

The Outstanding Stamens of *Pennisetum clandestinum* Hochst. ex Chiov.

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While walking across the University of Arizona campus in Spring 2006, I noticed bluish tufts in the lawn of a traffic island (Figure 1). On examination, these tufts comprised the translucent-whitish stamens of *Pennisetum clandestinum* Hochst. ex Chiov. (determined by John Reeder at ARIZ). The turf grass is native to Africa and widely planted, even invasive, in other tropical and subtropical regions (Hitchcock 1951; Calderón de Rzedowski & Rzedowski 2001). To say that the stamens were long-exserted is an understatement, as the filaments – up to 3.6 cm long – were several times the length of the spikelets (Figure 2). Across the apparently monotypic patch, inflorescences typically bore two spikelets and, thus, produced a tuft of six stamens (the stamens of both spikelets simultaneously exserted).

Surprisingly, this phenomenon is rarely mentioned in floristic treatments, and is not part of the original description of the species published by Chiovenda (1903). The inflorescence of *Pennisetum clandestinum* was described in the Flora of Tropical Africa as “reduced to a cluster of 2-4 (mostly 3 and rarely 1) spikelets,” which may be bisexual or functionally unisexual. The bisexual spikelet(s) produce “very long protruding filaments up to 1 or 2 in long,” while a functionally male spikelet possesses rudimentary stamens and a functionally female spikelet bears much-reduced filaments and empty anthers (Stapf & Hubbard 1934: 1010). The inflorescence has been depicted with the anthers only just-protruding from the spikelets (e.g., Chiovenda 1903: tav. 5-II; Hitchcock 1951: fig. 1114), or with the stamens of one spikelet exserted and those of the other not (or not yet) exserted (e.g., Wipff 2003: 520). In illustrations of an isolated spikelet, the stamens themselves are typically shown long-exserted but in a flaccid state (e.g., Hitchcock 1951: fig. 1114; Wipff 2003: 520). McVaugh provided an apt description, invoking the phenomenon observed in the UA lawn: “only the narrow tips [of the spikelets] and the slender stigmas and the upright white filaments 2-3 cm long exserted above the foliage...the inflorescences (except for the stamens) are very inconspicuous, and flowering may pass unnoticed” (McVaugh 1983: 329).

In the ‘field’ (irrigated lawn) setting, the stamens were exserted only in mid-morning, as they were first collected

on 14 Apr and then photographed on 17 Apr 2006. In the afternoon and early morning during the same time frame, the stamens were observed collapsed in disarray, but still visible on close inspection amid the tangle of stems and inflorescences in the short-napped lawn. This is the typical state of the stamens as they are preserved in herbarium specimens. A specimen has been deposited at the University of Arizona Herbarium (ARIZ 379989) that includes the plants at anthesis photographed in Figure 2. (Photos by author)

References Cited

- Calderón de Rzedowski, G. & J. Rzedowski. 2001. Flora fanerogámica del Valle de México, 2nd edition. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, Pátzcuaro.
- Chiovenda, E. 1903. [Flora della Colonia Eritrea, parte prima:] Graminaceae, Cyperaceae, Moringaceae, Papilionaceae, Caesalpiniaceae, Mimosaceae. *Annuario del Reale Istituto Botanico di Roma* 8: 21-109.
- Hitchcock, A. S. 1951. *Manual of the grasses of the United States*, 2nd edition, revised by A. Chase. U.S.D.A. Miscellaneous Publication no. 200, United States Government Printing Office, Washington.
- McVaugh, R. 1983. Gramineae, pp.1-436. *In*: W.R. Anderson, ed., *Flora Novo-Galiciana*, vol. 14. University of Michigan Press, Ann Arbor.
- Stapf, O. & C. E. Hubbard. 1934. Gramineae (Maydeae—Paniceae) – part 6, pp.945-1132. *In*: D. Prain, ed., *Flora of Tropical Africa*, vol. 9. L. Reeve & Co., Ltd., Kent.
- Wipff, J. K. 2003. *Pennisetum* Rich., pp.515-529. *In*: M. E. Barkworth, K. M. Capels, S. Long, & M. B. Piep, eds., *Flora of North America*, vol. 25 – Magnoliophyta: Commelinidae (in part): Poaceae, part 2. Oxford University Press, New York and Oxford.

Figure 1. Ground-level view of the stamens of *P. clandestinum* in an irrigated lawn on University of Arizona campus, 17 Apr 2006. (K. Mauz)

Figure 2. Pressed specimens of *P. clandestinum* (part of ARIZ 379989), preserving the long-exserted, erect stamens at anthesis. The two spikelets are particularly visible in the left-hand plant: the two sets of three stamens indicate the spikelets in the right-hand plant. (K. Mauz)



Figure 1. Bluish tufts in the lawn.



Figure 2. Plants at anthesis.