
A NEW SPECIES OF *URGINEA* (LILIACEAE) IN NIGERIA

The genus *Urginea* Stein. is represented in West Tropical Africa by the variable species *U. indica* (Roxb.) Kunth, *U. ensifolia* (Thonn.) Hepper, *U. pauciflora* Bak., and the variable *U. altissima* (L.) Bak., which was recently discovered to resolve into a complex of three species: *U. altissima* (L.) Bak., sensu stricto, *U. gigantea* (Jacq.) Oyewole, and *U. viridula* Bak. (Oyewole, 1975). Samples of wild populations continue to reveal the inadequacy of the existing taxonomy of the genus. For instance, complexes such as in *U. indica* (Oyewole, 1987) or entirely new variants are being discovered. Hence, a revision of the genus is due.

The present report describes a recently discovered wild population of a new species within the main campus site of the University of Ilorin, Kwara State, in west central Nigeria.

ECOLOGY

The flora of a rock outcrop located about 1.5 km to the east of the academic area of the main campus site of the University of Ilorin, about 20 km outside the city of Ilorin, was first sampled in May 1982. The site of the rock was to be part of a proposed botanical garden.

About 100 tiny bulbs of an evidently new representative of *Urginea* were collected between May 1982 and February 1983, from the shallow soils of the outcrop. The soil is brown and lateritic, with occasional dark humus in depressions. The vegetation is low grassland, with few small trees of *Entada africana*, *Erythrina pulcherrima*, and other legumes interspersed with stands of *Butyrospermum paradoxum* and *Lophira lanceolata*, and low stands of *Cochlospermum* sp. Herbaceous species of Commelinaceae and Asteraceae are common among low grasses. Seasonal marshes and ponds support the growth of various Cyperaceae, *Anthericum nigericum*, and many low, herbaceous Acanthaceae and Scrophulariaceae.

Bulbs of *U. nana* occur in an unshaded area with low grass and forb cover. Other bulbous geophytes occurring in the same habitat and interspersed with *U. nana* are *Dipcadi tacazzeanum*

(Hochst. ex A. Chev.) Bak. (*D. filamentosa* Morton) and *Pancratium hirtum* A. Chev.

TAXONOMY

***Urginea nana* Oyewole, sp. nov.** TYPE: Nigeria. Ilorin: near the academic area, University of Ilorin, S00/2111 (holotype, IUH; isotype, FHI). Figures 1–3.

Bulbus ovoideo-globosus, circa 3 cm altus, 4 cm diam., collis bulborum 0.5–4 cm, tunicae albae, tunicis exterioribus maroribus; folia tenuia, filiformia appressa aut lineari-lanceolata, erecta, 8–20 cm longa, 1–3 mm lata; pedunculus erectus, 1.5–4 cm longus; racemus compressus umbellatus, floribus 1–6, pedicellis crassis sed non rigidis, postremo in fructu reflexis; tepala subpunice-subflavida, aut subviridula flavida, 6–10 mm longa, 1–2 mm lata; maginibus flavescentibus, antherae 1–2 mm longae; capsula globosa vel ovoidea fulva, apice mucronata, 8–12 mm longa, seminibus nigris vel fusco-fulvis, 7–8 mm longis, usque 4–6 mm longis et usque 6 mm latis. Affinis *Urginea pauciflora* et *Urginea indica* (formae depauperatae) sed pedunculis minoribus, racemo compresso usque umbellato, foliis filiformibus aut lineari-lanceolatis differt.

Bulb small, ovoid-globose, up to 3 cm high and 4 cm diam., usually with bulb neck, 0.5–4 cm long and consisting of rolled bases of old leaves; scales white, outermost tunics membranous; leaves thin, filiform and spreading, or linear-lanceolate and erect to acutely arching, 8–20 cm long, 1–3 mm wide, not borne with the flowers; peduncle stiffly erect, 1.5–4 cm high, naked; inflorescence compressed, 1–6-flowered, all arising from about the same level terminally; pedicel thick but not stiff, reflexed during fruit development; tepal 6, pinkish and tinged yellow at the margin, or greenish yellow with hyaline margin, in 2 whorls of 3 each, alternating and free to the base, 6–10 mm long, 1–2 mm broad, outer segments reflexed at anthesis; filament hyaline, anthers bicelled, dorsally medifixed and versatile, up to 2 mm long, completely fertile; ovary pyramidal, 3–4 mm high at anthesis; style short and stiffly erect, about as long as the ovary. Fruit a 3-chambered capsule, brownish at maturity, ovoid-spherical, with mucronate apex, only slightly trigonal from the exterior, 8–12 mm

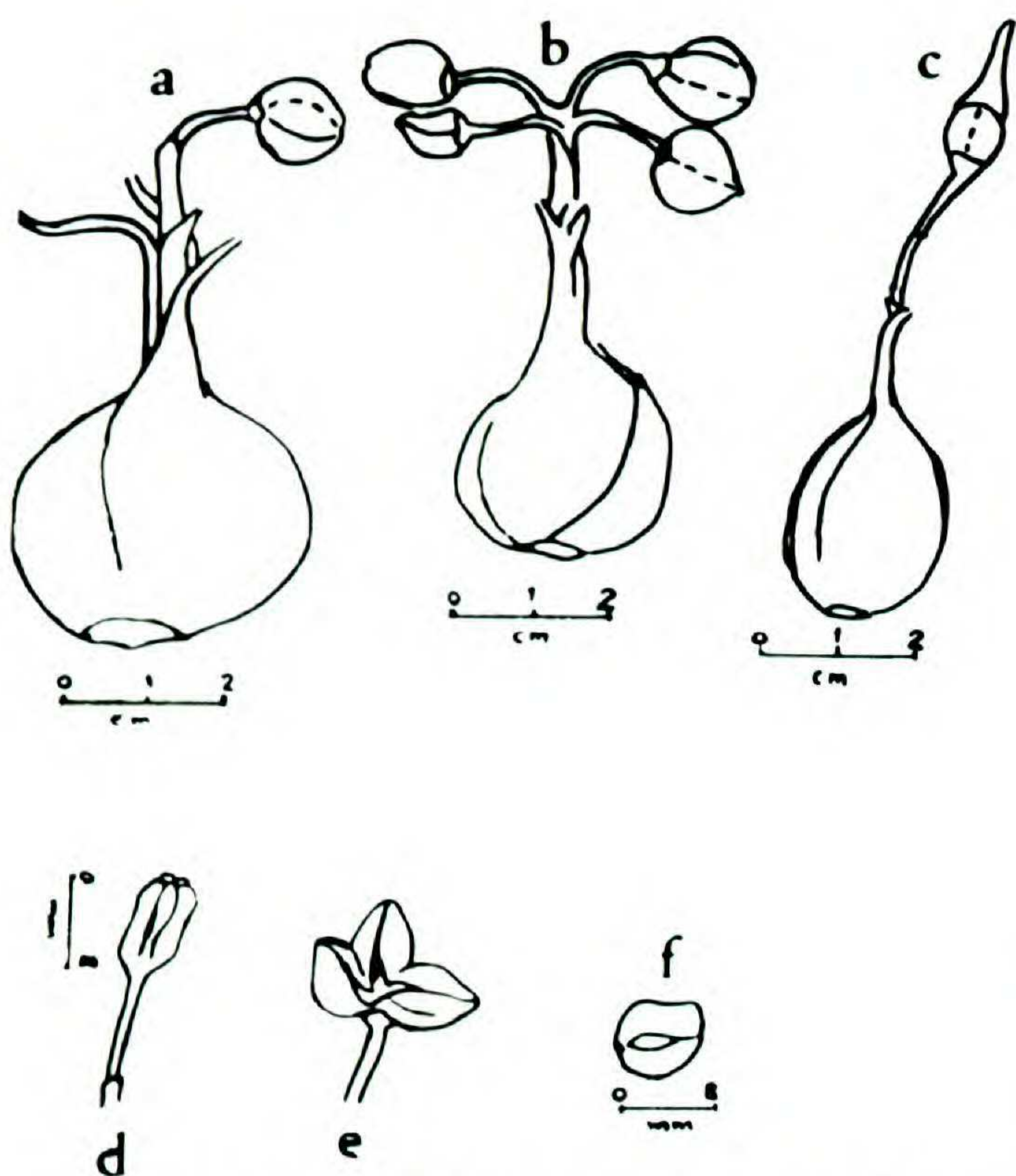


FIGURE 1. Growth habits of *U. nana*.—a, b, c. Fruiting plants of Morphs A, B, and C, respectively.—d. Mature flower before anthesis.—e. Dehiscent fruit.—f. Seed.

long as well as in circum.; seeds dark brown to black, 7–8 mm long, 4–6 mm across (including the membranous wing), uniseriate in each loculus.

Paratypes. NIGERIA. ILORIN: about 1.5 km to the northeast of the main buildings of the University of Ilorin, SOO/2121, SOO/2229, SOO/2230, SOO/2231 (IUH, FHI).

These bulbs resemble *U. pauciflora* in being few-flowered, and the depauperate morphs of *U. indica* in having linear-lanceolate, stiffly erect leaves and few-flowered inflorescences. They differ, however, in the form and width of the vegetative leaf, and in the size of the scape and the positioning of the flowers on the inflorescence. Examination of the herbarium specimens at the Herbarium of the Forest Research Institute of Nigeria (FHI), Ibadan, and at the University of Ibadan Herbarium (UIH) revealed that such specimens have not been collected previously in West Tropical Africa. Earlier examination of materials at Kew also showed that specimens of this taxon have not been recorded.

Certain variations were observed in the floral and vegetative morphology, on the basis of which the population was segregated into three morphs designated A, B, and C. This informal categorization was necessary for the purposes of karyotypic examination and eventual cytogenetic studies.

Morph A. Bulbs ovoid-spherical, 3–4 cm

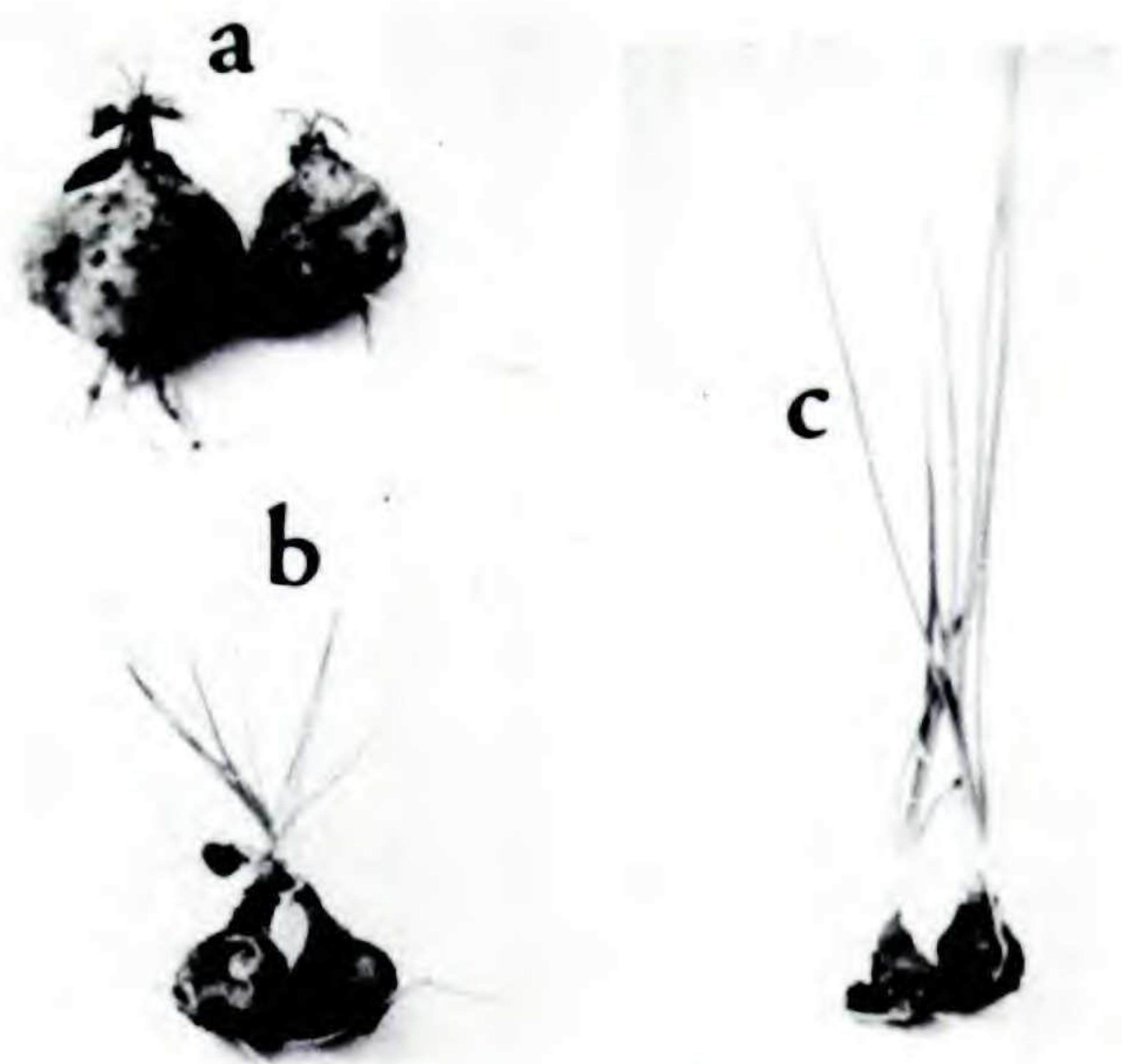


FIGURE 2. Vegetative plants of *U. nana*.—a, b, c from Morphs A, B, and C, respectively.

diam., 2–3 cm high, usually with relatively short bulb neck. Leaves thin, narrow, coiled (filiform), 10–15 cm long, 1–2 mm broad, dark green, crescent-shaped in transection. Peduncle up to 2.5 cm high outside of the bulb neck, thick and stiffly erect, green, bearing 2–3 flowers terminally. Tepals 8–10 mm long, 2–3 mm broad, yellowish green with hyaline margin.

Morph B. Bulbs ovoid-spherical, 2–3 cm high and diam., with a conspicuous bulb neck as high as 4.5 cm. Leaves thin, narrow, coiled, light green, crescent-shaped in transection, 8–12 cm long, about 1 mm broad. Peduncle stiffly erect, 3–4 cm high outside of the bulb neck, pinkish to purple, usually bearing 3–6 flowers terminally. Tepals pinkish tinted green on the margin, 7–8 mm long and ca. 2 mm broad.

Morph C. Bulbs small, oval-globose, 0.75–1.5 cm diam., 1.5–2.5 cm high, with relatively short bulb neck. Leaves light green, acutely erect, linear-lanceolate with open transection and shortly apiculate apex, 15–20 cm long, 2–3 mm broad. Peduncle thin, erect but not firm, up to 2.5 cm high outside of the bulb neck, bearing one terminal flower usually. Tepal greenish with hyaline margin, 6–7 mm long, about 1 mm broad.

The floral dimensions of the three morphs overlap so that they are not easily distinguished, but morph C differs distinctly in vegetative morphology. Plants of *U. nana* must have escaped recognition for so long because of their habit of growth: the fruiting shoot is hardly seen above the heap of burnt litter; the inflorescence begins to emerge from the soil less than 36 hours after the first burning. The flower and fruit colors merge with that of the dark brown soil surface once the charred

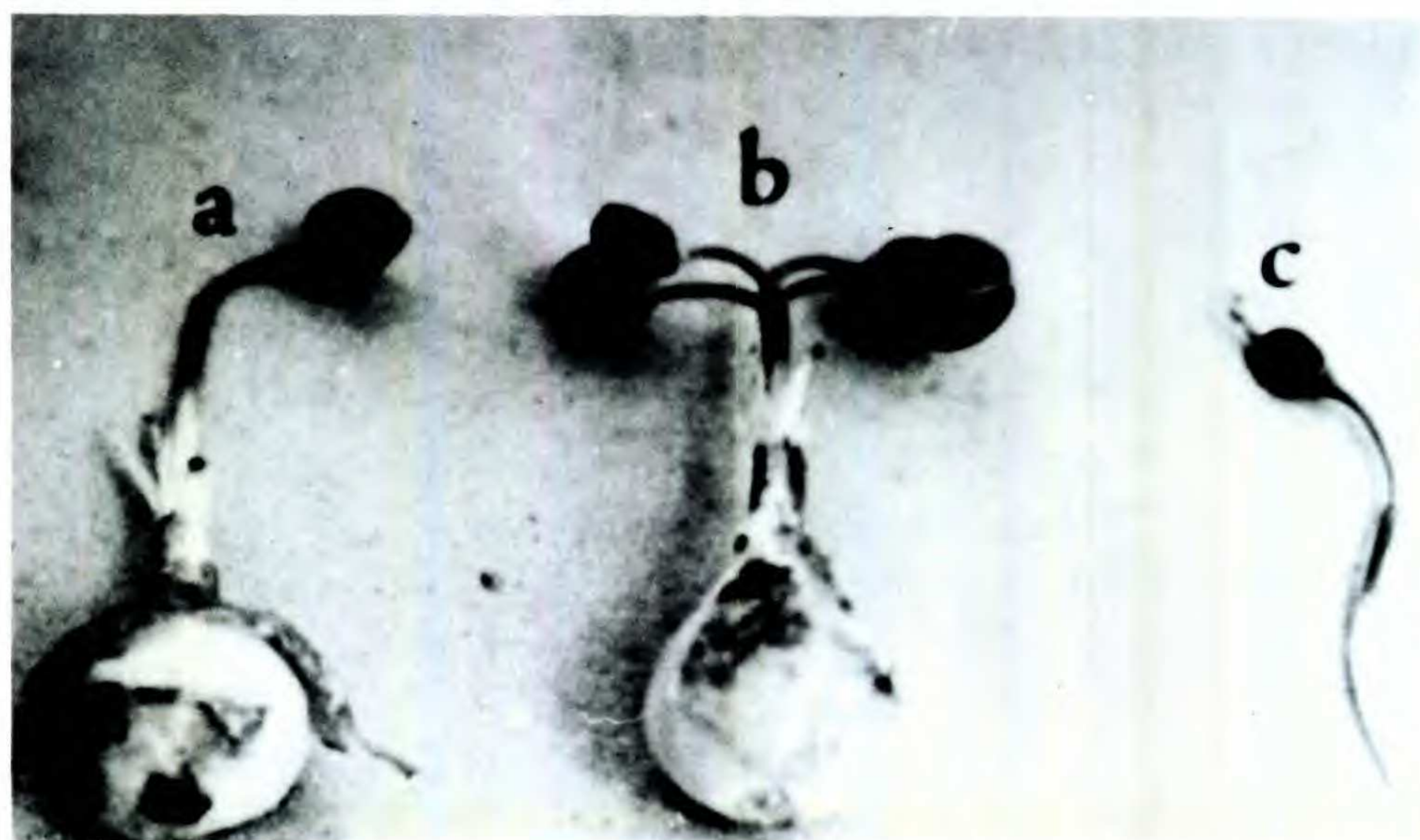


FIGURE 3. Fruiting plants of *U. nana*.—a, b, c from Morphs A, B, and C, respectively.

remains are blown away by the wind, and the vegetative leaves pass easily for the leaves of *Bulbostylis fimbriatylodes* and related sedges. The leaves are not evident when the plant flowers but rather are produced when the surrounding vegetation is luxuriant.

Following is a taxonomic key for separating the three morphs and their close relatives within the genus:

- 1a. Pedicel 3 cm long or longer; inflorescence various in height and number of flowers, but a lax raceme; capsule globose *U. indica*
- 1b. Pedicel shorter than 2 cm long.
 - 2a. Scape 6–10 cm tall; inflorescence a raceme of 6–10 flowers; fleshy tunics purplish violet *U. pauciflora*
 - 2b. Scape less than 5 cm tall; inflorescence of 1–6 flowers borne terminally; fleshy tunics white *U. nana*, morphs A, B & C
 - 3a. Leaves erect, flat in transection, 15 cm long or longer; inflorescence single-flowered, terminal, or with two flowers, one of which is subterminal *U. nana*, morph C
 - 3b. Leaves obtusely arching or spreading, coiled, crescent-shaped in transection, up to 12 cm long; inflorescence 2–6-flowered, umbellate.
 - 4a. Flowers pink, 3–6 per inflorescence *U. nana*, morph B
 - 4b. Flowers greenish, 2–3 per inflorescence *U. nana*, morph A

DISCUSSION

Urginea is probably of recent origin in West Tropical Africa (Oyewole, 1975), arising probably like its very close relative *Albuca* L. from southern-southeastern Africa and migrating across central Africa into the west (Oyewole, 1971). It is therefore

conceivable that, faced with myriads of ecological niches in this region, the number of representative species and infraspecific taxa is likely to be much higher than Hepper (1968) recognized. The distinct morphology of *U. nana*, with its peculiar habitat, sets it apart from previously known species of the genus. However, the existence of different morphs within a seemingly uniform ecological niche suggests that the population of *U. nana* may not entirely represent one genetic system. It is hoped that investigations now in progress on aspects of the biosystematics of this species will resolve this problem before long.

The discovery of *U. nana* in Nigeria underscores the fact that the latest treatment of Liliaceae in West Tropical Africa (Hepper, 1968) is due for revision. It also indicates that *Urginea* may be represented in this subregion by many more taxa than are now known (Oyewole, 1975).

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