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New taxa of *Aneilema* R. Br. (Commelinaceae) from southern and tropical East Africa

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ABSTRACT

Four new species of *Aneilema* are described: *A.* **indehiscens** Faden, with subsp. **indehiscens** (Kenya, Tanzania) and subsp. **lilacinum** Faden (Zimbabwe, Mozambique, South Africa); *A.* **arenicola** Faden (Mozambique, South Africa); *A.* **brunneospermum** Faden (Mozambique, Swaziland, South Africa); and *A.* **tanaense** Faden (Kenya). A new subspecies, *Aneilema dregeanum* Kunth subsp. **mossambicense** Faden (Mozambique), is also described, and *A. johnstonii* K. Schum. is lectotypified.

INTRODUCTION

A revision of the genus *Aneilema* for the *Flora of Southern Africa* has included a detailed study of a group of taxa which were only superficially examined during a previous investigation (Faden, 1975). The completed research has revealed the presence in southern Africa and adjacent floral regions of three undescribed species and a new subspecies, which are described below: *A. arenicola* Faden, *A. brunneospermum* Faden, *A. indehiscens* Faden (with two subspecies), and *A. dregeanum* Kunth subsp. *mossambicense* Faden. *Aneilema tanaense* Faden, from tropical East Africa, is also described because of the need to validate the name for a forthcoming publication. The problem of typifying *A. johnstonii* K. Schum. is discussed, and a lectotype is selected.

ANEILEMA DREGEANUM KUNTH AND *A. SCHLECHTERI* K. SCHUM.

Two related southern African species, *Aneilema dregeanum* Kunth and *A. schlechteri* K. Schum., were not clearly differentiated until Brenan (1961) studied them. They have continued to be confused with an unrelated but sympatric species that is described below as *A. indehiscens* Faden. In the discussion under *A. schlechteri,* Brenan (1961) noted that the Kew isotype (*Schlechter* 11748) differed from other specimens by having the cells of the outer capsule wall epidermis more or less isodiametric as opposed to longitudinally elongate. He considered that difference as probably due to the immature state of the capsules on the type, and he could find no reason to separate this collection taxonomically from the others. When I examined the specimens at Kew in 1974, I came to the same conclusion.

As part of my investigations on *Aneilema* for the *Flora of Southern Africa* I have examined a much greater number of specimens than have previous workers. I was also able to do field work in South Africa in 1974. These studies have shown that both *A. dregeanum* and *A. schlechteri* are taxonomically more complex than Brenan (1961) or I had realized. *Aneilema dregeanum* has been found to be separable into two subspecies: *A. dregeanum* subsp. *dregeanum* and *A. dregeanum* subsp. *mossambicense* which is described below. Studies of the holotype and nine additional isotypes of *A. schlechteri,* as well as two collections from Zimbabwe which agree with them, have revealed that (1) the shape of the cells of the capsule wall on *Schlechter* 11748 is not a function of the developmental stage of the capsules, and (2) these specimens exhibit further characters which do not fall within the range of the other collections that are usually treated as *A. schlechteri. Aneilema schlechteri* has proven to be a rare species which is known in southern Africa from only two collections (including the type). The much more common species lacks a specific name and is described below as *A. brunneospermum* Faden.

My field work in northern Natal yielded two collections of a plant that is clearly related to *A. schlechteri* and *A. brunneospermum* but differs from them in several significant characters. Several additional collections from the same region and from southern Mozambique were subsequently found among the specimens on loan from various institutions. This plant represents a distinct species which is described below as *A. arenicola* Faden.

The two subspecies of *A. dregeanum* and three species in the *A. schlechteri* group may be separated by the following key:

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Perennials; capsules oblong-elliptic to obovate-oblong or oblong, (3,5−)5−7,5 mm long, locules 2-seeded (sometimes 1-seeded by abortion):
- Maximum leaf width 16−45 mm; cincinnus peduncles 1−9,5(−13) mm long; bracteoles spaced 0,5−2(−3) mm apart; stamen filaments inconspicuously bearded with white hairs less than 0,3 mm long; seeds with testa foveate-scrobiculate, with hilum in a groove less than 1/3 the width of the seed ..... *A. dregeanum* subsp. *dregeanum*
- Maximum leaf width 8−22 mm; cincinnus peduncles (3−)4−15 mm long; bracteoles spaced (0,6−)1−5,6 mm apart; stamen filaments conspicuously bearded with yellow hairs more than 0,5 mm long; seeds with testa rugose to scrobiculate, with hilum in a groove 1/3−1/2 the width of the seed ..... *A. dregeanum* subsp. *mossambicense*

Annuals; capsules broadly elliptic to obovate or obovate-orbicular, 2,8−4,5(−5) mm long, locules 1-seeded:
- Pedicels 1,5−3 mm long, erect or only slightly further recurved in fruit; capsules transversely wrinkled at maturity, valves relatively planar, cells of the outer wall transversely elongate; seeds buff or light brownish orange ..... *A. arenicola*
- Pedicels 2−8 mm long, strongly recurved (120°−270°) in fruit; capsules not transversely wrinkled at maturity, valves strongly convexo-concave, cells of the outer wall longitudinally elongate or isodiametric; seeds dark brown or pale pinkish grey:
  - Inflorescences composed of (6−)10−20(−29) cincinni; pedicels puberulous for up to half their length; lateral stamen filaments (4,8−)5,5−9,5 mm long; cells of the outer capsule wall longitudinally elongate; seeds dark brown ..... *A. brunneospermum*
  - Inflorescenses composed of 3−13 cincinni; pedicels puberulous for more than half their length; lateral stamen filaments c. 3,2−4,5 mm long; cells of the outer capsule wall ± isodiametric to slightly longitudinally elongate; seeds pale pinkish grey ..... *A. schlechteri*

Aneilema dregeanum *Kunth*, Enum. Pl. 4: 73 (1843). Type: South Africa, Pondoland: between Umtata River and St Johns River, 1839, *Drège* 4471 (B, holo.!; B!, BM, FHO!, G!, K!, MO!, P!, S!, iso.).

(a) Aneilema dregeanum *Kunth* subsp. **dregeanum**

Subsp. *dregeanum* is endemic to South Africa, occurring in Natal and eastern Cape Provinces. It grows in moist or mesic situations, most commonly in forest, but also in bush, along streams and (rarely) in grassland, from about sea level to 940 m altitude, usually in partial or dense shade. Flowering specimens have been seen in all months except October, June and July, although the main flowering period is December to April. The flowers open in the morning and fade by 13h30.

In addition to the type collection, the following specimens have been seen:

CAPE.—3129 (Port St Johns): Insinuka near St Johns River mouth (−DA), *Bolus (in Bolus Herb.) 10348* (BOL; MO); Insinuka near Port St Johns (−DA), *Flanagan 2504* (BOL; PRE) & *Flanagan 2607* (PRE; Z); Port St Johns, west banks (−DA), *Galpin 3194* (BOL; PRE). Grid Reference Uncertain: 3 mi. inland of Umgazi River mouth, *Wells* 3493 (K; PRE).

NATAL.—2732 (Ubombo): Lake Sibayi (−BC), *Balsinhas 3191* (MO; PRE); Ubombo-Sordwana Bay road, 1 km before entrance to Sordwana Bay National Park and crossing of Ngobeseleni (Sordwana) River, c. 27°31'S, 32°40'E (−DA), *Faden & Faden 74/214* (BR; EA; K; MO; NH; NU; PRE; US; WAG). 2831 (Nkandla): Empangeni road, 8 mi. out from Eshowe, *Lawn* 184a (NH); Ntambanana Region, Mtunaini, *Venter* 807 (NH). 2832 (Mtubatuba): Bahene Forest, False Bay (−AB), *Oatley BA2* (PRE); Lower Umfolozi, S of Lake Umsingazi, near Richards Bay (−CC), *Oatley 13* (K; NH); Dukuduku Forest (−AD), *Strey 6990* (NH). 2930 (Pietermaritzburg): Umgeni Valley near Nagle Dam (−DA), *Cheadle 622* (PRE); Inanda Falls (−DA), *Dodds 132* (NU); Table Mtn, Pietermaritzburg (−DA), *Killick 246* (NU); Nagle Dam (−DA), *Wells 1051* (NU; PRE); Inanda, Umzinyati (=Inanda?) Falls (−DB), *Wood 1220* (BOL; NH). 2931 (Stanger): Mapumulo District, Oqaqeni (−AA), *Edwards 1838* (NU); Umhlanga Bush (−CA), *Huntley 63* (MO; NH; NU; PRE) & *Huntley 88* (MO; PRE); Hawaan Forest, S bank of Umhlanga River (−CA), *Ross & Moll 2302* (NH). 3030 (Port Shepstone): near Mehlomnyama (−CB), *Acocks 13312* (K; PRE); Elliott's Farm, Paddock, side ravine to Evongo (−CC), *Strey 7161* (K; NH; NU); Warner Beach (−BB), *Strey 9484* (EA; K; NH; NU; PRE), *Strey 9383* (=9484?) (SRGH) & *Strey 9928* (NH); Gibraltar (−CB), *Strey 9579* (K; NH; NU; S). Grid References Uncertain: Palmiet, *Evans* 540A (NH); Natal, without precise locality, *Gerrard s.n.*, July 1865 (K) & *Mrs Saunders s.n.*, June 1881 (K); Zululand, without precise locality, *Mrs McKenzie s.n.*, June 1882 (K) & *Wylie in Wood* 8772 (NH); Umhlovi Beach, *Graham* 13 (NU); Pietermaritzburg District, Oribi Aerodrome, *Moll* 2367 (NH); Umgeni, *Rehmann* 8571 (Z); near Umgeni, *Schlechter* 3072 (Z); Near Umkoruangi (Umkoruoruzi?) River, *Schlechter* 6711 (BOL; K; P; Z).

(b) Aneilema dregeanum *Kunth* subsp. **mossambicense** *Faden*, subsp. nov.

Ab subspecie *dregeano* laminis angustioribus et plerumque magis breviter petiolatis, inflorescentiis pedunculis cincinnorum longioribus [(3−)4−15 mm], bracteolis distantioribus [(0,6−)1−5,6 mm], floribus filamentis staminum lateralium pilis longioribus et luteis barbatis, seminibus testa rugosa ad scrobiculatam, hilo in sulco latior dispositis differt.

TYPE.—Mozambique, Nampula (Moçambique) District: Na estrada de Nampula para Corrane, a c. de 7 km de Nampula, 13 April 1961, *Balsinhas & Marrime in Balsinhas* 383 (PRE!, holo.; COI!, K!, LISC!, LMA!, SRGH!, iso.).

Subsp. *mossambicense* is known only from the northern half of Mozambique (c. 14°S−18°S latitudes). It is recorded from open deciduous forest and woodland from about sea level to 30 m altitude. Flowering specimens have been seen in October, November, January and March to May.

MOZAMBIQUE.—Ilha: De Memba a Nacala (Ke), *Torre* 1497 (COI; LISC). Nampula: Na estrada de Nampula para Corrane, a c. de 7 km de Nampula, *Balsinhas & Marrime in Balsinhas* 383 (COI; K; LISC; LMA; PRE; SRGH); Arredores de Nampula, próximo do acampamento do CICA, *Barbosa & Balsinhas* 5259 (LMA); 37 mi. W of Nampula, *Leach & Rutherford-Smith* 10980 (K; LISC; PRE; SRGH); Antonio Enes, Matangula (Makangula?) Praia area, *Moss* 32414 (LISC; SRGH); Nampula, *Pedro & Pedrógão* 3204 (EA; LMA). Zambézia: Entre Naburi e o rio Ligonha, a 11,8 km de Naburi, *Barbosa & Carvalho* 4327 (K; LMA); Moebede Road, Lugela, *Faulkner* 194 (BR; K) & *Faulkner* 194(2) (BR; COI; EA; K; S; SRGH); Quelimane, *Sim* 20618A (PRE) & *Sim* 20837 (PRE); Entre Mocuba e Ile (Errego), *Torre* 5016 (LISC).

Plants of subsp. *mossambicense* are different in aspect from those of subsp. *dregeanum* because of their narrower, commonly more coriaceous, and usually more shortly petiolate leaves, as well as their laxer-appearing inflorescences due to the longer cincinnus peduncles and more widely spaced bracteoles. The differences in stamen filament hair length and colour are quite striking, even in the dried specimens, in which they seem to have been preserved with unexpected frequency. It is probable that further floral characters will be found when living material of subsp. *mossambicense* can be obtained.

The cells of the outer capsule wall in both subspecies are transversely elongate. In subsp. *mossambicense* these cells are arranged in regular files; in subsp. *dregeanum* they are less well-ordered.

The seeds of the two taxa are quite distinct. Although there is almost complete overlap in seed size, the seeds of subsp. *dregeanum* (1,95–3 mm long) tend to be longer than those of subsp. *mossambicense* (1,9–2,3 mm long). They are also consistently darker in colour, and more deeply and finely pitted, with the hilum in a much narrower groove (less than $\frac{1}{3}$ the width of the seed vs $\frac{1}{3} - \frac{1}{2}$ the width of the seed) than the seeds of subsp. *mossambicense*. Furthermore, the seeds of subsp. *dregeanum* typically have the farinaceous material confined to the testa depressions, with the edges of the separate patches granular, whereas the seeds of subsp. *mossambicense* are commonly completely covered by matted farinaceous material which is not at all granular.

In view of the suite of differences between these two taxa, and in particular the consistent and significant dissimilarities in seed and stamen filament hair characters, treating these taxa as distinct species was considered. Because our knowledge of both taxa, especially the Mozambique plant, is incomplete, it was deemed best to describe them as subspecies at this time.

Brenan (1961) recorded the capsule locules of *A. dregeanum* as 2–3-seeded. I have been unable to find more than two seeds per locule in any of the specimens of either subspecies that I have examined.

Aneilema schlechteri K. Schum., *A. brunneospermum* Faden and *A. arenicola* Faden comprise a group of closely related species. They may be distinguished by the above key. Further contrasting characters are given in Table 1.

Aneilema schlechteri *K. Schum.* in Bot. Jb. 33: 376 (1903). Type: South Africa, Transvaal: Komati Poort, 15 December 1897, *Schlechter* 11748 (B!, holo.; BM!, BOL!, BR!, COI!, G!, K!, NSW!, PRE!, S!, Z!, iso.).

This species is confined to south-eastern Zimbabwe and eastern Transvaal. It is recorded from mopane woodland, *Acacia nigrescens* Community, and as a weed in irrigated sugarcane. It is noted as growing in basaltic soil or heavy, black turf. Flowering specimens have been seen in December and January, and a fruiting specimen in May.

In addition to the type collection, the following specimens have been seen:

ZIMBABWE.—Chiredzi: Hippo Valley Estates, Section 19, *Taylor* 234 (MO). Nuanetsi: between Chikombedzi and Chipinda Pools, *Drummond* 7845 (BR; K; SRGH).

TRANSVAAL—2431: Kruger National Park, S of Banguterritory (–BB), *Nel 5570* (PRE, only photocopy seen, capsule characters checked by A. A. Mauve).

Aneilema brunneospermum *Faden*, sp. nov.

Aneilema dregeanum Kunth var. *galpinii* C. B. Clarke in Thiselton-Dyer, F. C. 7: 13 (1897); Brenan in Kew Bull. 15: 216 (1961), pro syn. Type: Transvaal, Barberton (details of specific localities differ on all three specimens), 16 December 1890, *Galpin* 1187 (K!, holo.; NH!, PRE!).

Aneilema schlechteri sensu Brenan in Kew Bull. 15: 216 (1961).

Aneilema dregeanum sensu Compton, Fl. Swaziland, 83 (1976), non Kunth (1843).

Herbae annuae caespitosae. *Folia* laminis plerumque longe vel breviter petiolatis, lanceolatis ad lanceolato-ellipticas, ovato-ellipticas vel ovatas, 2,5–10(–14) cm longis (cum petiolo), (0,6–)1–3,5(–6) cm latis. *Inflorescentiae* thyrsi pro parte maxima terminales, ovoidei ad ellipsoideos parce densi ad parce laxos, (2–)2,5–6(–7,5) cm longi, (1,5–)2–4,5(–6) cm lati, cincinnis (6–)10–20(–29) pro parte maxima alternis ascendentibus compositi, bracteolis (0,8–)1–3(–3,5) mm distantibus. *Flores* perfecti et staminati, (9–)11–15 mm lati, pedicelis (2,2–)2,5–7(–8) mm longis, tempore fructigero recurvatis 120°–180°(–270°), supra medium puberulis. *Sepala* (2–)2,5–3,6(–4,3) mm longa, puberula, glandibus subapicalibus bilobatis. *Petala* postica lavandula vel pallide lilacina, 5,3–7,5(–9) mm longa, 3–7 mm lata, petalum anticum 2,5–3,5 mm longum. *Stamina* lateralia filamentis dense barbatis, 4,8–9,5 mm longis. *Stylus* 4,5–6 mm longus. *Capsulae* biloculares, obovatae, late obovatae vel obovato-orbiculares, (2,8–)3–4,5(–5) mm longae, (3,3–)3,8–4,5(–4,8) mm latae, loculis monospermatis, cellulis superficiei capsulae longistrorum elongatis. *Semina* plerumque elliptica, 2–2,5(–2,8) mm longa, 1,7–2,05 mm lata, 1,35–1,85 crassa, testa brunnea, foveolato-reticulata ad foveolato-scrobiculatam vel foleolato-rugosam.

TYPE.—South Africa, Natal, Zululand: 2732 (Ubombo): foothills of Lebombo Mountains, c. 5 km on road to Ndumu from the junction of the Ingwavuma–Ndumu and Ingwavuma-Ubombo roads, c. 27°07′S, 32°04′E, 18 February 1974 (–AA), *Faden, Faden & Pooley 74/209* (US, holo.; B, BR, K, MO, P, PRE, WAG, iso.).

Tufted annual to c. 60 cm tall (habit type IC of Faden, 1975). *Roots* thin, fibrous, produced only at the base and lower nodes. *Shoots* ascending. *Leaves* spirally arranged, sheaths (0,3–)0,5–1,5(–1,8) cm long, puberulous, ciliate at the apex; blades longly to shortly petiolate (rarely some sessile), lanceolate to lanceolate-elliptic, ovate-elliptic or ovate, 2,5–10(–14) cm long (including the petiole), (0,6–)1–3,5(–6) cm wide, apex acute to acuminate, base cuneate (to rounded), adaxial surface

usually scabrid (rarely not), puberulous, abaxial surface scabrid or not, puberulous. *Inflorescences* thyrses, terminal and sometimes axillary from the upper leaves, moderately dense to moderately lax, ovoid to ellipsoid, (2−)2,5−6(−7,5) cm long, (1,5−)2−4,5(−6) cm wide, with (6−)10−20(−29) alternate (or a few subopposite), ascending cincinni. *Penduncles* (1,5−)2,5−6(−10) cm long, puberulous with hook-hairs either uniform or of two sizes. *Cincinni* to 3,5 cm long and 13-flowered. *Cincinnus bracts* ovate to lanceolate, c. 1−3(−9) mm long, usually glabrous (rarely sparsely puberulous). *Cincinnus peduncles* ± uniform within the inflorescence or, more commonly, those of the middle cincinni the longest and those of the lowermost cincinni the shortest, 3−11(−14) mm long, green to purple, puberulous with hook-hairs of two sizes, *Bracteoles* spaced (0,8−)1−3(−3,5) mm apart, asymmetrically cup-shaped, usually perfoliate, (1−)1,3−2(−2,3) mm long, (usually prominently) glandular subapically (also margin occasionally glandular-thickened), glabrous or sparsely puberulous basally. *Flowers* perfect and staminate, very faintly scented, (9−)11−15 mm wide. *Pedicels*

TABLE 1.—Comparison of three related species of *Aneilema* from southern Africa

	A. brunneospermum	*A. schlechteri*	*A. arenicola*
Leaf sheaths	ciliate at apex	very sparsely ciliate or with hook-hairs only	ciliate (sometimes sparsely)
Lamina	longly to shortly petiolate (rarely some sessile)	sessile to shortly petiolate	shortly (rarely longly) petiolate to sessile
	2,5−10(−14) cm long	1,2−7 cm long	1,5−4,5(−6,5) cm long
	apex acute to acuminate	apex acute to obtuse	apex acute
	base cuneate (rarely rounded)	base cuneate to rounded	base broadly cuneate
	margins not or scarcely undulate, scabrid with prickle-hairs often mixed with few to many hook-hairs	margins usually undulate, scabrid with hook-hairs, with varying numbers of prickle-hairs apically	margins undulate, scabrid with hook-hairs (mixed with prickle-hairs apically)
Inflorescences	composed of (6−)10−20(−29) cincinni	composed of 3−13 cincinni	composed of (2−)5−13 cincinni
Bracteoles	spaced (0,8−)1−3(−3,5) mm apart	spaced (1−)1,5−4,5 mm apart	spaced 2−5,2 mm apart
Flowers	(9−)11−15 mm wide	?	6,5−8,5(−9,5) mm wide
Pedicels	(2,2−)2,5−5,5(−6,5) mm long in flower, 3−7(−8) mm long in fruit, recurved 120°−180°(−270°) in fruit, puberulous up to half their length	2−3,2 mm long in flower, 2−5,5 mm long in fruit, recurved 180°-270° in fruit, puberulous for more than half their length	1,5−2 mm long in flower, to 3 mm long in fruit, usually erect [recurved c. 70°−120°(−180°)] in fruit, puberulous for more than half their length
Paired petals	lavender or pale lilac, 5,3−7,5(−9) mm long	apparently white, c. 2,5−4 mm long	pale lilac, 3,5−5 mm long
Medial petal	2,5−3,9 mm long	c. 2,4−3,1 mm long	2−2,5(−2,8) mm long
Lateral stamens	filaments (4,8−)5,5−9,5 mm long, bearded for c. 1−2 mm, anthers 0,8−1,1 mm long, anther sacs blue-black	filaments c. 3,2−4,5 mm long, bearded for c. 1 mm, anthers c. 0,65−1 mm long, apparently pale yellow	filaments 2,5−3 mm long, bearded for 0,5−0,8 mm, anthers 0,5−0,75 mm long, anther sacs blue-black
Styles	(3−)4,5−9 mm long	3−4 mm long	1,5−2,3 mm long
Capsules	3−4,5(−5) mm long, (3,3−)3,8−4,5(−4,8) mm wide, tan or grey-tan to brown, valves not transversely wrinkled, strongly convexo-concave	3,5−4,5 mm long, (3,4−)4−5,1 mm wide, greenish tan to yellowish stramineous, valves not transversely wrinkled, strongly convexo-concave	2,8−4 mm long, 2,6−3,75 mm wide, tan to greenish tan, valves transversely wrinkled, relatively planar
Cells of capsule wall epidermis	longitudinally elongate	± isodiametric to slightly longitudinally elongate	transversely elongate
Seeds	2−2,5(−2,8) mm long, 1,7−2,05 mm wide, 1,35−1,85 mm thick, testa dark brown, hilum longer than the seed	2,75 mm long, 1,95−2 mm wide, 1,55 mm thick, testa pale pinkish grey, hilum ± equal to seed in length	2,2−3,1 mm long, 1,5−1,9 mm wide, 0,95−1,3 mm thick, testa buff or light brownish orange, hilum shorter than or subequal to the seed in length

(2,2−)2,5−5,5(−6,5) mm long in flower, 3−7(−8) mm long in fruit, ascending in flower, recurved either uniformly or just near the apex 120°−180°(−270°) in fruit, puberulous above the middle. *Sepals* convexo-concave, ovate, (2−)2,5−3,6(−4,3) mm long, green with violet margins, hooded apically, with subapical glands bilobed, sparsely puberulous (rarely glabrous) with uniform length hook-hairs. *Paired petals* 5,3−7,5(−9) mm long, 3−6 mm wide, limb ovate, 4−7 mm long, pale lilac to lavender (RHS colours: 87C−D, 87D), apex rounded to truncate, claw 1−2 mm long, white, glabrous. *Medial petal* elliptic to obovate, hooded apically, 2,5−3,9 mm long, 1,8−2,5 mm wide, white with a medial or subapical reddish purple spot. *Filaments* free. *Medial staminode* entirely yellow, c. 1−1,5 mm long, antherode bilobed, lobes sessile or subsessile, obovate to elliptic, connective elongate. *Lateral staminodes* with filaments 2−3 mm long, entirely yellow, antherodes bilobed, lobes stalked, obovate, 0,3−0,5 mm long, 0,3−0,75 mm wide. *Lateral stamens* with filaments dorsiventrally flattened, parallel or slightly divergent below the middle, strongly divergent above, 4,8−9,5 mm long, greenish yellow, sometimes shading to white apically, densely bearded for 1−2 mm above the middle with patent, white, uniseriate hairs c. 0,25−0,4 mm long, anthers facing the floral midplane and somewhat forward, ovate to ovate-elliptic, 0,8−1,2 mm long and c. 1 mm wide, anther sacs blue-black or violet-black, pollen dirty yellow. *Medial stamen* with filament 4−4,5 mm long, arcuate-decurved, greenish yellow, anther shield-shaped, ovate or broadly ovate, c. 0,9−1 mm long, 0,9−1,4 mm wide, connective broad, yellow, anther sacs orange-yellow, pollen orange-yellow to pale yellow (changing to white?), discolorous with lateral anther pollen. *Ovary* sessile, broadly elliptic, 0,75−1,1 mm long, 0,85−1,3 mm wide, green, densely covered with forward-pointing, colourless, glandular-capitate hairs except middorsally (where glabrous) and midventrally (where sometimes glabrous), apex rounded, dorsal locule suppressed, ventral locules each 1-ovulate; style (3−) 4,5−9 mm long, arcuate-decurved, then slightly recurved near apex, tapering apically, greenish yellow in basal half to three-quarters, contrastingly violet above, stigma small or slightly capitate, white. *Capsules* sessile to substipitate, broadly elliptic to obovate, broadly obovate or obovate-orbicular, dehiscent, bivalved, bilocular, (2,8−)3−4,5(−5) mm long, (3,3−)3,8−4,5(−4,8) mm wide, tan or grey-tan to brown (becoming stramineous with age), lustrous, sparsely puberulous, apex truncate to emarginate (rarely rounded), base cuneate to rounded, valves persistent, not wrinkled, strongly convexo-concave, dorsal locule suppressed, ventral locules 1-seeded, cells of the outer capsule wall longitudinally elongate. *Seeds* elliptic (to ovate-elliptic or reniform-elliptic), rounded to truncate at both ends, 2−2,5(−2,8) mm long, 1,7−2,05 mm wide, 1,35−1,85 mm thick, hilum dark brown, strongly raised but ± not in a groove, longly extended onto apical and basal surfaces, embryotega dark brown (concolorous with testa), testa dark brown (rarely warm brown), foveolate-reticulate to foveolate-scrobiculate or foveolate-rugose, sparsely white (and also sometimes dark brown) farinose in the depressions, the farinose material not easily detached. Fig. 1.

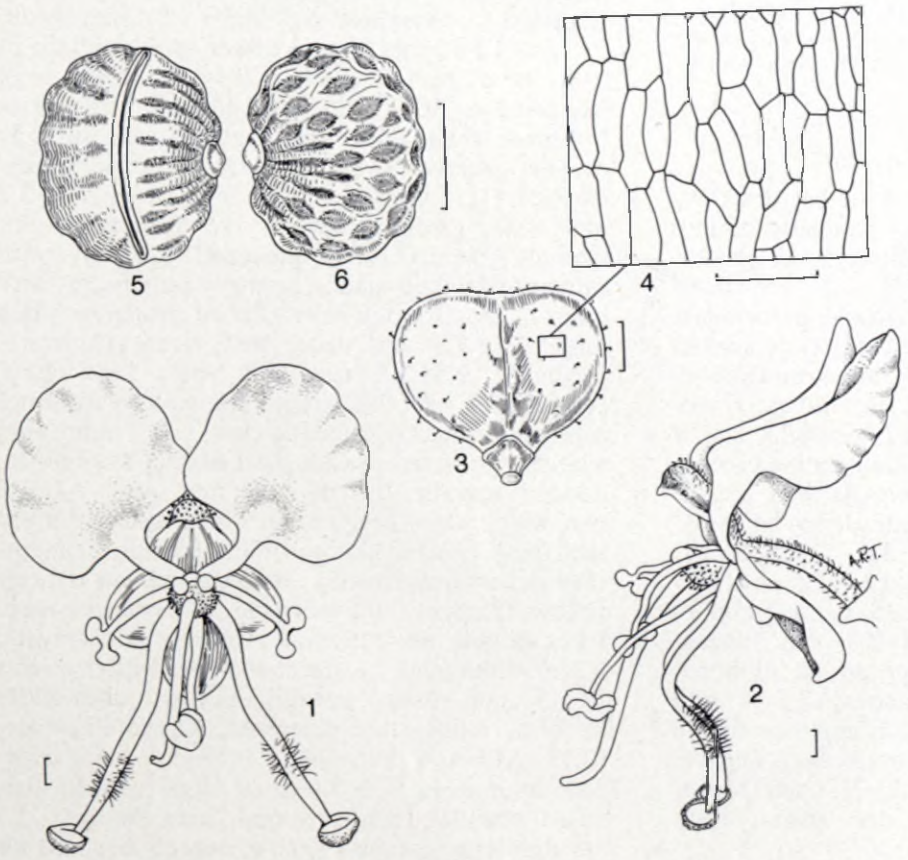

FIG. 1.—*Aneilema brunneospermum* Faden. 1, flower, front view; 2, flower, side view; 3, capsule; 4, cells of the capsule wall; 5, seed, ventral view; 6, seed, dorsal view. Bar = 1 mm except in Fig. 1.4 where bar = 0,1 mm. (From *Faden, Faden & Pooley* 74/209.)

Aneilema brunneospermum ranges from southern Mozambique to Swaziland and north-eastern South Africa (Natal and Transvaal). It occurs in scrub or forest (rarely grassland or poolsides), often in rocky places, and usually in partial shade, from 150 – 950 m altitude. Flowering specimens have been seen from October to February, April and May. The flowers open about sunrise and fade in the late morning.

MOZAMBIQUE.—Lourenço Marques: Namaacha, Goba, proximadades do fonte dos Libombos, *Balsinhas* 1250 (LMA); same locality, *Barbosa & Lemos in Barbosa* 8261 (COI; K; LISC; LMA; SRGH); Goba, *Exell, Mendonça & Wild* 556 (K; LISC; SRGH); Namaacha, *Gomes & Sousa* 420 (K; LMA); Namaacha, Goba, prox. da caseata, *Mendonça* 1672 (LISC); Namaacha, Goba, prox. do ponte, *Torre* 2057 (LISC).

SWAZILAND.—District uncertain: 2632 (Bela Vista): Farm Mlawula, south of Umbuluzi Poort, Rhino Pool (−AA), *Culverwell 0099* (PRE). Hhohho: Mdimba, *Kemp* 685 (MO). Piggs Peak: Komati Bridge, *Compton* 26824 (K; NH; PRE); same locality, *Compton* 30048 (K; PRE).

NATAL.—2732 (Ubombo): Lebombo Mountains, Pongolapoort lookout between Jozini Dam and Mkuke, c. 27°30′S, 32°00′E, *Faden & Faden 74/210* (K; MO; PRE); foothills of Lebombo Mountains, c. 5 km on road to Ndumu from junction of Ingwavuma-Ndumu and Ingwavuma-Ubombo roads, c. 27°07′S, 32°04′E (−AA), *Faden, Faden & Pooley 74/209* (B; BR; K; MO; P; PRE; US; WAG); Lebombo Mountains N of Josini (−AC), *Strey 8140* (K; NH; NU; PRE). Without Grid References: Hluhluwe Game Reserve, *Hitchins* 55 (PRE); Lebombo Mountains, *Strey* 4674 (K, NH); Mtunzini, Ngoya Mountain, *Venter* 1419 (NH); Babanango District near Old Gold Mine in valley, *Venter* 2935 (PRE); Hlabisa District, Hluhluwe Game Reserve, *Ward* 1928 (NH; NU); Mkuzi Game Reserve, west facing krantz above Mkuzi River, *Ward* 3982 (NU; PRE); Inanda, *Wood* 1220 (K); same locality, *Wood s.n.* (K); Near Nanoti River, *Wood s.n.* (MO).

TRANSVAAL.—Without Grid References: Barberton, *Galpin* 1187: valley near Edwin Bray Battery (K); Kaap River Valley (NH); Queens River Valley (PRE). Barberton, *Thorncroft* 9620 (PRE); same locality, *Thorncroft* 11310 (K); Krokodilbrug, Kruger-wildtuin, (Komatirivierpoort on PRE sheet), *Van der Schijff* 3992 (PRE; PUC); Malelane District, Tlalaberge, *Van der Schijff* 4205 (PRE).

Aneilema arenicola *Faden*, sp. nov.

Herbae annuae ramosissimae foliis distichis, plerumque sessilibus vel breviter petiolatis laminis lanceolato-ellipticis ad ovato-ellipticas vel ovatas, 1,5−4,5(−7) cm longis, 0,7−2(−2,7) cm latis. *Inflorescentiae* thyrsi terminales ovoidei parce densi ad parce laxos, 2−5 cm longi et lati, cincinnis (2−)5−13 pro parte maxima alternis ascendentibus compositi, bracteolis 2−5,2 mm distantibus. *Flores* perfecti, 6,5−8,5(−9,5) mm lati, pedicelis 1,5−3 mm longis, tempore fructigero plus minusve erectis. *Sepala* puberula (1,5−)2−3,5(−3,8) mm longa, valde cucullata, glandibus subapicalibus bilobatis. *Petala* postica pallide lilacina, 3,5−5 mm longa, 2,7−3,5 mm lata, petalum anticum 2−2,5(−2,8) mm longum. *Stamina* lateralia filamentis dense barbatis, 2,5−3 mm longis. *Stylus* 1,5−2,3 mm longus. *Capsulae* biloculares, late ellipticae ad elliptico-orbiculares vel obovato-orbiculares, 2,8−4 mm longae, 2,6−3,75 mm latae, loculis monospermatis, cellulis superficiei capsulae transverse anguste elongatis. *Semina* elliptica, 2,2−3,1 mm longa, 1,5−1,9 mm lata, 0,95−1,3 mm crassa, testa foveolato-reticulata.

TYPE.—South Africa, Natal, Zululand: 2732 (Ubombo): Ubombo-Sordwana Bay road, 2,6 km towards Sordwana Bay from Shongwe, 27°26′S, 32°24′E, 19 February 1974 (−AD), *Faden & Faden 74/211* (US, holo.; B, BR, EA, K, MO, NH, NU, P, PRE, UPS, WAG, iso.).

Densely branched annual to 30 cm tall (habit type IB of Faden, 1975). *Roots* thin, fibrous. *Shoots* ascending to decumbent, densely branched, rooting at the lower nodes. *Leaves* distichous (except on the primary shoot on which spirally arranged), sheaths 0,5−1 cm long, green, puberulous, sparsely ciliate at the apex, blades shortly (rarely longly) petiolate (lower leaves) to sessile (upper leaves), lanceolate-elliptic to ovate-elliptic or ovate, 1,5−4,5(−7) cm long (including the petiole), 0,7−2(−2,7) cm wide, apex acute, base broadly cuneate, adaxial surface dull, pale green, slightly scabrid, puberulous-hirsute, abaxial surface lustrous, puberulous. *Inflorescences* thyrses, terminal on the main and, ultimately, all lateral shoots, also sometimes axillary from the upper leaves, moderately lax to moderately dense, ovoid, 2−5 cm long and wide, with (2−)5−13 alternate (or a few subopposite), ascending cincinni. *Peduncles* 1,5−5 cm long, puberulous with hook-hairs of two sizes. *Cincinni* to 4,5 cm long and 9-flowered. *Cincinnus bracts* ovate to ovate-elliptic (or lanceolate), 1−3(−4,2) mm long, glabrous to sparsely puberulous. *Cincinnus peduncles* of increasing length from lower to upper cincinni, exceeding the cincinnus bracts (except occasionally the lowermost), 1,5−10 mm long, green, puberulous with hook-hairs of two sizes. *Bracteoles* spaced 2−5,2 mm apart, asymmetrically cup-shaped, usually perfoliate, 1,2−1,5(−2,2) mm long, prominently glandular subapically, glabrous or sparsely puberulous basally. *Flowers* all perfect (very rarely staminate), odourless, 6,5−8,5(−9,5) mm wide. *Pedicels* 1,5−2 mm long in flower, to 3 mm long in fruit, horizontal to erect in flower, usually erect (recurved c. 70°−120°(−180°)) in fruit, puberulous for more than half their length. *Sepals* strongly convexo-concave, ovate (to ovate-elliptic or oblong-elliptic), (1,5−)2−3,5(−4) mm long, (1,3−)1,5−2,2 mm wide, green except for the hyaline margin, strongly hooded and thickened apically, with subapical bilobed glands, sparsely puberulous with uniform length hook-hairs. *Paired petals* 3−5 mm long, 2,7−3,5 mm wide, limb ovate to ovate-orbicular, 2,5−3,5 mm long, pale lilac (RHS colours: 76C−D, 76D), apex rounded to truncate, sometimes slightly hooded, claw 1−1,5 mm long, whitish, glabrous. *Medial petal* elliptic to obovate, hooded apically, 2−2,5(−2,8) mm long, 1,4−1,8 mm wide, white or greenish white, usually tinged with pink. *Filaments* free or the stamen filaments very shortly fused basally. *Medial staminode* entirely yellow, filament c. 0,5 mm long, antherode bilobed, lobes sessile or subsessile, elliptic to obovate, 0,3−0,4 mm long. *Lateral staminodes* with filaments 1−1,5 mm long, entirely yellow, antherodes bilobed, lobes shortly stalked, obovate-cuneate, (0,15−)0,3−0,4 mm long, 0,25−0,5 mm wide. *Lateral stamens* with filaments dorsiventrally flattened, parallel, then converging near the apex, 2,5−3 mm long, greenish yellow, densely bearded for

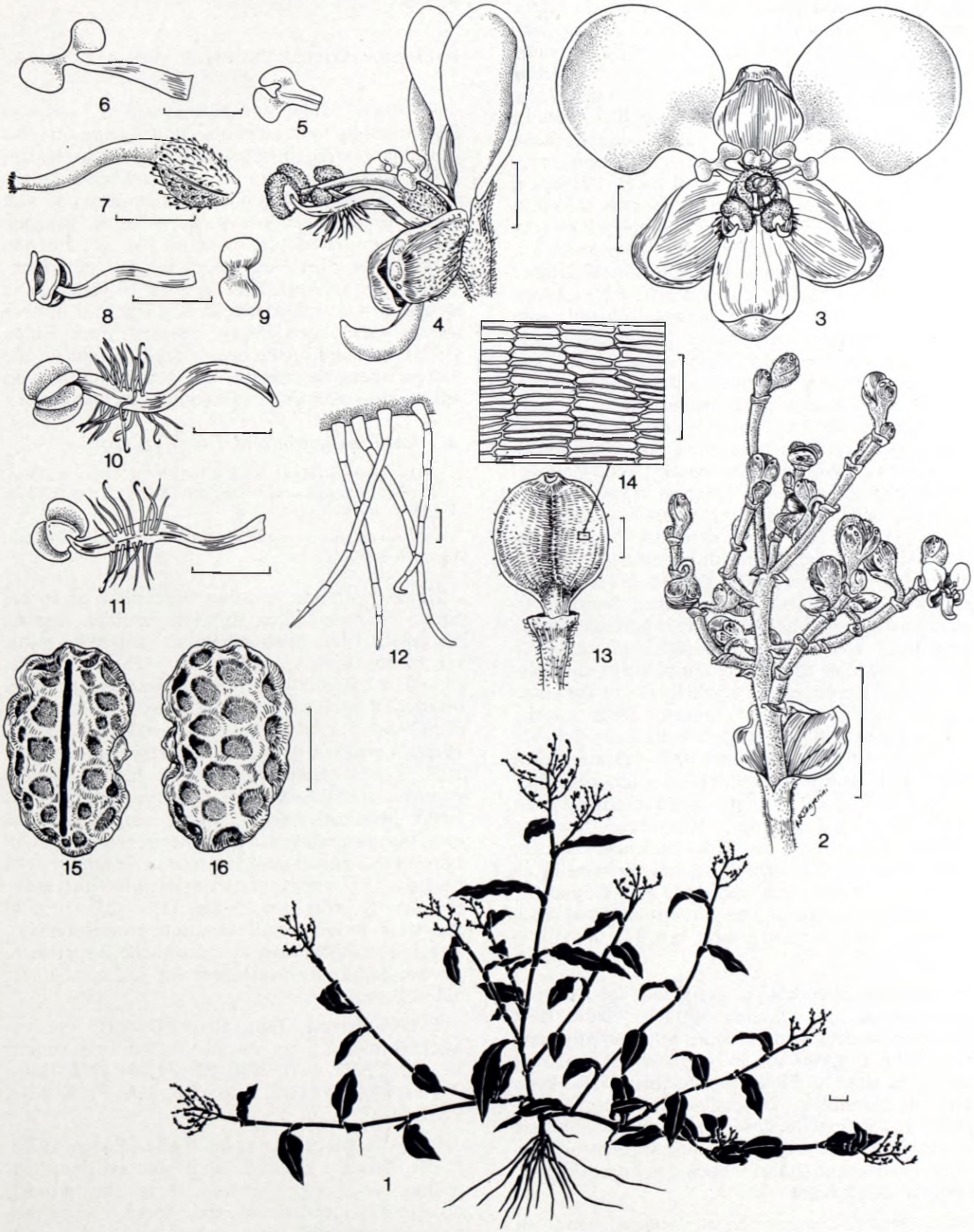

FIG. 2.—*Aneilema arenicola* Faden. 1, habit; 2, inflorescence; 3, flower, front view; 4, flower, side view; 5, medial staminode; 6, lateral staminode; 7, gynoecium; 8, medial stamen; 9, medial stamen anther; 10, lateral stamen, dorsal view; 11, lateral stamen, ventral view; 12, stamen filament hairs; 13, capsule; 14, cells of the capsule wall; 15, seed, ventral view; 16, seed, dorsal view. Bar = 1 mm in Figs. 2.3–2.11, 2.15 and 2.16; bar = 10 mm in Figs 2.1 and 2.2; bar = 0,1 mm in Figs 2.12 and 2.14. (Fig. 2.2 from *Faden & Faden* 74/211; all others from *Faden et al.* 74/204.).

0,5–0,8 mm above the middle (and broadened in this region) with patent, white, uniseriate (some terminally hooked) hairs (attached ventrally and laterally to the filament) to c. 0,5(–0,7) mm long, anthers facing the floral midplane and contacting one another, ovate-elliptic, 0,5–0,75 mm long, 0,3–0,8(–0,9) mm wide, anther sacs blue-black or blackish violet (sometimes pale), pollen yellow. *Medial stamen* with filament 1,6–2 mm long, undulate or straight, recurved near the apex, greenish yellow, anther ovate to obovate, 0,3–0,65 mm long, 0,4–0,9 mm wide, entirely yellow (the anther sacs somewhat brighter than the connective), pollen yellow (concolorous with lateral anther pollen). *Ovary* sessile, suborbicular, 0,8–1,1 mm long and wide, green, densely covered with forward-pointing, colourless, glandular-capitate hairs except midventrally (where sparsely hairy) and middorsally (where glabrous), apex rounded, dorsal locule suppressed, ventral locules each 1-ovulate; style 1,5–2,3 mm long, abruptly distinct from ovary, medial in flower, arcuate-decurved, tapering apically, green or greenish yellow basally, yellow above, stigma capitate, white or greenish yellow, making contact with the anthers. *Capsules* subsessile, broadly elliptic to elliptic-orbicular or obovate-orbicular, dehiscent, bivalved, bilocular, 2,8–4 mm long, 2,6–3,75 mm wide, tan to greenish tan, lustrous, sparsely puberulous, apex truncate to emarginate, base broadly cuneate to truncate, valves persistent, transversely wrinkled and relatively planar, spreading about 180°, dorsal locule suppressed, ventral locules each 1-seeded, cells of the outer capsule wall transversely elongate. *Seeds* elliptic, rounded to rounded-truncate at both ends, 2,2–3,1 mm long, 1,5–1,9 mm wide, 0,95–1,3 mm thick, hilum dark brown, straight, raised within a shallow groove, not at all to very slightly extended onto apical and basal surfaces, embryotega chocolate brown, testa buff to light brownish orange, foveolate-reticulate, densely farinose in some or all of the depressions and frequently also around the hilum and embryotega, the farinose material often coalescing and becoming sheet-like. Fig. 2.

Aneilema arenicola is restricted to southern Mozambique and extreme northern Natal. It is found on roadsides and hillsides with partially open woodland. It grows in sandy soil in full sun from 10–60 m altitude. Flowering specimens have been seen in November, December, and February to April. In the field the flowers were observed to fade at 10h00. In cultivation they open about two hours after sunrise and remain open for approximately two-and-a-half hours.

MOZAMBIQUE.—Lourenço Marques: Maputo, próximo da ponte do rio Fúti, *Correia & Marques* 776 (US; WAG); s. loc., *Borle* 364 (PRE). (A specimen with this collection number at G is *A. indehiscens* Faden subsp. *lilacinum* Faden.)

NATAL.—2632 (Bela Vista): Ndumu Game Reserve, 1 km E of main Rest Camp, 26°55′S, 32°19′E (–BD) *Faden et al. 74/204* (K; MO; NH; NU; PRE; US); Ndumu Hill, between camps Ukondo-Ndumu Game Reserve (–CC), *Pooley 1679* (MO; PRE). 2732 (Ubombo): 8 mi. E of Pongola River on road to Maputa (–AB), *Moll 4621* (EA; K; PRE); Ubombo-Sordwana Bay road, 2,6 km towards Sordwana Bay from Shongwe, 27°26′S, 32°24′E (–AD), *Faden & Faden 74/211* (B; BR; EA; K; MO; NH; NU; P; PRE; UPS; US; WAG); Mkuzi Game Reserve, near Bube hide (–CA or –CB), *Stewart 1698* (MO).

ANEILEMA INDEHISCENS FADEN AND *A. TANAENSE* FADEN

Aneilema indehiscens Faden and *A. tanaense* Faden belong to *Aneilema* section *Lamprodithyros* which is centred in tropical East Africa (Faden, 1975). One subspecies of *A. indehiscens* occurs within the Flora of Southern Africa area, so that species is described below. Seeds of *A. tanaense* have been used in a series of germination experiments that are soon to be published. Therefore, although that species is endemic to Kenya, it is described herein. The accounts of both species have been largely adapted from Faden (1975). Because of the urgent need to validate the names, these descriptions are being published in advance of a monograph of section *Lamprodithyros*.

Aneilema indehiscens *Faden*, sp. nov.

Aneilema petersii (Hassk.) C. B. Clarke in DC., Monogr. Phan. 3: 225 (1881), pro *Kirk* s.n.; in Thiselton-Dyer, Fl. Trop. Africa 8: 70 (1901), pro *Kirk* s.n.

Aneilema dregeanum sensu Compton, Fl. Swaziland, 33 (1966), p.p., non Kunth (1843).

Herbae perennes caulibus florentibus ad 60 cm altas. *Folia* spiraliter disposita laminis anguste lanceolatis, lanceolato-ellipticis, lanceolato-ovatis vel ovato-ellipticis, (2,5–)3–10(–13) cm longis, (0,7–)1–2,5(–3,5) cm latis. *Inflorescentiae* thyrsi ovoidei ad late ovoideos, (2–)2,5–5(–8) cm longi, (1,5)2–5(–7) cm lati, cincinnis (1–)3–9 compositi. *Pedicelli* tempore fructigero uniformiter recurvati c. 180°. *Petala* candida vel pallide lilacina, medio cupulato stamina lateralia raro retinenti anthesis initio. *Stamina* lateralia filimentis plerumque haud cruciatim dispositis. *Capsulae* dehiscentes vel indehiscentes, triloculares, castaneae, murinae vel pallide brunneae fuscobrunneis guttatae, (4–)4,5–6(–6,8) mm longae, (1,9–)2,3–3(–3,4) mm latae, loculo dorsali plerumque monospermato, loculis ventralibus uterque plerumque 2-spermato. *Semina* loculorum ventralium 1,5–2,2 mm longa, 1,3–1,8 mm lata.

TYPE.—Kenya, Tana River District: Garsen-Malindi road, 1,5 km towards Malindi from turnoff to Oda, 2°32′S, 40°07′30′E, 22–24 July 1974, *Faden & Faden 74/1184* (US, holo.; BR, EA, FI, K, MO, PRE, WAG, iso.).

Perennial herbs (habit type IIA3 of Faden, 1975). *Roots* fibrous. *Vegetative shoots* sparsely branched, trailing and often looping along the ground, occasionally rooting at the nodes, sometimes straggling through shrubs, to 3 m long (or longer?), flowering shoots produced irregularly, unbranched or sparsely branched, erect to ascending, to c. 60 cm tall (reaching a greater height when straggling through shrubs). *Leaves* spirally arranged, laminae shortly petiolate, gradually reduced towards the terminal inflorescence, narrowly lanceolate to lanceolate-elliptic, lanceolate-ovate or ovate-elliptic, rarely ovate, (2,5–)3–10(–13) cm long, (0,7–)1–2,5(–3,5) cm wide, both surfaces lustrous,

puberulous, veins pale on the adaxial surface. *Inflorescences* thyrses, terminal and frequently axillary from the upper leaves on the flowering shoots, lax to moderately dense, ovoid to broadly ovoid, (2–)2,5–5(–8) cm long, (1,5–)2–5(–7) cm wide, with (1–)3–9 cincinni, ascending (the lower sometimes patent), mostly alternate (frequently some subopposite, rarely some subverticillate). *Cincinni* up to 7,5 cm long and 27-flowered. *Bracteoles* spaced 1–3,5(–4,5) mm apart, ± herbaceous, eccentrically cup-shaped, usually perfoliate, 1,3–2,6 mm long, to 1 mm high, green, with a prominent subapical gland, puberulous at least basally or medially, frequently also with 1-several, long, uniseriate hairs on or near the fused edge, margin sometimes slightly thickened (glandular?) near the fused edge. *Flowers* perfect and staminate, odourless, (9–)13–17,5 mm wide. *Pedicels* 3,8–6(–8) mm long in flower, to 10 mm long in fruit, erect or ascending in flower, ± uniformly recurved in fruit, usually c. 180°, green, puberulous. *Sepals* glandular near the apex, puberulous; medial sepal 2,4–4,3(–4,9) mm long, subapical gland ± distinctly bilobed; lateral sepals 2,6–4,3(–4,6) mm long, subapical gland usually unlobed (rarely bilobed). *Paired petals* 7,3–9,5 mm long, 6–8,5 mm wide, limb broadly ovate to ovate-deltate, white or pale lilac (RHS colours; 76C, *Faden & Faden* 74/202; 84D, *Faden & Faden* 74/208), claw white or whitish. *Medial petal* cup-shaped, obovate (occasionally ovate or suborbicular), 6–8 mm long, 4–6(–7,5) mm wide, 3–5 mm deep, concolorous with the limbs of the paired petals. *Stamen filaments* fused basally. *Medial staminode* with filament (1,5–)2,7–4,6 mm long, antherode (rarely absent) bilobed, yellow, lobes sessile to shortly stipitate, obovate-cuneate to sickle-shaped and decurved. *Lateral staminodes* with filaments 4–5,6 mm long, antherodes bilobed, yellow, generally similar in size and form to that of the medial staminode. *Lateral stamens* with filaments usually ± parallel or slightly divergent for their entire length, or sometimes convergent apically, 7,7–8,5 mm long, gently S-shaped, anthers ovate to ovate-elliptic or occasionally elliptic to lanceolate-elliptic, 0,65–1,3 mm long, pollen yellow to orange or dirty white. *Medial stamen* with filament 5–7 mm long, anther ovate to ovate-elliptic, saddle-shaped, 1,5–2,4 mm long, pollen yellow to orange-yellow, concolorous with the pollen of the lateral anthers or different in colour. *Ovary* substipitate, densely and uniformly covered with patent, glandular hairs (very rarely mixed with a few hook-hairs), dorsal locule prominent, subequal to the ventral locules or distinctly smaller than them, 1–(or rarely 2–)ovulate, ventral locules each 2–(or very rarely 3–) ovulate; style 8–9,3 mm long, straight or gently arcuate-decurved for most of its length and strongly curved laterally out of the floral midplane, stigma capitate. *Capsules* subsessile to stipitate, obovate-elliptic to obovate-oblong, oblong or oblanceolate, dehiscent or indehiscent, when dehiscent, bivalved (occasionally partially trivalved), trilocular, (4–)4,5–6(–6,8) mm long, (1,9–)2,3–3(–3,4) mm wide, chestnut brown or mottled dark and light brown or grey-brown, lustrous, puberulous, apex emarginate, valves persistent, dorsal valve truncate to rounded apically or sometimes terminating in a narrow ridge and subequal to the ventral valve, dorsal locule prominent, 1-seeded or, by abortion, empty (very rarely 2-seeded), ventral locules each 2–(or, by abortion, 1–)seeded (very rarely 3-seeded); cells of the capsule wall transversely elongate. *Seeds* elliptic, 2–2,9 mm long, 1,35–1,65(–1,9) mm wide (dorsal locule seed) or ovate to trapezoidal, 1,5–2,2(–2,5) mm long, 1,3–1,8 mm wide (ventral locule seeds), 0,65–1 mm thick, testa usually orange-buff (rarely buff or orange-brown), very shallowly scrobiculate, with white farinose granules sparse to dense around the hilum, sparse around the embryotega and very sparse or lacking in the depressions.

Key to the subspecies

Petals white (rarely faintly tinged with pink); capsules often indehiscent, dorsal valve terminating in a narrow ridge ..... subsp. *indehiscens*

Petals pale lilac; capsules dehiscent, dorsal valve rounded to truncate apically, not terminating in a ridge..... subsp. *lilacinum*

(a) Aneilema indehiscens *Faden* subsp. **indehiscens**

The typical subspecies is confined to eastern Kenya and north-eastern Tanzania. It grows in bushland and thickets of varied species composition, in sandy or clayey soils, usually in partial shade, at c. 10 – 1 050(–1 250) m altitude. Flowering specimens have been seen in January, from March to May, July and October. In the field the flowers open 06h00–06h30(–c. 06h45) and fade 11h00–12h30.

KENYA.—Tana River: Garsen, 2°16′S, 40°07′E, *Faden & Faden 74/1066* (B; EA; FI; K; MO; P; PRE; UPS; US; WAG); 0,8 km towards Garsen from turnoff to Kibusu on Malindi-Garsen road, 2°21′S, 40°07′E, *Faden & Faden 74/1173* (BR; C; EA; K; LISC; MO; PRE); Garsen-Malindi road, 1,5 km towards Malindi from turnoff to Oda, 2°32′S, 40°07′30″E, *Faden & Faden 74/1184* (BR; EA; FI; K; MO; PRE; US; WAG). Taita: Maungu Hills, 3°38′S, 38°44′E, *Faden, Evans & Githui 70/158* (EA; K); Mile Post Taveta 36/Voi 36 on Taveta-Voi road, c. 3°25′S, 38°10′E, *Faden Evans & Siggins 69/318* (EA; FI; K; MO); Tsavo National Park East, Buchuma (Bachuma) Gate, 3°40′S, 38°56′E, *Faden & Faden 72/72* (EA; cultivated Missouri Botanical Garden: BR; EA; K; MO; PRE); 28 km towards Taveta on Voi-Taveta road from turnoff on Nairobi-Mombasa road, 3°30′S, 38°19′E, *Faden & Faden 74/489* (BR; EA; FI; K; MO); 18 km towards Taveta on Voi-Taveta road from turnoff on Nairobi-Mombasa road, c. 3°30′S, 38°24′E, *Faden & Faden 74/532* (EA; MO); 26 km towards Taveta on Voi-Taveta road from Nairobi-Mombasa road turnoff, c. 3°31′S, 38°21′E, *Faden & Faden 74/536* (EA; K; MO); 11,7 km towards Mombasa past Maungu Station on Nairobi-Mombasa road, 3°37′S, 38°50′E, *Faden & Faden 74/1284* (MO); 3 km E of Bura Railway Station, *Gillett 19562* (EA; K; MO); Voi, *Napier 973* (EA; K).

TANZANIA.—Bagamoyo: 4,5 km towards Mbwewe from crossing of Milgoji River on Korogwe-Dar es Salaam road, c. 5°57′S, 38°12′E, *Faden & Faden 74/380* (MO; cultivated Missouri Botanical Garden: DSM; EA; K; MO); Mbwewe, *Faulkner* 4471 (K). Lushoto: Mazinde, *Drummond & Hemsley* 2337 (K). Tanga: Magunga Estate, *Faulkner* 1160 (K).

ZANZIBAR.—Chumbuni, *Vaughan* 1851 (EA; K).

(b) Aneilema indehiscens *Faden* subsp. **lilacinum** *Faden*, subsp. nov.

Ab subsp. *indehiscenti* petalis pallide lilacinis, capsulis semper dehiscentibus valva dorsali apice rotundata vel truncata non crista terminata differt.

TYPE.—South Africa, Natal: Ingwavuma-Ndumu road, 15,5 km towards Ingwavuma from junction with Ndumu-Maputa road, c. 27°06'S, 32°12'E, 16 February 1974, *Faden & Faden 74/202* (US, holo.; BR, EA, K, LISC, MO, NH, NU, PRE, WAG, iso.).

Subsp. *lilacinum* occurs from southern Zimbabwe and southern Mozambique to northern Transvaal, Swaziland and northern Natal. It grows in open forest, woodland, thickets, lowveld bush and edges of marshes, in sandy or clayey soils, usually in partial shade, at c. 10–550 m altitude. Flowering specimens have been seen in all months except August. The flowers open about sunrise and begin to fade after four to six hours.

ZIMBABWE.—District unknown: Bank of Lundi River, *Bayliss* BS7216 (MO).

MOZAMBIQUE.—Gaza: Vila de João Belo, Chipenhe, *Barbosa & Lemos* 8431 (COI; K; LISC; LMA; PRE). Inhambane: Benguérua Isle, central ridge, *Mogg* 28886 (SRGH). Lourenço Marques: Costa do Sol, *Barbosa* 655 (LISC); Without precise locality, *Borle* 364 (G); Near Lourenço Marques town (Costa do Sol), *Gomes & Sousa* 3441 (BR; K-2 sheets); Maputo, Sep 1930, *Gomes & Sousa s.n.* (LISC); Ricatla, Acajou wood, *Junod* 493 (LISC; PRE-2 sheets); Inhaca Island, 23 mi. E of Lourenço Marques, *Mogg* 27469 (K); Inhaca, Picada Estação-Hotel, *Moura et al.* 399 (US); Costa do Sol, *Pedro* 109 (LMA); Matolla, *Quintas* 64 (COI-2 sheets). Manica e Sofala: Mouth of River Melambe, Zambesi Delta, 8 Jul 1861, *Kirk s.n.* (K).

SWAZILAND.—Hlatikulu: Ingwavuma Poort, *Compton* 28610 (K; PRE).

TRANSVAAL.—2230 (Messina): 18 mi. NE of Sibasa on road to Sambandou, *Codd* 6891 (K; PRE); 2431 (Acornhoek): Manyeleti Game Reserve, Albatross koppie, (–CB), *Bredenkamp 1795* (PRE).

NATAL.—2632 (Bela Vista): Ndumu Game Reserve, near main Rest Camp, c. 26°55'S, 32°19'E (–CD), *Faden & Faden 74/208* (K; MO; NH; NU; PRE); Grid reference only (–CD), *Moll 4152* (EA; K; NH; NU; PRE); Ndumu Game Reserve, Ndumu Hill (–CD), *Oatley C6* (PRE); Ndumu Game Reserve, E of Polwe Pan (–CD), *Pooley 1399* (NU). 2732 (Ubombo): Ingwavuma-Ndumu road, 15,5 km towards Ingwavuma from junction with Ndumu-Maputa road, c. 27°06'S, 32°12'E (–AA), *Faden & Faden 74/202* (BR; EA; K; LISC; MO; NH; NU; PRE; US; WAG); Ubombo Flats (–AB), *Strey 10326* (EA; K; NH; NU; PRE); Lake Sibayi (–BC/D), *Vahrmeijer 693* (PRE); Mahatini Flats, *Vahrmeijer & Tölken* 192 (PRE). 2831 (Nkandla): Eshowe, above reservoir (–CD), *Lawn 1289* (NH).

Aneilema indehiscens is most closely related to *A. petersii* (Hassk.) C. B. Clarke with which subsp. *indehiscens* is sympatric. Although quite distinct in the field, dried specimens lacking capsules may be difficult or impossible to determine. Such specimens can sometimes be distinguished from *A. petersii* by the form of the antherodes and bracteoles.

In the field or with more complete specimens or detailed collector's notes, *A. indehiscens* is readily distinguishable from *A. petersii* on the basis of its vegetative shoots long-trailing, antherode lobes often falcate, connectives usually slightly elongate, lateral stamen filaments usually not crossing, capsules narrow, often indehiscent, and dorsal and ventral locule seed dimorphism only slight. *Aneilema indehiscens* is consistently tetraploid and *A. petersii* regularly diploid (Faden, 1975, 1983).

Although the two subspecies are separated geographically by almost 1 500 km, few characters distinguish them unequivocally. These are given in the key above. However, other tendencies are shown by the subspecies which are sometimes useful diagnostically. Subsp. *indehiscens* usually has fewer uniseriate hairs on the bracteoles. It also tends to have shorter fruiting pedicels [4,5–6,5(–8) mm] than subsp. *lilacinum* [(5–)6–10 mm]. The shape of the antherodes apparently will also separate all or nearly all of the specimens, although further living material is required to determine the extent of the variation in subsp. *lilacinum*. In subsp. *lilacinum* the anther sacs and/or sutures of all three anthers are blue-black, while in subsp. *indehiscens* those of the lateral anthers are entirely or partly yellow and those of the medial anther are wholly yellow or orange-yellow. In subsp. *indehiscens* mature capsules are usually chestnut brown; in subsp. *lilacinum* they are grey-brown or mottled light and dark brown.

In southern Africa *A. indehiscens* subsp. *lilacinum* has been overlooked or confused with the unrelated *A. dregeanum* or *A. brunneospermum*. The Swaziland collection of *A. indehiscens* listed in the above exsiccatae is cited by Compton (1976) as *A. dregeanum*, a species which probably does not occur in that country. (Compton has also included *A. brunneospermum* in his *A. dregeanum*.) Similarly, Ross (1972) omits any reference to *A. petersii* or a related species in Natal, although *A. indehiscens* is quite frequent in the northern part of that province. He, too, may have included this species in *A. dregeanum* or *A. brunneospermum*.

Aneilema tanaense *Faden*, sp. nov.

Aneilema clarkei Rendle, J. Linn. Soc., Bot. 30, Pl. 34, Fig. 8 tantum, Fig. 7 & 9–12 et descr. excl. (1895).

Aneilema calceolus Brenan, Kew Bull. 15: 223 (1961), pro *Gregory s.n.*

Herbae annuae. *Inflorescentiae* grandiores thyrsi 1–2(–3) cm longi, 1,5–3(–5) cm lati, cincinnis ad 8 compositi; inflorescentiae parviores cincinnis uno ad aliquot fasciculatis compositae. *Cincinni* ad 2,2 cm longos, bracteolis 1–2(–2,5) mm distantibus. *Pedicelli* (4–)5,5–10(–11) mm longi, tempore fructigero uniformiter recurvati 180°–270°(–360°). *Petalum medium* calceolatum. *Staminodium medium* nullum vel vestigiale. *Capsulae* (2,4–)2,7–3(–3,4) mm longae, (1,1–)1,5–2,1 mm latae, valva dorsali decidua. *Semen* loculi dorsalis hemisphaericum 1,1–1,4 mm longum, 1–1,2 mm latum, testa laevi testacea. *Semina* loculorum ventralium subtriangularia, testa scrobiculata non profunda, grisea.

TYPE.—Kenya, Tana River District: Garissa-Malindi road, 16 km N of junction for Garsen, c. 2°08'S, 40°04'E, 15 January 1972, *Gillett 19528* (US!, holo.; B!, BR!, EA!, FI!, K!, MO!, PRE!, iso.).

Annual (rarely perennial) herbs (habit types IB, IC of Faden, 1975). *Roots* thin, fibrous, produced only at the base and lower nodes. *Main shoot* erect or ascending, much branched at the base, 15–35 cm tall, lateral shoots decumbent, or prostrate initially and then ascending. *Leaves* spirally arranged on main shoot, distichous (at least initially) on lateral shoots, laminae sessile or shortly petiolate, gradually reduced towards the inflorescence on the main

shoot, lanceolate or lanceolate-elliptic to ovate, 1–6,5 cm long, 0,8–2,5(–3) cm wide, both surfaces lustrous, puberulous. *Inflorescences* terminal on the main and major lateral shoots and on very reduced lateral shoots, ultimately produced from nearly all nodes; reduced lateral shoots frequently perforating the sheaths; larger inflorescences thyrses, moderately dense, broadly ovoid, 1–2(–3) cm long, 1,5–3(–5) cm wide, with up to 8 cincinni, subopposite or subverticillate (occasionally some alternate), ascending; smaller inflorescences consisting of 1-several, clustered cincinni, lacking a distinct axis and not clearly thyrses. *Cincinni* up to 2,2 cm long and 10-flowered (to 3,5 cm long and 17-flowered in cultivation). *Bracteoles* spaced 1–2(–2,5) mm apart, symmetrically or eccentrically cup-shaped, perfoliate, 1,4–1,8 mm long, prominently glandular near the apex and with smaller glands along the margin, puberulous in the basal 1/2 or, more commonly, only at the base. *Flowers* perfect and staminate, odourless, (9–)10–14,5 mm wide. *Pedicels* (4–)5,5–10(–11) mm long, erect to slightly arcuate in flower, ± uniformly recurved in fruit for their entire length 180°–270°(–360°), often spirally twisted as well, puberulous. *Sepals* prominently glandular near the apex, puberulous except for glabrous margins; medial sepal 2,5–3 mm long, with subapical gland distinctly bilobed, with smaller glands also generally present along the margin near the base; lateral sepals 2,8–3 mm long with subapical gland unlobed, lacking marginal glands. *Paired petals* (4,2–)6,5–8 mm long, 4,8–7 mm wide, limb ovate, pink or pale lilac (RHS colours: 77D–78D, *Faden & Faden* 74/1053; 84B–C, *Faden & Faden* 74/1185), claw white. *Medial petal* slipper-shaped, obovate-elliptic to suborbicular or subquadrate, 4,7–6 mm long, 3–4,7 mm wide, 3–3,6 mm deep, concolorous with the limbs of the paired petals. *Stamen filaments* fused basally. *Medial staminode* usually absent (rarely vestigial). *Lateral staminodes* with filaments 3,3–4 mm long, antherode bilobed, yellow. *Lateral stamens* with filaments ± parallel in the basal 1/2, then sharply divergent, 5,5–6,5 mm long, S-shaped, glabrous, anthers elliptic to ovate, 0,7–1,2 mm long, pollen yellow or orange-yellow. *Medial stamen* with filament 3,5–4 mm long, anther ovate, saddle-shaped, 1–1,5 mm long, pollen yellow or orange-yellow (concolourous with that of the lateral anthers). *Ovary* substipitate, densely and uniformly covered with patent, glandular hairs (mixed with hook-hairs along the lateral sutures), dorsal locule 1-ovulate, ventral locules each 2-ovulate; style 5,5–6,5 mm long, arcuate-decurved, then recurved near the apex, also gently curving out of the floral midplane (rarely not), stigma capitate. *Capsules* substipitate to shortly stipitate, obovate (to ovate), dehiscent, bivalved, trilocular, (2,4–)2,7–3(–3,4) mm long, (1,1–)1,5–2,1 mm wide, lustrous, puberulous, apex emarginate, dorsal valve deciduous, dorsal locule very prominent, often with a seed, ventral locules each 2-(or, by abortion, 1-)seeded; cells of the capsule wall transversely elongate. *Dorsal locule seed* hemispherical, 1,1–1,6 mm long, 1–1,4 mm wide, 0,85–1 mm thick, embryotega whitish, testa tan, smooth, lacking farinose granules and hypha-like filaments except around the hilum. *Ventral locule seeds* subtriangular, 1,2–1,4(–1,7) mm long, 1,2–1,3(–1,5) mm wide, 0,8–0,95 mm thick, embryotega dark brown to greyish brown, testa grey or greyish tan, shallowly scrobiculate on all surfaces, sparsely white-farinose in many of the depressions and around the embryotega, densely so around the hilum, frequently some hypha-like filaments present among the farinose granules.

KENYA.—Kwale: Mombasa-Nairobi road, 2,5 km towards Mombasa from turnoff to Maji ya Chumvi Railway Station, 3°49′S, 39°20′E, *Faden & Faden 77/582* (BR; EA; F; FI; K; MO; P; PRE; US; WAG); Lungalunga-Ramisi road, 1 km before turnoff to Kinango, 4°32′30″S, 39°05′30″E, *Faden & Faden 77/738* (EA; F; K; US); 5 km Maji ya Chumvi-Mackinnon Road (Kilifi District on label), 3°48′S, 39°20′E, *Gilbert & Rankin 4834* (EA). Tana River: 105 km N of Malindi on Garsen road, *Andrews in* EA15070 (EA); Galole-Garsen road, 8 km towards Garsen from turnoff to Wenje, 1°52′S, 40°05′E, *Faden & Faden 74/1053* (C; EA; F; K; MO; P); Garsen, 2°16′S, 40°07′E, *Faden & Faden 74/1064* (EA; MO); Malindi-Garsen road, 0,8 km towards Garsen from turnoff to Kibusu, 2°21′S, 40°07′E, *Faden & Faden 74/1171* (BR; EA; K; MO; PRE; WAG); Garsen-Malindi road, 1,6 km towards Malindi from crossing of Lugga Buna, 2°23′S, 40°07′E, *Faden & Faden 74/1179* (EA; K; MO); Garsen-Malindi road, 1,5 km towards Malindi from turnoff to Oda, 2°32′S, 40°07′E, *Faden & Faden 74/1185* (B; BR; EA; FI; K; MO; US); Garissa-Malindi road, 16 km N of junction for Garsen, c. 2°08′S, 40°04′E, *Gillett 19528* (B; BR; EA; FI; K; MO; PRE; US); 105 km N of Malindi on Garsen road (Kilifi District on label), *Gillett* 19532 (EA; K); Galole-Malindi road, 16 km S of spot height 106, 2°14′S, *Gillett 19973*, cultivated at Missouri Botanical Garden (BM; EA; K; MO); Lake Dumi, 13 February 1893, *Gregory s.n.* (BM).

This species is confined to coastal and subcoastal Kenya where it occurs in deciduous or semi-evergreen bushland and thickets at 10 – 250 m altitude. In Tana River District it grows in a seasonally waterlogged, grey-brown, clayey alluvium with patches of sand. In Kwale District, where both perennial populations have been collected, the plants grow in a better drained soil. Flowering occurs (December-) January to March and July to August. In the field flowers open 08h30–09h00 and fade 13h00–13h30.

The taxonomic confusion of this species with *A. clarkei* is due to the publication by Rendle (1895) of six figures (his Pl. 34, Figs 7–12) which accompany the type description of *A. clarkei*. Fig. 8 clearly does not belong to that species. Through correspondence with Brenan — and subsequent examination of the specimens at the British Museum (Natural History) — the writer determined that Gregory had made two separate, unmixed collections of *Aneilema* with the same label data. One of them is the type of *A. clarkei* which, significantly, has on it all of the drawings published by Rendle *except* Fig. 8. The second sheet is the one cited by Brenan (1961) as *A. calceolus* but is here treated as *A. tanaense*.

Aneilema tanaense is most closely related to *A. benadirense* Chiov. of Somalia and *A. calceolus* Brenan of Kenya and Tanzania. It may be distinguished from *A. benadirense* by its generally shorter leaves, smaller, often non-thyrsiform inflorescences with fewer cincinni, shorter cincinnus peduncles, less widely spaced bracteoles, puberulous sepals, hook-hairs on the ovaries and capsules, and smaller capsules. It can be separated from *A. calceolus* by its less prostrate habit, more widely

spaced bracteoles which have marginal glands, medial sepals generally with marginal glands, lateral anther pollen yellow, and smaller capsules.

LECTOTYPIFICATION OF *ANEILEMA JOHNSTONII*

Three collections from Tanzania were cited by Schumann (1895) when he described *Aneilema johnstonii* K. Schum.: *Johnston s.n.*, *Von Höhnel* 159 and *Volkens* 2146. Among the syntypes *Johnston s.n.* and *Volkens* 2146 belong to *A. johnstonii*, as it is usually interpreted, while *Von Höhnel* 159 is *A. hockii* De Wild. Although most of the description applies equally well to all three collections, the colour of the petals is taken from the Volkens specimen, and the description of the capsule from the Volkens and Johnston specimens. Because these characters clearly separate *A. johnstonii* from *A. hockii*, there can be no confusion as to which element the name *A. johnstonii* should be applied. The Von Höhnel collection cannot be the lectotype for *A. johnstonii*.

Of the remaining two collections, the Berlin specimen of *Volkens* 2146, which was presumably seen by Schumann, has survived, whereas that of *Johnston s.n.* has not. I am therefore designating *Volkens* 2146 (B!) as the lectotype of *A. johnstonii*. An isolectotype is at BM(!).

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UITTREKSEL

Vier nuwe Aneilema-*spesies word beskryf* : A. **indehiscens** *Faden, met subsp.* **indehiscens** *(Kenia, Tanzanië) en subsp.* **lilacinum** *Faden (Zimbabwe, Mosambiek, Suid-Afrika);* A. **arenicola** *Faden (Mosambiek, Suid-Afrika);* A. **brunneospermum,** *Faden (Mosambiek, Swaziland, Suid-Afrika); en* A. **tanaense** *Faden (Kenia). 'n Nuwe subspesie,* Aneilema dregeanum *Kunth subsp.* **mossambicense** *Faden (Mosambiek), word ook beskryf, en die lektotipe van* A. johnstonii *K. Schum. is aangewys.*

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