

A New Species of *Agave* from Trans-pecos Texas

Cornelius H. Muller

The detailed collections in the Chisos Mountains of Brewster County, Texas, by Professor O. E. Sperry and Mr. B. H. Warnock might be expected to disclose many gaps left by earlier collectors. The discovery in their collection of a new species of plant even so obvious as *Agave* is therefore not surprising. There follows a description.

Agave chisosensis sp. nov.

Folia anguste ovato lanceolata 45-55 x 6-7 cm.; spina 3-5 cm. longa attenuata lateribus applanta; margo ab apice ad basim ubique callosa; dentes 8-13 mm. longi reflexi. Scapus 2.5-3 m. longus basi 6-8 cm. crassus; inflorescentia 2.5-3 m. alta strictissima, ramulis 4-5 cm. longis, 10- vel 12-floris, pedicellis 3-7 mm. longis. Flores 4.5 cm. longi, tubo 8 mm. longo, segmentis 22 x 7 mm., filamentis basi segmentorum insertis, 40-50 mm. longis stylum aequantibus. Fructus 35-40 x 17 mm.

Acaulescent. Leaves thin, fleshy, narrowly ovate-lanceolate, broadest below the middle, about 45-55 cm. long and 6-7 cm. broad, surfaces smooth and rather glaucous green; apical spine brown or grayish, about 3-5 cm. long, acerose-attenuate, laterally much flattened, upper side round-grooved the basal four-fifths of its length, decurrent upon the leaf and contiguous with the horny margins which extend uninterrupted to the leaf-base; lateral spines brown with a glaucous bloom, flat, about 8-13 mm. long, strongly appressed-retroflexed or the apex ultimately spreading, 3-5 cm. distant from one another, the basal ones 1-2 cm. apart, occasionally reduced and ascending. Inflorescence 5-6 m. tall, scape 2.5-3 m. long, about 6 or 8 cm. thick at the base, panicle equaling the scape; basal bracts leaf-like, long-attenuate; upper bracts small, quickly drying and disintegrating. Panicle very strict and spike-like, its branches about 4-5 cm. long, densely flowered (each with 10 or 12 flowers, singly or in small groups, each on a pedicel 3-7 mm. long). Flowers golden-yellow, moderate-sized; perianth about 3 cm. long, the funnel-shaped tube scarcely 8 mm. long, the segments about 22 x 7 mm.; stamens inserted at the bases of the segments, 40-50 mm. long, at anthesis about equalling the style; ovary about 15 x 5 mm. (rapidly accrescent). Fruits numerous on each panicle branch, capsules cylindrical, about 35-40 x 17 mm., prominently longitudinally veined.

TEXAS: "Basin, Chisos Mountains, Brewster County," July 13, 1937, O. E. Sperry, B. H. Warnock, and W. B. McDougall 840 (type no. 1,725,954, U. S. National Herbarium); same locality, Sperry without number, August 1938 (whole leaves and panicle branches in fruit); Glass Mountains, Brewster County, Sperry without number, August, 1938 (whole leaves).

The new species is only distantly related to the two previously known species of *Agave* in the Chisos Mountains. Despite the great similarity of its broad leaves to those of *A. Havardiana* Trelease, its very strict panicle places it closer to *A. utahensis* Engelm. in the subgenus *Littaea* (Tagliab.) Baker, section *Pericamptagave* Berger.¹ From *A. utahensis* the new species is readily distinguished by its larger leaves with longer lateral spines and horny margins extending quite to the bases, its much larger flowers with longer filaments, and somewhat larger capsules.

Agave chisosensis occurs in a relatively dry valley or broad canyon in the Chisos Mountains in scattered stands of the oak-juniper woodland vegetation type where it is associated with *Quercus Emoryi* Torr., *Juniperus pachyphloea* Torr., and *Opuntia imbricata* (Haworth) DC. It is very likely, as indicated by its occurrence in the Glass Mountains, that this species occurs also on several of the low mountains and foothills adjacent to the Davis and Guadalupe Mountains to the north and on those of the Sierra del Carmen in Coahuila to the south. That distribution is shared by several species of other groups. The superficial resemblance of its vegetative parts to those of the common *A. Havardiana* Trelease and of its inflorescence to that of *A. lechuguilla* Torr. (see Fig. 1) apparently have been responsible for the tardy discovery of this quite distinct species. The author recalls noting numerous vegetative plants in the same locality and regarding them as depauperate specimens of *A. Havardiana* (misidentified as *A. Wislizeni* Engelm.) under which species they were discussed.² Since no plants with the characteristically strict inflorescence of *A. chisosensis* were seen in flower in the summers of 1931, 1932, and 1933, it is logical to assume that the species is very slow in flowering and that the numerous individuals usually flower simultaneously or approximately so.

The author wishes to express his gratitude to the collectors for the unusual completeness of the material they submitted and the very helpful photographs illustrating the habit of growth of the plant, and especially to Professor Sperry, who kindly collected additional material and checked in the field the dimensions in the accompanying description.

DIVISION OF PLANT EXPLORATION AND INTRODUCTION,
BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C.

¹ Berger, A. Die Agaven, pp. 85, 105. 1915.

² Muller, C. H. Vegetation in Chisos Mountains, Texas. Trans. Tex. Acad. Sci. 20:3-31. 1937.

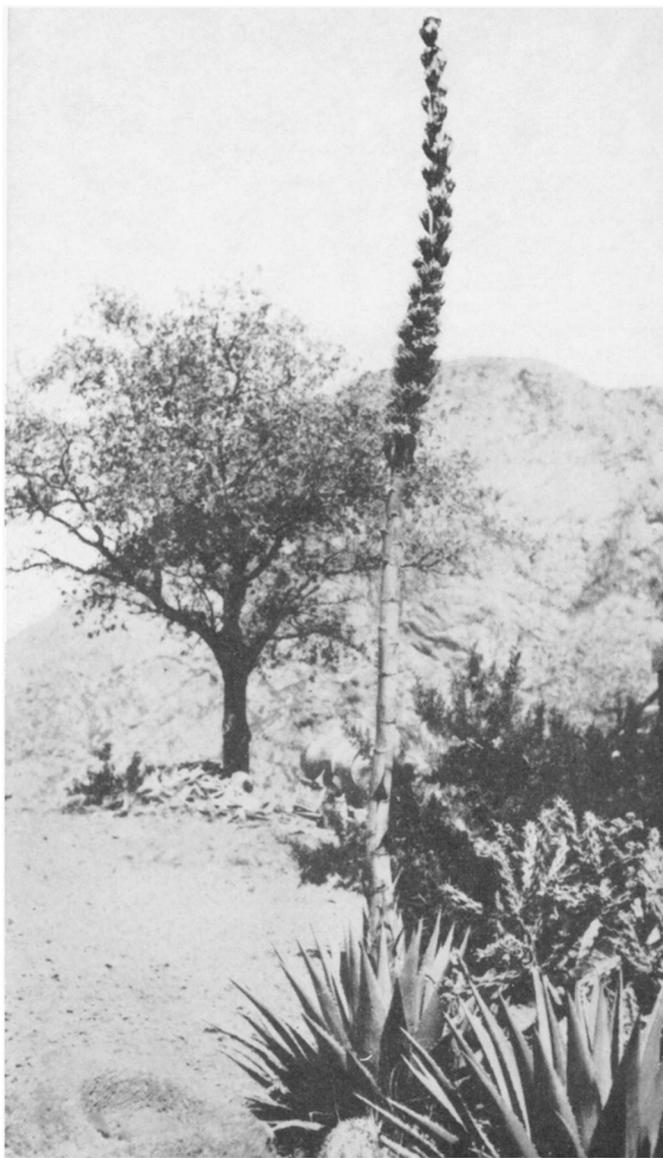


Fig. 1.—*Agave chisosensis* in the Chisos Mountains.