

**A study of Szépligeti's types of *Mesobracon* species
deposited in the Hungarian Natural History Museum
(Hymenoptera, Braconidae: Braconinae)**

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Abstract – Five *Mesobracon* SZÉPLIGETI, 1902 species are revised, three described by SZÉPLIGETI (*M. concolor*, *M. pulchripennis*, *M. similis*) and two by BRULLÉ (*M. litura*, *M. rugosus*). A key is given for the *Mesobracon* genus-group and for the five species. New synonymy: *Mesobracon litura* (BRULLÉ, 1846) = *M. guineensis* SZÉPLIGETI, 1914, syn. n. A checklist is presented for the 27 *Mesobracon* species considered as valid and distributed in the Afrotropical Region. With 65 figures.

Key words – *Mesobracon*, redescription, synonymy, key to genera and species, checklist.

INTRODUCTION

The genus *Mesobracon* was described by SZÉPLIGETI in 1902 on the basis of the species *M. pulchripennis* also described in 1902 (SZÉPLIGETI 1902). Later he added two further species, *M. concolor* and *M. similis*, also described by him (SZÉPLIGETI 1906). The holotypes of these three species are housed in the Hungarian Natural History Museum (HNHM), Budapest. Their descriptions are quite short, restricting mainly to colour features and differences.

At present 27 *Mesobracon* species have been recorded from the Afrotropical Region (YU *et al.* 2005). The first (and so far the last) reviser of the *Mesobracon* species was FAHRINGER (1928). He merely quoted word by word the original descriptions of the species by BRULLÉ, BRUES, CAMERON and SZÉPLIGETI, adding five new species described by him.

The key for the 24 *Mesobracon* species (known at the time) is rather a compilation relied mainly to the colour and body length differences picking out from the original descriptions.

In the present paper SZÉPLIGETI's three *Mesobracon* species are redescribed, including to several features (measurements of body parts, wing venation, sculpture quality) important in the unambiguous recognition of the parasitoid braconids. Two *Mesobracon* species described by BRULLÉ (*M. litura*, *M. rugosus*) represented by one female specimen each and identified reliably by NIXON are also housed in the HNHM. Both species are redescribed.

A checklist of the 27 *Mesobracon* species known from the Afrotropical Region is compiled.

Mesobracon SZÉPLIGETI, 1902

Mesobracon SZÉPLIGETI, 1902: 46, type species: *M. pulchripennis* SZÉPLIGETI, 1902 (designated by VIERECK 1914: 92). – FAHRINGER 1928: 117–142 (key to 24 species, re-descriptions). SHENEFELT 1978: 1704 (literature up to 1949). QUICKE 1987: 82 (in key), 120 (taxonomy).

Paraspinaria CAMERON, 1905: 205 (January, not October 1905). – SHENEFELT 1978: 1711 (as valid genus). QUICKE 1987: 120 (as new synonym of *Mesobracon*).

Telerda CAMERON, 1906: 75. – SHENEFELT 1978: 1704 (as synonym of *Mesobracon* after TURNER 1917: 245). QUICKE 1987: 120 (as synonym of *Mesobracon*).

Generic features of Mesobracon – Tarsal claw bifurcate, lobe of the claws with three pectiniform spinules (Figs 10, 14, 24, 49, 60). Scape globose, its outer side emarginate (Figs 9, 19, 54). Median flagellomeres of antennae transverse, i.e. clearly wider than long. Second tergite with a pair of oblique and posteriorly converging furrows forming a three-sided area (Figs 17, 29, 43, 52, 64). Tergites 4–6 without antero-lateral pair of smooth fields. Scutum of first tergite in lateral view dome-shaped (Figs 18, 28, 44, 53, 65).

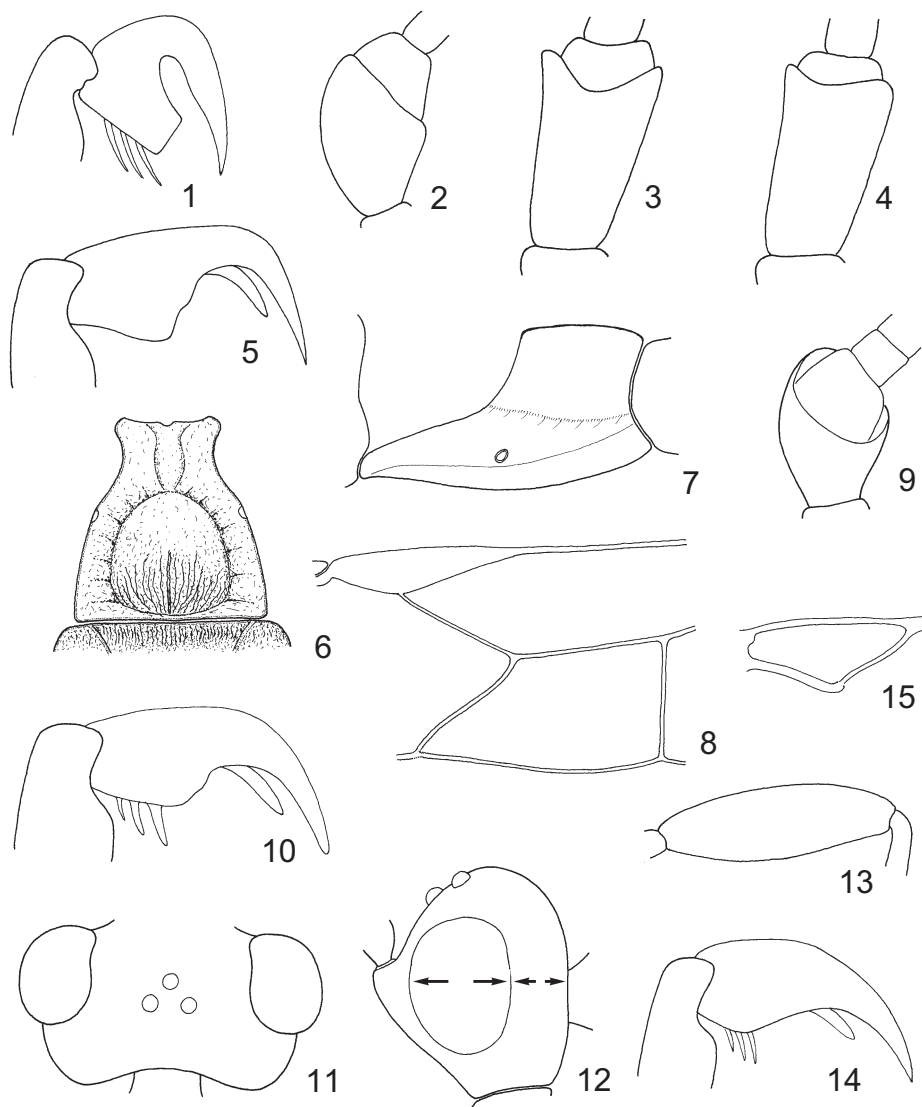
KEY TO THE THREE GENERA INCLUDED IN THE *MESOBRACON* GENUS-GROUP

- 1(2) Tarsal claws simple, strongly curved downwards, its basal lobe square (Fig. 1). Median flagellomeres considerably longer than wide. First tergite longer than wide behind. Scape globose, at most weakly emarginate (Fig. 2). *Mesobraconoides* SARHAN et QUICKE, 1990

- 2(1) Tarsal claws bifurcate, moderately to distinctly curved downwards, its basal lobe not square (Figs 5, 14). Median flagellomeres transverse, clearly broader than long. First tergite as long as wide behind or slightly wider behind than long (Figs 6, 17, 29, 43) or clearly broader behind (Fig. 52). Scape globose and its outer side more or less emarginate (Figs 9, 19) or long (Figs 3, 4).
- 3(4) Scape globose, i.e. hardly longer than wide apically, its inner side truncate (Figs 32, 55) and its outer side emarginate (Figs 9, 19). Claws with pectiniform spines on basal lobe (Figs 10, 24, 60). Tergites 4–6 without antero-lateral pair of smooth fields. Scutum of first tergite in lateral view dome-shaped (Figs 18, 44), in dorsal view rugose (Fig. 17) or areolate (Figs 29, 43, 52). Second submarginal cell not (Figs 25, 38, 50, 61) to less wide (Fig. 16). *Mesobracon* SZÉPLIGETI, 1902
- 4(3) Scape long, 1.6–2 times longer than wide apically, its outer side less deeply emarginate (Figs 3–4). Claws without pectiniform spines on its basal lobe (Fig. 5). Tergites 4–6 with antero-lateral pair of smooth fields. Scutum of first tergite in lateral view less dome-shaped (Fig. 7), in dorsal view striated posteriorly (Fig. 6). Second submarginal cell wide (Fig. 8). *Macrobracon* SZÉPLIGETI, 1902

Remarks – The genus *Mesobraconoides* was described based on the species *Mesobracon psolopterus* WILKINSON, 1931. *Mesobracon truncatus* SZÉPLIGETI, 1914 was also transferred to this genus. The two species are distributed in tropical Africa (SARHAN & QUICKE 1990). The taxonomic status of *Mesobraconoides* was confirmed, and a redescription of the genus was completed with true to nature figures (mainly SEM photomicrographs) (VAN ACHTERBERG & POLASZEK 1996).

The genus *Macrobracon* comprises thirteen species distributed in the Indo-Australian Region. A revision of the genus and species (including two new species) was published by CHISHTI & QUICKE (1994).



Figs 1–15. 1–2. *Mesobraconoides psolopterus* (WILKINSON, 1931): 1 = claw, 2 = inner side of scape and pedicel (both figures after SARHAN & QUICKE 1990: 220.) 3–8. *Macrobracon concolor* SZÉPLIGETI, 1902: 3–4 = scape, its outer side (3) and inner side (4), 5 = claw, 6 = first tergite in dorsal view, 7 = first tergite in lateral view, 8 = pterostigma and second submarginal cell of forewing. 9–10. *Mesobracon pulchripennis* SZÉPLIGETI, 1902: 9 = outer side of scape, 10 = claw. 11–15. *Mesobracon concolor* SZÉPLIGETI, 1906: 11 = head in dorsal view, 12 = head in lateral view, 13 = hind femur, 14 = claw, 15 = *cu-a* of hindwing

REDESCRIPTIONS OF THE FIVE *MESOBRACON* SPECIES

The following abbreviations of forewing veins are used in the redescrptions (after VAN ACHTERBERG 1993: 4–5): *cu-a* = nervulus, *m-cu* = transverse medio-cubital or recurrent vein, *r* = first section of the radial vein, *1-M* = basal vein, *2-M* = third section of the cubital vein, *1-R1* = first section of the metacarpal vein, *2-SR* = first transverse cubital vein, *3-SR* = second section of the radial vein, *1-SR-M* = first section of the cubital vein, *SR1* = third section of the radial vein. – Surface sculpture terminologies are used after HARRIS (1979).

Mesobracon concolor SZÉPLIGETI, 1906
(Figs 11–18)

Mesobracon concolor SZÉPLIGETI, 1906: 597 female, type locality: “Mozambique”, female holotype, designated by PAPP in 1969 (QUICKE 1991), in Hungarian Natural History Museum, Budapest; examined. – FAHRINGER 1928: 122 (in key), 127 (redescription after SZÉPLIGETI 1906). SHENEFELT 1978: 1704 (distribution, literature up to 1928). QUICKE 1991: 184 (type depository).

Designation of the female holotype – First blue label, printed: “Mozambiq”; second label is the holotype card; third label is with the inventory number “1600”; fourth label is with the identification by D. L. J. QUICKE in 1989 “*Mesobracon concolor* Szépl. ♀”. – Holotype is in good condition: (1) pinned through the mesosoma, wings nicely expanded; (2) right antenna apically deficient.

Redescription of the female holotype – Body 14 mm long. Antenna as long as body and with 95 antennomeres. Scape, pedicel and flagellomeres similar to those of *M. pulchripennis*. – Head in dorsal view transverse (Fig. 11), 1.9 times as wide as long, eye protruding and almost twice longer than temple, temple rounded, occiput moderately excavate. Eye in lateral view 1.4 times as high as wide and almost twice wider than temple (Fig. 12, see arrows). Malar space as long as basal width of mandible. Horizontal diameter of oral opening equal to shortest distance between opening and eye. Face laterally and cheek finely punctate, frons finely and densely granulose, otherwise head polished.

Mesosoma in lateral view 1.7 times as long as high, polished. Medio-transverse sulcus of pronotum smooth. Notaulix moderately deep, smooth. Propodeum punctate, interspaces smaller than punctures, with a medio-longitudinal sulcus. – Hind femur 3.1 times as long as wide medially (Fig. 13). Inner spur of hind tibia clearly shorter than half of basitarsus. Hind basitarsus as long as tarsomeres 2–3 combined. Basal lobe of claw as in Fig. 14.

Forewing as long as body. Pterostigma (Fig. 16) three times as long as wide and issuing *r* distally from its middle, *r* nearly 1.5 times longer than width of pterostigma; second submarginal cell less long, *3-SR* and *2-M* diverging distally, *3-SR* 1.6 times as long as *2-SR*, *SR1* bent, 1.25 times longer than *3-SR* and approaching tip of wing. First discal cell wide, similar to that of *M. pulchripennis* (cf. Fig. 39). – Hindwing: *cu-a* just S-form (Fig. 15).

First tergite (Fig. 17) wide, a bit broader behind than long, scutum rugose, dome-shaped in lateral view (Fig. 18). Second tergite less transverse, 1.8 times as wide behind as long medially, its median field basally wide, together with further tergites rugose. Ovipositor sheath as long as hind tibia.

Body colour similar to that of *M. pulchripennis*, only ocellar field black. "Fenestra" apically on fore wing small and whitish.

Male and host unknown.

Distribution – Kenya, Mozambique and Tanzania.

Remarks – The species is near *M. pulchripennis*, their distinction is discussed at this species and in the key to the *Mesobracon* species, couplets 1 (4) – 5 (6).

Mesobracon litura (BRULLÉ, 1846)
(Figs 19–31)

Bracon litura BRULLÉ, 1846: 415 female, type locality: "l'Afrique méridionale", syntype in Muséum National d'Histoire Naturelle, Paris; not examined.

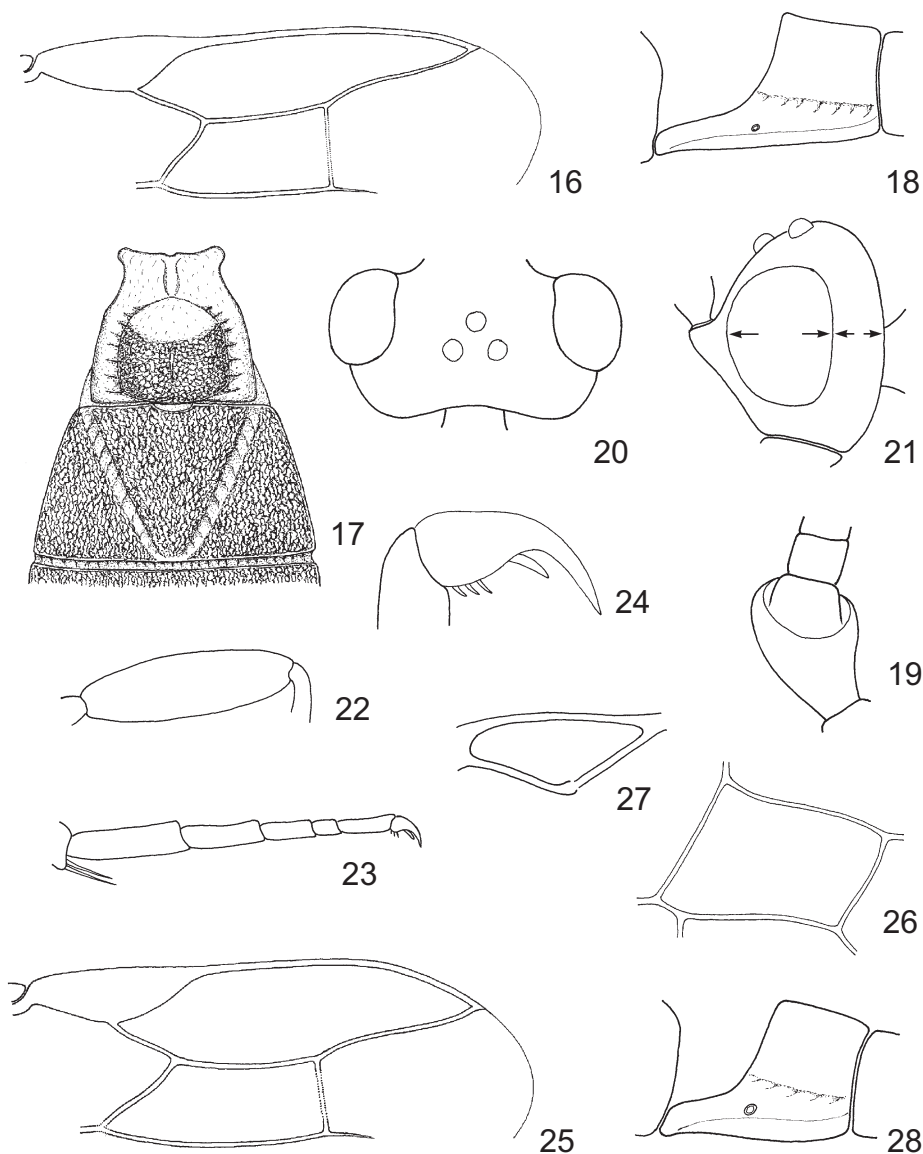
Ipobracon litura (BRULLÉ): FAHRINGER 1928: 302 (with a question-mark: species not certainly belonging to the genus *Ipobracon*). SHENEFELT 1978: 1823 (distribution, literature up to 1929).

Mesobracon guineensis SZÉPLIGETI, 1914: 189 female, type locality: "Guinea" (= Equatorial Guinea), female lectotype and one female paralectotype in Zoologisches Museum, Berlin; examined, **syn. n.** – FAHRINGER 1928: as valid species 124 (in key), 129 (redescription). SHENEFELT 1978: 1705 (as valid species, distribution, literature up to 1928). QUICKE & KOCH 1990: 220 (type designations, as valid species).

Material examined – Three females. One female (det. NIXON 1947): Republic of South Africa, Port St. John, Pondoland, May 1924, leg R. E. TURNER. Two females (types of *M. guineensis*): Equatorial Guinea, leg. HOFMEYER.

Description of the female specimen from South Africa – Body 10.5 mm long. Antenna as long as body, with 74 antennomeres. Scape globose, its outer side less deeply emarginate (Fig. 19), pedicel small, flagellomeres transverse. – Head in dorsal view transverse (Fig. 20), twice as wide as long, eye twice longer than temple, temple receded. Eye in lateral view 1.3 times as high as wide, and twice wider than temple (Fig. 21, see arrows). Malar space 1.2 times longer than basal width of mandible. Horizontal diameter of oral opening slightly longer than shortest distance between opening and eye. Head polished; face laterally and cheek dispersely punctate, frons densely granulose.

Mesosoma in lateral view 1.8 times as long as high, polished. Medio-transverse sulcus of pronotum very narrow, medially subcrenulate. Notaulix distinct, evenly deep.



Figs 16–28. 16–18. *Mesobracon concolor* SZÉPLIGETI, 1906: 16 = distal part of right forewing, 17 = tergites 1–2 in dorsal view, 18 = first tergite in lateral view. 19–28. *Mesobracon litura* (BRULLÉ, 1846): 19 = outer side of scape, 20 = head in dorsal view, 21 = head in lateral view, 22 = hind femur in lateral view, 23 = hind tarsus in lateral view, 24 = claw, 25 = distal part of right forewing, 26 = first discal cell of right forewing, 27 = *cu-a* of right hind wing, 28 = first tergite in lateral view

Propodeum similar to that of *M. pulchripennis*. – Hind femur 3.3 times as long as wide medially (Fig. 22). Tarsomeres of hind leg fairly thick, basitarsus four times as long as wide in lateral view, fifth tarsomere twice longer than fourth tarsomere (Fig. 23). Claw less curved downwards, its basal lobe smaller and with short pectiniform spinules (Fig. 24).

Forewing as long as body. Pterostigma (Fig. 25) 3.1 times as long as wide and issuing *r* from its middle, *r* 1.25 times longer than width of pterostigma; second submarginal cell long, 3–SR 1.4 times longer than 2–SR, SR1 bent, 1.2 times longer than 3–SR and approaching tip of wing. 1–R1 1.6 times as long as pterostigma. First discal cell wide, 1–M almost 1.3 times as long as *m-cu*, 1–SR–M S-shaped and 1.25 times longer than 1–M (Fig. 26). – Hindwing: *cu-a* straight as in Fig. 27.

First tergite (Fig. 29) slightly broader behind than long and broadening posteriorly, scutum areolate, its lateral margin with weak crenulae; in lateral view dome-shaped as in Fig. 28. Second tergite almost 1.9 times as wide behind as long medially, together with further tergites less strongly areolate (than scutum of first tergite, Fig. 29). Ovipositor sheath as long as hind tibia.

Scape and pedicel black, flagellum blackish. Ground colour of body yellow (head + mesosoma) and brownish yellow (metasoma) with much black pattern on frons, vertex, temple, prosternum, mesoscutum and last three tergites. Legs brownish yellow, hind tarsus black. Wings blackish, its proximal third yellowish.

Variable features of two females – (From Equatorial Africa, types of *M. guineensis*.) Temple in dorsal view slightly less rounded (Fig. 30). Forewing: 3–SR and 2–M slightly diverging (*cf.* Fig. 50). First tergite as long as wide behind (Fig. 31).

Male and host unknown.

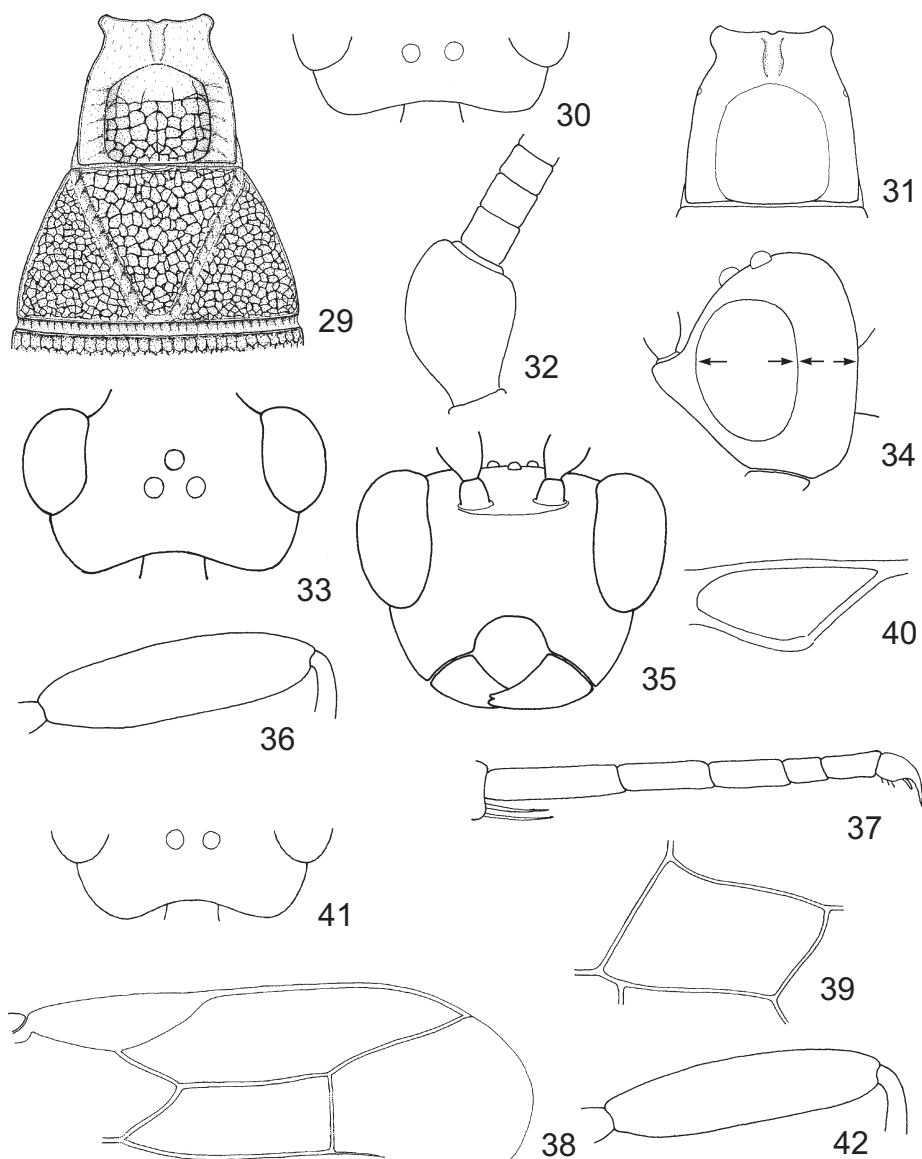
Distribution – Equatorial Guinea, Republic of South Africa.

Remarks – *M. litura* is nearest to *M. rugosus* (BRULLÉ, 1846), their distinction is presented in the key couplets 7 (8) – 8 (7).

Mesobracon pulchripennis SZÉPLIGETI, 1902 (Figs 9–10, 32–45)

Mesobracon pulchripennis SZÉPLIGETI, 1902: 46 female, type locality: “Franz. Congo: Kuilu” (People’s Republic of Congo or Brazaville Congo), female holotype, designated by PAPP in 1969 (QUICKE 1991), in Hungarian Natural History Museum, Budapest; examined. – SZÉPLIGETI 1906: 597 (in key). VIERECK 1914: 92 (fixation of the type species of *Mesobracon*). FAHRINGER 1928: 124 (in key), 136 (redescription after SZÉPLIGETI 1902). SHENEFFELT 1978: 1705 (distribution, literature up to 1928). QUICKE 1991: 184 (type depository).

Material examined – Two females. One female: Uganda, “Sesse Ins.” = Sese Island in Victoria Lake. One female: Zaire, “Mangema”.



Figs 29–42. 29–31. *Mesobracon litura* (BRULLÉ, 1846): 29 = tergites 1–2 in dorsal view, 30 = temple in dorsal view, 31 = first tergite in dorsal view. 32–42. *Mesobracon pulchripennis* SZÉPLIGETI, 1902: 32 = inner side of scape, 33 = head in dorsal view, 34 = head in lateral view, 35 = head in frontal view, 36 = hind femur in lateral view, 37 = hind tarsus in lateral view, 38 = distal part of right wing, 39 = first discal cell, 40 = *cu-a* of right hindwing, 41 = temple in dorsal view, 42 = hind femur in lateral view

Designation of the female holotype of M. pulchripennis – First label, printed: “Congo fr. / Kuilu”; second label, PAPP’s handwriting: “Brazaville / Congo”; third label is the holotype card; fourth label is with the inventory number “1601”; fifth label is with VAN ACHERBERG’s (1979) identification “Mesobracon pulchripennis Szépl. ... type series checked”. – Holotype is in good condition: (1) pinned through mesosoma, (2) fifth tarsomere of left fore leg missing, (3) left fore wing glued on a separate card (attached to pin close below wasp).

Redescription of the female holotype of M. pulchripennis. – Body 19 mm long. Antenna shorter than body, with 97 antennomeres. Scape globose, widening distally, its inner side one-fourth longer than wide distally (Fig. 32), its outer side obliquely emarginate (Fig. 9). Pedicel small, first flagellomere less transverse, slightly broader than long, flagellomeres 2–4 shortening so that further flagellomeres 1.7 times broader than long (Fig. 32). – Head in dorsal view transverse (Fig. 33), 1.9 times as wide as long, eye almost 1.5 times longer than temple, temple rounded. Eye in lateral view (Fig. 34) almost 1.4 times as high as wide and a bit less than twice as wide as temple. Malar space about as long as basal width of mandible. Horizontal diameter of oral opening slightly longer than shortest distance between opening and eye (Fig. 35). Face and cheek punctate, frons finely striate, interspaces finely granulose, occiput with confluent punctation; otherwise head polished.

Mesosoma in lateral view 1.6 times as long as high, polished. Medio-transverse sulcus of pronotum crenulate. Notaulix distinct, posteriorly becoming more shallow. Propodeum medially polished and with medio-longitudinal sulciform impression, laterally with rather disperse punctures. – Hind femur 3.5 times as long as wide medially (Fig. 36). Inner spur of hind tibia half as long as basitarsus. Hind tarsomeres thick (Fig. 37).

Forewing as long as body. Pterostigma (Fig. 38) 3.3 times as long as wide and issuing *r* from its middle, *r* longer than width of pterostigma; second submarginal cell long, 3–SR twice as long as 2–SR, SR1 as long as 3–SR and approaching tip of wing; 1–R1 1.5 times as long as pterostigma. First discal cell wide, 1–M clearly 1.25 times as long as *m-cu*, 1–SR–M bent and also 1.25 times longer than 1–M (Fig. 39). – Hindwing: *cu-a* straight as in Fig. 40.

First tergite (Fig. 43) as long as wide behind and somewhat less broadening posteriorly; scutum in lateral view dome-shaped (Fig. 44), in dorsal view rugose, lateral margin of tergite smooth, with a few weak crenulae. Second tergite almost 1.9 times broader behind than long medially, its median field emerging well, together with further tergites areolate. Suture between tergites 2–3 deep, crenulate (Fig. 43). Ovipositor sheath as long as hind tibia, its apical end as in Fig. 45.

Scape and pedicel black, flagellum dark brown to brown. Head yellow, frons, vertex and occiput black. Mandible brownish yellow, apically black. Palpi brownish. Mesosoma, metasoma and legs light brownish yellow. Sixth tergite black with a medio-longitudinal narrow brownish yellow streak. Hind tarsus blackish. Forewing: proximal half brownish yellow, distal half black to blackish and here with a median pale yellow “fenestra”; before pterostigma a black transverse streak. Hindwing also brownish yellow with two transverse dark streak distally.

Variable features of the two female specimens. – Body 16 mm long (1 female). Antenna with 88 (1 female) and 102 (1 female) antennomeres. Head in dorsal view twice as wide as

long, eye slightly more protruding; temple in dorsal view more rounded (Fig. 41). Forewing: 3-SR 1.8–2 times as long as 2-SR. Hind femur four times as long as wide medially (Fig. 42). Head entirely yellow, only ocellar field black.

Male and host unknown.

Distribution – Congo, Malawi, Uganda, Zaire.

Remarks – *M. pulchripennis* is nearest to *M. concolor* SZÉPLIGETI, the most distinctive features between them are as follows (further details see in the key couplets 1 (4) – 5 (6):

- 1(2) Second tergite more transverse, 1.9 times broader behind than long medially, areolate (Fig. 43). Fore wing: second submarginal cell longer, 3-SR and 2-M parallel, 3-SR 1.8 to 2 times as long as 2-SR (Fig. 38). Hindwing: *cu-a* straight (Fig. 40). Female: 16–19 mm

M. pulchripennis SZÉPLIGETI, 1902

- 2(1) Second tergite less transverse, 1.7–1.8 times as wide behind as long medially, rugose (Fig. 17). Forewing: second submarginal cell shorter, 3-SR and 2-M diverging distally, 3-SR 1.5 times as long as 2-SR (Fig. 16). Hindwing: *cu-a* just S-form (Fig. 15). Female: 14 mm

M. concolor SZÉPLIGETI, 1906

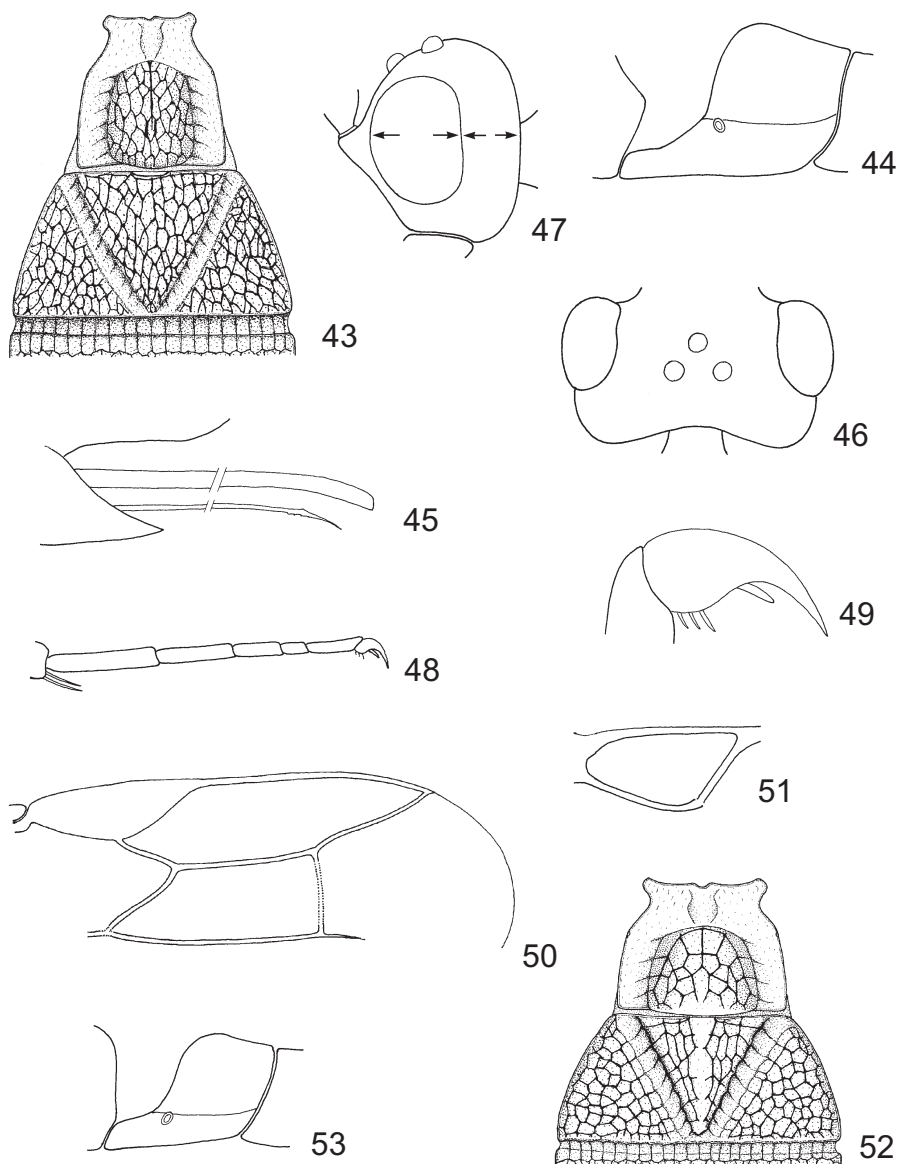
Mesobracon rugosus (BRULLÉ, 1846)
(Figs 46–53)

Bracon rugosus BRULLÉ, 1846: 413 female, type locality: “Afrique australe” (supposedly Republic of South Africa), syntype series in Museum National d’Histoire Naturelle, Paris; not examined.

Mesobracon rugosus (BRULLÉ): FAHRINGER 1928: 119 (in key), 137 (redescription after BRULLÉ 1846). SHENEFELT 1978: 1706 (distribution, literature up to 1928).

Material examined – One female (det. NIXON 1947): Republic of South Africa, Cape province, Mossel Bay, April 1921, leg. TURNER.

Description of the female specimen. – Body 9 mm long. Antenna as long as body, right antenna with 65, left antenna with 66 antennomeres. Scape globose, its outer side less deeply emarginate (*cf.* Fig. 19). – Head in dorsal view transverse (Fig. 46), almost 1.9 times broader than long, eye almost twice longer than temple, temple rounded. Eye in lateral view nearly 1.4 times as high as wide and less than 1.6 times as wide as temple, temple evenly wide beyond eye (Fig. 47, see arrows). Malar space as long as basal width of mandible. Horizontal diameter of oral opening a bit longer than shortest distance between opening and eye. Head polished, frons shiny and very finely granulose.



Figs 43–53. 43–45. *Mesobracon pulchripennis* SZÉPLIGETI, 1902: 43 = tergites 1–2 in dorsal view, 44 = first tergite in lateral view, 45 = hind end of female metasoma. 46–53. *Mesobracon rugosus* (BRULLÉ, 1846): 46 = head in dorsal view, 47 = head in lateral view, 48 = hind tarsus in lateral view, 49 = claw, 50 = distal part of right forewing, 51 = *cu-a* of right hind wing, 52 = tergites 1–2 in dorsal view, 53 = first tergite in lateral view

Mesosoma in lateral view clearly 1.7 times as long as high, polished. Medio-transverse sulcus of pronotum smooth. Notaulix becoming more shallow posteriorly. Propodeum polished, its medio-longitudinal sulcus hardly distinct. – Hind femur 3.3 times as long as wide medially (cf. Fig. 22). Tarsomeres of hind leg thin, basitarsus in lateral view six times as long as wide, fifth tarsomere twice longer than fourth tarsomere (Fig. 48). Claw less curved downwards, its basal lobe smaller, with short pectiniform spinules (Fig. 49).

Fore wing somewhat shorter than body. Pterostigma (Fig. 50) three times longer than wide and issuing *r* from its middle, *r* somewhat longer than width of pterostigma; second submarginale cell long, 3–SR 1.5 times as long as 2–SR, 3–SR and 2–M slightly diverging distally; SR1 faintly S-shaped and slightly shorter than 3–SR. 1–R1 1.4 times as long as pterostigma. First discal cell similar to that of *M. litura* (cf. Fig. 26). – Hindwing: *cu*–*a* straight as in Fig. 51.

First tergite (Fig. 52) almost 1.4 times broader behind than long, scutum strongly areolate, its lateral margin subcrenulate, in lateral view dome-shaped (Fig. 53). Second tergite almost 2.2 times as wide behind as long medially, together with further tergites areolate (this sculpture stronger than that of *M. litura*: cf. Fig. 29, Fig. 52). Suture between tergites 2–3 crenulate (Fig. 52). Ovipositor sheath long, as long as hind tibia + basitarsus combined.

Ground colour of head and mesosoma black; tergites rusty, laterally with faint blackish suffusion; sternites pale yellow. Scape and pedicel black, flagellum blackish. Clypeus, labrum, mandible, mouthparts, tegulae and metanotum yellow. Fore tarsus brownish smoky yellow. Tibio-femoral joints yellow. Wings yellowish, distally brown, pterostigma yellow, veins light brown.

Male and host unknown.

Distribution – Republic of South Africa.

Remarks – *M. rugosa* and *M. litura* (BRULLÉ) are similar to each other, their distinction see in the key couplets 7 (8) – 8 (7).

Mesobracon similis SZÉPLIGETI, 1906 (Figs 54–65)

Mesobracon similis SZÉPLIGETI, 1906: 597 female, type locality: “Sierra Leone”, female holotype, designated by PAPP in 1969 (QUICKE 1991), in Hungarian Natural History Museum, Budapest; examined. – FAHRINGER 1928: 123 (in key), 138 (redescription after SZÉPLIGETI 1906). SHENEFELT 1978: 1706 (distribution, literature up to 1928). QUICKE 1991: 184 (type depository).

Designation of the female holotype – First label: the original label became creased hence glued on a white card, printed: “Sierra Leone”; second label is the holotype card; third label is with the inventory number “1602”; fourth label is with identification by PAPP “*Mesobracon similis* Szépl. ♀”. – Holotype is in bad condition: (1) pinned through the

mesosoma, (2) left flagellum apically deficient, (3) missing: tarsus of hind leg and tarso-meres 3–5 of left hind leg, (4) right fore wing apically somewhat creased and deficient, (5) metasoma glued to propodeum hence first tergite less visible.

Redescription of the female holotype – Body 11 mm long. Right antenna as long as body, with 78 antennomeres. Scape more globose and its outer side deeply emarginate (Fig. 54), its inner side truncate (Fig. 55). – Head in dorsal view transverse (Fig. 56), twice as wide as long, eye protruding and clearly twice longer than temple, temple receded, occiput excavate. Eye in lateral view nearly 1.4 times as high as wide and clearly twice wider than temple, temple slightly narrowing dorsally (Fig. 57, see arrows). Malar space as long as basal width of mandible. Horizontal diameter of oral opening 1.5 times as long as shortest distance between opening and eye (Fig. 58). Face laterally and cheek finely punctate, frons densely subgranulose, otherwise head polished.

Mesosoma in lateral view 1.8 times as long as high, polished. Medio-transverse sulcus of pronotum medially very finely crenulate, otherwise smooth. Notaulix deep, smooth. Propodeum subpunctate and with a medio-longitudinal sulcus. – Hind femur 3.7 times as long as wide medially (Fig. 59). Inner spur of hind tibia half as long as hind basitarsus. Basal lobe of claw large as in Fig. 60.

Forewing slightly longer than body. Pterostigma (Fig. 61) nearly 3.6 times longer than wide and issuing *r* from its middle, *r* 1.5 times longer than width of pterostigma; second submarginal cell fairly long, 3–SR 1.7 times as long as 2–SR, 3–SR and 2–*M* indistinctly diverging distally; SR1 as long as 3–SR, faintly S-form bent and approaching tip of wing. First discal cell wide, 1–*M* less than 1.3 times longer than *m-cu*, 1–SR–*M* S-form curved and somewhat longer than 1–*M* (Fig. 62). – Hindwing: *cu-a* curved as in Fig. 63.

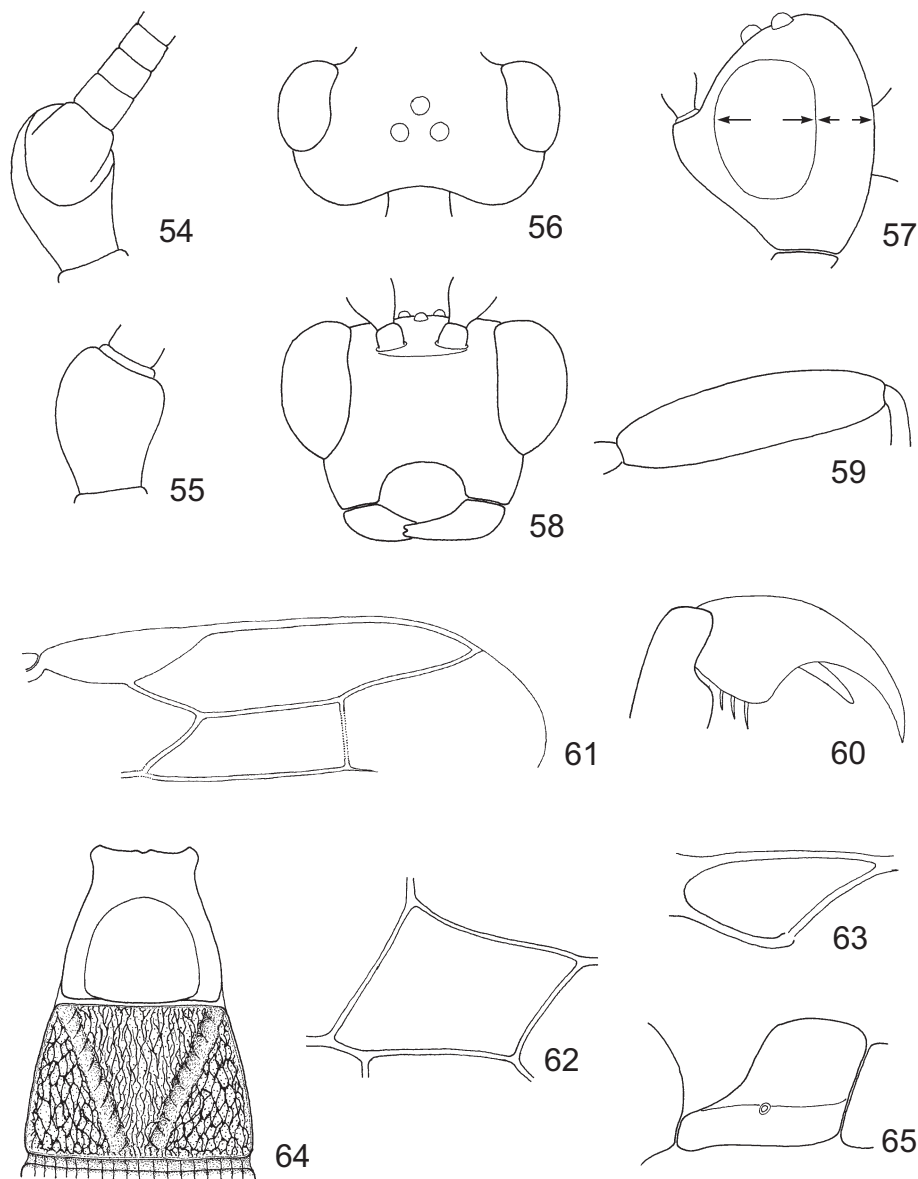
First tergite (tergite of the holotype less visible hence only its contour are depictable, Fig. 64) as long as wide behind, in lateral view dome-shaped as in Fig. 65. Second tergite less transverse, 1.5 times as wide behind as long medially, its median field basally wide and rather striate-rugose, laterally and together with further tergites rather areolate-rugose (Fig. 64). Ovipositor sheath almost as long as hind tibia.

Body colour testaceous, head rather yellowish. Antenna blackish, ocellar field black. Tarsomeres 1–2 of left hind leg blackish. Wings yellowish, distally with brown streaks.

Male and host unknown.

Distribution – Cameroon, Equatorial Guinea, Sierra Leone, Uganda.

Remarks – *M. similis* is near to *M. concolor* SZÉPLIGETI, their distinction see in the key couplets 1 (4) – 3 (2).



Figs 54–65. *Mesobracon similis* SZÉPLIGETI, 1906: 54 = outer side of scape, pedicel and flagellomeres 1–3, 55 = inner side of scape, 56 = head in dorsal view, 57 = head in lateral view, 58 = head in frontal view, 59 = hind femur in lateral view, 60 = claw, 61 = distal part of right fore wing, 62 = first discal cell, 63 = *cu-a* of right hind wing, 64 = tergites 1–2 in dorsal view, 65 = first tergite in lateral view

KEY TO THE FIVE *MESOBRACON* SPECIES

- 1(4) Second tergite less transverse, 1.5–1.7(–1.8) times as wide behind as long medially (Figs 17, 64). Hind wing: *cu-a* not straight, i.e. slightly bent or S-shaped (Figs 15, 63).
- 2(3) Forewing: pterostigma issuing *r* distally from its middle, 3–SR nearly 1.5 times as long as 2–SR (Fig. 16). Temple in dorsal view rounded; head in dorsal view slightly less transverse, 1.9 times as wide as long (Fig. 11). Hind femur 3.1 times as long as wide (Fig. 13). Basal lobe of claw smaller (Fig. 14). Meso- and metasoma brownish yellow. Female: 1.4 mm. – Kenya, Mozambique, Tanzania
M. concolor SZÉPLIGETI, 1906
- 3(2) Forewing: pterostigma issuing *r* from its middle, 3–SR almost 1.7 times as long as 2–SR (Fig. 61). Temple in dorsal view receded; head in dorsal view transverse, twice as wide as long (Fig. 56). Hind femur 3.7 as long as wide (Fig. 59). Basal lobe of claw larger (Fig. 60). Meso- and metasoma testaceous. Female: 11 mm. – Sierra Leone
M. similis SZÉPLIGETI, 1906
- 4(1) Second tergite more transverse, 1.8–1.9 times as wide behind as long medially (Figs 29, 43, 52). Hind wing: *cu-a* straight (Figs 27, 40, 51).
- 5(6) Body large and fairly strong. Forewing: 3–SR 1.8 to 2 times as long as 2–SR (Fig. 38). Fifth tarsomere of hind leg less long, 1.5 times longer than fourth tarsomere (Fig. 37). Hind femur 3.5–4 times as long as wide (Figs 36, 42). Antenna with 88–102 antennomeres. Body light brownish yellow, at most head above and metasoma apically black. Female: 16–19 mm. – Congo, Uganda, Zaire
M. pulchripennis SZÉPLIGETI, 1902
- 5(6) Body short and fairly gracile, 9–10.5 mm long. Forewing: 3–SR 1.4–1.5 times as long as 2–SR (Figs 25, 50). Fifth tarsomere of hind leg long, twice longer than fourth tarsomere (Figs 23, 48). Hind femur 3.3 times as long as wide (Fig. 22). Antenna at most with 75 antennomeres. Body with more or less black pattern.

7(8) Temple in dorsal view receded, head clearly twice as wide as long (Fig. 20). First tergite slightly broader behind than long (Fig. 29). Pterostigma issuing *r* from its middle; second submarginal cell longer, 3–SR almost 1.4 times longer than 2–SR (Fig. 25). Tarsomeres of hind leg thick, basitarsus in lateral view four times as long as wide (Fig. 23). Frons granulate, mat, tergites less strongly areolate (Fig. 29). Antenna with 75 antennomeres. Ground colour of body brownish yellow, black: head above, mesoscutum, last three tergites and hind tarsus. Female: 10.5 mm. – Equatorial Guinea, Republic of South Africa

M. litura (BRULLÉ, 1846)

8(7) Temple in dorsal view rounded, head at most 1.9 times as wide as long (Fig. 46). First tergite almost 1.4 times broader than long (Fig. 52). Pterostigma issuing *r* somewhat distally from its middle; second submarginal cell shorter, 3–SR 1.5 times longer than 2–SR (Fig. 50). Tarsomeres of hind leg thin, basitarsus in lateral view six times as long as wide (Fig. 48). Frons shiny, metasoma strongly areolate (Fig. 52). Antenna with 66 antennomeres. Ground colour of body and legs black with little (rusty and yellowish) pattern. Female: 9 mm. – Republic of South Africa

M. rugosus (BRULLÉ, 1846)

CHECKLIST OF AFROTROPICAL SPECIES OF *MESOBRACON*

The subsequent checklist follows YU *et al.* (2005), with the inclusion of *Mesobracon litura* (BRULLÉ), with its synonym, *M. guineensis* SZÉPLIGETI.

atripennis SZÉPLIGETI, 1914 – Botswana

cameroni FAHRINGER, 1928 – Tanzania

capensis SZÉPLIGETI, 1914 – Republic of South Africa

concolor SZÉPLIGETI, 1906 – Kenya, Mozambique, Tanzania

elegans SZÉPLIGETI, 1913 – Cameroon

fenesterratus BRUES, 1924 – Nigeria

= *fenestrellus* BRUES, 1926

giganteus FAHRINGER, 1928 – Brazzaville Congo

interstitialis FAHRINGER, 1928 – “Africa”

litura (BRULLÉ, 1846) – Equatorial Guinea, Republic of South Africa

= *guineensis* SZÉPLIGETI, 1914

luteus (CAMERON, 1910) – Somalia, Tanzania

maculiceps (CAMERON, 1906) – Republic of South Africa

minor BRUES, 1926 – Republic of South Africa
niger SZÉPLIGETI, 1906 – Republic of South Africa
nigriceps (CAMERON, 1906) – Republic of South Africa
nigricornis SZÉPLIGETI, 1914 – Equatorial Guinea, Republic of South Africa
pedalis BRUES, 1926 – Uganda
pulchripennis SZÉPLIGETI, 1902 – Congo, Malawi, Uganda, Zaire
punctatus SZÉPLIGETI, 1914 – Equatorial Guinea
rugosus (BRULLÉ, 1846) – Republic of South Africa
seyrigi GRANGER, 1949 – Madagascar
similis SZÉPLIGETI, 1906 – Cameroon, Equatorial Guinea, Sierra Leone, Uganda
trimaculatus SZÉPLIGETI, 1914 – Republic of South Africa
usambarensis FAHRINGER, 1928 – Tanzania
v-ornatus (CAMERON, 1905) – Republic of South Africa
xanthocephalus GRANGER, 1949 – Madagascar
zombrus FAHRINGER, 1928 – Namibia
zonatus FAHRINGER, 1928 – Cameroon

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