WHAT IS CYNODON RADIATUS ROTH EX R. & S. (POACEAE)?

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SUMMARY

_Cynodon radiatus_ Roth ex R. & S. is the correct name for _C. arcuatus_ Presl (Poaceae).

Roemer and Schultes (1817) described _Cynodon radiatus_, basing themselves on a manuscript by A.W. Roth, copying Roth's brief diagnosis and comment. It was compared to _Cynodon dactylon_, differing by its larger habit, the number and direction of the spikes, and the glabrous blades and sheaths.

This was of course insufficient to be able to deduce whether this was a mere form of _C. dactylon_ or indeed a distinct species.

In 1821 Roth described it more extensively, but his work is rare and therefore difficult to consult. Here, he described a very curious inflorescence with a terminal peduncled spike surrounded by a whorl of 7 sessile ones. Otherwise it seemed obvious that a species of _Cynodon_ was involved. Anyway, the species was nearly completely forgotten afterwards. Only Sprengel (1825) gave it a new combination in _Digitaria_, but, as Henrard (1950) pointed out, this was done without good reason.

When I studied the genus _Cynodon_ for the Flora Malesiana, I noted that Jansen (msc.) cited the name in synonymy under _C. dactylon_, but especially the number of the spikes reminded me more of _C. arcuatus_ Presl (1830). As _C. radiatus_ is older than the latter combination, it seemed sufficiently important to check the type, a Heyne collection from India. Through the kind cooperation of Dr. H. Scholz, Berlin, this type was received on loan, for which I am most grateful.

Heyne's specimen indeed has the type of inflorescence Roth described: a whorl of patent spikes, spikeled to base, and a central one, more or less upright and naked in the lower 6 mm. Otherwise in all diagnostic characters it is a true _C. arcuatus_. So, unfortunately, Roth based his description on a specimen with a minor abnormality of one spike, which certainly is no species character. In conclusion, the combination _Cynodon arcuatus_, which was used for more than 160 years, has to be replaced. The species is of insufficient economic value to have its name conserved under the present rules of the Code.

_Cynodon radiatus_ is morphologically very similar to _C. dactylon_ and it is not surprising that Henty (1969) regarded it as a subspecies of the latter, using a combination suggested by Dr. J.H. Kern on a label from Leiden. De Wet & Harlan (1970) have made an intensive study of hybridization and genetic boundaries in _Cynodon_ and observed that _C. radiatus_ is quite isolated from all other species. I therefore have maintained it as a species at their suggestion.
Cynodon radiatus Roth ex R. & S.

_Cynodon radiatus_ Roth ex R & S., Syst. Veg. 2 (1817) 411; Roth, Nov. Pl. Sp. (1821) 38. — _Digitaria radiata_ Spreng., Syst. Veg. 1 (1825) 272. — Type: Heyne s.n., in Hb Roth (B, holo).


Perennial, stoloniferous, rhizomes absent, mat-forming. _Culms_ erect, geniculate, 0.1–0.4(–0.9) m long. Ligule membranous, collar-shaped, 0.2–0.5 mm long, with few longer hairs. _Leaves_ glabrous, blades linear-lanceolate, flat, 4–14(–18) cm by (1–)4–7(–9) mm, auricles usually glabrous. _Spikes_ in 1 whorl, 5–8(–11), slender, flexuous, erect to patent, 6–12 cm by 0.6–1.5(–1.8) mm. Rachis margins scabrous. _Spikelets_ 1.9–2.5 mm long. Lower _glumes_ 0.6–1.2 mm long; upper glumes 0.7–1.5 mm long. _Lemmas_ 1.8–2.5 mm long, hairs sometimes club-shaped (25×!). _Anthers_ 0.5–0.7 mm long.

Chromosomes — 2n = 36.

Distribution — Madagascar, Comores [Bosser, Mém. ORSTOM 35 (1969) 93], India, South-east Asia, Burma, Australia (Northern Territory); Malesia: Java (Rangkasbitung), Ceribon, Magelang, Kediri, Besuki], Celebes (Bolang Mongedom), Philippines (Luzon, Mindanao), Moluccas (Halmahera), Lesser Sunda Islands (Bali, Flores, Alor, Timor), Papua New Guinea (introduced in Morobe Province).

KEY TO THE SPECIES

1a. Rhizomes present. _Culms_ 0.1–0.2 m long. _Blades_ 1.5–2.5 mm wide. _Spikes_ 3–6, 1–6 cm by 1.2–2 mm, not flexuous. _Anthers_ 0.8–1.5 mm long

_Cynodon dactylon_

b. Rhizomes absent. _Culms_ 0.2–0.4 m long. _Blades_ 4–7 mm wide. _Spikes_ 5–8, 6–12 cm by 0.6–1.5 mm, flexuous. _Anthers_ 0.5–0.7 mm long

_Cynodon radiatus_

REFERENCES


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