

A new species of *Kalaharia* (Lamiaceae) from Central Africa

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Background – The controversial genus *Kalaharia* Baill., often placed in synonymy with *Clerodendrum* L., was known by just one species: *K. uncinata* (Schinz) Moldenke. A second species, *Kalaharia schaijesii*, confused with it for a long time, is described based mainly on field observations.

Methods – Classical methods of herbarium taxonomy have been applied.

Key results – The new species is clearly different from *Kalaharia uncinata* by his habit prostrate, not erect and bushy, the flowers yellow and subactinomorphic, not red to orange and distinctly zygomorphic, the calyx shorter and the stamens enclosed, not exerted.

Key words – *Kalaharia*, *Clerodendrum*, Lamiaceae, Verbenaceae, Tropical Central Africa.

INTRODUCTION

The genus *Kalaharia* was described by Baillon (1891), distinguished by its exerted stamens and red flowers. He cited no specimens. He designated the southern African *K. spinipes* as the type of the genus, without describing it. Since he stated the genus to comprise one or two species, one cannot consider his generic description as a generic-specific one also covering the type species. Fernandes (2006) was consequently correct in considering *K. spinipes* to be a nomen nudum.

Shortly earlier, Schinz (1890: 206) had described a similar plant (based on Schinz 456 from Namibia) as *Clerodendrum uncinatum*, which he characterized by hooked thorns on the stems. Moldenke (1955) transferred this species in *Kalaharia*, *K. uncinata* becoming the name for the type species of the genus. This was followed by Fernandes (2006). Some other authors have retained the species in *Clerodendrum* L. (inter alia Verdcourt 1992).

The genus *Clerodendrum* was re-evaluated on a phylogenetic basis by Steane et al. (1997) but unfortunately the subgenus *Kalaharia* and several sections of the genus were not included in this study. The genus *Cyclonema* Hochst., considered later as a section of *Clerodendrum*, was revived, as was the former genus *Rotheca* Raf. (Steane & Mabberley 1998). Herman & Retief (2002), without any justification, combined *Clerodendrum uncinatum* under *Rotheca*, whereas Verdcourt (1992) classified it in subgen. *Kalaharia* and not in subgen. *Cyclonema* (= *Rotheca*). Fernandes (2006) maintained the genus *Kalaharia* as separate from *Clerodendrum* and *Rotheca* in her key of Verbenaceae for Angola. Yuan et al. (2010) confirmed this in a molecular investigation comprising 40 samples of ‘*Clerodendrum*’ including *K. uncinata*.

I follow this and accept *Kalaharia* as segregate from *Clerodendrum*.

Some years ago, Michel Schaijes, deputy director of the GECAMINE in Kolwezi (D.R. Congo, Katanga) and collaborator of the National Botanic Garden of Belgium, informed me that two specimens collected by him in two different places, both identified as ‘*Clerodendrum uncinatum*’, did not match one another at all. A close examination of the photographs corresponding to these specimens (fig. 1) evidently showed that the two specimens, apparently belonging to the same genus, and characterised by the hooked thorns, represent two different species. A subsequent careful examination of all the material of *Kalaharia uncinata* deposited at BR surprisingly revealed that a large proportion of these specimens correspond to the Schaijes specimen collected on the Manika plateau. A group of specimens clearly matches the type of *K. uncinata* by their long calyx, zygomorphic, scarlet to orange-red corolla and long-exserted stamens. A second group, corresponding to Schaijes’ Manika collection, differs in being a geoxylic suffrutex or ‘geofrutex’ (White 1976) having smaller flowers with shorter calyces, yellow subactinomorphic corollas and shorter stamens. It obviously represents a new species. Gürcke (1893) distinguished this taxon at the varietal level by accepting the manuscript name *parviflora* of Schinz (a name alluding to the smaller flowers), but he published this variety without description so that it remained a nomen nudum.

The distinguishing features of the two species are not always easy to recognize on dried herbarium specimens especially when they are not noted on the collector labels. This probably explains why they were confused as only one species for such a long time.

I am happy to dedicate this new species to Michel Schaijes, shrewd field botanist and talented photographer, for his valuable contribution to the discovery of the new species. His field work has provided us with a much better knowledge of the region surrounding Kolwezi in the Katanga Province, notably in the Orchid family where Geerinck (1984, 1992) described eighteen new species based on Schaijes collections.

TAXONOMIC TREATMENT

Kalaharia schaijesii Bamps, sp. nov.

Kalahariae uncinatae (Schinz) Moldenke affinis atque cum illa longo tempore confusa sed habitu effuso repentique nec erecto, calyce brevior (5–6 versus 8–9 mm longo) corolla subactinomorpha nec manifeste zygomorpha flava nec rubra vel aurantiaca staminibus vix aequantibus corollae lobos nec exsertis valde differt. – Type: D.R. Congo, Katanga, Manika plateau, 5 km S of Kolwezi, alt. 1500 m, 29 Jun. 1985, Schaijes 2511 (holo-: BR).

Clerodendrum spinescens (Oliv.) Gürke (1893) p.p.; Baker (1900) p.p. usque ad *Hens 57 & Descamps*; Th. & H. Durand (1909) p.p. usque ad *Schlechter, Gillet & Hendrickx*.

Clerodendrum spinescens (Oliv.) Gürke var. *parviflorum* Schinz ex Gürke (1893) nom. nud.

Kalaharia uncinata (Schinz) Moldenke (1955) p.p.

Clerodendrum uncinatum auct. non Schinz; Cavaco (1959).

Kalaharia uncinata auct. non (Schinz) Moldenke; R. Fernandes (2006) p.p.

Geofrutex; stems creeping and spreading, forming a rosette around the base of the plant, puberulent, armed with supra-axillary hooked thorns. **Leaves** opposite or subopposite, becoming smaller towards the tip; petiole 2–10 mm long, puberulent; blade more or less broadly ovate to suborbicular, rounded to obtuse or cuneate at the base, obtuse to cuspidate at the apex, entire, 1–4 × 0.5–3.5 cm, puberulent on both surfaces and on the margins. **Flowers** solitary, supra-axillary, the short pedicel ending the peduncle (which resembles a thorn) 1–1.5(–2) cm long, with 2 linear bracteoles often early deciduous; calyx campanulate, 5–6 mm long, including the 5 triangular teeth 2 mm long; corolla subactinomorphic, yellow; tube narrow, 4–6 mm long; lobes slightly unequal, oblong to ovate, 5–12 × 3–5 mm, pilose outside and ciliate; stamens, no longer than the corolla lobes; anthers medifixed, 2.5 mm long; style exserted, up to 1 cm long, ended by 2 stigmatic branches. **Fruits** subglobose, up to 15 mm diameter, blackish. Fig. 1A & B.

Habitat and distribution – *Kalaharia schaijesii* occurs in savannas, periodically inundated cultivated fields, and in dis-

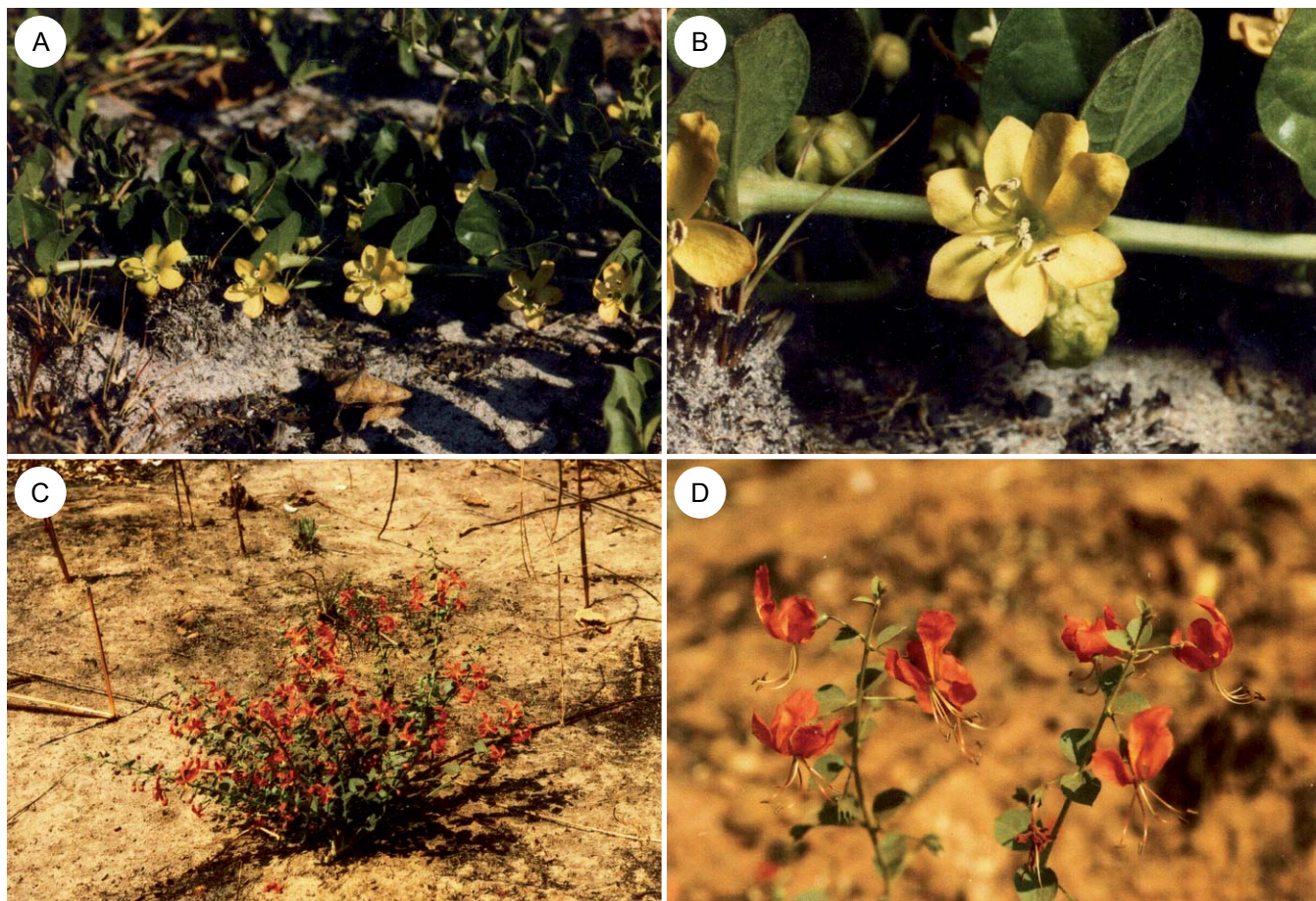


Figure 1 – Habit and flowers of the two species: A & B, *Kalaharia schaijesii* (from holotype Schaijes 2511, BR); C & D, *Kalaharia uncinata* (from specimen Schaijes 3586, BR). Photographs by M. Schaijes.

Key to the two species of *Kalaharia*

1. Erect bushy shrub or subshrub; calyx 8–9 mm long; corolla zygomorphic, scarlet to orange-red; stamens distinctly exceeding the corolla lobes *Kalaharia uncinata*
1. Prostrate and straggling geofrutex; calyx 5–6 mm long; corolla subactinomorphic, yellow; stamens not exceeding the corolla lobes *Kalaharia schaijesii*

turbed ground along roads, most probably on Kalahari sands (see map fig. 3 in White 1976). It is well distributed in the Democratic Republic of the Congo from the Congo River near Kinshasa and the Bateke plateau northwards as far as the Manika plateau, south of Kolwezi, in Katanga where it is parapatric with *K. uncinata* along the Lualaba River (fig. 2A). The species is also present in Angola and on the Bateke Plateau (R. Congo and southeast of Gabon).

Phenology – According to some collectors (Breynne, Carrington), the plant grows during the dry season and disappears when the rainy season starts.

Other specimens – **D.R. Congo** (all specimens in BR): Kinshasa, a. 1915, *Achten* 100; *ibid.*, 16 Sep. 1910, *Bequaert* 24; *ibid.*, 22 Mar. 1915, *Bequaert* 7140; *ibid.*, 24 Jun. 1979, *Breyne* 3652; *ibid.*, Jul. 1944, *Coûteaux* 1040; *ibid.*, 17 Jul. 1961, *Evrard* 6305; *ibid.*, 7 Jul. 1965, *Evrard* 6657; *ibid.*, 23 Jul. 1925, *Robyns* 288; Malebo Pool (= Stanley Pool), 18 Jul. 1882, *Hens* B.57; *ibid.*, Jun. 1899, *Schlechter* 12589; Kinshasa–Mbanza Ngungu, Jul. 1939, *Becquet* 979; Mt. Amba, 1 Jun. 1974, *Lawalrée* 18315; Mt. Ngafula, 19 Jul. 1996, *Pohl* 96/25; Ngaliema, 5 Sep. 1975, *Lisowski* 41637; Kimuenza, 17 Aug. 1958, *Carlier* 71; *ibid.*, Aug. 1965, *Carrington* 22; *ibid.*, 18 Jun. 1959, *Pauwels* 3358; *ibid.*, 19 Mar. 1971, *Tilquin* 182; Sabuka, 19 Nov. 1903, *E. & M. Laurent* s.n.; Kingankoto, 30 km S of Kinshasa, 2 Sep. 1984, *Lejoly* 84/781; Bateke plateau, Vue River, 9 Dec. 1982, *Lejoly* 82/792; Kisantu, a. 1900, *Gillet* s.n. & 691; *ibid.*, 15 Aug. 1935, *Louis* 63; *ibid.*, a. 1907, *Vanderyst* s.n.; *ibid.*, Aug. & Sep. 1908, *Vanderyst* s.n.; *ibid.*, Apr. 1930, *Vanderyst* 20400 &

24620; *ibid.*, Apr. 1932, *Vanderyst* 29002; *ibid.*, May 1932, *Vanderyst* 30002 & 30003; Boko, Apr. 1932, *Vanderyst* 29869 & 29885; Kikonka, Jul. & Aug. 1932, *Vanderyst* 32596, 33325 & 34042; Sonzo, Jul. 1932, *Vanderyst* 32606; Mayidi, Jul. 1932, *Vanderyst* 33167; Mpese, Sep. 1932, *Vanderyst* 34305; Kinsinga, Jul. 1932, *Vanderyst* 32667; Kinzala, Jan. 1955, *Callens* 4652; Mvuazi, 12 Sep. 1948, *Devred* 318; Lumene River, Jul. 1903, *Hendricks in Gillet* s.n.; N of Kaonga, 17 Mar. 1903, *Cabra & Michel* 11; Kabama, 25 Aug. 1959, *Pauwels* 4293; near Ilebo, Apr. 1978, *Dumont* 69; Mongobele, Sep. 1940, *Flamigni* 6041; Ibambu, 2 Aug. 1944, *Germain* 2586; Kwilu, Jul. 1906, *Sapin* s.n.; Ipamu–Kikwit, Jul. 1921, *Vanderyst* 9919; Kumbi, Nov. 1990, *Masens* 231; Ipeke, Aug. 1953, *Gilbert* 14581; Bena Dibebe, Jul. 1907, *Flamigni* 183A; Djuma valley, Jul. 1902, *Gentil* s.n.; near Lukuni, May 1953, *Callens* 4079; Panzi–Kisebula, Apr. 1955, *Devred* 1787; near Panzi, a. 1925, *Vanderyst* 17215; Bondo, Sep. 1907, *Sapin* s.n.; Kananga–Demba, km 25, Oct. 1977, *Mabika* 100; Kananga, a. 1913, *Sparano* 64, *ibid.*, s.d., *Vanderyst* 21071 & 24015; Bukonde (Hemptinne St. Benoît), May 1911, *Callewaert* s.n.; *ibid.*, s.d., *Vanderyst* 21434 & 23789; Tshimbulu–Bukonde, Jun. 1957, *Liben* 3114; Mombelaye (St. Trudon), s.d., *Casier* 137; *ibid.*, Aug. 1913, *Van Kerckhoven* s.n.; Katoko Kombe–Lodja, Sep. 1932, *Lebrun* 6189; Kabuanga, Jul. 1952, *Germain* 7958; near Luisa, Jul. 1955, *Risopoulos* 442; Kitenge, Jul. 1934, *Bequaert* 32; Tshibata–Bakwanga, Oct. 1956, *Liben* 1652; Molowaie–Mukamba, Nov. 1956, *Liben* 1910; Tshilungu (Mérode), July 1930, *Vanderyst* 22246; *ibid.*, s.d., *Vanderyst* 23089; Kaniama, May 1974, *Breyne* 1901; *ibid.*, Oct. 1980, *Focan* s.n.; *ibid.*, Aug. 1947, *Mullenders* 1034; Mutuy, Feb. 1931, *Quarré* 2456; Kongolo,

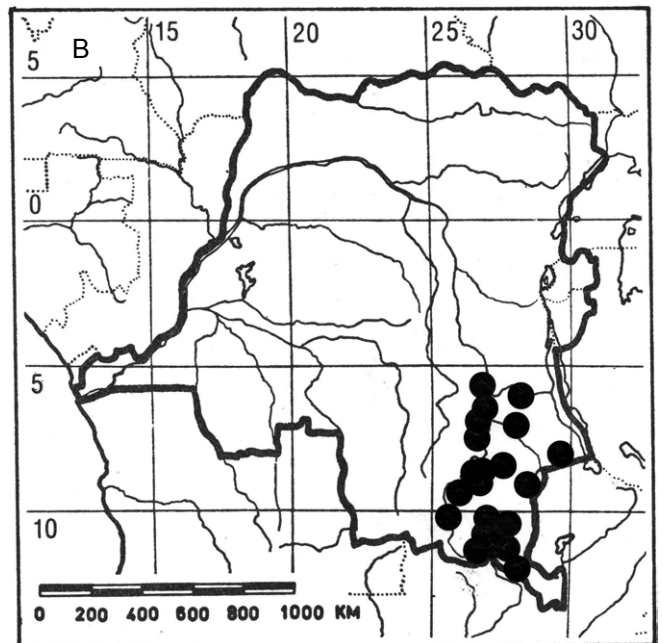
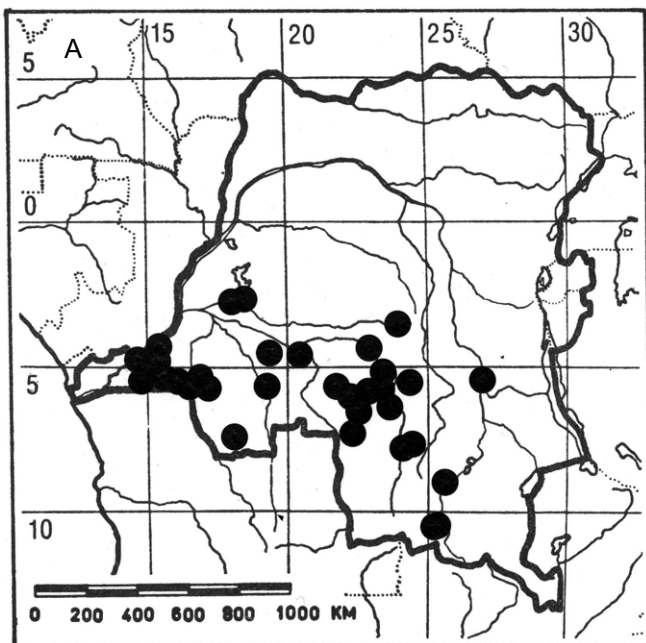


Figure 2 – Distribution of the two species in D.R. Congo: A, *Kalaharia schaijesii*; B, *Kalaharia uncinata*.

Jul. 1911, *Bequaert* 78; Luila Riv., Jun. 1891, *Descamps* s.n.; Manika plateau, 5 km S of Kolwezi, Aug. 1950, *Schmitz* 2943.

Angola (selection): Dundo, Sept. 1946, *Gossweiler* 13577 (BM); caminho de Cuemba, Sept. 1965, *Monteiro & Murta* 1717 (BR)

Republic of the Congo: Bateke plateau, road to Inoni, Jul. 1960, *Descouings* 6111 (MPU); Gambona-Ngo, Jun. 1961, *Descouings* 6906 (MPU)

Gabon: Bateke Plateau National Park, Mpassa Riv., *G. Walters* 1238, 1050 & 1921A (MO).

Kalaharia uncinata (Schinz) Moldenke

The general distribution of *K. uncinata* ranges from Tanzania (T4, 5) through Zambia, Malawi, Zimbabwe, Mozambique, Botswana until Namibia (Verdcourt 1992). Fig. 2B shows the distribution in the D.R. Congo.

D.R. Congo (all specimens in BR) – Somene, Sep. 1931, *Luxen* 58; Ankoru, Apr. 1937, *Borre* s.n.; Mutuy, Feb. 1931, *Quarré* 2456; *ibid.*, Jan 1953, *Thiebaud* 208; *ibid.*, May 1955, *Thiebaud* 561; *ibid.*, Jun. 1956, *Thiebaud* 604; *ibid.*, Sep. 1956, *Thiebaud* 609; *ibid.*, Jul. 1957, *Thiebaud* 653; *ibid.*, Aug. 1957, *Thiebaud* 699; Mabwe, Aug. 1947, *de Witte* 2847; *ibid.*, Jul. 1949, *de Witte* 6859; Kaswabilenga, Jun. 1948, *de Witte* 3990; Lukuga valley, near Muhuya, Jul. 1935, *De Saeger* 80; Kiambi, Apr. 1931, *de Witte* 253; Musosa, Jun. 1932, *Bredo* 3023; *ibid.*, a. 1940, *Bredo* 4105; Masombwe-Mukana, Sep. 1948, *Robyns* 3623; near Mitwaba, Sep.–Oct. 1945, *Mortelmans* 13; Kilwa, Jun. 1933, *Quarré* 3263; Ganza, Jun. 1949, *de Witte* 6933; near Luena, Jul. 1986, *Schaijes* 3022; near Bunkaya, Jul. 1948, *Hoffmann* 881; Pande, near Koni, Jun. 1911, *Hock* s.n.; Lukafu, Aug. 1899, *Verdick* 24; *ibid.*, Jun. 1900, *Verdick* 587; near Kapowole, May 1986, *Lisowski* 212; near Luisha, Oct. 1970, *Lisowski* 211; *ibid.*, Mar. 1986, *Lumbu* 7; Likasi-Kolwezi, Km 103, *Schmitz* 5755; NW of Luafi, Sep. 1958, *Streel* 268; Kyamasumba-Wakipinji, Lufufu Riv. Aug. 1987, *Schaijes* 3586; Lubumbashi (= Elisabethville), a. 1937, *Salésiens* 290 & 486; Katuba, Aug. 1934, *Quarré* 4217; Kisanga (= Keyberg), Nov. 1984, *Malaisse* 13384; *ibid.*, Dec. 1938, *Quarré* 5185; *ibid.*, Sep. 1947, *Schmitz* 916; Kisanga Valley, Aug. 1933, *Quarré* 3434; Tshinsenda, Oct. 1911, *Rogers* 10270.

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