

of interest as evidenced by the striking new cycad, *Ceratozamia Matudai*. Sixteen species are described from his collections.

In the course of the studies, the writer has borrowed types and other specimens from the Field Museum Herbarium, New York Botanical Garden, Gray Herbarium, Yale School of Forestry, U. S. National Herbarium, DePauw University Herbarium, and the University of California Herbarium at Berkeley. Grateful acknowledgement is made to the directors and curators of these institutions. To the Carnegie Institution of Washington the writer expresses his thanks for financial support of both field and herbarium studies. Especial indebtedness is acknowledged to Dr. A. V. Kidder whose continued interest has made possible much of the work in the Maya area.

## CYCADACEAE

***Ceratozamia Matudai* sp. nov.**

Truncus 30—50 cm. altus, 15—20 cm. diam. Folia 75—122 cm. longa, glabra. Petiolus basi dense tomentosus, subteres, aculeis brevibus pungentibus plus minus armatus. Rachis supra bisulcata, aculeolis raris armata. Foliola 23—44-juga, subopposita vel alterna, lineari-lanceolata, 20—38 cm. longa, 6.5—15 mm. lata, supra basin constricta, attenuata, acuta, subarcuato-patentia, integra, coriacea, nervis 6—11. Strobilus ♂ cylindrico-oblongus, 8—16 cm. longus, 3—4.5 cm. diam., pedunculo 8—11 cm. longo. Microsporophylla 1—2.1 cm. longa, 8—11 mm. lata, parte fertili 6—12 mm. longa, bicornuta. Strobilus ♀ ellipsoideus, ca. 15 cm. longus, 9 cm. latus, pedunculo 17—22 cm. longo. Peltae transverse hexagonae, 3.5 cm. latae, 1.8 cm. altae, basi tomentosae, in medio bicornutae. Semina obovoidea, ca. 3 cm. longa, 2.3 cm. diam.

Trunk 30 to 50 cm. tall, 15 to 20 cm. in diam. Leaves 75 to 122 cm. long, glabrous. Petioles armed with few short stout spines, subterete, the broad base densely and persistently tomentose, glabrous otherwise. Rachis flattened and shallowly bisulcate above, bearing a few short stout prickles, excurrent at apex. Leaflets 23 to 44 pairs, subopposite to alternate, linear-lanceolate, 20 to 38 cm. long, 6.5 to 15 mm. wide, the basal and apical shortest, widest above the constricted base, tapering to a long slender point, subarcuate-patent, coriaceous, yellow-green, shining above, entire, 6- to 11-veined, veins prominulous beneath, obscure above. Staminate strobile cylindrical-oblong, slightly narrowed toward the apex, abruptly and stoutly apiculate, 8 to 16 cm. long, 3 to 4.5 cm. in diam., peduncle 8 to 11 cm. long, covered with small red scales, appressed hirsute at base, thick at apex, gradually narrowed to the constricted base. Microsporophyll 1 to 2.1 cm. long, 8 to 11 mm. wide, broadest at the center, fertile part 6 to 12 mm. long, cuneate, sterile part 3.5 to 10 mm. long including horns, truncate-pyramidal, bearing two pointed horns 1.5 to 4 mm. long at apex,

the horns suberect to strongly divaricate. Mature fruiting strobile ellipsoid, about 15 cm. long, 9 cm. in diam., peduncle longer than cone, up to 22 cm. long, stout, rarely armed, appressed-hirsute and red scaly at first, glabrescent with age. Pelta transversely hexagonal, up to 3.5 cm. wide, 1.8 cm. high, base tomentose and red scaly, medially bicornute, the horns strongly divaricate, glabrous, their base red scaly, elevated. Seed obovoid, about 3 cm. long, 2.3 cm. in diam.

Type in the Herbarium of the University of Michigan, *Eizi Matuda 2645*, staminate plant, collected in broad leaved forest on northern slope of Mt. Ovando, Chiapas, Mexico, February 1939; alt. 1000 m.

Additional specimens examined: MEXICO: Chiapas, Mt. Ovando, on northern slope, Feb. 1939, *Matuda 2646* (mature fruit); Dec. 1937, *Matuda 2087*.

Through repeated trips to Mt. Ovando Mr. Matuda obtained complete material of the species, and it is with pleasure that I name it for him. *C. Matudai* may be readily separated from *C. mexicana* Brongn. and *C. Kuesteriana* Regel by its much longer peduncles and larger microsporophylls. On the basis of leaf nervation, it is nearest *C. Kuesteriana*, but differs, aside from the characteristics mentioned, in having armed petiole and rachis.

#### ARACEAE

#### *Monstera belizensis* sp. nov.

Caudex scandens. Folia oblique ovato-oblonga vel lanceolato-oblonga, 32—44 cm. longa, 13—20.5 cm. lata, apice angustata, rotundata et apiculata vel late obtusa et apiculata, basi rotundata, inaequilatera, integra, nunc pauciforaminata, nervis lateralibus I utrinque 9—12; petiolis 22—27 cm. longis. Pedunculus ca. 7 cm. longus, 8—10 mm. crassus. Spadix cylindricus, 15 cm. longus, ca. 3.5 cm. diam. Baccae 7—9 mm. longae. Stylus 4—6 mm. longus, truncatus. Semina 1 vel 2, oblongo-ellipsoidea, lateraliter compressa, 6.5—9 mm. longa, 5—6 mm. lata.

A large scandent vine, growing on tree trunks. Leaves thin, obliquely ovate-oblong or lanceolate-oblong, 32 to 44 cm. long, 13 to 20.5 cm. wide, apex narrowed, rounded and apiculate or broadly obtuse and apiculate, base rounded, inaequilateral, usually entire, rarely pertuse with 1 or 2 small holes remote from costa, main lateral veins 9 to 12 on each side, veinlets prominulous on both surfaces; petioles 22 to 27 cm. long, vaginate to middle of geniculus, which is 1.5 to 2.5 cm. long. Peduncles about 7 cm. long, 8 to 10 mm. thick. Spathe deciduous, not seen. Spadix in fruit sessile, cylindrical, tapering slightly from base to apex, 15 cm. long, about 3.5 cm. in diam. at base. Water soaked fruits cylindrical, 7 to 9 mm. long (excluding style), 1- or 2-seeded, the seed oblong-ellipsoid, slightly compressed laterally, 6.5 to 9 mm. long, 5 to 6 mm. wide; the style cylindrical, 4 to 6 mm. long, truncate or slightly concave; the stigma plane, slightly elevated in dried fruits.