

Figures 82–85.—Epigyna of *Alaranea* spp. 82, 84. Ventral view; 83, 85. Lateral view; 82, 83. *Alaranea alba* new species, paratype; 84, 85. *Alaranea ardua* new species, Marojejy.

*Alaranea ardua* new species

Figs. 84–89, 93–98

**Types.**—Male holotype and female paratype from Madagascar, Antsiranana Province, Marojejy Reserve, 8.4 km NNW Manantenina, montane rain forest, 14°26'S, 49°45'E, elev. 700 m, 10–16 November 1993, C. Griswold (CAS).

**Etymology.**—The species name is from the Latin for difficult, hard-won.

**Diagnosis.**—Conductor simple, proximal point thick, bifid, equal in width to cup (Figs. 86–88); dorsum of abdomen with sinuate longitudinal dark bands diverging from apex to middle and converging posteriorly (Figs. 95, 96). There seem to be no consistent characters to separate females of *ardua* from *merina*,

though the carapace of *ardua* (Fig. 96) tends to be darker than that of *merina* (Fig. 66).

**Description.**—*Male (holotype):* Total length 2.79. Carapace (Fig. 95) dusky orange-brown, faintly mottled with grey, especially along lateral margin, small dark longitudinal band anterior of thoracic fovea; ocular area black surrounding AM and lateral eyes, ocular quadrangle dark grey; clypeus yellow-brown, dark grey mark beneath AM narrowing to clypeal margin; chelicerae orange-brown, with faint dark basal streaks; sternum, labium, and palpal coxae red-brown with dark mottling, sternum black along ridges of rugosity, appearing nearly black; coxae, legs and palpi white, unmarked, palpal tibia yellow-brown, cymbium dark red-brown (Fig. 94); abdomen white, dorsum (Fig. 95) with paired longitudinal dark grey bands beneath transparent

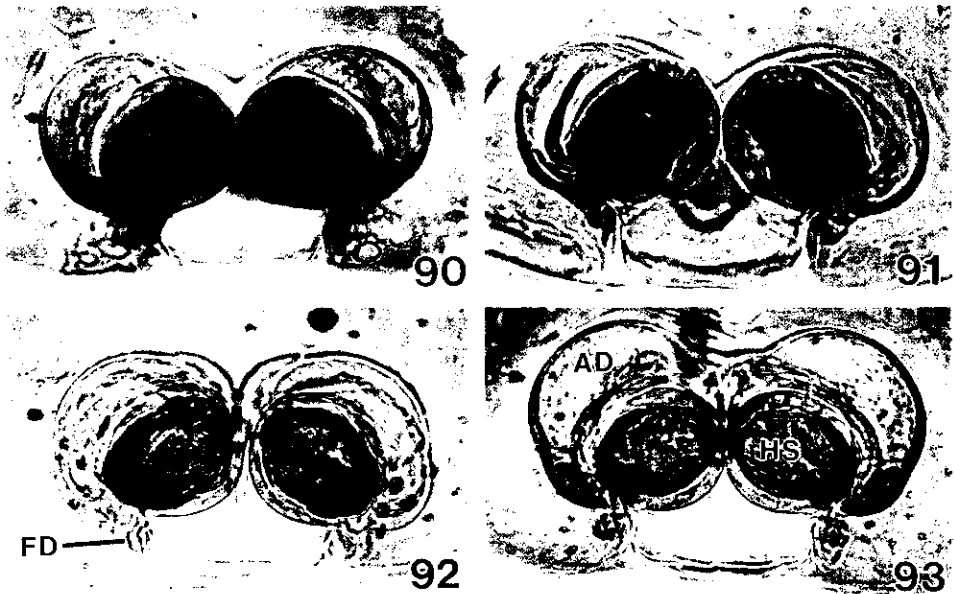


Figures 86–89.—*Alaranea ardua* new species, male from Marojejy, right palpus. 86. Retrolateral view; 87. Prolateral view; 88. Ventral view; 89. Parembolic process.

shiny scutum, area between these bands dusky, sides and posterior apex with black spots, venter grey between epigastric furrow and spiracle, dark brown sclerotization extending from epigastric furrow to and surrounding pedicel to form annulate petiole. Carapace 1.24 long, 0.76 wide, 0.35 high, trapezoidal in dorsal view; PER 0.47 wide, AER 0.44 wide, OAL 0.21; ratio AM:AL:PM:PL, 1.28:1.14:1.0:1.14, PM diameter 0.07. Clypeus 0.14 high, chelicerae 0.34 long. Sternum 0.59 long, 0.58 wide; labium 0.13 long, 0.18 wide; palpal coxae 0.21 long, 0.16 wide. Leg measurements (femur + patella + tibia +

metatarsus + tarsus = [Total]): I:  $1.53 + 0.28 + 1.28 + 1.13 + 0.70 = [4.92]$ ; II:  $1.51 + 0.25 + 1.17 + 1.04 + 0.64 = [4.61]$ ; III:  $0.98 + 0.23 + 0.64 + 0.59 + 0.38 = [2.82]$ ; IV:  $1.28 + 0.21 + 0.96 + 0.85 + 0.45 = [3.75]$ ; Palp:  $0.18 + 0.07 + 0.05 + (\text{absent}) + 0.18 = [0.48]$ . Palp (Figs. 86–89) with bulb marked as in *Alaranea betsileo* new species, cymbial RMP very short, acute, PC slender in lateral view; tegulum apex pustulate, TL large, convex, denticulation extensive; C large, retrolaterally dentate, with projecting basal article; PP with apical recurved hook.

*Variation:* ( $n = 3$ ). Total length 2.57–3.00;



Figures 90–93.—Vulvae of *Alaranea* spp., cleared, dorsal view. 90. *Alaranea betsileo* new species, from 7 km W Ranomafana; 91. *Alaranea merina* new species, Mandraka; 92. *Alaranea alba* new species, paratype; 93. *Alaranea ardua* new species, Marojejy. AD = afferent duct; FD = fertilization duct; HS = spermathecal head.

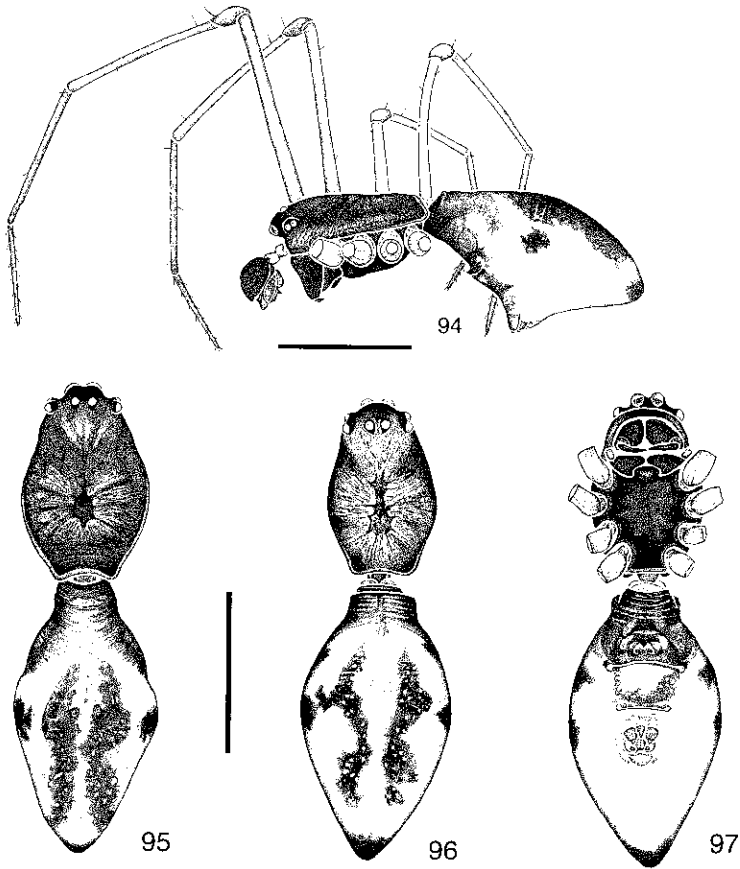
ratios of carapace length/width 1.60–1.64, height/width 0.45–0.46; ratios of PER/OQP 2.25–2.55, PER/OAL 2.00–2.25, OQP/OQA 0.81–1.11, distance PM-PL/diameter PM 1.00–1.43, diameter AM/PM 1.14–1.57; ratios of clypeal height/AM diameter 1.44–1.62, cheliceral length/clypeal height 2.19–3.30; ratio of sternum length/width 1.02–1.07; ratio of length femur I/carapace width 1.90–2.15. Markings of carapace range from dusky orange-brown to dark brown, dorsum of abdomen with longitudinal dark markings narrow and separate (Fig. 95) to completely black beneath scutum, lateral transverse marks forming spot or band connected to dorsum.

*Female (paratype)*: Total length 2.74. Markings (Figs. 96, 97) as in male except chelicerae, abdomen, and palpal coxae dark red-brown, sternum and petiole black, dorsum of abdomen with broad median black mark, this extending anteriorly to sclerotized petiole in two bands surrounding white mark, and extending laterally to form median transverse band, posterior tip black, venter pale. Carapace 1.13 long, 0.71 wide, 0.31 high; PER 0.45 wide, AER 0.43 wide, OAL 0.20; ratio AM:AL:PM:PL, 1.5:1.33:1.0:1.17, PM diameter 0.06. Clypeus 0.11 high, chelicerae 0.35

long. Sternum 0.56 long, 0.48 wide; labium 0.11 long, 0.19 wide; palpal coxae 0.21 long, 0.13 wide. Leg measurements (femur + patella + tibia + metatarsus + tarsus = [Total]): I: 1.34 + 0.28 + 1.15 + 1.23 + 0.64 = [4.64]; II: 1.28 + 0.25 + 1.21 + 1.15 + 0.64 = [4.53]; III: 0.76 + 0.21 + 0.55 + 0.51 + 0.40 = [2.43]; IV: 1.17 + 0.21 + 0.87 + 0.74 + 0.47 = [3.46]; Palp: 0.26 + 0.08 + 0.14 + (absent) + 0.26 = [0.74]. Epigynum and vulva as in *Alaranea betsileo* new species, epigynum as in Figs. 84, 85; vulva as in Fig. 93.

*Variation*: ( $n = 3$ ). Total length 2.32–3.46; ratio of carapace height/width 0.45–0.52; ratios of PER/OQP 2.16–2.39, PER/OAL 2.16–2.26, OQP/OQA 0.90–1.00, distance PM-PL/diameter PM 1.00–1.43, diameter AM/PM 1.28–1.50; ratios of clypeal height/AM diameter 1.11–1.40, cheliceral length/clypeal height 3.00–3.80; ratio of sternum length/width 1.02–1.15; ratio of length femur I/carapace width 1.98–2.20. Markings of carapace range from orange except black ocular area to all dark brown; dorsal abdominal markings range from faint to bold, dorsolateral bands may be narrow and broken, solid and separate (Fig. 96) or meeting medially, or entirely black.

**Natural History**.—Common inside forest



Figures 94–97.—Morphology of *Alaranea ardua* new species, from Marojejy. 94, 95. Male; 96, 97. Female; 94. Lateral view; 95, 96. Dorsal view; 97. Ventral view. (Scale bar = 1 mm)

hanging beneath sheet webs between 0.2–2 m above ground.

**Distribution.**—Known only from the type locality (Fig. 98).

**Material examined.**—MADAGASCAR: *Antsiranana Province*, Marojejy Reserve, 8.4 km NNW Manantenina, montane rain forest, 14°26'S, 49°45'E, elev. 700 m, 10–16 November 1993 (J. Coddington, N. Scharff, S. Larcher, C. Griswold, and R. Andriamasamanana) 13♂11♀ (CAS, ZMUC, USNM).

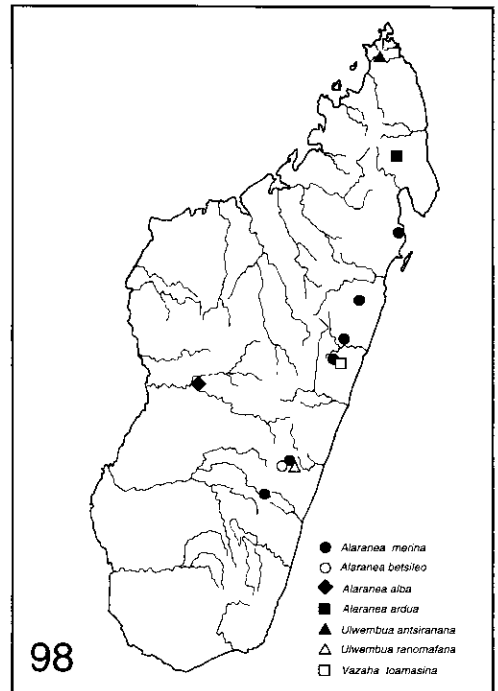


Figure 98.—Map showing distributions of Cyatholipidae in Madagascar. [Griswold, 1997: 82].