

STUDIES OF AMERICAN PLANTS — XXII

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CELASTRACEAE

EUONYMUS HERNANDEZII Lundell, sp. nov. — Arbor parva, 3 m., omnino glabra; ramuli ramulique graciles, quadrangulares; folia petiolata, petiolo 2—3.2 mm. longo, canaliculato; lamina membranacea, lanceolata, 4—8.5 cm. longa, 1.5—3.4 cm. lata, apice caudato-acuminata, basi acuta, crenulato-serrulata; inflorescentia parva, axillaris, cymosa, 1—2 cm. longa, pauciflora; pedicelli fructiferi, 2—3 mm. longi; flores 4-meri; sepala depresso-rotundata, ad 1.4 mm. lata, 1 mm. longa; capsula parva, tuberculata, depresso-globosa, ad 1 cm. lata; semina arillata.

Mexico: Oaxaca, Municipio Santa Maria Chimalapa, Monte Rico, ca. 18 km. al E de Santa Maria al N del Rio del Corte, alt. 250 m., Oct. 27, 1984, H. Hernandez G. 523 (holotype, LL), arbolito de 3 m. de altura, fruto color rosado, carne color rosa palido, semillas color mandarina. Another collection from this area, Hernandez 123, in young fruit, is referable to this species.

E. Hernandezii appears to be related to *E. chiapensis* Lundell, a taxon larger in most parts. The capsules of both are compactly tuberculate.

ZINOWIEWIA REVOLUTA Lundell, sp. nov. — Arbor glabra, 10 m. alta; folia ad 12 mm. longe petiolata; lamina chartacea, lanceolata vel oblongo-lanceolata, 3—6.5 cm. longa, 1—2.3 cm. lata, apice acuminata, acumine obtusiusculo vel acuto, basi subacuminata et revoluta; cymae 1—2.5 cm. longae; pedicelli 1.5—2 mm. longi; calyx quinquefidus; petala 5, ovata, parva, ca. 1 mm. longa; filamenta ca. 0.6 mm. longa; antherae minutae; ovarium in discum subimmersum, apice attenuatum.

Costa Rica: Provincia of Heredia, steep pastured slopes and thickets about 1 km. W of Los Cartagos towards Vara Blanca intersection, elev. of about 2040 m., Aug. 3, 1976, R. L. Wilbur 21739 (holotype, LL), tree 10 m. tall.

Zinowiewia revoluta resembles *Z. Matudae* Lundell of Chiapas in having a pronounced revolute base of leaf blade. It differs in its smaller flowers with pedicels up to 2 mm. long. These are the only species in the genus with leaves revolute at base.

Unfortunately the flowers of the type are diseased, and no samaras are available.

MYRSINACEAE

AURICULARDISIA MORAVIANA Lundell, sp. nov. — Frutex, 1 m.; ramuli crassi, apice adpresse lepidoti; folia petiolata, petiolo ad 1.5 cm. longo, marginato, subtus dense lepidoto; lamina subchartacea vel membranacea, obovato-elliptica, 27–32 cm. longa, 10.5–12 cm. lata, apice subabrupte acuminata, basi attenuata, margine pellucido-punctata, integra, subtus reticulata, minute lepidota; inflorescentia terminalis, squarrosa, late paniculata, ad 15 cm. longa, pyramidalis, minute lepidota; flores corymbosi, 5-meri; pedicelli 4–7 mm. longi; sepala hyalina, asymmetrica, anguste auriculata, suborbicularia, ad 2 mm. longa, 2.3 mm. lata, apice rotundata, parce macropunctata, margine epunctata, subciliolata; fructus subglobosus, ad 4.5 mm. diam.

Costa Rica: Provincia de San Jose, roadside leading from Alto La Palma to Bajo La Hondura with the elevation ranging from 1550 to 1260 m., about 10 km. NE of San Vincente de Moravia, Feb. 24, 1978, R. L. Wilbur 24919 (holotype, Duke), shrub 1 m. tall.

Differing markedly in the size and shape of the sepals, and in having much larger leaves with broad marginate petioles, these features distinguish *Auriculardisia moraviana* from the closely related *Auriculardisia quadrata* Lundell, *Phytologia* 56: 413. 1984. Both taxa have large quadrately branched paniculate inflorescences, and their leaves and inflorescences are yellow-green. The pellucid-punctate leaf margin of *Auriculardisia moraviana* further distinguishes it from *Auriculardisia quadrata*.

AURICULARDISIA SARAPIQUIENSIS Lundell, sp. nov. — Frutex, ad 4 m.; ramuli graciles, apice minute lepidoti; folia chartacea vel subcoriacea, glabra, dense nigropunctata, petiolata, petiolo 8–12 mm. longo, anguste marginato; lamina oblango-lanceolata vel oblan-ceolata, 8.5–15 cm. longa, 3–4.5 cm. lata, apice subacuminata, basi attenuata, integra, utrinque reticulata; inflorescentia terminalis, paniculata, glabra, subsessilia, ad 7.5 cm. longa et lata; flores 5-meri, glabri, corymbosi; pedicelli 6–10 mm. longi; sepala asymmetrica, suborbicularia, ca. 2 mm. longa et lata, punctata, ciliata et auriculato-fimbriata; corolla pallida, glabra, ca. 8 mm. longa, pallido-punctata; petala basi connata, lanceolata, ca. 6.5–7.5 mm. longa, obtusiuscula; stamina ca. 6.5 mm. longa; filamenta crassa, ca. 1 mm. longa; antherae anguste lanceolatae, ca. 6 mm. longae, attenuatae, dorso lineato-punctatae; ovarium glabrum, punctatum; stylus ca. 5 mm. longus; ovula 20, pluri-seriata.

Costa Rica: Provincia de Heredia, Finca La Selva, the OTS Field Station on the Rio Puerto Viejo just E of its junction with the Rio Sarapiquí, elev. about 100 m., July 20, 1982, B. Hammel & J. Trainer 13262 (holotype, LL), shrub to 4 m. tall, flowers pink, in forest on ridge at SW corner of new property.

Related to *Auriculardisia squamata* Lundell, *Phytologia* 56: 19. 1984, and *Auriculardisia wilburiana* Lundell, this species has the

same type of inflorescence borne at leafy apex of lateral branchlets. The three differ notably in size and structure of inflorescences and in flower and leaf size. All three are from the same river basin. The anthers of Auriculardisia sarapiquiensis are linear-punctate medially with black glands, a noteworthy feature of this taxon.

AURICULARDISIA SPATHULATA Lundell, sp. nov. — Arbor parva, ca. 6 m. alta; ramuli crassi, adpresse furfuracei; folia ad apices ramorum verticellatim congestis, subcoriacea, supra glabra, subtus parce adpresse lepidota, longipetiolata, petiolo 2—3 cm. longo, crassiusculo; lamina spathulata, 11—15 cm. longa, 3.5—4.5 cm. lata, integra, apice rotundata et retusa, basi attenuata; inflorescentia terminalis, late pyramidalis, paniculata, congesta, ad 25 cm. longa, basi ad 20 cm. lata, basi dense furfuracea, trichoma substipitata; flores 5-meri; pedicelli crassiusculi, 3—4 mm. longi, glabri; sepala parva, subcoriacea, asymmetrica, auriculata, ovata, 1.2—1.3 mm. longa, acuta, nigropunctata, ciliolata; ovarium punctatum; stylus ca. 3 mm. longus.

Costa Rica: Guanacaste Province, pasture adjoining main road and Chomogo Trail above Monte Verde, Chomogo Trail near headwaters of Rio Guacimal, Jan. 8, 1973, D. E. Stone & A. L. Welden 3440 (holotype, Duke), 15—20 ft. tall tree in young fruit.

Auriculardisia spathulata, noteworthy for its distinctive spathulate leaves, is related to Auriculardisia micrantha Lundell, Wrightia 7: 269. 1984.

AURICULARDISIA TARARIAE (Lundell) Lundell, comb. nov.

Ardisia tarariae Lundell, Phytologia 61: 67. 1986. Costa Rica: G. Davidse et al. 28882 (holotype, LL).

AURICULARDISIA TRICHOMATA Lundell, sp. nov. — Arbor parva, 5 m.; ramuli crassi, furfuracei; trichomata parce, elongata et stipitata, inferne recta; folia petiolata, petiolo crassiusculo, late marginato, ad 1.5 cm. longo; lamina subcoriacea, supra glabra, subtus dense adpresse lepidota, trichoma parce, lamina oblonga vel anguste lanceolata, 15—22 cm. longa, ad 5.3 cm. lata, apice subacuminata, basi attenuata, margine integra; inflorescentia terminalis, crassiuscula, late paniculata, ad 25 cm. longa, furfuracea, trichoma stipitata; pedicelli crassi, ad 1 mm. longi, 1.5 mm. diam.; flores capitati vel subspicati, 5-meri; sepala suborbicularia, ad 2 mm. longa, 2.5 mm. lata, asymmetrica, auriculata, subcoriacea, parce nigropunctata, margine erosa; corolla nigropunctata, ad 7 mm. longa; petala lanceolata, basi connata, apice acuta; stamina 4—5 mm. longa, supra basi adnata; filamenta ad 2 mm. longa; antherae lanceolatae, crassiusculae, 2.5—3 mm. longae, apiculatae; stylus ad 6.5 mm. longus; ovula parva, numerosa, pluriseriata.

Costa Rica: Provincia de San Jose, roadside leading from Alto La Palma to Bajo La Hondura with the elevation ranging from 1550 to

1260 m., about 10 km. NE of San Vincente de Moravia, Feb. 24, 1978, R. L. Wilbur 24906 (holotype, Duke), tree 5 m. tall.

Auriculardisia trichomata is remarkable for its indument, a mixture of appressed scales with mostly scattered usually stipitate trichomes. Its petioles are broadly marginate with leaf blade decurrent to base. Its flowers are in small aggregated heads below which they are spicate. Notable are the pedicels which are as thick as the calyx and with diameter greater than length. The depressed suborbicular sepals are rounded. The corolla is tubular at base with the rather slender filaments attached above the base. The petals are acute and asymmetric at apex, with scattered black glands.

The relationship of the taxon appears to be with Auriculardisia rufa (Lundell) Lundell, Phytologia 49: 345. 1981, a species of the mountains which has similar but less conspicuous trichomes and thick but much longer pedicels.

AURICULARDISIA WILBURIANA Lundell, sp. nov. — Arbor parva, ad 4 m. alta; ramuli crassiusculi et graciles, apice minute et dense lepidoti; folia chartacea, supra glabra, subtus minute lepidota, dense nigropunctata, petiolata, petiolo crassiusculo, subtus dense lepidoto, 7—12 mm. longo, anguste marginato; lamina lanceolato-elliptica, vel raro obovata, 8—22 cm. longa, 3.5—8 cm. lata, apice subacuminata et obtusiuscula, basi cuneata, margine integra, subtus reticulata; inflorescentia terminalis, pendula, capillaris, laxa, paniculata, ad 16 cm. longa, parce lepidota; flores 5-meri, corymbosi; pedicelli ad 1.7 cm. longi; sepala asymmetrica, ca. 2 mm. longa, suborbicularia, punctata, auriculato-fimbriata; corolla pallida, glabra, ca. 7 mm. longa; petala libera, lanceolato-oblonga, ca. 7 mm. longa, acutiuscula; stamina ca. 6 mm. longa; antherae anguste lanceolatae, attenuatae; filamenta subnulla; ovarium glabrum, punctatum; stylus 4 mm. longus; ovula 16, pluriseriata.

Costa Rica: Provincia de Heredia, Finca La Selva, the OTS Field Station on the Rio Puerto Viejo just E of its junction with the Rio Sarapiquí, Paso Perdidos trail, ca. 3200 m. line (EW), elev. about 100 m., July 16, 1984, B. Jacobs 2917 (holotype, LL; isotypes, Duke), weak trunked tree to 4 m., trunk ca. 3 cm. diam. most of the first 2 m., inflorescences pendant, corolla white, anthers yellow, fruits red.

A remarkable species related to Auriculardisia squamata Lundell, Phytologia 56: 19. 1984, the type of which came from the same locality. Both have slender lateral branchlets, borne near the apex of the twig, which have the inflorescences borne at the leafy apex. Auriculardisia Wilburiana has long slender panicles up to 16 cm., with corymbose flowers on slender pedicels up to 1.7 cm. long, and much larger white flowers. In Auriculardisia squamata the panicles are scarcely 3 cm. long, and the flowers are very small. Both taxa have fimbriate asymmetrical sepals wider than long, typical of the genus.

The species is named for Dr. R. L. Wilbur of Duke University as a token of recognition for his insistence on excellence in the preparation of herbarium specimens and his dedication to high standards for herbarium collections.

GRAPHARDISIA MURPHYAE Lundell, sp. nov. — Frutex; ramuli crassiusculi vel graciles, glabri; folia petiolata, petiolo 10–12 mm. longo, anguste marginato, canaliculato; lamina flava, glabra, subcoriacea, lanceolata vel oblanceolata, 11–16 cm. longa, 3.5–5.5 cm. lata, apice acuminata, basi cuneata, pellucido-punctata, integra; inflorescentia glabra, parva, terminalis, paniculata, 3.5–4.5 cm. longa, basi ad 6 cm. lata; pedicelli graciles, 8–11 mm. longi; flores corymbosi, 5-meri; sepala hyalina, elliptica vel ovato-elliptica, 4–5.5 mm. longa, ca. 3.5 mm. lata, lineato-punctata, apice rotundata, basi intus minute glandulosa; corolla ad 7 mm. longa; petala hyalina, basi connata, basi intus minute glandulosa, ovato-elliptica, ca. 6 mm. longa, 4 mm. lata, apice rotundata, lineato-punctata; stamina 3–3.5 mm. longa; filamenta crassa, 1–1.5 mm. longa; antherae lanceolatae, ca. 2.5 mm. longae, poris apicalibus dehiscentes; stylus ca. 4.5 mm. longus.

Costa Rica: Puntarenas, north of La Lucha road to Progreso, disturbed forest, elev. 1200 m., May 23, 1984, H. Murphy 1248 (holotype, Duke), common shrub in understory and forest edge, conspicuous and beautiful, flower rachis white tinged with purple, calyx white, corolla pale purple-white, stamens yellow, pistil pale green.

Closely related to *Graphardisia subcoriacea* (Lundell) Lundell, *Phytologia* 48: 140. 1981, *Graphardisia Murphyae* differs notably in having leaves pellucid-punctate, and with petals multilined. In *G. subcoriacea* the leaves are conspicuously black-punctate and the petals are bilined with black glands. Both are glandular at base of sepals and corolla within with minute gland-tipped hairs.

ICACOREA PROCTORI (Lundell) Lundell, *Phytologia* 49: 351. 1981. *Ardisia Proctori* Lundell, *Wrightia* 4: 64, Pl. 162. 1968.

Nicaragua: Dept. Bluefields, primary rain forest, ca. 5 km. NE of Rama, alt. sea-level to 150 m., Rio Escondido, April 4, 1966, George R. Proctor, Gayle C. Jones & Lynden Facey 27313 (holotype, LL), tree 8 m., fruits green.

Costa Rica: Provincia de Heredia, Finca La Selva, the OTS Field Station on the Rio Puerto Viejo, just E of its junction with the Rio Sarapiquí, elev. about 100 m., Holdridge Trail, 2000 m. line, April 3, 1981, James Folsom 9620 (LL), tree of 8–10 m., peduncle purple-red, fruit purple-black. Same locality, west boundary trail, 2300 m., south, Feb. 16, 1982, Barry Hammel 11165 (LL), tree 15 m. tall, 15 cm. dbh., flowers white, inflorescence branches pink. Provincia de Heredia, Zona Protectora La Selva, 6 km. by road from Rio Peje crossing, 5 km. SSE of Magasay, in primary forest along picada to Rio Peje, at about 390 m., Jan. 24,

1983, G. E. Schatz, M. Grayum 697 (Duke), tree 15 m. tall, corolla white, stamens, tip of pedicel pinkish.

PARATHESIS LONGIPETIOLATA Lundell, sp. nov. — Arbor parva, ca. 5 m. alta; ramuli graciles, minutissime tomentelli; folia longipetiolata, petiolo 2—3.5 cm. longo, canaliculato; lamina chartacea, oblanceolato-oblonga, 9—14 cm. longa, 3—4.5 cm. lata, apice acuminata, basi attenuata, acuta vel acuminata, integra, subtus pallida, reticulata; inflorescentia terminalis, paniculata, ad 12 cm. longa, basi ad 11 cm. lata, minutissime tomentella; flores 5-meri; pedicelli 2—2.3 mm. longi; sepala valvata, parva, ovato-triangularia, ca. 1 mm. longa, acuta, punctata, tomentella; fructus subglobosus, ad 4 mm. diam.

Costa Rica: Provincia de Heredia, Finca La Selva, the OTS Field Station on the Rio Puerto Viejo just E of its junction with the Rio Sarapiquí, old south boundary 200 m. E, elev. about 100 m., July 1, 1981, B. Hammel 10939 (holotype, LL)

In the absence of flowers, the relationship of Parathesis longipetiolata is doubtful. As the name implies, it has long petioles, up to 3.5 cm. long, a distinctive feature which merits recognition. The large terminal panicles, very minute tomentum, short pedicels, small mostly triangular sepals, and leaves drying whitish beneath are characteristics which in combination appear to set the taxon apart from other species of the region.

PARATHESIS OBOVALIFOLIA Lundell, sp. nov. — Arbor, 6 m. alta; ramuli graciles, minutissime tomentelli; folia petiolata, petiolo 1—1.8 cm. longo, canaliculato; lamina subchartacea, discolor, obovalia vel late oblanceolata, 7.5—13 cm. longa, 2.2—6 cm. lata, apice subabrupte subacuminata, basi acuta, margine integra, glabra, nigropunctata; inflorescentia axillaris, longipedunculata, gracilis, 6—7.5 cm. longa, pauciflora, glabrata; flores 5-meri, corymbosi; pedicelli 7—9 mm. longi; sepala valvata, late triangularia, acuminata, ad 2 mm. longa, nigropunctata; fructus subglobosus, ca. 4 mm. diam.

Costa Rica: Prov. Puntarenas, Reserva Biologica Monteverde, sendero brillante, elev. 1500 m., Aug. 25, 1985, William A. Haber & Eric Bello C. 2444 (holotype, LL), arbol ramificado, 6 m. de alto, bajo el bosque, frutos pequenos de 4 mm. de diametro, color rojo.

In mature fruit, this distinctive taxon appears to be glabrous, but the apex of branchlets are minutely tomentose and similar pubescence appears to cover the apex of fruits and base of style. The obovate leaves are dark green above and pale beneath.

VALERIOANTHUS HIRSUTISSIMUS (Lundell) Lundell, comb. nov. Ardisia hirsutissima Lundell, *Phytologia* 61: 64. 1986. Panama: G. de Nevers et al. 6408 (holotype, LL).



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