

**Revised circumscription of *Stumpffia* cf. *sorata*,
with a list of newly assigned material
and an expanded diagnosis**

Remark. – We have here assigned *Stumpffia* sp. Ca07 as a deep conspecific lineage of *S. sorata* (and refer to it as *Stumpffia* cf. *sorata*). This lineage is listed as *Stumpffia* sp. 7 (or Ca7 or Ca07) in VIETES et al. (2009), KÖHLER et al. (2010), KLAGES et al. (2013), SCHERZ et al. (2016, 2017), PELOSO et al. (2017), RAKOTOARISON et al. (2017), TU et al. (2018), and as *Stumpffia* sp. 6 in WOLLENBERG et al. (2008). The identity of the specimen PT315 listed in PELOSO et al. (2016) as *Stumpffia* sp. 2 (KM509206 in GenBank) from Andapa (also in SCHERZ et al. 2016, 2017, PELOSO et al. 2017, TU et al. 2018) is uncertain, and as it was not examined for this study; it may or may not be conspecific with *S. sorata*, but this will require confirmation in future.

Newly referred material. – ZSM 544/2016 (ZCMV 15181) (Fig. S1–S2), adult male, collected on 17–19 November 2016, from Camp Simpona, Marojejy National Park (S14.4499, E49.7433, 1326 m a.s.l.) by A. Rakotoarison, M.D. Scherz, M.C. Bletz, J.H. Razafindraibe, A. Razafimanantsoa, and M. Vences. ZSM 379/2005 (FGZC 2826), UADBA-A (FGZC 2827), and UADBA-A (FGZC 2870), all collected on 16 February 2005 from Camp Simpona, Marojejy National Park (S14.4886, E49.9002, 1326 m a.s.l.) by F. Glaw, M. Vences, and R.D. Randrianiaina; UADBA-A (FGZC 2728) collected on 14 February 2005 from Camp Mantella, Marojejy National Park (S14.5055 E, E49.9147, 481 m a.s.l.) by F. Glaw, M. Vences, and R.D. Randrianiaina; ZSM 537–541/2016 (ZCMV 15047–15050), UADBA-A 60239–60242 (ZCMV 15051–15054), UADBA-A 60243 (ZCMV 15056), UADBA-A 60244 (ZCMV 15061), ZSM 541/2016 (ZCMV 15069), ZSM 542/2016 (ZCMV 15070), UADBA-A 60245 (ZCMV 15074), UADBA-A 60246 (ZCMV 15079), and UADBA-A 60247 (ZCMV 15093), all collected on 15 November 2016 from a campsite called ‘Camp 0’ in Marojejy National Park (S14.44633, E49.78523, 310 m a.s.l.), by A. Rakotoarison, M.D. Scherz, M.C. Bletz, J.H. Razafindraibe, A. Razafimanantsoa, and M. Vences; UADBA-A 60248 (ZCMV 15155), UADBA-A 60249 (ZCMV 15166), ZSM 543/2016 (ZCMV 15168), UADBA-A 60250 (ZCMV 15169), UADBA-A 60300 (ZCMV 15179), ZSM 545/2016 (ZCMV 15182), ZSM 555/2016 (ZCMV 15187), ZSM 550/2016 (ZCMV 15212), UADBA-A 60301 (ZCMV 15213), and ZSM 555/2016 (ZCMV 15281), all collected on 17–19 November 2016, from Camp Simpona, Marojejy National Park (S14.4499, E49.7433, 1326 m a.s.l.) by A. Rakotoarison, M.D. Scherz, M.C. Bletz, J.H. Razafindraibe, A. Razafimanantsoa, and M. Vences.

Description of ZSM 544/2016. – Specimen in good state of preservation, piece of left thigh removed as a tissue sample for DNA extraction (Fig. S1). For morphometric measurements, see Table 1 in main text. Body round; head slightly wider than long, slightly narrower than body; snout slightly pointed in dorsal view, pointed in lateral view; nostrils directed laterally, not protuberant, nearer to tip of snout than to eye; canthus rostralis distinct, concave; loreal region slightly concave, vertical; tympanum distinct, about 54% of eye diameter; supratympanic fold not visible; tongue long, broadening posteriorly, attached anteriorly, not notched; maxillary teeth and vomerine teeth absent; choanae rounded. Forelimbs slender; subarticular tubercles single, distinct; outer metacarpal tubercle distinct, single, oval; palmar tubercle absent; prepollex small, not pronounced or swollen; fingers without webbing; no fingers reduced; relative length of fingers $1 < 2 = 4 < 3$, fourth finger subequal in length to second; finger tips

not expanded into discs. Hind limbs robust; tibia length 52% of snout–vent length; lateral metatarsalia strongly connected; inner metatarsal tubercle slightly distinct, single, oval; outer metatarsal tubercle absent; no webbing between toes; first toe reduced; relative length of toes $1 < 2 < 5 < 3 < 4$; fifth toe distinctly shorter than third. Skin on dorsum smooth, without distinct dorsolateral folds; ventral skin smooth; in life, dorsal skin was granular with distinct small bumps (see Fig. S2)

Coloration of ZSM 544/2016. – After one and a half years in 70% ethanol, the dorsum is a rich brown in colour in a thin teddy-bear shaped marking (Figs. S1–S2), laterally merging with grey-brown and with a faint red tinge over the suprascapular region. The dorsal surface of the head anterior to the eyes is beige. The nostril is surrounded in dark brown. The lateral surface of the head is as the dorsal surface of the head, with cream flecks posterior to the eye, which extend along the flank coloration. The flank is grey-brown with a purplish tinge, quickly becoming spotted with large cream spots on the venter; one round spot of burnt umber is present above the insertion of the left arm but apparently not the right, and an elongated burnt umber marking is present in the inguinal region on either side. The ventral trunk is dark brown over the chin becoming increasingly flecked with cream posteriorly to be almost solidly cream over the posterior abdomen; fine cream spots form a thin mid-chin line. The ventral thigh, shank, tibiotarsus, and inner surface of the dorsal foot are a yellowish cream but otherwise similar to the posterior abdomen, as is the underside of the arm and the palm of the hand. The ventral foot is dark brown, with a light annulus before the terminal phalange of each toe. The dorsal forelimbs are a ruddy brown with a single dark brown crossband on the forearm, and a cream annulus before each terminal phalange. The dorsal hindlimbs are a similar brown, with a dark brown crossband on the shank and speckling on the dorsolateral foot. A trapezoidal dark brown marking is present beneath the cloaca, and the hidden surfaces of the hindlimbs are dark brown finely flecked with cream.

Coloration pattern in life was the same as in preservative, but the colour palate was more vibrant: areas that are grey-brown in preservative were sepia in life, with more red on the loreal region and behind the eye. Ventrally, the chin was darker, almost burnt umber, with yellow-cream flecks on the chin and posteriorly, which however were clearly distinguished from the translucent yellowish coloration over the whole of the posterior abdomen and flecked on the ventral hindlimbs.

Variation. – For variation in measurements among specimens, see Table 1 in the main text. In general, all examined specimens agree in morphology. The body varies from round to elongate. The loreal region varies from vertical to slightly oblique. The tympanum of the two juvenile specimens ZSM 555/2016 (ZCMV 15187) and ZSM 556/2016 (ZCMV 15167) is slightly visible.

A very high degree of variability is present in the coloration of this species in Marojejy (Fig. S3). Dorsal coloration almost always has a teddy-bear shaped dark brown marking, but this is absent or broken in ZSM 537–540/2016 and 542/2016. Clear dark brown crossbands are usually present on the thighs, and at least one dark spot is present on the flank of all the paratypes, but can be weakly visible (ZCMV 15074), or very distinct with multiple spots (e.g. ZSM 545/2016). Base coloration can be reddish to brownish in life, becoming pinkish to grey in preservative. Ventral coloration can have or lack yellow coloration in life, but the cream flecks of the anterior trunk are always distinct from the translucent skin of the abdomen. Elongated inguinal spots are present in all the paratypes. The chin is generally dark in colour in adults, and cream in juveniles, but there are exceptions e.g. the small juvenile ZSM

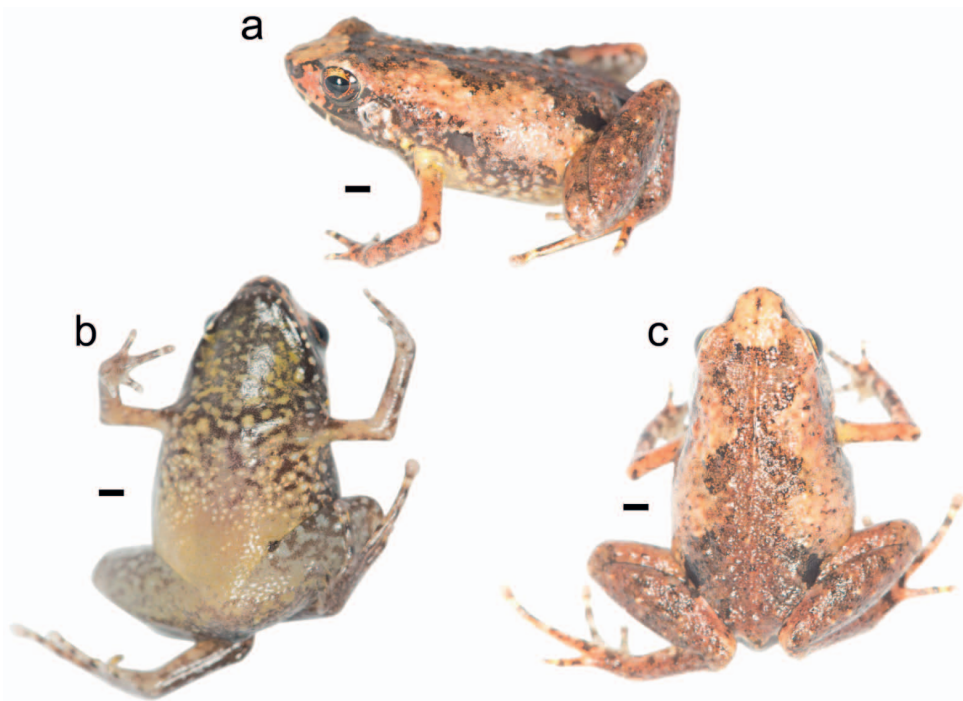
554/2016 has a dark ventral coloration. Iris coloration is highly variable, from reddish in ZCMV 15281 to brass in ZCMV 15074. The coloration of juvenile ZCMV 15281 is generally brighter and more contrasting than the collected adults, but otherwise fits the general colour patterns of this group well.

Supplementary References

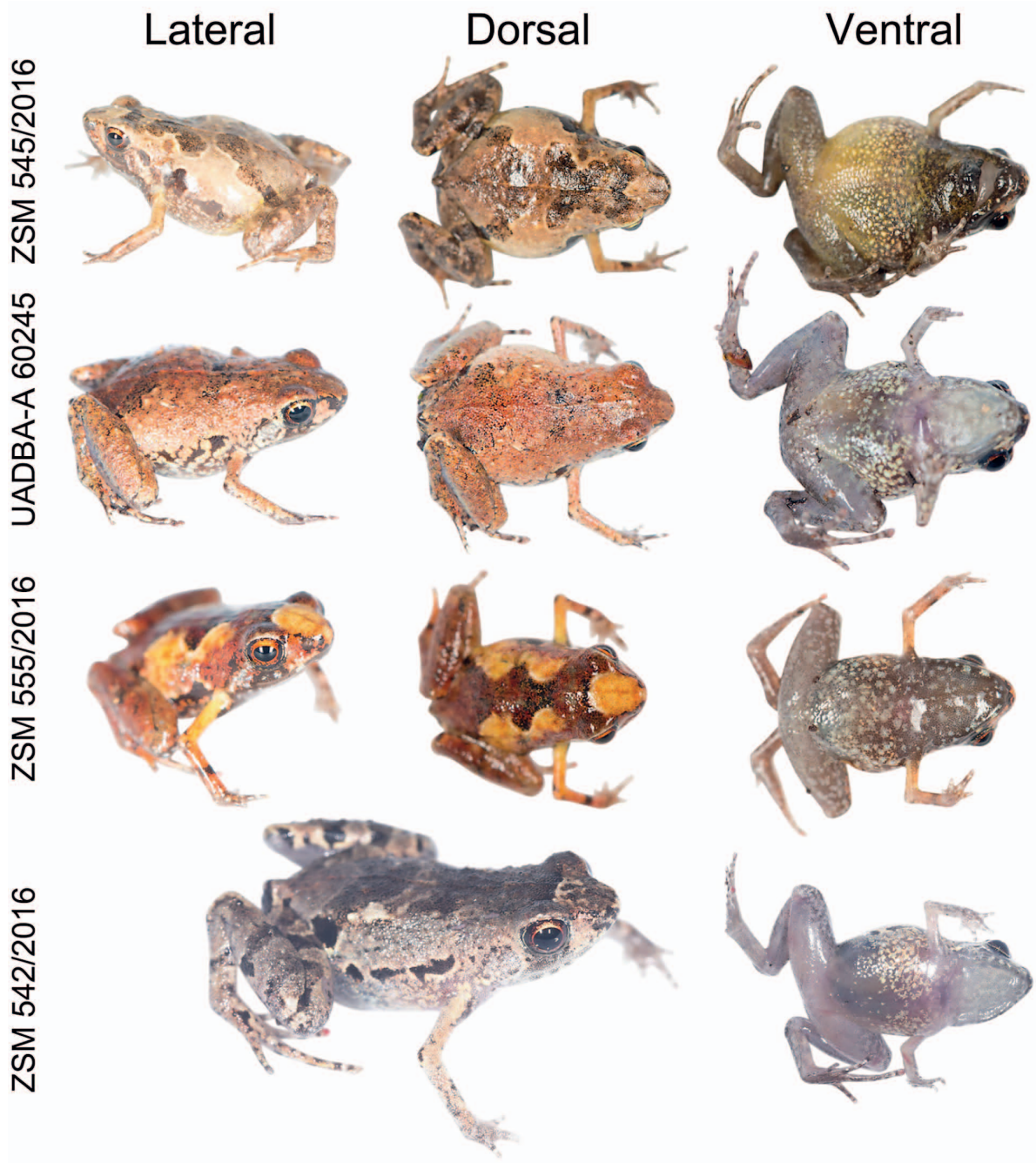
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Supplementary Figure S1. *Stumpffia cf. sorata* (ZSM 544/2016) adult male specimen from Marojejy.



Supplementary Figure S2. *Stumpffia cf. sorata* (ZSM 544/2016) adult male specimen from Marojejy, in life in (a) lateral, (b) ventral, and (c) dorsal view.



Supplementary Figure S3. Colour variation of *Stumpffia* cf. *sorata* on Marojejy. Photos not to scale. Note the juvenile coloration visible in ZSM 555/2016.