

A NEW SPECIES OF CERATUZAMIA (ZAMIACEAE) FROM CHIAPAS, MEXICO

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Dennis Wm. Stevenson (Department of Biological Sciences, Barnard College, Columbia University, New York, NY 10027 and New York Botanical Garden, Bronx, NY 10458). A new species of *Ceratozamia* (Zamiaceae) from Chiapas, Mexico. *Brittonia* 34: 181-184. 1982.—*Ceratozamia norstogii* sp. nov. from Chiapas, Mexico is described. This species is distinct from all others in the genus in that it has a straight rachis with very narrow leaflets (3-10 mm wide) which are strongly curved and almost round in cross section when dried. It is known only from Chiapas, Mexico and in cultivation.

Ceratozamia norstogii D. Stevenson, sp. nov. (Figs. 1-3)

Species *Ceratozamia zaragozae* affinis; rachis recta; foliola linearia, canaliculate, apice attenuata, 3-10 mm lata, 5-6 veniae.

Stem short (less than 50 cm), subcylindric to cylindric, covered by persistent leaf bases; *leaves* 1-2 m long, stipulate, densely pubescent when young, glabrous when fully expanded; *petiole* 20-30 cm long, armed with spines especially below, terete to subterete; *rachis* 0.8-1.7 m long, straight, sometimes armed with spines in the lower half and nearly smooth or smooth above; *leaflets* opposite to subopposite (rarely alternate), 50-80 on each side, linear, 20-50 cm long, 3-7 (10) mm wide, sessile, attenuate at base and apex, 5-6 veined, the venation dichotomous, the blade strongly rolled parallel to the longitudinal plane and almost completely tubular when dry; *microsporangiate cone* tawny brown when fresh, usually solitary, long-cylindric, tapering slightly towards the mucronate apex, 20-25 cm long just prior to the shedding of pollen, 5-8 cm in diameter; *peduncle* tomentose, elongate, 2-5 cm long, 1-2 cm in diameter, unarmed; *microsporophylls* broadly cuneate, 12-15 mm long, 5-8 mm wide, tapering to a narrow basal stalk, the apex slightly peltate with 2 horns 1-3 mm long; *microsporangia* covering the unexposed abaxial surface (from $\frac{2}{3}$ - $\frac{3}{4}$ the total length), mostly in clusters of three, dehiscing longitudinally; *ovulate cone* olive-green when fresh, usually solitary, cylindric, 20-40 cm long, 9-12 cm in diameter, the apex mucronate; *megasporophylls* peltate with a narrow stalk and with transversely hexagonal tips bearing 2 stout horns, 2-4 cm long including stalk, 1.5-3.5 cm wide; *ovules* two per sporophyll, projecting in towards cone axis, slightly pubescent when young, glabrous when mature; *seeds* white when ripe, smooth, 2-3.5 cm long, 1.2-1.5 cm in diameter.

TYPE: MEXICO. CHIAPAS: shady forests near Rancho, Fenia, Mar-Apr 1925, C. A. Purpus 6 (HOLOTYPE: NY; ISOTYPES: US, F—fragments only).

PARATYPES: MEXICO. CHIAPAS: Sierra Madre del Sul, mountain slopes under Pinus and Quercus, Mar 1925, C. A. Purpus 10006 (NY, US); microsporangiate cone, 24 Sep 1932, C. A. Purpus s.n. (F). UNITED STATES. CALIFORNIA: cultivated at the Sharp Estate, Coronado Beach, San Diego, but transplanted from the wild by Edward Howard, voucher 13 Sep 1937, C. J. Chamberlain s.n. (F—5 sheets); cultivated in the Doheny Conservatory, San Marino, Los Angeles, but transplanted from northern Chiapas by the Dohenys' collector, voucher 14 Aug 1939, A. W. Haupt s.n. (F—5 sheets); cultivated at the Sharp Estate, Coronado, 27 Feb 1940, C. J. Chamberlain s.n. (F—2 sheets); Conservatory of Golden Gate Park, San Francisco, 20 Sep 1929, Eric Walther s.n. (F—5 sheets); FLORIDA: cultivated at Fairchild Tropical Garden, Miami, accession no. 69-421, microsporangiate cone, 14 Jun 1971, S. Kiem s.n., leaf, 26 Jun 1981, J. Watson s.n. (FTG).

Natural distribution: known only from Chiapas, Mexico.

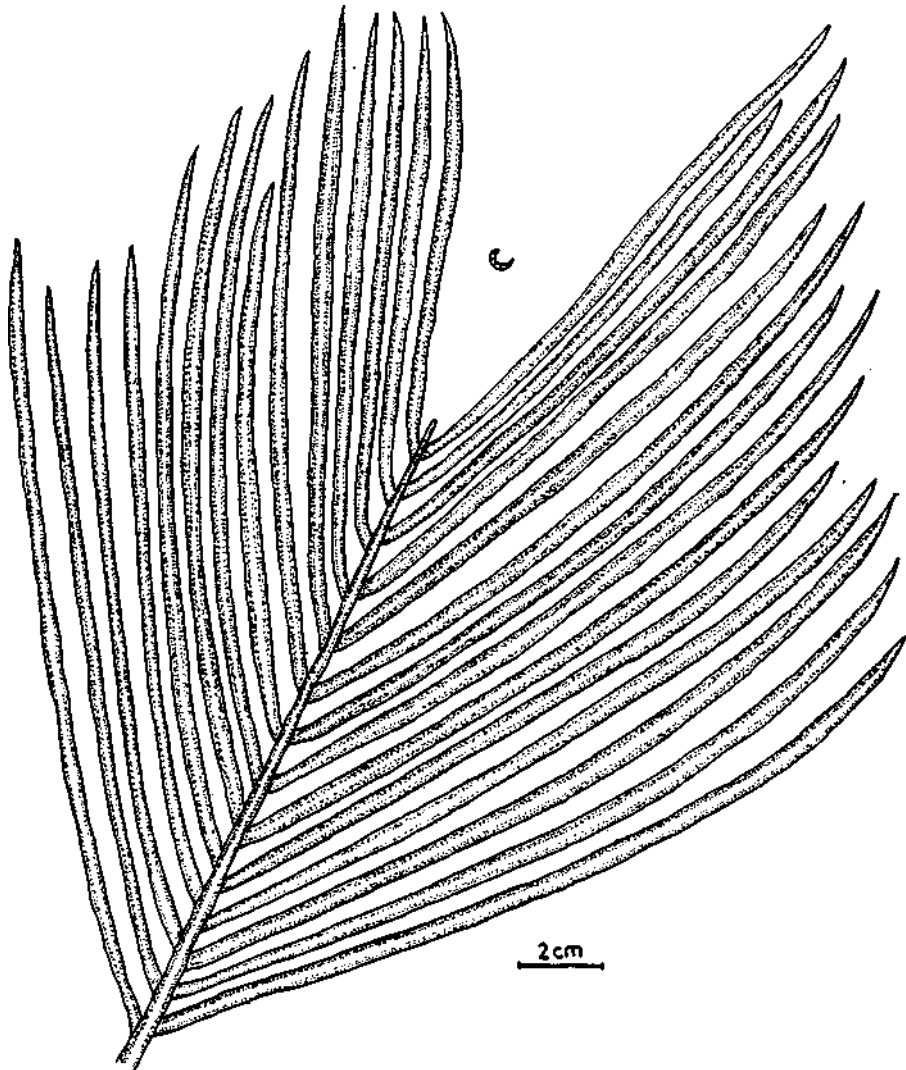


FIG. 1. Abaxial view of the terminal portion of a leaf of *Ceratozamia norstogii* D. Stevenson. The stippled areas represent those areas curving back from the viewer. Based on Chamberlain s.n. 13 Sep 1937 (F).

The closest relative to *C. norstogii* is probably *C. zaragozae* F. Meddlin. Although *C. zaragozae* has quite narrow leaflets it also has a distinctive twisted petiole and rachis, abruptly acute leaflet tips, and is restricted to San Luis Potosi, Mexico. In contrast, *C. norstogii* always has a straight petiole and rachis, attenuate leaflet tips, and is restricted to Chiapas, Mexico. This species is named in honor of Dr. Knut Norstog in recognition of his unexcelled contributions to our understanding of the Cycadales and for his stimulation of my interest and research in this group.

Ceratozamia norstogii has been recognized by three prior workers as a distinct species, but none of them has provided a description. The first to recognize it as new was J. N. Rose who labelled the Purpus specimens at NY and US with an epithet honoring the collector's surname, which was never published. Next, and quite independently, P. C. Standley recognized it as new from specimens col-

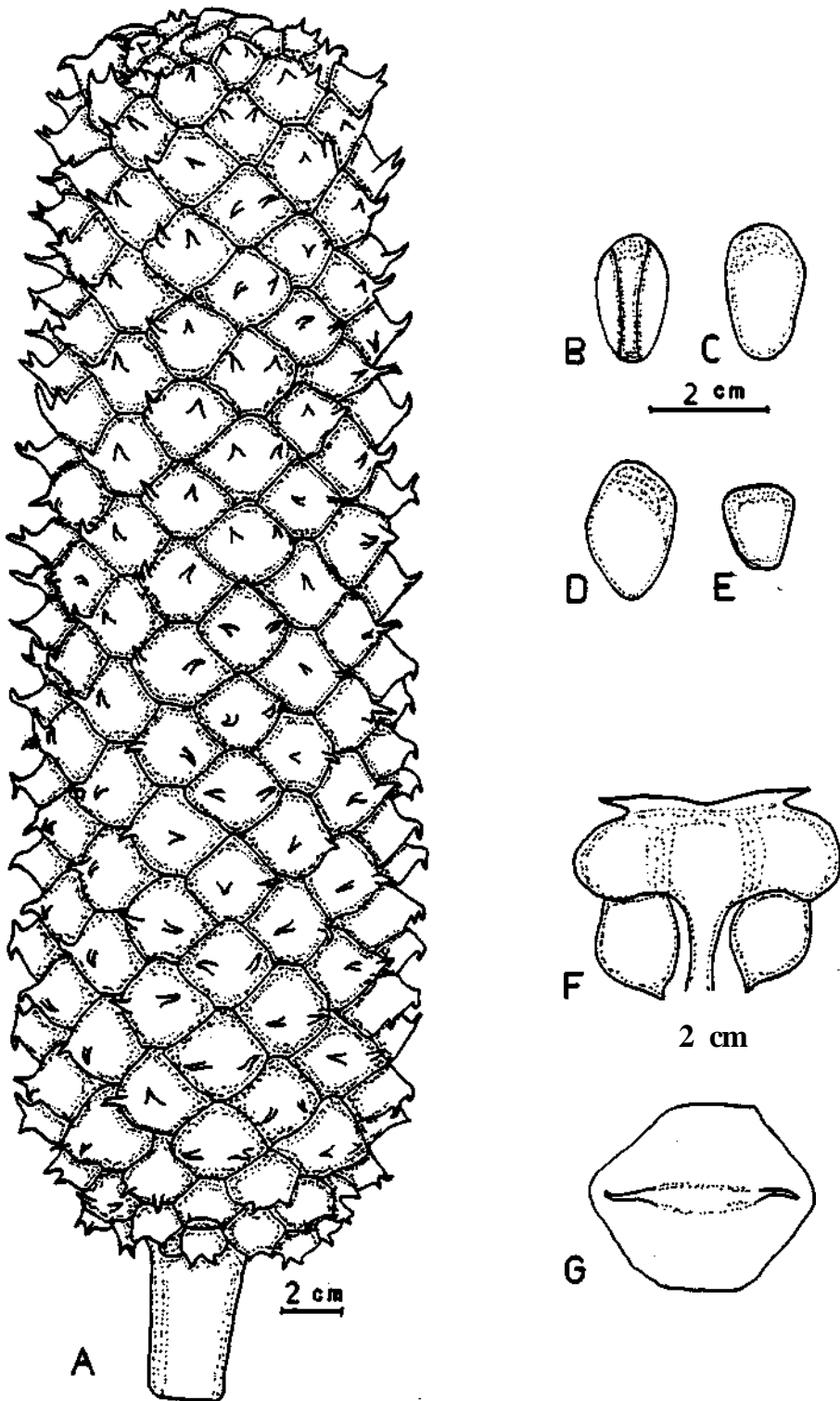


FIG. 2. Ovulate reproductive structures of *Ceratozamia norstogii*. A. Ovulate cone. Based on plant growing at FTG, accession no. 69-421B. B-E. Mature seeds. Based on plant growing at FTG, accession no. 69-421B. B. View from below. C. View from above. D. Side view. E. Micropylar end view. F-G. Megasporophyll. Based on *Purpus 6* (NY). F. Adaxial view. G. End view.

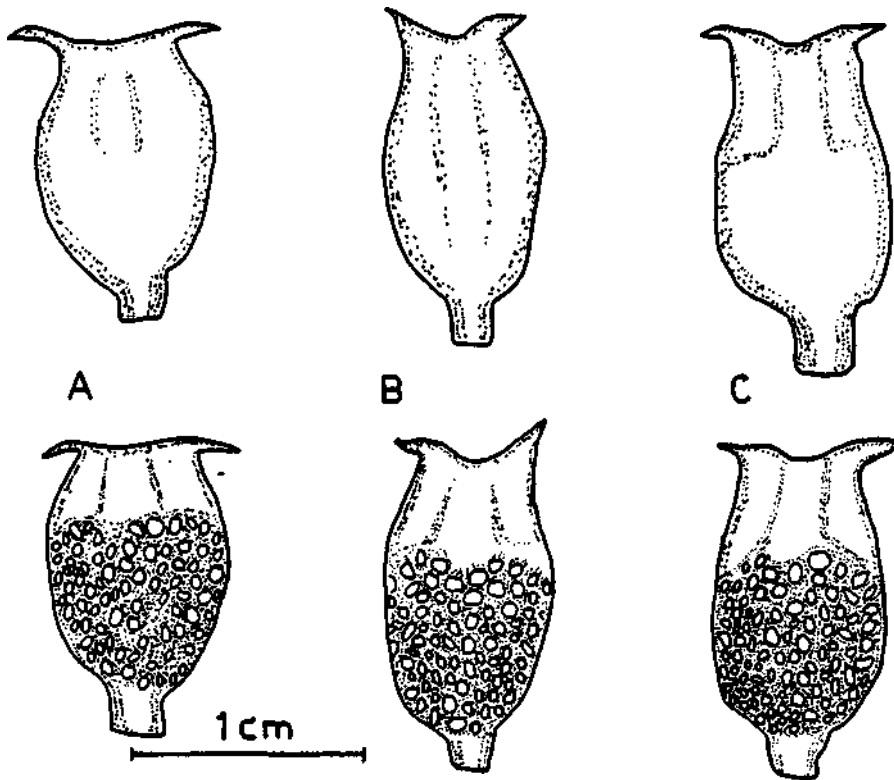


FIG. 3. Microsporophylls of *Ceratozamia norstogii* showing variation in size and shape from both adaxial and abaxial views of the same sporophylls. The upper row is the adaxial view, the lower row the abaxial view of the same sporophyll. Based on *Purpus s.n.* 24 Sep 1932 (F).

lected by Eric Walther from plants in cultivation in California and labelled them with an epithet honoring Alice Eastwood. Finally, C. J. Chamberlain also recognized it as a new species based partly upon the material examined by Rose and by Standley, material sent to him by Purpus, and material he collected from cultivation in California. Chamberlain, who did not publish on this species, identified it under Rose's herbarium name. Because three different workers have recognized this species as new but have used two different epithets on herbarium material, I have given it an entirely new name so as to avoid confusion. I have chosen the holotype, *Purpus 6* (NY), because it has reproductive structures and is the best specimen available that is known to have been collected in its native habitat.