

## DIION CAPUTOI (ZAMIACEAE), A NEW SPECIES FROM MEXICO

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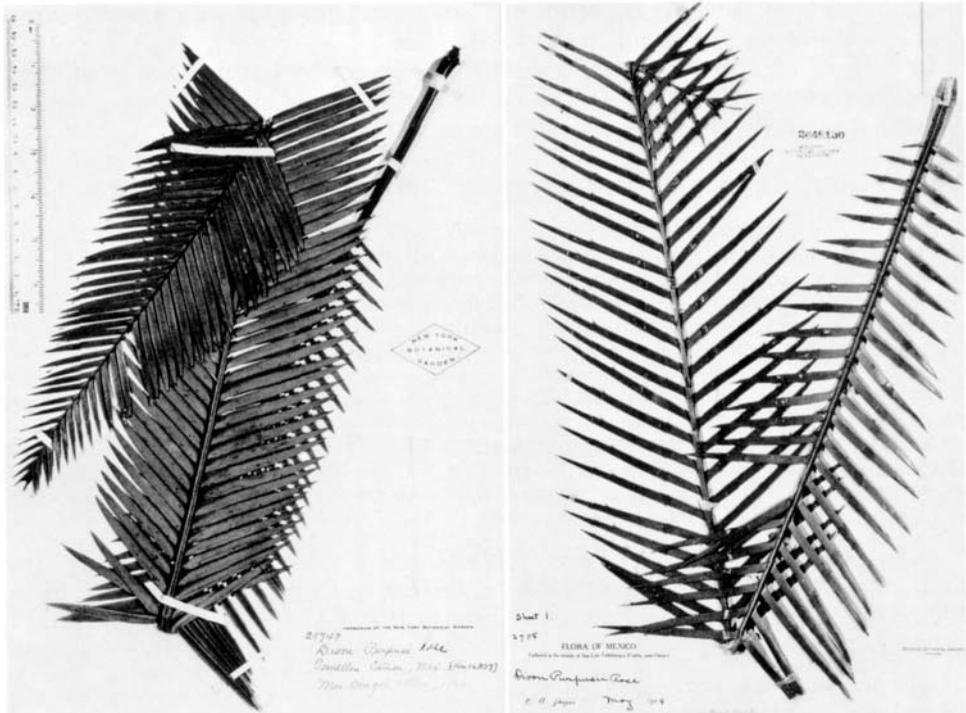
De Luca, Paolo, Sergio Snhato (Istituto di Botanica, Università di Napoli, via Foria 223, Napoli, Italy) and Mario Vázquez Torres (Facultad de Ciencias Biológicas, Universidad Veracruzana, Xalapa, Veracruz, Mexico). *Dioon caputoi* (Zamiaceae), a new species from Mexico. *Brittonia* 32: 43-46. 1980.—A new species of *Dioon* (***D. caputoi***) found in Puebla, Mexico, is characterized by narrow leaflets, arising at an acute angle from the rachis and regularly and widely spaced along it. This species has hitherto been confused with *D. purpusii*.

*Dioon purpusii* Rose (1909) was described from material collected in 1906 by MacDougal and Rose at Tomellín cañon, Oaxaca (Type U.S. National Herbarium no. 454142). Rose also reported that in 1908 C. A. Purpus had collected seeds and bracts of this species in Sierra Mixteca, Puebla.

Herbarium specimens collected in 1907 and 1908 by Purpus in Sierra Mixteca (in the vicinity of San Luis Tultitlanapa) and labelled *D. purpusii* are deposited in numerous herbaria (ARIZ, BM, CAS, E. F, G, GH, MO, K, NY, P, UC, US) and consist of megasporophylls, seeds and fronds. An isotype of *D. purpusii* and one of the specimens collected by Purpus are shown in Figures 1 and 2.

The material collected by Purpus in 1907-1908 has turned out to be very different from the type of *D. purpusii*.

Schuster (1932) did not notice the difference. His description of *D. purpusii* is



Figs. 1 & 2. 1 (left). Isotype of *Dioon purpusii* Rose. 2 (right). *Dioon caputoi* specimen collected by Purpus in 1908 at San Luis Tultitlanapa.

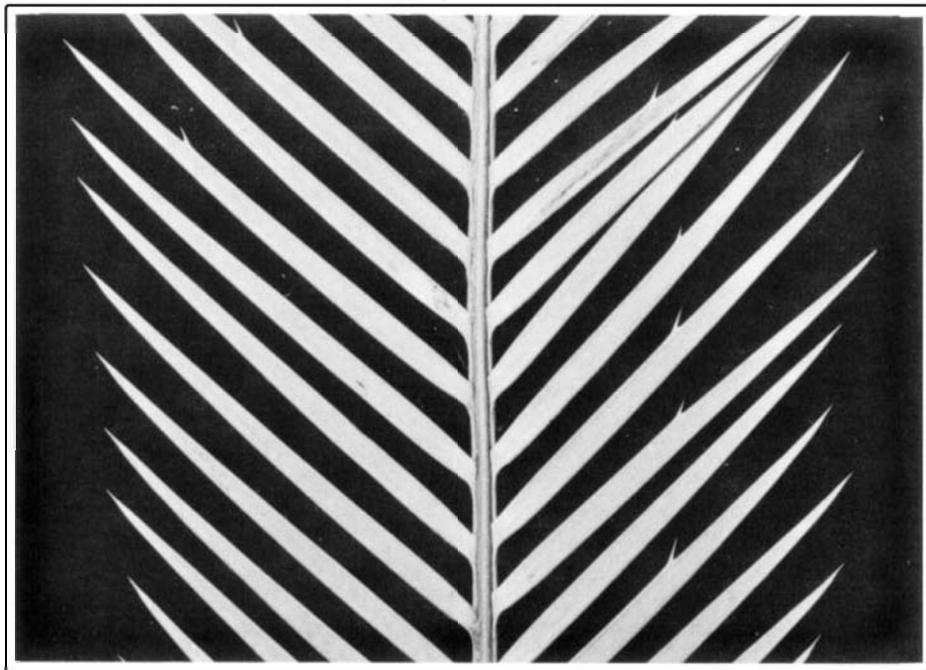


FIG. 3. Middle portion of frond of *Dioon caputoi*, x2/3.

based mainly on the exiccata of Purpus and he illustrated it with a photo of the same *Dioon* made by Purpus in Sierra Mixteca.

In order to identify the *Dioon* specimens collected by Purpus, one of us (Vázquez Torres) went to San Luis Tultitlanapa, where new material was collected. Examination of this material revealed a new species.

***Dioon caputoi* De Luca, Sabato & Vazquez Torres, sp. nov. (Figs. 3 & 4)**

Truncus cylindricus usque ad 1 m vel ultra altus, 20-25 cm diam. Cataphylla lanata. 12-14 cm longa, basi 2 cm lata. Folia plana. numerosa. coriacea, adscendentia. glabra, 75-90 cm longa et ultra. Rachis semiteres, recta aut leviter torta. Petiolus semiteres. 12-15 cm longus. Foliola 50-70 et ultra utroque latere. subopposita. lineari-lanceolata. acute pungentia, margine revoluta. 4-5 mm lata. 5-7 mm ca paribus intervallis separata. supra rachim acuto angulo inserta. Foliola inferiora primum 1.5-2.5 cm longa, 2 mm ca lata. deinde sensim crescentia. margine integerrima: foliola mediana. 6-8 usque ad 10 cm longa, 4-5 mm lata. nervis 6-8. margine superiore integerrima vel superiore dentibus 1, rarissime 2. spinosis 2-3 mm longis praedita. margine inferiore integerrima: foliola superiora sensim decrescentia usque ad 1-2 cm longa. 1-2 mm lata. margine integerrima. Strobilus femineus ovoideo-cylindricus. 30-40 cm longus. 20-25 cm diam. squamae deltoideo-ovatae 12-14 cm longae. 5 cm latae, extus dense lanosae; semina subglobosa, 3-4 cm diam. Strobilus masculinus elongato-cylindricus, ca 40 cm longus, 9-10 cm latus, microsporophylla basi angustata, 3-4 cm longa. parte fertili biloba, parte sterili sursum arrecta atque acute pungentia.

TYPE: MEXICO. PUEBLA: [REDACTED]

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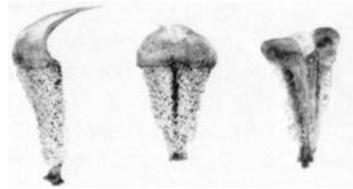
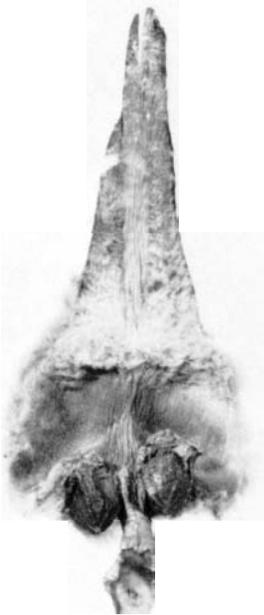
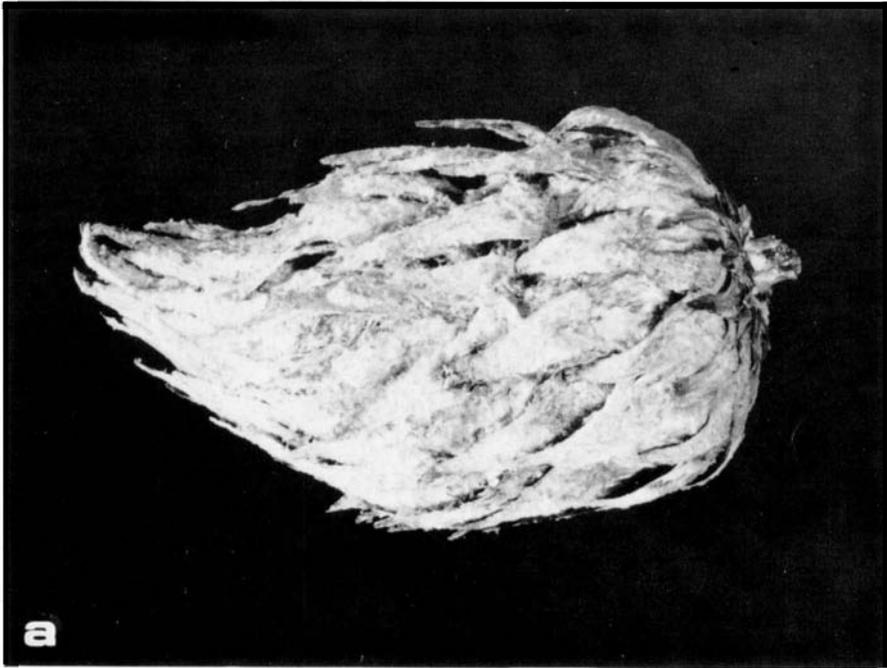
Dec 1978, Mario Vázquez Torres 2296 (HOLOTYPE: XALUV; ISOTYPE: ENCB, FI, MEXU. NAP).

Other specimens examined: MEXICO. PUEBLA: [REDACTED]

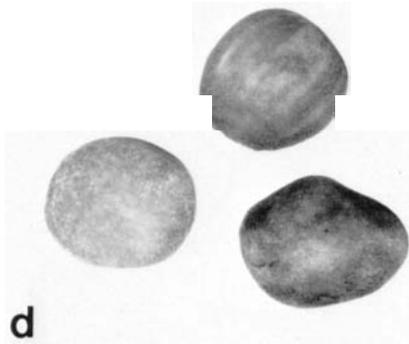
Aug 1907. C. A. Purpus s.n. (CAS, G, GH. K. P. UC, US);

May 1908. C. A. Purpus 2708 (BM. CAS. G. GH. F. MO, NY. US); [REDACTED]

Aug 1908. C. A. Purpus 2708 (ARIZ. E. G, P).



c



d

FIG.4. *Dioon caputoi*. A. Megasporangiate cone. x1/3. B. Megasporophyll. x2/3. C. Microsporophylls, x2/3. D. Seeds, x2/3.

The peculiar characters of this species are, flat fronds with narrow leaflets arising at an acute angle from the rachis and regularly and widely spaced along it, the leaflets entire or with 1 long spine-like tooth on the upper margin. These characters, observed both on our material and on the Purpus specimens, allow us to separate *D. caputoi* from the other species of the genus.

*Dioon purpusii*, to which were erroneously attributed specimens of *D. caputoi*, differs in its lightly keeled fronds and its wider (8–10 not 4–5 mm) leaflets which are closely set in the median and apical region of the frond, not regularly and widely spaced along the whole rachis.

The population of *D. caputoi* is made up of two small groups of not more than 50 specimens scattered in a remarkably steep open area of about one square kilometer. The substratum is calcareous and the soil is very poor. Seedlings are very rare and plants are threatened by worms. The specimens taller than 80–100 cm have prostrate stems. The habitat is transitional between Tropical Deciduous Forest and Oak Forest.

*Dioon caputoi*, localized in Sierra de Zapotitlan, is very isolated from *D. purpusii* at Santa Catarina (DeLuca et al., 1979) in Tomellín cañon and from *D. califanoi* De Luca & Sabato (1979) between Teotitlan and Huautla even though the distances in bee-line are only 90 km and 70 km respectively. Its common name is Palma Real.

A staminate specimen of *D. caputoi* collected near San Luis Atolotitlan is growing in the Naples Botanical Garden (Italy).

This species is dedicated to Giuseppe Caputo, Professor of Botany and Director of Istituto di Botanica, Universita di Napoli (Italy).

### Acknowledgments

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### Literature Cited

- De Luca, P. & S. Sabato. 1979. *Dioon califanoi* (Zamiaceae), a new species from Mexico. *Brittonia*: 31: 170-173.
- & M. Vazquez Torres. 1979. *Dioon purpusii* Rose, a misknown species of Zamiaceae. *Delpinoa* n.s. 20: 31–35.
- Rose, J. N. 1909. Cycadaceae. In: Studies of Mexican and Central American plants. *Contr. U.S. Natl. Herb.* 12: 260-261.
- Schuster, J. 1932. Cycadaceae. In: A. Engler & L. Diels. *Das Pflanzenreich* IV. 1 (Heft 99). Ed. 1966. Leipzig.