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## FOUR NEW SPECIES OF CYPERACEAE FROM CENTRAL AUSTRALIA

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### Abstract

Four new species, viz. *Eleocharis papillosa*, *Fimbristylis ammobia*, *F. eremophila* and *Shoenus centralis* are described from central Australia.

The author is currently preparing a monograph of the family Cyperaceae (excluding *Cyperus*) for the proposed Flora of Central Australia. Four distinct undescribed species were known to occur in the area and are described here so that they can be included in the Flora. It is usually considered unwise to describe new species unless one has critically examined all other closely related species. However, the genus *Fimbristylis* is currently under revision by the author and will be covered more fully in a future publication. The other two species, although both occurring in genera in need of revision, are considered to be quite distinct and should not be confused with any other Australian species.

### 1. *Eleocharis papillosa* Latz, species nova.

Herba annua nana 3-9 cm alta. Apex vaginae truncatus vel attenuatus plus minusve. Spiculae multiflorae dense. Glumae 2.0-2.5 mm longae. Stamina tria. Stylus trifidus. Nux ovoidea, trigona, acuta papillis tenuibus nitentibus vestita dense, 0.7-0.8 mm longa. Setae 6, nucem fere aequantes vel reductae (absentes raro).

*Holotypus*: P.K. Latz 5604, 3.vi.1974, Stirling Swamp, 21° 47' S., 133° 43' E. Rare in clayey loam, above waterline of seasonal swamp (NT54462).

*Isotypi*: AD, BRI, CANB, NSW, PERTH, K. L, NY.

Dwarf annual with brownish fibrous roots. *Stems* tufted erect, terete but obscurely striate, smooth, 3-9 cm long by 0.25-0.3 mm wide. *Sheaths* membranous appressed, purplish at base, longitudinally striate, the orifice of the uppermost truncate or somewhat attenuate on one side. *Spikelets* linear-cylindrical to somewhat ovoid, somewhat obtuse, about 15-50 flowered, reddish brown to brown, 4-10 x 2.0-3.5 mm. *Glumes* membranous, appressed or obliquely spreading, broadly ovate, obtuse, scarcely keeled, 1 nerved, keel yellowish, sides tinged with purple, 2.0-2.5 x 1.3-1.5 mm, only the lowermost shorter or empty (others all perfect). *Stamens* 3, anthers linear, 1.0-1.5 mm long, with a minute setaceous appendage. *Style* trifid. *Nut* ovoid to acutely trigonous, densely clothed with fine glistening papillae, yellowish brown, 0.7-0.8 mm long and 0.5-0.7 mm wide (excluding the style base), the external cells minute. *Style base* glabrous, variable in shape, from subglobular to subcylindrical, up to 4 mm long and 2 mm wide. *Bristles* 6, white to straw coloured, minutely scabrous, nearly as long as the nut or reduced (rarely absent). (Fig. 1).

### *Specimens examined*

NORTHERN TERRITORY: Latz 5851, 4.xii.1974, Ilparpa Swamp, Alice Springs, 23° 45' S., 133° 50' E., (BRI, NT). — Latz 6795 15.vi.1977, Andado Stn, 25° 10' S., 135° 36' E., (AD, NT).

*Eleocharis papillosa* can be separated from all other Australian species by its characteristic papillose nut. Although the two paratypes are somewhat immature they match the isotype well. The characteristic papillae, although underdeveloped, are still plainly visible on the immature nuts.

*E. papillosa* is apparently widespread in central Australia but it has probably been overlooked in the past because it is such an inconspicuous, short lived species.

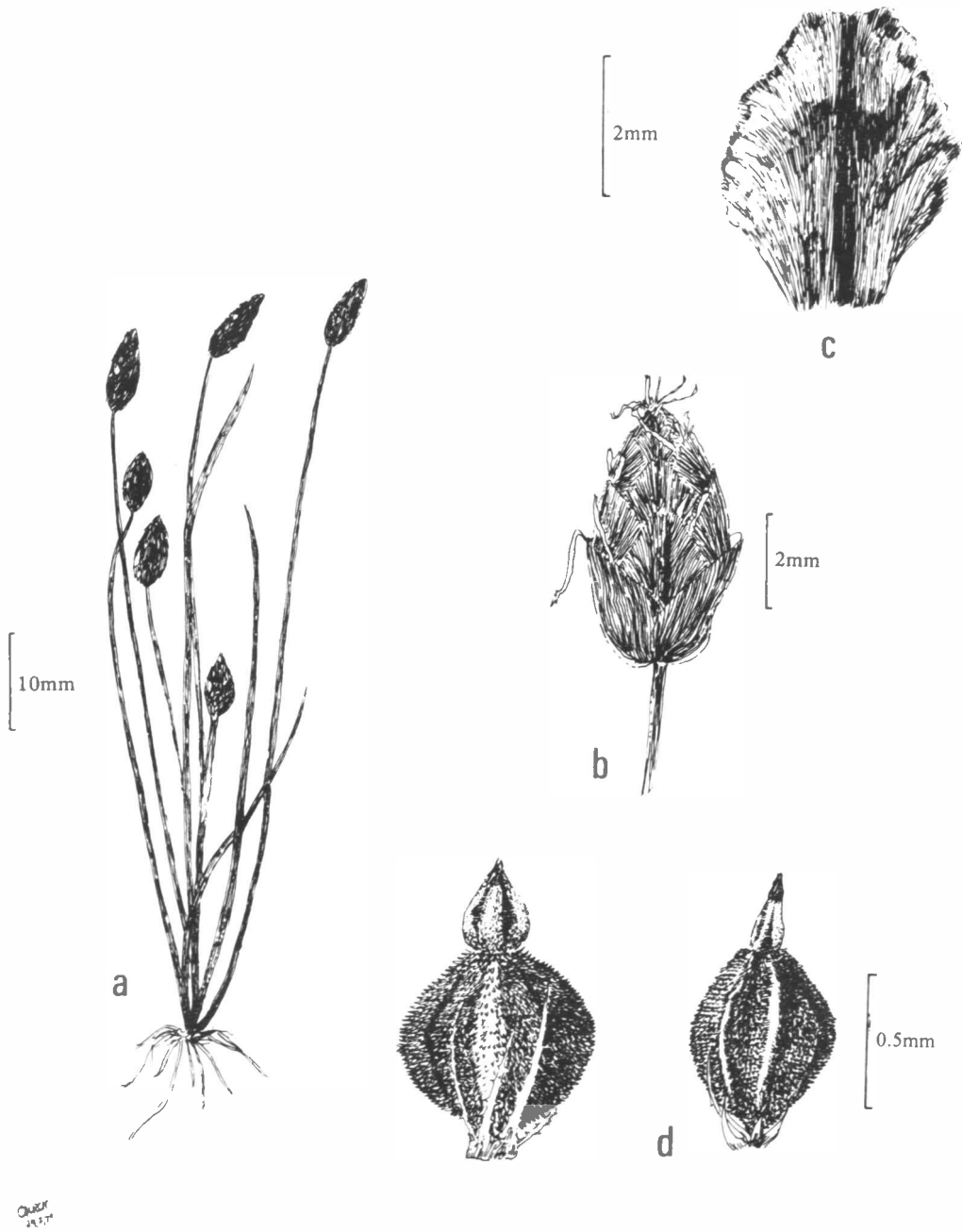


Fig. 1. *Eleocharis papillosa* a. habit; b. spikelet; c. glume; d. nuts. (From Latz 5604.)

## 2. *Fimbristylis ammobia* Latz, species nova.

Glabra annua usque 20 cm alta, foliis angustis brevibus. Ligula absens. Inflorescentia plerumque singularis terminalis spicula, rariore 1(-2) pedunculatis lateralibus spiculis. Spiculae 3-15 x 2.5 mm. Fertiles glumae 2.5-3.5 mm longae, mucronatae breviter. Staminae 3. Stylus 0.7-1.5 mm longus glaber, basi bulbosus. Stigmata 3. Nux ovoidea vel ovoidea-oblonga 1.0-1.5 x 0.8-1.0 mm, 3 nervatis inconspicuis, transversalibus cristis.

*Holotypus*: P.K. Latz 5960, 26.v.1975, Singleton Station, 20° 47' S., 134° 13' E. Erect annual becoming pinkish with age. Infrequent in red sand, edge of depression (run on area) with *Triodia pungens* and *Eucalyptus microtheca* (NT48474).

*Isotypi*: — AD, BRI, CANB, MEL, NSW, PERTH, K, L, MO.

Small, glabrous annual with fibrous roots. *Stems* erect and spreading, striate, smooth or slightly scabrid above, leafy at the base, up to 20cm long and 0.4-1.0mm wide, sometimes much reduced. *Leaves* basal, mostly reduced to bladeless sheaths, those produced rarely half as long as the stems, margins usually inrolled, scabrid above; about 0.3mm wide; ligule absent, sheaths with broad hyaline margins. *Inflorescence* usually a single terminal spikelet more rarely 1(-2) peduncled lateral spikelets added. Involucral bracts 1-2, glumelike, mucronate, only slightly longer than the glumes. *Spikelets* solitary, ovoid, angular, obtuse, several flowered, pale yellow, 3-15 x 2.5mm; rachilla winged. *Glumes* spiral, broadly ovate, obtuse or apiculate, keeled, 2.5-3.5 x 2.0-2.5mm, stramineous with 3 nerved keel nerveless sides and narrow hyaline margins. *Stamens* 3, anthers oblong, 0.7-1.5mm long. *Style* glabrous, with large bulbous base, 0.7-1.5mm long; stigmas 3, about as long as the style. *Nut* obtusely trigonous, ovoid to ovoid-oblong, inconspicuously 3-nerved, with convex side, minutely stipitate and umbonulate, marked with 7-10 coarse transverse ridges, whitish or stramineous, 1.0-1.5 x 0.8-1.0mm. (Fig. 2)

### *Specimens examined*

NORTHERN TERRITORY: *Chippendale s.n.*, NT1162, 11.v.1955, 24 km E Argadargada Homestead, 21° 40' S., 136° 52' E., (BRI, CANB, NT) — *Latz 5556*, 22.vi.1974, 3 km N. Taylors Well, Stuart Hwy, 21° 13' S., 134° 08' E., (BRI, CANB, NSW, NT, NY, PERTH) — *Latz 6037*, 1.vi.1975, McLaren Creek Stn, Frying Pan Waterhole, 20° 18' S., 133° 55' E., (CANB, NT) — *Latz 7000*, 9.v.1977, Elkedra Stn, Aranju Waterhole, 21° 11' S., 135° 47' E. (BRI, MEL, NSW, NT) — *Latz 7045*, 11.v.1977, Annitowa Stn, 21° 04' S., 136° 28' E. (BRI, DNA, NT) — *Latz 7054*, 12.v.1977, N. Annitowa Stn, 20° 21' S., 136° 46' E. (NT, K, L) — *Latz 7084*, 12.v.1977, 3 km W. Frewena Roadhouse, 19° 26' S., 135° 23' E. (AD, CANB, NT, PERTH).

WESTERN AUSTRALIA: *Latz 4039*, 20.vii.1973, N. Balgo Mission, 19° 43' S., 128° 18' E. (BRI, CANB, DNA, MEL, NT, PERTH, K, L).

The first two specimens seen, viz. *Chippendale s.n.* and *Latz 4039* were originally identified by the author as *F. subaristata* Benth. (ex description). However, on examination of specimens of true *F. subaristata* it was immediately apparent that *F. ammobia* was a distinct species. *F. subaristata* has acute, often aristate glumes, the nuts are larger, distinctly 3 nerved and lacking distinct transverse ridges and single terminal spikelets are rarely seen. *F. punctata* R.Br. has close affinities to *F. ammobia* but differs by being larger in all parts and by its flattened ciliate style.

*F. ammobia* appears to be restricted to far northern areas of central Australia where it occurs in red sand with *Triodia*, usually near (but well above) watercourses and seasonal swamps. In the west of its known range it is often associated with the peculiar white trunked form of *Eucalyptus microtheca*.

## 3. *Fimbristylis eremophila* Latz, species nova.

Perennis foliosa glabra. Distincta ligula absens. Inflorescentia composita. Spiculae 6.0-13 x 1.0-1.5 mm rubrifuscae, oblongae vel lanceolatae. Glumae fertiles 2.0-2.5 mm longae, obtusae, mucronatae, marginibus ciliatis saltem ad apicem. Stamina 3. Stylus dense ciliatus supra, 1.0-1.3 mm longus, basi bulbosus. Stigmata 3. Nux alba, 0.8-1.0 x 0.4-0.6 mm, obovoidea verrucosa.

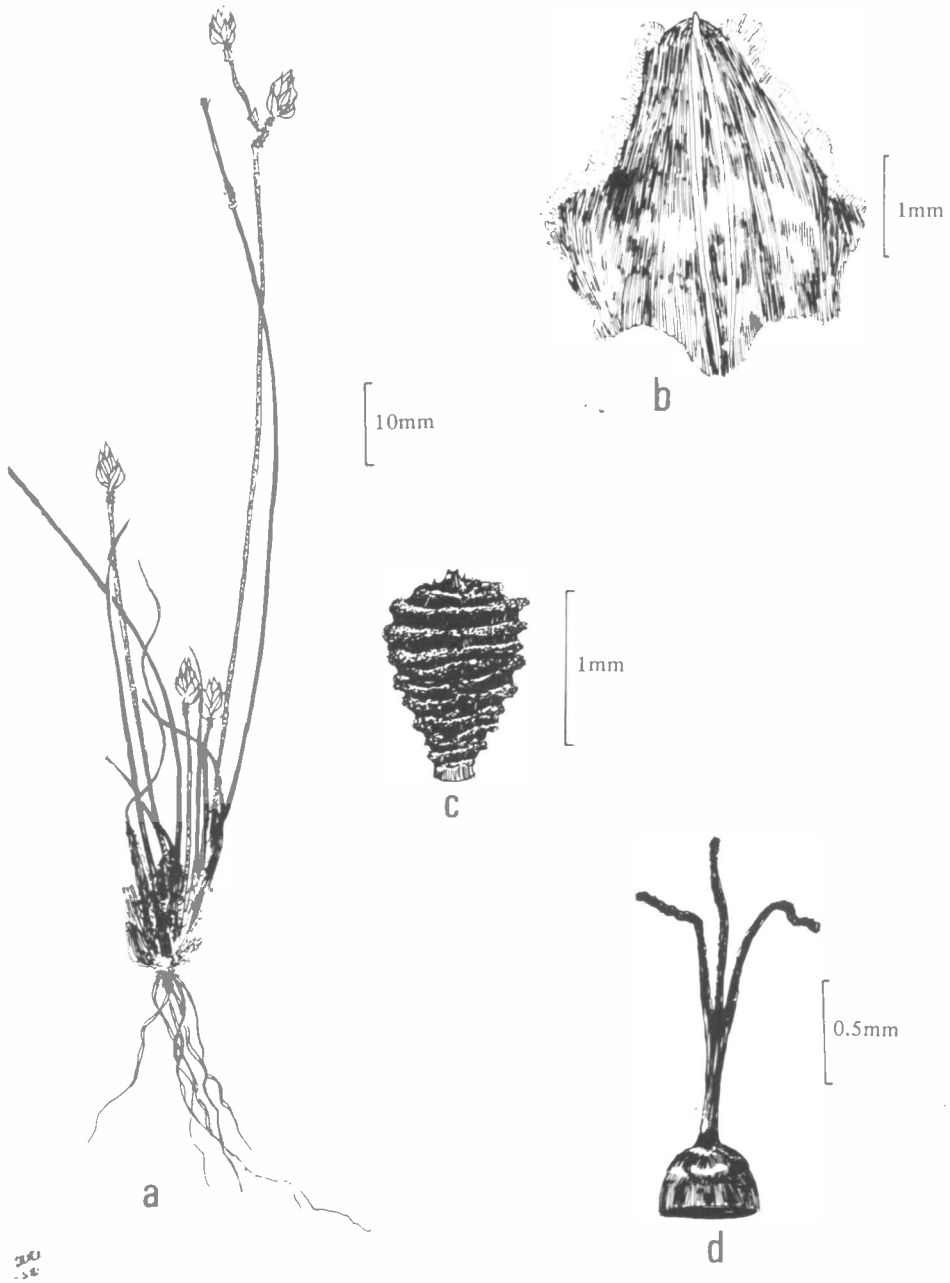


Fig. 2. *Fimbristylis ammobia* a. habit; b. glume; c. nut; d. pistil. (From Latz 5960.)

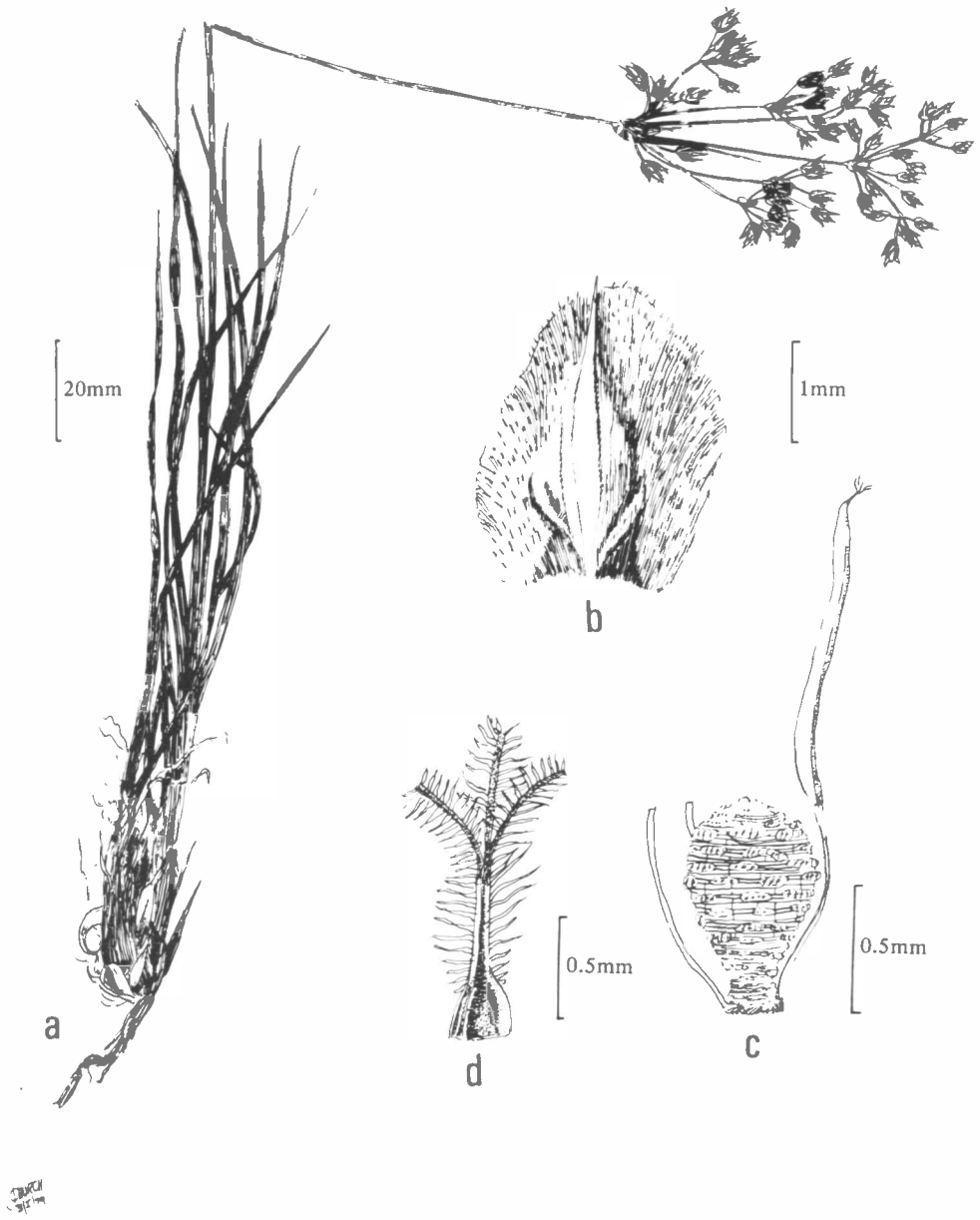


Fig. 3. *Fimbristylis eremophila*, a. habit: b. glume: c. nut and stamen: d. pistil. (From *Latz 2101.*)

*Holotypus*: P.K. Latz 2101, 18.i.1972, Mt Gurner 22° 43' S., 130° 42' E. Large erect perennial. Locally common in sandy loam at base of quartzite hill. Recently burnt *Triodia pungens* community (NT34183).

*Isotypi*: AD, BRI, CANB, NSW, PERTH, K, L, MO.

Glabrous perennial with short rhizome. *Stems* densely tufted, rigid, striate, several leafed at the base, 25-58 cm x 0.5-2.0 mm. *Leaves* shorter than the stems, rather rigid, flat or inrolled, margins scabrid gradually tapering to the acute apex, greyish green; no distinct ligule. *Inflorescence* decomposed, loose to somewhat dense with numerous spikelets (20-140) up to 7 cm by 7 cm. Involucral bracts 3-5, erect, the lowest sometimes overtopping the inflorescence 2.5-6.5 cm long, scabrid. Primary rays 5-11, striate, scabrid above, up to 5 cm long. *Spikelets* mostly solitary but sometimes in clusters of 2-4, oblong to lanceolate, acute, becoming twisted with age, several to many flowered, reddish brown, 6-13 x 1.0-1.5 mm; rachilla broadly winged. *Glumes* spiral sometimes subdistichous, oblong-ovate, acute or apiculate, keeled 2.0-2.5 x 1.5-2.0 mm, keel green, 3 nerved, sides nerveless, ferruginous to brown, the hyaline margins minutely ciliate at least on the upper margins. *Stamens* 3, anthers oblong 1.0-1.5 mm long with a minute setaceous appendage. *Style* triquetrous, usually with a bulbous base, densely long ciliolate above rarely glabrous at the base, 1.0-1.3 mm long; stigmas 3. *Nut* 3 nerved obtusely trigonous, obovoid to ellipsoid, shortly stipitate, umbonulate, verruculose to almost tuberculate, finely transversely lineolate by the oblong-linear epidermal cells, white, 0.8-1.0 x 0.4-0.6 mm. (Fig. 3)

#### *Specimens examined*

NORTHERN TERRITORY — Latz 1212, 14.i.1971, Red Bank bore, Coniston Stn, 21° 56' S., 132° 25' E. (BRI, MEL, NT, NY, PERTH) — Latz 1988, 13.i.1972, SW. Yuendumu, 22° 28' S., 131° 29' E. (AD, BRI, CANB, NT) — Latz 2062, 15.i.1972, Mt Doreen Stn, 22° 27' S., 130° 41' E. (NT, K.L.) — Latz 4045, 21.vii.1973, 80 km W. Tanami, 19° 52' S., 129° 03' E. (NT, PERTH) — Latz 5550, 21.vi.1974, 4 km E. Wycliffe Well, 20° 47' S., 134° 16' E., (CANB, NT) — Latz 5736, 23.ix.1974, 9 km S. Mt Currie, 25° 06' S., 130° 34' E. (AD, BRI, NSW, NT, PERTH, L) — Latz 6578, 9.viii.1976, Tanami Sanctuary, 21° 39' S., 131° 05' E. (NSW, NT) — Latz 7019A, 10.v.1977, Annitowa Stn, 21° 07' S., 136° 17' E. (BRI, NT) — Latz 7082, 13.v.1977, 3 km W. Frewena Roadhouse, 19° 26' S., 135° 23' E. (BRI, DNA, NSW, NT, PERTH) — Beaglehole 50856, 19.v.1976, Tanami Desert, 20° 35' S., 130° 21' E., (NT) — J. Wauchope s.n., 6.vii.1977, Ormiston Gorge, 23° 38' S., 132° 43' E. (NT).

*Fimbristylis eremophila* belongs to the Section *Cymosae*, a rather difficult group in Australia. However it can be separated from the other members of this section by its small ciliate, bulbous based style, its small, white, verrucose nut and its perennial habit. It appears to be restricted to northern areas of central Australia where it can be quite common, mostly in association with *Triodia* in better watered sand plain areas.

#### 4. *Schoenus centralis* Latz, species nova.

Planta annua caespitosa. Folia basalia et caulina, plana, uninervia ad marginem incrassata scabra. Inflorescentia racemosa, raro paniculate, ramis floriferis (2-) 3-4(-6). Spiculae 5-7 mm longae, floribus fertilibus, 4-6 omnibus perfectibus. Glumae 6-10; glumae fertiles, carina scabra 2/3 supra. Perianthium destitutum. Stamina 3. Stylus glaber, stigmata 3. Nux ovoidea ad obovoideam trigona acute (fere alis) angulibus truncatis abrupte prope apicem, 11-15 mm longa.

*Holotypus*: P.K. Latz 5945, 9.v.1975, Napperby Stn, 22° 43' S., 132° 23' E. Infrequent in gravelly sand at base of quartzite hill; seepage area. With *Melaleuca glomerata* (NT48447).

*Isotypi*: AD, BRI, CANB, NSW, K, L.

Annual with pink fibrous roots, glabrous except for scaberulous leaf margins and inflorescence. *Stems* densely tufted, weak but usually erect, terete to somewhat flattened, obscurely striate, smooth with 1 or rarely 2 sheaths between the basal sheaths and bracts, (3-) 15-30 cm long by 0.5-0.8 mm wide, the base clothed with 5-nerved, pinkish, open, hyaline margined sheaths produced to a blade up to 5 cm long (sometimes reduced to a short point). *Cauline leaves* 1-2, flat, the upper surface grooved on each side of the central nerve, margins thickened, scaberulous, otherwise glabrous, 1-6 cm long, about 8 mm wide; ligule absent. Sheaths obscurely 5-nerved, tubular, truncate at the apex with a hyaline margin shortly

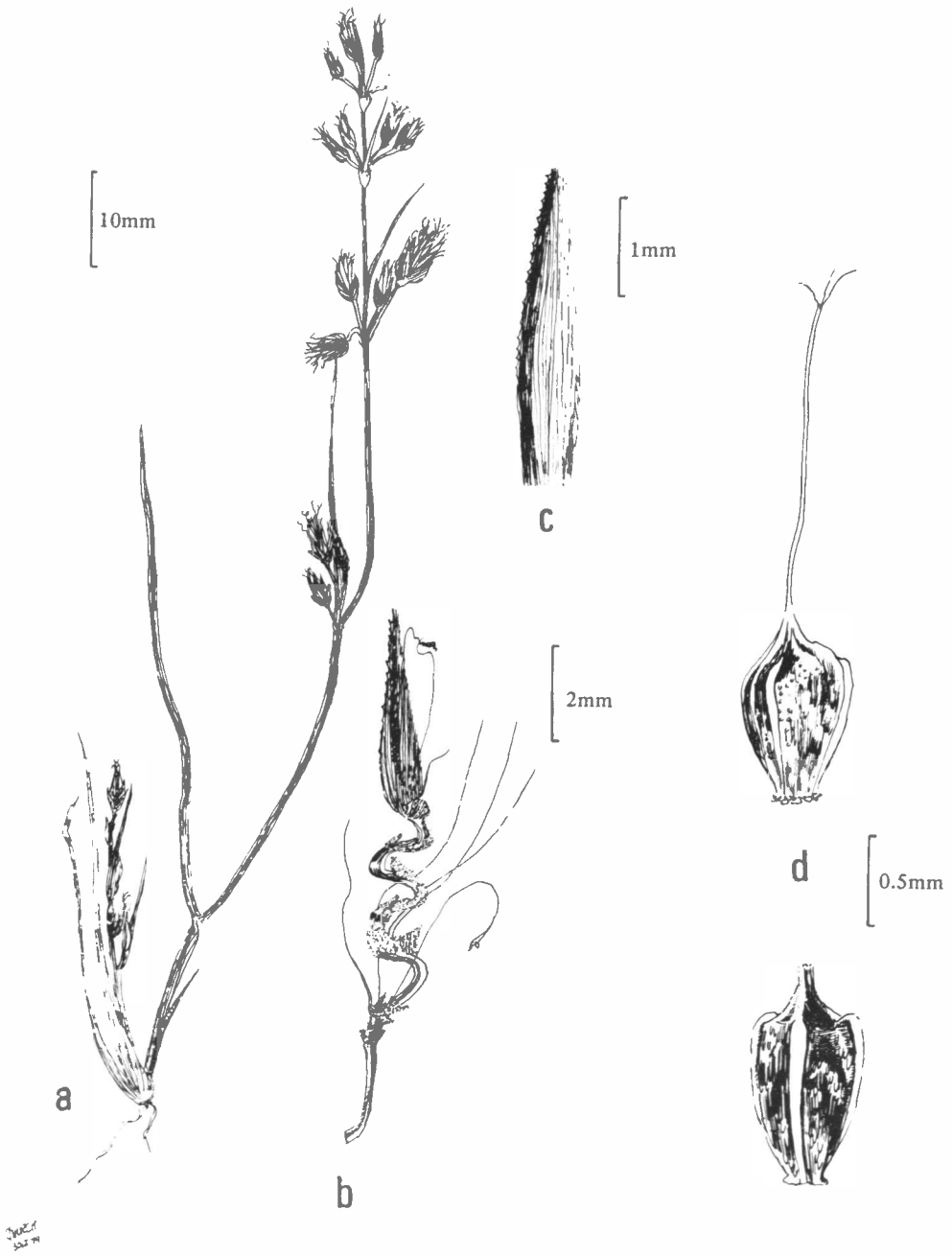


Fig. 4. *Schoenus centralis* a. habit; b. deflorate spikelet; c. glume; d. nuts. (From Latz 5945.)



decurrent onto the leaf blade, up to 2 cm long. *Inflorescence* racemose, rarely subpaniculate, loose, consisting of (1-) 3-4 fascicles of branches. Solitary bracts similar to the leaves only the uppermost overtopping the inflorescence. Branches (2-) 3-4(-6) together, unequal, spreading, compressed, scaberulous with 1 (rarely 2) spikelets, 0.25 mm wide and up to 2 cm long. *Spikelets* lanceolate to narrow ovate, acute, 4-6 flowered, 5-7 mm long and about 2 mm wide; the uppermost always with 3 empty glumes below the fertile ones. *Rachilla* flattened dorsally, 3-4 mm wide, lower internodes (between the empty glumes) very short, upper ones elongated and prominently zig-zag at maturity. *Glumes* distichous, 6-10, the lowest 2 or 3 and the uppermost reduced and empty. Fertile glumes membranous, decurrent on the rachilla, lanceolate, rather acute but shallowly notched at the apex, 3-4 mm long; keel green, scabrid on the upper 2/3, sides orange or reddish, nerveless or with one faint nerve in the centre on either side, margins hyaline; spreading at maturity and usually falling with the nut. Lower empty glumes shorter, more acute otherwise similar to upper. *Perianth* absent. *Stamens* 3; anthers yellow, 1.5-2.5 mm x 0.2-0.25 mm, appendage of the connective short, up to 0.5 mm long. *Style* slender, glabrous, 1.5-3.0 mm long; stigmas 3, about 1 mm long. *Nut* sharply trigonous, ovoid to obovoid, the 3 angles acute, almost winged and abruptly truncate near the apex, 1.1-1.5 mm long (including the 0.3-0.4 mm long style base) 0.5-0.6 mm wide, blackish blotched at maturity; epidermal cells isodiametric to oblong in vertical rows, sometimes swollen. (Fig. 4)

The Australian species of *Schoenus* are badly in need of revision. It appears, however, that *S. centralis* can be separated from all the other Australian species by the following combination of characters:—the annual habit; the flat 'grass like' leaves, the presence of up to 6 fertile flowers; the lack of bristles or scales; the scabrid glumes and the shape of the nut. Known only from the type specimen, it appears to be endemic to central Australia and is separated by about 800 km from the nearest *Schoenus* to the north.

#### Acknowledgements

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