A synopsis of *Stenostephanus* Nees (Acanthaceae) in Bolivia

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Summary. 12 species of *Stenostephanus* Nees occur in Bolivia, two of which, *S. madidiensis* J.R.I.Wood and *S. sehuencasii* J.R.I.Wood are described as new. Ten species are endemic to the country with all growing on the humid eastern slopes of the Andes. The distribution of all Bolivian species is described and mapped and implications for conservation are discussed. A key to the species found in Bolivia and a table of their principal distinguishing characteristics are provided. The new species are illustrated with line drawings and photographs.

Key Words. Andes, distribution patterns, endemism, new species, species key, taxonomy.

Stenostephanus Nees is a neotropical genus of Acanthaceae consisting of about 80 species. It is distributed along the mountain chains from south central Mexico through Central America and then along the Andes from Venezuela south to the Santa Cruz region in central Bolivia. A single species, *S. lobeliiformis* Nees occurs in the Atlantic Forest of southeastern Brazil. The greatest diversity is found in Colombia from where 29 species are known (Wood 2016). All species are perennial herbs, usually weakly ascending in habit and with flowers arranged in a racemose or open, paniculate thyrses. The corolla is quite varied in form, commonly prominently 2-lipped or with four, often short, subequal lobes. There are only two stamens and the often exserted anthers are monothecous. The capsule is 4-seeded. Also distinctive is the pollen, which is biporate, spherical, somewhat compressed, usually with an encircling band and resembling an aeroplane wheel.

The Bolivian species of *Stenostephanus* were treated fully by Wasshausen & Wood (2004), but an additional species, *S. suburceolatus* J.R.I.Wood was described in 2015 (Wood 2015) and a further two species are described in the current paper bringing the total for Bolivia to 12. This is the same total as for Peru (Wood 2019) although there is a greater likelihood of discovering additional species in Peru. The opportunity is here taken to update information on the distribution of species in Bolivia and at the same time to clarify differences between species based on the greater number of specimens that have become available this century.

This paper is based on the study of herbarium specimens of *Stenostephanus* at BOLV, K and LPB. This has been supplemented by photographs and field

notes by collectors, together with the author's knowledge of the genus in the field in Bolivia.

In Bolivia *Stenostephanus* is a genus of moist evergreen forest “Bosque humedo del pie de monte” and “Bosque Montano Humedo de las Yungas” (Killeen *et al.* 1993; Jorgensen *et al.* 2015) on the eastern slopes of the Andes north of latitude 18 degrees south, growing from around 400 m in the Andean foothills up to about 2800 m in the cloud forests of the Cochabamba region (Map 1). Of the 12 species known from Bolivia, ten are endemic to the country. Of the two exceptions, one *S. longistamineus* (Ruiz & Pav.) V.M.Baum is only known from a single collection and has not been seen in Bolivia for a hundred years. It is, however, the commonest species of *Stenostephanus* in Peru and, probably, in Brazil (Wood 2019). The other species, *S. davidsonii* Wassh., is scattered over a wide area of northern Bolivia and Peru and this distribution has been mapped by Wood (2019). Of the ten species endemic to Bolivia much the most commonly collected is *S. crenulatus* (Britton ex Rusby) Wassh., which is present in many of the cloud forests in La Paz Department. All other species are very localised in their distribution occurring in a single restricted area (*S. cochabambensis* Wassh., *S. madidiensis* J.R.I.Wood, *S. pyramidalis* (Lindau) Wassh., *S. spicatus* Wassh. & J.R.I.Wood, *S. sehuencasii* J.R.I.Wood, *S. suburceolatus* J.R.I.Wood) or in two or three disjunct populations (*S. krukoffii* Wassh., *S. lyman-smithii* Wassh., *S. tenellus* Wassh. & J.R.I.Wood). This pattern of isolated localised populations is characteristic of the genus in South America.

As noted above, species of *Stenostephanus* in Bolivia are characteristic of moist Andean hill forest, being found from lowland rainforest in the Andean foothills

Map 1. Distribution of *Stenostephanus* in Bolivia, which is restricted to the Eastern slopes of the Andes north of 18° south.

(*S. spicatus*, *S. tenellus*) up to the moist montane cloud forest at higher altitudes up to about 2800 m. The species with a distinctly 2-lipped corolla (*S. cochabambensis*, *S. davidsonii*, *S. pyramidalis*, *S. shuencasi*) occur at higher altitudes (mostly above 2000 m) than the species with a subequally lobed corolla, which are found below 2000 m. All species grow in primary forest but may be favoured by a degree of disturbance being found often near tracks or along wooded quebradas. They sometimes survive in partially cleared forest.

Although only three species, *Stenostephanus cochabambensis*, *S. krukoffii* and *S. spicatus* have been formally assessed using IUCN guidelines (Ministerio de Medio Ambiente y Agua 2012), all species occur-

ring in Bolivia face similar threats. All except *S. crenulatus* and *S. davidsonii* are very restricted in their ranges and all occur in forest, which is to a greater or lesser degree subject to logging or casual disturbance by cattle or encroachment from cultivated areas. On the positive side, all species grow at least in part of their range within legally protected areas, at least five entirely so. Most of the habitats where they grow are relatively inaccessible and poorly explored. A good example is the Serranía de Bellavista lying between Caranavi and Alto Beni which is crossed by the main road from La Paz to the Beni and where three species, *S. crenulatus*, *S. krukoffii* and *S. lyman-smithii* grow. Unprotected, superficially easily accessi-

ble, the hillsides are precipitous and only on the rare days when the cloud and mist disperse, do they merit their name. Inevitably, all known populations are from within a few metres of the road, and the mountain range which extends many kilometres both north and south remains botanically unexplored and could harbour extensive population of all three species. Slopes are rocky, the summits perpetually wet and soil limited to gullies so it is not easily or profitably exploited for logging or cultivation. The situation of *S. sehuencasii* and *S. spicatus* is not dissimilar with both restricted to the Carrasco National Park. Both grow near dirt tracks passing through forest and no serious search has ever been made away from these trails. In sum, therefore, any conservation assessment is highly speculative and must await thorough exploration of the very inaccessible areas where most species grow.

Another factor that needs to be considered in assessing the status of *Stenostephanus* species is the irregular flowering pattern of many species. There is no reliable

evidence for this phenomenon in Bolivia but it has been noted elsewhere (Wood 1988) and at least one species from Mexico is known to be plietesial (Daniel 2006). Consequently, the absence of flowering specimens does not necessarily indicate the absence of the plant itself.

A key to all 12 species occurring in Bolivia is provided here as well as a table of the principal differences between the species. The key and the table add to and refine elements of the account by Wasshausen & Wood (2004) as more specimens and information have gradually become available as a result of more intensive collecting in Bolivia. However, the very localised distribution of most species is clear (Maps 2, 3, 4 and 5) with only two species extending to Peru.

The species can be distinguished by the following key. It should be noted that specimens are difficult to identify in the absence of corollas as their distinctive shape and colouring are usually diagnostic. The principal differences between species are shown in Table 1.

Key to species of *Stenostephanus* known from Bolivia

1. Corolla distinctly 2-lipped, the tube relatively short; anthers included or held at corolla mouth; inflorescence an open paniculate thyse; plants growing above 2000 m 2
Corolla with a distinct subcylindrical tube, and a 4-lobed limb; anthers exserted or included; inflorescence spicate, racemose, a very narrow racemose thyse or an open thyse; plants growing below 2000 m 5
2. Corolla dark red, 15 – 16 mm long ***S. cochabambensis***
Corolla yellow-green or white, < 14 mm long 3
3. Corolla yellow-green, 13 – 15 mm long. ***S. pyramidalis***
Corolla white, < 11 mm long 4
4. Sepals glabrous, the lobes obtuse, c. 6 mm long ***S. sehuencasii***
Sepals shortly hirsute and when in fruit, glandular pilose, the lobes finely attenuate, 11 – 12 mm long . . . ***S. davidsonii***
5. Corolla yellow or yellow-green 6
Corolla red, pink or lilac 8
6. Plant glabrous or nearly so, corolla c. 6.5 mm long. ***S. spicatus***
Plant hirsute, corolla > 8 mm long. 7
7. Corolla 8 – 9 mm long, hirsute; anthers held at corolla mouth; inflorescence spicate ***S. krukoffii***
Corolla 14 – 15 mm long, glabrous; anthers exserted; inflorescence a lax thyse ***S. madidiensis***
8. Corolla pale lilac, < 15 mm long, the lobes, strap-shaped 5 × 1 mm. ***S. tenellus***
Corolla dark pink or red, lobes only slightly longer than broad. 9
9. Inflorescence narrow, spicate or racemose in form; calyx 7 – 11 mm long. 10
Inflorescence an open thyse, often not much longer than broad; calyx < 6 mm long. 11
10. Inflorescence narrow, elongate, 10 – 20 cm long, terminal; leaves narrowly oblong-elliptic ***S. lyman-smithii***
Inflorescence short, relatively broad, up to 4 cm long, axillary; leaves ovate. ***S. suburceolatus***
11. Corolla completely glabrous, subcylindrical; anthers shortly exserted; calyx 2 – 3 mm long, lobes deltoid ***S. crenulatus***
Corolla usually pubescent near the apex, obovoid, at least in bud; calyx 3 – 5 mm long, lobes lanceolate, abruptly narrowed above a narrow base ***S. longistamineus***

Synopsis of the species of *Stenostephanus* known from Bolivia

Stenostephanus cochabambensis *Wassh.* (Wasshausen 1999: 282). Type: Bolivia, Cochabamba, Chapare, c.

9 km along road to Corani Pampa from Cochabamba to Chapare highway by junction of Río Derrumbe Mayo and Río Aliso Mayo, *J. R. I. Wood* & *N. Ritter* 9939 (holotype US3348686, isotypes K, LPB). Fig. 1A

Map 2. Distribution of *Stenostephanus cochabambensis* (blue triangles), *S. crenulatus* (black circles) and *S. pyramidalis* (red squares) in Bolivia.

DISTRIBUTION. Restricted to between 2200 and 2500 m in the area around Tablas Monte, Corani Pampa and Incachaca in Chapare Province of Cochabamba Department. Map 2.

Stenostephanus crenulatus (*Britton ex Rusby*) *Wassh.* (Wasshausen 1999: 288).

Hansteinia crenulata Britton ex Rusby (1895: 242). Type: Bolivia, without specific location, *M. Bang* 641 (lectotype NY00311994, designated by Wasshausen 1999: 288, isoelectotypes F, GH, US).

DISTRIBUTION. Frequent between 950 and 1500 m in the Yungas region of La Paz, being recorded from Huancane in Sud Yungas, Polo Polo near Coroico and around Choro in Nor Yungas, the Caranavi area and the Serranía de Bellavista, near Mapiri in Larecaja and between Charazani and Apolo (Asunta Pata). Map 2.

The variety var. *longiflorus* *Wassh. & J.R.I.Wood* (Wasshausen & Wood 2001: 453) is recorded from between Huancane and San Isidro in Sud Yungas.

Map 3. Distribution of *Stenostephanus krukoffii* (black circles), *S. madidiensis* (red square) and *S. sehuencasii* (blue square).

***Stenostephanus davidsonii* Wassh.** (Wasshausen 1999: 285). Type: Bolivia, La Paz, 16.2 km SW of Yolosa towards Unduavi, 2440 m, 12 Nov. 1976, *C. Davidson* 4973 (holotype RSA00006484, formerly LAM).

DISTRIBUTION. Scattered populations are found between about 2200 and 2800 m from the area of the old Cochabamba-Villa Tunari road and Cocapata in Cochabamba Department through Nor Yungas and the Camata-Cuibaja area (Muñecas-Saavedra) in La Paz Department north into Peru. For a map, see Wood (2019).

***Stenostephanus krukoffii* Wassh.** (Wasshausen 1999: 282). Type: Bolivia, La Paz, Sud Yungas, basin of Río Bopi [Boopi], San Bartolome (near Calisaya), *Krukoff* 10400 (holotype US00604402, isotype F, K, NY, S).

DISTRIBUTION. Known between 900 and 1500 m from three somewhat disjunct locations in the Yungas region: Calisaya (Río Boopi), Serranía de Bellavista and the Río Yuyo. It has not been found in the first of these locations for 70 years. Map 3.

Map 4. Disjunct distribution of *Stenostephanus lyman-smithii* in Bolivia.

Stenostephanus longistamineus (Ruiz & Pav.)
V.M.Baum (1982: 433).

Justicia longistaminea Ruiz & Pav. (Ruiz & Pavon 1798: 8). Type: Peru, Ruiz & Pavon s.n. (lectotype MA815569, designated by Wood (2019: 14), isotypes BM, G, MA, OXF).

Thysacanthus longistamineus (Ruiz & Pav.) Nees (1847: 326).

Stenostephanus bolivianus Rusby (1927: 366). Type: Bolivia, Ixiamas, M. Cardenas 1905 (holotype NY00278291, isotype K000529043).

Stenostephanus thyrsoides Lindau (1914: 198). Type: Brazil, Alto Acre, Paraguassu, E. Ule 9795 (holo-

type ?B†, isotypes K000529044, L2841863, U0000131, UC492971).

DISTRIBUTION. In Bolivia, only known from a single collection (Cardenas 1905) made nearly a hundred years ago at Ixiamas. For its wider distribution, see Wood (2019).

Stenostephanus lyman-smithii Wassh. (Wasshausen 1999: 281). Type: Bolivia, La Paz, Caranavi, on road from Caranavi [to Alto Beni], 12 km from Carrasco, D. C. Wasshausen & J. R. I. Wood 2155 (holotype US00604401, isotypes CAS, K, LPB, NY).

Map 5. Distribution of *Stenostephanus spicatus* (black circle), *S. suburceolatus* (blue triangles) and *S. tenellus* (red squares).

DISTRIBUTION. A species with a very disjunct distribution being found in the Locotal-Kharahuasi area on the borders of Santa Cruz and Cochabamba Department at around 1800 m and in several places in La Paz and Beni Departments over a wider altitude range of between 600 and 2000 m: Serranía de Bellavista, Río Quiquebey, Pílon Lajas, Tumapasa. Map 4.

***Stenostephanus madidiensis* J.R.I.Wood, sp. nov.** Type: Bolivia, La Paz, Prov. Franz Tamayo, P.N. Madidi, sector Tocoaque, por el camino Keara-Mojos,

14°37'05"S 68°57'08"W, 2350 m, 16 April 2016 fl., A. F. Fuentes 19712 (holotype LPB, isotypes K, MO).

<http://www.ipni.org/urn:lsid:ipni.org:names:60479373-2>

Isophyllous, much-branched perennial *subshrub*, c. 1 m high; stems dark green, terete, densely hirsute with multicellular hairs. *Leaves* petiolate, 5 – 20 × 2 – 9 cm, oblong-elliptic or (above) elliptic, apex shortly acuminate, base attenuate, margin entire, both surfaces coarsely hirsute, but especially so on the veins, adaxially with cystoliths, abaxially paler, the midrib with prominent cystoliths, reticulate; petiole 0 – 3.5

Table 1. Summary of important differences between species of *Stenostephanus* found in Bolivia.

Species	Leaves	Inflorescence	Calyx lobes	Corolla	Anthers
<i>cochabambensis</i>	ovate to elliptic, hirsute	dense terminal thyse with smaller thyreses also in upper leaf axils	6 – 11 mm long, linear-lanceolate, glandular-hirsute, accrescent	15 – 20 mm long, dark red, glabrous, 2-lipped, lips 4 – 8 mm long, lower lip lobes 2 × 1.5 mm	shortly exerted
<i>pyramidalis</i>	ovate to elliptic, hirsute, especially on veins	dense terminal thyse with thyreses also in upper leaf axils	6 – 12 mm long, linear-lanceolate, hirsute, accrescent	11 – 15 mm long, lemon-yellow, glabrous, 2-lipped, lips 3 – 5 mm long, lower lip lobes ovate, 2.5 – 3 × 2 mm	held at mouth
<i>davidsonii</i>	oblong-elliptic, hirsute mostly on veins	lax terminal and axillary thyreses	4 – 12 mm long, linear, acuminate, hirsute, in fruit glandular-pilose, weakly accrescent	11 mm long, white, (sub)glabrous, 2-lipped, lips 4 – 5 mm, lower lip lobes oblong, 2 × 1 – 1.5 mm	included
<i>sehuencasii</i>	oblong-elliptic, glabrous except on veins	lax terminal thyse	5 – 6 mm long, linear-lanceolate, glabrous, very weakly accrescent	9 mm long, white, glabrous, 2-lipped, lips 3.5 – 4 mm long, lower lip lobes ovate, 1.5 × 1.5 mm	included
<i>spicatus</i>	oblong-elliptic, glabrous	terminal, elongate, spicate thyse	3 – 8 mm long, linear-lanceolate, glabrous / minutely hirsute, accrescent	4 – 5 mm long, yellow-green, glabrous, subequally lobed, lobes oblong, 2 × 1 mm	exserted
<i>tenellus</i>	ovate to elliptic, subglabrous or with a few hairs on veins	lax, terminal thyse	2.5 – 5 mm long, linear-lanceolate, glabrous, ? not accrescent	9 – 12 mm long, white or dull lilac, glabrous, subequally 5-lobed, lobes oblong, 4 × 1 mm	exserted
<i>lyman-smithii</i>	oblong-elliptic, glabrous	elongate, terminal raceme	7 – 12 mm long, linear-lanceolate, hirsute, accrescent, glandular-pilose in fruit	13 – 16 mm long, inflated above narrow basal tube, deep pink, glabrous, lobes subequal, darker, puberulent, 2 × 1.5 mm	strongly exerted
<i>crenulatus</i>	oblong-elliptic, glabrous	lax, strictly terminal thyse	2 – 3 mm long, deltoid, glabrous, not accrescent	20 – 23 mm long, dark red, glabrous, inflated above narrow basal tube, lobes equal 1 – 2 × 1.5 mm, ovate	strongly exerted
<i>longistaminus</i>	obovate-elliptic, sparsely hirsute, mostly on veins	dense, strictly terminal thyse	3 – 5 mm long, lanceolate-filiform from a broad base, glabrous or shortly hirsute, not accrescent	19 – 25 mm long, deep pink, glabrous, obovoid in bud, 2-lipped, upper lip oblong 2 – 7 × 1 – 2 mm, lower lip broad, lobes ovate, 2 – 3 mm	strongly exerted
<i>suburceolatus</i>	ovate to elliptic, densely hirsute	short, axillary, bracteate racemes	7 – 8 mm long, linear-lanceolate, acuminate, glandular-pilose	21 – 22 mm long, deep pink, hirsute, inflated above narrow basal tube subequally lobed, lobes purplish, ovate, 1.5 mm	strongly exerted
<i>kruckhoffii</i>	oblong-elliptic to obovate, hirsute mostly on veins	terminal and (less commonly) axillary, elongate racemes	4 – 9 mm long, linear-filiform, hirsute, in fruit glandular-pilose, accrescent	8 – 9 mm long, cream, glabrous or (in type) hirsute, subequally lobed, lobes oblong, 1.5 – 2.5 × 1 mm	shortly exerted
<i>madidiensis</i>	oblong-elliptic, hirsute	lax terminal thyse	7 – 12 mm long, lanceolate, acuminate, hirsute, accrescent	14 – 15 mm long, yellow, glabrous, inflated above narrow basal tube subequally lobed, lobes greenish, 2 × 2 mm	exserted

cm, diminishing in length upwards, hirsute, cystoliths prominent. *Inflorescence* a lax terminal thyrses up to 20 cm long with smaller inflorescences developing in the axils of the upper leaves; bracts at inflorescence branching points resembling small leaves, diminishing in size upwards, primary branches up to 3.5 cm long, hirsute; secondary branches 0.5 – 0.8 (– 1.8) cm, hirsute; bracteoles 2 – 4 × 0.1 – 0.5 mm, linear-filiform, hirsute; pedicels 1 mm long, hirsute; calyx subequally 5-lobed to the base, lobes 7 – 8 mm long at anthesis, lanceolate-narrowly deltoid, finely acuminate, green, hirsute, accrescent in fruit to 12 mm; corolla glabrous, 14 – 15 mm long, tube yellow, basal subcylindrical part c. 4 mm long, then slightly constricted before being, abruptly widened to 4 – 4.5 mm in width, before being slightly narrowed at the mouth, limb shortly lobed, the lobes 2 × 2 mm, obtuse, greenish when young; filaments glabrous, c. 18 mm long, anthers 2 mm long, exerted c. 6 mm; style 2.2 cm long, appressed pilose. *Capsule* oblanceolate-clavate, c. 12 × 3 mm (somewhat immature), glabrous; *seeds* not seen. Figs 1C, 2.

RECOGNITION. Resembling species previously placed in *Hansteinia* because of the suburceolate corolla with short, subequal lobes and very superficially recalling a yellow-flowered form of *S. crenulatus* in its diffuse thyrses, but the plant is hirsute (not glabrous) and the calyx lobes lanceolate, 7 – 8 mm long (not deltoid c. 3 mm long) and the corolla yellow (not red); quite unlike the other Bolivian species with a yellow corolla (*I. krukoffii* and *I. spicatus*) both of which differ *inter alia* in the subspicate inflorescence.

HABITAT & DISTRIBUTION. In open, well drained areas beside the trail in montane Yungas rainforest with *Clethra elongata* Rusby and *Weinmannia reticulata* Ruiz & Pav. Only known from around the type locality in the Madidi National Park in northern Bolivia. Map 3.

SPECIMENS EXAMINED. BOLIVIA. Dept. La Paz, Prov. Franz Tamayo, P.N. Madidi, sector Tocoaque, entre Keara y Mojos, camino al lado del arroyo, 14°37'02"S 68°57'14"W, 1989 m, 3 Oct. 2009 fr. A. Fuentes, D. Alanes & M. Chambi 15551 (LPB, K); Dept. La Paz, Prov. Franz Tamayo, P.N. Madidi, sector Tocoaque, por el camino Keara-Mojos, 14°37'05"S 68°57'08"W, 2350 m, 16 April 2016 fl., A. Fuentes 19712 (holotype LPB, isotypes K, MO).

***Stenostephanus pyramidalis* (Lindau) Wassh.** (Wasshausen 1999: 288).

Habracanthus pyramidalis Lindau (1895: 482). Type: Bolivia, Cochabamba, “between Cochabamba & Chimore” but probably from the Siberia area, O. Kuntze s.n. (holotype B†, photo F, isotype NY00311985).

DISTRIBUTION. Restricted to altitudes between 2000 and 2400 m in the area around Kharahuasi, Locotol and San Mateo on the borders of Santa Cruz and Cochabamba Departments with a single slightly distant location on Cerro Bravo above Comarapa. Map 2.

***Stenostephanus sehuencasii* J.R.I. Wood, sp. nov.** Type: Bolivia, Cochabamba, Carrasco, Sehuencas, S. Altamirano 5034 (holotype BOLV).

<http://www.ipni.org/urn:lsid:ipni.org:names:60479374-2>

Erect isophyllous *herb* of c. 50 cm in height; stem glabrous, but thinly pubescent immediately below the thyrses. *Leaves* petiolate, 4.8 – 10 × 2.5 – 3.9 cm, oblong-elliptic, apex finely acuminate, base cuneate to attenuate, margin undulate, adaxially green, subglabrous, cystoliths present but obscure, abaxially paler, glabrous but pubescent on the midrib and principal veins; petiole 0.3 – 3 cm long, diminishing in length upwards, obscurely sulcate, subglabrous or with a few hairs near base. *Inflorescence* a terminal thyrses, c. 11 × 5 cm, broadly pyramidal in outline; rhachis shortly pubescent with white, multicellular hairs; bracts at base of thyrses, 10 – 12 × 9 mm, resembling small, sessile leaves; bracts at branching points of thyrses 3.5 – 5 × 1 – 1.5 mm, narrowly oblong-lanceolate, acute, sessile, glabrous; primary branches 10 – 12 mm long, pubescent; secondary branches 5 – 8 mm long, pubescent; bracteoles 2.5 – 4 × 1 – 1.5 mm, narrowly oblong-lanceolate, acute, glabrous; pedicels 0.5 – 1 mm, pubescent with crisped or spreading hairs; calyx 5-lobed to near the base, lobes at anthesis 4.5 – 5 × 0.5 – 0.75 mm, narrowly linear-lanceolate, subacute, pale green with prominent cystoliths, glabrous, in fruit 5 – 6 mm long; corolla c. 9 mm long, white, glabrous, 2-lipped, upper lip c. 3.5 × 2 mm long, entire, ovate-deltoid, obtuse, bent back slightly, lower lip c. 4.5 × 4 mm, 3-lobed to c. 1 mm, lobes c. 1 × 1.25 mm, broadly ovate, rounded, the central lobe slightly broader; filaments 3 mm long, glabrous, white, anthers 1 mm, included; style 3.5 – 4 mm long, white, glabrous; stigma compressed globose. *Capsule* (immature) 0.5 × 1.5 mm, oblong, glabrous. Figs 1B, 3.

RECOGNITION. Resembles *Stenostephanus davidsonii* but differs in being eglandular, the calyx glabrous (not shortly hirsute and, when mature, glandular-pilose), the lobes linear-lanceolate, shorter, c. 6 mm long in fruit, (not linear, finely attenuate 11 – 12 mm) and corolla 9 mm long (not 11 mm) with a broader lower lip. The inflorescence is formed of a terminal thyrses whereas *S. davidsonii* (always?) develops axillary thyrses but it remains uncertain whether their absence in the new species is diagnostic or not.

HABITAT AND DISTRIBUTION. Well-conserved moist hill forest, soils with a mixture of rock and organic material. In understory near a stream, associated with *Alchornea grandis* Benth., *Cyathea squamipes* H.Karst.,

Fig. 1. A *Stenostephanus cochabambensis*; B *S. sehuencasii*; C *S. madidiensis*. PHOTOS: A – B SAUL ALTAMIRANO, C ALFREDO FUENTES.

Fig. 2. *Stenostephanus madidiensis*. A habit; B adaxial leaf surface; C abaxial leaf surface; D calyx, ovary and style; E corolla opened out to show stamens; F capsule with calyx in fruit. A – E from Fuentes 19712; D from Fuentes et al. 15551. DRAWN BY ROSEMARY WISE.

Fig. 3. *Stenostephanus sehuencasii*. A habit; B abaxial leaf surface; C calyx; E corolla, face view; F corolla, side view. *S. davidsonii* D calyx. A – C, E – F from *Altamirano* 5034; D from *Altamirano* 719. DRAWN BY ROSEMARY WISE.

Alsophila sp., *Clethra scabra* Pers., *Ruagea glabra* Triana & Planch., *Clusia* sp., *Alnus acuminata* Kunth, *Weinmannia* spp., *Schefflera* sp., *Oreopanax* sp. etc. at 2140 m, near Sehuencas in P.N. Carrasco. Only known from the type collection. Map 3.

SPECIMENS EXAMINED. BOLIVIA. Cochabamba, Carrasco, Sehuencas, 17°28'8.2"S 65°16'45.5"W, 2140 m, 22 May 2015, S. Altamirano 5034 (BOLV).

***Stenostephanus spicatus* Wassh. & J.R.I. Wood** (Wasshausen & Wood 2001: 450). Type: Bolivia, Tiraque ("Chapare"), on road above El Palmar from Villa Tunari, J. R. I. Wood 12408 (holotype K000529033, isotypes CAS, LPB, US).

DISTRIBUTION. A low altitude species found between 700 and 1400 m around El Palmar in P.N. Carrasco but also recorded from the nearby valley of the Río Espíritu Santo. Map 5.

***Stenostephanus suburceolatus* J.R.I. Wood (2015: 1).** Type: Bolivia, La Paz. Prov. Abel Iturralde, P.N. Madidi, Asariamas, entre San Martín y Rancho Chico, A. Fuentes 18450 (holotype LPB, isotypes K, MO).

DISTRIBUTION. Found between 1245 – 1844 m in the Madidi National Park around the type locality and also near Com. Santa Rosa (Fuentes et al. 20402). Map 5.

***Stenostephanus tenellus* Wassh. & J.R.I. Wood** (Wasshausen & Wood 2001: 450). Type: Bolivia, Santa Cruz, Ichilo, by track from Río Yapacaní to Campamento Mataratu, Amboró Park, 400 m, 25 March 2000, J. R. I. Wood 16101 (holotype K000529032, isotypes LPB, US).

DISTRIBUTION. A low altitude species with a disjunct distribution, found near Camp. Mataratu in P.N. Amboró around 400 m and in a number of places near the village of Challa between Yolosa and Caranavi in Nor Yungas at an altitude of 900 – 1000 m. Map 5.

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