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BRIEFER ARTICLES

PARTIAL PHYLLODY OF YUCCA ELATA

(WITH ONE FIGURE)

Observations on phyllody in *Yucca elata* Engelm., previously reported from the Jornada Experimental Range in southern New Mexico, dealt with specimens in which differentiation of flowers failed completely.[1] All of the cases found from 1926 to 1931 were of this type. In July, 1932, however, three specimens of partial phyllody were noticed. These specimens of partial phyllody, two of which are shown in figure 1, were produced in 1931, probably during the early summer. When they were found a year later, the panicles were dry, the capsules open, and most of the seeds were dispersed. Even though the stalks were a year old, they were sufficiently well preserved to demonstrate this unusual feature for *Y. elata*.

The usual inflorescence of *Y. elata* is a much branched panicle with perfect flowers. It has been reported previously[2] that the number of blossoms on different flower stalks may vary from 75 to sometimes more than 200, but the number of flowers which produce mature capsules is low, rarely as high as 30 per cent. Observation of the flower stalks shown in figure 1 revealed that flowers and mature capsules were produced on the lower branches of the panicles, but flowers failed to differentiate on the upper portions, thus producing the condition of partial phyllody. The smaller panicle produced nine normal branches, supporting approximately 50 flowers; five branches showing transition between typical growth and phyllody; 14 leaf clusters on the main axis and a dense terminal group of leaf clusters. Five of the flowers produced mature capsules. The larger panicle (fig. 1) produced 25 normal branches, with approximately 100 flowers, six transitional branches, nine branches in condition of phyllody, and the terminal leaf cluster. Eleven mature capsules were produced on this specimen.

It is impossible to determine the cause of the condition observed from the scanty material available. Both of the specimens were inhabited by the carpenter bee, *Xylocopa californica*, but this insect does not enter

[1] CAMPBELL, R. S., A case of phyllody in *Yucca elata*. BOT. GAZ. 88:109–110. 1929.

[2] CAMPBELL, R. S., and KELLER, J. G., Growth and reproduction of *Yucca elata*. Ecology 13:364–374. 1932.

Yucca flower stalks until after the flowers are fully developed and it is by no means confined to panicles in a condition of phyllody. The specimens shown in figure 1 were taken from stalks with a connecting underground stem.

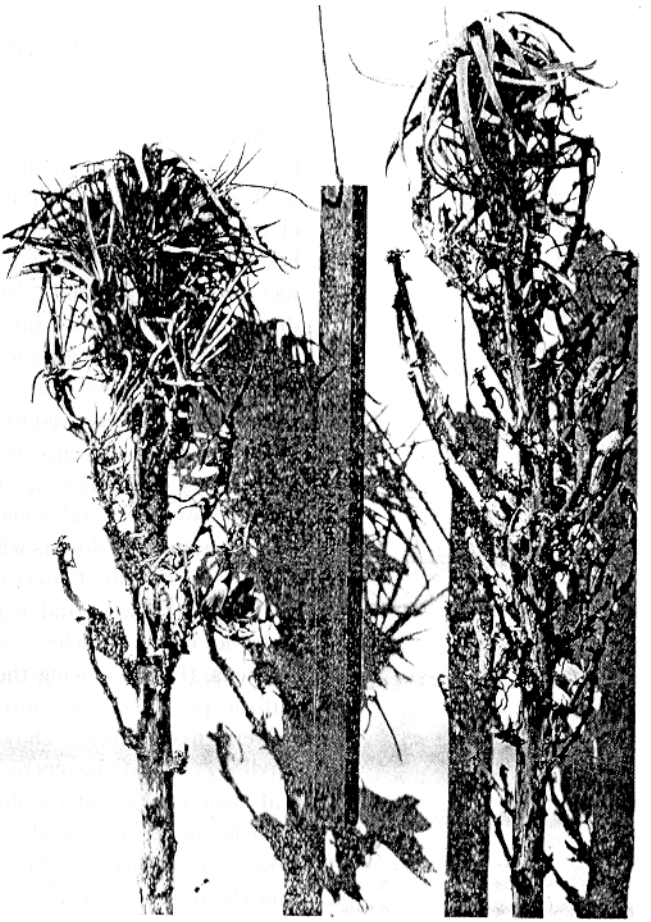

FIG. 1.—Two flower stalks of *Yucca elata*, showing partial phyllody

Although many observations have been made, no cases of phyllody have been observed in other species of *Yucca* found in southern New Mexico, *Y. baccata*, *Y. glauca*, and *Y. macrocarpa*. R. S. CAMPBELL and J. G. KELLER, *Southwestern Forest and Range Experiment Station, U.S. Forest Service, Las Cruces, New Mexico.*