

FIVE NEW MESOCENTRUS SZÉPLIGETI SPECIES
FROM THE AUSTRALIAN REGION
(HYMENOPTERA: BRACONIDAE: BETYLOBRACONINAE)

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A short review is presented on our knowledge of the betylobraconine species since 1900, the year of the description of the first betylobraconine species by SZÉPLIGETI under the name *Mesocentrus crassipes*. The subfamily was erected by TOBIAS in 1979 with the description of the new genus and new species *Betylobracon waterhousi*. The systematics of the subfamily taxa are expounded. Five new species are described as follows: *Mesocentrus baloghi*, *M. gilvus*, *M. reptus*, *M. rutilus* and *M. variicolor*. New combination was established: *Mesocentrus tenuis* (PAPP, 1993) (originally described in *Yelicones*). Hitherto 21 betylobraconine species are known. Additional features are introduced in the redescription of *M. crassipes* SZÉPLIGETI. A key is presented to the seven known *Mesocentrus* species. With 55 original figures.

Key words: *Mesocentrus*, subfamily survey, description, identification key, distribution

INTRODUCTION

The first two new betylobraconine species were described by SZÉPLIGETI in 1900 and 1902 under his new genus *Mesocentrus*: *M. crassipes* and *M. pusillus*, respectively. SZÉPLIGETI placed his new genus in the subfamily Rogadinae, i.e. he did not recognize that his new genus is representing a new subfamily too.

The betylobraconine subfamily was erected by TOBIAS in 1979 on the basis of the new species as well as the new genus *Betylobracon waterhousi* TOBIAS. VAN ACHTERBERG (1995a, 1995b) has studied a fairly diverse betylobraconine material and assigned seven genera to this subfamily, five were described by him on the basis of one or more new species. By this survey it came to light that the betylobraconine species are distributed in the Indo-Australian, Neotropical and Nearctic Regions, i.e. widely in the tropics. A total of 21 betylobraconine species are registered in this subfamily today.

Subsequently the system of the subfamily Betylobraconinae is presented following VAN ACHTERBERG (1995a, b); the five new *Mesocentrus* herewith described are also included:

Subfamily Betylobraconinae TOBIAS, 1979

Tribe Betylobraconini TOBIAS, 1979

Genus *Betylobracon* TOBIAS, 1979

B. waterhousi TOBIAS, 1979 – Australia (Queensland)

Genus *Mesocentrus* SZÉPLIGETI, 1900

M. baloghi sp. n. – Australia (New South Wales)

M. crassipes SZÉPLIGETI, 1900 – Papua New Guinea

M. gilvus sp. n. – New Caledonia

M. pusillus SZÉPLIGETI, 1902 – Papua New Guinea

M. reptus sp. n. – Papua New Guinea

M. rutilus sp. n. – Australia (New South Wales)

M. tenuis (PAPP, 1993) (Yelicones) – Australia (New South Wales)

M. variicolor sp. n. – Australia (New South Wales)

Genus *Promesocentrus* VAN ACHTERBERG, 1995

P. tricolor VAN ACHTERBERG, 1995 – Australia (Queensland)

Tribe Facitorini VAN ACHTERBERG, 1995

Genus *Conobregma* VAN ACHTERBERG, 1995

C. brevinervis VAN ACHTERBERG, 1995 – U.S.A. (North and South Caroline)

C. brevistigma VAN ACHTERBERG, 1995 – Dominican Republic

C. cometes VAN ACHTERBERG, 1995 – U.S.A. (Florida)

C. masneri VAN ACHTERBERG, 1995 – Dominican Republic

C. stigmaticum VAN ACHTERBERG, 1995 – U.S.A. (Florida)

C. sulaensis VAN ACHTERBERG, 1995 – Indonesia

Genus *Facitorus* VAN ACHTERBERG, 1995

F. brevicornis VAN ACHTERBERG, 1995 – Taiwan

F. superus VAN ACHTERBERG, 1995 – Nepal

Genus *Jannya* VAN ACHTERBERG, 1995

J. brevitarsus VAN ACHTERBERG, 1995 – Colombia, Costa Rica, Ecuador

J. nigriceps VAN ACHTERBERG, 1995 – Costa Rica

Tribe Planitorini VAN ACHTERBERG, 1995

Genus *Planitorus* VAN ACHTERBERG, 1995

P. breviflagellaris VAN ACHTERBERG, 1995 – Australia (Capital Territory, Queensland)

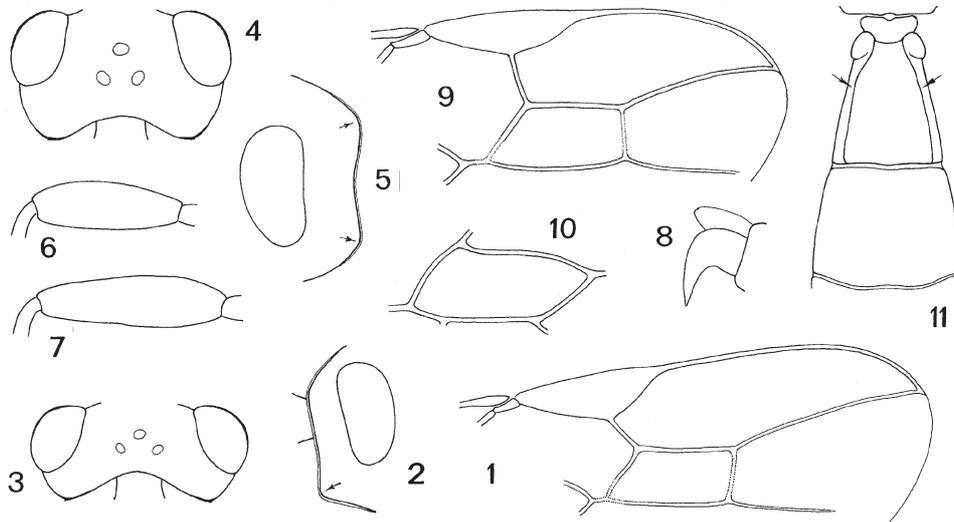
Abbreviations applied in the descriptions – Ocelli: OOL = shortest distance between hind ocellus and compound eye; POL = shortest distance between hind two ocelli. – Alar veins of the fore wing (VAN ACHTERBERG 1993: 5): *m-cu* = recurrent vein; *r* = first section of the radial (or marginal) vein; *SRI* = third section of the radial (or submarginal) vein; *I-M* = basal vein; *2-SR* = first transverse cubital vein; *3-SR* = second section of the radial (or submarginal) vein.

Mesocentrus baloghi sp. n. ♂
(Figs 4–11)

Material examined (1 ♂). – Male holotype: Australia, New South Wales, environment Murvillumbach, 7 March 1965, leg. J. BALOGH. – Holotype is deposited in the Australian National Insect Collection, Canberra. – Holotype is in fairly good condition: glued on a pointed card by its mesosternum, right antenna damaged (having only four flagellomeres), hind pair of wings and tarsomeres 2–5 of left hind leg missing.

Etymology. – The new species is dedicated to the late Prof. Dr. JÁNOS BALOGH (1913–2002), zoologist and naturalist, explorer of the nature of Australia and Oceania, and the collector of the holotype specimen.

Description of the male holotype. – Body 3.6 mm, fore wing 3 mm long. Antenna with 16 antennomeres as long as head and mesosoma combined. First flagellomere 4.5 times, penultimate flagellomere 4.3 times as long as broad, flagellum attenuating distally. Distance between antennal sockets a bit greater than that between socket and eye. – Head in dorsal view (Fig. 4) 1.66 times as broad as long, eye somewhat protruding and 1.5 times as long as temple, temple rounded, occiput excavated. OOL twice the length of POL. Eye in lateral view 1.9 times as high as wide, temple 0.8 times as wide as eye, temporal carina bent angularly towards occipital and hypostomal carinae (Fig. 5, see arrows). Maxillary palp somewhat longer than height of head. Malar space 0.8 times the basal width of mandible. Head coriaceous, frons with transverse rugulosity, temple polished.



Figs 1–11. 1–3 = *Betylobracon waterhousi* TOBIAS: 1 = distal part of right fore wing, 2 = eye and temple in lateral view, 3 = head in dorsal view. 4–11 = *Mesocentrus baloghi* sp. n.: 4 = head in dorsal view, 5 = eye and temple in lateral view, 6 = fore femur, 7 = hind femur, 8 = claw of hind leg, 9 = distal part of right fore wing, 10 = first discal cell of fore wing, 11 = tergites 1–2

Mesosoma in lateral view twice its height. Precoxal suture crenulate, mesopleuron finely coriaceous and matt. Mesoscutum and scutellum granulose, propodeum rugulose. – Fore femur less thick, three times (Fig. 6), hind femur 3.6 times (Fig. 7) as long as broad medially and proximally, respectively. Claw of hind tarsus as in Fig. 8.

Fore wing (Fig. 9): Pterostigma 3.6 times as long as wide, issuing *r* just distally from its middle, *r* a bit longer than width of pterostigma. Second submarginal cell less long, 3-*SR* 1.4 times as long as 2-*SR*, *SR1* arched and nearly twice as long as 3-*SR*. First discal cell elongate, 1-*M* 1.4 times the length of *m-cu* (Fig. 10).

First tergite (Fig. 11) 1.3 times as long as broad behind and evenly broadening posteriorly, longitudinally striate, interstriations subshiny, laterotergite in dorsal view visible (see arrows in Fig. 11). Second tergite long, trapeziform, 1.3 times as broad behind as long medially, suture between tergites 2-3 faintly convex; second tergite and anterior three-fourths of third tergite with longitudinal striation (similar to that of first tergite). Tergites 4-5 with fine transverse substriation.

Ground colour of body testaceous. Face and clypeus yellow. Oral parts, palpi and cheek straw yellow. Tegula ochre yellow. Mesopleuron above, fore margin of metapleuron, propodeum laterally brownish; keel of laterotergite blackish. Antenna weakly darkening yellowish to brownish yellow. Legs pale yellow; hind coxa almost entirely, hind femur medially and hind tibia distally brownish to brown. Wing faintly infusate. Pterostigma yellow, its lower part brownish, veins also brownish.

Female and host unknown.

Distribution: Australia (New South Wales).

The new species, *Mesocentrus baloghi*, is nearest to *M. reptus* sp. n., their distinction see in the key at couplets 15(16) – 16(15). – The distinction between *M. baloghi* and *M. gilvus* sp. n. is presented at the latter species.

Mesocentrus crassipes SZÉPLIGETI ♀
(Figs 12–19)

Mesocentrus crassipes SZÉPLIGETI, 1900: Természetráji Füzetek 23: 56 ♀♂, type locality: “Friedrich-Wilhelmshafen” (= Madang) Papua New Guinea, female lectotype (and one male paralectotype in the Hungarian Natural History Museum, Budapest. – SHENEFELT 1969: 443, 1978: 1871 (literature up to 1969). VAN ACHTERBERG 1995a: 32 (redescription).

Remark. – The type-series (female lectotype and one male paralectotype) of this species was borrowed by Dr. A. AUSTIN (Adelaide) in 1989 and up to 2004 he had not returned it despite my repeated demand. Hence I could examine only the single female specimen from Australia (see subsequently).

Material examined (1 ♀). – One female: Australia, New South Wales, Kiola State Forest, taken with soil trap, 4 January 1979, Collector of the Australian Museum, Sydney. – The female specimen is deposited in the Department of Zoology, Hungarian Natural History Museum, Budapest.

Redescription of the female. – Body 3.1 mm, fore wing 2.7 mm long. Antenna with 17 antennomeres as long as head, mesosoma and tergites 1-2 combined. First flagellomere 2.1 times, penulti-

mate flagellomere 1.75 times as long as broad, flagellum not attenuating. Antennal sockets a bit less than twice as far from each other as one socket from eye. – Head in dorsal view (Fig. 12) transverse, twice as broad as long, eye twice as long as temple, temple constricted, occiput excavated. OOL twice as long as POL, ocelli of average size. Eye in lateral view 2.2 times as high as wide, temple 0.8 times as wide as eye; temporal carina curved (i.e. not angular) towards occipital and hypostomal carinae (Fig. 13). Maxillary palp about one-fifth shorter than height of head. Malar space a bit longer than basal width of mandible. Head above rugulo-granulose, frons rugulose, face transversely rugulose, temple polished.

Mesosoma in lateral view twice as long as high. Precoxal suture granulose, mesopleuron polished. Middle lobe of mesoscutum rugulose, lateral lobes granulose. Propodeum areolate-rugose. – Fore femur thick, 2.3 times (Fig. 14), hind femur 2.9 times (Fig. 15) as long as broad medially. Claw of hind tarsus as in Fig. 16.

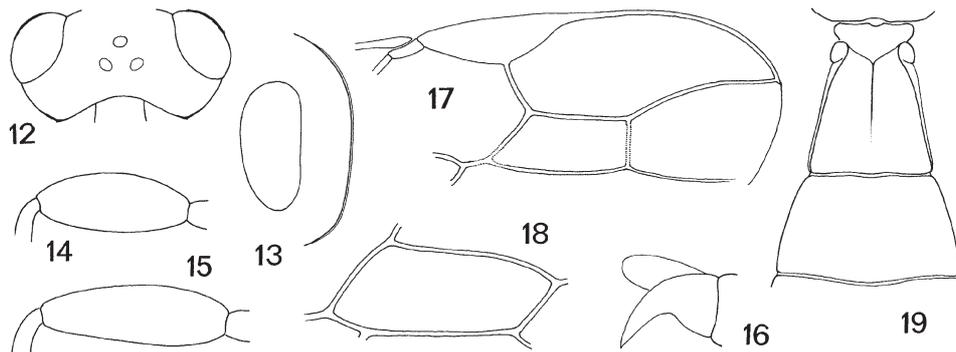
Fore wing (Fig. 17): Pterostigma three times as long as wide issuing *r* somewhat distally from its middle, *r* as long as width of pterostigma, second submarginal cell long, 3–*SR* 1.7 times as long as 2–*SR*, *r* 0.8 times as long as 2–*SR*, *SR*1 weakly arched and 1.5 times as long as 3–*SR*. First discal cell elongate, 1–*SR*–*M* twice as long as 1–*M*, 1–*M* 1.5 times as long as *m*–*cu* (Fig. 18).

First tergite (Fig. 19) moderately broadening posteriorly, 1.2 times as long as behind, longitudinally striate, interstriation uneven, subshiny. Second tergite wide trapeziform, 1.85 times as broad behind as long medially, almost entirely striate (striation somewhat less strong than that of first tergite); further tergites polished. Suture between tergites 2–3 straight, shallow, smooth. Ovipositor sheath in lateral view as long as tarsomeres 1–2 of hind leg.

Head and mesosoma testaceous, tergites rusty. Antenna testaceous to darkening brown, flagellomeres 10–14 yellowish. Prosoma brownish. Tegula and parategula yellow. Mesopleuron dark brown. Propodeum black, first tergite blackish. Fore leg yellow, middle and hind legs light testaceous, coxae and trochanters whitish, hind femur with a brown ring. Wings subhyaline, pterostigma brown with a pale yellow spot basally, veins brownish to light brown.

Host unknown.

Distribution: Australia (New South Wales), Papua New Guinea (Madang).



Figs 12–19. *Mesocentrus crassipes* SZÉPLIGETI: 12 = head in dorsal view, 13 = eye and temple in lateral view, 14 = fore femur, 15 = hind femur, 16 = claw of hind leg, 17 = distal part of right fore wing, 18 = first discal cell of fore wing, 19 = tergites 1–2

Mesocentrus crassipes SZÉPLIGETI is nearest to *M. rutilus* sp. n., their distinction is presented in the key at couplets 4(5)–5(4).

Remark. – See also SHENEFELT's (1969: 443) and VAN ACHTERBERG's (1995a: 32, 194) redescription and figures of this species, their redescriptions cover several morphological features which are omitted here.

***Mesocentrus gilvus* sp. n. ♀**
(Figs 20–27)

Material examined (1 ♂). – Male holotype: New Caledonia, Ponerihuen, 11 October 1969, leg. J. BALOGH. – Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology) Budapest, Hym. Typ. No. 10702. – Holotype is in fairly good condition: glued on a pointed card by its mesosternum, left antenna damaged (having only 13 flagellomeres), left middle and hind legs (except hind coxa and trochanter) missing.

Etymology. – The species name “gilvus” refers to the peculiar yellow colour of the body.

Description of the male holotype. – Body 4 mm, fore wing 3.5 mm long. Antenna with 19 antennomeres (right antenna) about as long as head, mesosoma and first tergite combined. First flagellomere 2.5 times, penultimate flagellomere 3.3 times as long as broad, flagellum attenuating distally. Distance between antennal sockets one-third greater than that between socket and eye. – Head in dorsal view (Fig. 20) less transverse, 1.6 times as broad as long, eye just protruding and almost 1.5 times the length of temple, temple strongly rounded, occiput excavated. OOL three times the length of POL. Eye in lateral view 1.8 times as high as wide, temple just as wide as eye, temporal carina angularly bent towards hypostomal carina (Fig. 21, see arrow). Maxillary palp about as long as height of head. Malar space one-third longer than basal width of mandible. Head coriaceous to subrugulose, temple polished.

Mesosoma in lateral view twice as long as high. Precoxal suture crenulate, mesopleuron polished. Mesoscutum granulose, scutellum finely granulose. Propodeum areolate-rugose, hind pair of areolae less rugose. – Fore femur thick, 2.6 times (Fig. 22), hind femur 2.9 times (Fig. 23) as long as broad medially. Claw of hind leg as in Fig. 24.

Fore wing (Fig. 25): Pterostigma 3.2 times as long as wide issuing *r* distally from its middle, *r* one-fourth shorter than width of pterostigma; second submarginal cell long, 3–*SR* 1.9 times as long as 2–*SR*, *SR*1 weakly arched and 1.3 times the length of 3–*SR*. First discal cell narrowing distally, *l*–*M* twice the length of *m*–*cu* (Fig. 26).

First tergite (Fig. 27) 1.6 times as long as broad behind and evenly broadening posteriorly, with longitudinal striae, interstriae rugulose-subrugulose. Second tergite long, trapeziform, 1.35 times as broad behind as long medially, suture between tergites 2–3 convex; second tergite longitudinally striate, third tergite with somewhat weaker striation; fourth tergite substriate to striolate; further tergites polished.

Body ochre yellow. Scape and pedicel pale yellow, flagellum faintly darkening ochre yellow. Face and clypeus pale yellow. Palpi whitish. Ocellar field black. Tegula pale yellow. Legs pale yellow; coxae, fore femur and femora 2–3 basally whitish yellow. Wings subhyaline, along middle veins infusate; pterostigma brownish, basally yellow, veins brownish.

Female and host unknown.

Distribution: New Caledonia.

The new species, *Mesocentrus gilvus*, is nearest to *M. baloghi* sp. n., their distinction is as follows:

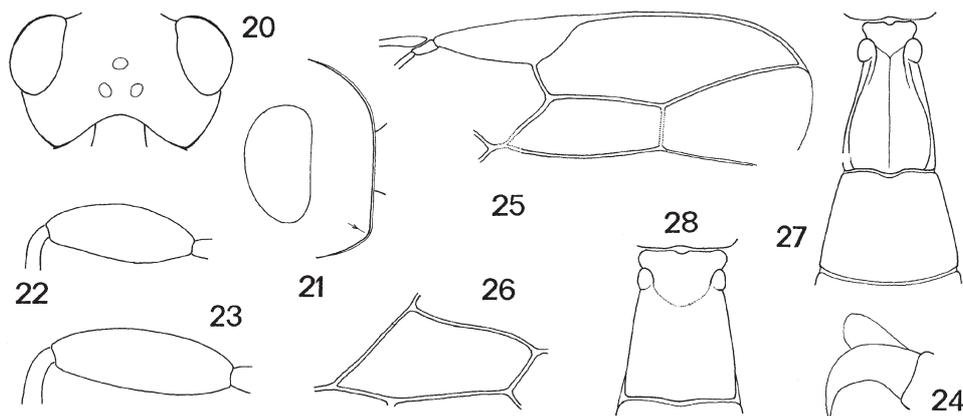
M. gilvus sp. n.: Head in dorsal view (Fig. 20) less transverse, 1.6 times as broad as long. Second submarginal cell long, 3-SR 1.8 times as long as 2-SR (Fig. 25). Fore femur thick, 2.6 times as long as broad medially (Fig. 22). Ground colour of body ochre yellow. ♂: 4 mm.

M. baloghi sp. n.: Head in dorsal view (Fig. 4) transverse, 1.8 times as broad as long. Second submarginal cell less long, 3-SR 1.4 times as long as 2-SR (Fig. 9). Fore femur less thick, three times as long as broad medially (Fig. 6). Ground colour of body testaceous with yellowish and brownish pattern. ♂: 3.6 mm.

Mesocentrus pusillus SZÉPLIGETI, 1902

Mesocentrus pusillus SZÉPLIGETI, 1902: 61 ♂. – SHENEFELT 1978: 1871 (literature up to 1969).

Remark. – The species was described upon a single male specimen which has been designated by me in 1969 as the holotype specimen. In 1989 Dr. A. AUSTIN (Adelaide) borrowed the holotype and up to 2004 he had not returned it despite my repeated demand. Hence my knowledge of this species is restricted exclusively to the original description.



Figs 20–28. 20–27 = *Mesocentrus gilvus* sp. n.: 20 = head in dorsal view, 21 = eye and temple in lateral view, 22 = fore femur, 23 = hind femur, 24 = claw of hind leg, 25 = distal part of right fore wing, 26 = first discal cell of fore wing, 27 = tergites 1–2. 28 = *Betylobracon waterhousi* TOBIAS: first tergite

Mesocentrus reptus sp. n. ♂
(Figs 29–36)

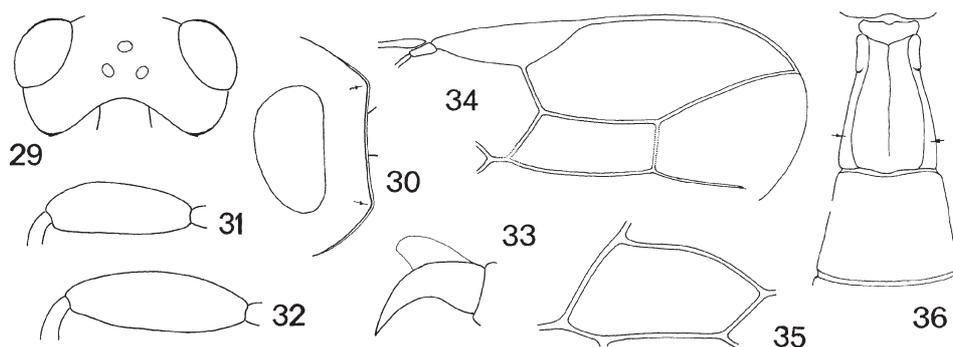
Material examined (1 ♂). – Male holotype: Papua New Guinea, Haus Copper Wau, Mt. Missim, 22–24 April 1965, leg. J. BALOGH et J. SZENT-IVÁNY. – Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology) Budapest, Hym. Typ. No. 10703. – Holotype is in good condition: glued on a pointed card by its mesosternum, left antenna damaged (having only six flagellomeres), right middle tarsus missing.

Etymology. – The species name “reptus” is a phantasy name.

Description of the male holotype. – Body 3.1 mm, fore wing 3 mm long. Antenna with 15 antennomeres (right antenna) as long as head, mesosoma and first tergite combined. First flagellomere four times, penultimate flagellomere 3.7 times as long as broad, flagellum attenuating distally. Antennal sockets twice as far from each other as one socket to eye. – Head in dorsal view (Fig. 29) transverse, 1.85 times as broad as long, eye slightly protruding and nearly twice as long as temple, temple somewhat more rounded, occiput deeply excavated. OOL one-third longer than POL, ocelli large. Eye in lateral view 1.9 times as high as wide, temple 0.6 times as wide as eye, temporal carina angularly bent towards occipital as well as hypostomal carinae (Fig. 30, see arrows). Maxillary palp as long as height of head. Malar space just shorter than basal width of mandible. Head coriaceous; temple polished, its lower third uneven to subcoriaceous.

Mesosoma in lateral view twice as long as high. Precoxal suture rugulose with a few crenulae, mesopleuron polished. Mesoscutum granulose (a bit finer than that of head), postero-medially rugo-rugulose; scutellum polished. Propodeum rugose-scabrose, hind pair of areolae almost smooth and shiny. – Fore femur less thick, 2.8 times (Fig. 31) and hind femur 3.1 times (Fig. 32) as long as broad distally and medially, respectively. Claw of hind leg as in Fig. 33.

Fore wing (Fig. 34): Pterostigma 3.3 times as long as wide, issuing *r* distally from its middle, *r* just longer than width of pterostigma; second submarginal cell long, *3-SR* twice as long as *2-SR*, *SRI* weakly arched and 1.4 times as long as *3-SR* (Fig. 34). First discal cell elongate, *1-M* 1.9 times as long as *m-cu* (Fig. 35).



Figs 29–36. *Mesocentrus reptus* sp. n.: 29 = head in dorsal view, 30 = eye and temple in lateral view, 31 = fore femur, 32 = hind femur, 33 = claw of hind leg, 34 = distal part of right fore wing, 35 = first discal cell of fore wing, 36 = tergites 1–2

First tergite (Fig. 36) 1.6 times as long as broad behind and evenly broadening posteriorly, with four strong longitudinal striae, i.e. laterotergite visible in dorsal view (see arrows in Fig. 36), interstriation uneven and shiny. Second tergite long, trapeziform, 1.35 times as broad behind as long medially, suture between tergites 2–3 straight, subcrenulate. Second tergite with strong longitudinal striation, third and further tergites polished.

Body variably coloured. Head, mesoscutum and scutellum ochre; rest of mesosoma light brownish. Propodeum and first tergite dark rusty, rest of metasoma rusty. Scape and pedicel ochre, flagellum darkening ochre. Ocellar field black. Palpi light ochre. Legs yellow, fore and middle coxae and trochanters whitish. Wings faintly infuscate, pterostigma light brown, basally yellow; veins brownish.

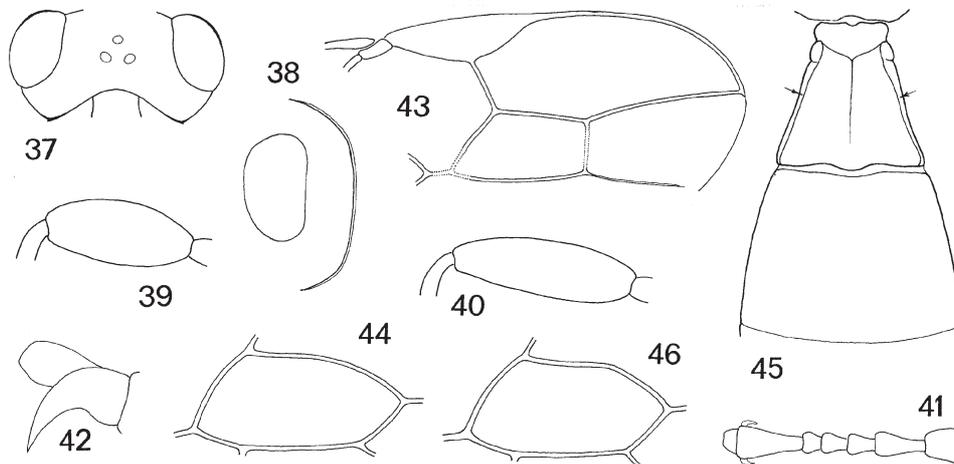
Female and host unknown.

Distribution: Papua New Guinea.

The new species, *Mesocentrus reptus*, is nearest to *M. baloghi* sp. n., their distinction see in the key at couplets 13(14)–14(13).

***Mesocentrus rutilus* sp. n. ♀**
(Figs 37–46)

Material examined (2 ♀). – Female holotype and one female paratype: Australia, central New South Wales, Round Hill, near Lake Cargillego, taken at night at lamp-light, 11 January 1981, leg. GY. HANGAY et A. VOJNITS. – Holotype is deposited in the National Insect Collection, Canberra and



Figs 37–46. *Mesocentrus rutilus* sp. n.: 37 = head in dorsal view, 38 = eye and temple in lateral view, 39 = fore femur, 40 = hind femur, 41 = tarsus of fore leg, 42 = claw of hind leg, 43 = distal part of right fore wing, 44 = first discal cell of fore wing of female holotype, 45 = tergites 1–2, 46 = first discal cell of fore wing of female paratype

the paratype in the Hungarian Natural History Museum (Department of Zoology) Budapest, Hym. Typ. No. 10704. – The holotype and the paratype are in good condition: glued on a pointed card by their mesosternum; right antenna of the paratype is damaged (having only 15 antennomeres).

Etymology. – The species name “*rutilus*” refers to its russet body colour.

Description of the female holotype. – Body 5.5 mm, fore wing 4 mm long. Antenna with 21 antennomeres as long as head, mesosoma and first tergite combined. First flagellomere 2.3 times, penultimate flagellomere 2.8 times as long as broad, flagellum attenuating distally. Antennal sockets 2.4 times as far from each other as one socket from eye. – Head in dorsal view (Fig. 37) transverse, twice as broad as long, eye twice as long as temple, temple constricted, occiput excavated. OOL 2.4 times longer than POL, ocelli of average size. Eye in lateral view 1.7 times as high as wide, temple 0.76 times as wide as eye; temporal carina curved (i.e. not angular) towards occipital as well as towards hypostomal carinae (Fig. 38). Maxillary palp about one-third shorter than height of head. Malar space one-third longer than basal width of mandible. Head coriaceous, temple polished; face rugulose laterally, medially uneven.

Mesosoma in lateral view twice as long as high. Precoxal suture finely crenulate, mesopleuron polished. Mesoscutum granulose, postero-medially longitudinally striolate; scutellum finely granulose. Propodeum densely rugulose. – Fore femur 2.2 times (Fig. 39), hind femur 3.3 times (Fig. 40) as long as broad medially and proximally, respectively. Tarsus of fore leg (Fig. 41) and claw of hind leg as in Fig. 42.

Fore wing: Pterostigma 3.3 times as long as wide issuing *r* distally from its middle, *r* a bit longer than width of pterostigma, submarginal cell short, 3-*SR* one-third (or 1.3 times) longer than 2-*SR*, *r* 0.77 times as long as 2-*SR*, *SRI* weakly arched and 1.6 times as long as 3-*SR* (Fig. 43). First discal cell less elongate, 1-*SR-M* 1.7 times as long as 1-*M*, 1-*M* 1.4 times as long as *m-cu* (Fig. 44).

First tergite (Fig. 45) strongly broadening posteriorly, its length equal to its hind width, longitudinally striate, interstriation uneven and shiny, laterotergite just visible in dorsal view (see arrows in Fig. 45). Second tergite long trapeziform, 1.2 times wider behind than long medially, basally with fine striation, otherwise together with further tergites polished. Suture between tergites 2-3 indistinct. Ovisitor sheath as long as hind tarsomere 1 and half of tarsomere 2 combined.

Ground colour of body rusty. Antenna darkening rusty to brown. Palpi pale yellow. Parastigma yellow. Propodeum and first tergite laterally blackish. Fore leg brownish yellow, middle and hind legs rusty, coxae and trochanters whitish. Wings subhyaline, pterostigma brown with yellow basal spot, veins brownish.

Description of the female paratype. – Similar to the female holotype. Body 5 mm long. Scutellum similarly coriaceous to mesoscutum. Fore femur 2.35 times as long as broad medially. 3-*SR* 1.38 times as long as 2-*SR*. First discal cell slightly less long, 1-*SR-M* somewhat refracted medially and 1.6 times as long as (Fig. 46). Fore half of second tergite finely striate.

Male and host unknown.

Distribution: Australia (New South Wales).

The new species, *Mesocentrus rutilus*, is nearest to *M. crassipes* SZÉPLIGETI, the distinction of the two species is presented in the key at couplets 4(5)–5(4).

Mesocentrus tenuis (PAPP, 1993)

Yelicones tenuis PAPP, 1993: 151 ♀. – QUICKE, AUSTIN & CHISHTI 1998: 927 (comb. n., taxonomic remark).

The holotype specimen of *M. tenuis* is on loan with Dr. A. AUSTIN (Adelaide) since 1995 hence I was unable to re-examine it.

The species was described by me on the basis of a single female specimen taken in Australia (New South Wales). That time I assigned it to the genus *Yelicones*. This generic arrangement was corrected by QUICKE, AUSTIN & CHISHTI (l. c.) and the species was placed in the genus *Mesocentrus*.

Mesocentrus variicolor sp. n. ♀
(Figs 47–55)

Material examined (2 ♀). – Female holotype and one female (without paratype status): Australia, New South Wales, Canberra, Uriara Forest, 31 July 1968, leg. I. LOKSA. – Female holotype is deposited in the Australian National Insect Collection, Canberra. – Holotype is in good condition: glued on a pointed card by its mesosternum. The second female specimen is in bad condition, unsuitable for paratype designation. It is deposited in the Hungarian Natural History Museum, Budapest.

Etymology. – The species name “variicolor” is an indication of its bright colour pattern.

Description of the female holotype. – Body 3 mm, fore wing 2.8 mm long. Antenna with 20 antennomeres about as long as head, mesosoma and tergites 1–2 combined. First flagellomere 2.5 times, penultimate flagellomere 2.3 times as long as broad, flagellum indistinctly attenuating distally. – Head in dorsal view (Fig. 47) less transverse, 1.65 times as broad as long, eye 1.25 times as long as temple, temple rather receded, occiput excavated. OOL clearly twice as long as POL, ocelli of average size. Eye in lateral view 1.65 times as high as wide, temple 0.9 times as wide as eye (Fig. 48: see arrows); temporal carina curved (i.e. not angular) towards occipital and hypostomal carinae (Fig. 48). Maxillary palp about as long as height of head. Length of malar space 1.5 times basal width of mandible. Head densely rugulose, temple less rugulose and subshiny.

Mesosoma in lateral view twice as long as high. Precoxal suture widely rugo-rugulose, mesopleuron densely and finely punctate-uneven, interspaces shiny. Mesoscutum and scutellum densely rugulose (somewhat weaker than that of vertex). Propodeum rugose. – Fore femur 2.8 times (Fig. 49), hind femur 3.6 times (Fig. 50) as long as broad medially. Claw of hind leg as in Fig. 51.

Fore wing: Pterostigma 3.6 times as long as wide issuing *r* clearly distally from its middle, *r* as long as width of pterostigma; submarginal cell fairly long, 3–*SR* 1.6 times as long as 2–*SR*, *r* 0.7 times as long as 2–*SR*, *SR*1 almost straight and 1.6 times as long as 3–*SR* (Fig. 52). First discal cell elongate, 1–*SR*–*M* 1.6 times as long as 1–*M*, 1–*M* 1.4 times as long as *m*–*cu*, 1–*M* distinctly curved (Fig. 53).

First tergite (Fig. 54) a bit longer than broad behind, evenly broadening posteriorly, longitudinally striate, interstriations uneven and subshiny; laterotergite visible (see arrows in Fig. 54). Second tergite wide trapeziform, twice wider behind than long laterally, finely striate, more shiny than first tergite. First and second suture distinct. Further tergites polished. Ovipositor sheath in lateral view as long as hind tarsomeres 1–2 combined.

Ground colour of head, mesoscutum and scutellum brownish yellow with pale yellow and brown pattern. Cheek and palpi straw yellow. Antenna brownish yellow. Side of mesosoma dark brown, pronotum medially pale. Propodeum and tergites rusty, tergites laterally and apically darkening brown. Legs pale yellow, femora 1–2 with brownish tint, hind femur medially with dark brown ring; tarsi light brownish. Wings subhyaline, pterostigma brown, basally yellow, veins brownish.

The female specimen is similar to the female holotype. *l–M* of first discal cell less curved (Fig. 55).

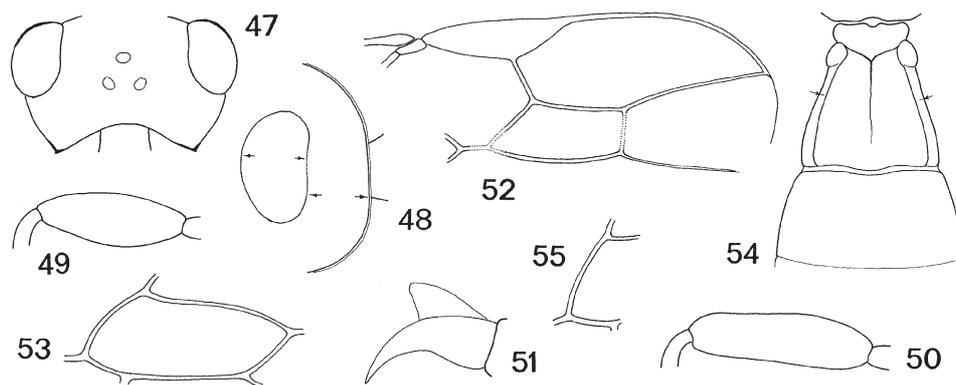
Male and host unknown.

Distribution: Australia (New South Wales).

The new species, *Mesocentrus variicolor*, is nearest to *M. rutilus* sp. n. considering the colour of their body, curved temporal carina in lateral view, clearly broadening first tergite and venation of the fore wing; the two species are distinguished by the following features:

M. rutilus sp. n.: Temple in dorsal view constricted, eye twice as long as temple (Fig. 37). Pterostigma 3.3 times as long as wide and issuing *r* somewhat less distally (Fig. 43). Second tergite long trapeziform, 1.2 times as broad behind as long medially (Fig. 45). Antenna with 21 antennomeres. Second submarginal cell fairly short, 3–*SR* 1.3 times the length of 2–*SR* (Fig. 43). Legs brownish to rusty. ♀: 5.5 mm.

M. variicolor sp. n.: Temple in dorsal view rather receded, eye 1.25 times as long as temple (Fig. 47). Pterostigma 3.6 times as long as wide and issuing *r* somewhat more distally (Fig. 52). Second tergite wide trapeziform, twice wider behind than long medially (Fig. 54). Antenna with 20 antennomeres. Second submarginal cell fairly long, 3–*SR* 1.5 times the length of 2–*SR* (Fig. 52). Legs pale yellow with brownish to dark brown pattern. ♀: 3 mm.



Figs 47–55. *Mesocentrus variicolor* sp. n.: 47 = head in dorsal view, 48 = eye and temple in lateral view, 49 = fore femur, 50 = hind femur, 51 = claw of hind leg, 52 = distal part of right fore wing, 53 = first discal cell of fore wing of female holotype, 54 = tergites 1–2, 55 = *l–M* of first discal cell of fore wing of a female specimen

KEY TO THE MESOCENTRUS SPECIES
OF AUSTRALIA, NEW GUINEA AND NEW CALEDONIA

- 1 (2) Mesoscutum polished, three lobes of mesoscutum punctate, interspaces larger than punctures except fore half of median lobe where punctures denser and smaller (*Betylobracon* TOBIAS, 1995). – *SR1* of fore wing twice as long as *3-SR* (Fig. 1). In lateral view temporal carina strong and angularly bent below towards hypostomal carina (Fig. 2: see arrow). Temple in dorsal view strongly constricted (Fig. 3). First tergite subparallelsided (Fig. 28). Antenna with 17–23 antennomeres. Dark brown with much testaceous and yellowish pattern, legs yellow. ♀: 3.7–4 mm. – Australia
Betylobracon waterhousi TOBIAS, 1979
- 2 (1) Mesoscutum densely granulose, matt, never punctate (*Mesocentrus* SZÉPLIGETI, 1900). – *SR1* of fore wing less than twice as long as *3-SR* (Figs 9, 17, 25, 34, 43, 52). In lateral view temporal carina variably angularly bent above or below or simply bent without angle (Figs 5, 13, 21, 30, 38, 48).
- 3 (6) Temple in dorsal view constricted (Figs 12, 37). Fore femur thick (Figs 14, 39). Temporal carina in lateral view curved, i.e. not bent angularly (Figs 13, 38).
- 4 (5) First tergite strongly broadening posteriorly, its length equal to its hind width (Fig. 45); second tergite antero-medially finely striate. Second submarginal cell wide, *2-SR* less bent (Fig. 43); first discal cell less elongate, *1-SR-M* 1.6–1.7 times as long as *1-M* (Figs 44, 46). Antenna with 21 antennomeres. Fore leg brownish yellow. ♀: 5–5.5 mm. – Australia
M. rutilus sp. n.
- 5 (4) First tergite moderately broadening posteriorly, 1.2 times longer than wide behind (Fig. 11); second tergite almost entirely striate. Second submarginal cell less wide, *2-SR* more bent (Fig. 9); first discal cell elongate, *1-SR-M* 1.8 times as long as *1-M* (Fig. 10). Antenna with 17 antennomeres. Fore leg yellow. ♀: 3.1 mm. – Australia
M. crassipes SZÉPLIGETI, 1900
- 6 (3) Temple in dorsal view rounded or receded (Figs 4, 20, 29, 47). Fore femur thin (Figs 22, 31, 49) except *M. baloghi* (Fig. 6). Temporal carina in lateral view bent angularly (Figs 5, 21, 30, see arrows) except *M. varicolor* (Fig. 48) and ?*M. pusillus*.
- 7 (12) First tergite as long as broad behind (Fig. 54).

- 8 (11) Temple in dorsal view rounded (Fig. 86 in PAPP 1993: 153). Antenna at most with 19 antennomeres.
- 9 (10) Second tergite quadrate, somewhat broader behind than long. Antenna with 16 antennomeres. Pterostigma issuing *r* from its middle, *SR1* of fore wing less S-like bent. Head, pronotum and mesoscutum testaceous, propodeum and tergites 1–2 black, leg reddish yellow. ♂: 2 mm. – Papua New Guinea
M. pusillus SZÉPLIGETI, 1902
- 10 (9) Second tergite transverse, twice broader behind than long. Antenna with 19 antennomeres. Pterostigma issuing *r* distally from its middle, *SR1* of fore wing distinctly S-like bent. Head and mesosoma brownish, propodeum and metasoma rusty brown, mesonotum blackish, legs brownish with whitish and black pattern. ♀: 3.1 mm. – Australia
M. tenuis (PAPP, 1993)
- 11 (8) Temple in dorsal view receded (Fig. 47). Antenna with 20 antennomeres. Second tergite transverse, twice broader behind than long (Fig. 54). Pterostigma issuing *r* distally from its middle (Fig. 62). Head, pronotum and mesoscutum brownish yellow; propodeum and tergites 1–2 rusty. ♀: 3 mm. – Australia
M. varicolor sp. n.
- 12 (7) First tergite clearly 1.3–1.7 times longer than broad behind; second tergite less transverse, about 1.2 times as broad behind as long (Figs 11, 27, 36).
- 13 (14) Temporal carina in lateral view bent angularly only towards hypostomal carina (Fig 21: see arrow). Fore femur thick, 2.6 times as long as broad medially (Fig. 22). First tergite 1.6 times as long as broad behind (Fig. 27). Tergites 3–4 with longitudinal striation. Antenna with 19 antennomeres. Body yellow, legs straw yellow. ♂: 4 mm. – New Caledonia
M. gilvus sp. n.
- 14 (13) Temporal carina in lateral view bent angularly towards both occipital and hypostomal carinae (Figs 5, 30, see arrows). Fore femur less thick, 2.8–3 times as long as broad somewhat distally (Figs 6, 31). Antenna with 15–16 antennomeres.
- 15 (16) First tergite (Fig. 36) somewhat less broadening posteriorly, 1.6 times as long as broad behind, with four strong longitudinal striae, interstriations uneven and shiny; suture between tergites 2–3 straight; third tergite polished. Head in dorsal view more transverse, occiput deeply excavated, temple somewhat more rounded (Fig. 29). Second submarginal cell long, 3–*SR* twice the length of 2–*SR* (Fig. 34). Scutellum polished. Propodeum

and first tergite dark rusty, metasoma rusty. ♂: 3.1 mm. – Papua New Guinea
M. reptus sp. n.

- 16 (15) First tergite (Fig. 11) more broadening posteriorly, 1.3 times as long as broad behind, with longitudinal striation, interstriations subshiny; suture between tergites 2–3 faintly convex. Third tergite also longitudinally striate. Head in dorsal view less transverse, occiput less deeply excavated, temple somewhat less rounded (Fig. 4). Second submarginal cell less long, 3–SR 1.4 times the length of 2–SR (Fig. 9). Scutellum coriaceous. Propodeum and metasoma testaceous. ♂: 3.6 mm. – Australia
M. baloghi sp. n.

*

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