

PLANTAE MESOAMERICANAE NOVAE. II.\*

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For a number of years the Costa Rican collections of *Zamia* L. (Cycadaceae) have been placed either under the names *Z. skinneri* Warsz. or *Z. pseudoparasitica* Yates, but it was obvious that several entities were present and mixed up in the materials. A revision of exsiccatae and several years of observation in the field lead me to separate the following taxa for Costa Rica and Panamá:

*Zamia acuminata* Ørsted ex Dyer in Hemsley, Biol. Cent. Amer. Bot. 3: 194. 1883. Described from southern Nicaragua it is rarely found in the tropical moist lowland and premontane forests of Costa Rica.

*Zamia chigua* Seemann, Bot. Voy. Herald 2:201. t.3., 1854. (*Z. lindleyi* Warsz., Allg. Gartenz. 19:146. 1851; *Z. lindleyana* Warsz. in Wend. Ind. Palm. 53. 1854.). A South American species undoubtedly to be found in the Darién and possibly other parts of Panamá and of adjacent Costa Rica.

*Zamia fairchildiana* L. D. Gomez sp. nov. (*Z. pseudo-pseudoparasitica* Dressler, Marie Selby Bot. Gdn. Bull. 2(3).22. nom. nud., *Z. pseudoparasitica* s. auct. in herb.).

Truncus cylindricus 1 m et ultra altus, 10-14 cm crassus, irregulariter subannulatus. Folia numerosa, 0.9-1.80 m longa, oblongata. Petiolus cum rachi obscure quadrangulatus, dense aculeatus, glaber. Foliola 10-30-plura, alterna vel subalterna, oblonga-lanceolata quasi vittata, basi gradualiter reducta apicem acuta, integra vel ad apicem pauce denticulata, nervis 27-30, supra sulcatis subtus quasi impressis, 20-30 cm longa, 3-4 cm lata, chartaceo-rigida, lucida. Strobili masc. aggregati, cylindrici, obtusi, avellanei-velutini. Strobili fem. ferruginei. Pelta hexagona. Semina ovalia, usque ad 20 mm longa ca. 15 mm diametro, rubra.

Of the *Z. chigua* group from which it differs in the characters of the stem, armature of petiole and rachis, size of leaflets and their texture and number of veins. Holotypus: Rio Claro, near Sirena, Península de Osa, Puntarenas, 50 m, L.D. Gómez 7948 (CR). Paratypus: Isla Violín, Rio Sierpe, Puntarenas, Gómez-L. & Bermúdez 2665 (USJ).

It is a species of the tropical rain forests seldom found above 700 m. Mr. Robert G. Wilson of Las Cruces Bot. Gardens has distributed horticultural materials under the name *Z. fairchildi*.

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Zamia pseudomonticola L. D. Gomez sp. nov. Truncus erectus usque ad 30 cm altus, 5-7 cm diametro, nudus. Petiolus inferiore parte glaber, inermis. Petiolus cum rachi supra obscure trigonus sub-convexus. Folia 3-10, 80-100 cm longa, 9-14-juga, basim abrupte truncata. Foliola opposita, elliptico-lanceolata, acuminata, acumen rectum vel retrorsum, falcata, basi contracta, integra, 15-22 cm longa, 3.5-4.5 cm lata, nervis in maxima latitudine 32, immersis. Strobili masc. pedunculo 4-6 cm longo, erecti, 8-9.5 cm longi. Pelta microsporophylla hexagonali, pyramidato-truncati. Pelta megasporophylla subquadrangulari. Semina armeniaca, subsphaericae, 1.3-1.7 cm diametro.

Related to Z. monticola Chamberlain, from which it differs in the glabrous, unarmed petioles, lack of persistent leaf bases, dimensions and characters of the strobili. It could be confused with Z. acuminata, a lowland species with fewer leaflets with almost straight upper margins with the acumen directed upwards, caudate apex and spiny petioles. Holotypus: Sitio Cotón, SW slopes of Cerro Pando, 1300 m, in mixed *Quercus-Wimmeria-Symplocos* forests (CR). Isotypi: F, MO. It is likely to occur in the adjacent parts of Panamá.

Zamia pseudoparasitica Yates in Seemann, Bot. Voy. Herald 2:202.1852-1857. A species of South America found also in the Panamanian forests and, possibly, in the mountains of SW Costa Rica. It is the only epiphytic Zamia in the area. Cf. Dressler, Marie Selby Bot. Gardens Bull. 2(3):22-23.

Zamia skinneri Warszewicz in Otto & Dietr., Allg. Gartenz. 19:146.18-51; Seemann, Bot. Voy. Herald 2:202,252. 1852-1857. A species widely distributed in the rainforests of both versants of Central America, it is easily identified by the deeply veined, serrate-denticulate leaflets.

Key to the Costa Rica- Panamá species of Zamia

- 1.- Plants epiphytic. Stems subglobose or contorted-cylindrical. Petioles unarmed or rarely with few prickles. Leaflets strap-shaped, subfalcate, entire. Z. pseudoparasitica
- 1.- Plants terrestrial 2
  - 2.- Margin of leaflets serrate-denticulate, leaflets almost plicate. Petiole and often the rachis spiny. Z. skinneri
  - 2.- Margin of leaflets entire or with a few apical teeth 3
- 3.- Petiole and rachis unarmed. Leaflets acuminate, the acumen straight or directed downwards. Fronds many-foliolate. Z. pseudomonticola
- 3.- Petiole and rachis with prickles or spines present at least at the petiolar base 4

- 4.- Leaflets 6-9 pairs, elliptic-lanceolate, long acuminate. Petiolar base with spines Z. acuminata
- 4.- Leaflets many-paired, strap-shaped, apex obtuse or acute but never acuminate, entire or with a few teeth. Petioles and rachises with spines 5
- 5.-Base of the stipe inflated,  $\pm$  round in t.s., tomentose when young. Leaflets deeply sulcate above, with 18-22(25) nerves, Stem subglobose-cylindrical, rarely more than 75 cm tall. Petioles and rachises densely spiny. Z. chigua
- 5.-Base of stipe not inflated,  $\pm$  trihedric in t.s., glabrous. Leaflets smooth on both sides or the veins hardly perceptible, 27-30. The stem cylindrical, simple or rarely branched. Petioles and rachis spiny. Z. fairchildiana

## Plate 1

Representative leaflets of Zamia spp., the included numbers indicate the highest number of veins observed in the area. A- Z. chigua, B,C, D- Z. pseudoparasitica, E,F- Z. fairchildiana, G- Z. skinneri, H- Z. acuminata, I- Z. pseudomonticola.

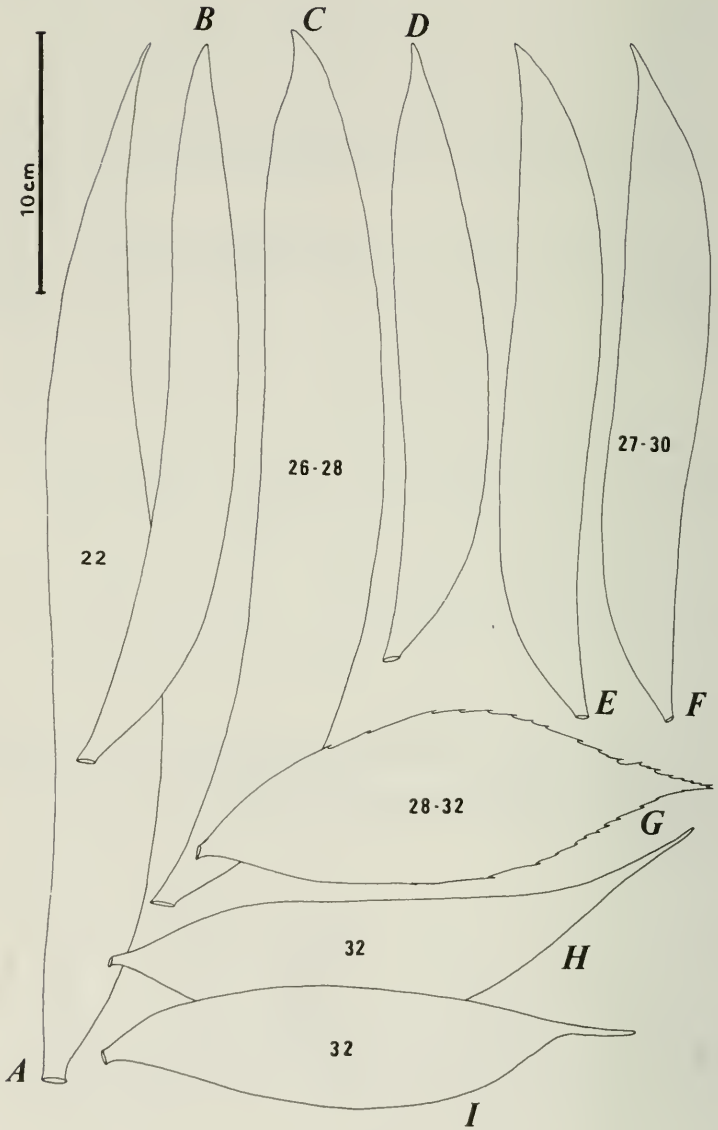


Plate 1