



FIG. 1.

Roots of *Sopubia delphinifolia* (B) attached to roots of *Andropogon Sorghum* (A).

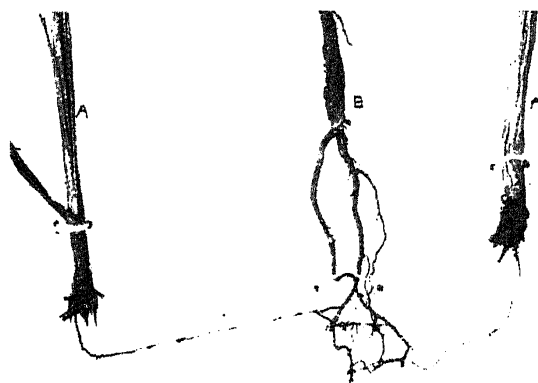


FIG. 2.

Enlargement showing the roots of *S. delphinifolia* (B) attached to roots of *Andropogon Sorghum* (A).

uncertain until it was observed to attack Sorghum.

The writer has not been able to find any reference to previous report of *S. delphinifolia* attacking Sorghum and this is the first instance of its being placed on record.

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¹ Fyson, P. F., *Flora of the Nilgiri and Pulney Hill-tops*, 1915, 1.

² Hooker, J. D., *The Flora of British India*, 1885, 4.

³ Cooke, Theodore, *Flora of the Presidency of Bombay*, 1903, 2, Part II.

The Occurrence of Root-Hairs on Aerial Roots in Sorghum.

DURING 1937-38, the Type-1 Sorghum (*S. cernuum*, Host.) crop on the Station was very much stunted due to deficient rainfall. To understand the effect of drought on the development of the plant, root-studies were undertaken. When the plants were two months old (Nov.-Dec.), the aerial adventitious roots arising from the bottom nodes were found to be trailing along the ground instead of penetrating it as a result of a very hard top layer of soil. These had a silvery, woolly look instead of being green. Microscopic examination showed this to be due to light reflected by innumerable, transparent root-hairs jutting from the epidermis. The root-hairs were distributed *all over the surface* of the aerial root. Normally in the Sorghum plant, the aerial adventitious roots are devoid of root-hairs. Root-hairs develop only when these aerial roots pierce the ground and come into contact with the moist particles of soil. Even when the root-hairs are present they are usually confined to a short distance behind the root tip in the tender undifferentiated tissues. The occurrence of numerous root-hairs all over the root, which is entirely aerial, in the natural field environment is, so far as we are aware, rare. Further, the root-hairs on these roots were healthy and full of protoplasmic contents. At the time of observation (Nov.-Dec.) the atmosphere was very dry except for a small amount of dew in the early hours of the morning. As these aerial adventitious roots could not penetrate the hard layer but remained trailing along the surface without coming into contact with moist soil, the only logical explanation for the occurrence of root-hairs on the surfaces of these aerial roots seems to be that they were developed there in response to the dew. The nature of root-hairs themselves, *viz.*, their perpendicular disposition with straight cell walls lends further support for the suggestion that they were developed in response to moisture.¹

This unusual development of root-hairs strongly suggests the extreme efforts on the part of the plant at obtaining water which it so badly needed during this particularly dry season.

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May 20, 1938.

¹ F. Schwarz, *Untersuch. Bot. Inst. Tübingen*, 1883, 1, 135-88.