LINDSAEA MESARUM, A NEW FERN SPECIES FROM THE RORAIMA SANDSTONE

When the present author published his revision of the New World species of *Lindsaea* (Kramer, 1957), the collection *Tate 430* (NY) was cited as a probably distinct but as yet insufficiently known, undescribed taxon. This taxon is now known by over 20 collections and is therefore described as new.

Lindsaea mesarum Kramer, sp. nov. TYPE: Venezuela. Bolívar: Distr. Piar, summit of Murisipán-tepuí, Aparamá Range, 5°53′N, 62°03′W, sandstone mesa, cracks of rock, 2,200 m *B. K. Holst 3548* (holotype, MO; isotype, Z). Figure 1.

Rhizoma breviter repens, squamis parvis, fuscis vestitum. Folia approximata; petiolus obscurus, abaxialiter rotundatus vel superne applanatus. Lamina bipinnata, pinnis primariis paucis, usque ad 3 pro latere et terminali conformi; rhachis primaria abaxialiter biangularis vel sulcata, secundariae subacute biangulares. Pinnulae numerosae, coriaceae, in sicco obscurae, semi-ovatae vel subtriangulares, margine anteriori recto, plerumque inciso, incisionibus paucis, haud profundis, inconspicuis sed pro lamina omni numquam carentibus. Venae immersae, simplices vel unifurcatae, liberae. Sori interrupti incisionibus marginis, vel continui ad pinnulas minores; indusium firmum, marginem subaequans. Sporae triletae.

Rhizome rather short-creeping, 1.5–2.5 mm diam.; scales fuscous, small, narrowly triangular with broad base, acuminate, ca. 1 × 0.2 mm, ca. 8-seriate at base. Leaves a few–several mm apart; petiole usually lustrous, atropurpureous to black, smooth but the basal part bearing some small wart-like bases of shed scales: adaxial (sometimes also abaxial) side flattened (near the apex) to faintly sulcate, abaxial side otherwise rounded; length ca. 12–22 cm, equaling the lamina to much exceeding it. Lamina narrowly oblong, ca. 10–20 cm long, paucijugate-bipinnate, or a few once-pinnate or subbipinnate sterile leaves present beside the bipinnate fertile ones; primary rachis dark reddish to blackish brown, abaxially faintly biangular to distinctly sulcate. Pinnae from 1 odd one to more often 1–3 pairs and a conform terminal one, moderately to very strongly ascending, hence the width of the lamina quite variable; lateral pinnae with a petiolule of ca. 8 mm, 7–10(–16) cm long, up to 15 mm wide, somewhat narrowed near the base, gradually and strongly tapering to the apex. Secondary rachises medium to dark brown, dull, adaxially sulcate, the groove bordered by rounded ridges, abaxially subacutely biangular. Pinnules close to contiguous or even overlapping, coriaceous, often blackish when dry, dull or adaxially sublustrous, dimidiate, spreading or somewhat ascending, up to ca. 25 well-developed ones to a side, above these some much-reduced pinnules, a few finally confluent into a short, pinnatifid pinna-apex. Larger pinnules ca. 6–9 mm long, 3.5–5 mm wide, about 1.5 times as long as wide, semiovate to subtriangular, base cuneate, posterior margin straight or convex, anterior margin approximately straight, entire or more often distantly and shallowly incised to ca. 0.5 mm, the lobes flanking the incisions mostly touching to overlapping, thus the incisions inconspicuous. Inner margin of pinnules straight, diverging from the rachidule, an outer margin not developed; all margins, especially the posterior, sclerotic, apex subacute to obtuse but not rounded. Sterile pinnules very shallowly and rather irregularly crenate. Veins immersed but somewhat evident, adaxially often slightly impressed in dry specimens, free, simple or the inner forked above the base, ca. 5–8 vein-ends per pinnule present. Sori occupying the anterior margin, interrupted, or in small pinnules continuous, (1–)2–5 per pinnule, each on 1–4(–6) vein-ends, ca. 1.5–4 mm long; indusium firm, entire, often somewhat undulate (not sinuate!), about equaling the margin, ca. 0.4 mm wide. Spores trilete, subtetrahedral, tawny, smooth, with prominent laesura, ca. 35 μm (proximal) × 26 μm (lateral view).

Paratypes. VENEZUELA. BOLÍVAR: Distr. Piar, Aparamá Range, Camarcaibaraí-tepuí, 2,400 m, shaded ledge, *B. K. Holst 3632* (MO, Z); Murisipán-tepuí, 2,350 m, eroded sandstone mesa, *Holst, Steyermark & Liesner 2947* (MO, Z); summit of Auyan-tepuí, 2,140 m, sandy ground under large rock, *Steyermark, Carreño E., McDiarmid & Brewer-Carías 116035* (UC); Chimantá Massif, Apacará-tepuí, ca. 2,200 m, *Steyermark, Huber & Carreño E. 128445* (MO, UC). AMAZONAS: Dept. Atabapo, Cerro de Marahuaco above Salto Los Monos, 2,255 m, base of rock, *Liesner 17973* (MO), *18003* (MO, Z); same locality, 2,520–2,650 m, *Steyermark & Holst*

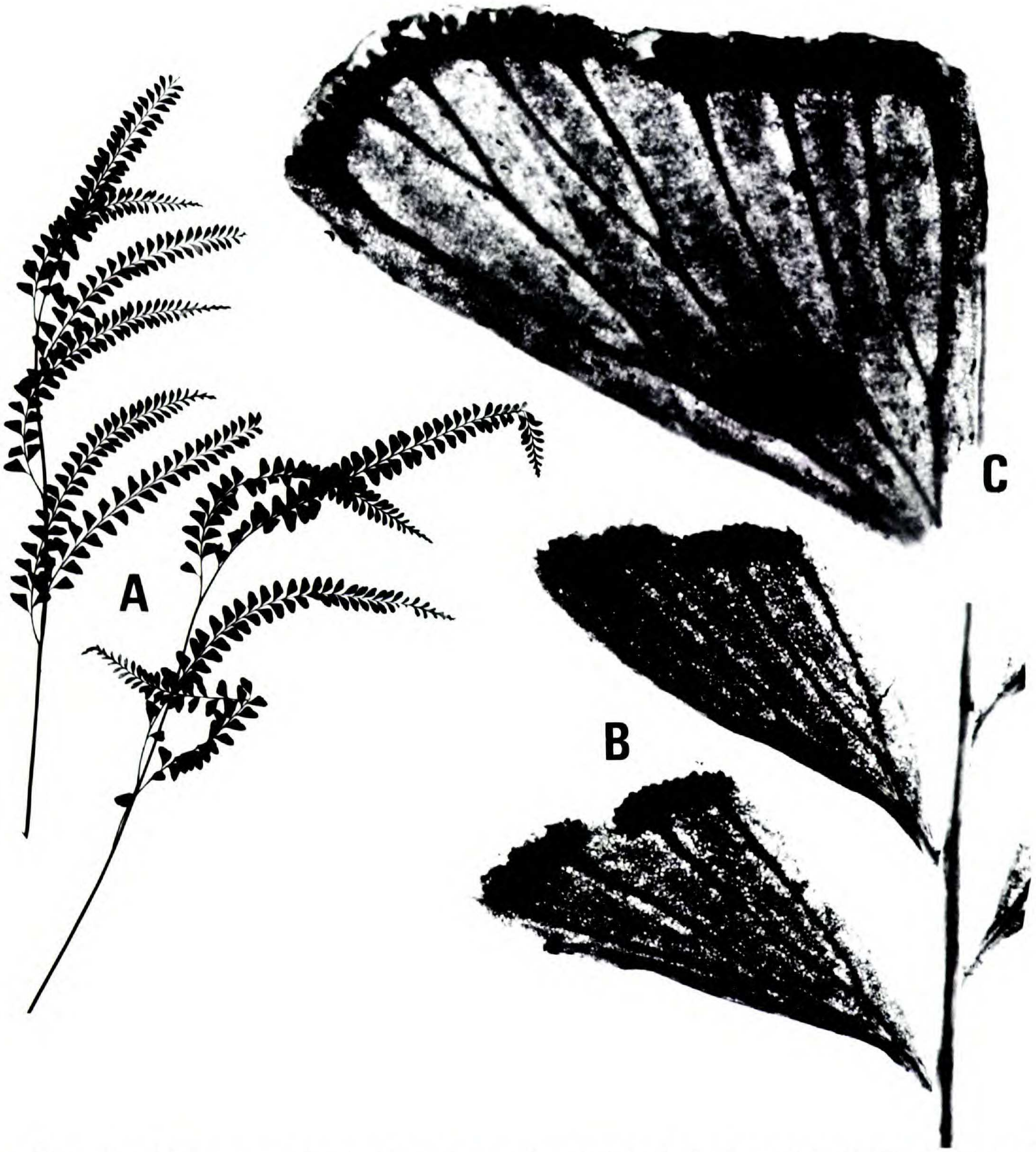

FIGURE 1. *Lindsaea mesarum*—A. Two laminas, × ½.—B. Part of secondary rachis with two pinnules, ×13.—C. A single pinnule, ×20. All from *Holst, Steyermark & Liesner 2947* (Z).

130808 (MO, Z); same locality, 2,580–2,600 m, *Steyermark & Delascio 129253* (UC); same locality, summit, 2,800 m, *Steyermark & Delascio 129096* (MO); same locality, *Steyermark & Delascio 129214* (NY); Cerro Marahuaca-Fhuif, summit, 2,480–2,500 m, *Steyermark, Guariglia, Holmgren, Luteyn & Mori 126072, 125979* (NY); same locality, 2,580 m, same collectors *125947* (NY); Cerro Marahuaca-Shiho, summit, 2,450–2,480 m, same collectors *126351* (NY); same locality, 2,480 m, same collectors *126289* (NY); same locality, 2,450 m, same collectors *126351* (NY); Cerro Duida, Ridge 25, *Tate 430* (NY); Cerro de la Neblina, 3 km ENE of Pico Zoloaga, 1,900–2,000 m, *Stein & Gentry 1606* (MO); same locality, S slopes of Cañon Grande, 1,770–1,850 m, *Croat 59509* (MO); Dept. Río Negro, Cerro de la Neblina, ridge on Venezuela–Brazil border, 2,000 m, *W. W. Thomas & Plowman 3073* (MO, NY, UC).

The following, almost sterile collection may also belong to this species: Cerro de la Neblina, *Liesner 16023* (MO, UC).

All collections are from cracks and crevices of sandstone rocks, from sandy soil in open thickets or other vegetation, or from open forest with *Bonnetia roraimae* (where recorded), between ca.

1,800 and 2,800 m. The species is often described as being locally common.

The interrupted sori were at first taken for an abnormality due to incomplete fertility of the leaves, as is often seen in the genus. The constancy of the character, however, leaves no doubt about its being a distinctive feature of the species.

Lindsaea mesarum resembles *L. stricta* (Sw.) Dryander var. *jamesoniiformis* Kramer in habit, but this is certainly due to convergence. The two taxa occur in the same habitat and are sometimes collected next to each other. The closest relative of *L. mesarum* is *L. klotzschiana* Moritz ex Ettingsh., which has thinner, much more pronouncedly incised pinnules and larger rhizome scales. Another probable relative is *L. parkeri* (Hooker) Kuhn subsp. *steyermarkiana* Kramer, a little-known taxon of somewhat uncertain status; it has thinner pinnules that are much less narrowed towards the apex. If the inconspicuous incisions of the anterior margin of the pinnules of *L. mesarum* are overlooked, it will key out to *L. stricta* (Sw.) Dryander in the present author's key (Kramer, 1957); from this it can be distinguished by its smaller rhizome scales, and the forms of *L. stricta* with dark leaf axes have strongly rounded pinnules.

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Literature Cited

Kramer, K. U. 1957. A revision of the genus *Lindsaea* in the New World with notes on allied genera. Acta Bot. Neerl. 6: 97–290.

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