora* (K. KRAUSE) BORHIDI**, Acta Bot. Hung. 59 (1–2): 14 (2017)

- ≡ *Psychotria angustiflora* K. KRAUSE, Bot. Jahrb. Syst. 54 (3, Beibl. 119): 43 (1916).
Types: Costa Rica, Cartago: Las Vueltas de Tucurrique, 600–700 m, Jan. 1899, A. Tonduz 12996 [lectotype, designated here: US 00138647!; isoelectotypes: F V0070162F! (ex US); P P03973325!, P03973327!; syntype, or possibly holotype: B † (photo: F neg. BN-521!)].
- = *Psychotria mima* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (5): 386–387, Oct. (1940c), nom. illeg. hom., non *Psychotria mima* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (3): 204–205, Sept. (1940b).
Types: Costa Rica, Cartago: Vicinity of Pejivalle, 600–850 m, Jan. 1940, A.F. Skutch 4589 [holotype: F V0070203F!; isotypes: GH 00095058!; MO MO-022088!, MO-316989!; NY 132570!; US 00138871!, 01049888!].
- *Psychotria berteriana* sensu STANDLEY (1938), DWYER (1980b, p.p.), non DC.
- *Psychotria solitudinum* sensu HABER (1991), non STANDL.

Psychotria angustiflora was published with reference to an entire gathering. As K. KRAUSE (1916) did not cite a particular specimen, all duplicates should be regarded as syntypes, although it may be argued that he possibly used only a duplicate at B, the herbarium he was based. The corresponding specimen was destroyed during World War II, and only a photography ("Berlin negative") survived at F. Therefore, in either case, a lectotype needs to be designated (ICN, Art. 9.11). Specimens of Tonduz are found in many herbaria with the largest sets in CR and US (STAFLEU & COWAN 1976–1988). The duplicate at US consists of two branches with two inflorescences and one infructescence. It is the only specimen showing both flowers and fruits and is here designated as lectotype.

Distribution: *Palicourea angustiflora* is known from Costa Rica to western Colombia (TAYLOR 2014).

***Palicourea aubletii* DELPRETE & J.H. KIRKBR.**, J. Bot. Res. Inst. Texas 10 (2): 412 (2016), non *Palicourea paniculata* (L. f.) P.L.R. MORAES & C.M. TAYLOR, Phytotaxa 41: 19 (2012)

- ≡ *Nonatelia paniculata* AUBL., Hist. Pl. Guiane 1: 184–185 et 3: tab. 70, fig. 2 (1775)
- ≡ *Oribasia paniculata* (AUBL.) J.F. GMEL., Syst. Nat., ed. 13[bis] 2 (1): 367 (1791)
- ≡ *Psychotria paniculata* (AUBL.) RAEUSCH., Nomencl. Bot. [Raeusch.] ed. 3: 56, (1797)
- ≡ *Psychotria flexuosa* WILLD., Sp. Pl., ed. 4 [Willdenow] 1 (2): 966 (1798), nom. illeg. superfl.
- ≡ *Uragoga flexuosa* KUNTZE, Revis. Gen. Pl. 2: 960 (1891), non *Uragoga paniculata* (L. f.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891).
Type: French Guiana, Cayenne: without locality and/or Cayenne Island, 1762–1764, J.B.C.F. Aublet s.n. [lectotype (STEYERMARK 1972: 500): BM BM001008958!].

In the protologue of *Nonatelia paniculata*, J.B.C.F. AUBLET (1775) gives details on the type collection "Floreat fructumque ferebat Augusto. Habitat Caiënnæ locis sterilibus." (i.e., in fruit in August. Growing in Cayenne in barren areas). In French, he lists "J'ai trouvé cette plante au bord des sentiers dans les forêts de l'île de Caienne & de la Guianne. Elle étoit en fleur & en fruit dans le mois d'Août." (i.e., I found this plant at the edge of trails in the forests of Cayenne Island and in French Guiana. It was in flower and

fruit in August.). In the French version, he refers to two localities Cayenne Island and (other areas in) French Guiana, indicating that several observations and/or collections might have been used when describing *Nonatelia paniculata*.

After Aublet's death, his herbarium was sold and J. Banks acquired the main part, which later came in the possession of BM. In addition, Aublet gave many specimens to contemporary botanists such as Linnaeus filius (now LINN-SM) or Rousseau (now at P; DELPRETE 2015, STAFLEU & COWAN 1976–1988). The only known original specimen of *Nonatelia paniculata* is located at BM. It was cited as the "type" by STEYERMARK (1972: 500), which has to be accepted as a valid (though unintentional) lectotypification (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; see also MCNEILL 2014, PRADO & al. 2015). DELPRETE (2015) accepted the lectotypification by STEYERMARK (1972) and gave some additional details on the collection. Superfluously, DELPRETE & KIRKBRIDE (2016) again designated the same specimen as lectotype.

WILLDENOW (1798) intended to publish the replacement name *Psychotria flexuosa* for *Nonatelia paniculata* AUBL. In the same work he also published the combination *Psychotria paniculata* (L. f.) WILLD., Sp. Pl., ed. 4 [Willdenow] 1 (2): 970, 1798, a nom. illeg. hom. based on *Chiococca paniculata* L. f., Suppl. Pl.: 145, 1882. However, Willdenow was not aware of the earlier combination *Psychotria paniculata* (AUBL.) RAEUSCH., that renders both his aforementioned names illegitimate.

Uragoga paniculata was long considered to be based on *Nonatelia paniculata* and it was therefore cited as *Uragoga paniculata* (AUBL.) KUNTZE. However, the publication reads "*paniculata* [W.]", in which an author in square brackets refers to names transferred from *Psychotria* and "W" refers to Willdenow (KUNTZE 1891: 958, 962). Thus, he refers to *Psychotria paniculata* (L. f.) WILLD., which is an indirect reference to the basionym *Chiococca paniculata* L. f. The correct author citation therefore is *Uragoga paniculata* (L. f.) KUNTZE. In addition, he uses the name *Uragoga flexuosa* KUNTZE for the taxon based on *Nonatelia paniculata*.

Distribution: *Palicourea aubletii* is a mostly South American species that hardly reaches Mesoamerica in the Darien Province, Panama. Besides Panama, it is known from Colombia, the Guianas, Venezuela and Brazil (DELPRETE & KIRKBRIDE 2016, LORENCE & TAYLOR 2012).

***Palicourea aurantiibractea* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 14 (2017), non *Palicourea pittieri* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (1): 66 (1930)

- ≡ *Cephaelis pittieri* K. KRAUSE, Bot. Jahrb. Syst. 54 (3, Beibl. 119): 45 (1916)
- ≡ *Psychotria aurantiibractea* C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 235, fig. 18 (1993), non *Psychotria pittieri* STANDL., Contr. U. S. Natl. Herb. 18 (3): 132–133 (1916).
Types: Costa Rica, Puntarenas: Cañas Gordas, 1100 m, Feb. 1897, H.F. Pittier 11162 [lectotype, designated here: US 00129825!; isolectotypes: F V0068628F! (fragm. ex B); G G00300827!; syntype, or possibly holotype: B † (photo: F neg. BN-763!)].

Cephaelis pittieri was published with reference to an entire gathering and all duplicates therefore represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; see also MCNEILL 2014, PRADO & al. 2015). However, it may be argued that, because Krause

did not annotate and likely has not seen other duplicates, the specimen at B might have represented the holotype. Types of names published by Krause as well as a large set of H.F. Pittier's specimens have been at B, which was destroyed during World War II (STAFLEU & COWAN 1976–1988, URBAN 1917). Of the latter, only a photograph ("Berlin negative") and a fragment consisting of part of a stem, two leaves, and part of an inflorescence survived at F. Therefore, in either case, a lectotype needs to be designated (ICN, Art. 9.11).

Pittier sent his Costa Rican plants to T. Durand at BR, from where they were distributed. The most complete sets are now at BR and CR, but none are known there (STAFLEU & COWAN 1976–1988). The duplicate at US consists of two branches, one of them flowering, and is here designated as lectotype.

Distribution: *Palicourea aurantiibractea* is endemic to southern Costa Rica (TAYLOR 2014).

***Palicourea axillaris* (Sw.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)

- ≡ *Cephaelis axillaris* Sw., Prodr. [O. P. Swartz]: 45 (1788)
- ≡ *Tapogomea axillaris* (Sw.) POIR., Encycl. [J. Lamarck & al.] 7: 585 (1806)
- ≡ *Uragoga axillaris* (Sw.) KUNTZE, Revis. Gen. Pl. 2: 954 (1891)
- ≡ *Evea axillaris* (Sw.) STANDL., Contr. U. S. Natl. Herb. 18 (3): 123 (1916)
- ≡ *Psychotria aubletiana* STEYERM., Mem. New York Bot. Gard. 23: 694–700 (1972), non *Psychotria axillaris* WILLD., Sp. Pl., ed. 4 [Willdenow] 1 (2): 962, (1798), nom. illeg. superfl., nec. *Psychotria axillaris* VELL., Fl. Flumin.: 67 (1829) et Fl. Flumin. Icon. 2: tab. 32 (1831), nom. illeg. hom.
Types: Saint Kitts and Nevis: Saint Kitts [= Saint Christopher], 1779–1780, F. Masson s.n. [holotype: BM BM001123052!; isotypes: S S08-661!, S08-664!].
- = *Psychotria aubletiana* var. *andina* STEYERM., Mem. New York Bot. Gard. 23: 695–697 (1972).
Types: Venezuela, Táchira: Páramo de Tamá, near Quebrada Buena Vista, 2300–2450 m, 22–24 May 1967, J.A. Steyermark, G.C.K. Dunsterville & E. Dunsterville 98683 [holotype: VEN 72571!; isotype: US 00138658!].
- = *Psychotria aubletiana* var. *andina* f. *pubescens* STEYERM., Mem. New York Bot. Gard. 23: 697 (1972).
Type: Venezuela, Mérida: La Carbonera, 15 km NE of Ejico, 2200 m, 19 June 1953, E.L. Little 15238 [holotype: VEN 37073!].
- = *Psychotria aubletiana* var. *centro-americana* STEYERM., Mem. New York Bot. Gard. 23: 694–695, 1972.
Types: Honduras, Francisco Morazán: La Tigra, between El Piligüin and Prado de Fátima, 1800 m, 30 Dec. 1962, L.O. Williams & A. Molina 11237 [holotype: NY 132557!; isotypes: EAP 93550!; F V0070163F!].

In all recent floras, the type of *Cephaelis axillaris* is regarded as gathered by O.P. Swartz himself (e.g., LORENCE & TAYLOR 2012, TAYLOR 2014). The protologue gives the minimalistic type information "* St. Christopher", in which the asterisk indicates that the species was described from specimens seen in the private herbarium of Banks (SWARTZ 1788: vii–viii). Later, SWARTZ (1797: 441) gave some more information on the particular

collection: "Provenit in Insula St. Christophori. Herb. Banks (Masson.)." From both statements, it is clear that F. Masson at Saint Kitts gathered the type.

For the preparation of his Prodrumus, Swartz made extensive use of the West Indian collections in the Banks herbarium, which is now part of BM. In 1786 and 1787, he worked in the latter herbarium, and also acquired some of the specimens to supplement his own collections, which later came to S (HOWARD 1989: viii, STAFLEU & COWAN 1976–1988, URBAN 1902: 134–135). By specifically referring to the Banks Herbarium when describing *Cephaelis axillaris*, the single specimen at BM is here accepted as the holotype (ICN, Art. 40.2, Art. 40 Note 1; see MCNEILL 2014, PRADO & al. 2015). This opinion followed here is in contrast to DELPRETE & KIRKBRIDE (2016), who considered the same specimen as lectotype designated by HOWARD (1982: 443).

Distribution: *Palicourea axillaris* is known from southern Mexico to northern Peru, from Venezuela, the Guianas, Trinidad and the Antilles (TAYLOR 2014).

***Palicourea beachiana* C.M. TAYLOR**, Novon 20 (4): 489–487 (2010), non *Palicourea nigrescens* M. MARTENS & GALEOTTI, Bull. Acad. Roy. Sci. Bruxelles 11 (1): 136 (1844)

≡ *Coussarea nigrescens* C.M. TAYLOR & HAMMEL, Selbyana 12: 134–135, fig. 1 (1991). Type: Costa Rica, Heredia: Finca La Selva, the OTS field station near Puerto Viejo de Sarapiquí, near the junction of the Ríos Puerto Viejo and Sarapiquí, 100 m, 5 Nov. 1980, B. Hammel 10383 [holotype: DUKE 10000637!].

Distribution: *Palicourea beachiana* is restricted to southeastern Nicaragua and Costa Rica (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea berteriana* (DC.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011), non *Palicourea pubescens* (SW.) BORHIDI, Acta Bot. Hung. 53 (3–4): 246–247 (2011)

≡ *Nonatelia pubescens* SPRENG., Syst. Veg. (ed. 16) [Sprengel] 1: 751 (1824)

≡ *Psychotria berteriana* DC., Prodr. [A.P. de Candolle] 4: 515 (1830), non *Psychotria pubescens* Sw., Prodr. [O.P. Swartz]: 44 (1788)

≡ *Uragoga berteriana* (DC.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).

Types: Dominican Republic: Santo Domingo, without locality, 1819–1820, C.L.G. Bertero s.n. [lectotype, designated here: G-DC G00478836! (p.p., flowering branch, excluding capsule, photos: F neg. 33538!, IDC microfiche 800: 713/10!); isolectotype: TO]. Possible types: Puerto Rico, without locality: 1818–1819, C.L.G. Bertero s.n. [G-DC G00478836! (ex TO, p.p., capsule, excluding flowering branch, photo: IDC microfiche 800: 713/10!); TO].

= *Psychotria crebrinervia* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 343, 1929b, nom. illeg. hom., non *Psychotria crebrinervis* VALETON, Bot. Jahrb. Syst. 61: 102 (1927).

Types: Honduras, Atlántida: Hills near Lancetilla Valley, 200 m, 31 Jan. 1928, P.C. Standley 55286 [holotype: F V0070178F!; isotype: G G00300831! (fragm. ex F)].

= *Psychotria izabalensis* L. O. WILLIAMS, Phytologia 28 (3): 229–230 (1974)

≡ *Palicourea izabalensis* (L. O. WILLIAMS) BORHIDI, Acta Bot. Hung. 53 (3–4): 245 (2011).

Types: Guatemala, Izabal: Vicinity of Lago Izabal, 600 m, 22 Apr. 1966, G.C. Jones, G.R. Proctor & L. Facey 3024 [holotype: F V0070190F!; isotype: NY (probably lost)].

= *Psychotria platyphylla* DC., Prodr. [A. P. de Candolle] 4: 517 (1830).

Types: Puerto Rico, without locality: s.d., unknown collector s.n. [holotype: G-DC G00478837! (photos: F neg. 33543!, IDC microfiche 800: 714/3!); isotype: G].

In the protologue of *Nonatelia pubescens*, K. SPRENGEL (1824) gives the minimalistic type information "Hispaniola". A few years later, A.P. DE CANDOLLE (1830), when publishing his replacement name, gave some additional information "*P. berteriana* [...]. In Sto.-Domingo et in Porto-Ricco legit indes. Bertero. *Nonatelia pubescens* Spreng! syst. 1. p. 751." The orthography of "*berteriana*" was subsequently corrected to "*berteroana*" (ICN, Art. 60.7).

Although SPRENGEL omitted citing the collector, *Nonatelia pubescens* was based on collections by C.L.G. Bertero, as already indicated by DE CANDOLLE (1830). Bertero, an Italian physician and botanist, collected extensively in the West Indies including Puerto Rico (1818–1819) and Hispaniola (1819–1820; URBAN 1902: 22, 1917). This allows establishing the collection dates of the material cited by de Candolle.

According to URBAN (1902: 22), a renowned expert on the flora and botanical history of the West Indies, Bertero sent his West Indian specimens to G.B. Balbis, who arranged their enumeration by Sprengel and subsequently distributed the specimens. The first set went to TO, the second set to G-DC and further sets were given to many other European herbaria. In addition, Sprengel kept a set for his private herbarium (LASÈGUE 1845, STAFLEU & COWAN 1976–1988, URBAN 1902, 1917).

As SPRENGEL did not cite a particular herbarium specimen in the protologue of *Nonatelia pubescens*, all duplicates should be regarded as syntypes and a lectotype needs to be designated (ICN, Art. 9.11). Also, he has seen the complete set of specimens before they have been distributed by Balbis (URBAN 1902). BORHIDI (2011, 2017) and DELPRETE & KIRKBRIDE (2016) listed a duplicate at G-DC as the holotype of *Nonatelia pubescens* SPRENG. This is not correct as the replaced synonym provides the type of a replacement name. Even if assuming that a holotype exists, it should have been in the private herbarium of Sprengel and not in that of de Candolle. In 1890, B acquired a large part of Sprengel's herbarium, which included a large set of Bertero specimens (URBAN 1902, 1917). Some additional specimens of Bertero were received with the herbarium of Kunth and on exchange from TO. Unfortunately, specimens from the Sprengel herbarium are no longer extant due to the destruction of B in World War II.

HOWARD (1989: 443) cited the type as "Type: Bertero s.n., "Dominique" = Hispaniola (IDC 800. 713: II.2.)." He refers to a particular specimen in the microfiche series of de Candolle's Prodr. herbarium G-DC (Inter Documentation Company 800: 713/10). By including the term "type", the statement has to be considered a valid [first-step] lectotypification (ICN, Art. 9.17). However, on the respective sheet two different collections are mounted as indicated by two labels. A large flowering branch bears the collection details "S. Domingue. Bertero. M. Balbis 1821." The second collection is a capsule containing a fragment with an infructescence and some loose fruits. The capsule is labeled "fructus ex specim. Portoricensi herb. Balbis", referring to a fruiting specimen at TO, which likewise could be original material. A second capsule contains a small inflorescence fragment showing an open flower and some flower buds. It bears the inscription "Psychotr.

Berteriana St. Domingo." and might contain yet another collection or a fragment of the flowering specimen. Here, the flowering specimen is designated as second-step lectotype.

In the protologue of *Psychotria platyphylla*, DE CANDOLLE (1830) gives the following type information: "In Porto-Ricco. *P. macrophylla* Vent! in h. Deless. [...]. (v. s. sine fr. comm. ab am. Delessert.)." By citing a particular specimen he received from J. P. B. Delessert, it represents the holotype. Indeed, a corresponding specimen is present at G-DC, which constitutes of a branch with flowers and young fruits bearing the label "*Ps. macrophylla* V. *Nonatelia paniculata* Aub. Porto Rico. B. Delessert 1810." The same specimen i.e. microfiche IDC 800: 714/3 was cited by HOWARD (1989: 443) as "Type: "Delessert 1810" (IDC 800. 714: I.3)."

HOWARD refers to "Delessert 1810" as collector, but this is not possible since Delessert never collected outside of Europe (STAFLEU 1970). Unfortunately, the type specimen itself gives no direct information on locality and collector, but the mentioned annotation of E.P. Ventenat ("*P. macrophylla* Vent! in h. Deless.") may provide some hints. It indicates that a respective specimen must have been in the possession of Ventenat before his death in 1808. In 1809, his herbarium was acquired by Delessert and incorporated in his own collections (LASÈGUE 1845). Thus, it appears likely that "Delessert 1810" indicates the year in which de Candolle received the above-mentioned specimen from Delessert.

The herbarium of Ventenat contained many specimens from contemporary botanists, among them West Indian collections from Swartz, who, however, never collected in Puerto Rico (LASÈGUE 1845, URBAN 1902). Ventenat also received specimens from Vahl, who distributed Puerto Rican specimens collected by J.P.B. von Rohr in 1786, and by H. West in 1797, and some are known at G-DC (LASÈGUE 1845, URBAN 1902). Nevertheless, as long as no further evidence is found, it remains unclear if one of these or any other contemporary collector gathered the type of *Psychotria platyphylla*.

Distribution: *Palicourea berteroana* is known from southern Mexico to Bolivia and from Venezuela, Guyana and the Greater Antilles (TAYLOR 2014).

***Palicourea boraginoides* (DWYER) C.M. TAYLOR**, Novon 23 (4): 465 (2015a).

≡ *Psychotria acuminata* subsp. *boraginoides* DWYER, Ann. Missouri Bot. Gard. 67 (2): 344 (1980b)

≡ *Psychotria boraginoides* (DWYER) C.M. TAYLOR, Novon 21 (1): 144 (2011).

Types: Panama, Panamá: El Llano–Cartí road, 19 km from Pan-American Highway, 200–500 m, 26–27 Mar. 1973, R.L. Liesner 1187 [holotype, or possibly lectotype: MO MO-312060!; isotype, or possibly isolectotype: MO MO-312061!].

In the protologue, DWYER (1980b) stated that the type is located at MO but did not cite a specific sheet. There, two specimens are available, leaving some doubt, which was meant. Among these, only one bears an annotation slip by Dwyer from 1976 giving the name *Psychotria acuminata* var. *boraginoides* DWYER. Subsequently, LORENCE (1999), TAYLOR & al. (2011) and TAYLOR (2015) cited the specimen as the holotype. If not following these authors, the type citation by LORENCE (1999: "Holotype MO 2164366" [accession no.]) constitutes a valid lectotypification of the same specimen (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; McNEILL 2014).

Distribution: *Palicourea boraginoides* is endemic to central Panama (TAYLOR 2015a).

***Palicourea brachiata* (Sw.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)≡ *Psychotria brachiata* Sw., Prodr. [O. P. Swartz]: 45 (1788)≡ *Uragoga brachiata* (Sw.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891)≡ *Myrstiphyllum brachiatum* (Sw.) HITCHC., Rep. (Annual) Missouri Bot. Gard. 4: 94 (1893).

Types: Jamaica, without locality: 1784–1786, O.P. Swartz s.n. [lectotype, designated here: S S-R-5312!; isolectotypes: BM BM001009022!; LINN-HS 333.15!; LD 1256057!; M 0188917!; SBT 13401!].

The protologue of *Psychotria brachiata* gives the minimalistic type information "Jamaica." In his later flora, SWARTZ (1797: 415) gave some information "Habitat in montibus altis Jamaicae australis." He collected in the West Indies including Jamaica between 1784 and 1786 (URBAN 1902). Reportedly, Swartz was "very liberal with his specimens" and many of his type collections have duplicates found in other herbaria (STAFLEU & COWAN 1976–1988). In the case of *Psychotria brachiata*, six specimens are known and should be regarded as syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; MCNEILL 2014, PRADO & al. 2015). In 1819, his private herbarium was acquired by the Swedish Academy of Sciences and built the basis of S. The corresponding sheet contains two branches, one in flower and one in fruit, and is here designated as lectotype.

Distribution: *Palicourea brachiata* is known from southern Mexico to Ecuador, and from Venezuela, Trinidad and the Greater Antilles (TAYLOR 2014).

***Palicourea breedlovei* (LORENCE) LORENCE**, Novon 20 (4): 487 (2010)≡ *Psychotria breedlovei* LORENCE, Novon 4 (2): 125–127, fig. 4 (1994).

Types: Mexico, Chiapas: Municipio La Trinitaria, 1 km E of Tziscão or 11 km E of entry of Lagunas de Montebello National Park, 1330 m, 9 Aug. 1985, T. Chehaibar N. 170 [holotype: PTBG PTBG1000000722!; isotypes: MEXU; UAMIZ].

Distribution: *Palicourea breedlovei* is known from southern Mexico and Guatemala (TAYLOR & al. 2010).

***Palicourea caerulea* (RUIZ & PAV.) ROEM. & SCHULT.**, Syst. Veg., ed. 15 bis [Roemer & Schultes] 5: 194 (1819)≡ *Psychotria caerulea* RUIZ & PAV., Fl. Peruv. [Ruiz & Pavon] 2: 62, tab. 213, fig. b (1799)≡ *Uragoga caerulea* (RUIZ & PAV.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Types: Peru, Huánuco: Pillao and Chacahuassi, Aug.–Oct. 1787, J.A. Pavon & H. Ruiz L. s.n.; and/or Junín: Río Vitoc, 1794, J.J. Tafalla 368 [lectotype, designated here: MA 815914!; isolectotypes: F V0041043F! (fragm. ex G); G G00300928! (photo: F neg. 25772!); F V0041042F!; MA 815913!, 818862!; original drawing: F. Pulgar [MA AJB04-D-0429!].

– *Psychotria brachiata* sensu auct., non Sw.

Concerning authorship of names published in the *Systema Vegetabilium*, volumes 1–4 were authored by J.J. Römer and J.A. Schultes. In the year of publication of the 5th volume, Römer died and Schultes continued the publication series. The title page of volume

5 gives both authors, whereas from the 6th volume onwards, Römer does not appear on the title page anymore. From this and an indication in the foreword, it is clear that both authored the new species in volume 5. Therefore, any nomenclatural novelty in the volume should be attributed to both Römer and Schultes.

After returning to Spain, the Peruvian collections of Ruiz, Pavon and co-workers were given to the newly established Botanical Office of Peru, which was funded by the Ministry of the Indies. Specimens were housed and studied there for decades until large parts were finally given to MA. However, due to economic problems, from 1814 onward, Pavon started to sell parts of their collections, a situation that further deteriorated after the Napoleonic Wars cut off governmental funding. Consequently, this led to a gradual disintegration of the collections at the Botanical Office, in some cases, without retaining material (LACK 1979, STEELE 1964).

On the other hand, this promoted the dissemination of specimens to many foreign botanists. A large set of their collections (4994 specimens) was acquired by F.B. Webb and is now housed at FI (PICHI-SERMOLLI 1949, STEINBERG 1977). Even more important was a collection containing several thousands of specimens that A.B. Lambert acquired over the years. After Lamberts death, his herbarium was divided, and sold at an auction (MILLER 1970, STEINBERG 1977, URBAN 1917). Specimens from Ruiz and Pavon's collection were divided in 3 lots, one went to B (with duplicates sent to US), one to BM (with duplicates sent to MO and NY), and one to FI (via the herbarium of G. Gardner). In addition, many specimens were otherwise sold by Pavon and are found in other herbaria (IBÁÑEZ & al. 2006).

The protologue of *Psychotria caerulea* gives the type information "Habitat in Peruviae Andium nemoribus imis calidis, ad Vitoc vicum, unde Tafalla iconem nobiscum communicavit." This indicates that J.J. Tafalla, who joined the expedition in 1784, provided a drawing and probably specimens from a locality at Río Vitoc. After Ruiz and Pavon returned to Spain in 1788, Tafalla kept sending materials, which were incorporated in their *Flora Peruviana et Chilensis*. Concerning the area given in the protologue, it is known that Tafalla worked at Río Vitoc in 1794 (KNAPP 2008), and this year is assumed for the cited illustration and specimen.

In his extensive account of their voyage, Ruiz reported that they found *Psychotria caerulea* at two different localities (SCHULTES & JARAMILLO-ARANGO 1998: 115, 308). First, they collected, described and illustrated it in the vicinity of Tarma (Junín; between May 1779 and Jan. 1780). Unfortunately, all specimens and illustrations gathered prior to April 1784 were lost when the Spanish ship San Pedro de Alcántara sank off the Portuguese coast. Only two folio volumes with corresponding plant descriptions were saved due to later shipping (SCHULTES & JARAMILLO-ARANGO 1998: 252, STEELE 1964: 154, 160). Later, *Psychotria caerulea* was regathered near the settlements of Pillao and Chacahuassi (Huánuco; Aug.–Oct. 1787), from where specimens should be extant.

Three specimens representing original material of *Psychotria caerulea* are found at MA. One (815914) bears four flowering branches and a label giving "Pentand. Monog. *Psychotria coerulea*. F. P. c. l. N° 368." The style of the label matches what is known from Tafalla (e.g., KNAPP 2008), but the handwriting is different and may belong to his co-worker F. Pulgar. In addition, the sheet bears another label in what appears to be Pavon's hand giving "*Psychotria caerulea* Sp. Pl. Fl. Per." Although the locality Río Vitoc is

not given on the latter specimen, it likely originates from the locality mentioned in the protologue and it is here designated as lectotype. The other sheets likely originate from the above-mentioned collections by Ruiz & Pavon near Pillao and Chacahuassi in 1787.

Distribution: *Palicourea caerulea* is known from Panama to Bolivia, from northwestern Venezuela and northern Brazil (LORENCE & TAYLOR 2012).

***Palicourea calidicola* (C.M. TAYLOR) C.M. TAYLOR**, Novon 20 (4): 487 (2010)

≡ *Psychotria calidicola* C.M. TAYLOR, Novon 14 (4): 497–499, fig. 2a–d (2004).

Types: Costa Rica, Limón: Parque Nacional Tortuguero, Río Tortuguero, ca. 3 km SE of Tortuguero, 4 m, 12 Oct. 1988, R. Robles 2100 [holotype: CR CR136898!; isotype: MO MO-683196!].

Distribution: *Palicourea calidicola* is known from southeastern Nicaragua to western Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea carnosocarpa* (DWYER & M. V. HAYDEN) C.M. TAYLOR**, Novon 25 (1): 88 (2016).

≡ *Psychotria carnosocarpa* DWYER & M. V. HAYDEN, Ann. Missouri Bot. Gard. 55 (1): 41–42 (1968).

Types: Panama, Chiriquí: Francés Arriba School, ca. 14 miles N of David, 30–60 m, 14 Dec. 1966, W.H. Lewis, D. Burch, J.D. Dwyer, T.S. Elias, N. Escobar, R.I. Oliver & K.R. Robertson 964 [holotype: MO MO-312046!; isotype: GH 00549890 (ex MO)].

= *Psychotria taurina* DWYER, Ann. Missouri Bot. Gard. 67 (2): 432–433 (1980b).

Type: Panama, Bocas del Toro: Fish Creek Mountains, 16 Apr. 1941, H. von Wedel 2240 [holotype: MO MO-312047!].

The protologue of *Psychotria carnosocarpa* deviates in some details from the information given on the specimens, which are listed above. The protologue reads "Bocas del Toro: Changuinola to 5 mi S at jct Ríos Changuinola & Terebe, alt. 100–200 ft, Lewis, Dwyer, Elias & Robertson 964."

Distribution: *Palicourea carnosocarpa* is known from a single record in easternmost Costa Rica [Grayum & al. 4482, CR 110303!, MO 1026829], from western Panama and western Colombia (TAYLOR 2014, TAYLOR & HOLLOWELL 2016).

***Palicourea chiapensis* (STANDL.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)

≡ *Evea chiapensis* STANDL., Contr. U. S. Natl. Herb. 23 (5): 1392 (1926b)

≡ *Cephaelis chiapensis* (STANDL.) STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 295 (1929a)

≡ *Psychotria molinarum* LORENCE, Novon 7 (1): 51–52 (1997), non *Psychotria chiapensis* STANDL., Contr. U. S. Natl. Herb. 23 (5): 1390 (1926b).

Types: Mexico, Chiapas: Cerro Boquerón, Sept. 1913, C.A. Purpus 6928 [holotype: US 00129802!; isotypes: BM BM000624106!; F V0069048F!; GH 00092495; MO MO-312028!].

= *Cephaelis sessilifolia* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 295 (1929a).

Types: Mexico, Jalisco: Quimixto, trail from San Pedro el Tuito, 60 m, 2 Dec. 1926, Y.E.J. Mexia 1240 [holotype: F V0068629F!; isotypes: A 00092499; BM BM000624199!; CAS 0001927!; E E00285058!; G G00300576! (fragm. ex US), G00300577!; GH; MICH MICH1108116!; MO MO-312029!; NY 131010!; US 00129832!; 00997244!].

Distribution: *Palicourea chiapensis* is endemic to the states of Chiapas, Guerrero and Jalisco, Mexico (LORENCE & TAYLOR 2012).

***Palicourea chiriquensis* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 15 (2017)

≡ *Cephaelis chiriquensis* STANDL., Ann. Missouri Bot. Gard. 28 (4): 469–470 (1941)

≡ *Psychotria chiriquensis* (STANDL.) C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 241–242 (1993).

Types: Panama, Chiriquí: Vicinity of Bajo Chorro, 1900 m, 20–22 July 1940, R.E. Woodson & R.W. Schery 610 [holotype: F V0068621F!; isotypes: GH 00092496; MO MO-312043!].

– *Cephaelis chiriquensis*, *Psychotria chiriquensis*, *Palicourea chiriquensis*, orth. var.

– *Cephaelis elata* sensu DWYER (1980a, p.p.), non SW.

– *Psychotria dichroa* sensu STANDLEY (1938), non (STANDL.) C.M. TAYLOR.

– *Psychotria moliniana* C.M. TAYLOR & W. C. BURGER, ined. (HABER 1991: 113).

In some literature (e.g., DWYER 1980a: 70, LORENCE 1999: 30), the holotype is cited as being located at MO. The protologue, however, clearly states that it is at F.

Distribution: *Palicourea chiriquensis* is known from Costa Rica and western Panama (TAYLOR 2014).

***Palicourea chlorobotrya* (STANDL.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)

≡ *Psychotria chlorobotrya* STANDL., J. Wash. Acad. Sci. 16 (1): 17 (1926a).

Types: Mexico, Chiapas: Mountains near Rancho "El Fenix", May 1925, C.A. Purpus 104 [holotype: US 00138705!; isotype: US 00611137!].

= *Psychotria izabalensis* subsp. *oaxacana* LORENCE, Bol. Soc. Bot. México 47: 53–55, fig. 2a, b (1987)

≡ *Psychotria rzedowskiana* BORHIDI, Acta Bot. Hung. 46 (1–2): 66 (2004), non *Psychotria oxacana* STANDL., Contr. U. S. Natl. Herb. 23 (5): 1391 (1926b)

≡ *Palicourea rzedowskiana* (BORHIDI) BORHIDI, Acta Bot. Hung. 53 (3–4): 247 (2011).
Types: Mexico, Oaxaca: Ixtlán, Sierra de Juárez, Route 175 Tuxtépex–Oaxaca, 2.5 km NE of Puerto Eligio, 800 m, 1–2 June 1983, D.H. Lorence & R. Cedillo T. 4250 [holotype: MEXU PVT422317!; isotypes: BM; BR BR0000005316434!; CAS; ENCB 003552!; F V0070191F!; MEXU PVT422318!; MO MO-316986!; NY 132563!; UC UC1587880!; US 00512694!; XAL].

Specimens of the type collection of *Psychotria izabalensis* subsp. *oaxacana* bear two different collection dates, 1 June (BR, NY) and 2 June (ENCB, F, MEXU, MO, UC, US)

with slightly shorter information on locality. The protologue mentions the former but cites a specimen collected on the latter date as holotype.

Distribution: *Palicourea chlorobotrya* is endemic to Mexico and is only known from a few sites in the states of Chiapas and Oaxaca (LORENCE & TAYLOR 2012).

***Palicourea chrysocalymma* (L.O. WILLIAMS) C.M. TAYLOR**, Novon 20 (4): 487 (2010)

≡ *Psychotria chrysocalymma* L.O. WILLIAMS, Phytologia 28 (3): 228–229 (1974).

Types: Guatemala, El Progreso: Between Finca Piamonte and summit of Volcán Santa Luisa, 2400–3333 m, 5 Feb. 1942, J.A. Steyermark 43518 [holotype: F V0070173F!; isotypes: US 00611138!, 00611139!].

Distribution: *Palicourea chrysocalymma* is endemic to Guatemala (TAYLOR & al. 2010).

***Palicourea correae* (DWYER & M.V. HAYDEN) BORHIDI**, Acta Bot. Hung. 59 (1–2): 16 (2017)

≡ *Cephaelis correae* DWYER & M.V. HAYDEN, Ann. Missouri Bot. Gard. 55 (1): 36, fig. 1 (1968) et 55 (3): iv (erratum) (1969)

≡ *Psychotria correae* (DWYER & M.V. HAYDEN) C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 244, fig. 17 (1993).

Types: Panama, Coclé: El Valle de Antón, foot of Cerro Pilón, 760–910 m, 28 May 1967, W.H. Lewis, B. MacBryde, R.L. Oliver & J.E. Ridgway 1759 [holotype: MO MO-312042!; isotypes: F V0076691F!; GH; PMA 1006!; UC; US].

– *Psychotria elata* sensu HABER (1991), non (Sw.) HAMMEL.

Distribution: *Palicourea correae* is known from Nicaragua to Panama (TAYLOR 2014).

***Palicourea croatii* (DWYER) BORHIDI**, Acta Bot. Hung. 59 (1–2): 16 (2017)

≡ *Cephaelis croatii* DWYER, Ann. Missouri Bot. Gard. 67 (1): 64–65 (1980a)

≡ *Psychotria croatii* (DWYER) C.M. TAYLOR, Novon 21 (1): 144–145 (2011).

Types: Panama, Darién: Headwaters of Río Tuquesa ca. 2 air km from continental divide, 26 Aug. 1974, T.B. Croat 27204 [holotype: MO MO-312246!; isotypes: F V0068623F!; GH 00092497; NY 131009!; XAL 0106633!].

= *Psychotria purpureocapitata* DWYER ex C.M. TAYLOR, Novon 6 (3): 301–302, fig. 2a, b, (1996a).

Types: Panama, Coclé: El Copé on Pacific side, 1/2 hour walk from sawmill, 730 m, 16 Oct. 1979, T.M. Antonio 2154 [holotype: PMA 1000!; isotypes: GB GB-0048605!; MO MO-312247!].

In TAYLOR & al. (2011: 144), an isotype of *Psychotria purpureocapitata* (MO-312247) is erroneously cited as holotype, but the protologue clearly specifies that the holotype is found at PMA.

Distribution: *Palicourea croatii* is endemic to Panama (LORENCE & TAYLOR 2012).

***Palicourea croceovenosa* (DWYER) A.C. BERGER**, comb.n.

≡ *Psychotria croceovenosa* DWYER, Ann. Missouri Bot. Gard. 67 (2): 367–368 (1980b).

Types: Panama, Chiriquí: N of San Félix, Cerro Colorado copper mine road, 1500–1700 m, 4 May 1975, S.A. Mori & J.A. Kallunki 5880 [lectotype (LORENCE 1999: 121): MO MO-312041!; isolectotype: PMA 650! (ex MO 2465343); syntypes: MEXU PVT679503!; excluded syntype: MO MO-312236! (see below)].

= *Palicourea montensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 309 (1980b).

Types: Based on the same collection as *Psychotria croceovenosa*, 4 May 1975, S.A. Mori & J.A. Kallunki 5880 [lectotype, designated here: MO MO-312236!].

– *Psychotria berteriana* sensu STANDLEY (1938, p.p.), non DC.

– *Psychotria luxurians* sensu STANDLEY (1938, p.p.), non RUSBY.

Psychotria croceovenosa and *Palicourea montensis* were published simultaneously, and both are based on an incomplete set of the same type collection. It has been suggested that these are invalid alternative names (ICN, Art. 36.2). However, DWYER (1980b) considered both to be distinct species and the names are thus valid (M. GRAYUM in TAYLOR 2014: 699). At the time of publication, three specimens were stored at MO, and none of these is annotated by Dwyer as *P. montensis*. Dwyer apparently returned to unmounted and unlabeled duplicates of the same collection to describe *Palicourea montensis*, but did not annotate them as such (C.M. Taylor, pers. comm.). The second sheet at MO bears what appears to be a later (printed) transcript of the corrected labels of the aforementioned sheets, and corresponds to a duplicate distributed to MEXU. C.M. Taylor therefore annotated the specimen in 1988 as lectotype of *Palicourea montensis*. Unfortunately, her lectotype designation was never published and is here validated.

LORENCE (1999: 110, 121) was the first to synonymize these taxa and adopted the name *Psychotria croceovenosa*, which was in accordance with the previous generic concept of including entomophilous species of *Palicourea* in *Psychotria*.

Due to the incorporation of *Psychotria* subg. *Heteropsychotria* in *Palicourea*, BORHIDI (2017) accepted the name *Palicourea montensis* for the taxon. However, according to the ICN (Art. 11.5, in particular Art. 11 Ex. 22), the first choice between two names of equal priority establishes priority irrespective of the genus. Hence, the necessary new combination *Palicourea croceovenosa* is proposed here.

LORENCE (1999: 121) cited the type of *P. croceovenosa* as "S. Mori & J. Kallunki 5880 (Holotype MO 2579259)" [accession no.]. By including the term "holotype", this has to be considered a valid lectotypification (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; MCNEILL 2014, PRADO & al. 2015). The respective sheet bears a pre-printed label giving collection details and an illegible in herb. name typed on it by Dwyer in 1977. At some point, he changed his mind, the name was covered with whiteout and replaced by *Psychotria croceovenosa*. A duplicate showing the same identification history was distributed to PMA.

Distribution: *Palicourea croceovenosa* is known from Costa Rica and Panama (TAYLOR 2014).

***Palicourea cyanococca* (DOMBRAIN) BORHIDI**, Acta Bot. Hung. 59 (1–2): 17 (2017)

≡ *Psychotria cyanococca* DOMBRAIN, Fl. Mag. (London) 9: tab. 479 (1870).

Types: Based on a cultivated plant [no specimens known]. Lectotype, designated here: DOMBRAIN (1870): tab. 479. Epitype, designated here: Nicaragua, Chontales: without locality, 1867, B.C. Seemann 119 [BM BM000572021!].

- = *Psychotria dispersa* STANDL., J. Wash. Acad. Sci. 18 (7): 184–185 (1928b).
Type: Costa Rica, Guanacaste: Los Ayotes near Tilarán, 600–700 m, 21 Jan. 1926, P.C. Standley & J. Valerio 45548 [holotype: US 00138730!].
- = *Psychotria pittieri* STANDL., Contr. U. S. Natl. Herb. 18 (3): 132–133, 1916.
Type: Panama, Colón: Between Gorgona and Gatún, 10–50 m, 7 Jan. 1911, H.F. Pittier 2266 [holotype: US 00138928!].
- = *Psychotria pittieri* subsp. *oinochrophylla* DWYER, Ann. Missouri Bot. Gard. 67 (2): 416 (1980b).
Types: Panama, Darién: Cerro Pirre, 760–1200 m, 9–10 Aug. 1967, J.A. Duke & T.S. Elias 13668 [holotype: MO MO-2138646!; isotypes: F V0076692F! (ex MO 2234291); PMA 1188! (ex MO 2237417)].
- = *Psychotria pumiliocarpa* DWYER, Ann. Missouri Bot. Gard. 67 (2): 419–420, (1980b).
Types: Panama, Veraguas: Alto de Piedra, 800 m, 7 Sept. 1974, P.J.M. Maas & R.L. Dressler 1612 [holotype: MO MO-2287628!; isotype: U 0006237!].

Between 1866 and 1867, B.C. Seemann accompanied Captain B.C.T. Pim to explore Central American countries (PIM & SEEMAN 1869, TRIMEN 1872, VAN HOUTTE 1873). From Chontales, Nicaragua, Seemann sent seeds and/or living plants to the English plant trader W. Bull. Based on his cultivated plants, *Psychotria cyanococca* was figured and described by H.H. DOMBRAIN (1870). In the same publication, it was said that he later distributed it to other gardeners. In 1867, BM purchased 238 herbarium specimens Seemann collected in Chontales (MURRAY 1904: 98, 181), among these was a specimen that was later regarded as the holotype (LORENCE 1999, LORENCE & TAYLOR 2012). However, the species was based on a living plant, and the herbarium specimen Seeman 119 is therefore not part of the original material. Here, the original illustration is designated as lectotype, and the aforementioned specimen is designated as epitype.

In the protologue of *Psychotria pittieri* subsp. *oinochrophylla*, DWYER (1980b) stated that the holotype was deposited at MO. Although, at the time of publication, three duplicates have been accessioned, only one has an original printed collection label with holotype typed on it, whilst the others have labels stating that they are isotypes. In a repatriation project in 2001, the two isotypes were subsequently deaccessioned and distributed (C.M. Taylor, pers. comm.).

Distribution: *Palicourea cyanococca* is known from southern Mexico, Belize and Guatemala and from Nicaragua to western Colombia (TAYLOR 2014). So far, it is not reported from El Salvador and Honduras, but should be expected there.

***Palicourea deflexa* (DC.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 243 (2011)

≡ *Psychotria deflexa* DC., Prodr. [A.P. de Candolle] 4: 510 (1830)

≡ *Uragoga deflexa* (DC.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Types: French Guiana, Cayenne: without locality and/or Cayenne Island, 1766–1769, J.-B. Patris s.n. [lectotype (DELPRETE & KIRKBRIDE 2016): G-DC G00478847!]

("sheet 4", photos: F neg. 6678!, IDC microfiche 800: 712/2!); isolectotype: G-DC G00478847! ("sheet 3")].

- *Psychotria patens* sensu STANDLEY (1938), STANDLEY & WILLIAMS (1975), non SW.
- *Psychotria flexuosa* auct., non WILLD.

In the protologue of *Psychotria deflexa*, DE CANDOLLE (1830) gives the type information "In Guianâ Gallicâ olim legit Patris. [...]. (v. s. sine fr.)." In 1764, B. de Jussieu sent his pupil J.-B. Patris to French Guiana, where he was appointed King's Physician in Cayenne and served as Physician to the Governor E.F. Turgot. He undertook two extensive voyages (1766–1767 and 1769) to the interior of French Guiana, at that time virtually unexplored, and collected up to 2,000 species. After Patris died in 1786, the governor, himself having botanical interests, gave his herbarium to C.L. L'Héritier de Brutelle. After the latter died in 1800, his private herbarium with around 8,000 specimens was sold to de Candolle in 1821, and is now at G-DC (CHAIA 1979, HOFF 2000, LASÈGUE 1845, STAFLEU & COWAN 1976–1988).

The respective folio of *Psychotria deflexa* at G-DC contains four sheets, which were numbered 1–4 in pencil by P. Delprete. He annotated sheet 1 [G-DC! (G00478849, photo: IDC microfiche 800: 712/4!)] and 2 [G-DC! (G00478849, photo: IDC microfiche 800: 712/3!)] as "dubious isolectotypes and probably not the same taxon" (see also DELPRETE & KIRKBRIDE 2016). These two specimens are not at all related to *Palicourea deflexa*, but belong to the newly delimited *Palicourea* sect. *Nonatelia* (AUBL.) C.M. TAYLOR, which is easily differentiated by stipules bearing distinctive awns, subparallel tertiary leaf venation, and different inflorescence morphology (TAYLOR & HOLLOWELL 2016). More specifically, the specimen belongs to *Palicourea octocuspis* or a probably undescribed relative mentioned by TAYLOR & HOLLOWELL (2016: 98).

The specimens mounted on sheets 3 and 4 belong to true *Palicourea deflexa*. DWYER (1980b) cited the type collection as "Surinam, collector unknown (MO, photo of isotype (?) in Delessert Herb.)." ZAPPI & NUNES (2000) cite it as "Type: Anonymous, Suriname (G-Del)." Although early enough for an inadvertent lectotypification, the reference to the Patris specimen from French Guiana is insufficiently direct to be acceptable as a lectotypification (ICN, Art. 7.10, Art. 40 Note 2).

Of the two available sheets, only sheet 4 bears the name *Psychotria deflexa*, and it was designated as lectotype by DELPRETE & KIRKBRIDE (2016). On the respective sheet, two flowering branches are mounted and each bears a label in different style. The upper specimen's label reads "Cayenne", the lower specimen's label reads "islet [illegible] 17 Mars." Beside the lower specimens, a capsule with some separate flowers and a flower analysis is mounted. The same branch is depicted in full on the field negatives, whereas from the upper specimen only some leaves are visible. This indicates that the two branches belong to separate collections mounted on a single sheet.

Distribution: *Palicourea deflexa* is known from southern Mexico to Bolivia, Brazil and Paraguay and from the Greater Antilles (TAYLOR 2014).

***Palicourea deneversii* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 16 (2017)

≡ *Psychotria deneversii* C.M. TAYLOR, Novon 6 (3): 300–301, fig. 2c, d, (1996a).

Types: Panama, San Blas: El Llano–Cartí road, 18 km from Pan-American Highway, headwaters of Atlantic-draining creeks, 300 m, 7 Sept. 1984, G.C. de Nevers 3861 [holotype: PMA 995!; isotypes: GB GB-00486029!; MO MO-312233!].

Distribution: *Palicourea deneversii* is endemic to Panama and is currently known from only two collections at the El Llano–Cartí Road (TAYLOR 2017).

***Palicourea dichotoma* (RUDGE) DELPRETE & J. H. KIRKBR., J. Bot. Res. Inst. Texas 10 (2): 418 (2016)**

- ≡ *Cephaelis dichotoma* RUDGE, Pl. Guian. 29, tab. 44 (1806)
- ≡ *Psychotria dichotoma* (RUDGE) BREMEK., Recueil Trav. Bot. Néerl. 31 (1–2): 301, (1934), nom. illeg. hom., non *Psychotria dichotoma* HUMB. & BONPL. ex ROEM. & SCHULT., Syst. Veg., ed. 15 bis [Roemer & Schultes] 5: 190 (1819).

Types: French Guiana, without locality (cf., STEARN & WILLIAMS 1957): 1790–1802, J. Martin s.n. [first-step lectotype (STEARNS & WILLIAMS 1957: 263); second-step lectotype (DELPRETE & KIRKBRIDE 2016): BM BM000611038!; isolectotypes: BM BM000611037!; BR BR0000005315741! (ex Herb. Martius); possible types, in flower: B † (ex Herb. Kunth ex P, photo: F neg. BN-721!); P P04016857!, P04016865!; possible types, in fruit: P P04016858!, P04016860!, P04016870!, P04016871!, P04016872!, P04016862! (ex Herb. Jussieu)].

- = *Psychotria brevipes* DC., Prodr. [A. P. de Candolle] 4: 511 (1830)
 - ≡ *Uragoga brevipes* (DC.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).
- Types: French Guiana, without locality: 1766–1769, J.-B. Patris s.n. [lectotype (DELPRETE & KIRKBRIDE 2016): G-DC; isolectotype: G G00300388!].
- = *Psychotria martiana* MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 339–340, pl. 51 (1881).
- Types: Rio de Janeiro: Sierra de Macacú, 1819–1820, H.W. Schott 5302 (799.d) [first-step lectotype (STEYERMARK 1972: 600); second-step lectotype (DELPRETE & KIRKBRIDE 2016): NY 00132735! (ex W); isolectotypes: F V0070512F! (fragm. ex W); K K000015623! (ex herb. Hooker); W]. Syntypes: Brazil, Bahia: without locality, s.d., J.S. Blanchet s.n. [G G00300390!, G00300391! (ex Herb. Moricand); P P04016844!]; Ilheos, 1819–1820, C.F.P. von Martius 618 [BR BR0000005316403! (ex Herb. Martius), BR0000008415417! (ex Herb. Martius); F V0070511F! (fragm.); G G00300389!; K K000015624!; M 0189136!; NY 502199!; P P03942895!; without locality, s.d., L. du Pasquier s.n. [n.v.]; Ilheos, Dec. 1816, M.A.P. zu Wied-Neuwied 114 [BR BR0000008415059! (ex Herb. Martius)]. Maranhão: Rio Itapicuru, s.d., C.F.P. von Martius s.n. [M 0189135!]. Without province: Rio Upa, Aug. 1821, L. Riedel 327 [BR BR0000008414762! (ex Herb. Martius)].

- = *Psychotria platypoda* DC., Prodr. [A. P. de Candolle] 4: 510–511 (1830)
 - ≡ *Uragoga platypoda* (DC.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891)
 - ≡ *Palicourea platypoda* (DC.) BORHIDI, Acta Bot. Hung. 59 (1–2): 19 (2017).
- Types: French Guiana, without locality: 1766–1769, J.-B. Patris s.n. [lectotype, (DELPRETE & KIRKBRIDE 2016): G-DC (photos: F neg. 6680!, IDC microfiche 800: 712/8!); isolectotype: G; possible isolectotype: G G00300388!].

J. Martin was sent to French Guiana to collect herbarium specimens and living plants for the P herbarium and the Jardin des Plantes, where he was employed as gardener.

In 1803, two British privateers captured one large shipment on the French ship *L'Union* containing living plants, seeds and herbarium specimens gathered during six years. More than 3000 specimens of Martins were looted and sold at an auction in London. Lambert, E. Rudge and three others bought these and Rudge based many new species including *Cephaelis dichotoma* on them (RUDGE, 1805–1806). After the death of Lambert in 1842, his private herbarium was sold at an auction and BM acquired 400 specimens of Martin from him. In 1847, the widow of Rudge presented his private herbarium including 772 Martin-specimens to BM (HOFF 2000, MILLER 1970, STEARN & WILLIAMS, 1957).

This explains the origin of the two Martin specimens at BM. The duplicate at BR originates from the private herbarium of Martius and was given to him by J. Lindley. Specimens of Martin are found in other herbaria, most notably at P, but these were evidently sent to France before 1803 (STEARNS & WILLIAMS 1957). Hence, it is highly questionable if the specimens of *Palicourea dichotoma* at P are type material, or belong to previous gatherings. Furthermore, according to their general habit and phenology (flowering vs. fruiting, etc.), the specimens may be assigned to at least two collections.

In the protologue of *Psychotria platypoda*, DE CANDOLLE (1830) gives the type information "In Guianâ Gallicâ legit cl. Patris. [...] (v. s. sine fl.)." For further information on the collector Patris, see comments under *Palicourea deflexa*. Besides the specimen at G-DC, a duplicate is found in the general collections at G and was designated as lectotype by DELPRETE & KIRKBRIDE (2016). Another Patris specimen (G00300388) bears a label indicating that Delessert received the specimen from de Candolle ("Comm. Decandolle et L'Héritier"). The specimen does not bear an annotation by de Candolle and could be a duplicate of the type collection of either *Psychotria brevipes* or *Psychotria platypoda*. Both names are based on a Patris collection and considered synonyms of *Palicourea dichotoma*. The specimen was first identified as *Psychotria brevipes* by P.C. Standley and later annotated as an isotype of the same by C.M. Taylor. On base of inflorescence structure, I tentatively consider the specimen closer to the type of *Psychotria platypoda* in G-DC, and therefore a duplicate of the latter type collection.

Distribution: *Palicourea platypoda* is known from Costa Rica to Bolivia and from Venezuela to the Guianas and Brazil (TAYLOR 2014).

***Palicourea dichroa* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 14 (2017)

≡ *Evea dichroa* STANDL., Contr. U. S. Natl. Herb. 18 (3): 124 (1916)

≡ *Cephaelis dichroa* (STANDL.) STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 296 (1929a)

≡ *Psychotria dichroa* (STANDL.) C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 245 (1993).

Types: Panama, Chiriquí: Cuesta de las Palmas, southern slope of Cerro de Horqueta, 1700–2100 m, 17–19 Mar. 1911, H.F. Pittier 3218 [holotype: US 00129807!; isotypes: F V0069049F!; G G00300752! (fragm. ex F)].

Distribution: *Palicourea dichroa* is endemic to western Panama (LORENCE & TAYLOR 2012).

***Palicourea domingensis* (JACQ.) DC.**, Prodr. [A.P. de Candolle] 4: 529 (1830)

≡ *Psychotria domingensis* JACQ., Enum. Syst. Pl.: 16 (1760)

- ≡ *Uragoga domingensis* (JACQ.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).
Types: Haiti, without locality: Dec. 1757, N.J. Jacquin s.n. [no specimens known]. Dominican Republic, Barahona: Arroyo San Rafael, San Rafael, 5 km from Paraíso on the road to Barahona, 15 June 1982, T. Zanoni, M. Mejía & J. Pimentel 20943 [neotype (TAYLOR & al. 2010): JBSD; isoneotypes: MO MO-856263!; NY 1163366!].
- ≡ *Psychotria mombachensis* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (3): 188–189 (1930).
Types: Nicaragua, Granada: Mombacho Volcano, 600–750 m, 5 July 1923, W.R. Maxon, A.D. Harvey & A.T. Valentine 7818 [holotype: F V0070206F!; isotypes: G G00300608! (fragm. ex F); US 00138876!].
- ≡ *Psychotria pavetta* Sw., Prodr. [O.P. Swartz]: 45 (1788), as "*Pavettæ*".
- ≡ *Pavetta pentandra* Sw., Fl. Ind. Occid. 1: 233–235 (1797)
- ≡ *Palicourea pavetta* (Sw.) DC., Prodr. [A.P. de Candolle] 4: 525 (1830)
- ≡ *Palicourea pentandra* (Sw.) K. SCHUM., Nat. Pflanzenfam. [Engler & Prantl] 4 (4): 115 (1891), nom. illeg. superfl.
- ≡ *Uragoga pavetta* (Sw.) M. GÓMEZ, Anales Soc. Esp. Hist. Nat., ser. 2, 23: 294 (1894).
Types: Jamaica, without locality: 1784–1786, O.P. Swartz s.n. [first-step lectotype, (HOWARD 1989); second-step lectotype, designated here: S S-R-5329!; isolectotypes: LINN-HS 333.1!; M 0188878!; P-LA P00308601!, P00308602!; S S08-67!; SBT 13387!]. Syntypes: Without locality, 1687–1689, H. Sloane s.n. [SLOANE 1725: tab. 189, fig. 4 (i.e., *Psychotria lunanii*), original illustration, BM BM000593984!, corresponding specimens: BM000593985!, BM000593987!]. Without locality, s.d., C. Plumier s.n. [PLUMIER (1758): pl. 156, fig. 1, original illustration: P]. Saint Catherine: Guanaboa Vale, hills near Colonel Cope's plantation, 1687–1689, H. Sloane s.n. [SLOANE 1725: tab. 202, fig. 2, original illustration: BM BM000593982!, corresponding specimen: BM000593983!].

In the protologue of *Psychotria domingensis*, N.J. JACQUIN (1760) gives no type information, which he supplemented in his later *Selectarum* (JACQUIN 1763: 66) "Hab. in Domingo ad ripas torrentum fruticasas, inque umbrosis humidis & montosis. Florentem Decembri vidi." The locality refers to the, at that time, French colony Saint Domingue, which later became Haiti. Between 21 September 1757 and 4 January 1758, Jacquin collected mostly at its northern coast. According to MADRIÑÁN (2013: 33), it is unlikely that he ever visited the Dominican Republic, at that time a Spanish colony. HOWARD (1973: 439) suggested that at least one locality given by Jacquin as "Sinum Bayaha" (e.g., for *Cinchona caribaea* JACQ.) could be Barahona or a nearby town in the southwestern part of the Dominican Republic, but MADRIÑÁN (2013: 33) identifies the latter locality as Fort-Liberté Bay in Haiti. Together, this allows specifying that Jacquin discovered *Palicourea domingensis* in December 1757 in Haiti.

MADRIÑÁN (2013: 5, 25, 81) indicated that Jacquin refrained from making herbarium specimens after termites destroyed his first collections he made in Martinique in 1755. Instead, he made extensive field notes and drawings that were the basis of his *Enumeratio* and *Selectarum*. Furthermore, Madriñán argued that most of Jacquin's West Indian specimens were taken from living plants he brought back and cultivated at the Schönbrunn gardens in Vienna, explaining the scarce representation of his specimens in herbaria. In any case, Jacquin's herbarium was bought by Banks and came in the possession of

BM. Concerning West Indian collections, it is said to comprise only of few scraps of specimens. By contrast, the herbarium of his son J.F. Jacquin contained most specimens of his father and is now at W. Another important set is at LINN and additional specimens are found in a few other herbaria (D'ARCY 1970, STAFLEU & COWAN 1976–1988). No type specimens could be located, and no corresponding illustration is available for lectotypification. TAYLOR & al. (2010) therefore designated a neotype from near Barahona on the southwestern coast of the Dominican Republic, probably assuming that the species was initially discovered there.

In the protologue of *Psychotria pavetta* SWARTZ (1788) states that the species originates from "India occidentalis." He later narrowed down the locality to "Habitat in sylvestribus montium Jamaicae." (SWARTZ 1797: 233). In the protologue, he included references to illustrations in the essentially pre-Linnaean works by C. PLUMIER and H. SLOANE "Lonicera foliis lanceolato-ovatis. Plum. ic. t. 156. f. 1. Ceraso affinis arbor baccifera, fructu caeruleo testiculato. Sloan. h. 2. 96. t. 189. f. 4." These are therefore part of the original material. The corresponding figures in SLOANE (1725) are based on illustrations of herbarium specimens drawn by E. Kick (see annotations on the original illustrations at BM) and M. van der Gucht engraved most. The figure in PLUMIER (1758: 149, pl. 156, fig. 1) was drawn by Plumier himself (STAFLEU & COWAN 1976–1988).

The reference to SLOANE (1725) is somewhat problematic because it erroneously includes two different elements: The polynomial "Ceraso affinis arbor baccifera, fructu caeruleo testiculato" refers to a figure and description of *Palicourea domingensis* (SLOANE 1725: 95, tab. 202, fig. 2; original illustration: BM000593982!, corresponding specimen: BM000593983!). By contrast, the cited figure "[p.] 96. t. 189. f. 4" refers to the polynomial of "Ceraso forte affinis arbor racemosa, foliis laurinis ex adverso nascentibus subtus albicantibus, flore pentapetaloide" i.e. *Psychotria lunanii* (SLOANE 1725: 96, tab. 189, fig. 4; original illustration: BM000593984!, corresponding specimens: BM000593985!, BM000593987!). Later, SWARTZ (1797: 233) reported on his error and corrected the reference to "Sloan Hist. 2. t. 202. f. 2. (non t. 189. f. 4. ut in prodr.) fig. mala."

Another figure of *Palicourea domingensis* (SLOANE 1725: 97, tab. 205, fig. 1; original illustration: BM! (BM000593989), corresponding specimen: BM! (BM000593990, flowering branch) was erroneously listed under the polynomial referring to *Famea occidentalis*. Although PLUMIER (1758: 149) already referred to the illustration under the correct identity "Lonicera foliis lanceolato-ovatis" i.e. *Palicourea domingensis*, it is unclear why SWARTZ (1788) did not include the illustration of the flowering branch in his description of *Psychotria pavetta*.

HOWARD (1989: 445) cited the type of *Psychotria pavetta* as "Type: Jamaica, Swartz s.n. (holotype, S)." By referring to the collection at S as "holotype", this constitutes a valid [first-step] lectotypification (ICN, Art. 9.17). One of the two sheets at S! (S08-67) bears a small branch with a single leaf and an inflorescence mounted together with a separate leaf. The second sheet (S-R-5329) bears ample materials including two branches bearing both flowers and fruits and two flowering branches and is here designated as lectotype.

Distribution: *Palicourea domingensis* is known from central Mexico to Costa Rica, along the coasts in northern Colombia, northern Ecuador and northern Venezuela, and in the Greater and Lesser Antilles (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea elata* (Sw.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 244 (2011)

- ≡ *Cephaelis elata* Sw., Prodr. [O.P. Swartz]: 45 (1788)
- ≡ *Cephaelis alata* Sw., Syst. Nat., ed. 13 [bis] 2 (1): 372 (1791), orth. var., erroneously cited as "*Callicocca elata* (Sw.) J.F. GMEL." in several places
- ≡ *Tapogomea elata* (Sw.) POIR., Encycl. [J. Lamarck & al.] 7: 585–586 (1806)
- ≡ *Uragoga elata* (Sw.) KUNTZE, Revis. Gen. Pl. 2: 955 (1891)
- ≡ *Evea elata* (Sw.) STANDL., Contr. U. S. Natl. Herb. 18 (3): 123 (1916)
- ≡ *Psychotria elata* (Sw.) HAMMEL, Selbyana 12: 139 (1991).
Types: Jamaica, without locality: 1784–1786, O.P. Swartz s.n. [lectotype, designated here: S S-R-1001!; isolectotypes: LD (1255277!; LINN-HS 340.1.2!; M 0187155!; S S-R-1002!; SBT 13329!].
- = *Cephaelis elata* f. *lutea* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1279 (1938) syn.n.
Type: Costa Rica, San José: San Isidro de El General, 750 m, 30 June 1932, H.E. Stork 3084 [holotype: F V0068626F!].
- = *Cephaelis costaricensis* SCHLTDL., Linnaea 28 (5): 546 (1857).
Type: Costa Rica, without locality: s.d., unknown collector s.n. [holotype: HAL 0113946!].
- = *Cephaelis punicea* VAHL, Eclog. Amer. 1: 19–20 (1797)
- ≡ *Tapogomea punicea* (VAHL) POIR., Encycl. [J. Lamarck & al.] 7: 585 (1806)
- ≡ *Uragoga punicea* (VAHL) K. SCHUM., Nat. Pflanzenfam. [Engler & Prantl] 4 (4): 120 (1891).
Types: Jamaica, without locality: 1786, J.P.B. von Rohr s.n. [no specimens known, C?].
- *Cephaelis phoenicia* DONN. SM., Enum. Pl. Guatem. 5: 39 (1899), nom. nud.
- *Uragoga phoenicia* K. SCHUM., Nat. Pflanzenfam. 4 (4): 120 (1891), sphalm.

The protologue of *Cephaelis elata* gives the minimalistic type information "Jamaica." Later, SWARTZ (1797: 437) gave some more information "Habitat in montibus altis Jamaicae australis." The main set of Swartz is at S, where two corresponding specimen are available, but see additional comments under *Palicourea brachiata*. S-R-1001 is here designated as lectotype because it contains three fertile branches and an additional inflorescence, compared to a single fertile branch in S-R-1002. Dating back to the Index Kewensis (JACKSON 1893: 387), the name *Callicocca elata* was erroneously attributed to GMELIN (1791: 1791). There, however, the species is listed under *Cephaelis* implying that the name was never published.

In an addendum to his *Plantae Lechlerianae*, D.F.L. VON SCHLECHTENDAL (1857) enumerated a few Rubiaceae from Costa Rica. For *Cephaelis costaricensis*, he gave a description and comparison with *C. elata*, which he considered distinct on base of several characters. He, missed to give the locality and collector, but stated that he had seen only a single specimen in bad condition ("Specimen unicum putredine jam correptum"). The private herbarium of Schlechtendal is kept at HAL, where he served as professor of botany and director of the botanical garden (STAFLEU & COWAN 1976–1988). Coincidentally, a single corresponding specimen is found there and represents the holotype.

Cephaelis punicea was based on a collection by von Rohr. Between 1784–1791, he collected in the West Indies and the adjacent South American coast, from where he sent his collections to M. Vahl for description. Subsequently, Vahl distributed duplicates to Willdenow, and some went, through the private herbarium of his pupil M.N. Puerari, to de Candolle, to which he presented his collections in 1827 (now G-DC). In turn, the private herbarium of Vahl, which supposedly contains the largest set of von Rohr specimens, was acquired by the Danish king in 1805 and given to C (STAFLEU & COWAN 1976–1988, URBAN 1898, 1902, 1917).

However, no original material of *Cephaelis punicea* could be located at C nor is mentioned in their type-catalogue (O. Ryding, pers. comm.). This indicates that the respective specimen was either misplaced, lost or has been distributed to prior or after the incorporation of the Vahl herbarium at C. Although two specimens from Jamaica labeled *Cephaelis punicea* are available at G-DC (G00478833, photo: IDC microfiche 800: 717/6!; and G00478834, photo: IDC microfiche 800: 717/7!), none was collected by von Rohr. Likewise, no specimen is present at B-Willd.

The name *Cephaelis phoenicia* first appeared in an enumeration of Guatemalan plants by J. DONNEL SMITH (1899). He lists two of his collections under the latter name and cites *Uragoga phoenicia* K. SCHUM. in synonymy. He, however, mistook the epithet of *Uragoga punicea* (VAHL) K. SCHUM. with "phoenicia" and created two orthographically erroneous names that were later given as valid by LORENCE (1999).

Distribution: *Palicourea elata* is known from southern Mexico to northern Ecuador and from Jamaica (TAYLOR 2014).

***Palicourea eurycarpa* (STANDL.) C.M. TAYLOR**, Novon 20 (4): 487 (2010)

≡ *Psychotria eurycarpa* STANDL., J. Wash. Acad. Sci. 18 (10): 275–276 (1928c).

Type: Costa Rica, Guanacaste: Quebrada Serena, SE of Tilarán, 700 m, 27 Jan. 1926, P.C. Standley & J. Valerio 46237 [holotype: US 00138747!].

Distribution: *Palicourea eurycarpa* is known from southernmost Nicaragua to Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea faxlucens* (LORENCE & DWYER) LORENCE**, Novon 20 (4): 487 (2010)

≡ *Psychotria faxlucens* LORENCE & DWYER, Bol. Soc. Bot. México 47: 50–52, fig. 1 (1987).

Types: Mexico, Veracruz: Catemaco, ejido de Coscoapan, 8 km SE of Coyame, 16 Apr. 1974, F. Ponce & R. Cedillo T. 2 [holotype: MEXU PVT300056!; isotypes: F V0070180F!; MO MO-316984!].

Distribution: *Palicourea faxlucens* is endemic to central Mexico (TAYLOR & al. 2010).

***Palicourea gaitalensis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 16 (2017)

≡ *Psychotria gaitalensis* C.M. TAYLOR, Novon 14 (4): 501, fig. 2e, f (2004).

Types: Panama, Coclé: Above El Valle, on trail to top of Cerro Gaital, 1050–1180 m, 22 Jan. 1988, G.D. McPherson 11967 [holotype: PMA, lost or never deposited there?; lectotype, designated here: MO MO-797035!].

The type of *Psychotria gaitalensis* was collected in course of activities by MO, as indicated on the label. The protologue states that the holotype is deposited at PMA. However, due to whatever reasons only a paratype [PMA 1164!] is present there (V. Murillo, pers. comm.). Possibly, duplicates were never distributed to or subsequently lost at PMA. Therefore, the specimen that was cited as isotype in the protologue is here designated as lectotype. A similar situation is found in *Palicourea sanblasensis*.

Distribution: *Palicourea gaitalensis* is endemic to central Panama (LORENCE & TAYLOR 2012).

***Palicourea galeottiana* M. MARTENS**, Bull. Acad. Roy. Sci. Bruxelles 11 (1): 136 (1844)

≡ *Uragoga galeottiana* (M. MARTENS) KUNTZE, Revis. Gen. Pl. 2: 960 (1891)

≡ *Psychotria galeottiana* (M. MARTENS) C.M. TAYLOR & LORENCE, Taxon 34 (4): 669 (1985).

Types: Mexico, Oaxaca: Between Llano Verde and Rincon, Mar.–Aug. 1840, H.G. Galeotti 2602 [first-step lectotype (TAYLOR & LORENCE 1985); second-step lectotype, designated here: BR BR0000005316311! (ex Herb. Martens); isolectotypes: BR BR0000005315987! (ex Herb. Galeotti), G G00300767!; K K000634978! (ex Herb. Hooker); P P03942845!]. Syntypes: Puebla: Chinantla, Sierra de Yavesia, Apr. 1840, H.G. Galeotti 2636 [BR BR0000005315666!; P P03939979!].

= *Psychotria orogenes* L. O. WILLIAMS, Phytologia 28 (3): 231 (1974).

Types: Guatemala, Baja Verapaz: Sierra de las Minas, 5 km S of Purulhá, 1600 m, 2 Jan. 1973, L.O. Williams, A. Molina R. & T.P. Williams 41924 [holotype: F V0070211F!; isotypes: BM BM001009024!; EAP; NY 01404742!; US].

= *Palicourea seleri* LOES., Verh. Bot. Vereins Prov. Brandenburg 65: 114 (1923).

Types: Between Trinidad and Rosario, 13 Aug. 1896, C. Seler & E.G. Seler 3049 [lectotype, designated here: GH 00094827!; isolectotype: F V0069882F! (fragm. ex B); syntype: B † (photo: F neg. BN-636!)]. Guatemala, Huehuetenango: Nenton, Yalambohoch, s.d., C. Seler & E.G. Seler 2676 [syntype: B †].

= *Psychotria skutchii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 17 (3): 283 (1937).

Types: Guatemala, Huehuetenango: San Juan Ixcay, 2580 m, 22 Aug. 1934, A.F. Skutch 1074 [holotype: F V0070226F!; isotype: A 00095101!].

= *Psychotria pachecoana* STANDL. & STEYERM., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (3): 205–206 (1940b).

Type: Guatemala, Baja Verapaz: N of the divide rising N of Santa Rosa, 1650 m, 30 Mar. 1939, P.C. Standley 69922 [holotype: F V0070213F!].

= *Psychotria persearum* STANDL., Ceiba 1 (1): 47–48 (1950)

≡ *Psychotria galeottiana* subsp. *persearum* (STANDL.) BORHIDI, Rubiác. México: 480 (2006)

≡ *Palicourea galeottiana* subsp. *persearum* (STANDL.) BORHIDI, Acta Bot. Hung. 53 (3–4): 244 (2011).

Types: Honduras, Francisco Morazán: Cerro de Uyuca, 1800 m, 2 Mar. 1947, P.C. Standley 4865 [holotype: F V1256865F!; isotype: EAP 95347!].

= *Psychotria uyucana* STANDL., Ceiba 1 (1): 48–49 (1950).

Types: Honduras, Francisco Morazán: Canyon of Montaña de Uyaca, 2000 m, 29 May 1948, A. Molina R. 919 [holotype: F V0070233F!; isotype: EAP 95354!].

- *Palicourea macrantha* auct., non LOES.
- *Palicourea mollis* LOES., in herb. [B † (photo: F neg. BN-636!), GH! (00094827)].
- *Palicourea padifolia* auct., non (HUMB. & BONPL. ex ROEM. & SCHULT.) C.M. TAYLOR & LORENCE.
- *Psychotria tricastata* STANDL., sphalm. in LORENCE (1999: 135).

Palicourea galeottiana was initially based on two collections, each representing a different species. To further complicate the case, neither of the collections belongs to *Palicourea padifolia*, the species to which the name *Palicourea galeottiana* has traditionally been (miss-)applied. Whilst Galeotti 2636 belongs to *Palicourea macrantha*, specimens of Galeotti 2602 represent true *Palicourea galeottiana* in the sense of the lectotypifications.

With the statement "type from Oaxaca" STANDLEY (1926b: 1392) referred to Galeotti 2602, collected in Oaxaca. Nevertheless, this cannot be considered a valid lectotypification because it does not include a direct citation of the type (ICN, Art. 7.10, Art. 40 Note 2). Later, the same collection was chosen as [first-step] lectotype by TAYLOR & LORENCE (1985: 669): "Galeotti 2602 (Holotype: BR!)." Unfortunately, their designation was not sufficiently precise because there are two duplicates of the respective collection at BR, neither of which was annotated as lectotype. It is therefore necessary to designate a second-step lectotype. The private herbarium of H.G. Galeotti is kept at BR (STAFLEU & COWAN 1976–1988), and one sheet bears a stamp that indicates this origin ("Herb. Hort. Bruxell. Coll. Galeottii"). The second sheet bears a label showing that it originated from M. Martens private herbarium and was given to BR by Don de Pierre Martens in 1932. The specimen from the Martens herbarium is here designated as [second-step] lectotype of *Palicourea galeottiana*.

The German anthropologist and archaeologist E.G. Seler and his wife C. Seler made several trips to Mexico, where they collected plants for B. Their specimens were enumerated by T. Loesener at B and described in his series *Plantae Selerianae*. The first set of specimens stayed at B, where it was destroyed during World War II. The second set was kept by E.G. Seler, and sold after his death. The third set of their first trips went to NY (LOESENER 1899: 534–536, 1923, URBAN 1917). In addition, further duplicates are found in many herbaria.

Palicourea seleri was based on two gatherings, Seler & Seler 2676 and 3049. From the former gathering no extant material is known. From the latter, a duplicate at GH, a photograph ("Berlin negative") and a fragment at F survived. Both, the GH duplicate and the photograph show identical labels bearing the name "*Palicourea mollis* Loes. n. sp.", a name that was already blocked by *Palicourea mollis* H. J. P. WINKL., Repert. Spec. Nov. Regni Veg. 8 (157–159): 4, 1910. In the B specimen, "mollis" was stroked out and replaced by "seleri" as seen on the photograph.

The fragment at F originates from the B specimen as indicated on the label, and consists of a leaf, some inflorescence fragments, a flower and a photograph of the original B specimen. In addition, a label is attached that gives the publication date of *Palicourea*

seleri and "Type fragment, photograph of lectotype, C.M. Taylor 1985." I was not able to locate a corresponding publication, which would be necessary for effective lectotypification of the B specimen, which, in any case, was destroyed. Consequently, designating a (new) lectotype is necessary. The specimen at GH bears four flowering branches and an original label and is here designated as lectotype.

The name *Psychotria tricostata* first appears in LORENCE (1999: 135), and is attributed to Ceiba 1 (1): 48, 1950, the place of publication of *Psychotria uyucana*. In addition, type specimens of *Psychotria uyucana* are listed as types of *Psychotria tricostata*. Therefore, the latter name is here considered an erroneous citation of *Psychotria uyucana*.

Distribution: *Palicourea galeottiana* is known from southern Mexico to Costa Rica (TAYLOR 2014).

***Palicourea gardenioides* (SCHEIDW.) BENTH. & HOOK., Biol. Cent.-Amer., Bot. 2 (7): 52 (1881)**

≡ *Rhodostoma gardenioides* SCHEIDW., Allg. Gartenzeitung (Otto & Dietrich) 10 (36): 286 (1842)

≡ *Palicourea gardenioides* (SCHEIDW.) BENTH. & HOOK., Gen. Pl. [Bentham & Hooker f.] 2 (1): 125 (1873), nom. inval.

≡ *Uragoga scheidweileri* KUNTZE, Revis. Gen. Pl. 2: 957 (1891), as "*Schiedweileri*", non *Uragoga gardenioides* (CHAM.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891)

≡ *Psychotria gardenioides* (SCHEIDW.) STANDL., J. Wash. Acad. Sci. 17 (13): 342 (1927). Types: Based on a plant cultivated at BR [no specimens known, seeds and/or living plants probably collected by H.G. Galeotti or J.J. Linden]. Mexico, Veracruz: Catemaco, 500 m, 20 May 1968, G. Martínez C. 1700 [neotype, (TAYLOR & al. 2010): XAL; isoneotypes: MEXU PV216071, PV233719; MO MO-604444!, MO-604449, MO-2531326].

The here adopted author citation of the name *Palicourea gardenioides* deviates from previous views (*Palicourea gardenioides* (SCHEIDW.) HEMSL.; TAYLOR & al. 2010). In synonymy of the genus *Palicourea*, BENTHAM & HOOKER (1873: 125) referred to the protologue of *Rhodostoma* and its single species *R. gardenioides* stating "est *Palicourea* species Mexicana, corolla tubo sere recto, et drupae putamine coriaceo." This does not constitute a valid combination, because they have not definitely associated the epithet with the name of the genus (ICN, Art. 35.2). Later, HEMSLEY (1881) ascribed the combination to them (ICN, Art. 46.2) as shown by stating "*Palicourea gardenioides*, BENTH. et HOOK. Gen. Pl. ii. p. 125", therefore validating the latter name. Hence, it should be cited as *Rhodostoma gardenioides* (SCHEIDW.) BENTH. & HOOK.

SCHEIDWEILER (1842) described *Rhodostoma gardenioides* from plants of unclear origins growing at the Botanical Gardens in Brussels. As the species was described from living material and no type was indicated, TAYLOR & al. (2010) designated a neotype. However, it is possible that specimens from the respective plants are still extant then comprising original material.

Scheidweiler's herbarium is now at BR (STAFLEU & COWAN 1976–1988), but no corresponding specimens are known there. It is not clear if he made specimens from the cultivated plant, but it appears that living plants of *Rhodostoma gardenioides* were later

distributed to other botanical gardens. In 1843, the species was presented in Edwards's Botanical Register (LINDLEY 1843: 40–41). In 1845, it was introduced to England from "some of the continental gardens" (MOORE & HENFREY 1850: 65, fig. 65). In May 1846, it was first shown at an exhibition on new plants at the Horticultural Society of London by "Messrs. Veitch and Son, of Exeter", and was reported to be "rather frequent in collections" around 1850. Given the timing of description, presentation at a plants fair and the reported frequent cultivation in London, it appears likely that the living plant was propagated and distributed shortly after it was described by SCHEIDWEILER (1842).

Regarding the origins of the cultivated plant at BR, seeds or living plants must have been brought from Mexico, where it is endemic (TAYLOR & al. 2010). It was reported that it had already been flowering for several years before it was described in 1842 (SCHEIDWEILER 1842). From this statement and the need to grow to flowering size, the date of importing the plants may be approximated as 1830–1840. At around this period, two Belgian-based botanists and horticulturalists made extensive collections in Mexico (DIAGRE 2011, STAFLEU & COWAN 1976–1988, URBAN 1902), among which the respective plants might have been.

These are Galeotti and J.J. Linden, both for some times directors of the Botanical Garden of Brussels. Galeotti collected herbarium specimens in Mexico between 1835 and 1840 and, after his return, he established a horticultural company in Brussels. However, *Rhodostoma gardenioides* is not listed in the enumeration of Galeotti's specimens (MARTENS & GALEOTTI 1844). Linden focused on collecting living plants for horticulture in Cuba, Mexico and Guatemala between March 1838 and 1840, and later founded what was called a "horticultural empire" (URBAN 1902: 76–77). The herbaria of both are now at BR, but no corresponding specimens are currently known.

However, two specimens of *Rhodostoma gardenioides* are available at BR that may originate from the same cultivated plant used by SCHEIDWEILER (1842) for his descriptions. One originates from the herbarium of M. Martens and was collected in 1846 but neither locality nor collector are given [BR BR0000021453915!]. On the label of the second specimen with unknown collector [BR BR0000021453922!], the abbreviation "J. B. Br." is written in pencil, and it appears likely that it was collected at the "Jardin Botanique Bruxelles". In addition, the specimen bears a stamp with "Herb. Hort. Bruxell." Until further information becomes available, the question on the type status of the latter may not be answered, but it appears likely that they originate from the same plant or clone available to SCHEIDWEILER.

Distribution: *Palicourea gardenioides* is endemic to eastern Mexico (TAYLOR & al. 2010).

***Palicourea glomerulata* (DONN. SM.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 245 (2011)

≡ *Cephaelis glomerulata* DONN. SM., Bot. Gaz. 16 (1): 12, tab. 1 (1891)

≡ *Psychotria glomerulata* (DONN. SM.) STEYERM., Mem. New York Bot. Gard. 23: 670 (1972).

Types: Guatemala, Izabal: Livingston, Rio Dulce, sea level, Mar. 1889, J. Donnell Smith 1637 [lectotype (LORENCE 1999): US 00129815!; isolecotypes: GH 00549889; K K000174136!; MO (fide MOLINA 1953); NY 74093!; US 00129816!].

Cephaelis glomerulata was based on the gathering J. Donnell Smith 1637. All known duplicates bear identical labels giving the name of the new species and a corresponding literature citation. This implies that he used the complete set when describing the species and later distributing some specimens. Smith donated his private herbarium to US in 1905 (COULTER 1908), where two equally well-preserved duplicates are housed. US 00129815 apparently was figured in the protologue. LORENCE (1999, 31) cited the same specimen as type "J.D. Smith 1637 (Holotype US 943529)", which constitutes a valid lectotypification (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; McNEILL 2014, PRADO & al. 2015).

Distribution: *Palicourea glomerulata* is known from southern Mexico to northwestern Ecuador (TAYLOR 2014).

***Palicourea goldmanii* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 17 (2017)

≡ *Psychotria goldmanii* STANDL., Contr. U. S. Natl. Herb. 18 (3): 130 (1916).

Type: Panama, Panamá: Mount Pírre, head of Río Limón, 1500 m, 6 Mar. 1912, E.A. Goldman 1883 [holotype: US 00138770!].

= *Psychotria eugenifolia* DWYER, Ann. Missouri Bot. Gard. 67 (2): 375–376, (1980b), as "*eugenifolia*".

Types: Panama, Darién: Cerro Tacarcuna massif, top of W peak, 1800–1850 m, 28 Jan. 1975, A.H. Gentry & S.A. Mori 13984 [lectotype, designated here: MO MO-312229!; isoelectotypes: BM BM000624116! (ex MO); MEXU 01329174! (ex MO 2578531); NY 132562! (ex MO 2578532, "sheet # 2/3"); PMA 997! (ex MO 2578534); RB RB00543671!, RB 00560038!; SCZ 12302!].

= *Psychotria sanfelicensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 424 (1980b).

Types: Panama, Chiriquí: N of San Félix, Cerro Colorado copper mine road, 1500–1700 m, 4 May 1975, S.A. Mori & J.A. Kallunki 5871 [lectotype, designated here: MO MO-312243!; isoelectotype: PMA 1082! (ex MO 2668928)].

– *Psychotria eugenioides* DWYER, in herb. [RB RB00560038!].

According to the protologue, the type collection of *Psychotria eugenifolia* should be Gentry & Mori 13984, which appears to be a typographical error of collection number 13984 appearing on the specimens. In addition, the holotype is said to be located at MO, where, at least at the time of publication, several specimens have been deposited, as evidenced by respective accession number stamps on the sheets. In a subsequent repatriation project in 2001, all "spare" duplicates were deaccessioned and distributed (C.M. Taylor, pers. comm.). As Dwyer annotated none as the holotype, the type designation is ambiguous and the specimens represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; McNEILL 2014, PRADO & al. 2015). Here, following the original intent of DWYER, the specimen that remained at MO is designated as lectotype.

According to the protologue, the holotype of *Psychotria sanfelicensis* should be at MO. There, the only currently held specimen is annotated as isotype and reference is given to LORENCE (1999: 133). He lists a specimen with the accession number MO-3646500 (barcode MO-312003) as holotype. This is erroneous since the cited number refers to the holotype of a different species, *Notopleura penduliflora* C.M. TAYLOR. The respective sheet bears a label with "Holotype of: *Psychotria santafeensis* Dwyer", apparently an in

herb. name for the, at that time, undescribed species of *Notopleura*. The orthographic similarity of both names explains the error in LORENCE (1999) that ultimately resulted in considering the remaining MO specimen as isotype. In addition, two duplicates have been at MO before 2001, and the same case of lectotypification applies as described above.

Distribution: *Palicourea goldmanii* is known from Costa Rica and Panama (TAYLOR 2014).

***Palicourea gracilenta* (MÜLL. ARG.) DELPRETE & J.H. KIRKBR., J. Bot. Res. Inst. Texas 10 (2): 421 (2016)**

≡ *Psychotria gracilenta* MÜLL. ARG., Flora 59 (34): 542 in clavi, 545 (1876)

≡ *Uragoga gracilenta* (MÜLL. ARG.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891)

≡ *Palicourea gracilenta* (MÜLL. ARG.) BORHIDI, Acta Bot. Hung. 59 (1–2): 17, (2017), isonym.

Types: Brazil, Bahia: without locality, 1834, J.S. Blanchet 1590 [lectotype (DELPRETE & KIRKBRIDE 2016): G G00300770! (photo: F neg. 25790!); isolectotypes: BM BM000624171!; F V0070428F! (ex G)].

= *Psychotria brachybotrya* MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 327 (1881)

≡ *Uragoga brachybotrya* (MÜLL. ARG.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).

Types: Brazil, Amazonas ["Province Pará"]: near São Gabriel da Cachoeira, Mar. 1852, R. Spruce 2190 [first-step lectotype (STEYERMARK 1972: 609); second-step lectotype (DELPRETE & KIRKBRIDE 2016): P P00836988! (ex Herb. Drake del Castillo); isolectotypes: K K000173545! (ex Herb. Benthams), K000173546! (ex Herb. Hooker); W-Rchb. 1889-0014256!. Syntypes: Rio Abacaxis, 1819–1820, C.F.P. von Martius s.n. [B †; M 0188904!, 0188905!; photo: F neg. 6078!]. Amazonas ["Province Rio Negro"]: Rio Japurá, 1819–1820, C.F.P. von Martius s.n. [M 0188909!, 0188910!]; Rio Japurá, Cataractas Cubatenses, 1819–1820, C.F.P. von Martius s.n. [M 0188916!]; without locality [cf. Rio Japurá], 1819–1820, C.F.P. von Martius s.n. [M 188906!, 0188907!, 0188908!, 0188911!, 0188912!, 0188913!, 0188914!, 0188915!].

= *Psychotria iquitosensis* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (3): 195–196 (1930).

Types: Peru, Loreto: Near Iquitos, 14 July 1929, L. Williams 1391 [holotype: F V0041058F!; isotypes: G G00300771! (fragm. ex F); S S05-1086!].

J. Müller Argoviensis, curator of both the de Candolle (1851–1869) and Delessert herbaria (1869–1896), and later director of the Geneva Botanical Gardens contributed the Rubiaceae treatment to the monumental Flora Brasiliensis (MÜLLER ARGOVIENSIS 1881). *Psychotria gracilenta* was based on an entire collection of J.S. Blanchet. As all duplicates represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; MCNEILL 2014, PRADO & al. 2015), a lectotype is necessary. Between 1828 and 1856, Blanchet stayed in Bahia, where he worked for a Swiss export firm and collected ample plant material. His private herbarium was purchased by Shuttleworth in 1839 (URBAN 1895) and now belongs to BM. Blanchet sent his collections to his associate M.E. Moricand at Geneva, from where they were distributed. The largest sets of his specimens were those of Moricand (G), de Candolle (G and G-DC), and Delessert (G), with additional sets in many other herbaria.

A single specimen is known at G, which was in de Candolle's possession. It bears an annotation in Müller's hand and was designated as lectotype by DELPRETE & KIRKBRIDE (2016).

Psychotria brachybotrya was based on several Brazilian collections made by C.F.P. von Martius and R. Spruce. Among these, STEYERMARK (1972: 609) designated the collection "Type. Rio Negro prope San Gabriel, Amazonas, Brazil, Spruce 2190" as [first-step] lectotype, but did not refer to a single specimen. Spruce collected in South America between 1849 and 1864. His collections were sent to Bentham in London, who forwarded them to subscribers of Spruce's sets (BENTHAM 1850). Coincidentally, there are two complete and equally well-preserved duplicates at K. They originate from the Bentham and Hooker herbarium, but Müller annotated none of them as *Psychotria brachybotrya*. Likewise, he has not seen the duplicate at W-Rchb. The only specimen he annotated was a duplicate now at P, and it was designated as second-step lectotype (ICN, Art. 9.17) by DELPRETE & KIRKBRIDE (2016). Erroneously, they listed the same specimen again as an isolectotype, which probably invalidates their lectotypification.

On the occasion of the wedding of Maria Leopoldina of Austria and Pedro I of Brazil, the Bavaria King Maximilian I sent a scientific expedition to Brazil. Von Martius was appointed as botanist and brought back ample collections that were deposited at M. Concerning his collections, the protologue of *Psychotria brachybotrya* gives the localities "In regione Rio Negro [...]; in silvis ad flumen Japura: Martius et ibidem ad Abacaxis, Mart." Detailed information is given only on some specimen's labels, and it appears that these have not generally been copied to duplicates. The list of specimens is therefore organized by label information. From these, it appears that MÜLLER ARGOVIENSIS (1881) subsumed the two localities "Japura" and "Abacaxis" given in the protologue.

Distribution: *Palicourea gracilenta* is known from southern Mexico to Brazil and Paraguay (TAYLOR 2014).

***Palicourea grandifructa* (C.M. TAYLOR) C.M. TAYLOR**, Novon 20 (4): 488 (2010)

≡ *Coussarea grandifructa* C.M. TAYLOR, Novon 11 (1): 138–140, fig. 2a, b (2001b).

Types: Costa Rica, Puntarenas: Reserva Forestal Golfo Dulce, Osa Peninsula, Rancho Quemado, ca. 15 km W of Rincón, in bottom of valley along Río Riyito near bridge and in forest along road on ridge above valley, 250 m, 31 May 1988, B. Hammel, G. Herrera, M.M. Chavarría & A. Solís 16950 [holotype: MO MO-316872!; isotype: CR CR149818!].

Distribution: *Palicourea grandifructa* is endemic to southern Costa Rica (TAYLOR 2014).

***Palicourea hazenii* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 17 (2017)

≡ *Psychotria hazenii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 96 (1930).

Types: Colombia, Valle del Cauca: Above La Cumbre, 1800–2200 m, 14–19 May 1922, E.P. Killip 5573 [holotype: US 00138784!; isotypes: GH 00095168!; NY 132687!; PH 00022484!].

= *Cephaelis chlorochlamys* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1278 (1938).

Types: Costa Rica, San José: La Hondura de San José, 1300 m, 15 Aug. 1933, M. Valerio 704 [holotype: F V0068622F!; isotype: CR CR25111!].

- = *Psychotria davidsei* DWYER, Ann. Missouri Bot. Gard. 67 (2): 368–369 (1980b).
Types: Panama, Darién: Cerro Tacarcuna, 1550–1650 m, 1 Feb. 1975, A.H. Gentry & S.A. Mori 14071 [holotype: MO MO-312226!; isotypes: COL 000004659!; SCZ 12500!].

- = *Psychotria ramonensis* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1360, 1938.

Types: Costa Rica, Alajuela: La Palma de San Ramón, 1250 m, 8 Nov. 1925, A.M. Brenes 4599 [holotype: F V0070221F!; isotypes: CR CR22650!; NY 132573!].

Distribution: *Palicourea hazenii* is known from Costa Rica to Ecuador (TAYLOR 2014).

***Palicourea hebeclada* (DC.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 245 (2011)

- ≡ *Psychotria hebeclada* DC., Prodr. [A. P. de Candolle] 4: 513 (1830)

- ≡ *Uragoga hebeclada* (DC.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Types: Mexico, without locality: 1790–1792, T.P.X. Haenke s.n. [lectotype, designated here: PR 612440!; isolectotypes: G-DC (fragm. ex PR, photo: IDC microfiche 800: 712/14!); PR 612441!].

- = *Palicourea molliramis* K. SCHUM. & K. KRAUSE, Bot. Jahrb. Syst. 40 (3): 331, (1908).

- ≡ *Psychotria molliramis* (K. SCHUM. & K. KRAUSE) STEYERM., Mem. New York Bot. Gard. 23: 529–530 (1972).

Types: Colombia, Valle de Cauca: Río Dagua, near Las Juntas, 200–500 m, Sept.–Dec. 1876–1901, F.C. Lehmann 4667 [lectotype, designated here: K K000432889!; isolectotype: F V0070033F!; syntype, or possibly holotype: B † (photo: F neg. BN-615!)].

- = *Psychotria bracteolata* M. MARTENS & GALEOTTI, Bull. Acad. Roy. Sci. Bruxelles 11 (1): 228 (1844)

- ≡ *Uragoga bracteolata* (M. MARTENS & GALEOTTI) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).

Types: Mexico, Oaxaca: Sierra de Capulalpam, Apr.–Nov. 1840, H.G. Galeotti 7226 [lectotype, designated here: BR BR0000005316465! (ex Herb. Martens); isolectotypes: K; P].

- = *Psychotria justicioides* SCHLTDL., Linnaea 9 (5): 596–597 (1835)

- ≡ *Uragoga justicioides* (SCHLTDL.) KUNTZE, Revis. Gen. Pl. 1: 300 (1891).

Types: Mexico. Veracruz: Barranca de Teocelo, Aug. 1829, C.J.W. Schiede & F. Deppe s.n. [distributed under no. 259 of Schlechtendal's enumeration; lectotype, designated here: HAL 0075852!; isolectotype: P P00837064!; syntype: B †].

- *Psychotria pubescens* BARTL., in herb. [G-DC (photo: IDC microfiche 800: 712/14!)].

- *Psychotria pubescens* sensu CROAT (1978) and DWYER (1980b, p.p.), non Sw.

The protologue of *Psychotria hebeclada* lists the type as "v.s. in h. Haenke." DE CANDOLLE (1830) refers to the herbarium of T.P.X. Haenke, who gathered ample materials of all kinds during a Spanish expedition led by A. Malaspina. Between 1789 and 1794, their

aims were to cartograph and study the Americas and the Pacific region. The Spanish share of Haenke's collections was sent to the Spanish authorities and, in 1820, specimens were given to what became MA. However, according to LASÈGUE (1845: 451), the bulk of these specimens was forwarded to Lima (Peru) in 1818.

In turn, Haenke sent his private set to a trade company in Cadiz for storage until his proposed return. He, however, remained in South America until his death. The specimens were forgotten for some decades and condemned to decay due to bad storage. In 1821, K.M. Sternberg finally discovered the specimens and arranged their transfer and study in Prague (ANONYMOUS 1826). Based on these approx. 15.000 specimens, C.B. PRESL (1825–1835) published the *Reliquiae Haenkeanae*.

Due to delays with the latter publication, Sternberg sent selected families to de Candolle for study. He incorporated the material in his *Prodromus*, returned the specimens and retained some fragments (rarely complete specimens) for his herbarium (O. Sida, pers. comm.). Later, duplicates of Haenke's collections were sold (PRESL 1834), and large sets went to HAL and W. Around 1918, the remaining collection was divided and partitioned between PR and PRC (GICKLHORN 1964, 1966, 1972). Coincidentally, a type fragment consisting of single leaf is preserved at G-DC and two well-preserved fruiting specimens are available at PR. One of the sheets at PR bears two fruiting branches and an original label and is here designated as lectotype. Given the history of Haenke's herbarium after its study by de Candolle, there is no reason to select a fragment at G-DC as lectotypes as long as better material is available in other herbaria.

Psychotria bracteolata was based on an entire gathering of Galeotti, thus all duplicates qualify as syntypes. A corresponding sheet is available at BR, where the herbaria of Galeotti and Martens are located (see comments under *Palicourea galeottiana*). The respective specimen bears a label that indicates that it originated from Martens' private herbarium and is here designated as lectotype.

Mexican collections by C.J.W. Schiede and F. Deppe were sent to Schlechtendal, who enumerated them in a publication series (SCHLECHTENDAL & CHAMISSO 1830) and arranged their distribution to subscribers (SCHLECHTENDAL 1830). The private herbarium of both collectors was at B, where it was destroyed during World War II. Two specimens of the type collection are currently known, and both are annotated as *Psychotria justicioides* in what appears to be Schlechtendal's hand. His private herbarium is now at HAL (see comments under *Palicourea elata*) and the corresponding specimen is here designated as lectotype.

Palicourea molliramis was based on a collection by the German gardener and consul to Colombia F.C. Lehmann. K.M. Schumann regarded the respective collection as a new species, and after his death KRAUSE (1908) published it under joint authorship. For comments on Krause see *Palicourea angustiflora*. Both, Krause and Schumann were based at B, where the first set ("Hauptexemplar") of Lehmann was deposited (URBAN 1902: 74). The specimen at B was cited as holotype by TAYLOR (1984), but was destroyed during World War II. Major sets of Lehmann's collections are in the herbaria B, BM, G and K, the latter having acquired his private herbarium in 1906 (CRIBB 2010). The corresponding specimen at K is here designated as lectotype. According to CRIBB (2010), Lehmann numbered many of his collections retrospectively, and subsummed different localities under a single number or visited localities several times to recollect materials. Hence, it is not possible to date the type collection of *Palicourea molliramis*.

Distribution: *Palicourea hebeclada* is known from southern Mexico and Guatemala, from Costa Rica to Ecuador, from northeastern Venezuela and from southeastern Brazil (TAYLOR 2014).

***Palicourea heydei* (STANDL.) LORENCE**, Novon 20 (4): 488 (2010)

≡ *Psychotria heydei* STANDL., J. Wash. Acad. Sci. 18 (7): 184 (1928b).

Types: Guatemala, Quiché: Chiul, 2600 m, Apr. 1892, E.T. Heyde & E. Lux 3173 [holotype: US 00138789!; isotypes: G G00300778!; F V0070187F!; US 00997803!].

Distribution: *Palicourea heydei* is known from southern Mexico and Guatemala (TAYLOR & al. 2010).

***Palicourea hoffmannseggiana* (ROEM. & SCHULT.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 245 (2011)

≡ *Cephaelis hoffmannseggiana* ROEM. & SCHULT., Syst. Veg., ed. 15 bis [Roemer & Schultes] 5: 214 (1819)

≡ *Psychotria hoffmannseggiana* (ROEM. & SCHULT.) MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 336 (1881)

≡ *Uragoga hoffmannseggiana* (ROEM. & SCHULT.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Type: Brazil, Pará: without locality, s.d., F.W. Sieber s.n. [holotype: B-Willd. BW04155010!; photo: F neg. BN-745!].

= *Cephaelis rubra* WILLD. ex ROEM. & SCHULT., Syst. Veg., ed. 15 bis [Roemer & Schultes] 5: 214 (1819)

≡ *Psychotria rubra* (WILLD. ex ROEM. & SCHULT.) MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 336–337 (1881), nom. illeg. hom., non *Psychotria rubra* (LOUR.) POIR., Encycl. [J. Lamarck & al.] Suppl. 4 (2): 597 (1816).

Types: Brazil, Pará: without locality, s.d., F.W. Sieber s.n. [lectotype, designated here: B-Willd. BW04150010! (photo: F neg. BN-765!); isolectotypes: B-Willd. BW04150020!; HAL 0113943!].

= *Psychotria barbiflora* DC., Prodr. [A. P. de Candolle] 4: 509 (1830)

≡ *Psychotria barbiflora* var. *genuina* MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 329–330 (1881), nom. inval.

≡ *Uragoga barbiflora* (DC.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).

Types: Brazil, Bahia: without locality, 1827–1830, P. Salzmann s.n. [holotype: G-DC (photos: F neg. 6671!, IDC microfiche 800: 711/13!); isotypes: E E00505318!; G G00300780!; HAL 0075291!, 0075292!; K K000015432!, K000015433!; MO MO-797163!; MPU MPU022106!, MPU022107!, MPU022108!, MPU023655!; P P00836991!, P00836992!, P03816254!; W 0031761].

= *Psychotria furcata* DC., Prodr. [A. P. de Candolle] 4: 512–513 (1830)

≡ *Uragoga furcata* (DC.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891)

≡ *Palicourea furcata* (DC.) BORHIDI, Acta Bot. Hung. 53 (3–4): 244 (2011).

Types: Panama, without locality: 1790–1792, T.P.X. Haenke s.n. [lectotype, designated here: PR 612080!; isolectotypes: G-DC G00478835! (photos: F neg. 6682!, IDC microfiche 800: 712/12!); PR 612081!].

- *Cephaelis dichotoma* WILLD., in herb. [B-Willd. BW04155010! (photo: F neg. BN-745)].
- *Cephaelis furcata* BARTL., in herb. [PR 612080!].
- *Psychotria involucrata* sensu STANDLEY (1938, p.p.), non Sw., nom. superfl.

RÖMER & SCHULTES (1819) amended Willdenow's handwritten diagnosis that accompanied the specimens and published a series of new species from his herbarium in their "Species sequentes enumeratur adhuc in Reliquiis Willdenowianis MS. ulterius indagandae". For *Cephaelis hoffmannseggiana*, Willdenow used the name *Cephaelis dichotoma*, which was preoccupied by *Cephaelis dichotoma* RUDGE. Therefore, they changed the name, and it deserves no "ex" citation of Willdenow as sometimes used (e.g., LORENCE 1999).

The type collection of *Cephaelis hoffmannseggiana* was frequently attributed to J.C. von Hoffmannsegg (e.g., LORENCE & TAYLOR 2012), who never collected outside of Europe. Instead, "his" Brazilian specimens were gathered by his commissioned collector Friedrich Wilhelm Sieber (not to be confused with Franz Wilhelm Sieber), and later distributed by Hoffmannsegg (STAFLEU & COWAN 1976–1988, URBAN 1917). The same is true for *Cephaelis rubra*.

In the respective folio of *Cephaelis hoffmannseggiana* in the Willdenow Herbarium (no. 4155; sub *Cephaelis dichotoma*), only one sheet is found thus representing the holotype. In the respective folio of *Cephaelis rubra* (no. 4150), two sheets are found. The first sheet bears the species name and the origin ("Hoffmannsegg") written on it by Schlechtendal, who arranged the collections after B has acquired them. In addition, an annotation slip by Müller Argoviensis ("*Psychotria rubra*") is attached. The second sheet bears only an annotation slip with "*Tapogomaea* (W.)." The first sheet is here designated as lectotype. Probably, the type specimens of both names originate from the same gathering by Sieber, as they are similar in overall appearance, phenology and state of preservation.

The protologue of *Psychotria barbiflora* gives the type information "In Bahiae collibus legit indef. Salzman. [...]. (v. s. comm. à cl. Salzman.)." De Candolle was in contact with P. Salzmann since he was professor of botany and director of the botanical gardens at Montpellier (MPU, 1808–1816; RÖSE 1853). In 1830, he received his Brazilian collections, as indicated by "M. Salzman 1830" labels attached to many sheets at G-DC. A respective specimen of *P. barbiflora*, is among these and bears field notes in Salzmann's hand. By citing this particular specimen ("comm. à cl. Salzman"), it represents the holotype. Another duplicate is in the general herbarium G. It has an original and an additional labeled with "Brésil. Ph. Salzmann 1831", probably the year Delessert received the specimen. The latter specimen was cited as the type by STEYERMARK (1972, 603: "Bahia: Bahia, Salzmann s.n. (photo of type from Delessert Herb. at G)" and was superfluously designated as lectotype by DELPRETE & KIRKBRIDE (2016).

The protologue of *Psychotria furcata* cites the type as "In Panamâ leg. cl. Haenke.[...]. *Cephaelis furcata* Bartl. in h. Haenke. [...]. (v.s.)." More specifically, DE CANDOLLE (1830) refers to a Haenke collection and not simply to the Haenke herbarium, as was the case in *Palicourea hebeclada* ("v.s. in h. Haenke"). This indicates that he kept a duplicate for his herbarium. Coincidentally, a specimen is present at G-DC, but it is merely a fragment with an old inflorescence devoid of flowers and fruit. At PR, two complete and

well-preserved sheets are available, one bears original labels and two fruiting branches and is here designated as lectotype. For the history of Haenke's herbarium, see comments under *Palicourea hebeclada*.

Distribution: *Palicourea hoffmannseggiana* is known from southern Mexico to Bolivia, from Venezuela to the Guianas and Brazil, and from the Greater Antilles (TAYLOR 2014).

***Palicourea hondensis* (STANDL.) C.M. TAYLOR**, Novon 20 (4): 488 (2010)

≡ *Psychotria hondensis* STANDL., J. Wash. Acad. Sci. 18 (7): 183–184 (1928b)

≡ *Coussarea hondensis* (STANDL.) C.M. TAYLOR & W.C. BURGER, Selbyana 12: 138–139 (1991).

Types: Costa Rica, Limón: Siquirres, Río Hondo, 100 m, Aug. 1901, H.F. Pittier 16161 [holotype: US 00138796! (photo: F neg. 63763); isotype: US 00997779!].

= *Psychotria ostaurea* DWYER & M. V. HAYDEN, Ann. Missouri Bot. Gard. 54 (2): 143 (1967).

Types: Panama, Bocas del Toro: Water Valley, Chiriquí Lagoon, 1 Nov. 1940, H. von Wedel 1461 [holotype: MO MO-316865!; isotype: F V0070212F!].

– *Coussarea taurina* STANDL. & L.O. WILLIAMS, in herb. [F V0070212F!; MO MO-316865!].

Distribution: *Palicourea hondensis* is known from southeastern Nicaragua to western Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea horquetensis* (DWYER & HAYDEN) A.C. BERGER & C.M. TAYLOR**, PhytoKeys 80: 55–56 (2017)

≡ *Rudgea horquetensis* DWYER & HAYDEN, Ann. Missouri Bot. Gard. 54 (2): 145–146 (1967).

Type: Panama, Chiriquí: Distr. Boquete, Cerro Horqueta, ca. 1980 m, 26 July 1940, C. von Hagen & W. von Hagen 2156 [holotype: NY 133202!].

= *Coussarea nebulosa* DWYER, Ann. Missouri Bot. Gard. 67 (1): 131 (1980a)

≡ *Psychotria nebulosa* (DWYER) C.M. TAYLOR, Novon 5 (2): 205 (1995), nom. illeg. hom., non *Psychotria nebulosa* K. KRAUSE, Bot. Jahrb. Syst. 57 (1): 46–47 (1920)

≡ *Palicourea nebulosa* (DWYER) C.M. TAYLOR, Novon 20 (4): 488 (2010).

Types: Panama, Chiriquí: Monte Rey near Boquete, ca. 1170 m, 20 July 1971, T.B. Croat 15868 [lectotype (TAYLOR 1995): PMA 1189! (ex MO 2162999, "sheet # 1/2"); isolectotype: MO MO 312217! ("sheet # 2/2")].

= *Rudgea chiriquiensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 476 (1980b)

≡ *Coussarea chiriquiensis* (DWYER) C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 113 (1993).

Types: Panama, Chiriquí: Cerro Colorado, along road above San Félix, 29 km above bridge over Río San Félix, 7.9 km above turnoff to Escopeta, 1500 m, 14 July 1976, T.B. Croat 37071 [lectotype (TAYLOR 1995): MO MO-312257!; isolectotype: PMA 1163! (ex MO 2389189)].

Details on nomenclature and typification are found in BERGER (2017).

Distribution: *Palicourea horquetensis* is known from Costa Rica and western Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea juarezana* (C.M. TAYLOR & LORENCE) BORHIDI**, Acta Bot. Hung. 53 (3–4): 245 (2011)

- ≡ *Psychotria juarezana* C.M. TAYLOR & LORENCE, Novon 2 (3): 264–265, fig. 2 (1992). Types: Mexico, Oaxaca: Sierra de Juárez, Route 175 Tuxtepec–Oaxaca, ca. 4 km SE of La Esperanza, 1700 m, 4 Apr. 1983, D.H. Lorence 4266 [holotype: MO MO-312039!; isotypes: MEXU PV364229!, PV408145!].

Distribution: *Palicourea juarezana* is endemic to southern Mexico, where it is found in the states of Chiapas and Oaxaca (LORENCE & TAYLOR 2012).

***Palicourea longicuspis* (MÜLL. ARG.) DELPRETE & J.H. KIRKBR.**, J. Bot. Res. Inst. Texas 10 (2): 425 (2016)

- ≡ *Psychotria longicuspis* MÜLL. ARG., Flora 59 (35): 549 in clavi, 552 (1876)
 - ≡ *Uragoga longicuspis* (MÜLL. ARG.) KUNTZE, Revis. Gen. Pl. 2: 961 (1891)
 - ≡ *Palicourea longicuspis* (MÜLL. ARG.) BORHIDI, Acta Bot. Hung. 59 (1–2): 18 (2017), isonym.
- Types: Brazil, Amazonas: Río Uaupés, near Ipanoré waterfall, Oct. 1852–Jan. 1853, R. Spruce 2871 [lectotype (DELPRETE & KIRKBRIDE 2016): BR BR0000005315772! (ex Herb. Martens); isolectotypes: G G00300481! (fragm. ex BR, photo: F neg. 25788); K K000174302!, K000174301! (ex Herb. Bentham), K001199141! (ex Herb. Hooker); P P00837095!; W-Rchb. 1889-0014267!].

- = *Psychotria cincta* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 90 (1930). Types: Colombia, Valle del Cauca: Córdoba, Dagua Valley, 100 m, 6–8 May 1922, E.P. Killip 5140 [holotype: US 00138706!; isotypes: F V0070357F! (fragm. ex US); GH 00095151!; NY 132643!; PH 00022471!].

Specimens collected by Spruce are found in many herbaria, but his main set is at K, from where duplicates have been distributed by Bentham (STAFLEU & COWAN 1976–1988). Coincidentally, there are three complete and equally well-preserved duplicates of the type collection of *Psychotria longicuspis* at K, one each originating from the Bentham and Hooker Herbarium. The former specimen bears an original label in Spruce's hand, and was annotated as holotype by J.A. Steyermark in 1969. A duplicate at BR from the private herbarium of Martens bears an annotation slip by Müller Argoviensis and was designated as lectotype by DELPRETE & KIRKBRIDE (2016).

Distribution: *Palicourea longicuspis* is known from southeastern Nicaragua and north-eastern Costa Rica, from Panama to Bolivia, southern Venezuela, Guyana, French Guyana and Brazil (TAYLOR 2014).

***Palicourea longiinvolucrata* A.C. BERGER**, PhytoKeys 80: 58–60, fig. 1, (2017)

- ≡ *Psychotria hispidula* STANDL. ex STEYERM., Acta Biol. Venez. 4 (1): 97–98 (1964)
 - ≡ *Palicourea hispidula* (STANDL. ex STEYERM.) BORHIDI, Acta Bot. Hung. 59 (1–2): 17 (2017a), nom. illeg. hom., non *Palicourea hispidula* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 11 (5): 227 (1936).
- Types: Colombia, Valle del Cauca: Río Calima, La Trojita, 5–50 m, 19 Feb.–10 Mar. 1944, J. Cuatrecasas 16359 [holotype: F V0070450F!; isotypes: BC 623883!; U 0006197!; US 00138790!; VEN].

- *Psychotria hoffmannseggiana* sensu BURGER & TAYLOR (1993, p.p.), non (ROEM. & SCHULT.) MÜLL. ARG.
- *Psychotria involucrata* sensu STANDLEY (1938, p.p.), non SW., nom. superfl.

Details on the nomenclature of the species are found in BERGER (2017).

Distribution: *Palicourea longirostris* is known from Belize to Bolivia, from Venezuela and from Brazil (TAYLOR 2014).

***Palicourea longirostris* (RUSBY) BORHIDI**, Acta Bot. Hung. 59 (1–2): 18 (2017)

≡ *Rudgea longirostris* RUSBY, Descr. S. Amer. Pl.: 143–144 (1920)

≡ *Psychotria longirostris* (RUSBY) STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 101–102 (1930)

≡ *Palicourea longirostris* (RUSBY) BORHIDI, Acta Bot. Hung. 59 (1–2): 34 (2017), isonym.

Types: Colombia, Magdalena: Sierra del Libano, 1800 m, 10 Jan. 1898–1901, H.H. Smith 1819 [lectotype (STANDLEY 1930): NY 7254!; isolectotypes: A 00094375!; BM BM000624237!; BR BR0000005316083!; CM 2173!; DAO 000457257!; E E00285006!; F V0071000F!; G G00300483!, G00300484!; GH 00094376!; K K000432895!; L 0001316!; MICH MICH1108295!; MO MO-797151!; MPU MPU022069!; P P03939918!, P03939920!; PH 00021598!; S S05-1092!; U 0006213!; US 00129742!]. Syntype: region of Santa Marta, 1898–1901, H.H. Smith 1821 p.p. [NY 01404743!].

= *Psychotria cairoana* STANDL. ex STEYERM., Acta Biol. Venez. 4 (1): 92–94, fig. 46 (1964).

Types: Colombia, Valle de Cauca: Cordillera Occidental, Hoya del Río Calima, El Cairo, between Darién and Mediacanoa, 1650–1750 m, 6–7 Jan. 1943, J. Cuatrecasas 13927 [holotype: F 1136962; isotypes: F; US 00138685!; VALLE 000591!].

In the protologue of *Rudgea longirostris*, RUSBY (1920) cites two syntype collections "Sierra del Libano, about 6,000 feet, January 10. (Herbert H. Smith, Colombia, No. 1819.) No. 1821 is in part this species and in part a very small-flowered *Psychotria*, probably undescribed." Among these two, a lectotype was designated by STANDLEY (1930): "H. H. Smith 1819 (Y, type; F, W, M, P, S)", in which the abbreviations stand for NY, F, US, MO, PH and S. The lectotype bears two flowering branches, some inflorescence fragments and a handwritten label with field notes, presumably by the collector.

Distribution: *Palicourea longirostris* is known from central and eastern Panama to northern Peru and from northwestern Venezuela (LORENCE & TAYLOR 2012).

***Palicourea lozadae* (BORHIDI & LOREA-HERN.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 245 (2011)

≡ *Psychotria lozadae* BORHIDI & LOREA-HERN., Acta Bot. Hung. 50 (3–4): 282–284 (2008).

Types: Mexico, Guerrero: Chichihualco, 2600 m, 22 Sept. 1988, F. Lorea 4353 [holotype: FCME; isotypes: BP; MEXU].

Distribution: *Palicourea lozadae* is endemic to the state of Guerrero, southern Mexico (BORHIDI & LOREA-HERNÁNDEZ 2008).

***Palicourea luxurians* (RUSBY) BORHIDI**, Acta Bot. Hung. 59 (1–2): 18 (2017)≡ *Psychotria luxurians* RUSBY, Mem. Torrey Bot. Club 6 (1): 50 (1896)≡ *Psychotria berteriana* subsp. *luxurians* (RUSBY) STEYERM., Mem. New York Bot. Gard. 23: 534–535 (1972).

Types: Bolivia, La Paz: Between Tipuani and Guanai, Dec. 1892, M. Bang 1741 [first-step lectotype (DWYER 1980b); second-step lectotype (LORENCE 1999): US 00138844!; isolectotypes: A; CORD 00004484!; E E00285004!; F V0070501F!; G G00300542!; GH 00095178! (ex WELC), 00095179!; K K000432912!; M 0188920!; MICH MICH1108260!; MO MO-797147!, MO-797223!; NY 132727!, 132728!; PH 00022495!; US 00138842!, 00138843!; W 1893-0005570!; WIS; WU 0033057!; B †]. Syntype: Peru, Junín: Pangoa, s.d., A. Mathews 1167 [n.v.].

= *Palicourea lusinaturalis* DWYER, Ann. Missouri Bot. Gard. 53 (1): 106–107 (1966).

Types: Panama, Colón: W of Gatún, road along Río Piña-Río Media divide, 50–100 m, 6 Apr. 1956, I.M. Johnston 1807 [holotype: MO MO-601750!].

The protologue of *Psychotria luxurians* lists two different type collections "Between Tipuani and Guanai, Dec., 1892 ([M. Bang] 1741) = Mathews, Peru, 1167." Due to the fact that the respective publication was an enumeration of plants collected by M. Bang, the gathering by A. Mathews, although cited in the protologue, was ignored in subsequent treatments. In addition, the latter collection is not conspecific according to STANDLEY (1936: 226), who identifies it as *Palicourea crocea*. Regardless of its identity, the collection was cited in the protologue and therefore comprises original material.

Specimens collected by Bang are found in many herbaria. His first set was at the Columbia College Herbarium, now part of NY, where his collections were enumerated and distributed by N.L. Britton and M.H. Rusby (RUSBY 1893, STAFLEU & COWAN 1976–1988). For *Psychotria luxurians*, DWYER (1980b) designated a [first-step] lectotype (ICN, Art. 9.17) by stating "Type: Bolivia, Bang 1741 (US, holotype)" (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10). Since there are three duplicates of this particular collection at US, his designation was not sufficiently precise. Subsequently, the second-step lectotype was designated by LORENCE (1999: 126).

Distribution: *Palicourea luxurians* is known from southeastern Nicaragua to Bolivia and from Venezuela (TAYLOR 2014).

***Palicourea mediocris* (STANDL. & STEYERM.) LORENCE**, Novon 20 (4): 488 (2010)≡ *Coussarea mediocris* STANDL. & STEYERM., Publ. Field Mus. Nat. Hist., Bot. Ser. 23 (5): 248 (1947).

Types: Guatemala, Huehuetenango: Sierra de los Cuchumatanes, vicinity of Maxbal about 27 km N of Barillas, 1500 m, 15 July 1942, J.A. Steyermark 48732 [holotype: F V0068829F!; isotype: US 00129935!].

= *Coussarea izabalensis* C.M. TAYLOR, Novon 11 (1): 140, fig. 2d, e, (2001b).

Type: Guatemala, Izabal: El Estor, 17 Mar. 1972, E. Contreras 11354 [holotype: MO MO-316873!].

= *Rudgea simiarum* STANDL. & STEYERM., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (5): 389–340, (1940c), syn.n., non *Psychotria simiarum* STANDL., Publ. Field Mus. Nat.

Hist., Bot. Ser. 4 (8): 344 (1929b), nec *Palicourea simiarum* (STANDL.) BORHIDI, Acta Bot. Hung. 53 (3–4): 247 (2011).

Types: Guatemala, Izabal: Between Virginia and Lago Izabal, Montaña del Mico, 50–500 m, 5 Apr. 1940, J.A. Steyermark 38839 [lectotype (LORENCE 1999): F V0077887F!; isolectotype: F V0077888F!].

Rudgea simiarum was described from Izabal, Eastern Guatemala. The name was later assigned to "*Psychotria* cf. *eurycarpa*" (LORENCE 1999: 161) and subsequently overlooked. Based on morphology and distribution, *Rudgea simiarum* is not conspecific with *Palicourea eurycarpa*, an endemic to Costa Rica and Panama, which is frequently confused with other nocturnal and large-flowered relatives (TAYLOR & al. 2010). Instead, I consider *Rudgea simiarum* and *Palicourea mediocris* to be conspecific.

Although *Rudgea simiarum* has priority over *Coussarea mediocris*, a respective combination is blocked by *Palicourea simiarum* (STANDL.) BORHIDI and *Palicourea mediocris* is the next available name. According to the protologue, the holotype should be located at F. There, two duplicates with identical labels are found, thus representing syntypes. Among these, a lectotype was designated by LORENCE (1999: 161) who stated that the type is "J.A. Steyermark 38839 (Holotype F 1042936)." [catalog no.].

Distribution: *Palicourea mediocris* is endemic to Guatemala (TAYLOR & al. 2010).

***Palicourea megalantha* (LORENCE) LORENCE**, Novon 20 (4): 488 (2010).

≡ *Psychotria megalantha* LORENCE, Bol. Soc. Bot. México 47: 58–59, fig. 2c, d (1987).
Types: Mexico, Oaxaca: Ixtlán, Sierra de Juárez, Route 175 Tuxtepec–Oaxaca, 5 km NE of Vista Hermosa, 1300 m, 28 May 1983, D.H. Lorence & R. Cedillo T. 4190 [holotype: MEXU PVT363279!; isotypes: BM; BR BR0000005316335!; CAS; ENCB 003554!; F V0070200F!; K K000174199!; MEXU PVT363280!; MO MO-312034!; NY 132568!; UC UC1587877!; US 00512695!; W; WIS v0255223WIS!; TEX 00373168!; XAL 0106641!].

Distribution: *Palicourea megalantha* is restricted to southern Mexico (TAYLOR & al. 2010).

***Palicourea microbotrys* (RUIZ ex STANDL.) DELPRETE & J.H. KIRKBR.**, J. Bot. Res. Inst. Texas 10 (2): 426 (2016)

≡ *Psychotria microbotrys* RUIZ ex STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (3): 204–205 (1930)

≡ *Palicourea microbotrys* (RUIZ ex STANDL.) BORHIDI, Acta Bot. Hung. 59 (1–2): 18, (2017), isonym.

≡ *Palicourea microbotrys* (RUIZ ex STANDL.) BORHIDI, Acta Bot. Hung. 59 (1–2): 35 (2017), isonym.

Type: Peru, Loreto: La Victoria on Amazon River, 31 Aug. 1929, L. Williams 2983 [holotype: F V0041071F!].

= *Psychotria veraguensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 438–439, (1980b).
Type: Panama, Veraguas: Road between Escuela Agrícola Alto Piedra and Rio Dos Bocas, 530–620 m, 26 July 1974, T.B. Croat 25871 [holotype: MO MO-312219!].

Distribution: *Palicourea microbotrys* is known from Belize, from Nicaragua to Bolivia and from Venezuela to the Guianas and northern Brazil (TAYLOR 2014).

***Palicourea minarum* (STANDL. & STEYERM.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 246 (2011)

≡ *Psychotria minarum* STANDL. & STEYERM., Publ. Field Mus. Nat. Hist., Bot. Ser. 23 (5): 253 (1947).

Types: Guatemala, El Progreso: Sierra de las Minas, between Calera and summit of Volcán Siglo, 2000–3000 m, 21 Jan. 1942, J.A. Steyermark 43106 [holotype: F V0070204F!; isotype: US 00138872!].

= *Psychotria lilacina* STANDL. & STEYERM., Publ. Field Mus. Nat. Hist., Bot. Ser. 23 (5): 252–253 (1947).

Type: Guatemala, Huehuetenango: Sierra de los Cuchumatanes, Cerro Huitz, between Mimanhuitz and Yulhuitz, 1500–2600 m, 14 July 1942, J.A. Steyermark 48564 [holotype: F V0070195F!].

Psychotria minarum and *P. lilacina* were published simultaneously, each based on incomplete material. Whilst the former species was described with a fruiting collection, the latter was described using a collection with immature flowers. Aware of their similarities, STANDLEY & STEYERMARK (1947) stated that they are much like another in general appearance. Coincidentally, TAYLOR & LORENCE (1992: 260) synonymized both and selected the name *Psychotria minarum*, which features a more complete description and type specimens.

Distribution: *Palicourea minarum* is a rarely collected species known from southern Mexico, Guatemala, Honduras and El Salvador (LORENCE & TAYLOR 2012).

***Palicourea mortoniana* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 18 (2017).

≡ *Psychotria mortoniana* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1355–1356 (1938).

Types: Costa Rica, San José: Vicinity of San Isidro de El General, 950 m, July 1936, A.F. Skutch 2697 [holotype: US 00138877! (photo: F neg. 49975!); isotypes: F V0070208F! (fragm. ex US); GH 00095060!; K K000174198!; MICH MICH1108263!; MO MO-1110709!; NY 132571!; S S05-1099!].

– *Psychotria calophylla* sensu HABER (1991), non STANDL.

Distribution: *Palicourea mortoniana* is known from Costa Rica and Panama (TAYLOR 2014).

***Palicourea muscosa* (JACQ.) DELPRETE & J.H. KIRKBR.**, J. Bot. Res. Inst. Texas 10 (2): 426–427 (2016)

≡ *Morinda muscosa* JACQ., Enum. Syst. Pl.: 16 (1760)

≡ *Cephaelis muscosa* (JACQ.) SW., Prodr. [O. P. Swartz]: 46 (1788)

≡ *Tapogomea muscosa* (JACQ.) POIR., Encycl. [J. Lamarck & al.] 7: 587 (1806)

≡ *Uragoga muscosa* (JACQ.) BAILL., Hist. Pl. (Baillon) 7: 376 (1880), nom. inval.

- ≡ *Uragoga muscosa* (JACQ.) KUNTZE, Revis. Gen. Pl. 2: 961 (1891)
- ≡ *Evea muscosa* (JACQ.) STANDL., Contr. U. S. Natl. Herb. 18 (3): 123 (1916)
- ≡ *Psychotria muscosa* (JACQ.) STEYERM., Mem. New York Bot. Gard. 23: 671–672 (1972)
- ≡ *Palicourea muscosa* (JACQ.) BORHIDI, Acta Bot. Hung. 59 (1–2): 18 (2017), isonym. Types: Martinique, without locality: Apr., 1755–1757, N.J. Jacquin s.n. [no specimens known; lectotype (HOWARD 1989): JACQUIN (1763): pl. 45!].
- = *Cephaelis kennedyae* DWYER, Ann. Missouri Bot. Gard. 67 (1): 75–76 (1980a). Types: Panama, Panamá: El Llano–Cartí road, 6 km from the Pan-American Highway, 200 m, 18 Oct. 1972, H. Kennedy 1779 [lectotype, designated here: MO MO-312218! ("sheet # 1"); isolectotypes: BISH 1004321! (ex MO); BM BM000522187! (ex MO 2161974, "sheet # 3"); BM BM000906005! (via PMA 30151 ex MO 2224200); DUKE 10000634! (ex MO); GH 00092498; MEXU 01326858! (ex MO 2161974, "sheet # 2"); PMA 928! (ex MO 2224261)].

In the protologue of *Morinda muscosa*, JACQUIN (1760) gave no information about the type. In his later *Selectarum*, he provided an illustration (JACQUIN 1763: 65, pl. 45) and supplemented details on the type locality "Habitat in Martinicae sylvis densis & vastis ad ripas fluviorum. Floret Aprili.". He visited Martinique between 1755 and 1757 (MADRIGNÁN 2013), for some information on Jacquin's collections and their faith see comments under *Palicourea domingensis*. Although the illustration of *Morinda muscosa* was not cited in the *Enumeratio*, it was drawn in the field by Jacquin, was among the materials he used for describing the new species, and comprises original material. The illustration was later cited by HOWARD (1989: 448) as "Type: Martinique, Jacq. Select. Stirp. Hist. Amer. 65. Pl. 45. No Jacquin material located." This constitutes a valid lectotypification of the plate (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; McNEILL 2014, PRADO & al. 2015). The same illustration was superfluously designated as lectotype by DELPRETE & KIRKBRIDE (2016).

The combination *Uragoga muscosa* was ascribed to BAILLON (1880: 376), who failed to definitely associate the epithet with the name of the genus (ICN, Art. 35.2). The respective combination was later made by KUNTZE (1891: 961).

According to the protologue, the holotype of *Cephaelis kennedyae* is located at MO. However, at the time of publication, several additional duplicates of the type collection have been accessioned at MO. These have been deaccessioned and distributed in a repatriation project in 2001 (C.M. Taylor, pers. comm.), but still bear MO accession number stamps and "Type Specimen HERB. M.B.G." paper slips. All duplicates bear identical collection labels and identification history. No accession number or barcode was cited and Dwyer annotated none of the specimens as holotype. This renders the holotype citation in the protologue ambiguous and all duplicates syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; McNEILL 2014, PRADO & al. 2015). Following the original intent of Dwyer (1980a), the specimen that remained at MO is here designated as lectotype.

Palicourea muscosa subsp. *breviloba* (STEYERM.) BORHIDI was erroneously reported by BORHIDI (2017) for Mesoamerica. If the taxon is accepted as distinct from *Palicourea muscosa*, it is confined to South America (STEYERMARK 1972).

Distribution: *Palicourea muscosa* is known from eastern Panama, Venezuela, the Guianas and from the Lesser Antilles (LORENCE & TAYLOR 2012).

***Palicourea neopurpurea* C.M. TAYLOR**, Novon 20 (4): 488–489 (2010)

- ≡ *Psychotria purpurea* STANDL., Contr. U. S. Natl. Herb. 23 (5): 1388 (1926b), non *Palicourea purpurea* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (1): 67–68, (1930).
Types: Mexico, Chiapas: Cerro del Boquerón, Aug. 1913, C.A. Purpus 7012 [holotype: US 00138943!; isotypes: A 00095097!; BM BM000624109!; F V0070220F!; G G00300404!; GH 00095098!; M 0189119!; MO MO-312069!; NY 564079!].

Two duplicates with the same collection number deviate from the protologue by bearing different handwritten collecting dates [June 1912, A 00095097; June 1913, G G00300404]. If these are errors or re-gatherings remains unknown.

Distribution: *Palicourea neopurpurea* is known from southern Mexico and southwestern Guatemala (TAYLOR & al. 2010).

***Palicourea osaensis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 19 (2017)

- ≡ *Psychotria osaensis* C.M. TAYLOR, Novon 14 (4): 201–502, fig. 3e, f (2004).
Types: Costa Rica, Puntarenas: Parque Nacional Corcovado, Los Patos, 1–50 m, 8 July 1989, C. Kernan 1211 [holotype: CR CR150421!; isotypes: K K000265569!; MO MO-4590639!; W 1997-0005497!].

Distribution: *Palicourea osaensis* is endemic to the Golfo Dulce region (TAYLOR 2014).

***Palicourea paradichroa* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 19 (2017)

- ≡ *Psychotria paradichroa* C.M. TAYLOR, Novon 14 (4): 502–503, fig. 2g (2004).
Types: Panama, Panamá: Cerro Jefe, 820–920 m, 27 Jan. 1966, E.L. Tyson, J. Dwyer & K. Blum 3285 [holotype: PMA 1221! (ex MO 1832808); isotype: MO MO-683194!].
– *Cephaelis dichroa* sensu DWYER (1980a, p.p.), non (STANDL.) STANDL.

Distribution: *Palicourea paradichroa* is endemic to central and western Panama (LOR-ENCE & TAYLOR 2012).

***Palicourea pereziana* C.M. TAYLOR**, Novon 20 (4): 489–490, fig. 1 (2010).

Types: Costa Rica, Puntarenas: Coto Brus, Térraba-Sierpe Basin, Hacienda La Amistad, 1242 m, 17 Mar. 2002, R. Kriebel 103 [holotype: CR (ex INB); isotypes: CR CR243720!; MO MO-2049790!].

Distribution: *Palicourea pereziana* is known from eastern Costa Rica and western Panama (TAYLOR 2014).

***Palicourea perotensis* (CAST.-CAMPOS) BORHIDI**, Acta Bot. Hung. 53 (3–4): 246 (2011)

- ≡ *Psychotria perotensis* CAST.-CAMPOS, Novon 19 (4): 426–430, fig. 1, 2 (2009).
Types: Mexico, Veracruz: Coatepec, La Cortadura, E slopes of volcano Cofre de Perote, 2100–2250 m, 23 May–10 Sept. 2007, G. Castillo-Campos & J. Pale Pale 22827 [holotype: XAL 0000503!; isotypes: ENCB; IEB 0240438!; MEXU; MO MO-2292765!; NY 1104990!].

The protologue gives the altitude and collection date as 2250 m and 10 Sept. 2007, whereas corresponding specimens all give 2100 m and 23 May 2007.

Distribution: *Palicourea perotensis* is endemic to the state of Veracruz, Mexico (CASTILLO-CAMPOS & al. 2009).

***Palicourea phanerandra* STANDL. & STEYERM.**, Publ. Field Mus. Nat. Hist., Bot. Ser. 23 (5): 252 (1847)

≡ *Psychotria phanerandra* (STANDL. & STEYERM.) LORENCE, Novon 2 (3): 260–261 (1992).

Types: Guatemala, Izabal: Cerro San Gil, 1200 m, 26–27 Dec. 1941, J.A. Steyermark 41952 [holotype: F V0069879F!; isotype: US 00129686!].

= *Psychotria luteotuba* LORENCE, Bol. Soc. Bot. México 47: 55–57, fig. 3a, b (1987).
Types: Mexico, Veracruz: Uxpanapa, Río Solosuchil 5–6 km ESE from Hermanos Cedillo, 100–200 m, 24 Mar. 1982, D.H. Lorence, T. Wendt, R. Riviere, M. Vázquez T., A.S. Ton & I. Navarrete 3910 [holotype: MEXU PVT363283!; isotypes: BM, BR BR0000005316014!; CHAPA 0000337!; ENCB 003553!; F V0070198F!; MO MO-312070!; NY 132567!; UC UC1587878; XAL 0106640!].

Distribution: *Palicourea phanerandra* is known from southern Mexico to Costa Rica (TAYLOR 2014).

***Palicourea pilosa* (RUIZ & PAV.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 19 (2017).

≡ *Psychotria pilosa* RUIZ & PAV., Fl. Peruv. [Ruiz & Pavon] 2: 60, tab. 208, fig. a (1799)

≡ *Uragoga pilosa* (RUIZ & PAV.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891), as "*pilota*", typogr. error.

Types: Peru, Huánuco: Vicinity of Cuchero, July 1780–Sept. 1781, J. Dombey s.n. [lectotype, designated here: P P00837134!; isolectotype: MA 815960!]; original drawing: I. Gálvez [MA AJB04-D-0421!]. Syntypes: San Antonio de Chicoplaya, 1797, J.J. Tafalla s.n. [B † (photo: F neg. BN-477!), MA 815961!].

= *Psychotria calopogon* L. O. WILLIAMS, Phytologia 28 (3): 227–228 (1974).

Type: Guatemala, Huehuetenango: Sierra de los Cuchumatanes, between Ixcán and Río Ixcán, 150–200 m, 23 July 1942, J.A. Steyermark 49308 [holotype: F V0070170F!].

= *Psychotria chontalensis* SEEM., Cat. New Beautiful Rare Pl. [W. Bull] 1871: 29–30 (1871).

Type: Nicaragua, Chontales: without locality, 1867, B.C. Seemann 125 [holotype, or probably syntype: BM BM001191945!].

= *Psychotria costaricensis* POL., Linnaea 41 (5–6): 571 (1877)

≡ *Uragoga polakowskyi* KUNTZE, Revis. Gen. Pl. 2: 957 (1891), non *Uragoga costaricensis* (BENTH.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Types: Costa Rica, Cartago: Angostura, Nov. 1875, H. Polakowsky 384 A [lectotype, designated here: BM BM001009023!; isolectotypes: F V0070177F! (fragm. ex B); W!; B † (photo: F neg. BN-520!)].

- *Psychotria bracteata*, in herb. [P P00837134!].
- *Psychotria santae-rosae* sensu HABER (1991), non STANDL.

Psychotria pilosa was described from fruiting material. In the protologue, RUIZ & PAVON (1799) gave the type information "Habitat in Andium nemoribus locis humidis in Cuchero circuitu. Floret Junio, et Julio." Their first visit of Cuchero was between July 1780 and September 1781. Unfortunately, corresponding specimens from that period were lost in 1784 with the ship San Pedro de Alcántara. A year later, the expedition headed back to Cuchero to replace the losses, but again, a major setback occurred when their house in Macora caught fire in Aug. 1785 destroying all corresponding specimens, diaries covering three years, three folio volumes of botanical descriptions covering four years, etc. (RUIZ 1940: 189–192, SCHULTES & JARAMILLO-ARANGO 1998, STEELE 1964: 145).

In his extensive journal, Ruiz reported that they have collected, described and drawn "*Psychotria hirsuta*" near Cuchero (RUIZ 1940: 70–78, 91, SCHULTES & JARAMILLO-ARANGO 1998: 154). In their flora, RUIZ & PAVON (1799) did not use the name, because at that time, it was already blocked by a Jamaican species (SWARTZ 1788). Thus, it is unclear to which of their species he refers, but it may be assumed that it is either *Psychotria pilosa* or *P. villosa*, both described from Cuchero.

The only extant specimens of *Psychotria pilosa* from their visit to Cuchero are in the sets of J. Dombey. He joined the expedition on behalf and expenses of France, and it was agreed that his collections should be shared between France and Spain. After he left the expedition in 1784, his specimens were divided, and he took the French share with him. The Spanish part was sent back at the same time, but likewise got lost with the San Pedro de Alcántara (RUIZ 1940: 166, 198, STEELE 1964: 162).

As a consequence and relief of Spanish losses, the French gave an additional duplicate of Dombey's collections to Ruiz and Pavon. The corresponding specimen at P bears a label that gives the locality Cuchero and a short description of the plant as well as the name *Psychotria bracteata* in what appears to be Dombey's hand. In addition, a label is attached that refers to the illustration in the protologue: "*Psychotria pilosa* Flor. Per. Tab. 208." Indeed, the specimen bears close resemblance to the illustration in the "Flora Peruviana, et Chilensis" (RUIZ & PAVON 1799).

The main set of Ruiz, Pavon and co-workers is now located at MA, but many specimens have been sold or otherwise distributed (see comments under *Palicourea caerulea*). At MA, two corresponding sheets are available and both were annotated in what appears to be Pavon's hand. Sheet MA (815960) bears only a stem fragment and a separate leaf. From overall appearance, it is clear that it belongs to Dombey's gathering and was later given to Spain as their share of his collections. Poor specimens like this might have been at hand when Ruiz complained on having received only "some skeletons of plants" (STEELE 1964: 172).

The second sheet at MA bears a branch with a young inflorescence, a separate branch and some leaves. In addition, a label in Tafalla's handwriting (KNAPP 2008) is attached that refers to San Antonio de Chicoplaya downstream of Cuchero "Ex Chicop. Año 97." (RUIZ 1940: 71). The specimen has an additional label that gives the locality "Cochero" and a transcript of the label from the Dombey specimen at P in unknown handwriting,

probably mounted on the wrong MA sheet. The epithet "pilosa" was later added on this label, probably in Ruiz's hand. Here, the specimen at P is designated as lectotype because it originates from the initial gathering and type locality and is in fruiting stage thus corresponding to the description and figure in the protologue.

Psychotria chontalensis was described in a wholesale catalogue of the plant merchant W. BULL (1871). The description is essentially a reprint of a letter with a description accompanying the seeds or living plants Seemann sent from Chontales, Nicaragua (TRIMEN 1872, VAN HOUTTE 1873). A corresponding specimen is present at BM, which acquired his collections from Chontales in 1867 (BRITTEN 1881, MURRAY 1904). As long as no evidence becomes available that he gathered additional duplicates, the sole specimen known is here regarded as the holotype. See comments under *Palicourea cyanococca* for some additional information concerning Seemann and his collections.

H. POLAKOWSKY (1877) based *Psychotria costaricensis* on one of his collections, but did not designate a particular specimen as type. Therefore all duplicates are syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; MCNEILL 2014, PRADO & al. 2015). His main set was lost during the destruction of B during World War II (STAFLEU & COWAN 1976–1988) and what remained is a fragment at F. The fragment consists of a leaf and some fruits that are mounted together with a photography of the B specimen ("Berlin negative"). In addition, a good specimen is available at BM. Although it bears two collection numbers 384 (in ink) and 384 A (in pencil), it surely is part of the type collection, and is here designated as lectotype.

Distribution: *Palicourea pilosa* is known from Guatemala, from Nicaragua to Bolivia and from Venezuela (TAYLOR 2014).

***Palicourea pseudaxillaris* (WERNHAM) C.M. TAYLOR, Novon, in press**

≡ *Cephaelis pseudaxillaris* WERNHAM, J. Bot. 55: 284–285 (1917)

≡ *Psychotria pseudaxillaris* (WERNHAM) DELPRETE, Phytoneuron 22: 6 (2015).

Types: Colombia, Chocó: Barbacoas, ca. 975 m, 1891, J.J. Triana 1689 [syntypes: BM BM001009099!, BM001009100!; US 00129828!].

= *Psychotria cooperi* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 296–297 (1929a)

≡ *Palicourea cooperi* (STANDL.) BORHIDI, Acta Bot. Hung. 59 (1–2): 15 (2017).

Types: Panama, Bocas del Toro: Almirante, Buena Vista Camp on Chiriquí Trail, 375 m, 11 Mar. 1928, G.P. Cooper 577 = Yale ser. no. 12210 [holotype: F V0070176F!; isotypes: NY 132560!; WIS 00001024MAD! (ex MAD)].

Cephaelis pseudaxillaris was published with reference to an entire gathering. Therefore, all duplicates represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; MCNEILL 2014, PRADO & al. 2015). The private herbarium of Wernham is at BM where two duplicates of the type collection are available a possible lectotypification. The first set of Triana specimens is deposited at COL, but no duplicate of the type collection is found there. The only conspecific specimen available there is a duplicate of Triana 3186 [COL! (000004574)]

Distribution: *Palicourea pseudaxillaris* is known from southeastern Nicaragua to western Ecuador (TAYLOR 2014).

***Palicourea psychotrioides* (C.M. TAYLOR & HAMMEL) C.M. TAYLOR**, Novon 20 (4): 490 (2010)

≡ *Coussarea psychotrioides* C.M. TAYLOR & HAMMEL, Selbyana 12: 135–137, fig. 2 (1991).

Types: Costa Rica, Heredia: Finca La Selva–OTS field station near Puerto Viejo de Sarapiquí, near the junction of the Ríos Puerto Viejo and Sarapiquí, 100 m, 12 July 1979, J.H. Beach 1467 [holotype: DUKE 10000638!; isotypes: CR CR105346!; F V0360461F!; MO MO-316875!; MO-316876!; WIS v0004268WIS!].

Distribution: *Palicourea psychotrioides* is known from northern Costa Rica and western Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea pubescens* (Sw.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 246–247 (2011)

≡ *Psychotria pubescens* Sw., Prodr. [O. P. Swartz]: 44 (1788)

≡ *Uragoga pubescens* (Sw.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891)

≡ *Myrstiphyllum pubescens* (Sw.) C.L. HITCHC., Rep. (Annual) Missouri Bot. Gard. 4: 95 (1893).

Types: Jamaica, without locality: 1784, 1785–1786, O.P. Swartz s.n. [lectotype, designated here: S S-R-5331!; isoelectotypes: LINN-HS 333.2.2!; SBT 13402!]. Syn-types: Haiti, without locality: Dec. 1784–June 1785, O.P. Swartz s.n. [M 0189124!, 0189125!]. Probable syntype: Saint Kitts and Nevis: Saint Kitts, 1779–1780, F. Masson s.n. [M 0188962!].

= *Psychotria aureola* BARTL. ex DC., Prodr. [A. P. de Candolle] 4: 513 (1830), syn.n.

≡ *Uragoga aureola* (BARTL. ex DC.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891).

Types: Mexico, without locality: 1790–1792, T.P.X. Haenke s.n. [lectotype, designated here: PR 612079!; isoelectotype: G-DC (fragm. ex PR, photo: IDC microfiche 800: 712/15!)].

= *Psychotria glauca* POL., Linnaea 41 (5–6): 569–570 (1877)

≡ *Uragoga glauca* (POL.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).

Types: Costa Rica, San José: without locality, Dec. 1875, H. Polakowsky 377 [lectotype, designated here: F V0077541F! (fragm. ex B); syntype: B †]; H. Polakowsky 378 [syntypes: B †; BM BM000624117!; F V0070184F! (fragm. ex W); W 0066417!].

= *Psychotria mollis* POIR., Encycl. [J. Lamarck & al.] 5: 701–702 (1804)

≡ *Uragoga mollis* (POIR.) KUNTZE, Revis. Gen. Pl. 2: 961 (1891).

Type: Mexico, without locality: 1790–1792, unknown collector s.n. [holotype: P P00837149! (photo: F neg. 37244)].

= *Psychotria oreodoxa* L. O. WILLIAMS, Phytologia 28 (3): 230 (1974)

≡ *Palicourea oreodoxa* (L. O. WILLIAMS) BORHIDI, Acta Bot. Hung. 53 (3–4): 246 (2011).

Type: Guatemala, Suchitepéquez: S slopes of Volcán Santa Clara, 2.5–3 km W of Finca Naranjo, 1250 m, 1 June 1942, J.A. Steyermark 46803 [holotype: F V0070210F!].

= *Psychotria scabriuscula* BARTL. ex DC., Prodr. [A. P. de Candolle] 4: 513 (1830)

≡ *Uragoga scabriuscula* (BARTL. ex DC.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891).

Type: Mexico, Guerrero: Acapulco, 1790–1792, T.P.X. Haenke s.n. [type: not found at PR, G-DC (fragm. ex PR, photo: IDC microfiche 800: 712/16!)].

– *Psychotria microdon* sensu HABER (1991), non (DC.) URB.

The protologue of *Psychotria pubescens* gives the minimalistic type information "Jamaica, Hispaniola." Swartz visited Jamaica in 1784 and between 1785 and 1786. On Hispaniola, he only visited Haiti between 1784 and 1785 (URBAN 1917: 134–135) allowing specifying some collection details. Later, SWARTZ (1797: 415) gave additional information "Habitat in sepibus rudericis Jamaicae, vulgaris, aliisque in locis Indiae occidentalis." Therefore, the specimen was based on several gatherings and a lectotype is necessary. See comments under *Psychotria brachiata* for some information on Swartz and his collections. Although HOWARD (1989) stated that a neotype is needed, several duplicates of the type collection could be located and S-R-5331 is here designated as lectotype. The sheet contains ample flowering and fruiting material, has an identification slip with the name "pubescens" in Swartz's hand and originates from his private herbarium.

Psychotria glauca was based on two collections, Polakowsky 377 and 378. A [first-step] lectotype (ICN, Art. 9.17) was designated by STANDLEY (1928a), who stated "[...] type of *P. glauca*, from San José, Costa Rica, Polakowsky 377" (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10). The only known material of Polakowsky 377 is a type fragment at F, which is here designated as second-step lectotype. It constitutes of a small branch with some leaves, an infructescence and some loose fruits. Furthermore, it bears reference to an annotation by Urban at the Berlin herbarium: "*P. pubescens* Sw. fide Urban in herb. Berol", indicating that the fragment originates from the herbarium B.

According to LORENCE (1999), the type of *Psychotria mollis* is a Mexican collection by Haenke. This is erroneous as the type at P bears no reference to Haenke, and his herbarium was not available for consultation until the 1820s (see comments under *Palicourea hebeclada*). At PR, a Haenke collection [PR! (859847)] bears the annotation "*Psychotria mollis* Poir.?" The specimen has a different overall appearance and is in a different phenological state. It is possible that the error dates back to DE CANDOLLE (1830: 513), who referred to *Psychotria mollis* a specimen he has seen at the herbarium of Haenke.

In the protologue, POIRET (1804) states "Cette plante croît dans l'Amérique: elle m'a été communiquée par M. Dupuis. (V.s.)." Likely, this statement refers to having received a specimen from Alexis Casimir Dupuis (1775–1849), a little-known French veterinary and botanist, who might have collected himself or received and distributed specimens from some other sources. Poiret's private herbarium as well as a respective type specimen is now at P. The specimen is regarded as the holotype, unless evidence becomes available that additional duplicates of the type collection exist.

The name *Psychotria aureola* was listed with uncertain identity by LORENCE (1999) and was not accepted or assigned to any species in later literature. In the protologue, DE CANDOLLE (1830) refers to the herbarium of Haenke (PR, see comments under *Palicourea hebeclada*), where a well-preserved specimen with two flowering branches is present. The specimen clearly belongs to the group of *Palicourea hebeclada* and *Palicourea pubescens* as already indicated by LORENCE (1999). Its corymbiform (vs. congested-pyramidal) inflorescence, shorter bracts and shorter calyx limbs clearly place *Psychotria aureola* in synonymy of *Palicourea pubescens*. The specimen at PR is here designated as lectotype. A fragment of the specimen consisting of two leaves and part of an inflorescence with two flowers is found at G-DC.

The protologue of *Psychotria scabriuscula* cites the type as "v.s. in h. Haenke sine fl." At PR, no corresponding specimens could be located (O. Sida, pers. comm.), leaving the

possibility that the type was misplaced or distributed. The only known type material is a fragment at G-DC that consists of a single leaf and a fruit.

Distribution: *Palicourea pubescens* is known from Mexico to northern Colombia, from the Greater Antilles and from the Bahamas (TAYLOR 2014).

***Palicourea racemosa* (AUBL.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 247 (2011)

- ≡ *Nonatelia racemosa* AUBL., Hist. Pl. Guiane 1: 186–188 et 3: tab. 72 (1775)
- ≡ *Oribasia racemosa* (AUBL.) J. F. GMEL., Syst. Nat., ed. 13[bis] 2 (1): 367 (1791)
- ≡ *Psychotria racemosa* (AUBL.) RAEUSCH., Nomencl. Bot. [Raeusch.]: 56 (1797), nom. illeg. hom., non *Psychotria racemosa* RICH., Actes Soc. Hist. Nat. Paris 1: 107 (1792)
- ≡ *Psychotria racemosa* (AUBL.) WILLD., Sp. Pl., ed. 4 [Willdenow] 1 (2): 966 (1798), nom. illeg. hom.

Type: French Guiana, Cayenne: Forest between Kaw and Orapu River, Mar. 1764, J.B.C.F. Aublet s.n. [lectotype (LANJOUW & UITTEN 1940): P-JJR P00778118! (= P-JJR 8: 271C)].

- = *Psychotria racemosa* RICH., Actes Soc. Hist. Nat. Paris 1: 107 (1792)
- ≡ *Uragoga racemosa* (RICH.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891).
Types: French Guiana, Cayenne: without locality, 1781–1789, L.C.M. Richard s.n. [neotype (KIRKBRIDE 1997): P; isoneotype: P]; without locality, 1786–1804, J.B. Leblond s.n. [n.v.].
- = *Nonatelia panamensis* DC., Prodr. [A.P. de Candolle] 4: 466 (1830).
Type: Panama, without locality: 1790–1792, T.P.X. Haenke s.n. [lectotype, designated here: PR 612061!].
- *Nonatelia divaricata* BARTL., in herb. [PR 612061!].

Psychotria racemosa has a complex nomenclatural history that was studied in detail by KIRKBRIDE (1997). Briefly, the name was regarded as being published by RAEUSCHEL (1797), who transferred *Nonatelia racemosa* AUBL. to *Psychotria*. He, however, created a later homonym of the independently published *Psychotria racemosa* RICH., which has priority in *Psychotria*. By contrast, *Nonatelia racemosa* has priority when transferred to *Palicourea*, the correct name being *Palicourea racemosa* (AUBL.) BORHIDI.

Uragoga racemosa was considered based on *Nonatelia racemosa* AUBL. (e.g., KIRKBRIDE 1997, TAYLOR & HOLLOWELL 2016), but KUNTZE (1891) clearly refers to *Psychotria racemosa* RICH. He cites "racemosa [Rich.]", in which an author in square bracket refers to names transferred from *Psychotria* (KUNTZE 1891: 958). Therefore, the correct citation is *Uragoga racemosa* (RICH.) KUNTZE. In addition, Kuntze accepted the genus *Nonatelia* as distinct from *Psychotria* and included *Nonatelia racemosa* (KUNTZE 1891: 291).

In 1786, J.B. Leblond was sent to French Guiana, where he worked as a physician, naturalist and plant collector. Until his return to Paris in 1791, he brought together some 500 species. One year later, L.C.M. RICHARD (1792) published a catalogue of his collections, which included the description of *Psychotria racemosa*. Leblond's main collections went to E.P. Ventenat, and, after his death, his herbarium was bought by Delessert, and is now at G. The herbarium of Richard, supposedly containing a set of Leblond's specimens, came to P (HOFF 2000, LASÈGUE 1845, STAFLEU & COWAN 1976–1988: 764).

KIRKBRIDE (1997) failed to locate respective specimen at G and P. Therefore, he designated a specimen collected by Richard as the neotype. He collected in French Guiana between 1781 and 1789 and gathered some 3,000 species. Between 1786 and 1789, he and Leblond collected in French Guiana. Although it is not known if they worked together part of the time, it appears likely given the fact that Richard worked on Leblond's collections after his return. It may be speculated that the missing type collection is found in the sets of Richard, and that the neotype actually represents original material.

Aublet based *Nonatelia racemosa* on one of his collections. Most of his specimens are located at BM, LINN-SM and P (see comments under *Palicourea capitata*). The only known specimen is at P-JJR, and it was designated as lectotype by LANJOUW & UITTEN (1940: 154, see also DELPRETE 2015).

The protologue of *Nonatelia panamensis* gives the type as "v.s. in h. Haenke." DE CANDOLLE (1830) refers to the herbarium of Haenke. The corresponding duplicate at PR is here designated as lectotype. See comments under *Palicourea hebeclada* for the history of Haenke's herbarium. *N. panamensis* was provisionally synonymized with *Palicourea racemosa* by TAYLOR & HOLLOWELL (2016), but the type was not seen by them. Based on consulting the respective type specimen, their synonymization is here confirmed.

The sheet at PR bears two annotation slips giving the in herb-name "*Nonatelia divaricata* Bartl.", as cited by DE CANDOLLE (1830). A third annotation slip also bears the name "*Nonatelia panamensis* Cand." in an unknown handwriting. The slips are mounted together with two fruiting branches and a capsule containing some fruits. Stipule and inflorescence morphology and in particular fruits possessing five pyrenes clearly place the name in synonymy of *Palicourea racemosa*.

Distribution: *Palicourea racemosa* is known from southern Mexico to Bolivia, from Venezuela to the Guianas, Trinidad and southeastern Brazil (TAYLOR 2014, TAYLOR & HOLLOWELL 2016).

***Palicourea recordiana* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017)

≡ *Psychotria recordiana* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 17 (3): 282 (1937).

Types: Ecuador, Pichincha: W Cordillera of Quito, Río Saloya Valley, 1800 m, Nov. 1935, A. Rimbach 623 [holotype: F V0070586F!; isotypes: LP 010445!; NY 132794!; S S05-1126!; US 00138950!, 00997835!, 01049662!; WIS 00001029MAD! (ex MAD)].

- *Psychotria cornigera* DWYER, nom. ined., in HABER (1991: 112), non BENTH.
- *Psychotria steyermarkii* sensu BURGER & TAYLOR (1993), TAYLOR (2001a), non STANDL.

Distribution: *Palicourea recordiana* is known from Honduras to Ecuador and from northwestern Venezuela (TAYLOR 2014).

***Palicourea roseocrema* (DWYER) C.M. TAYLOR**, Novon 20 (4): 490 (2010)

≡ *Coussarea roseocrema* DWYER, Ann. Missouri Bot. Gard. 67 (1): 133–134 (1980a)

- ≡ *Psychotria roseocrema* (DWYER) C.M. TAYLOR, Novon 5 (2): 205 (1995).
Types: Panama, Panamá: El Llano–Cartí road, 6–10 km N of El Llano, 14 Apr. 1973, R.L. Dressler 4334 [holotype: MO MO-312245!; isotype: PMA 944!].

Distribution: *Palicourea roseocrema* is endemic to Panama (TAYLOR & al. 2010).

***Palicourea sanblasensis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017)

- ≡ *Psychotria sanblasensis* C.M. TAYLOR, Novon 14 (4): 503–504, fig. 1h–j (2004).
Types: Panama, Guna Yala: Playón Chico, Río Ukupseni, 5 km upstream from camp Lagandi, 50–150 m, 7 Nov. 1991, H. Herrera, J. Mojica & J. Morris 1100 [holotype: PMA, lost or never deposited there?; lectotype, designated here: MO MO-683193!]

The type of *Psychotria sanblasensis* was collected in course of activities by MO, as indicated on the label. The protologue states that the holotype is deposited at PMA. However, due to whatever reasons only paratypes [PMA 331!, 584!] are currently present (V. Murillo, pers. comm.). Possibly, duplicates were never distributed or subsequently lost. Therefore, the isotype at MO is here designated as lectotype. A similar situation is found in *Palicourea gaitalensis*.

Distribution: *Palicourea sanblasensis* is endemic to Panama (LORENCE & TAYLOR 2012).

***Palicourea santae-rosae* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017), as "sanctae-rosae".

- ≡ *Psychotria santae-rosae* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 113 (1930).
Types: Colombia, Valle de Cauca: Dagua Valley, Santa Rosa, 200–300 m, 22 Sept. 1922, E.P. Killip 11530 [holotype: US 00138973!; isotypes: F V0070610F! (fragm. ex US); GH 00095210!; NY 132810!; PH 00022657!].

Distribution: *Palicourea santae-rosae* is known from western Panama, western Colombia and Ecuador (LORENCE & TAYLOR 2012).

***Palicourea schunkei* (C.M. TAYLOR) C.M. TAYLOR**, Novon 24 (1): 87 (2015), non *Palicourea killipii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 136 (1930)

- ≡ *Cephaelis killipii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 8 (3): 187 (1830)
≡ *Psychotria schunkei* C.M. TAYLOR, Monogr. Syst. Bot. Missouri Bot. Gard. 45: 1258, (1993), non *Psychotria killipii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (1): 99–100 (1930).
Types: Peru, Loreto: San Antonio on Río Itaya, 110 m, 18 Sept. 1929, E.P. Killip & A.C. Smith 29303 [holotype: F V0043160F!; isotypes: G G00301264! (fragm. ex F); NY 131022!; US 00129818!].

Distribution: *Palicourea schunkei* is known from southeastern Nicaragua to Peru (TAYLOR 2014, TAYLOR 2015b).

***Palicourea siccorubra* (DWYER) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017)

- ≡ *Psychotria siccorubra* DWYER, Ann. Missouri Bot. Gard. 67 (2): 428–430, fig. 79 (1980b).

Types: Panama, Veraguas: Cerro Tute ca 10 km NW of Santa Fe, ridge top, above 1000 m, 19 June 1975, S.A. Mori 6781 [lectotype, designated here: MO MO-312240!; isolectotypes: NY 132576!; MO MO-312241!].

According to the protologue, the holotype of *Psychotria siccorubra* should be located at MO. Unfortunately, there are two specimens with identical labels at MO, no barcode was cited and Dwyer annotated none of the specimens as holotype making his type designation ambiguous (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; McNeill 2014, Prado & al. 2015). Therefore, both represent syntypes and a lectotype is necessary. The original illustration of the habit (fig. 79 a) was apparently based on MO-312240, and C.M. Taylor later annotated the specimen as holotype. The same specimen is here designated as lectotype.

Distribution: *Palicourea siccorubra* is endemic to Panama (LORENCE & TAYLOR 2012).

***Palicourea simiarum* (STANDL.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 247 (2011).

≡ *Psychotria simiarum* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 344 (1929b).

Types: Honduras, Atlántida: Hills above Lancetilla Valley, near Tela, 600 m, 13 Mar. 1928, P.C. Standley 56772 [holotype: F V0070225F!; isotypes: G G00305861! (fragm. ex F); US 00138983!].

Distribution: *Palicourea simiarum* is known from southern Mexico to western Panama (TAYLOR 2014).

***Palicourea simiarum* subsp. *chiapensis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 53 (3–4): 247 (2011)

≡ *Psychotria simiarum* subsp. *chiapensis* C.M. TAYLOR, Novon 14 (4): 504–505, fig. 1a, b (2004).

Types: Mexico, Chiapas: Palenque, vicinity of the Palenque Archaeological Site, 170 m, 11 May 1982, G. Davidse, M. Sousa, A. Chater & E. Cabrera 20351 [holotype: MEXU; isotype: MO MO-683197!].

Distribution: *Palicourea simiarum* subsp. *chiapensis* is endemic to southern Mexico (LORENCE & TAYLOR 2012).

***Palicourea soejartoi* (C.M. TAYLOR) C.M. TAYLOR**, Novon 25 (1): 100–101 (2016)

≡ *Psychotria soejartoi* C.M. TAYLOR, Novon 14 (4): 506–507, fig. 3a (2004).

Types: Colombia, Antioquia: Municipio de Anorí, Corregimiento de Providencia, Valle del Río Anorí, between Dos Bocas and Anorí, Buenos Aires, primary forest trail, above bridge between Providencia and Anorí, ca. 4 km upriver, 400–900 m, 6–12 Sept. 1973, D.D. Soejarto, R. Fonnegra G., P. Havens & J.W. White 4318 [holotype: MO MO-797120!; isotypes: F V0070632F!; HUA].

Distribution: *Palicourea soejartoi* is known from eastern Panama and northwestern Colombia (TAYLOR & HOLLOWELL 2016).

***Palicourea sousae* (LORENCE & DWYER) LORENCE**, Novon 20 (4): 490 (2010)

≡ *Psychotria sousae* LORENCE & DWYER, Bol. Soc. Bot. México 47: 59–61, fig. 3c, d (1987).

Types: Mexico, Oaxaca: Mpio. Matías Romero, hills E of Arroyo Hamaca, N of Río Verde, 9.5 km SE of La Floresta sawmill, 21.5 km S of Esmeralda, 400 m, 22 May 1981, A. Villalobos, I. Navarrete & J. Anguiano 3282 [holotype: MEXU PVT363281!; isotypes: CHAPA 0000335!; PTBG PTBG1000000727!].

Distribution: *Palicourea sousae* is endemic to southern Mexico (TAYLOR & al. 2010).

***Palicourea solitudinum* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017)

≡ *Psychotria solitudinum* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (3): 207 (1940b).

Types: Costa Rica, San José: Vicinity of San Isidro de El General, 700 m, June 1939, A.F. Skutch 4347 [holotype: F V0070227F!; isotypes: A 00095102!; K K000174195!; MO MO-312065!; NY 132577!; S S05-1137!; US 00138989! (photo: F neg. 63768)].

Distribution: *Palicourea solitudinum* is known from Costa Rica to western Colombia (TAYLOR 2014).

***Palicourea steyermarkiana* BORHIDI**, Acta Bot. Hung. 53 (3–4): 247 (2011)

≡ *Psychotria steyermarkii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 22 (5): 387–388, (1940c), non *Palicourea steyermarkii* C.M. TAYLOR, Phytologia 66 (6): 470 (1989).

Type: Guatemala, Quetzaltenango: Slopes of Volcán de Santa María, between Santa María de Jesús and Calahuaché, along gorge between Finca Pireneos and San Juan Patzulín, 1300–1500 m, 6 Jan. 1940, J.A. Steyermark 33700 [holotype: F V0070228F!].

Distribution: *Palicourea steyermarkiana* is known from southern Mexico and Guatemala (LORENCE & TAYLOR 2012).

***Palicourea suerrensis* (DONN. SM.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 20 (2017)

≡ *Psychotria suerrensis* DONN. SM., Bot. Gaz. 27 (5): 337 (1899).

Types: Costa Rica, Limón: Llanuras de Santa Clara, near Suerre, 300 m, Feb.–Apr. 1896, J. Donnell Smith 6580 [lectotype, designated here: US 00139004!; isolecototypes: F V0070230F!; K K000174192!; M 0189074!; MO MO-0312064!; NY 32578!; US 00139005!; 00997802!]; syntypes: Valle de Talamanca, Suretka ["Tsuritkub"], Mar. 1894, A. Tonduz 8683 [P P03943852!; US 01101135!].

Psychotria suerrensis was based on two syntype collections. Among these, Donnell Smith 6580 was gathered near the name-bringing locality "Suerre" and has duplicates in many herbaria, and is therefore selected as lectotype collection. Type specimens of names published by Donnell Smith are usually located at US, to which he donated his private herbarium in 1905 (COULTER 1908). There, three duplicates are available. US (00139004) has three inflorescences, flower buds and open (thrum-)flowers, and is here designated as lectotype. It is interesting to note that the duplicate US (00997802) has

pin-flowers indicating that the type collection was gathered from different individuals (or sites?), as also evident by the dates of collection on the labels "M. Febr. et Apr. 1896".

Distribution: *Palicourea suerrensis* is known from Honduras to Colombia and western Brazil (TAYLOR 2014).

***Palicourea tacarcunensis* (DWYER) C.M. TAYLOR**, Novon 25 (1): 102–103 (2016)

≡ *Psychotria tacarcunensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 431–432 (1980b).

Types: Panama, Darién: Top of W peak of Cerro Tacarcuna massif, 1800–1850 m, 28 Jan. 1975, A.H. Gentry & S.A. Mori 13974 [holotype: MO MO-00312239!; isotype: PMA 1011!].

Distribution: *Palicourea tacarcunensis* is endemic to Cerro Tacarcuna at the Colombian–Panamanian border (TAYLOR & HOLLOWELL 2016).

***Palicourea tapantiensis* (C.M. TAYLOR) BORHIDI**, Acta Bot. Hung. 59 (1–2): 21 (2017)

≡ *Psychotria tapantiensis* C.M. TAYLOR, Fieldiana, Bot., n.s. 33: 275–276 (1993).

Type: Costa Rica, Cartago: Tapantí National Park, beside road 11 km above the Tapantí bridge, 1400–1600 m, 10 Aug. 1980, R.L. Wilbur 30741 [holotype: DUKE 10000660!].

Distribution: *Palicourea tapantiensis* is endemic to Costa Rica (TAYLOR 2014).

***Palicourea tetragona* (DONN. SM.) C.M. TAYLOR & LORENCE**, Novon 20 (4): 490–491 (2010)

≡ *Cephaelis tetragona* DONN. SM., Bot. Gaz. 61 (5): 376 (1916)

≡ *Mexocarpus tetragonus* (DONN. SM.) BORHIDI, E. MARTÍNEZ & RAMOS, Acta Bot. Hung. 57 (3–4): 256–263, figs. 2–8 (2015), syn.n.

Types: Costa Rica, Cartago: Tuís (de Turrialba), 650 m, Oct. 1897, A. Tonduz 11352 [lectotype (TAYLOR & LORENCE 2010): US 00129836! (photo: F neg. 44962!); isolecotypes: F V0068630F! (fragm. ex B), V0068630F! (fragm. ex US); GH 00898026; B †]. Syntype: Las Vueltas de Tucurrique, 600–700 m, Feb. 1899, A. Tonduz 12997 [US 01094609!].

≡ *Psychotria chiapensis* STANDL., Contr. U. S. Natl. Herb. 23 (5): 1390 (1926b).

Types: Mexico, Chiapas: Finca Mexiquito, 650 m, July 1913, C.A. Purpus 6963 [holotype: US 00138702!; isotypes: GH 00095045!; MO MO-316988!].

Recently, the segregation of the monotypic genus *Mexocarpus* from *Palicourea* was proposed (BORHIDI & al. 2015). The new genus was based solely on having pyrenes being "triangulate in transverse section with an elevated central-dorsal crest." Although *Palicourea tetragona* was never subject of a DNA-phylogenetic study, it is nested within a bulk of morphologically similar species that share large fruits and nocturnal, large, slender and white corollas as apparent adaptations to hawk moth pollination. These species have been variously included in *Coussarea*, *Palicourea* or *Psychotria*, and are informally called the "nocturnally flowering *Psychotria domingensis*-*Coussarea hondensis* group." Recently, these species have been transferred to *Palicourea*, and are now placed

in *Palicourea* subg. *Montanae* C.M. TAYLOR sect. *Psychotrioides* C.M. TAYLOR ser. 9 (TAYLOR & al. 2010).

Concerning their fruit and pyrene characters, these species generally have large fruits and pyrenes that are smooth or with only weak longitudinal ridges. Although pyrenes of *Palicourea tetragona* are somewhat extreme in having a single elevated ridge, which results in a triangular cross section, the segregation of *Mexocarpus* is not accepted here because all other characters integrate it very well with *Palicourea* sect. *Psychotrioides* and other species of the genus.

Cephaelis tetragona was based on two syntype collections gathered by Tonduz. With the statement "type from Tuis, Costa Rica", STANDLEY & WILLIAMS (1975) referred to the only gathering made at Tuis (de Turrialba), Tonduz 11352. Although some requirements of the ICN are met (Art. 9.9, Art. 9.23, Art 9 Ex. 10; McNEILL 2014, PRADO & al. 2015), this cannot be considered a valid [first-step] lectotypification because it does not include a direct citation of the type (ICN, Art. 7.10, Art. 40 Note 2). Later, TAYLOR & LORENCE (2010) finally designated a duplicate of the latter collection at US as lectotype, erroneously referring to the wrong coll. no. 11354 instead of 11352.

Distribution: *Palicourea tetragona* is known from central Mexico to western Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea thornei* (LORENCE) LORENCE**, Novon 20 (4): 491 (2010)

≡ *Psychotria thornei* LORENCE, Novon 4 (2): 127–129, fig. 5 (1994).

Type: Mexico, Chiapas: Selva Negra, ca. 15 km N of Pueblo Nuevo Solistahuacán, 1740 m, 24 June 1970, R. Thorne & E. Lathrop 40389b [holotype: CAS 0004185! (ex DS)].

Distribution: *Palicourea thornei* is endemic to the state of Chiapas, southern Mexico (LORENCE & TAYLOR 2012).

***Palicourea tomentosa* (AUBL.) BORHIDI**, Acta Bot. Hung. 53 (3–4): 248 (2011)

≡ *Tapogomea tomentosa* AUBL., Hist. Pl. Guiane 1: 160–162 et 3: tab. 61 (1775)

≡ *Callicocca tomentosa* (AUBL.) J. F. GMEL., Syst. Nat., ed. 13[bis] 2 (1): 371 (1791)

≡ *Cephaelis tomentosa* (AUBL.) VAHL, Eclog. Amer. 1: 19 (1797)

≡ *Psychotria tomentosa* (AUBL.) MÜLL. ARG., Fl. Bras. [Martius] 6 (5): 370–371, (1881), nom. illeg. hom., non *Psychotria tomentosa* (OERST.) HEMSL., Biol. Cent.-Amer., Bot. 2 (7): 51 (1881)

≡ *Uragoga tomentosa* (AUBL.) K. SCHUM., Nat. Pflanzenfam. 4 (4): 120 (Aug. 1891)

≡ *Uragoga tomentosa* (AUBL.) KUNTZE, Revis. Gen. Pl. 1: 301 (Nov. 1891), isonym

≡ *Evea tomentosa* (AUBL.) STANDL., Contr. U. S. Natl. Herb. 18 (3): 123 (1916).

Types: French Guiana, without locality: 1762–1764, J.B.C.F. Aublet s.n. [lectotype (LANJOUW & UITTEN 1940): P-JJR P00778109! (= P-JJR 8: 265B); isolectotypes: BM BM001008950!; LINN-SM 340.4!; P-LA P00308611!. Possible type: B-Wlld. BW04147010! (ex Herb. Vahl, photo: F neg. BN-772!)].

= *Cephaelis hirsuta* M. MARTENS & GALEOTTI, Bull. Acad. Roy. Sci. Bruxelles 11 (1): 135 (1844)

- ≡ *Psychotria hirsuta* (M. MARTENS & GALEOTTI) MÜLL. ARG., sphalm., combination attributed to Fl. Bras. [Martius] 6 (5): 370 (1881), but not published there
- ≡ *Uragoga chinantlensis* KUNTZE, Revis. Gen. Pl. 2: 955 (1891), non *Uragoga hirsuta* (Sw.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).
Types: Mexico, Puebla: Chinantla, Eastern Cordillera of Oaxaca, June 1840, H.G. Galeotti 7185 [lectotype (DELPRETE & KIRKBRIDE 2016): BR BR0000005316045! (ex Herb. Martens); isolectotypes: BR BR0000005315710! (ex Herb. Galeotti), BR0000005315833! (ex Herb. Galeotti)].
- = *Cephaelis vultusmimi* DWYER, Ann. Missouri Bot. Gard. 67 (1): 81, fig. 17 (1980a).
Types: Panama, Colón: Santa Rita Ridge Road, E ridge, 23 Mar. 1972, A.H. Gentry & J.D. Dwyer 4811 [lectotype, designated here: MO MO-312254! ("sheet # 1/2"); isolectotype: MO MO-312255! ("sheet # 2/2")].
- = *Psychotria poeppigiana* MÜLL. ARG., Fl. Bras. 6 (5): 370, tab. 57, fig. 1 (1881)
- ≡ *Uragoga poeppigiana* (MÜLL. ARG.) KUNTZE, Revis. Gen. Pl. 2: 962 (1891).
Types: Brazil, Amazonas: Near Tefé ["Ega"], Nov. 1830, E.F. Poeppig 3065 [first-step lectotype (STEYERMARK 1972); second-step lectotype (DELPRETE & KIRKBRIDE 2016): G G00418072!; isolectotypes: F V0070575F! (fragm. ex G); G G00418071!; NY 132784! (ex W); P P03943047!; W 0053537!, W-Rchb. 1889-0104833!, 1889-0111261!. Syntypes: Near Tefé ["Ega"], 1819–1820, C.F.P. von Martius s.n. [M]; Río Japurá, near Maribi 1819–1820, C.F.P. von Martius s.n. [M]; near Manaus ["Barra"], 1819–1820, C.F.P. von Martius s.n. [W-Rchb. 1889-0216530!]; near Nogueira, 1819–1820, C.F.P. von Martius s.n. [M]; without locality, 1819–1820, C.F.P. von Martius s.n. [BR BR0000005742752!]; near Novo Airão ["Airão"], Nov. 1851, R. Spruce 1892 [K K000174426! (ex Herb. Bentham)]; Ilha Uanaca ["Uauanaca"], Dec. 1851, R. Spruce 1892 [P P00837145! (ex Herb. E. Drake del Castillo)]; near São Gabriel da Cachoeira, Mar. 1852, R. Spruce 1892 [P P03943050!].

The private herbarium of Aublet is located at BM (see comments under *Palicourea flexuosa*), where a duplicate of the type collection of *Tapogomea tomentosa* is available. Among the located duplicates, the sheet at P-JJR is the only specimen that bears the species name and place of publication in Aublet's hand, and was designated as the lectotype by LANJOUW & UITTEN (1940; see DELPRETE 2015).

For *Cephaelis hirsuta*, three complete and equally well-preserved duplicates of the type collection Galeotti 7185 are available at BR, were the herbaria of Galeotti and Martens are located (see comments under *Palicourea galeottiana*). BR (BR0000005316045) bears a label indicating its origin from Martens' private herbarium, and the specimen was designated as lectotype by DELPRETE & KIRKBRIDE (2016).

According to the protologue of *Cephaelis vultusmimi*, the holotype is located at MO. Unfortunately, there are two sheets available, no barcode was cited and Dwyer annotated none of the specimens as holotype. These are therefore syntypes and a lectotype is necessary. Later, the specimens were annotated as sheets 1 and 2 of 2, respectively, and C.M. Taylor annotated the sheet with fertile material as holotype in 2001. It is here designated as lectotype.

STEYERMARK (1972: 680) designated a [first-step] lectotype of *Psychotria poeppigiana* by citing the type as "Poeppig 3065 (type of *Psychotria poeppigiana* M.-Arg.)". The

private herbarium of E.F. Poeppig is now at W (STAFLEU & COWAN 1976–1988), where three specimens he gathered in the vicinity of Tefé ["Ega"] are available, though some have incomplete labels such as missing collection numbers. The specimen at W (0053537) bears two flowering branches and an identification slip by Müller Argovien-sis and would have been a good choice for a lectotype. Instead, a comparable specimen at G was designated as [second-step] lectotype (DELPRETE & KIRKBRIDE 2016).

Distribution: *Palicourea tomentosa* is known from southern Mexico to Bolivia, from Venezuela to the Guianas and Trinidad and from Brazil (TAYLOR 2014).

***Palicourea tonduzii* (K. KRAUSE) A.C. BERGER**, PhytoKeys 80: 57–58 (2017)

≡ *Cephaelis tonduzii* K. KRAUSE, Bot. Jahrb. Syst. 54 (3, Beibl. 119): 45–46 (1916), non *Psychotria tonduzii* STANDL., J. Wash. Acad. Sci. 15 (13): 287 (1925b).

Types: Costa Rica, Cartago: Tuis, 650 m, Nov. 1897, A. Tonduz 11461 [lectotype (BERGER 2017): F V0068631F! (fragm. ex B); syntype, or possibly holotype: B † (photo: F neg. BN-773!)]].

= *Cephaelis discolor* POL., Linnaea 41 (5–6): 572–573 (1877)

≡ *Uragoga angosturensis* KUNTZE, Revis. Gen. Pl. 2: 954 (1891), non *Uragoga discolor* (BENTH.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891); [annotation: nec *Psychotria discolor* (GRISEB.) ROLFE, Bull. Misc. Inform. Kew 1893: 258 (1893), nec *Palicourea discolor* K. KRAUSE, Bot. Jahrb. Syst. 54 (3, Beibl. 119): 40–41 (1916)].

Types: Costa Rica, Cartago: Angostura, Nov. 1875, H. Polakowsky 384 [lectotype (BERGER 2017): F V0068625F! (fragm. ex B); syntype: B † (photo: F neg. BN-722!)]].

= *Cephaelis nicaraguensis* STANDL., Trop. Woods 16: 46 (1928e).

Types: Nicaragua, Atlántico Norte: Puerto Cabezas [Bragman's Bluff], bank of Kukulaya River, 60 m, 8 Dec. 1927, F.C. Englesing 58 [holotype: F V0068627F!; isotype: G G00300772! (fragm. ex F)].

= *Evea guapilensis* STANDL., J. Wash. Acad. Sci. 15 (5): 104–105 (1925a)

≡ *Cephaelis guapilensis* (STANDL.) STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 4 (8): 295 (1929a)

≡ *Psychotria guapilensis* (STANDL.) HAMMEL, Selbyana 12: 139 (1991).

Type: Costa Rica, Limón: Vicinity of Guápiles, 300–500 m, 12–13 Mar. 1924, P.C. Standley 37025 [holotype: US 00129829!].

= *Evea nana* STANDL., J. Wash. Acad. Sci. 15 (5): 105 (1925a)

≡ *Cephaelis nana* (STANDL.) STANDL., J. Wash. Acad. Sci. 17 (7): 171 (1927).

Type: Panama, Colón: Hills N of Frijoles, 19 Dec. 1923, P.C. Standley 27550 [holotype: US 1153871!].

Details on nomenclature and typification are found in BERGER (2017).

Distribution: *Palicourea tonduzii* is known from Nicaragua, Costa Rica, Panama and Ecuador (TAYLOR 2014).

***Palicourea torresiana* (STANDL.) BORHIDI**, Acta Bot. Hung. 59 (1–2): 21 (2017)

≡ *Psychotria torresiana* STANDL., J. Wash. Acad. Sci. 15 (13): 288 (1925b).

Type: Costa Rica, Cartago: Vicinity of Orosi, 30 Mar. 1924, P.C. Standley 39769 [holotype: US 00146636!].

- *Psychotria goldmanii* sensu BURGER & TAYLOR (1993, p.p.), non STANDL.

Distribution: *Palicourea torresiana* is known from Costa Rica and western Panama (TAYLOR 2014).

***Palicourea tsakiana* (C.M. TAYLOR) C.M. TAYLOR**, Novon 25 (1): 104–105 (2016), non *Palicourea thyrsiflora* (RUIZ & PAV.) DC., Prodr. [A. P. de Candolle] 4: 528 (1830)

≡ *Rudgea thyrsiflora* DONN. SM., Bot. Gaz. 61 (5): 375–376 (1916)

≡ *Psychotria tsakiana* C.M. TAYLOR, Novon 21 (1): 146 (2011), non *Psychotria thyrsiflora* RUIZ & PAV., Fl. Peruv. [Ruiz & Pavon] 2: 57–58, tab. 204, fig. b (1799).

Types: Costa Rica, Limón: Valle de Talamanca, Soki ["Tsáki"], 200 m, Apr. 1895, A. Tonduz 9579 [lectotype (LORENCE 1999): US 00129759!; isolectotypes: BR BR0000005325887!, BR0000005326204!].

- *Psychotria racemosa* sensu STANDLEY (1938, p.p.), DWYER (1980b, p.p.), HAMMEL in TAYLOR (1991, p.p.), BURGER & TAYLOR (1993, p.p.), TAYLOR (2001, p.p.), non RICH.

Rudgea thyrsiflora was published with reference to an entire gathering by Tonduz. Hence, all specimens represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. 40 Note 1; McNEILL 2014, PRADO & al. 2015). The main set of Smith is housed at US. There, a corresponding duplicate is available and it bears an identification slip with "*Rudgea thyrsiflora* Donn. Sm. n. sp." The specimen was designated as lectotype by LORENCE (1999: 161) by citing the specimen [catalog no.] as "A. Tonduz 9579 (Holotype US 943477)" (ICN, Art. 9.9, Art. 9.23, Art. 9 Ex. 10; see also McNEILL 2014, PRADO & al. 2015).

Distribution: *Palicourea tsakiana* is known from southeastern Nicaragua to Panama (TAYLOR 2014, TAYLOR & HOLLOWELL 2016).

***Palicourea tutensis* (DWYER) C.M. TAYLOR**, Novon 20 (4): 491 (2010)

≡ *Psychotria tutensis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 434 (1980b).

Types: Panama, Veraguas: Cerro Tute, above 1000 m, 19 June 1975, S.A. Mori 67836 [lectotype, designated here: MO MO-312238!; isolectotype: PMA 684! (ex MO 2338504)].

The protologue states that the holotype is located at MO, and a specimen is available there. However, at the time of publication, a second sheet was deposited there. The respective specimen is now at PMA, but still bears a MO accession number stamp and a "Type Specimen HERB. M.B.G." annotation slip. Both sheets bear identical pre-printed collection labels with "*Psychotria tutensis* Dwyer, det. J.D. Dwyer 1975" typed on them, and both have the same identification slip, where he repeats the identification in 1976. In a repatriation project in 2001, the "spare" sheet was deaccessioned and distributed to PMA (C.M. Taylor, pers. comm.). As DWYER (1980b) did not designate a duplicate as (holo)type before or at time of publication, his type designation is ambiguous and both specimens represent syntypes (ICN, Art. 9.5, Art. 40.2, Art. Note 1; McNEILL 2014, PRADO & al. 2015). Only after publication as a new species, one of the sheets was annotated as holotype, and was later cited as such in the last revision of the group (TAYLOR &

al. 2010). Here, following the original intent of DWYER (1980b) as well as TAYLOR & al. (2010), the duplicate that remained at MO is designated as lectotype.

Distribution: *Palicourea tutensis* is endemic to western Panama (LORENCE & TAYLOR 2012, TAYLOR & al. 2010).

***Palicourea umbelliformis* (DWYER & M.V. HAYDEN) C.M. TAYLOR**, Novon 20 (4): 491 (2010)

≡ *Psychotria umbelliformis* DWYER & M. V. HAYDEN, Ann. Missouri Bot. Gard. 55 (1): 44–45 (1968).

Type: Panama, Panamá: Cerro Trinidad, 5 May 1968, J.A. Duke & J.H. Kirkbride Jr. 1641 [holotype: MO MO-312237!].

Distribution: *Palicourea umbelliformis* is known from Costa Rica and Panama (TAYLOR 2014, TAYLOR & al. 2010).

***Palicourea valeriana* (STANDL.) C.M. TAYLOR**, Novon 25 (1): 105 (2016).

≡ *Psychotria valeriana* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 18 (4): 1363 (1938), as "*Valeriana*".

Types: Costa Rica, Alajuela: San Pedro de San Ramón, 1075 m, 22 June 1926, A.M. Brenes 4886 [holotype: F V0070234F!; isotype: CR CR22652!].

– *Psychotria allenii* sensu BURGER & TAYLOR (1993), non STANDL.

– *Psychotria valeriana*, orth. var.

The species was named in honor of the director of the Museo Nacional de Costa Rica, Juvenal Valerio Rodríguez. It was originally published as "*Psychotria Valeriana*" and subsequently corrected to *Psychotria valeriana* (ICN, Art. 60).

Distribution: *Palicourea valeriana* is known from Costa Rica to northwestern Colombia (TAYLOR 2014, TAYLOR & HOLLOWELL 2016).

***Palicourea veracruzensis* (LORENCE & DWYER) BORHIDI**, Acta Bot. Hung. 53 (3–4): 248 (2011)

≡ *Psychotria veracruzensis* LORENCE & DWYER, Bol. Soc. Bot. México 47: 61–64, fig. 4 (1987).

Types: Mexico, Veracruz: San Andrés Tuxtla, Estación de Biología Tropical Los Tuxtlas, between Sontecomapan and Montepío, trail on Cerro Vigía, 150–250 m, 18 Apr. 1981, D. Lorence & T.P. Ramamoorthy 3313 [holotype: MEXU PVT338145!; isotypes: BM; F V0070236F1!; MEXU PVT3381441!; MO MO-312062!; UC UC1587879!; XAL 0106642!].

When publishing *Psychotria veracruzensis*, LORENCE & DWYER (1987) referred to a holotype at MEXU, but have not cited a barcode, etc. However, in 1982, Lorence annotated the sheets as holotype and isotype making clear which specimen he intended to be the type.

Distribution: *Palicourea veracruzensis* is known from southern Mexico to Costa Rica (TAYLOR 2014, TAYLOR & HOLLOWELL 2016).

***Palicourea violacea* (AUBL.) A. RICH., Mém. Rubiac.: 95 (1830)**

- ≡ *Nonatelia violacea* AUBL., Hist. Pl. Guiane 1: 188–190 et 3: tab. 73 (1775)
- ≡ *Oribasia violacea* (AUBL.) J. F. GMEL., Syst. Nat., ed. 13[bis] 2 (1): 367 (1791)
- ≡ *Psychotria amplifolia* RAEUSCH., Nomencl. Bot. [Raeusch.] ed. 3: 56 (1797), non *Psychotria violacea* AUBL., Hist. Pl. Guiane 1: 145–147 et 3: tab. 55 (1775)
- ≡ *Psychotria violacea* (AUBL.) WILLD., Sp. Pl., ed. 4 [Willdenow] 1 (2): 966 (1798), nom. illeg. hom.
- ≡ *Naletonia violacea* (AUBL.) BREMEK., Recueil Trav. Bot. Néerl. 31 (1–2): 285–286 (1934)
- ≡ *Psychotria capitata* subsp. *amplifolia* (RAEUSCH.) STEYERM., Mem. New York Bot. Gard. 23: 621 (1972), nom. illeg. superfl.
Types: French Guiana, Cayenne: Comté de Gennes, 1762–1764, J.B.C.F. Aublet s.n. [lectotype (LANJOUW & UITTEN 1940): P-JJR P00778119! (= P-JJR 8: 271D); isolecotype: BM BM001122609!].
- = *Psychotria albonervia* STANDL., Contr. U. S. Natl. Herb. 18 (3): 131 (1916).
Types: Panama, Colón: Vicinity of Chagres, Feb.–Mar. 1850, A. Fendler 62 [holotype: US 00138633!; photo: F V0070159F! (p.p.)]; isotypes: F V0070159F! (fragm. ex W-Rchb.); GH; K K000432858! (ex Herb. Bentham); MO MO-2764030!; W-Rchb. 1889-0214049!].
- = *Psychotria capitata* RUIZ & PAV., Fl. Peruv. [Ruiz & Pavon] 2: 59, tab. 206, fig. a, (1799)
- ≡ *Cephaelis peruviana* SPRENG., Syst. Veg. (ed. 16) [Sprengel] 1: 749 (1824), nom. illeg. superfl.
- ≡ *Uragoga capitata* (RUIZ & PAV.) KUNTZE, Revis. Gen. Pl. 2: 959 (1891)
- ≡ *Palicourea capitata* (RUIZ & PAV.) BORHIDI, Acta Bot. Hung. 53 (3–4): 243, (2011).
Types: Peru, Huánuco: Vicinity of Chinchao, June–Aug. 1785, H. Ruiz L. & J.A. Pavon s.n. [lectotype (DELPRETE & KIRKBRIDE 2016): MA 815948!; isolecotype: MA 815947!]; original drawing: I. Gálvez [MA AJB04-D-0419!; epitype (DELPRETE & KIRKBRIDE 2016): Peru, Junín: Schunke Hacienda, above San Ramón, 1300–1700 m, Aug.–Sept. 1923, C. Schunke A19 [US 01246623!].
- = *Psychotria capitata* subsp. *fissistipularis* DWYER, Ann. Missouri Bot. Gard. 67 (2): 355–356 (1980b).
Types: Panama, Colón: Miquel de la Borda, 24 Apr. 1970, T.B. Croat 10037 [holotype: MO MO-312049!; isotype: SCZ 12239!].
- = *Psychotria capitata* subsp. *rubra* DWYER, Ann. Missouri Bot. Gard. 67 (2): 356 (1980b).
Types: Panama, Panamá: El Llano–Cartí road, 8 km from Pan-American Highway, 6 Apr. 1977, J.P. Folsom & L. Skog 2454 [holotype: MO MO-312048!; isotype: PMA 556! (ex MO)].
- = *Psychotria chlorotica* MÜLL. ARG., Flora 59 (34): 542 in clavi, 545 (1876)
- ≡ *Uragoga chlorotica* (MÜLL. ARG.) KUNTZE, Revis. Gen. Pl. 2: 960 (1891).
Types: Brazil, Bahia: without locality, 1832, J.S. Blanchet 908 [first-step lectotype (DWYER 1980b); second-step lectotype, designated here: G G00418158!]; additional syntypes of the species are listed under the following three varieties.

- = *Psychotria chlorotica* var. *bahiensis* MÜLL. ARG., Flora 59 (34): 545 (1876).
Syntypes: Brazil, Bahia: without locality, 1832, J.S. Blanchet 908 [G G00418158!]; without locality, 1834, J.S. Blanchet 1880 [2880 in lit.] [F V0070351F!; PP03971917!, P03971918!]; without locality, s.d., J.S. Blanchet 2384 [F V0070352F! (ex G); G; P P03971913!, P03971914! (ex Herb. E. Drake del Castillo)]. Minas Gerais: Lagoa Santa, s.d., J.E.B. Warming s.n. [P P03971930!, P03971932!]. Pernambuco: without locality, Nov. 1837 or 1838, G. Gardner 1039 [K K000015423!, K000174340! (ex Herb. Hooker); P P03971935!].
- = *Psychotria chlorotica* var. *lanceolata* MÜLL. ARG., Flora 59 (34): 545 (1876).
Syntypes: Brazil, Minas Gerais: Lagoa Santa, s.d., J.E.B. Warming s.n. [n.v.]; Serra da Lapa, Nov. 1824, L. Riedel 984 [BR BR0000006429065! (ex Herb. Martius); F V0070353F!]; without locality, Apr.–Aug. 1840, P.C.D. Claussen s.n. [G G00418159!; K K000174337! (ex Herb. Hooker), K001199270! (ex Herb. Hooker), K001199310! (ex Herb. Benthams); P P03971921! (ex Herb. Richard), P03971922! (ex Herb. Richard), P04020474! (ex G)]; without locality, s.d., H.A. Weddel s.n. [n.v.]. Piauí: Parnaíba, 1817–1821, J.B.E. Pohl 662 (887 d.) [K K000174338! (ex Herb. Hooker); W 0051350!, 0051351!].
- = *Psychotria chlorotica* var. *obovata* MÜLL. ARG., Flora 59 (34): 545 (1876).
Syntypes: Brazil, Minas Gerais: without locality, Apr.–Aug. 1840, P.C.D. Claussen [K K000174339! (ex Herb. Hooker), K001199313! (ex Herb. Hooker), K001199314! (ex Herb. Benthams); P P03971919! (ex Herb. Richard), P03971920! (ex Herb. Richard), P04020473!].
- = *Psychotria inundata* BENTH., J. Bot. (Hooker) 3 (21): 229 (1841)
- ≡ *Uragoga inundata* (BENTH.) KUNTZE, Revis. Gen. Pl. 2: 691 (1891)
- ≡ *Psychotria capitata* subsp. *inundata* (BENTH.) STEYERM., Mem. New York Bot. Gard. 23: 618–619 (1972).
Types: Guyana: Río Essequibo, 1836, R.H. Schomburgk 27 [lectotype (HOWARD 1989): K K000174334! (ex Herb. Benthams); isolectotypes: BM BM001191943!, BM001191944!; E E00285063!; G G00300933!, photo: F neg. 25796); GH 00095172!; TCD 0005777!; US 00138807!; W 0051349!].
- = *Palicourea stevensonii* STANDL., Trop. Woods 16: 42 (1928d).
Types: Belize, Stann Creek: Middlesex, 24 July 1927, N.S. Stevenson s.n. = Yale ser. no. 10683 [holotype: F V0069885F!; isotypes: K K000174170!; NY 132452!; WIS 00001022MAD! (ex MAD)].
- *Psychotria calochlamys* sensu BURGER & TAYLOR (1993), non STANDL.

Palicourea violacea is a variable species that is widespread throughout Central and Southern America. Although extreme forms are distinctive and some have been described as varieties and species, these are usually integrated by intermediate specimens (STEYERMARK 1972: 616–624, as *Psychotria capitata*). Two different cytotypes (diploids, tetraploids) are found in the species (KIEHN & BERGER, in prep.) confirming its heterogeneity and calling for further taxonomic studies. Hence, a broad concept of *Palicourea violacea* (e.g., DELPRETE & KIRKBRIDE 2016) is followed here until further studies have clarified species boundaries.

Nonatelia violacea was described from French Guiana and *Psychotria capitata* from Peru. According to STEYERMARK (1972), these differ only in stipule morphology, and have been treated by him as subspecies. The type of *Nonatelia violacea* corresponds more closely to Central American materials due to its very large and shallowly lobed stipules, whereas Peruvian material described under *Psychotria capitata* has smaller and deeply bilobed stipules. If these are united (e.g., DELPRETE 2015, FUNK & al. 2007), the former name has priority under *Palicourea*.

Nonatelia violacea was based on a gathering by Aublet, the herbarium of which is now at BM and P. Coincidentally, beside the specimen at BM, a duplicate at P-JJR was recently (re-)located by DELPRETE (2015). The latter is the only specimen that bears the species name and place of publication in Aublet's hand, and was designated as the lectotype by LANJOUW & UITTEN (1940, see also DELPRETE 2015).

The protologue of *Psychotria capitata* gives the following type information "Habitat in Andium montibus nemorosis per Chinchao runcationes. Floret Junio, Julio et Augusto." The expedition of Ruiz and Pavon set camp in Chinchao in Aug. 1780 but all collections made prior to 1784 were lost with the San Pedro de Alcántara. In June–August 1785, they again stayed in the Chinchao valley, but lost all except a few collections due to a fire at their hacienda at Macora. On their way back to Huánuco, they collected some additional specimens of *Psychotria capitata* that remained extant (RUIZ 1940, SCHULTES & JARAMILLO-ARANGO 1998, STEELE 1964).

Based on fruiting specimens from the latter gathering, RUIZ & PAVON (1799) described *Psychotria capitata*. Their main set is at MA where two corresponding sheets are available, each with a sterile and a fertile branch and a corresponding species name in what appears to be Pavon's hand. The flowering branch of MA (815948) shows closer resemblance to the illustration in the protologue. It was designated as lectotype by DELPRETE & KIRKBRIDE (2016). For some general comments on Ruiz and Pavon see *Palicourea caerulea* and *P. pilosa*.

Psychotria chlorotica was published with 3 varieties: *P. chlorotica* α. *obovata*, β. *bahiensis* and γ. *lanceolata*, and all specimens listed under the respective varieties are syntypes for the species. A [first step] lectotype was designated by DWYER (1980b, 361–362: "Lectotype: Brazil, *Blanchet* 908. Not seen."), but without specifying a particular herbarium or specimen. A specimen at G bearing the name *P. chlorotica* in Müller Argoviensis' hand is here designated as second-step lectotype (ICN, Art. 9.17).

Psychotria inundata was based on a collection that Robert H. Schomburgk made at his first expedition to the Río Essequibo. His travels were funded by the Royal Geographical Society under the provision that they receive a set of his collections (now at BM). Dried plants were sent to Bentham in London, who arranged their distribution to subscribers. In addition, BENTHAM (1839) based upon them a publication series entitled "Enumeration of plants collected by Mr. Schomburgk in British Guiana." By tracing Bentham's handwriting, it is known that he also studied collections in BM and FI (RIVIÈRE 2006, VAN DAM 2002). The private herbarium of Bentham is now at K, where a corresponding duplicate of the type collection of *Psychotria inundata* is present. In accordance with the ICN (Art. 9.9, Art. 9.23, Art. 9 Ex. 10; McNEILL 2014, PRADO & al. 2015), HOWARD (1989, 444: "Type: Guyana, Schomburgk 27 (holotype, K).") designated the specimen as lectotype. Unaware of the earlier typification, a superfluous

lectotype, a specimen at E (E00285063) was later designated by DELPRETE & KIRKBRIDE (2016).

Distribution: *Palicourea violacea* is known from Belize, from Guatemala to Bolivia, from Venezuela to the Guianas and Brazil and from Trinidad and Tobago and the Antilles (TAYLOR 2014).

***Palicourea winkleri* BORHIDI**, Acta Bot. Hung. 57 (3–4): 280 (2015)

- ≡ *Uragoga buchtienii* H.J.P. WINKL., Repert. Spec. Nov. Regni Veg. 8 (157–159): 5–6 (1910)
- ≡ *Psychotria buchtienii* (H.J.P. WINKL.) STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (3): 303 (1931)
- ≡ *Palicourea buchtienii* (H.J.P. WINKL.) BORHIDI, Acta Bot. Hung. 54 (1–2): 83, (2012), nom. illeg. hom., non *Palicourea buchtienii* STANDL., Publ. Field Mus. Nat. Hist., Bot. Ser. 7 (3): 317–318 (1931).

Types: Bolivia, La Paz: San Antonio near Mapiri, 870 m, Dec. 1907, O.A. Buchtien 1608 [lectotype (STANDLEY 1931a: 303): B †; lectotype, designated here: US 00138683!; isolectotype: F V0071200F!]; syntypes: San Carlos near Mapiri, 750 m, Aug. 1907, O.A. Buchtien 1945 [F V0071201F! (fragm., p.p., accession no. 587043 only); US 00997833!].

- *Psychotria involucrata* sensu STANDLEY (1926b, 1938), non Sw., nom. superfl.
- *Psychotria officinalis* sensu STANDLEY & WILLIAMS (1975), DWYER (1980b), TAYLOR (1991), BURGER & TAYLOR (1993), TAYLOR (2001), BORHIDI (2006, 2012), BORHIDI & STRANCZINGER (2011), non (AUBL.) RAEUSCH.
- *Palicourea swartziana* sensu BORHIDI (2011).

Dating back to STANDLEY (1938: 1353, under *Psychotria involucrata*, a superfluous name for *Nonatelia officinalis* AUBL.), Central American authors have misapplied the name *Psychotria officinalis* (AUBL.) RAEUSCH., a species restricted to the Guyana Highlands, to *Psychotria buchtienii* from Central and NW South America (TAYLOR 2004). Unaware of the aforementioned confusion of the two species, BORHIDI (2011) proposed the new name *Palicourea swartziana* BORHIDI to replace *Psychotria officinalis* sensu auct. (non *Palicourea officinalis* MART.). Although unintended, the name *Palicourea swartziana* BORHIDI is a validly published replacement name for *Psychotria officinalis* (AUBL.) RAEUSCH.

After the error became apparent, BORHIDI & STRANCZINGER (2012) tried to make the combination *Palicourea buchtienii* (H.J.P. WINKL.) BORHIDI. Unfortunately, they overlooked the earlier *Palicourea buchtienii* STANDL., described from Bolivia, therefore creating an illegitimate later homonym necessitating yet another new name. Finally, it was provided by BORHIDI (2015), who named the species *Palicourea winkleri* BORHIDI.

Uragoga buchtienii was based on two collections by O.A. Buchtien. K.G. Baenitz initially gave the specimens to the Botanical Museum Breslau (now WRSL). On these, F.A. PAX (1908) and coworkers based their publication series "Plantae novae Bolivianae" including numerous new species and their identifications were later summarized by BUCHTIEN (1910). From 1911 onwards, the respective specimens were distributed in an

exsiccatae series entitled "Herbarium Bolivianum" in a circulation of 10 sets (MATOUCHEK 1912). As a consequence, Buchtien's collections are found in many herbaria.

STANDLEY (1931: 303) designated a specimen at B as lectotype of *Uragoga buchtienii*. By citing "San Antonio, near Mapiri, 850 m., O.A. Buchtien 1608 (F, US, type collection; photo. of type, ex Herb. Berol., in F)", he refers to the type at B (and F and US as type collection). However, due to the destruction of B in World War II, designating a subsequent duplicate of the same collection as [second-step] lectotype is necessary. Buchtien's personal herbarium was sold to US in 1922 (STAFLEU & COWAN 1976–1988), where a duplicate of each of the type collections is available. Here, the duplicate of Buchtien 1608 at US is designated as [second-step] lectotype. It constitutes of a large branch with three inflorescences, and has a label with "*Uragoga buchtienii* H. Winkler, n.sp." written in ink, presumably by the collector.

Distribution: *Palicourea winkleri* is known from southern Mexico to Bolivia and from Venezuela (TAYLOR 2014).

Index of accepted Mexican and Central American taxa and relevant synonyms cited in the text. Accepted taxa are highlighted in bold.

Callicocca elata = *Palicourea elata*
Callicocca tomentosa = *Palicourea tomentosa*
Cephaelis axillaris = *Palicourea axillaris*
Cephaelis chiapensis = *Palicourea chiapensis*
Cephaelis chiriquensis = *Palicourea chiriquensis*
Cephaelis chiriquiensis = *Palicourea chiriquiensis*
Cephaelis chlorochlamys = *Palicourea hazenii*
Cephaelis corraeae = *Palicourea corraeae*
Cephaelis costaricensis = *Palicourea elata*
Cephaelis croatii = *Palicourea croatii*
Cephaelis dichotoma RUDGE = *Palicourea dichotoma*
Cephaelis dichotoma WILLD. = *Palicourea hoffmannseggiana*
Cephaelis dichroa = *Palicourea dichroa*
Cephaelis discolor = *Palicourea tonduzii*
Cephaelis elata = *Palicourea elata*
Cephaelis elata f. *lutea* = *Palicourea elata*
Cephaelis furcata = *Palicourea hoffmannseggiana*
Cephaelis glomerulata = *Palicourea glomerulata*
Cephaelis guapilensis = *Palicourea tonduzii*
Cephaelis hirsuta = *Palicourea tomentosa*
Cephaelis hoffmannseggiana = *Palicourea hoffmannseggiana*
Cephaelis kennedyae = *Palicourea muscosa*
Cephaelis killipii = *Palicourea schunkei*
Cephaelis muscosa = *Palicourea muscosa*
Cephaelis nana = *Palicourea tonduzii*
Cephaelis nicaraguensis = *Palicourea tonduzii*
Cephaelis peruviana = *Palicourea violacea*
Cephaelis phoenicia = *Palicourea elata*

Cephaelis pittieri = *Palicourea aurantiibractea*
Cephaelis pseudaxillaris = *Palicourea pseudaxillaris*
Cephaelis punicea = *Palicourea elata*
Cephaelis rubra = *Palicourea hoffmannseggiana*
Cephaelis sessilifolia = *Palicourea chiapensis*
Cephaelis tetragona = *Palicourea tetragona*
Cephaelis tomentosa = *Palicourea tomentosa*
Cephaelis tonduzii = *Palicourea tonduzii*
Cephaelis vultusmimi = *Palicourea tomentosa*
Coussarea austin-smithii = *Palicourea alajuelensis*
Coussarea chiriquiensis = *Palicourea horquetensis*
Coussarea grandifructa = *Palicourea grandifructa*
Coussarea hondensis = *Palicourea hondensis*
Coussarea izabalensis = *Palicourea mediocris*
Coussarea mediocris = *Palicourea mediocris*
Coussarea nebulosa = *Palicourea horquetensis*
Coussarea nigrescens = *Palicourea beachiana*
Coussarea psychotrioides = *Palicourea psychotrioides*
Coussarea roseocremea = *Palicourea roseocremea*
Coussarea taurina = *Palicourea hondensis*
Coussarea zarceroana = *Palicourea alajuelensis*
Evea axillaris = *Palicourea axillaris*
Evea chiapensis = *Palicourea chiapensis*
Evea dichroa = *Palicourea dichroa*
Evea elata = *Palicourea elata*
Evea guapilensis = *Palicourea tonduzii*
Evea muscosa = *Palicourea muscosa*
Evea nana = *Palicourea tonduzii*
Evea tomentosa = *Palicourea tomentosa*

Mexocarpus tetragonus = *Palicourea tetragona*
Morinda muscosa = *Palicourea muscosa*
Myrstiphyllum brachiatum = *Palicourea brachiata*
Myrstiphyllum pubescens = *Palicourea pubescens*
Naletonia violacea = *Palicourea violacea*
Nonatelia panamensis = *Palicourea racemosa*
Nonatelia paniculata = *Palicourea aubletii*
Nonatelia pubescens = *Palicourea berteriana*
Nonatelia racemosa = *Palicourea racemosa*
Nonatelia violacea = *Palicourea violacea*
Oribasia paniculata = *Palicourea aubletii*
Oribasia racemosa = *Palicourea racemosa*
Oribasia violacea = *Palicourea violacea*
Palicourea acicularis
Palicourea acuminata
Palicourea alajuelensis
Palicourea allenii
Palicourea andina subsp. *panamensis*
Palicourea angustiflora
Palicourea aubletii
Palicourea aurantiibractea
Palicourea axillaris
Palicourea bechiana
Palicourea berteriana
Palicourea boraginoides
Palicourea brachiata
Palicourea buchtienii = *Palicourea winkleri*
Palicourea caerulea
Palicourea calidicola
Palicourea capitata = *Palicourea violacea*
Palicourea carnosocarpa
Palicourea chiapensis
Palicourea chiriquensis
Palicourea chiriquiensis = *Palicourea chiriquensis*
Palicourea chlorobotrya
Palicourea chrysocalymma
Palicourea cooperi = *Palicourea pseudaxillaris*
Palicourea correae
Palicourea croatii
Palicourea croceovenosa
Palicourea cyanococca
Palicourea deflexa
Palicourea deneversii
Palicourea dichotoma
Palicourea dichroa
Palicourea domingensis
Palicourea elata
Palicourea eurycarpa
Palicourea faxlucens
Palicourea furcata = *Palicourea hoffmannseggiana*
Palicourea gaitalensis
Palicourea galeottiana

Palicourea galeottiana subsp. *persearum* =
Palicourea galeottiana
Palicourea gardenioides
Palicourea glomerulata
Palicourea goldmanii
Palicourea gracilentia
Palicourea grandifructa
Palicourea hazenii
Palicourea hebeclada
Palicourea heydei
Palicourea hispidula = *Palicourea*
longiinvolutrata
Palicourea hoffmannseggiana
Palicourea hondensis
Palicourea horquetensis
Palicourea izabalensis = *Palicourea berteriana*
Palicourea juarezana
Palicourea longicuspis
Palicourea longiinvolutrata
Palicourea longirostris
Palicourea lozadæ
Palicourea lusinaturalis = *Palicourea luxurians*
Palicourea luxurians
Palicourea mediocris
Palicourea megalantha
Palicourea microbotrys
Palicourea minarum
Palicourea mollirami = *Palicourea hebeclada*
Palicourea mollis = *Palicourea galeottiana*
Palicourea montensis = *Palicourea croceovenosa*
Palicourea mortonia
Palicourea muscosa
Palicourea nebulosa = *Palicourea horquetensis*
Palicourea neopurpusii
Palicourea oreodoxa = *Palicourea pubescens*
Palicourea osaensis
Palicourea paradichroa
Palicourea pavetta = *Palicourea domingensis*
Palicourea pentandra = *Palicourea domingensis*
Palicourea periziana
Palicourea perotensis
Palicourea phanerandra
Palicourea pilosa
Palicourea platypoda = *Palicourea dichotoma*
Palicourea pseudaxillaris
Palicourea psychotrioides
Palicourea pubescens
Palicourea racemosa
Palicourea recordiana
Palicourea roseocremea
Palicourea rzedowskiana = *Palicourea*
chlorobotrya

*Palicourea sanblasensis**Palicourea santae-rosae**Palicourea schunkei**Palicourea seleri* = *Palicourea galeottiana**Palicourea siccorubra**Palicourea simiarum**Palicourea simiarum* subsp. *chiapensis**Palicourea soejartoi**Palicourea solitudinum**Palicourea sousae**Palicourea stevensonii* = *Palicourea violacea**Palicourea steyermarkiana**Palicourea suerrensis**Palicourea tacarcunensis**Palicourea tapantiensis**Palicourea tetragona**Palicourea thornei**Palicourea tomentosa**Palicourea tonduzii**Palicourea torresiana**Palicourea tsakiana**Palicourea tutensis**Palicourea umbelliformis**Palicourea valeriana**Palicourea veracruzensis**Palicourea violacea**Palicourea winkleri**Pavetta pentandra* = *Palicourea domingensis**Psychotria acicularis* = *Palicourea acicularis**Psychotria acuminata* = *Palicourea acuminata**Psychotria acuminata* subsp. *boraginoides* =
*Palicourea boraginoides**Psychotria acuminata* var. *latifolia* = *Palicourea*
*acuminata**Psychotria albonervia* = *Palicourea violacea**Psychotria allenii* = *Palicourea allenii**Psychotria amplifolia* = *Palicourea violacea**Psychotria angustiflora* = *Palicourea angustiflora**Psychotria aubletiana* = *Palicourea axillaris**Psychotria aubletiana* var. *andina* = *Palicourea*
*axillaris**Psychotria aubletiana* var. *andina* f. *pubescens* =
*Palicourea axillaris**Psychotria aubletiana* var. *centro-americana* =
*Palicourea axillaris**Psychotria aurantiibractea* = *Palicourea*
*aurantiibractea**Psychotria aureola* = *Palicourea pubescens**Psychotria barbiflora* = *Palicourea*
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*hoffmannseggiana**Psychotria berteriana* = *Palicourea berteriana**Psychotria berteriana* subsp. *luxurians* =*Palicourea luxurians**Psychotria boraginoides* = *Palicourea*
*boraginoides**Psychotria brachiata* = *Palicourea brachiata**Psychotria brachybotrya* = *Palicourea gracilentia**Psychotria bracteata* = *Palicourea pilosa**Psychotria bracteolata* = *Palicourea hebeclada**Psychotria breedlovei* = *Palicourea breedlovei**Psychotria brevipes* = *Palicourea dichotoma**Psychotria buchtienii* = *Palicourea winkleri**Psychotria caerulea* = *Palicourea caerulea**Psychotria cairoana* = *Palicourea longirostris**Psychotria calidicola* = *Palicourea calidicola**Psychotria calopogon* = *Palicourea pilosa**Psychotria capitata* = *Palicourea violacea**Psychotria capitata* subsp. *amplifolia* = *Palicourea*
*violacea**Psychotria capitata* subsp. *fissistipularis* =
*Palicourea violacea**Psychotria capitata* subsp. *inundata* = *Palicourea*
*violacea**Psychotria capitata* subsp. *rubra* = *Palicourea*
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*violacea**Psychotria chlorotica* var. *lanceolata* = *Palicourea*
*violacea**Psychotria chlorotica* var. *obovata* = *Palicourea*
*violacea**Psychotria chontalensis* = *Palicourea pilosa**Psychotria chrysocalymma* = *Palicourea*
*chrysocalymma**Psychotria cincta* = *Palicourea longicuspis**Psychotria cooperi* = *Palicourea pseudaxillaris**Psychotria cornigera* = *Palicourea recordiana**Psychotria correae* = *Palicourea correae**Psychotria costaricensis* = *Palicourea pilosa**Psychotria crebrinervia* = *Palicourea berteriana**Psychotria croatii* = *Palicourea croatii**Psychotria croceovenosa* = *Palicourea*
*croceovenosa**Psychotria cyanococca* = *Palicourea cyanococca**Psychotria davidsei* = *Palicourea hazenii*

- Psychotria deflexa* = *Palicourea deflexa*
Psychotria deneversii = *Palicourea deneversii*
Psychotria dichotoma = *Palicourea dichotoma*
Psychotria dichroa = *Palicourea dichroa*
Psychotria dispersa = *Palicourea cyanococca*
Psychotria domingensis = *Palicourea domingensis*
Psychotria elata = *Palicourea elata*
Psychotria eugeniifolia = *Palicourea goldmanii*
Psychotria eugenoides = *Palicourea goldmanii*
Psychotria eurycarpa = *Palicourea eurycarpa*
Psychotria faxlucens = *Palicourea faxlucens*
Psychotria flexuosa = *Palicourea aubletii*
Psychotria furcata = *Palicourea hoffmannseggiana*
Psychotria gaitalensis = *Palicourea gaitalensis*
Psychotria galeottiana = *Palicourea galeottiana*
Psychotria galeottiana subsp. *persearum* =
Palicourea galeottiana
Psychotria gardenioides = *Palicourea gardenioides*
Psychotria glauca = *Palicourea pubescens*
Psychotria glomerulata = *Palicourea glomerulata*
Psychotria goldmanii = *Palicourea goldmanii*
Psychotria gracilentia = *Palicourea gracilentia*
Psychotria hazenii = *Palicourea hazenii*
Psychotria hebeclada = *Palicourea hebeclada*
Psychotria heydei = *Palicourea heydei*
Psychotria hirsuta = *Palicourea tomentosa*
Psychotria hispida = *Palicourea longiinvoluta*
Psychotria hoffmannseggiana = *Palicourea*
hoffmannseggiana
Psychotria hondensis = *Palicourea hondensis*
Psychotria inundata = *Palicourea violacea*
Psychotria iquitosensis = *Palicourea gracilentia*
Psychotria izabalensis = *Palicourea berteriana*
Psychotria izabalensis subsp. *oaxacana* = *Palicourea chlorobotrya*
Psychotria juarezana = *Palicourea juarezana*
Psychotria justicioides = *Palicourea hebeclada*
Psychotria lilacina = *Palicourea minarum*
Psychotria longicuspis = *Palicourea longicuspis*
Psychotria longirostris = *Palicourea longirostris*
Psychotria lozadae = *Palicourea lozadae*
Psychotria luteotuba = *Palicourea phanerandra*
Psychotria luxurians = *Palicourea luxurians*
Psychotria martiana = *Palicourea dichotoma*
Psychotria megalantha = *Palicourea megalantha*
Psychotria microbotrys = *Palicourea microbotrys*
Psychotria mima = *Palicourea angustiflora*
Psychotria minarum = *Palicourea minarum*
Psychotria molinarum = *Palicourea chiapensis*
Psychotria moliniana = *Palicourea chiriquensis*
Psychotria mollirami = *Palicourea hebeclada*
Psychotria mollis = *Palicourea pubescens*
Psychotria mombachensis = *Palicourea*
domingensis
Psychotria mortoniana = *Palicourea mortoniana*
Psychotria muscosa = *Palicourea muscosa*
Psychotria nebulosa = *Palicourea horquetensis*
Psychotria oreodoxa = *Palicourea pubescens*
Psychotria orogenes = *Palicourea galeottiana*
Psychotria osaensis = *Palicourea osaensis*
Psychotria ostaura = *Palicourea hondensis*
Psychotria pachecoana = *Palicourea galeottiana*
Psychotria paniculata = *Palicourea aubletii*
Psychotria paradichroa = *Palicourea paradichroa*
Psychotria pavetta = *Palicourea domingensis*
Psychotria perotensis = *Palicourea perotensis*
Psychotria persearum = *Palicourea galeottiana*
Psychotria phanerandra = *Palicourea*
phanerandra
Psychotria pilosa = *Palicourea pilosa*
Psychotria pittieri = *Palicourea cyanococca*
Psychotria pittieri subsp. *oinochrophylla* =
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Psychotria platyphylla = *Palicourea berteriana*
Psychotria platypoda = *Palicourea dichotoma*
Psychotria poeppigiana = *Palicourea tomentosa*
Psychotria pseudaxillaris = *Palicourea*
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Psychotria pubescens = *Palicourea hebeclada*
Psychotria pubescens = *Palicourea pubescens*
Psychotria pumiliocarpa = *Palicourea cyanococca*
Psychotria purpureocapitata = *Palicourea croatii*
Psychotria purpusii = *Palicourea neopurpusii*
Psychotria quadrangulata = *Palicourea allenii*
Psychotria racemosa = *Palicourea racemosa*
Psychotria racemosa = *Palicourea racemosa*
Psychotria racemosa = *Palicourea racemosa*
Psychotria ramonensis = *Palicourea hazenii*
Psychotria recordiana = *Palicourea recordiana*
Psychotria roseocremea = *Palicourea*
roseocremea
Psychotria rubra = *Palicourea hoffmannseggiana*
Psychotria rzadowskiana = *Palicourea*
chlorobotrya
Psychotria sanblasensis = *Palicourea sanblasensis*
Psychotria sanfelicensis = *Palicourea goldmanii*
Psychotria santae-rosae = *Palicourea santae-rosae*
Psychotria santaritensis = *Palicourea allenii*
Psychotria scabriuscula = *Palicourea pubescens*
Psychotria schunkei = *Palicourea schunkei*
Psychotria siccorubra = *Palicourea siccorubra*
Psychotria simiarum = *Palicourea simiarum*
Psychotria simiarum subsp. *chiapensis* =
Palicourea simiarum subsp. *chiapensis*

Psychotria skutchii = *Palicourea galeottiana*
Psychotria soejartoi = *Palicourea soejartoi*
Psychotria solitudinum = *Palicourea solitudinum*
Psychotria sousae = *Palicourea sousae*
Psychotria steyermarkii = *Palicourea steyermarkiana*
Psychotria suerrensis = *Palicourea suerrensis*
Psychotria tacarcunensis = *Palicourea tacarcunensis*
Psychotria tapantiensis = *Palicourea tapantiensis*
Psychotria taurina = *Palicourea carnosocarpa*
Psychotria thornei = *Palicourea thornei*
Psychotria tomentosa = *Palicourea tomentosa*
Psychotria torresiana = *Palicourea torresiana*
Psychotria tricostata = *Palicourea galeottiana*
Psychotria tsakiana = *Palicourea tsakiana*
Psychotria tutensis = *Palicourea tutensis*
Psychotria umbelliformis = *Palicourea umbelliformis*
Psychotria uyucana = *Palicourea galeottiana*
Psychotria valeriana = *Palicourea valeriana*
Psychotria valeriana = *Palicourea valeriana*
Psychotria veracruzensis = *Palicourea veracruzensis*
Psychotria veraguensis = *Palicourea microbotrys*
Psychotria violacea = *Palicourea violacea*
Rhodostoma gardenioides = *Palicourea gardenioides*
Rudgea chiriquiensis = *Palicourea horquetensis*
Rudgea horquetensis = *Palicourea horquetensis*
Rudgea longirostris = *Palicourea longirostris*
Rudgea simiarum = *Palicourea mediocris*
Rudgea thyrsoflora = *Palicourea tsakiana*
Tapogomea axillaris = *Palicourea axillaris*
Tapogomea elata = *Palicourea elata*
Tapogomea muscosa = *Palicourea muscosa*
Tapogomea punicea = *Palicourea elata*
Tapogomea tomentosa = *Palicourea tomentosa*
Uragoga acuminata = *Palicourea acuminata*
Uragoga angosturensis = *Palicourea tonduzii*
Uragoga aureola = *Palicourea pubescens*
Uragoga axillaris = *Palicourea axillaris*

Uragoga barbiflora = *Palicourea hoffmannseggiana*
Uragoga berteriana = *Palicourea berteriana*
Uragoga brachiata = *Palicourea brachiata*
Uragoga brachybotrya = *Palicourea gracilenta*
Uragoga bracteolata = *Palicourea hebeclada*
Uragoga brevipes = *Palicourea dichotoma*
Uragoga buchtienii = *Palicourea winkleri*
Uragoga caerulea = *Palicourea caerulea*
Uragoga capitata = *Palicourea violacea*
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Uragoga chlorotica = *Palicourea violacea*
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Uragoga muscosa = *Palicourea muscosa*
Uragoga muscosa = *Palicourea muscosa*
Uragoga pavetta = *Palicourea domingensis*
Uragoga phoenicia = *Palicourea elata*
Uragoga pilosa = *Palicourea pilosa*
Uragoga platypoda = *Palicourea dichotoma*
Uragoga poeppigiana = *Palicourea tomentosa*
Uragoga polakowskyi = *Palicourea pilosa*
Uragoga pubescens = *Palicourea pubescens*
Uragoga punicea = *Palicourea elata*
Uragoga racemosa = *Palicourea racemosa*
Uragoga scabriuscula = *Palicourea pubescens*
Uragoga scheidweileri = *Palicourea gardenioides*
Uragoga tomentosa = *Palicourea tomentosa*
Uragoga tomentosa = *Palicourea tomentosa*

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