

Arthromeris cyrtomioides S. G. Lu & C. D. Xu, a new species of Polypodiaceae from Yunnan, China

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Abstract *Arthromeris cyrtomioides* S. G. Lu & C. D. Xu, a new species of the genus *Arthromeris* (Polypodiaceae) from Yunnan, China, is described and illustrated. The new species is similar to *A. lehmanni* (Mett.) Ching in size, but differs by its lamina being tomentose on the lower surface and pubescent on the upper surface and having 9–16 pairs of lateral pinnae. The new species is also similar to *A. tomentosa* W. M. Chu in the lamina indumentum, but differs by pinnae lacking the membranous cartilaginous margin and having 5–16 pairs of lateral pinnae.

Key words *Arthromeris*, *Arthromeris cyrtomioides* S. G. Lu & C. D. Xu, Polypodiaceae, new species, Yunnan, China.

The genus *Arthromeris* (T. Moore) J. Sm. is a natural group in the Polypodiaceae characterized by the fronds being pinnate with pinnae jointed to rachis and having branched included veinlets. This genus contains 20 species, distributed in tropic and subtropic Asia. Seventeen species are recognized in China (Lu, 2000). During the course of a field survey at Mt. Gaoligongshan, W. Yunnan Province, China, we found a fern that clearly belongs to the genus *Arthromeris* (T. Moore) J. Sm., but cannot be identified as any of the known species. This fern is recognized as a new species, *Arthromeris cyrtomioides* S. G. Lu & C. D. Xu, which is similar to *A. lehmanni* (Mett.) Ching in size, but differs by its lamina being tomentose on the lower surface and pubescent on the upper surface and having 9–16 pairs of lateral pinnae. The new species is also similar to *A. tomentosa* W. M. Chu in the lamina indumentum, but differs by pinnae lacking the membranous cartilaginous margin and having 5–16 pairs of lateral pinnae. The differences between this new species and the known species in China are listed below in the key to Chinese species.

Key to the species of *Arthromeris* from China

1. Sori large, solitary between adjacent lateral veins, thus arranging in one row on either side of costa.
 2. Lateral pinnae with distinct stalks.....1. **A. tenuicauda** (Hook.) Ching
 2. Lateral pinnae sessile, adnate at base.
 3. Scales brown, lanceolate, acuminate at apex.
 4. Sori rounded, solitary2. **A. wallichiana** (Spreng.) Ching
 4. Sori elliptic or two adnate together.....3. **A. intermedia** Ching
 3. Scales brown, dark brown or black, broad at base, subulate at apex.
 5. Rhizome densely scaly throughout; scales brown, narrowly subulate with long tails; terrestrial.....4. **A. tatsienensis** (Franch. & Bureau.) Ching
 5. Rhizome covered with whitish bloom and sparsely scales; scales dark brown to black, rounded at petlate base, subulate at upper part; epiphytic.....5. **A. nigropaleacea** S. G. Lu
 1. Sori small, more than two between adjacent lateral veins, thus scattered on either side of costa.

6. Rhizome 3–6 mm in diam.; lamina glabrous or pubescent .
7. Pinnae ovate with broadly membranous cartilaginous margin; lateral pinnae 1–4 pairs.
8. Rhizome covered with whitish bloom and sparse scales; scales brown.
9. Lamina pubescent on both surfaces.....6. **A. himalayensis** (Hook.) Ching
9. Lamina tomentose on lower surface and glabrous on upper surface.....
.....7. **A. himalayensis** var. **niphoboloides** (C. B. Clarke) S. G. Lu
8. Rhizome densely covered with scales; scales whitish; lamina tomentose on lower surface and glabrous on upper surface.....8. **A. tomentosa** W. M. Chu
7. Pinnae lanceolate with narrowly membranous cartilaginous margin or none; lateral pinnae 5–16 pairs.
10. Pinnae caudate at apex; with narrowly membranous cartilaginous margin.
11. Lamina glabrous on both surfaces.....9a. **A. elegans** Ching f. **elegans**
11. Lamina densely pubescent on lower surface and glabrous on upper surface.....
.....9b. **A. elegans** Ching f. **pianmaensis** S. G. Lu.
10. Pinnae acuminate at apex; without membranous cartilaginous margin.
12. Lamina tomentose on lower surface or pubescent on both surfaces; epiphytic.
13. Lamina tomentose on lower surface, pubescent on upper surface; lateral pinnae 9–16 pairs10. **A. cyrtomioides** S. G. Lu & C. D. Xu
13. Lamina pubescent on both surfaces; lateral pinnae 5–8 pairs
14. Scales broad at base, subulate at apex; lamina sparsely pubescent or subglabrous
.....11. **A. lehmanni** (Mett.) Ching
14. Scales ovate-lanceolate, acuminate at apex; lamina densely pubescent on both surfaces
.....12. **A. lungtauensis** Ching
12. Lamina glabrous on both surfaces; terrestrial; lateral pinnae 8–12 pairs.....
.....13. **A. mairei** (Brause) Ching
6. Rhizome 10–12 mm in diam.; lamina usually covered with whitish bloom on lower surface .
15. Lateral pinnae adnate at bases.....14. **A. wardii** (C. B. Clarke) Ching
15. Lateral pinnae with stalks.
16. Lateral pinnae opposite.....15. **A. medogensis** Ching & Y. X. Ling
16. Lateral pinnae alternate.
17. Lamina with glandular hairs on underside.....16. **A. caudata** Ching & Y. X. Ling
17. Lamina without glandular hairs.....17. **A. salicifolia** Ching & Y. X. Ling

Arthromeris cyrtomioides S. G. Lu & C. D. Xu, sp. nov. Figs. 1–4

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Species nova *A. lehmanni* (Mett.) Ching et *A. tomentosae* W. M. Chu affinis, ab illa differt pinnis adaxialiter pubescentibus, abaxialiter tomentosis, eis lateralibus 9–16-jugis; ab hac recedit pinnis lateralibus 9–16-jugis, pinnis marginibus membranaceis cartilagineis carentibus.

Planta epiphytica. Rhizoma longum repens, 5–7 mm crassum, pallidum, paleis sparsis anguste lanceolatis 4–6 mm longis medio castaneis vel brunneis margine pallidis et ciliatis apice subulatis basi peltatis obtectum. Stipes 8–12 cm longus, 2–3 mm crassus, stramineus, basi paleis eis rhizomatis aequalibus obtectus, supra basin sparse pubescens. Lamina lanceolata, 30–50 cm longa, 15–20 cm lata, imparipinnata. Pinnae laterales 9–16-jugae, oppositae, patentes, lanceolatae, 2 cm inter se remotae, 5–11 cm longae, 1.5–2.5 cm latae, apice acuminatae, basi rotundae, sessiles, margine integra. Venae reticulatae, laterales 20–25-jugae, utrinque visibiles, venulis inclusis. Rhachis stramineas, sparse pubescens. Textura folii chartacea, supra sparse pubescens, subtus dense tomentosa; costae subtus praecipue ad basim laxe paleaceis. Sori rotundi, utraque costae latere irregulariter dispositi, juventute pallidi, maturitate brunnei.

Epiphytic plants. Rhizome long-creeping, 5–7 mm in diam., sparsely scaly and covered with whitish bloom; scales narrowly lanceolate, 4–6 mm long, castaneous or brown at center,

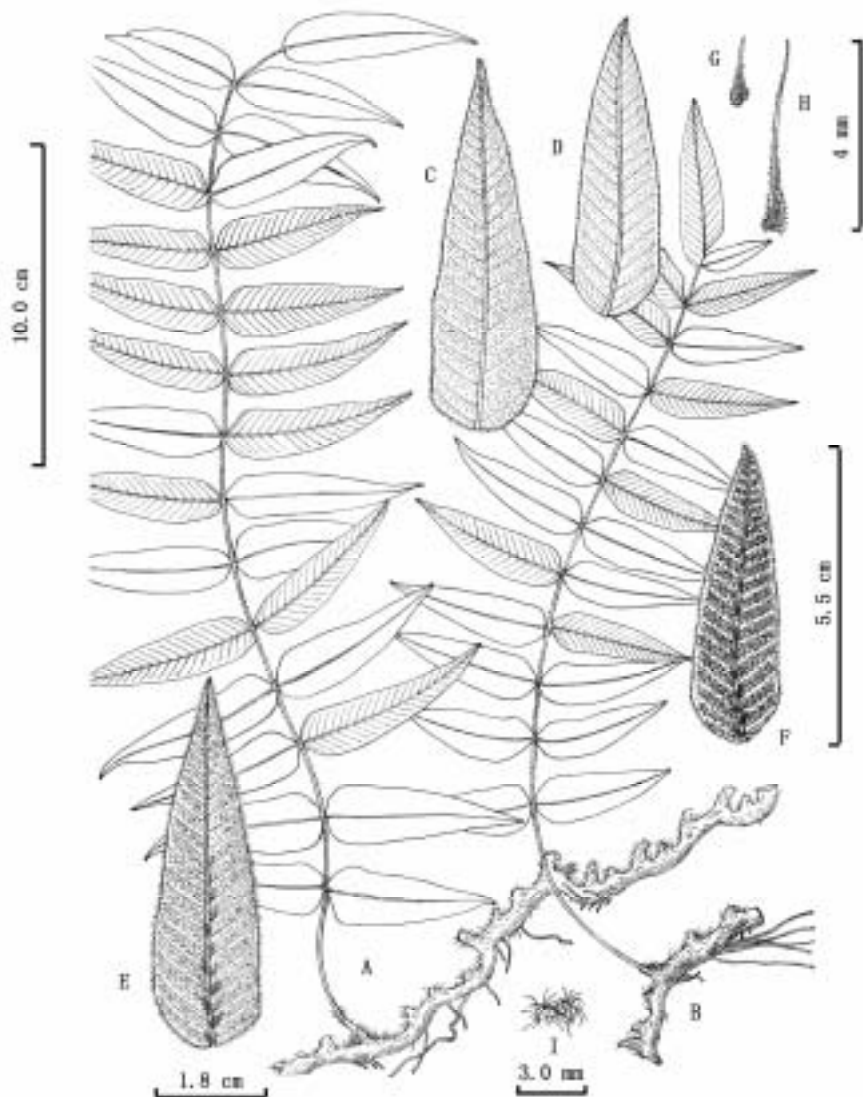


Fig. 1. *Arthromeris cyrtomioides* S. G. Lu & C. D. Xu. A, B, habit; C, D, the adaxial surface of pinnae, showing the sparsely pilose condition; E, abaxial surface of pinna, showing dense tomentum and small scales on rachis; F, abaxial surface of pinna, showing sori; G, H, scales on rhizome; I, tomentum on the abaxial surface of pinna. Drawn by X. L. Wu from C. D. Xu 31601, PYU.

paler towards margin, broad and peltate at base, subulate at apex, minutely toothed at margin. Fronds remote. Stipes 8–12 cm long, 2–3 mm in diam., stramineous, scaly at base, pubescent upward. Laminae imparipinnate, lanceolate, 30–50 long, 15–20 cm broad. Lateral pinnae 9–16 pairs, opposite, patent, lanceolate, 5–11 cm long, 1.5–2.5 cm broad, acuminate at apex, round at base, sessile, entire, without membranous cartilaginous margin. Veins reticulate with included veinlets, lateral veins 20–25 pairs, distinct. Rachis stramineous, sparsely pubescent on both surfaces and small scales on lower surface. Texture papyraceous, sparsely pubescent on upper surface, densely tomentose on lower surface. Sori round, irregularly scattered on lower surface of pinnae, pale at young stage and brown at mature stage.

China. Yunnan (云南): Longling (龙陵), Mt. Gaoligongshan, margin of the evergreen



Figs. 2–4. 2. The plants of *Arthromeris cyrtomioides* S. G. Lu & C. D. Xu, epiphytic on tree trunk. 3. A part of lamina of *A. cyrtomioides*. 4. A part of pinna of *A. cyrtomioides*.

broad-leaf forest, epiphytic on isolated tree trunk, alt. 2000 m, 2004-09-26, C. D. Xu 31601 (holotype, isotype, PYU).

This new species is similar to *A. lehmanni* (Mett.) Ching in size, but differs by its lamina being tomentose on the lower surface and pubescent on the upper surface and having 9–16 pairs of lateral pinnae. The new species is also similar to *A. tomentosa* W. M. Chu in the lamina indumentum, but differs by pinnae lacking the membranous cartilaginous margin and having 5–16 pairs of lateral pinnae.

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云南节肢蕨属(水龙骨科)一新种——贯众叶节肢蕨

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摘要 报道了产于中国云南高黎贡山的水龙骨科Polypodiaceae节肢蕨属*Arthromeris*一新种——贯众叶节肢蕨*A. cyrtomioides* S. G. Lu & C. D. Xu。该新种的植株大小与节肢蕨*A. lehmanni* (Mett.) Ching相似,但叶片的背面密被绒毛,表面被短柔毛,侧生羽片9–16对。该新种在毛被方面与厚毛羽节肢蕨*A. tomentosa* W. M. Chu相似,但羽片边缘无软骨质的膜质边,侧生羽片多达9–16对。

关键词 节肢蕨属; 贯众叶节肢蕨; 水龙骨科; 新种; 云南; 中国