

Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 31-33.

***Thyropoeus malagasus* (Strand) 1908**

(Figs. 50, 51A-E, 52, 53A-H, 54A-C, 55A-D, 56D, 65, 68)

*Heteromigella malagasa* Strand 1908:454 (holotype female from St. Marie de Marovoay, Madagascar, in NHR Stockholm, examined).

*Heteromigella malagassa*, Petrunkevitch 1928:69 (unjustified emendation). Roewer 1942:193. Bonnet 1957:2184.

*Thyropoeus malagassa*, Raven 1985:145. Platnick 1989:71.

*Thyropoeus malagasus*, Platnick 2001.

Synonymy.—Raven (1985) first proposed the synonymy of *Heteromigella* Strand under *Thyropoeus* Pocock. He noted the similarity in the deep, lunate shaped sternal sigilla and the dorsobasal excavation on tibia III shared by *Heteromigella malagasa* Strand and *Thyropoeus mirandus* Pocock. Although the dorsobasal excavation on tibia III is shared by other Malagasy Migidae, the lunate sternal sigilla are unique to *Thyropoeus* and *Heteromigella*. The types of *Heteromigella malagasa* and *Thyropoeus mirandus* have been examined and found to share these features, confirming Raven's decision.

Notes.—Petrunkevitch (1928:69), without comment, used *malagassa* instead of Strand's name *malagasa*. This change was followed as an emendation by Roewer (1954) and Bonnet (1957), the latter stating "Il vaut mieux écrire malagassa" (Bonnet 1957:2184). This emendation is unjustified under the rule of nomenclature (ICZN 1999, Article 33.2.3).

The male is described here for the first time. Although the type locality of *H. malagasa* in Mahajanga Province is far from Vohimena in Toliara Province, the great similarity of females from each locality indicate that they are conspecific.

Diagnosis.—Distinguished from *Thyropoeus mirandus* by its smaller size (length 12.9–14.8), thoracic fovea that is straight to weakly procurved medially (Fig. 50) in females, and the basal tooth on the fang (Figs. 51B, 53B).

Female.—(Holotype): Total length 14.8. Specimen faded. Carapace pale yellow-brown with faint dark areas along lateral margins of caput; ocular area, chelicerae, sternum, labium, coxae, pedipalpi and legs pale yellow-brown; abdomen yellow-white including spinnerets.

Carapace 5.8 long, 5.4 wide, height at thoracic fovea 0.22 × carapace width; smooth. Caput highly arched, height 2.5 × that at thoracic fovea, width 0.79 × carapace width; median ocular seta present with a pair and single seta anterior to this, one pair of setae on clypeus; clypeus 0.42 × length OAL, margin straight. Thoracic fovea weakly procurved medially and recurved at sides, width 0.25 × that of carapace, 7.0 × wider than long; prefoveal setae absent.

Ocular area width 0.46 × caput, 2.85 × wider than long; AER 2.0 wide, 1.08 × width PER. Ratio of eyes: AME: ALE: PME: PLE: 1.0: 1.6: 1.6: 1.0, diameter AME 0.13; AME separated by 1.3 × their diameter, PME by 3.0 × their diameter. Ocular quadrangle 0.92 × wider than long, posterior width 2.08 × anterior.

Sternum 3.6 long, 3.2 wide, widest behind coxa II and narrowed anteriorly, sparsely setose along margin and on surface; sigilla adjacent to coxa II, 0.03 × width sternum, distance between 0.77 × distance from margin. Labium with 17 and pedipalpal coxae with 32–33 cuspules; labium 1.0 long, 1.3 wide, pedipalpal coxae 2.0 long, 1.4 wide, apex produced to a blunt point. Chelicerae 2.5 long, promargin of fang furrow with 3 teeth, retromargin with 6 teeth, pro- and retromargins interspersed with 8 denticles.

Femur I 0.59, tibia I 0.37, femur IV 0.68, and tibia IV 0.39 × width of carapace. Spination: pedipalpus: tibia p 1-2, r 0 or 0-0-1, tarsus p 2-2-1-1, r 1-1-1-1; leg I: tibia p 3-2-2, r 2-4-2, metatarsus p 2-4-4, r 3-3-3, tarsus r 2; leg II: tibia p 3-3-2, r 0-2-2, metatarsus p 2-3-3, r 3-2-2, tarsus r 2-0; leg III: patella with approximately 55, tibia with approximately 75, metatarsus with approximately 54, and tarsus with approximately 20 spinules; leg IV: patella with approximately 70 and tibia with approximately 30 spinules, metatarsus v0-0-2a. STC (pro-retro) I, II, and IV (1-1), III (1-2), ITC simple, pedipalpal claw with 1 simple tooth (Fig. 51E). Leg measurements (Femur + Patella + Tibia + Metatarsus + Tarsus = [Total]): I: 3.2 + 2.2 + 2.0 + 1.55 + 1.0 = [9.95]; II: 2.95 + 2.2 + 1.9 + 1.65 + 1.2 = [9.9]; III: 2.65 + 2.05 + 1.5 + 1.65 + 1.4 = [9.25]; IV: 3.7 + 2.35 + 2.15 + 2.05 + 1.7 = [11.95]; pedipalpus: 2.4 + 1.35 + 1.5 + (absent) + 1.5 = [6.75].

Abdomen 6.5 long, 5.5 wide, sparsely covered with short setae. Spermathecae not dissected but through cuticle they appear to be like those of FMNH female (see below).

Variation (N=2).—Total length 13.0–14.8. Markings of a fresh female specimen from Vohimena are pale yellow-brown on prosoma except dusky on middle of and along margin of caput, with black surrounding each AME and mesad of each ALE, PME and PLE; abdomen yellow-white, unmarked (Figs. 50, 51A–B). Height at fovea  $0.16\text{--}0.22 \times$  carapace width. Caput  $0.79\text{--}0.84 \times$  carapace width, height  $2.5\text{--}3.62 \times$  height at thoracic fovea; width ocular area  $0.41\text{--}0.46 \times$  caput width, diameter ALE  $1.6\text{--}1.7 \times$  AME, PLE  $1.4\text{--}1.6 \times$  PME; clypeus length  $0.83\text{--}1.15 \times$  OAL, 3–4 setae anterior of ocular area; thoracic fovea width  $6.2\text{--}7.0 \times$  length. Teeth of fang furrow interspersed with 6–9 denticles (Fig. 51D). Sternal sigilla width  $0.03\text{--}0.11 \times$  sternum width; labium with 16–17, pedipalpal coxae with 33–40 cuspules. Tibia I with 8, metatarsus I with 9–10 retroventral spines, tibia II with 6–8 proventral spines. STC may have small denticle distad to tooth. Spermatheca (of FMNH specimen from Vohimena) length  $3.0 \times$  maximum diameter, length  $0.88 \times$  base width, maximum diameter  $1.45 \times$  minimum, head and stalk not distinguishable (Figs. 51C, 56D).

Male.—(Vohimena): Total length 11.7. Carapace red-brown with faint dark areas along median and margins of caput and around thoracic fovea; ocular area and chelicerae red-brown, black between AME and mesad of ALE, PME and PLE (Figs. 52, 53A); sternum, coxae, and trochanters pale yellow-brown (Fig. 53B); pedipalpi and legs II through IV pale yellow-brown with dorsal surface of femora distinctly darker than ventral surface; leg I red-brown fading to pale yellow-brown ventrally and on tarsus and apex of metatarsus (Figs. 52, 53C); abdomen yellow-white including spinnerets.

Carapace 5.0 long, 4.7 wide, height at thoracic fovea  $0.25 \times$  carapace width; rugose, margin rebordered. Caput inclined (Fig. 53A), height  $1.5 \times$  that at thoracic fovea, width  $0.65 \times$  carapace width; median ocular seta present with a pair of setae anterior to this; clypeus  $0.66 \times$  length OAL, rugose, margin straight. Thoracic fovea T-shaped, tripartite, with deep posterior part, width  $0.21 \times$  that of carapace,  $1.6 \times$  wider than long, prefoveal setae absent (Fig. 52).

Ocular area width  $0.41 \times$  caput,  $2.16 \times$  wider than long; AER 1.35 wide,  $1.02 \times$  width PER. Ratio of eyes: AME: ALE: PME: PLE: 1.0: 0.63: 1.57: 0.36, diameter AME 0.27; AME separated by  $0.45 \times$  their diameter, PME by  $3.14 \times$  their diameter. Ocular quadrangle  $1.5 \times$  wider than long, posterior width  $1.5 \times$  anterior.

Sternum 2.95 long, 2.45 wide, widest behind coxa II and narrowed anteriorly; sigilla adjacent to coxa II,  $0.06 \times$  width sternum, distance between  $1.18 \times$  distance from margin (Fig. 53B). Labium and pedipalpal coxae lacking cuspules; labium 1.0 long, 0.95 wide, pedipalpal coxae 2.0 long, 1.05 wide, apex produced to a blunt point. Chelicerae 1.7 long, fang long and slender, with longitudinal basal tooth, promargin of fang furrow with 4 teeth, retromargin with 8 teeth, pro- and retromargins interspersed with 8 denticles (Fig. 53D).

Tibia I prolaterally swollen and with retrolateral megaspine (Figs. 52, 53C, 55A–B). Femur I 1.0, tibia I 0.78, femur IV 0.89, and tibia IV  $0.63 \times$  width carapace. Scopulae weak beneath tarsi I and II, dense and entire beneath tarsi III and IV and apically on 1/3 of metatarsus IV. Spination: leg I: patella p 0-0-1-1, v 0-0-0-3, r 0-0-1-0, tibia p 0-2-2-2-2a, v 0-1-1-0, metatarsus p 0-1-1-1-1a, r 0-1-1-1-1a, tarsus r 2-1-0; leg II: patella p 0-0-1, v 0-0-1, tibia p 1-1-1-1, v 1-2-1-2-1a, metatarsus p 0-1-1-1-1a, r 1-2-1-1-1a, tarsus r 1-1-0; leg III: patella with approximately 45, tibia with approximately 50, and metatarsus with approximately 30 spinules; leg IV: patella with approximately 50 and tibia with approximately 25 spinules. STC (pro, retro) I (1-1), II (1-2), III, IV (1-1), ITC simple (Fig. 53H). Leg measurements (Femur + Patella + Tibia + Metatarsus + Tarsus = [Total]): I:  $4.7 + 2.5 + 3.7 + 2.8 + 1.2 = [14.9]$ ; II:  $4.0 + 2.0 + 2.7 + 2.6 + 1.4 = [12.7]$ ; III:  $3.4 + 2.0 + 2.0 + 2.1 + 1.9 = [11.4]$ ; IV:  $4.2 + 2.2 + 3.0 + 2.6 + 2.3 = [14.3]$ ; pedipalpus:  $3.5 + 1.5 + 2.9 + (\text{absent}) + 0.8 = [8.7]$ .

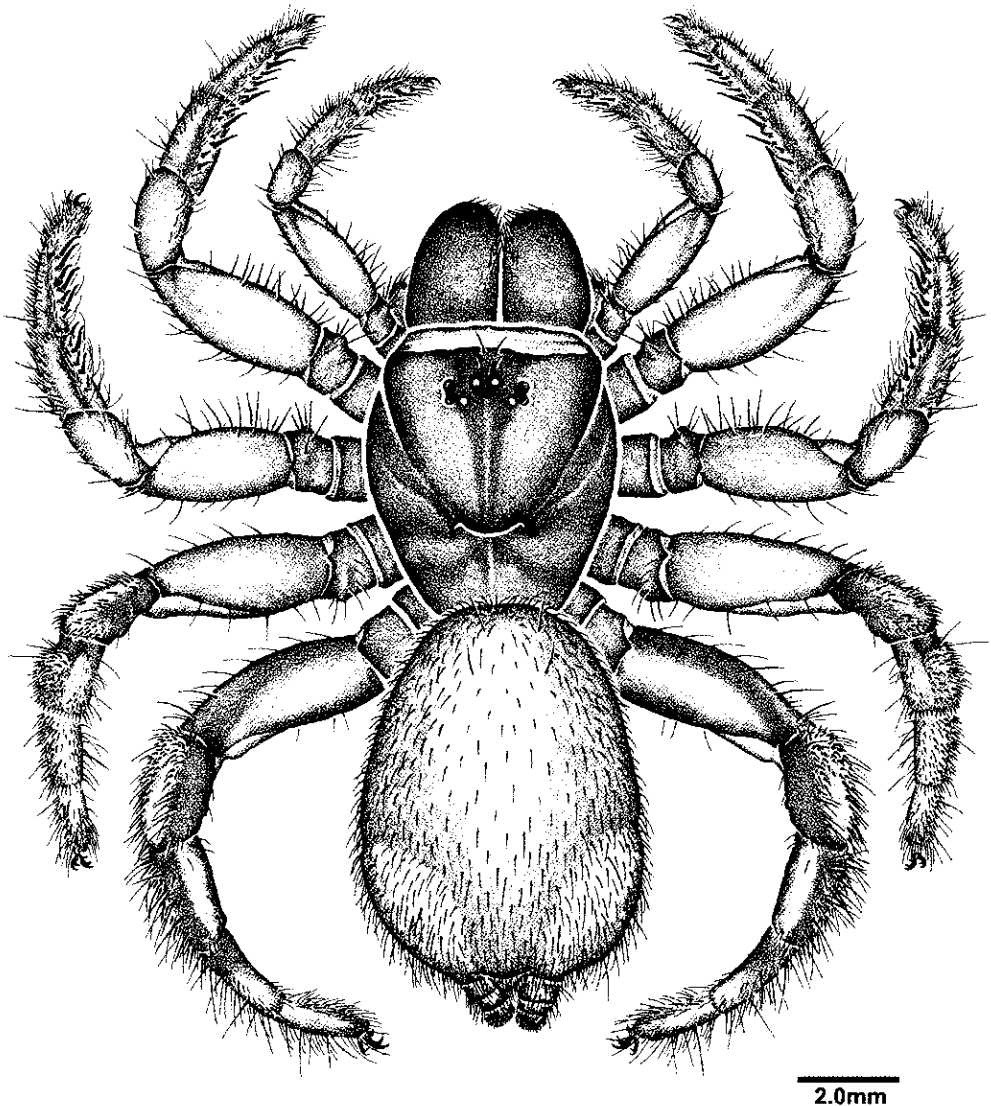
Pedipalpus with femur 0.74, tibia  $0.62 \times$  carapace width; femur 4.37, tibia  $3.62 \times$  length tarsus; tibia stout, prolaterally swollen (Figs. 53E–G, 54A), height  $0.34 \times$  length; tarsus without apical spinules; bulb width  $1.75 \times$  tarsus length; embolus length  $1.25 \times$  bulb width (Fig. 53F). Abdomen 5.0 long, 3.8 wide, sparsely covered with spiniform setae (Fig. 52).

Variation (N=5).—Total length 8.8–12.9; height at fovea 0.14–0.25 × carapace width. Caput inclined, caput height 1.33–2.5 × that at thoracic fovea, width 0.31–0.38 × carapace width; width ocular area 0.41–0.53 × caput width, diameter AME 0.20–0.32, PME 0.10–0.20, PME interdistances 3.14–6.0 × their diameter; clypeus length 0.57–0.88 × OAL; thoracic fovea width 1.6–4.0 × length. Sternal sigilla width 0.06–0.115 × width sternum; retromargin of fang furrow with 4–6 teeth and 2–4 denticles. Metatarsus II with 4–5 proventral spines. STC with 1–3 teeth. Bulb length 2.13–2.93 × width.

Natural History.—A female and many male specimens were collected in pitfall traps during January 1996. Whereas males were probably wandering, the presence of a female in these terrestrial traps suggests that this species may be terrestrial.

Distribution.—Western Madagascar (Fig. 68).

Material examined.—MADAGASCAR: Mahajanga: St. Marie de Marovoay, 22 November 1906 (holotype female of *Heteromigella malagasa* Strand 1908, NHR). Toliara: Forêt de Vohimena, 35 km SE Sakaraha, 22°41.0'S, 44°49.8'E, elev. 780m, 17–24 January 1996, S. Goodman, (2 males CAS; 1 female, 23 males, FMNH).



2.0mm

FIGURE 50. *Thyropoeus malagasus*, female from Vohimena, Madagascar, dorsal. Illustration by JS.  
(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 100).

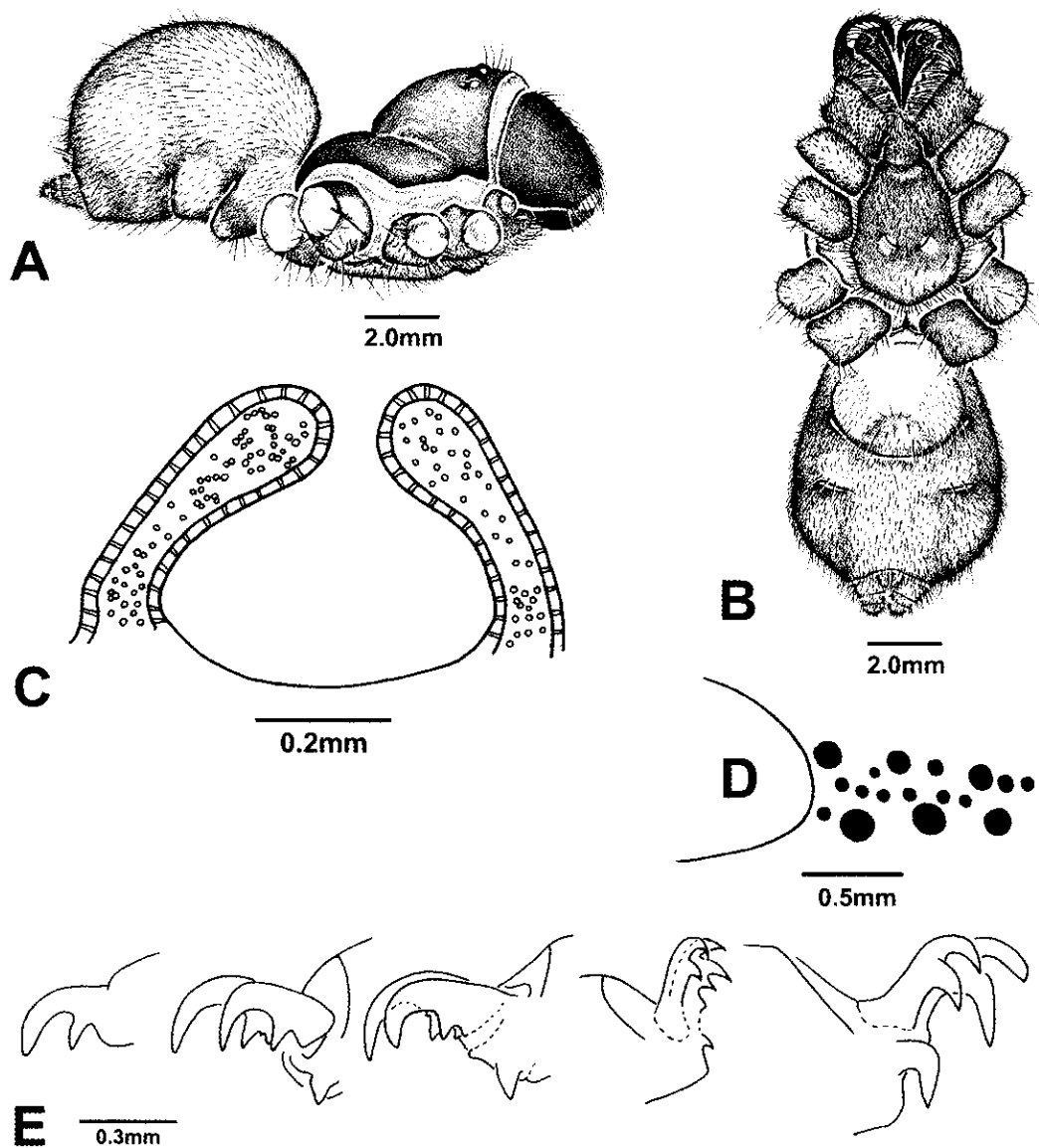


FIGURE 51. *Thyropoeus malagasus*. A–D. Female from Vohimena, Madagascar. E. Holotype female of *Heteromigella malagasa*. A. Lateral. B. ventral. C. Spermathecae, dorsal. D. Dentition of right chelicera. E. Left tarsal claws: pedipalp, leg I retrolateral, leg II retrolateral, leg III prolateral, leg IV prolateral. Illustrations A, B by JS, C, D by JL, E by CG.

(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 101).

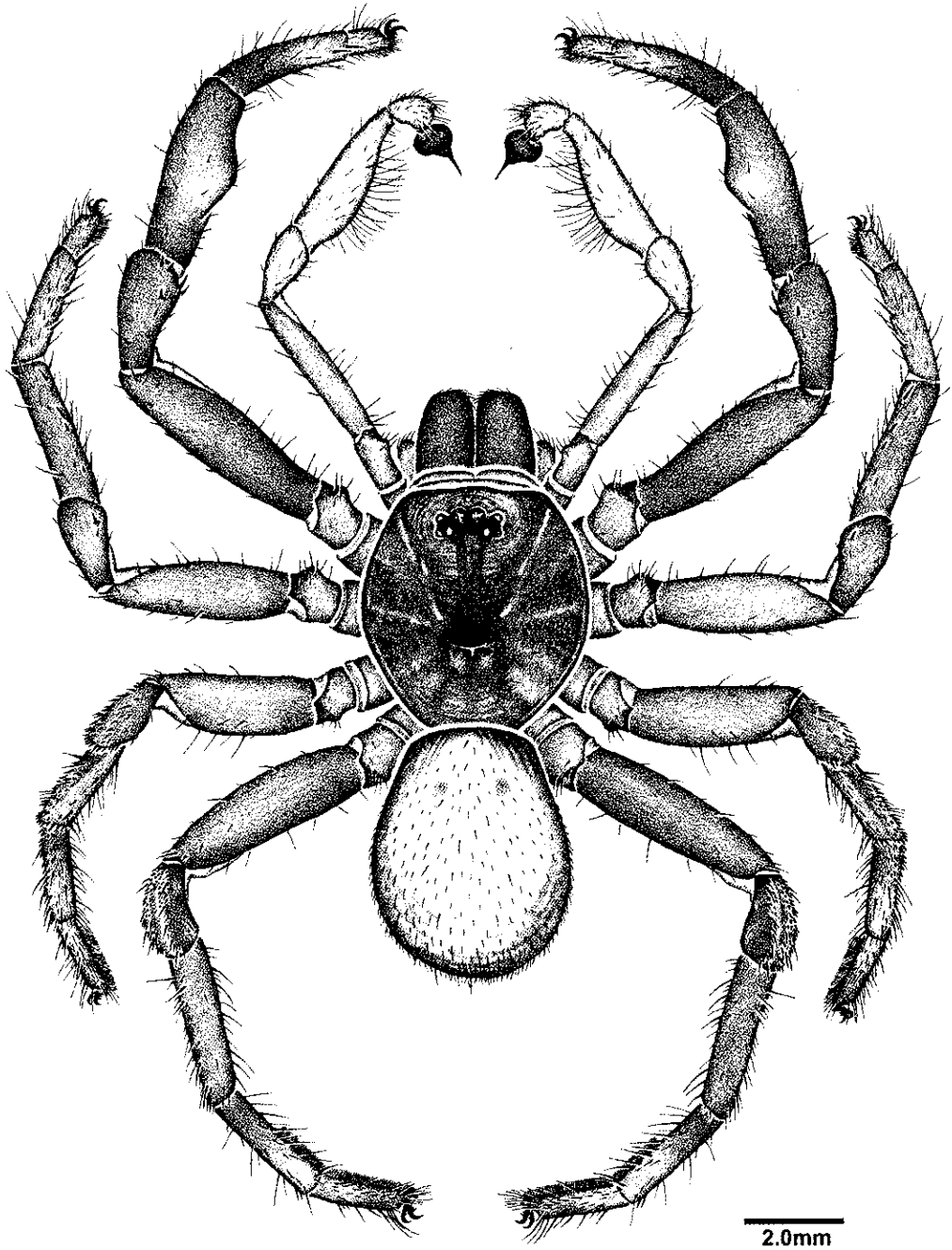


FIGURE 52. *Thyropoeus malagasus*, male from Vohimena, Madagascar, dorsal. Illustration by JS.

(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 102).

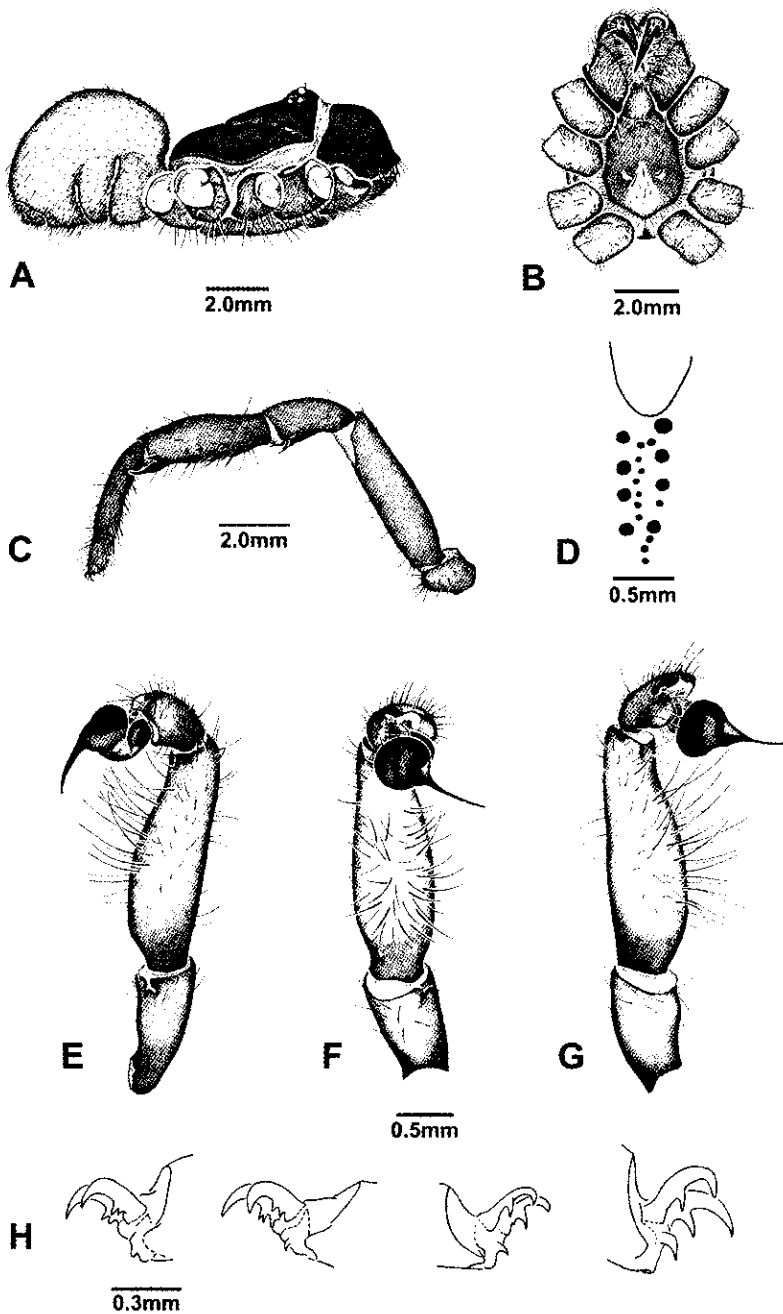


FIGURE 53. *Thyropoeus malagasyus*, male from Vohimena, Madagascar. A. Lateral. B. Cephalothorax, ventral. C. Left leg I, retrolateral. D. Dentition of right chelicera. E–G. Left pedipalp patella-tarsus. E. Retrolateral. F. Ventral. G. Prolateral. H. Left tarsal claws: leg I retrolateral, leg II retrolateral, leg III prolateral, leg IV prolateral. Illustrations A–C, E–G by JS, D by JL, H by CG.

(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 103).

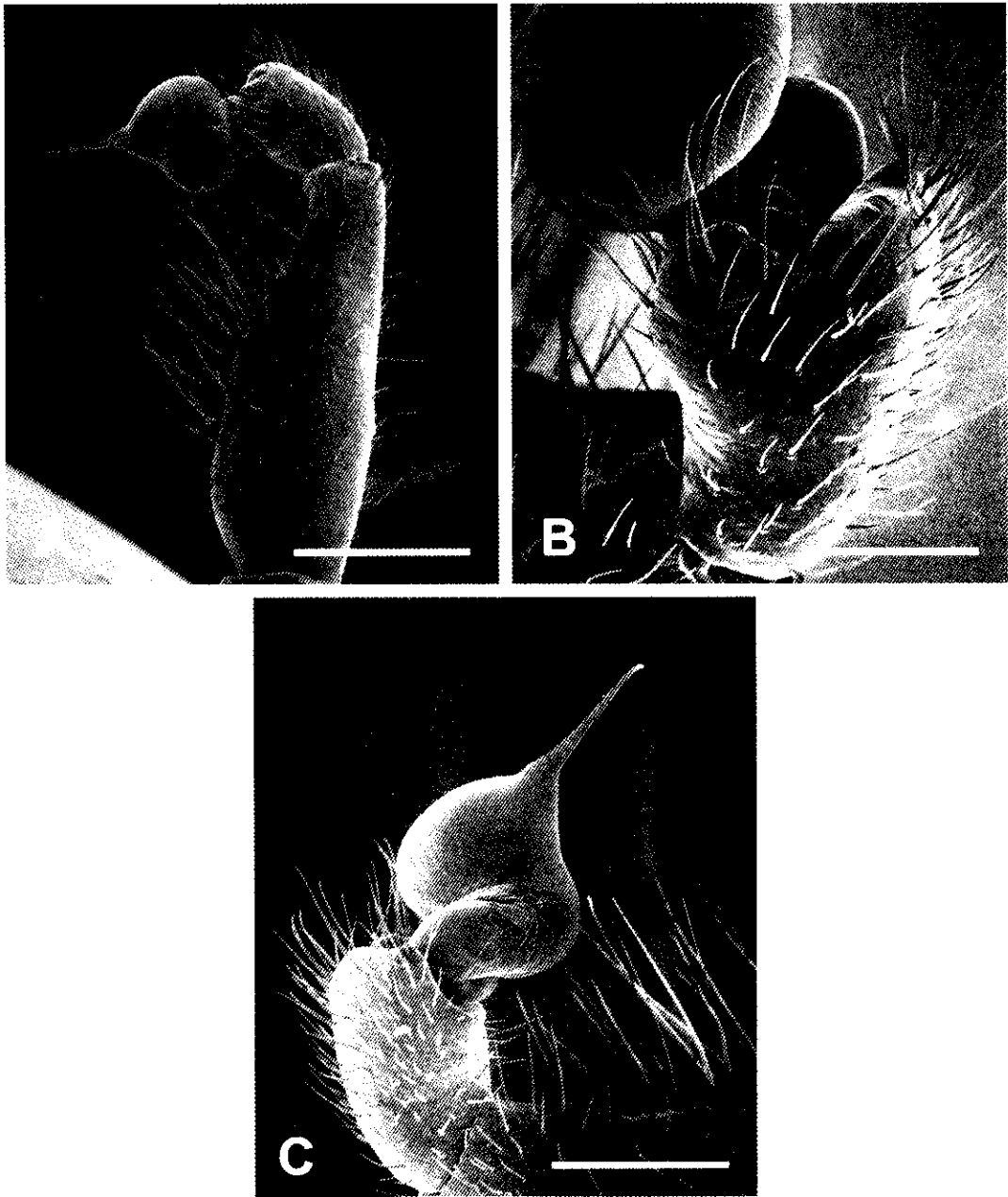


FIGURE 54. *Thyropoeus malagascus*, male from Vohimena, Madagascar, right pedipalpus. A. Tibia-tarsus, prolateral. B. Tarsus, dorsal. C. Tarsus, retrolateral. Scale bars: A = 1000  $\mu\text{m}$ . B = 380  $\mu\text{m}$ , C = 600  $\mu\text{m}$ .  
(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 104).

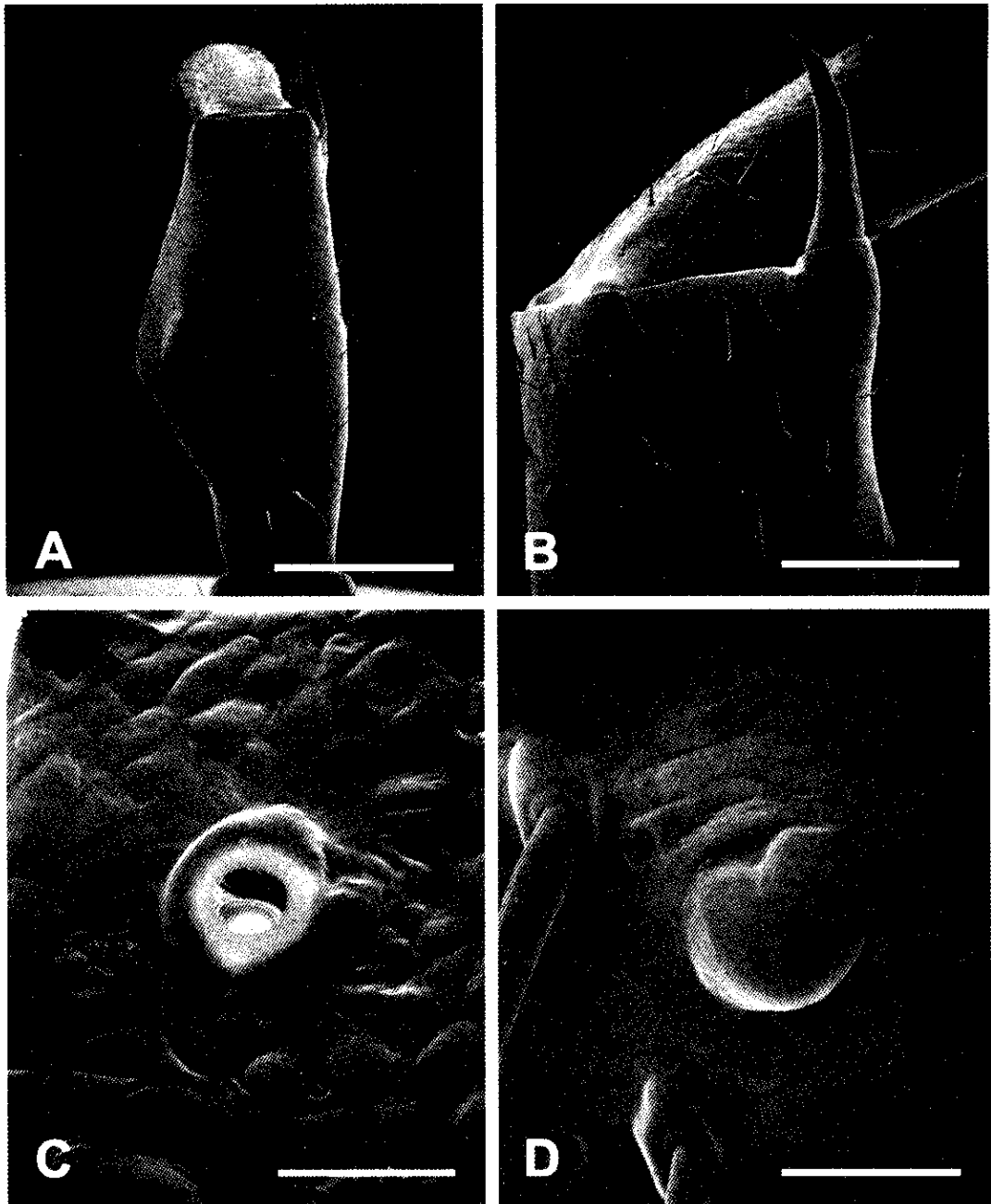


FIGURE 55. *Thropoeus malagasus*, male from Vohimena, Madagascar. A. Right tibia I, dorsal. B. Apex of right tibia I, retro-lateral. C. Trichobothrial base, metatarsus I. D. Tarsal organ I. Scale bars: A = 1200  $\mu\text{m}$ , B = 500  $\mu\text{m}$ , C, D = 30  $\mu\text{m}$ . (From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 105).



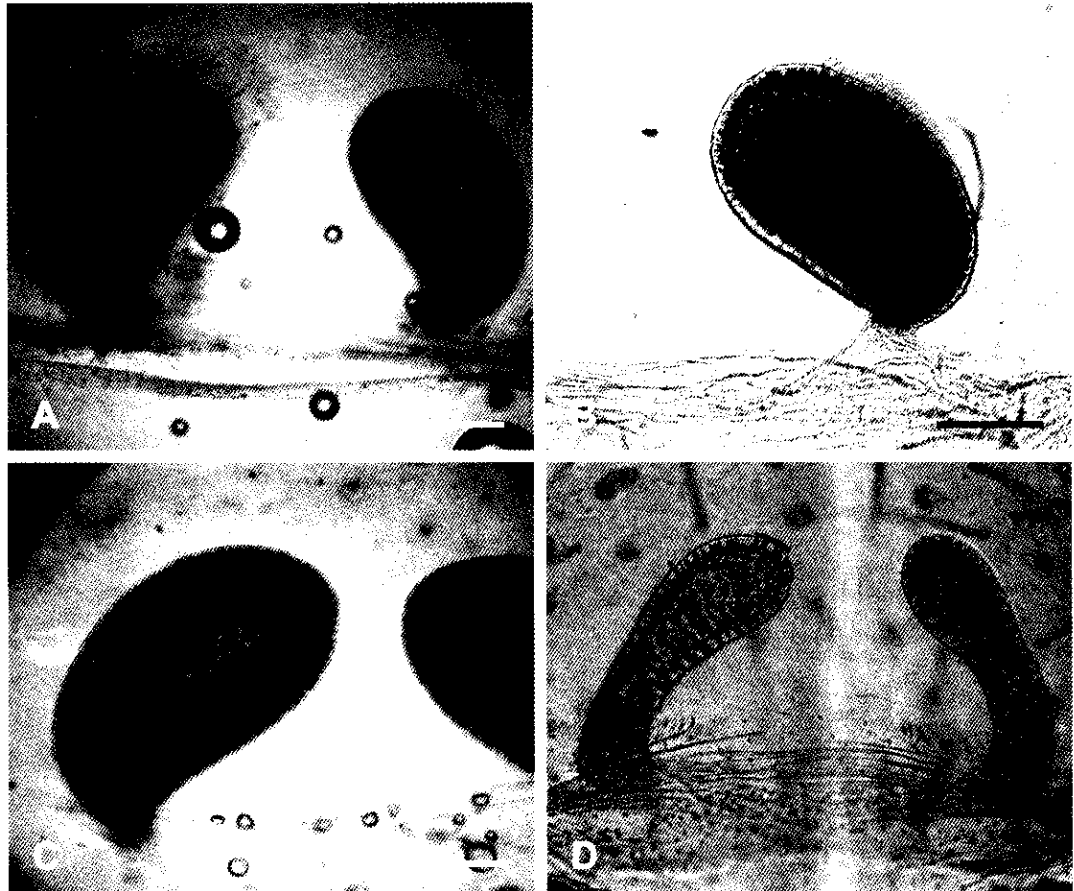


FIGURE 56. Spermathecae of *Thyropoecus* spp., dorsal. A. *T. mirandus*, small female. Ft. Dauphin, Madagascar. B. *T. mirandus*, holotype, left. C. *T. mirandus*, large female. Ft. Dauphin, Madagascar. D. *T. malagasus*. Vohemena, Madagascar. Scale bars: A–C = 0.4 mm, D = 0.2 mm.

(From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 106).

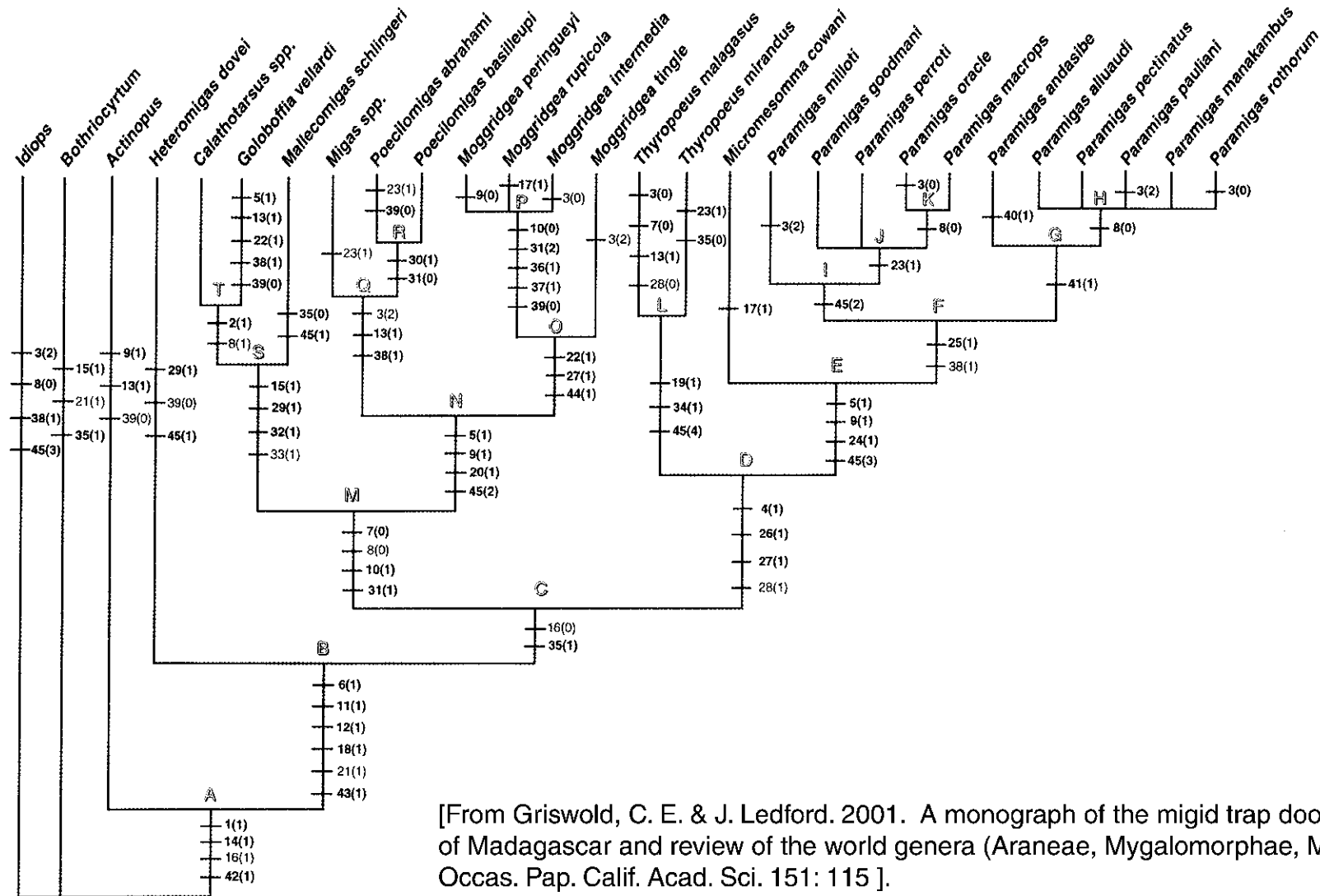


FIGURE 65. Preferred cladogram for Migidae, 96 steps, c.i. = 0.52, r.i. = 0.76. Character changes are marked on branches [character (state)]; those in bold represent unambiguous optimizations. Bremer support (decay indices) for the nodes are A (2), B (3), C (1), D (4), E (5), F (1), G—K (0), L (4), M (2), N (>5), O (4), P (4), Q (3), R (1), S (2) and T (1).

A *Thyropoeus malagasus*

B *Thyropoeus mirandus*

C *Paramigas alluaudi*

D *Paramigas andasibe*

E *Paramigas goodmani*

F *Paramigas macrops*

G *Paramigas manakambus*

H *Paramigas milloti*

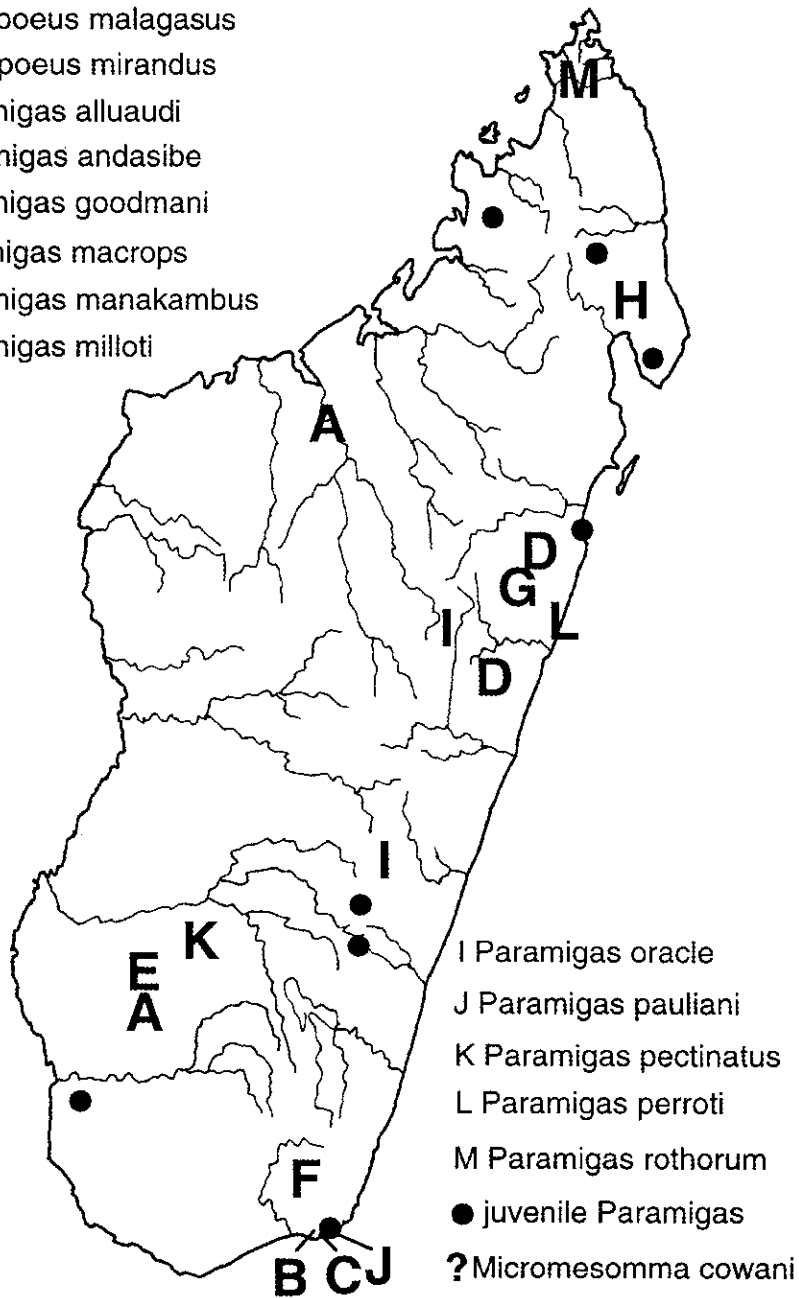


FIGURE 68. Map of Madagascar showing records of Migidae. Locality data for juvenile *Paramigas* are listed in Table 1

[From Griswold, C. E. & J. Ledford. 2001. A monograph of the migid trap door spiders of Madagascar and review of the world genera (Araneae, Mygalomorphae, Migidae). Occas. Pap. Calif. Acad. Sci. 151: 117].