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STUDIES IN *DIOSCOREA*, II:
AN UNUSUAL NEW SPECIES FROM MEXICO¹

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Among the vast collections made by the late George B. Hinton in the Mexican states of México, Guerrero, and Michoacán during the decade 1930-1940 there are still undescribed species in many genera. Hinton's collections of *Dioscorea* include one of the most unusual members of the genus, here described by us as *Dioscorea insignis*.² These striking plants have the largest flowers of any species in the New World and, so far as we know, in the Old World as well. The largest flowers noted by Knuth³ were those of *D. macrantha* Uline ex Knuth, of Brazil, with a diameter of 2.75 centimeters, and Burkill⁴ has stated that "the largest flower of the Old World among the Dioscoreae is that of *D. buchanani*—7 mm. across the mouth." The densely flowered inflorescences and flowers with slender, white tepals 2 to 3 centimeters long must give a striking aspect to *Dioscorea insignis* and are surely the basis for its vernacular name "cola de borrego" or lamb's tail.

¹ The preceding paper in this series, Studies in *Dioscorea*, I: A collection from British Honduras, was published in the Journal of the Arnold Arboretum 47: 147-159. 1966.

² Mr. Morton long ago annotated a specimen of this material as *Dioscorea insignis*. However, lacking carpellate material he delayed publishing a description. After finding a carpellate collection in the Gray Herbarium set of Hinton material and having an illustration prepared, I discussed the species with Mr. Morton who cordially offered to publish it jointly with me. Matuda, in his monograph, listed the name as a nomen nudum and cited Hinton 6713 from Hinton's own herbarium as representative. There seems no reason now, however, not to use Morton's epithet. B. G. S.

³ Knuth, R., 1924. Das Pflanzenreich IV. 43 (Heft 87): 27, 118.

⁴ Burkill, I. H., 1960. Jour. Linn. Soc. (Bot.) 56: 392.



FIG. 1. a-i, *Dioscorea insignis* Morton & Schubert (a-d from Hinton 6713 (NA 170242), e-i from Hinton 6716 (GH)). a, portion of stem with leaf and staminate inflorescence, $\times \frac{1}{3}$; b, unopened staminate flower to show pubescence on pedicel and outer surface of tepals, $\times 3$;

***Dioscorea insignis* Morton & Schubert, new species**

D. insignis Morton ex Matuda, Anal. Inst. Biol. México 24(2): 386. 1954, NOMEN NUDUM.

Volubilis, ca. 1 m., sinistrorsum torta, caule gracili canaliculato, 3 mm. diametro supra, sparse piloso vel glabrescente; foliis ovato-acuminatis ad apicem longo-attenuatis, 9–11-nervatis, nervis extremis bifurcatis. Inflorescentiae ♂ axillares, racemis 15–30 cm. longis dense floriferis, rachibus racemorum canaliculatis abundanter pilosis; bracteis albis oblongo-lanceolatis, glanduloso-pilosis, cum costa prominente, pedicellis pilosos excedentibus. Perianthium 6-partitum album, segmentis lanceo-attenuatis. Stamina fertilia 3, centralia, tepalibus exterioribus opposita, antheris extrorsis; staminodia 3 in tepalis interioribus affixa in dimidio inferiore; rudimentum stylinum filamentis duplo brevius. Inflorescentiae ♀ 23–33 cm. longae, pedunculatae ad dimidium longitudinis; tepala eis florum stamineorum simillima; staminodia 6, 3 brevia tepalis exterioribus opposita, 3 elongata tepalis interioribus opposita et adnata; columna styliina apice 3-partita, stigmatibus 3 bifidis; capsula breviter pedicellata plus minusve ubique pilosa; semina undique alata.

Holotype: Cutzamalato Rancho, District Coyuca, Guerrero, México, 4 Oct. 1934, Hinton et al. 6713 (US ♂, no. 1,792,463; isotypes GH ♂, LL ♂).

Climbing or scrambling plant with a slender, canaliculate stem, ca 3 mm thick above, sinistrorsely twining; leaves ovate-acuminate to a long-attenuate tip, rather deeply cordate and with a broad sinus, 9–11-veined, the 2 outermost veins forked from the base, glabrous, 8–21 cm long, 6–17 cm wide; petioles canaliculate, pilose with small, 1-to-several-celled, light to very dark, scattered trichomes, 3.5–10 cm long. Staminate plant with leaves smaller than those of carpellate plant; racemes axillary, 15–30 cm long, densely flowered more or less from the base, the rachis canaliculate, rather abundantly pilose throughout, the bracts white, oblong-lanceolate with prominent midrib, with scattered glandular tri-

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c, opened staminate flower with most of tepals removed, showing 3 stamens, 3 staminodia, and elongate styler rudiment, × 3; d, flattened staminate flower to show position of the 3 stamens opposite the outer tepals and the 3 staminodia opposite the inner tepals, × 3; e, portion of stem with leaf and carpellate inflorescence, × ½; f, portion of carpellate inflorescence with almost mature capsules, × 3; g, carpellate flower with 2 tepals turned down to show 3 short staminodia opposite the outer tepals, 3 long staminodia opposite the inner tepals, and the styler column tripartite at apex and with 3 bifid stigmas, × 3; h, carpellate flower flattened and showing relative positions of staminodia and stigmas, × 3; i, winged seed, × 5. The illustration was prepared by Regina O. Hughes formerly of the U.S. Department of Agriculture.

chomes on the outer surface, ca 8 mm long, 1.5 mm wide at base, longer than the pilose pedicels; perianth white, 6-parted almost to base, the segments lance-attenuate, 2.5–3 cm long, 1.5 mm wide with a single prominent nerve, somewhat pilose below on the outer surface or throughout; stamens 3, centrally attached and opposite the outer tepals, the anthers extrorse; staminodia 3, attached for about half their length to the inner tepals, twice as long as the stamens; styler rudiment about half the length of the staminal filaments. Carpellate inflorescence 23–33 cm long, pedunculate about half its length, the rachis similar to the staminate, the bracts about 1 cm long; perianth segments similar to those of the staminate flowers, 2 cm long; 3 long staminodia opposite inner tepals and attached to them, 3 short staminodia opposite outer tepals; style 3-parted above and with 3 bifid stigmas; capsule short pedicellate, elliptic, somewhat pilose throughout, 2.3 cm long, 1.2 cm wide; only immature seeds seen, winged all around, 2.5 mm long.

MEXICO: Dist. Temascaltepec, Palmar, in barranca, 5 Oct. 1934, Hinton et al 6716 (GH ♀ ♂, US ♀). GUERRERO: Dist. Coyuca, Cutzamalato Rancho, barranca, 14 Oct. 1934, Hinton et al. 6713 (MO ♂ [as 7613], NA ♂); Dist. Montes de Oca, San Antonio, 30 Oct. 1937, Hinton et al. 11555 (GH ♂, US ♂); Dist. Galeana, Carrizo to Santo Domingo (alt. 850 m, by river in mixed forest, 25 Oct. 1939, Hinton et al. 14716 (GH ♂, NA ♂, US ♂).

This extraordinary species, *Dioscorea insignis*, seems to be most closely related to *D. densiflora* Hemsley of section *Oxypetalum* Uline, in subgenus *Dioscorea*. The section is characterized by plants with sinistrorsely twining stems, flowers borne singly and subtended by bracts, staminate flowers with 3 stamens and 3 staminodia, and carpellate flowers with 6 staminodia and the styles connate in a column. From all other members of the section the species is distinguished by the extremely elongate perianth segments of the flowers of both sexes, the elongate pedicels of the staminate flowers, and the narrowly alate capsules. In addition, its leaves are 9–11-veined rather than 7–9-veined as are those of other members of the section.

Although Hinton collected *Dioscorea insignis* in three localities in Guerrero and one in the state of Mexico, other collectors seem not to have found it at all. Since its range and that of *D. densiflora* (which is found in Honduras, Guatemala, British Honduras, and north into Veracruz, Tamaulipas, Chiapas and Oaxaca) do not overlap, it would be interesting to hunt for related elements which may bridge the gap.