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# Two new yellow species of *Cyperus* L. from Africa

KAARE ARNSTEIN LYE

## RÉSUMÉ

LYE, K. A. (1988). Deux espèces nouvelles jaunes du genre *Cyperus* L. en Afrique. *Candollea* 43: 505-511. En anglais, résumés français et anglais.

Deux espèces nouvelles jaunes sont décrites de l'Angola et de la Zambie, soit *Cyperus austrochrysanthus* Lye, spec. nova et *C. altochrysocephalus* Lye. Le premier a été confondu avec *Cyperus niveus* Retz. var. *flavissimus* (Schrad.) Lye, tandis que le dernier est allié à *C. rhynchosporoides* Kükenth.

## ABSTRACT

LYE, K. A. (1988). Two new yellow species of *Cyperus* L. from Africa. *Candollea* 43: 505-511. In English, French and English abstracts.

Two new yellow species of *Cyperus* are described from Angola and Zambia, viz. *Cyperus austrochrysanthus* Lye, spec. nova et *C. altochrysocephalus* Lye. The first has been confused with *Cyperus niveus* Retz. var. *flavissimus* (Schrad.) Lye, while the second is related to *C. rhynchosporoides* Kükenth.

## *Cyperus austrochrysanthus* Lye, spec. nova

Herbae perennes. Anthela capitato-contracta. Spiculae multiflorae. Squamae flavae, 2-3 mm longae. Nux 0.6-0.7 mm longa, papillosa.

*Orig. coll.:* P. Bamps, S. Martins & C. Matos 4462, Angola, Catengue-Cubal, km 13, 13°00'S & 13°50'E, 650 m, 12.4.1973 (BR, holotype).

A slender perennial with crowded culms from a slightly swollen base. Culms 6-16 cm long and 0.3-0.5 mm thick, obtusely triangular with many obscure longitudinal ridges, glabrous. Leaves from the basal 2 cm only; the sheaths pallid to light reddish brown, glabrous, as old often splitting up into pallid fibres, the orifice oblique; blades 2-10 cm long and 0.2-0.5 mm wide, glabrous, flat, but somewhat folded and twisted when dry, the apex obtuse. Inflorescence a congested bright yellow anthela 8-16 mm in diameter with 4-12 erect and spreading sessile spikelets. Involucral bracts 1-3, leafy, spreading or reflexed; the largest 1-4 cm long. Spikelets 4-9 mm long and 2.5-5.5 mm wide, oval, strongly compressed, 10-25 flowered with spreading glumes; rachilla articulated, but not winged. Glumes 2-3 mm long, oval, concave, yellow but more orange with some reddish brown dots especially near the obtuse tip of the midribs; with 3-4 prominent lateral nerves on each side of the midrib which is hardly more prominent than the lateral nerves. Stamens 2; filaments whitish, about 2.5 mm long, strongly flattened. Style pallid to light brown, unbranched, at the tip prominently coiled or spiralled. Achene 0.6-0.7 mm long and about 0.4 mm wide, oboval in outline, lenticular, pallid to light reddish brown as young, dark reddish brown with a metallic shine when mature; the style-base persisting on the mature nutlet as a small black knob; outermost cells to pericarp isodiametric, polygonal ("6-7 angular"), about 20 µm in diameter, with a prominent dome-shaped papilla in each cell (Figs. 1-2).



Fig. 1. — *Cyperus austrochrysanthus* Lye  
 A, habit, ca. 1 ×, see scale; B, inflorescence, 2.5 ×; C, inflorescence with glumes and achenes shed, 3.5 ×; D, spikelet, 4.5 ×; E, glumes, 9 ×; F, flower, 18 ×; G, achene, 54 ×. Drawn from P. Bamps & al. 4462 (Catengue, Angola) by Ebba Hauger.

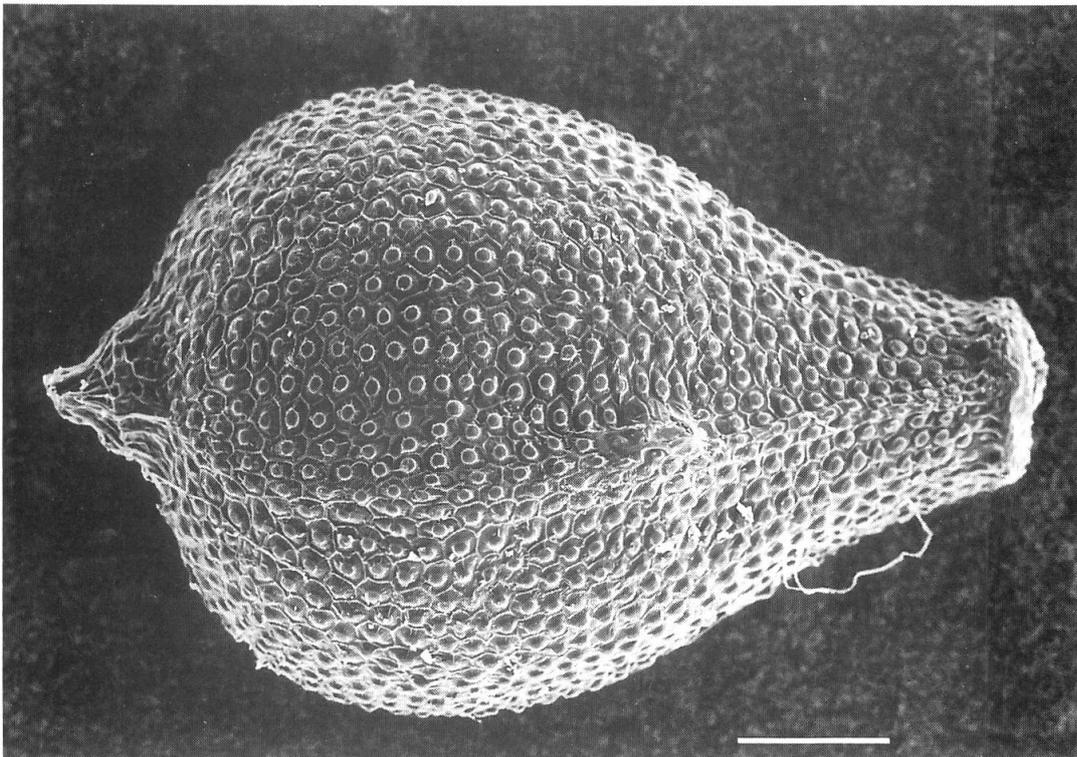
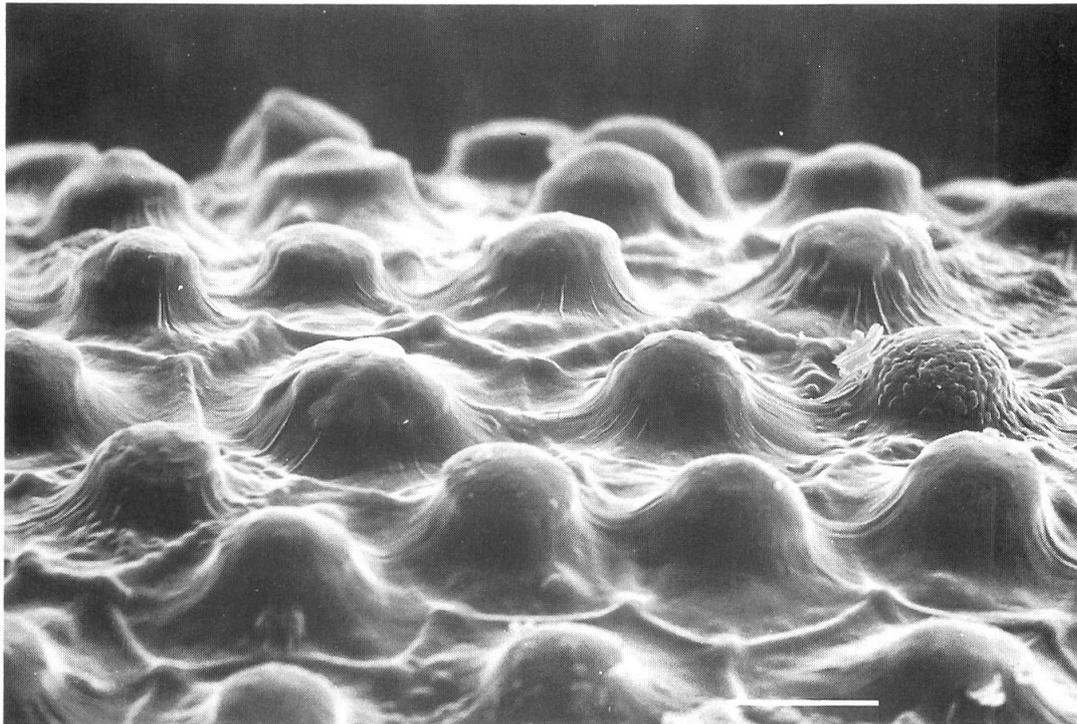


Fig. 2. — *Cyperus austrochrysanthus* Lye  
Below: Nutlet, scale 100  $\mu\text{m}$ ; above: surface pattern of nutlet, scale 10  $\mu\text{m}$ . Both SEM photographs from the holotype.

In wet sand over flat granite, 650-1700 m. Very rare. Only recorded from the Benguela district in Angola.

*Additional collection:* Angola, Benguela district, highlands between Ganda and Caconda, ca. 1700 m, Dec. 1933, *O. Hundt 752* (BM).

In the herbaria this species has been identified as *Cyperus niveus* Retz. var. *flavissimus* (Schrader) Lye, but the two plants are not closely related. *C. niveus* has swollen culm bases, taller and much thicker (0.7-2.5 mm thick) culms, larger and wider (0.5-5.0 mm wide) leaf-blades which are scabrid, much thicker and darker leaf-sheaths, larger inflorescence and involucre bracts, larger spikelets, larger glumes (4-6 mm long) with more nerves, 3 stamens, 3-branched style, and larger achene with smaller papillae (Fig. 3).

*C. austrochrysanthus* is possibly most closely related to *C. meeboldii* Kükenth., with which it shares the unbranched style, and the small nutlet with large papillae. *C. meeboldii* has however, only 1-2 mm wide spikelets, 1.3-1.5 mm long reddish brown glumes with a paler 3-nerved midrib which ends in a slightly recurved apex, a solitary stamen and a more pear-shaped nutlet.

### ***Cyperus altochrysocephalus* Lye, spec. nova**

Herbae perennes. Anthela capitato-contracta subglobosa. Spicae confluentes. Spiculae 1-florae. Squamae flavae, pluricostata, 6-7 mm longae.

*Orig. coll.:* *A. Strid 2576*, Zambia, Western province, 20 miles from Mwinilunga along road to Kalene Hill, 21.11.1972 (NLH, holotype).

A tall robust perennial with a horizontal rhizome producing a single culm at its growing end. Rhizome up to 8 mm thick, woody, scale-covered, but scales stuck together by a purple glue and not easily discernable; young rhizomes or stolons produced at the base of the culm, 3-4 mm thick, densely covered by pallid or light reddish brown multinerved scales which are bright purple at their tip; the purple patches are very sticky and generally covered by numerous minute mineral particles, particularly quartz grains. Culm 80-90 cm long and 1.5-5.0 mm thick, prominently triangular to almost winged, with numerous weak rounded longitudinal ridges, densely scabrid on the three angles, otherwise glabrous. Lowest scale of culm an about 1 cm long bract; second scale a 2 cm long prophyll; both scales glabrous and multinerved. Leaves 5, widely spaced and up to 20 cm high on the culm, the lower two without blades, the upper 3 with long blades. Bladeless sheaths light reddish brown with some purplish patches and dots, other sheaths straw-coloured or green; the lowermost sheath almost glabrous, the other densely minute villous with 0.1-0.2 mm long pallid or yellow straight or slightly curved hairs; orifice oblique. Leaf-blades 18-65 cm long and 8-10 mm wide, flat with numerous longitudinal lateral nerves (which are obscure on upper surface, but fairly prominent on lower surface) and a midrib which is obscure on upper surface, but forming a prominent keel on lower surface, densely scabrid on margin and keel of midrib, otherwise glabrous.

Inflorescence a congested yellow-orange head about 15 mm in diameter, consisting of numerous crowded spikelets subtended by 3-4 leaf-like involucre bracts. Involucre bracts spreading, the largest 6.5 cm long and 5-7 mm wide. Spikelets 7-8 mm long (including an about 0.7 mm long basal stalk) and 1.0-1.5 mm wide, narrow lanceolate, consisting of two small basal scales (bract and prophyll), two long sterile glumes and one smaller fertile glume, i.e. spikelet perfecting one flower only, the spikelet disarticulating entire leaving only the bract and the prophyll. Bract and prophyll of spikelet about 2.0 mm long, broadly oval, yellow to light reddish brown, with many slender nerves and no prominent midrib; apex obtuse to truncate. Sterile glumes 6-7 mm long, lanceolate, multinerved and with no prominent midrib, concave and with margins strongly enrolled around the flower and achene, bright yellow, but pallid below and often orange or reddish brown near the apex; the two glumes set distichously on the stalk; apex obtuse or truncate, but may appear acute because of the enrolled glume-margins. Inside the two distichous sterile glumes is found a third fertile glume; it is only about 3.5 mm long, lanceolate with acute apex, pallid below and light reddish brown above, with one midrib and no lateral nerves. Stamens 3, filaments 5-6 mm long, whitish, flattened. Style about 3.5 mm long, pallid below, but stigma 0.5-1.0 mm long, reddish brown, 2-3 branched. Achene elliptic, triangular, minutely papillose (Fig. 4).

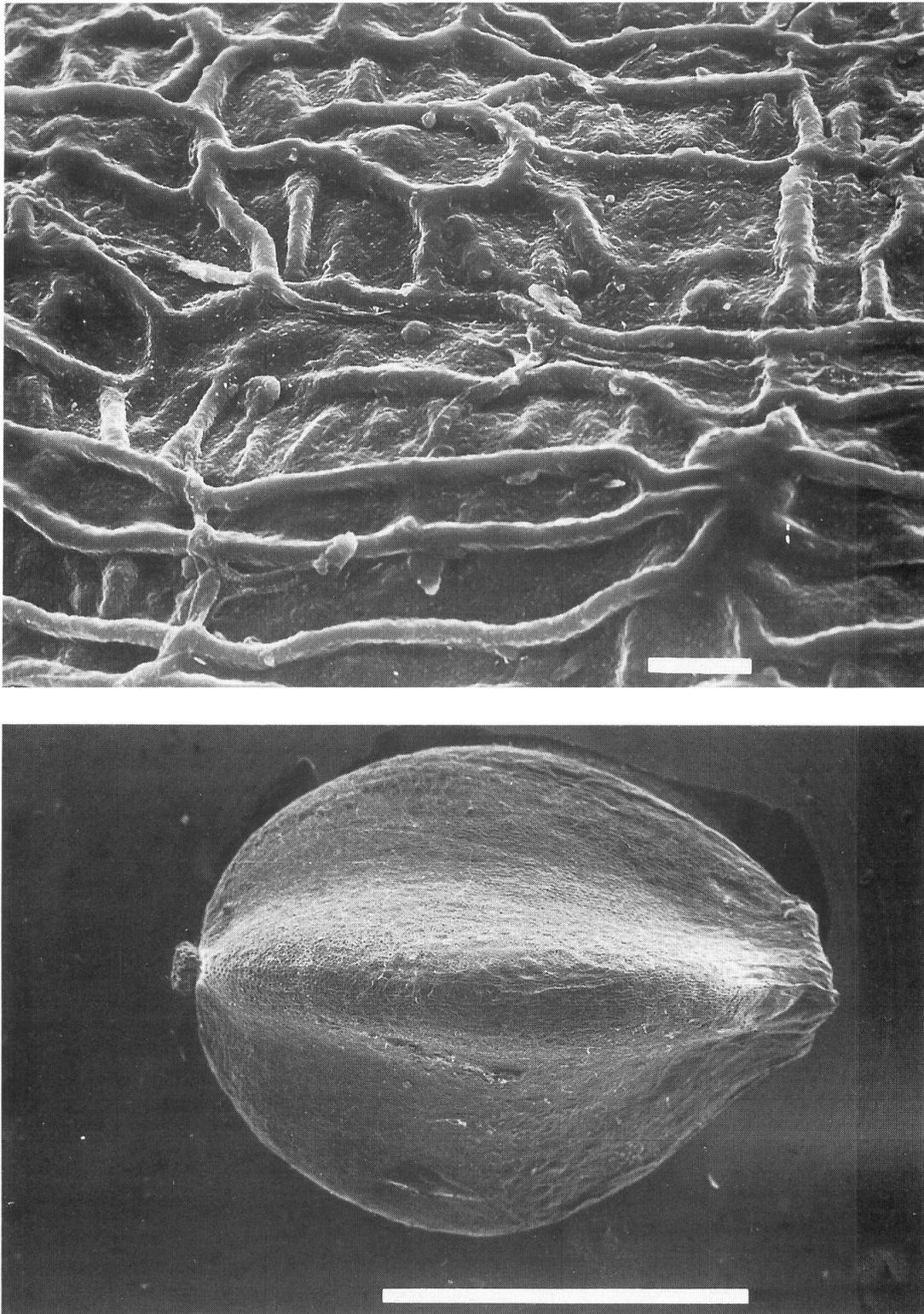


Fig. 3. — *Cyperus niveus* Retz. var. *flavissimus* (Schrader) Lye, the plant with which *Cyperus austrochrysanthus* has been confused. Below: Nutlet, scale 1 mm; above: surface pattern of nutlet, scale 10  $\mu$ m. Both SEM photographs from K. A. Lye 9609 (Tanzania, Sumbawanga district, above Rukwa Escarpment).

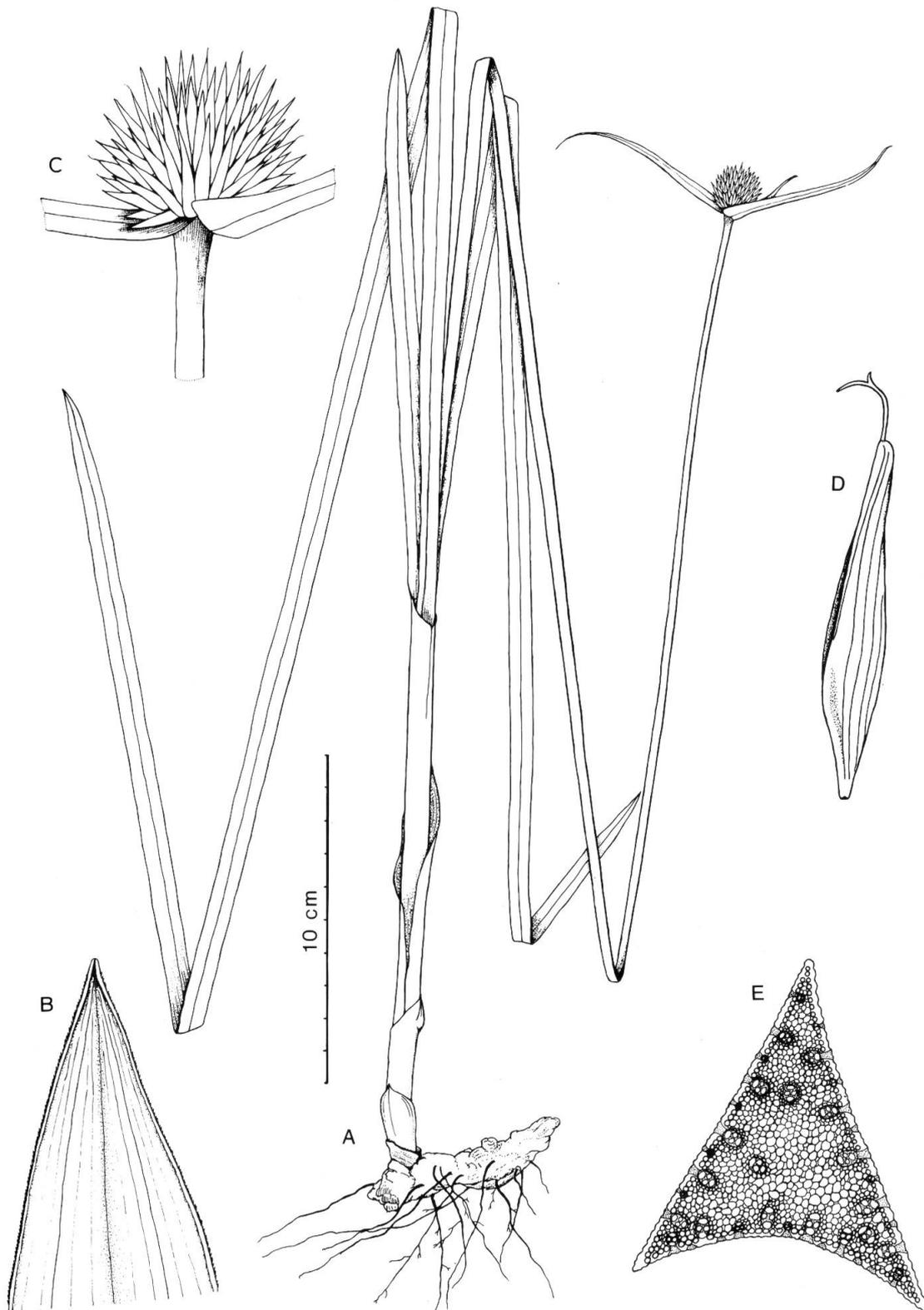


Fig. 4. — *Cyperus altochrysocephalus* Lye  
 A, habit, ca.  $\frac{1}{2} \times$ , see scale; B, detail from leaf-apex,  $8 \times$ ; C, inflorescence,  $2 \times$ ; D, spikelet after disarticulation,  $8 \times$ ; E, section of culm,  $18 \times$ . Drawn from A. Strid 2576 (Mwinilunga, Zambia) by Ebba Hauger.

In woodland in sandy area at edge of watershed grassland. Only known from the Mwinilunga district in Zambia, but likely to turn up even in adjacent parts of Zaire and Angola.

This species is closely related to *C. rhynchosporoides* Kükenth., but differs in a number of characters, viz. larger rhizome with purplish scales, taller and thicker culm (10-50 cm long and 1-2 mm thick in *C. rhynchosporoides*), longer and wider leaves (to 30 cm long and 3-5 mm wide in *C. rhynchosporoides*), minutely villous leaf-sheaths, larger inflorescence (8-12 mm in diameter in *C. rhynchosporoides*), larger and 1-flowered spikelets (5-6 mm long and 2-flowered in *C. rhynchosporoides*), larger glumes (4.5-5.0 mm long in *C. rhynchosporoides*), and presence of 1-nerved fertile inner glume.

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