

Two new phanerogam species from the Nguru Mountains of
Tanzania, East Africa.

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Kraków
1991

Two new phanerogam species from the Nguru Mountains of Tanzania, East Africa

TAMÁS PÓCS

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ABSTRACT: *Cinnobotrys ranarum* Pócs (Melastomataceae) and *Streptocarpus burttianus* Pócs (Gesneriaceae) are described as new species from the upland rainforests of the Nguru Mountains in the Morogoro Region of Tanzania. These mountains are notorious for their richness in endemic and relic species, which are members of the Precambrian crystalline 'Eastern Arc' mountain chain of Tanzania. Additionally, a new nothospecies *Cinnobotrys oreophila* Gilg. x *C. ranarum* Pócs is distinguished.

KEY WORDS: Gesneriaceae, Melastomataceae, Nguru Mts., nothospecies, Tanzania

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The Nguru Mountains in the Morogoro Region are the part of the Precambrian crystalline 'Eastern Arc' of coastal Tanzania. These mountains are very rich in endemic species, similarly to the Usambaras, Ulugurus, Ukagurus, Usagurus or Uzungwe Mountains. In addition, the Nguru Mountains are the most undercollected area in comparison to the above mentioned mountains (Pócs *et al.* 1991). The central high plateau of the Ngurus was visited before our present activities only by J. Schlieben in the early 1930s and resulted in the discovery of many new endemics, such as *Aloë schliebenii*, *Streptocarpus bambuseti*, *S. schliebenii*, *Impatiens messumbaensis*, and others. Since early 1989 the author repeatedly visited this core area of the mountains accompanied by different colleagues and during this recent investigation they discovered, among other things, some new species of *Plagiochila*, *Impatiens*, *Pavetta* as well as a *Mystacidium* described by Cribb (1990) as *Mystacidium nguruense*. Two additional species are described in the present account.

Cinnobotrys ranarum Pócs. *spec. nov.* (Figs 1-9 & 16A)

Species a Cinnobotryde creophilo Gilg. foliis lanceolatis (non cordiformis), 5-nervis (non 7-9-nervis) superficiebus et marginibus dense setosis, calycibus longedentatis bene differt.

Rosulate plant with narrow rhizome. Leaves lanceolate with 5-11 cm long petiole, 4-9 x 2-3 cm lamina with acute apex and cuneate shoulder. 2-2 parallel veins are presented on each side of midrib, interconnected by parallel tertiary veins. The indumentum of the upper lamina surface consist of scattered short bristles and dense, setose, 1 mm long hairs giving the leaf pilose appearance. On

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Figs 1-5. *Cinnobotrys ranarum* Pócs, 6-9. *Cinnobotrys oreophila* Gilg. and 10. *Cinnobotrys oreophila* Gilg. x *C. ranarum* Pócs. 1, 4 & 6 - habit; 2 & 7 - magnified lower leaf surfaces; 3 & 8 magnified upper leaf surfaces; 5 & 9 - calyx (1-3 drawn from Pócs & Orbán 89171/B, holotype - BP; 4-5 from Pócs & Orbán 89170/A - BP; 6-8 from Pócs & Mwanjabe 6464/R, Uluguru Mts., Kilangala top near Bunduki, 1950 m - SUA; 10 from Mantelow et al. 89267, holotype - BP).

Figs 11-13
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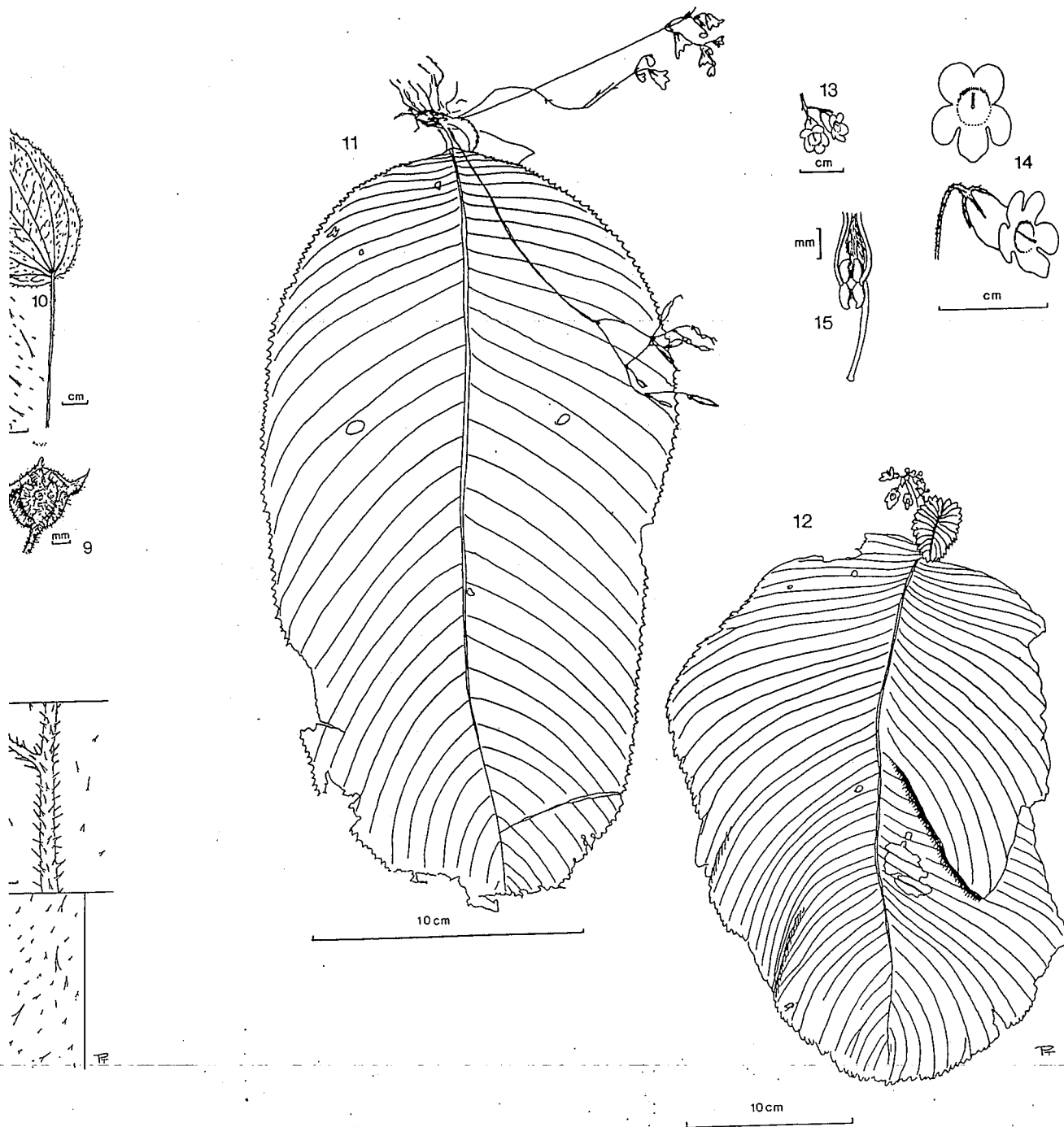
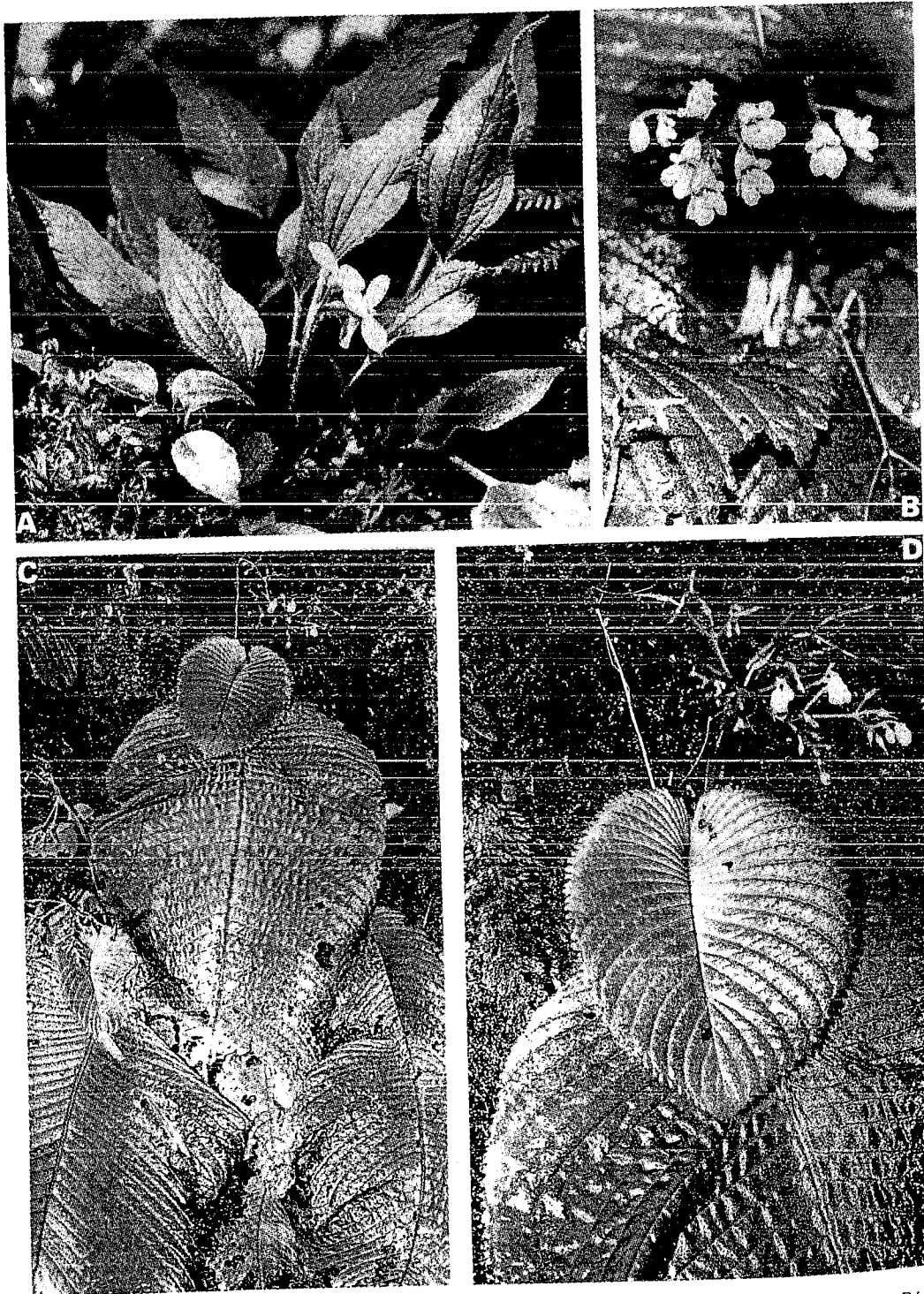


Fig. 10. *Cincinobotrys* faces; 3 & 8 magnified; 3 - BP; 4-5 from Pócs; 6-8 from Bunduki,

Figs 11-15. *Streptocarpus burtlianus* Pócs. 11-12 - habit; 13-14 - flowers in different position and magnifications; 15 - androecium and gynoecium. (11 & 13-15 drawn from Pócs, LaFarge-England & Magill 90057/A, holotype - BP; 12 & 14 from a photograph taken from the type locality).



Figs 16A-D. A - *Cincinnatiobotrys ranarum* Pócs in the type locality; B-D - *Streptocarpus burrtianus* Pócs from the type locality (photos by the author).

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the lower lamina surface most of the setae are restricted to the nerves. Leaf margin ciliate. Upper part of the petiole and inflorescence densely pubescent. Inflorescence cincinnate on 6–12 cm stalk, with one bract. Flowers of 2.5 cm in diameter, 4-mer, calyx teeth narrow triangular, lanceolate, up to 3 mm, densely setose. Petals 4, 10 x 7–8 mm, white or pale pink, tinged with lilac at their tip. Stamens 8, filaments 3–4 mm long, slightly bent and unequal, style purple, bent, 7–8 long.

TYPE: TANZANIA. MOROGORO REGION. Nguru Mts.: SE end of the Mafululmula ridge, 10 km NW of the village of Turiani; elev. 2150 m; on mossy ground in the mossy montane rainforest; 2 June 1989, Pócs & Orbán 89171/B (Holotype: BP; isotype: SUA).

PARATYPES: 1. TANZANIA. MOROGORO REGION. Nguru Mts.: 9 km NW of the village of Turiani, around the 'Spirit Lake' near the N. source of Chazi River; elev. 1900 m; on mossy ground just above the giat falls in the montane rainforest; 4 February 1989, Pócs 89054/A (BP, SUA); 2. TANZANIA. MOROGORO REGION. Nguru Mts.: N branch of Chazi Valley above the 'Spirit Lake'; elev. 2060 m; on mossy boulders; 2 June 1989, Pócs & Orbán 89170/A (BP, DSM, EGR, K, MO, SUA, UPS, VBI).

The new species well differs from the widespread East African montane *Cincinnobotrys oreophila* Gilg. by its lanceolate, 5-nerved leaves with densely setose upper surface and pubescent petiole and inflorescence and by its longer calyx teeth (compare Figs 1–5 with Figs 6–9).

The species is named after the giant, mansized frogs wearing trousers, which occur according to the local believe, in the 'Spirit Lake', near to the type locality of this very spectacular plant. The typical habitat of this species is the montane mossy forest (cloud forest) on the central plateau of the Nguru Mountains at an elevation of 1800–2200 m, where it thrives on the mossy ground or on wet, shady granite boulders.

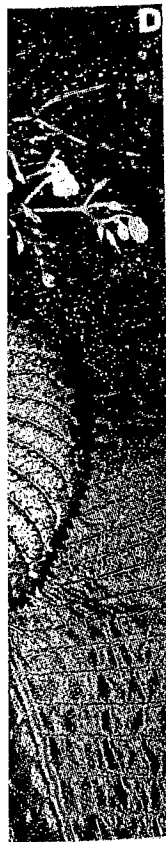
Cincinnobotrys oreophila Gilg. x *C. ranarum* Pócs, *nothospec. nov.* (Fig. 10)

Nothospecies inter parentes, foliis ovato-lanceolatis, 5-7-nervis, sparse setosis.

TYPE: TANZANIA. MOROGORO REGION. Nguru Mts., Dikurura Valley W of Mhonda Mission, elev. 1500 m; on gneissic cliffs near the rock shelter in montane rainforest; 5 April 1989, Mantelow, Minja, Björndalen, Farkas, Pócs & Temu 89267 (Holotype: BP; isotypes: SUA, UPS).

PARATYPE: same locality, elev. 1800 m; on shady rocks in mossy forests; 31 May 1989, Pócs & Orbán 89163/K (BP).

As *C. oreophilus* Gilg. is not rare, in the Nguru Mountains, the hybrid of the two species also occurs, in different stages of transitions. The hybrid is recognizable by the ovate-lanceolate leaves intermediate in shape between the parents, with 5 large and 2 faint veins and with an indumentum on its upper surface, in which the longer setae are less abundant. It is noticeable that the large populations of both species used to be clean and homogeneous and hybrids tend to occur near the lower altitudinal limit of the species.



is burrtianus Pócs

Streptocarpus (subg. *Streptocarpus*) *burttianus* Pócs, spec. nov.
(Figs 11-15 & 16B-D)

Planta bifoliata foliis floriferis 30-50 cm (rare 1 m) longis, 15-25 cm latis, nitidis, crenulatis, 30-50-costatis, subsericeis. Inflorescentia cymosa, floribus 7-10 mm longis, corollae tubus parum curvus late cylindricus, albus, 6-9 mm longus, 3-4 mm, cum lobis 6-7 mm latus, corollae lobi subrotundatae. Stylus 5-8 mm longus. Filamenta ad basem corollae adnata, 2-3 mm longa, incurvata. Fructus 12 mm longus.

Sessile perennial always with one senescent and one small, young leaf. The senescent, flowering leaves 15-25 cm broad, 30-50 cm, seldom 100 cm long, with 30-50 parallel side veins (costae), rarely with bifurcate ends, disappearing before reaching the crenate leaf margin (4-10 marginal teeth are present between two costae). Leaves almost sessile, by 0-10 mm long petiole attached to the short rhizome, very fragile, often injured or broken, especially near the distal end. Lamina surface shiny alive, silky in appearance, with scattered, appressed hairs. Inflorescence develops from the base of short petiole of the senescent leaf, cymose (dichasium), branches subtended by small (1-3 mm) bracts. Flowers white, zygomorphic campanulate, slightly bilabiate, 7-10 mm long. Calyx segments narrow linear, 3 x 0.6 mm long, silky setose. Corolla white, with yellow marks and some hairs in throat. Tube 3-4 mm wide, slightly bent and broadened just below the open, round mouth. Free petal lobes rounded, make the corolla 6-7 mm broad. Lower corolla lobe (palate) with blunt triangular apex. Style 5-8 mm long, with slightly broadened, truncate apex. Ovary densely hairy, lanceolate. Filaments originate from the inner corolla base, incurved, 2-3 mm long with opposite anthers fused at their center. 1-2 staminodes present. Fruit 12 mm long, with slightly twisted carpels.

TYPE: TANZANIA. MOROGORO REGION. Nguru Mts.: 5 km W of Mhonda Mission, Dikurura Valley, elev. 1500 m; on very shady gneiss cliff with dripping water below the rock shelter in montane rainforest; 7 March 1990, Pócs, *LaFarge-England* & *Magill 90057/A* (Holotype: BP; isotypes: K, SUA).

PARATYPES: 1. TANZANIA. MOROGORO REGION. Nguru Mts.: 9 km NW of the village of Turiani, in the N branch of Chazi Valley around the 'Spirit Lake' just above the giant falls; on shady gneiss cliffs in montane rainforest; elev. 1900 m, 4 February 1989, Pócs 89054/AB (BP); 2. TANZANIA. MOROGORO REGION. Nguru Mts.: Chazi Valley, elev. 1700 m; on shady gneiss cliff in montane rainforest; 31 May 1989, Pócs & Orbán 89163/L (BP, DSM, EGR, K, MO, SUA, UPS, VBI).

The new species seems to be quite isolated. From the related *S. kungwensis* Hilliard & Burt and from *S. galpinii* J. D. Hooker it differs by its so much smaller flowers and not monocarpic leaf development. The leaf development of *S. daviesii* seems to be very similar with one senescent and one small, young leaf, but the flower mouth of the latter species is compressed.

The gigantic leaves reaching sometimes 1 meter length are quite unique and very attractive, hanging down in large, shiny masses from shady cliffs in the montane rainforest belt of nguru Mountains. This new species is dedicated to the monographer of African Gesneriaceae, Dr. B. L. Burt.

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STRESZCZENIE

Góry Nguru, będące jednym z wielu prekambryjskich masywów krystalicznych we wschodniej Tanzanii, są wybitnym ośrodkiem endemizmu wśród roślin naczyniowych. Ponieważ są one bardzo słabo zbadane pod względem botanicznym, ich eksploracja przez profesjonalnych botaników stale przynosi odkrycia nowych dla nauki taksonów. W niniejszej pracy autor opisał dwa nowe gatunki roślin naczyniowych, które są endemiczne dla Gór Nguru, a mianowicie *Cincinnobotrys ranarum* Pócs z rodziny Melastomataceae (Ryc. 1-9 & 16A) oraz *Streptocarpus burttianum* Pócs z rodziny Gesneriaceae (Ryc. 11-15 & 16C-D). Ponadto opisano nowego mieszańca pomiędzy nowoopisanym *Cincinnobotrys ranarum* a *C. oreophila* Gilg. Okazuje się on być nierzadki w Górach Nguru.

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