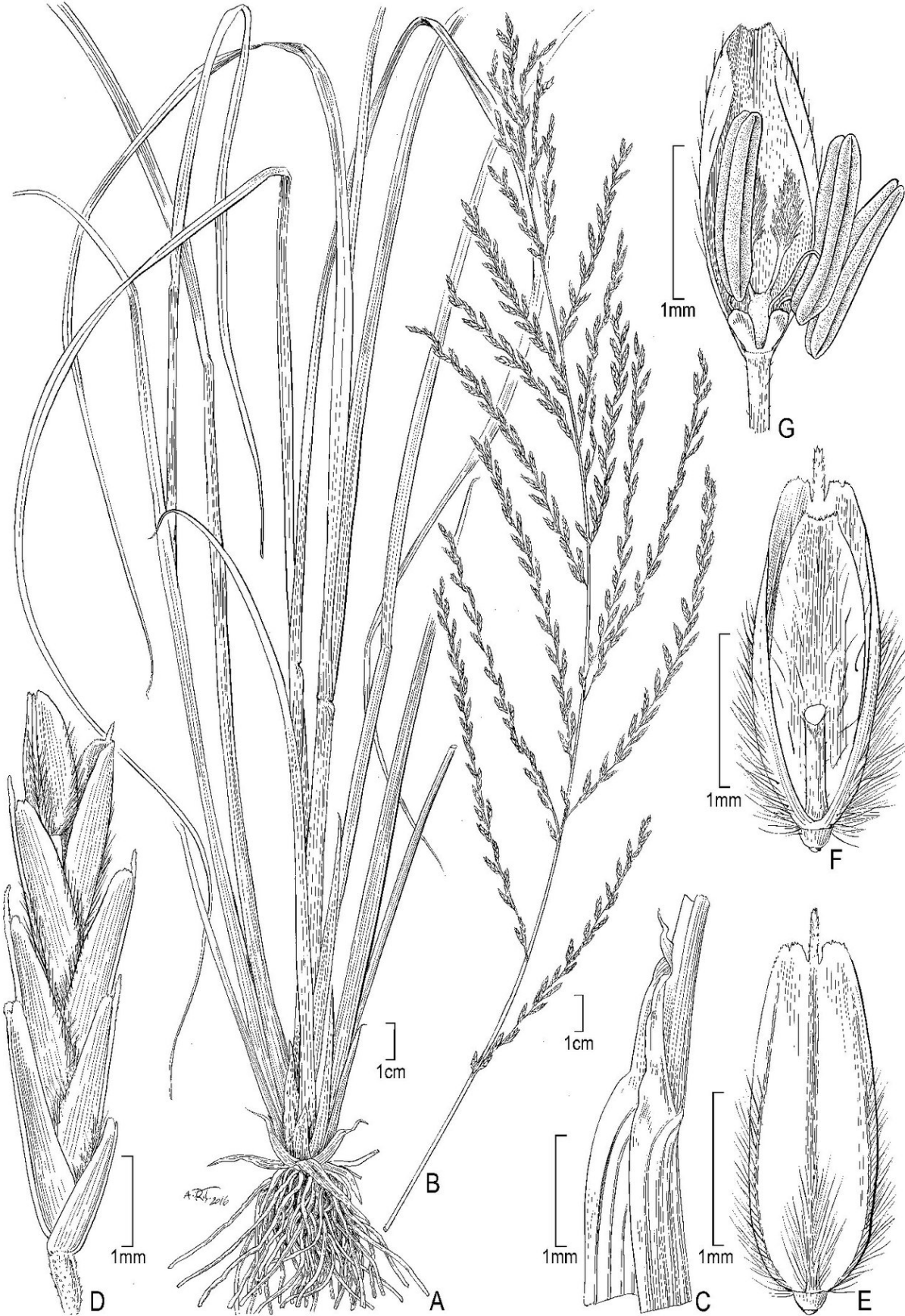


Unusual properties within the grass genus *Diplachne*

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Scientific drawing of the enigmatic *Diplachne gigantea*. Credit: Snow N, et. al.

The grass genus *Diplachne* only includes two species, but it does not fall short when it comes to remarkable features. It was precisely this affinity to the unusual displayed by the nearly worldwide genus that inspired Dr Neil Snow and his co-authors to delve deeper in a dedicated monograph published in the open access journal *PhytoKeys*.

Occurring widely on all continents except Antarctica, *Diplachne fusca*, one of the two known species, is by far not just another grass species, with two of its four subspecies displaying high salt tolerance.

Even more intriguing is the discovery of a German research team from the 1980s, which discovered that some populations from southern Asia harbor a nitrogen-fixing bacterial species, which when described was new to science.

"The combination of nitrogen-fixing bacteria and high levels of [salinity tolerance](#) is unknown in other grasses, at least that I am aware of", explains Snow.

"The high tolerance for growing in saline soils suggests the plants may have untapped potential for the reclamation of salinized agricultural soils, which is more and more problematic for some producers."

In significant contrast, the second species *Diplachne gigantea* is restricted to small pockets in Africa. Having been collected only a few times and not since the early 1980s, the enigmatic plant is an emergent

species, meaning its roots are in the water but upper portions typically extend well above the surface.



Typical growth form (left) of *Diplachne fusca* subsp. *Fascicularis*. Credit: Snow N, et. al.

"I spent two long and hot days in a boat in the Okavango Delta in Botswana in 1996 looking for this elusive plant, but regrettably without success", comments Snow on his attempt to encounter *Diplachne gigantea* in its natural surroundings. "Given the widespread potential habitat in the Okavango, it seems odd the [species](#) is collected so infrequently, but it may well be that it is quite rare".

Snow's colleagues at the Smithsonian Institution, Drs. Paul Peterson and

Konstantin Romaschenko , included a molecular phylogenetic analysis of 21 individuals of *Diplachne*, which indicated that while the genus is monophyletic, some accessions of the four subspecies of *D. fusca* are in fact polyphyletic.

More information: Neil Snow et al. Monograph of *Diplachne* (Poaceae, Chloridoideae, Cynodonteae), *PhytoKeys* (2018). [DOI: 10.3897/phytokeys.93.21079](https://doi.org/10.3897/phytokeys.93.21079)

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