BIOLOGIA
CENTRALI-AMERICANA;

OR,

CONTRIBUTIONS TO THE KNOWLEDGE

OF THE

FAUNA AND FLORA

OF

MEXICO AND CENTRAL AMERICA.

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BY

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(CYCADACEÆ. By W. T. THISELTON DYER, F.R.S.)

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which he had prepared from them. The four species (which he discovered in 1841) were *Dioon edule* (two forms), *Ceratozamia mexicana*, and *Zamia leiboldii*.

1. DIOON.

Dioon, Lindl. Bot. Reg. 1843, Misc. p. 59 (*Dion*).
Platyzamia, Zucc. in Abhandl. bayer. Akad. iv. p. 23, t. 4.

Two species peculiar to Mexico.

1. **Dioon edule,** Lindl. Bot. Reg. 1843, Misc. p. 59. (Tab. LXXXI. figg. 1, 2.)

Dioon edule, Miq. in Act. Inst. reg. Sc. Neerl. ser. 3, iv. p. 2, tt. 3 et 4. figg. *a, b, c*; Lem. in Ill. Hort. ii. p. 91, cum tt.; DC. Prodr. xvi. 2, p. 537.
Dioon imbricatum, Miq. in Wiss. Tijdschr. i. p. 36; Act. Inst. reg. Sc. Neerl. ser. 3, iv. t. 4. figg. *d, e.*
Dioon angustifolium, Miq. in Wiss. Tijdschr. i. p. 37; Act. Inst. reg. Sc. Neerl. ser. 3, iv. t. 4. fig. *f.*
Dioon aculeatum, Lem. in Ill. Hort. ii. Misc. p. 91.
Platyzamia rigida, Zucc. in Abhandl. bayer. Akad. iv. p. 23, t. 4.
Zamia mæleni, Miq. in Linn. xviii. p. 97.
Zamia friderici-guilielmi, Hort. Parmentier, ex Miq. Prodr. Syst. Cycad. p. 22.
Macrozamia pectinata, Liebm. ic. ined. in Herb. Haun.
Macrozamia littoralis, Liebm. ic. ined. in Herb. Haun.

South Mexico, Colipa and Laguna verde (*Liebmann*). Hort. et Herb. Kew.

The leaves vary very much in size and form in different individuals, and especially, as is usual in Cycads, with the age of the plants bearing them. The segments may be linear or broad, and distant or closely imbricated; in very young leaves they are often spinulose towards the apex.

The male plant has been well figured in Bot. Mag. t. 6184; Zuccarini's figure of the female cone is altogether inadequate, and that given in Plate LXXXI has therefore been prepared from a female cone produced at Kew.

EXPLANATION OF TAB. LXXXI. Figg. 1, 2.

Fig. 1, female cone, natural size; 2, detached scale.

β. **latipinna,** Dyer. (Tab. LXXXI. figg. 3–5.)

Segmenta $\frac{5}{8}$ pollice lata, inferiora apicem versus spinulosa.

South Mexico? Hort. Kew.

EXPLANATION OF TAB. LXXXI. Figg. 3–5.

Fig. 3, basal portion of rachis of leaf, showing dentate reduced segments; 4, segment from lower part of leaf, with spinulose apex; 5, segments from middle of leaf: all natural size.

[*Dioon strobilosum* (Lem. in Ill. Hort. 10, Misc. p. 4; *D. strobilaceum,* DC. Prodr. x vi. 2, p. 537) is unknown to me. It may possibly be a state of *D. edule.*]

2. **Dioon spinulosum,** Dyer; Eichler in Gart. Zeit. 1883, p. 411. (Tab. LXXXII.)

Folia breviter petiolata, elongato-lanceolata, rigida, plana, pinnatisecta, ad 3 pedes longa; segmentis circiter 70 utroque latere, mediis majoribus suboppositis lineari-lanceolatis breviter acuminatis 18–23-nerviis, ad 4 pollices longis media latitudine semipollicaribus, basi angustiore, utroque latere spinulis pungentibus basim versus integerrimis, inferioribus in dentes palmatifidos desinentibus. *Strobili.........*

South Mexico, Tuxtla; Yucatan, Progreso (*C. J. Höge*). Herb. Kew.

EXPLANATION OF TAB. LXXXII.

The figures represent the upper and lower portions of a leaf of the Yucatan specimen of the natural size.

2. CERATOZAMIA.

Ceratozamia, Brongn. in Ann. Sc. Nat. série 3, v. (1846), p. 7, t. 1; Benth. et Hook. Gen. Pl. iii. p. 446.
Dipsacozamia, Lehm. (*sic*) in Lindl. Veg. Kingd. p. 225 (nomen tantum).

About four species, restricted to Mexico.

1. **Ceratozamia miqueliana,** Wendl. Ind. Palm. p. 68; DC. Prodr. xvi. 2, p. 547. (Tab. LXXXIII.)

Ceratozamia ghiesbreghtii, Hort. Linden. ex Regel, Cycad. Gen. et Sp. Rev. p. 27.

Mexico. Hort. Kew.

As Miquel points out (Prodr. Syst. Cycad. p. 22), this species differs from all the rest, "quod foliola pedetentim proferat." Notwithstanding this, the male and female cones, which have not hitherto been described, fully accord with those characteristics of the genus. For material for the figure of the former I am indebted to Mr. W. Bull, F.L.S., of the King's Road, Chelsea; for that of the latter to Prof. Eichler, Director of the Royal Botanic Garden, Berlin.

EXPLANATION OF TAB. LXXXIII.

Fig. 1, male plant (reduced); 2, upper portion of leaf; 3, male cone; 4, 5, & 6, upper, lower, and lateral views of scale of male cone; 7, female cone: figs. 2–7 all natural size.

2. **Ceratozamia latifolia,** Miq. in Wiss. Tijdschr. i. p. 206; DC. Prodr. xvi. 2, p. 547.

Ceratozamia karsteniana, Hort. Kew.

Mexico, Mirador (*Liebmann*). Hort. Kew.

3. **Ceratozamia mexicana,** Brongn. in Ann. Sc. Nat. série 3, v. p. 7, t. 1; DC. Prodr. xvi. 2, p. 546.

Ceratozamia brevifrons, Miq. in Wiss. Tijdschr. i. p. 41 (a young state).
Zamia atropurpurea, Parment. ex Miq. Prodr. Syst. Cycad. p. 23.
Dipsacozamia mexicana, Liebm. ic. ined. in Herb. Haun.

Mexico (*Ghiesbreght*), Mirador (*Liebmann*).

I am quite unable to discriminate between this and a number of other forms which have been regarded as species by Miquel and others. The character of the foliage of all Cycads, as already remarked under *Dioon,* more or less alters with the age of the plant that bears it. For this reason the type plants which are preserved in botanic gardens constantly outgrow the diagnoses originally based upon them. This variableness with age makes the separation of nearly allied forms an all but hopeless task. The following varieties may be maintained for convenience:—

Ceratozamia mexicana, β. longifolia.

Ceratozamia longifolia, Miq. in Wiss. Tijdschr. i. p. 40; DC. Prodr. xvi. 2, p. 547.
Ceratozamia intermedia, Miq. in Wiss. Tijdschr. i. p. 40; *C. latifolia β. minor*, DC. Prodr. xvi. 2, p. 547.
Ceratozamia fusca-viridis, D. Moore in Proc. R. Dubl. Soc. 1878.
? *Zamia galeottii*, Vriese in Tijdschr. nat. Gesch. 1845, p. 23; Miq. in Wiss. Tijdschr. i. p. 40; DC. Prodr. xvi. 2, p. 545.
Zamia macrophylla, Parment. partim, ex Miq. Prodr. Syst. Cycad. p. 23.

MEXICO. Hort. Kew.

C. fusca-viridis seems only a form with dark-brown under surface to the leaflets.

γ. robusta.

Ceratozamia robusta, Miq. in Wiss. Tijdschr. i. p. 42; DC. Prodr. xvi. 2, p. 547.

MEXICO, Colipa (*Liebmann*).

δ. tenuis, Dyer.

Foliola pedalia, $\frac{5}{8}$ pollice lata, distantia.

MEXICO? Hort. Kew.

The leaflets somewhat resemble those of the following species, but the general habit is different.

4. **Ceratozamia küsteriana,** Regel in Bull. Soc. Nat. Mosc. 1857, p. 187, cum ic. xylogr., t. 3. fig. 6, t. 4. fig. 22, et Gartenfl. t. 878; DC. Prodr. xvi. 2, p. 546.

MEXICO (*Karwinsky*). Hort. Kew.

3. ZAMIA.

Zamia, Linn. Gen. n. 1227; Benth. et Hook. Gen. Pl. iii. p. 447.
Aulacophyllum, Regel, Gartenfl. 1876, p. 140.

About thirty species, concentrated in Tropical and Subtropical South America, with a few representatives in the West Indies.

1. **Zamia pseudo-parasitica,** Yates in Seem. Bot. Voy. 'Herald,' pp. 202, 253; DC. Prodr. xvi. 2, p. 543.

Zamia roezlii, Regel, in Linden's Cat. 1873, n. 90, et Gartenfl. 1874, p. 55; Ill. Hort. 1873, tt. 133, 134.
Aulacophyllum roezli, Regel, Gartenfl. 1876, p. 141.

PANAMA (*Warscewicz*).—COLOMBIA; PERU. Hort. et Hb. Kew.

2. **Zamia skinneri,** Warsc. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 146, cum ic.; Seem. Bot. Voy. 'Herald,' pp. 202, 252; Hook. in Bot. Mag. t. 5242; DC. Prodr. xvi. 2, p. 539.

Aulacophyllum skinneri, Regel, Gartenfl. 1876, p. 143.

GUATEMALA; PANAMA, Veraguas (*Warscewicz*). Hort. et Hb. Kew.

Seemann's specimens from Cape Corrientes (upon which the occurrence of the species