

LILIACEAE

NEW SPECIES OF KNIPHOFIA

Names are required for three undescribed species of *Kniphofia* which are included in check-lists being compiled for the territories of Swaziland by Prof. R. H. Compton and of Basutoland by Mrs. A. Jacot Guillarmod, respectively. The three species are described here, together with a fourth species which was recently collected in the Mountain Zebra National Park, Cradock District, Cape Province.

***K. ritualis* Codd, sp. nov., *K. sarmentosae* (Ait.) Kunth affinis, sed foliis marginibus scabridulis, floribus longioribus differt.**

K. sarmentosa sensu Phillips in Ann. S. Afr. Mus. 16: 294 (1917).

Planta 40–80 cm alta. *Folia* carinata, glauca, 40–90 cm longa, 1.2–2.4 cm lata, margine conspicue serrulata. *Inflorescentia* densa, rhomboideo-cylindrica vel ovoidea, 9–14 cm longa, 4–5 cm lata, gemmis pendulis corallinis vel rubris, floribus maturis flavo-virentibus. *Bracteae* lineari-lanceolatae, acutae vel acuminatae, 10–12 mm longae, 2 mm latae, minute denticulatae. *Pedicelli* 1–2 mm longi. *Perianthium* subcylindricum, 2.5–3 cm longum. *Stamina* inclusa vel vix exserta. *Stylus* 3 mm exsertus. *Capsula* subglobosa, 7–8 mm longa. PLATE 2.

Type: Basutoland, Berea District, Bitsolebe area, alt. 6,500 ft, 22/1/1957, *Marais* 1327 (PRE, holo.).

Plants solitary or in small groups. *Leaves* in 3 or 4 ranks, 8–12 per peduncle, at first erect, later bending at the middle, soft in texture, glaucous, 40–90 cm long and 1.2–2.4 cm broad near the base, deeply keeled; margin conspicuously and regularly serrulate. *Peduncle* subequal or shorter than the leaves, 40–80 cm long. *Inflorescence* rhomboid-cylindrical to ovoid, dense, 9–14 cm long and 4–5 cm in diameter; buds and flowers pendulous; buds coral or salmon to orange-red, becoming greenish-yellow as the flowers open. *Bracts* lanceolate to linear-lanceolate, tapering to the acute or acuminate apex, 10–12 mm long and 2 mm broad; margin usually minutely denticulate. *Pedicels* 1–2 mm long at flowering stage, elongating to 5 mm in the fruiting stage. *Perianth* subcylindrical, 2.5–3 cm long, very slightly constricted above the ovary, 3 mm wide at the base, increasing gradually to 5 mm wide at the mouth; lobes ovate, rounded, 3–3.5 mm long, not spreading. *Stamens* 6, of two lengths; anthers not or scarcely exerted at anthesis, later withdrawn into the perianth tube. *Style* equal to the stamens at anthesis, later included or exerted by up to 3 mm. *Capsule* subglobose, not markedly triquetrous, 7–8 mm long.

Common in Basutoland and the adjoining areas of the eastern Orange Free State, mainly on sandstone formation, in shallow soil in rock crevices, in dry water courses and on grassy slopes, at altitudes of 5,500 to 9,000 ft. The flowering time is from January to March.

BASUTOLAND.—Mafeteng: Malealea, *Munro* s.n. (cultivated in Pretoria). Maseru: Thaba Bosigo, *Van der Merwe* 1156; Jordan Valley, *Guillarmod* 1671; Senqunyane Valley, *Guillarmod* 2256. Berea: below Molimo-Nthuse, *Marais* 1326; Bitsolebe area, grassy slope among shrubs, *Marais* 1327 (PRE, holo.); at foot of Pulane Mt., *Bruce* 360; Pulane area, *Bruce* 361; 362; near Mateka, *Bruce* 364; Thaba Chitja, *Bruce* 365; Mamathes, *Bruce* 390. *Leribe*: *Dieterlen* 174; 174a.

ORANGE FREE STATE.—Ficksburg: farm Wintershoek, near Kirklington, *Codd* 10540; 10541; farm Franschhoek, 20 miles N.E. of Ficksburg, *Codd* 10549. Fouriesburg: 23 miles N.E. of Ficksburg, *Bruce* 343; 12 miles S. of Clarens, *Bruce* 393; near Golden Gate, 11 miles E. of Clarens, *Codd* 10537. Senekal: *Goossens* 838. Thabanchu: Thabanchu Mt., *Roberts* s.n.

Phillips, l.c., misidentified this species as *K. sarmentosa* (Ait.) Kunth, a species largely restricted to the Roggeveld area of the Cape Province. He records the Sotho common names as "Lelolele or Lelole" and states that: "A decoction prepared from this species is drunk to cure pains in the shoulders. Women, during the times girls are undergoing initiation rites, make use of this plant for some purpose, but this being one of the sacred rites of the tribe, no further information could be obtained".

K. sarmentosa and *K. ritualis* are similar in having conspicuously long, narrow bracts. The latter species can, however, readily be distinguished by the markedly serrulate leaves and the longer perianth, 2.5–3 cm long, as against 2–2.5 cm long in *K. sarmentosa*.

K. ritualis also shows an affinity to *K. caulescens*, but there are several characters distinguishing them. *K. caulescens* is one of the few caulescent species in the genus and is gregarious, forming large groups. With its markedly glaucous leaves and attractive inflorescences grading from coral or red buds to lemon-coloured flowers, a group in flower is an impressive sight. The perianth (2.2–2.4 cm) is distinctly shorter than in *K. ritualis*, while the stamens are exerted by 8–13 mm at anthesis. It is interesting to note that the natives regard *K. caulescens* as a charm against lightning and frequently plant the species near their huts. Phillips, l.c., who misidentified this species as *K. tysonii* Bak., also records that the natives bathe themselves with a decoction from the plant in order to protect themselves against lightning.

***K. hirsuta* Codd, sp. nov., *K. ritualis* Codd affinis, sed foliis hirsutis differt.**

Planta 45–60 cm alta. *Folia* carinata, erecta, 40–60 cm longa, 1.5–2.5 cm lata, hirsuta, margine conspicue serrulata. *Inflorescentia* densa, rhomboideo-cylindrica vel ovoidea, 8–12 cm longa, 4–4.5 cm lata, gemmis pendulis corallinis vel rubris, floribus maturis flavo-virentibus. *Bracteae* lineari-lanceolatae, acuminatae, 10–14 mm longae, 2 mm latae, minute denticulatae vel integrae. *Pedicelli* 2–3 mm longi. *Perianthium* subcylindricum, 2.2–2.7 cm longum. *Stamina* inclusa vel vix exserta. *Stylus* 3 mm exsertus. *Capsula* subglobosa, 7–9 mm longa. PLATE 3.

Type: Basutoland, Berea District, Mamalapi, alt. 8,500 ft, 20/1/1957, *Guillarmod & Marais* 1307 (PRE, holo.).

Plants usually solitary. *Leaves* in 3 or, rarely, 4 ranks, 8–12 per peduncle, erect, soft in texture, dull green, 40–60 cm long and 1.5–2.5 cm broad near the base, deeply keeled, hirsute along the nerves on both surfaces; margin conspicuously and regularly serrulate. *Peduncle* equal to or longer than the leaves, 45–60 cm long. *Inflorescence* shortly rhomboid-cylindrical to ovoid, dense, 8–12 cm long and 4–4.5 cm in diameter; buds and flowers pendulous; buds orange or dull coral to salmon-pink tipped green, becoming dull greenish-yellow as the flowers open. *Bracts* linear-lanceolate, tapering to the acuminate apex, 10–14 mm long and 2 mm broad; margin minutely denticulate to entire. *Pedicels* 2–3 mm long at flowering stage, elongating to 4 mm in fruit. *Perianth* subcylindrical, 2.2–2.7 cm long, very slightly constricted above the ovary, 3.5 mm wide at the base, increasing gradually to 5 mm wide at the mouth; lobes ovate, rounded, 2.5 mm long, not spreading. *Stamens* 6, of two lengths, not or scarcely exerted at anthesis, later withdrawn into the perianth tube. *Style* equal to the stamens at anthesis, later exerted by up to 3 mm. *Capsule* subglobose, not markedly triquetrous, 7–9 mm long.

Found in the mountains of Basutoland on grassy slopes and stream banks, at altitudes of 8,000 to 9,000 ft. The flowering takes place in December and January.

BASUTOLAND.—Berea District, Mamalapi, in grassveld near rocks, alt. 8,500 ft, 20/1/1957, *Guillarmod & Marais* 1307 (PRE, holo.); *Guillarmod & Marais* 1308; Mamalapi, December 1948, *Compton* 21266.

K. hirsuta is closely allied to *K. ritualis*, having similar inflorescence, perianth and bract characters, but the former species is unique in the genus in having pubescent leaves. The only other species which approaches it in this respect is *K. stricta* Codd, which sometimes has a few scabrid hairs on the nerves. *K. hirsuta* was apparently discovered in December 1948 by Prof. R. H. Compton at Mamalapi at an altitude of about 8,500 ft. Since then, good flowering and fruiting material was collected at the same locality by Mrs. A. Jacot Guillarmod and Mr. W. Marais, who report that it tends to flower earlier than *K. ritualis* and to grow at higher altitudes (up to 9,000 ft), where it grows in mountain grassland, associated with *Danthonia-Erica-Cliffortia* scrub of rocky slopes or streams.

***K. umbrina* Codd, sp. nov., *K. typhoidi* Codd affinis, sed foliis conspicue carinatis, floribus et bracteis longioribus differt.**

Planta 70–90 cm alta. *Folia* carinata, erecta, apice reflexa, flaccida, 45–70 cm longa, 1–2 cm lata, margine carinaque levi. *Inflorescentia* densa, subcylindrica, 7–15 cm longa, 1.5–2 cm lata, gemmis patulis, floribus maturis primum patulis demum pendulis, umbrinis vix aromaticis. *Bractea* lineari-lanceolatae, acuminatae, 9–11 mm longae, 1.5 mm latae, integrae. *Pedicelli* 1.5 mm longi. *Perianthium* cylindricum, 8–9 mm longum. *Stamina* 2 mm exserta. *Stylus* 3 mm exsertus. *Capsula* ovoidea-triquetra, 5–6 mm longa. PLATE 4.

Type: Swaziland, 4 miles S. of Forbes Reef, 20/2/1951, *Bruce* 272 (PRE, holo.).

Plants usually in small groups. *Leaves* not distichous, 6–8 per peduncle, at first erect, later reflexed, mid-green, somewhat flaccid, 45–70 cm long and 1–2 cm broad, tapering towards a rather blunt apex, V-shaped in cross section, breaking up into a few persistent fibres at the base; margin and keel smooth. *Peduncle* overtopping the leaves, 70–90 cm tall. *Inflorescence* subcylindrical, tapering slightly towards the apex, dense, 7–15 cm long and 1.5–2 cm in diameter; buds spreading, flowers eventually pendulous; buds purplish-brown, flowers reddish-brown to dull red, slightly scented, drying blackish. *Bracts* linear-lanceolate, acuminate, 9–11 mm long and 1.5 mm broad; margin entire. *Pedicels* 0.5 mm long. *Perianth* cylindrical, not constricted above the ovary, 8–9 mm long, 1.5 mm wide at the base, increasing to 2.5 mm at the mouth; lobes ovate, 1 mm long, not spreading. *Stamens* 6, of two lengths, exerted by up to 2 mm at anthesis. *Style* exerted by 1–2 mm at anthesis and eventually by 3 mm. *Capsule* ovoid-triquetrous, 5–6 mm long.

Known from only a small area a few miles south of Forbes Reef in Swaziland, at an altitude of about 4,500 ft, where it grows in or near grassy vleis. The flowering time is February to early March.

SWAZILAND.—Four miles S. of Forbes Reef, 20/2/1951, *Bruce* 272 (PRE, holo.); 6/3/56, *Codd* 9521; 12 miles N. of Mbabane on Forbes Reef road, 19/2/51, *Reynolds* 5866; near Forbes Reef, 21/2/58, *Compton* 27552; 8/2/62, *Compton* 31290.

With its reddish-brown, slightly scented flowers, this species shows an obvious relationship to *K. typhoides* Codd (*Notosceptrum natalense* Bak.), but there are several clear distinguishing characters. The leaves are not distichous or glaucous, as in *K. typhoides*, and they are distinctly keeled. In addition, the perianth is longer (4.5–6.5 mm long in *K. typhoides*) and more pendulous, while the floral bracts are longer (4–6 mm long in *K. typhoides*) and are acuminate at the apex, not rounded as in *K. typhoides*.

In view of the restricted distribution of this species and the growing pressure of agricultural activity, it is desirable that adequate steps be taken to ensure that it is protected from eradication.

K. acraea Codd, sp. nov., *K. breviflorae* Bak. affinis, sed inflorescentiis densioribus, bracteis latis ovatis differt.

Planta 50–70 cm alta. *Folia* nervosa, carinata, 50–70 cm longa, 1–1.5 cm lata, margine minute denticulata. *Inflorescentia* densa, ovoidea vel subcylindrica, 6–12 cm longa, 2.2–2.5 cm lata, gemmis patulis viridi-luteis, floribus maturis primum patulis demum pendulis luteis. *Bracteae* latae ovatae, obtusae, 4–5 mm longae, 2–2.5 mm latae, minute eroso-denticulatae. *Pedicelli* 1.5–2 mm longi. *Perianthium* breviter cylindricum, 8–9 mm longum, 2 mm latum. *Stamina* 2–3 mm exserta. *Stylus* 3–4 mm exsertus. *Fructus* non visi. PLATE 5.

Type: Cape Province, Cradock District, National Mountain Zebra Park, on top of Bankberg, alt. about 6,000 ft, 6/3/1964, Liebenberg 7120 (PRE, holo.).

Plants in small groups. *Leaves* about 12 per peduncle, 50–70 cm long and 1–1.5 cm broad, folded along the midrib, nerves conspicuous; margin minutely and somewhat distantly denticulate, keel smooth. *Peduncle* subequal to the leaves, 50–60 cm long. *Inflorescence* dense, ovoid to subcylindrical, tapering to the apex in the young stage, 6–12 cm long and 2.2–2.5 cm in diameter; buds greenish-yellow, spreading; mature flowers yellow, at first spreading, later deflexed. *Bracts* broadly ovate, obtuse, 4–5 mm long and 2–2.5 mm broad, chartaceous, erect and overlapping the buds in the young stage, later reflexed; margin minutely erose-denticulate. *Pedicels* 1.5–2 mm long. *Perianth* shortly cylindrical, not constricted above the ovary, 8–9 mm long, about 2 mm wide at the base, widening slightly to 2.5–3 mm wide at the mouth; lobes broadly ovate to oblong, rounded to acute, 1.5–2 mm long. *Stamens* exserted by 2–3 mm at anthesis. *Style* equal to the stamens at anthesis, eventually exserted by 3–4 mm. *Fruit* not seen.

Known only from the above gathering, consisting of 3 specimens, collected on top of the Bankberg, in a seepage area among rocks. It is a very distinctive species, resembling *K. breviflora* Harv. ex Bak. in the length and colour of the flowers, but its real relationship is not clear.