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THREE NEW GENERA OF BRACONINAE FROM THE AFROTROPICAL REGION (HYMENOPTERA: BRACONIDAE)

by

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Achterberg, C. van & B. Sigwalt: Three new genera of Braconinae from the Afrotropical region (Hymenoptera: Braconidae).

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Key words: Braconidae; Braconinae; *Kenema*; *Commatapsis*; *Bicentra*; *Iphibracon*; keys; Afrotropical; Malagasy.

Three new genera and species from the Afrotropical region are described and fully illustrated. *Bicentra* (type-species: *B. concavitaris* spec. nov. from Zimbabwe), *Commatapsis* (type-species: *C. cyanea* spec. nov. from Guinea) and *Iphibracon* (type-species: *I. flavovariegata* spec. nov. from Malagasy). A new species of the genus *Kenema* (*K. serrata* from Senegal) is described and a key to the species of the genus *Kenema* Van Achterberg is added.

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INTRODUCTION

The new taxa described in this paper were discovered by the second author in the collection of the Muséum National d'Histoire Naturelle, Paris and this paper is part of a study of the genera of Braconidae by the first author. The Afrotropical Braconinae were identified to genus level by the second author with a manuscript key to the genera by the first author. All three genera possess one or more aberrant character-states: *Bicentra* has two fore tibial spurs (a very exceptional characteristic shared by only three genera of the Braconidae, of which only one, *Rhamnura* Enderlein, has been described),

Commatapsis has its protruding outer corners of the fourth tarsal segments, and *Iphibracon* is unique by the combination of the (sub)truncate scapus, second metasomal tergite without medial carina, and the enlarged upper valve of the ovipositor. The biology of the genera described in this paper is unknown, but related genera are ectoparasites of wood-boring larvae of Cerambycidae, Buprestidae, etc. The Braconidae are among the most important primary parasites of the larvae of these groups and may be of importance for biological control of wood-boring larvae. For the terminology used in this paper, see Van Achterberg (1979: 242-249).

DESCRIPTIONS

Bicentra gen. nov.

Type-species: *Bicentra concavitaris* spec. nov.

Etymology: from "bi" (Latin for "two") and "centrum" (Latin for "spur"), because of the two fore tibial spurs. Gender: neuter.

Diagnosis. — Head dorsally and mesosoma smooth; scapsus robust, ventrally longer than dorsally (fig. 5); eyes glabrous, not distinctly emarginate (fig. 9), with a narrow depression behind eyes (fig. 1); clypeus with weak dorsal and ventral carina (fig. 9); malar suture present, wide (fig. 9); labio-maxillary complex not protruding; labrum weakly concave; mesoscutum glabrous laterally, sparsely setose medio-anteriorly; notauli only present anteriorly, shallow (fig. 12), without medio-posterior depression; pleural and mesosternal sulci smooth; antescutal depression virtually absent (fig. 1); metapleural flange absent; scutellar sulcus shallow, narrow and smooth; metanotum without medial carina; propodeum without medial carina and propodeal carina elliptical and situated medially (fig. 1); angle between veins 1-SR and C+SC+R of fore wing about 35° (fig. 3); vein 1-SR+M of fore wing straight; vein cu-a of fore wing distinctly postfurcal (fig. 4); vein 1-M of fore wing curved (fig. 3); vein CU1b of fore wing much shorter than vein 3-CU1 (fig. 4); vein m-cu of fore wing antefurcal, and about parallel to vein 1-M (fig. 4); vein 1-R1 of fore wing much longer than pterostigma (fig. 4), but ending far from apex of wing and basad of level of apex of vein 3-M; vein 1-SR of fore wing normal (fig. 3); vein r of fore wing long, oblique and longer than width of pterostigma (fig. 4); vein 2-SC+R of hind wing transverse; second submarginal cell of fore wing widened distally (fig. 4); vein 1r-m of hind wing much longer than vein SC+R1, and curved (fig. 4); marginal cell of hind wing narrowed apically (fig. 4); tarsal claws setose and simple (fig. 10); all fourth tarsal segments deeply emarginate (concave) apically (fig. 8), their setae

reaching basal third of telotarsus (fig. 10); fore tibia with two spurs, outer one largely glabrous, inner spur normally setose, 0.6 and 0.7 times fore basitarsus, respectively (fig. 7); fore tibia with longitudinal area of spiny setae; length of fore tarsus about 1.5 times its tibia; dorso-lateral carina of first tergite only present behind spiracle (fig. 1); dorsal carinae of first tergite absent (fig. 14); first tergite shallowly concave basally; second metasomal suture deep, wide and crenulate (fig. 14); second tergite with obsolescent medio-basal area and longitudinally depressed laterally (fig. 14); third and fourth tergites with complete oblique groove (figs. 1, 14), and deeply concave apically (fig. 14); second-fifth tergites with sharp lateral crease; ovipositor long, about 1.4 times fore wing, its apex normal; hypopygium large and apically acute (fig. 1).

Distribution. — Afrotropical: one species.

Note. — Obviously the new genus is closely related to *Bathyaulax* (synapomorphies: concave fourth tarsal segments, dorsal and ventral carinae of clypeus, scapus ventrally much longer than dorsally, third and fourth tergites with pair of oblique grooves and a transverse subapical groove, vein 1r-m of hind wing curved, and marginal cell of hind wing strongly narrowed), but is easily separated because of the two fore tibial spurs. The only other described genus with two fore tibial spurs in the Braconidae is *Rhamnura* Enderlein (Van Achterberg, 1981). *Rhamnura* differs by the shape of the scapus (only slightly concave apically), long marginal cell of fore wing, straight vein 1r-m of hind wing, flat labrum, not or slightly narrowed marginal cell of hind wing, slender tarsi, absence of grooves on third and fourth tergites, outer spur of hind tibia with very short adpressed setae, and antennal sockets further apart. A third genus with two fore tibial spurs will be described by Dr. D. L. Quicke (Sheffield); it belongs to a different group of genera (the *Atanycolus*-group; Quicke, in litt.).

***Bicentra concavitaris* spec. nov.**
(figs. 1-14)

Material. — Holotype, ♀, (Muséum National d'Histoire Naturelle, Paris): "Muséum Paris, Rhodésia du Sud, Selukwe, R. Ellenberger, 1923", "Avril (-)Juin", "Ipobracon maximus Szépligeti" (in Fahringer's handwriting). This identification is obviously wrong because, according to the original description *I. maximus* has no notauli, marginal cell nearly reaching apex of fore wing, only second tergite aciculate, hind legs and pterostigma black and apex of ovipositor sheath greyish setose. The holotype is obviously the specimen referred to by Fahringer (1935: 280).

Holotype, ♀, length of body 18.5 mm, of fore wing 17.5 mm.

Head. — Antennal segments 100 (but apical segments missing), length of third segment 1.8 times fourth segment, length of third and fourth segments 1.9 and 1.1 times their width, respectively; length of maxillary palp 0.9 times height of head; length of eye in dorsal view 1.8 times temple (fig. 13); temple linearly narrowed posteriorly (fig. 13); POL : diameter of ocellus : OOL = 5 : 4 : 11; frons smooth, weakly concave; face flattened, punctate-coriaceous and rather matt (fig. 9); clypeus flat, microsculptured, its apical margin concave and with distinct carina (fig. 9), depressed ventrally; length of malar space 1.2 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.7 times its height; episternal scrobe linear and rather shallow (fig. 1); mesoscutal lobes moderately convex; surface of propodeum smooth, laterally with long brownish setae; propodeal tubercle or carina absent.

Wings. — Fore wing: $r : 3\text{-SR} : \text{SR1} = 7 : 17 : 24$; cu-a vertical (fig. 4); $1\text{-CU1} : 2\text{-CU1} = 3 : 28$; $2\text{-SR} : 3\text{-SR} : r\text{-m} = 7 : 17 : 9$.

Legs. — Hind coxa smooth with long setae; length of femur, tibia and basitarsus of hind leg 8.1, 9.1 and 5.4 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma. — Length of first tergite 1.6 times its apical width, its surface smooth basally, densely and rather coarsely striate apically (fig. 14), with medio-longitudinal depression; second tergite striate medially, but near apex and baso-medially smooth; third and fourth tergites striate medially with antero-lateral grooves, and with transverse basal and subapical grooves (figs. 1, 14); remainder of metasoma somewhat compressed, smooth, without distinct grooves, except at base of fifth tergite (fig. 1); length of ovipositor sheath 1.43 times fore wing.

Colour. — Reddish-brown; dorsal two-thirds of head, antenna and ovipositor sheath black; parastigma and apex of pterostigma blackish; remainder of pterostigma yellow; wing membrane dark brown, with a yellowish patch below pterostigma.

Note. — *Bicentra concavitaris* gen. et spec. nov. in Fahringer's compilation of the Braconinae of the Afrotropical region (1928-1935) runs to *Goniobracon waterloti* Fahringer, 1935. The type of this species is in the Paris Museum and has been examined by the second author; it differs by the absence of the second fore tibial spur, the antero-lateral grooves of third tergite remain separated medially, the head is completely reddish, and the fore wing has a complete pale band below the pterostigma.

Commatapsis gen. nov.

Type-species: *Commatapsis cyanea* spec. nov.

Etymology: from “comma” (Latin for “part, piece”) and “apsis” (Latin for “arch”) because of the partly arched apices of the fourth tarsal segments. Gender: feminine.

Diagnosis. — Head and mesosoma (except scutellum) smooth; scapus robust, subglobose, its outer apex concave, ventrally about as long as dorsally (figs. 15, 17), inner apex without double margin; apical antennal segment normal (fig. 19); eyes glabrous, and slightly emarginate (fig. 29), without depression behind eyes (fig. 15); clypeus without dorsal carina (fig. 29); malar suture absent (fig. 29); labio-maxillary complex not protruding; labrum flat, somewhat slanted inwards and glabrous; mesoscutum largely glabrous; notauli short, deep and present only anteriorly (fig. 27), without posterior depression; pleural and mesosternal sulci smooth; antescutal depression absent; meta-pleural flange absent; scutellar sulcus narrow, shallow and smooth (fig. 27); scutellum with deep round pit anteriorly (fig. 27); metanotum without distinct carina medially; propodeum without medial carina, propodeal spiracle nearly round, medium-sized and just behind middle of propodeum (fig. 15); angle between veins 1-SR and C+SC+R of fore wing about 40° (fig. 20); vein 1-SR+M of fore wing straight; vein cu-a of fore wing distinctly postfurcal (fig. 18); vein 1-M of fore wing straight; vein CU1b of fore wing much shorter than vein 3-CU1 (fig. 18); vein m-cu of fore wing slightly antefurcal and parallel to vein 1-M (fig. 18); vein 1-R1 of fore wing much longer than pterostigma and ending at same level as apex of vein 3-M (fig. 18); vein 1-SR of fore wing widened (fig. 20); vein r of fore wing much shorter than width of pterostigma, oblique (fig. 18); second submarginal cell of fore wing widened distally (fig. 18); vein 1r-m of hind wing very long and straight (fig. 18); vein 2-SC+R of hind wing vertical (fig. 22); marginal cell of hind wing narrowed apically (fig. 18); tarsal claws rather slender, setose and simple (fig. 25); all fourth tarsal segments with outer corner somewhat protruding (figs. 24, 26), their spiny setae reaching basal third of telotarsus (fig. 25); fore tibia with one spur; fore tibia setose; dorso-lateral and dorsal carinae of first metasomal tergite absent (figs. 15, 30); first tergite with very deep medio-basal depression (fig. 30); second suture deep and slightly curved (fig. 30); second tergite without medio-basal area, with pair of deep, long, lateral grooves and posteriorly diverging (fig. 30); third tergite truncate apically and with incomplete lateral depression (fig. 30), which is absent on following tergites (fig. 15); only second tergite with sharp lateral crease (fig. 15); ovipositor long, about 1.3 times fore wing, and its apex normal (fig. 31); hypopygium large and truncate apically (fig. 15).

Distribution. — Afrotropical: one species.

Note. — This genus is closely related to *Euurobracon* Ashmead, but *Commatapsis* has the second submarginal cell of fore wing widened apically, veins SR1 and 2-SR short compared with vein r-m of fore wing, vein 1-SR+M of fore wing is straight, vein 2-SC+R of hind wing vertical, outer corners of fourth tarsal segments protruding, and scutellum with pit.

***Commatapsis cyanea* spec. nov.**
(fig. 15-31)

Material. — Holotype, ♀, (Muséum National d'Histoire Naturelle): "P. 1450, ravin 2, 24/10/56", "Muséum Paris, Guinée, Mt. Nimba, Lamotte leg.", "prep. ailes" (= right wings on slide).

Holotype, ♀, length of body 14 mm, of fore wing 13.6 mm.

Head. — Antennal segments 52, antenna narrowed basally (fig. 16), length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 2.1, 1.6 and 0.5 times their width, respectively (figs. 16, 19); third-fifth antennal segments with longer black setae between short pale setae; length of maxillary palp 0.6 times height of head; length of eye in dorsal view 0.9 times temple (fig. 23); temple parallel-sided (fig. 23); POL : diameter of posterior ocellus : OOL = 5 : 3 : 11; frons with medial groove, remainder largely flat; face flattened, and smooth; dorsal half of clypeus weakly convex, smooth, its ventral half depressed, the two halves separated by a row of long dark setae and medially with a short carina (fig. 29); length of malar space 0.9 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.7 times its height; episternal scrobe obsolescent; mesoscutal lobes rather convex; scutellum with some punctures and weakly convex (fig. 27); dorsal face of propodeum smooth and largely with long setae.

Wings. — Fore wing: r : 3-SR : SR1 = 4 : 38 : 25; angle between veins 1-SR and C+SC+R 38°; cu-a somewhat inclivous (fig. 18); 1-CU1 : 2-CU1 = 3 : 16; 2-SR : 3-SR : r-m = 14 : 38 : 17.

Legs. — Hind coxa punctulate; length of femur, tibia and basitarsus of hind leg 4.4, 8.6 and 4.3 times their width, respectively; length of hind tibial spurs 0.35 and 0.30 times hind basitarsus.

Metasoma. — Length of first tergite equal to its apical width, its surface smooth, its sublateral grooves wide and very deep, converging anteriorly (fig. 30); second and following tergites smooth; fourth and following tergites without antero-lateral grooves and rather depressed (fig. 15); length of ovipositor sheath 1.34 times fore wing.

Colour. — Blackish with bluish shine; femora and apex of antenna (rather) dark brown; head brownish-yellow; palpi brown; wing membrane, veins and pterostigma dark brown, with a large oval hyaline spot subapically and with a minute spot near vein 2-SR+M of fore wing (fig. 18).

Iphibracon gen. nov.

Type-species: *Iphibracon flavovariegatus* spec. nov.

Etymology: from “Iphiaulax” and “Bracon”, because it is intermediate in some aspects between these two genera. Additionally “iphi” is Greek for “strongly, mighty” to indicate that it is an aberrant *Bracon*-like genus with a strong ovipositor. Gender: masculine.

Diagnosis. — Head and mesosoma smooth; scapus robust, sub-globose subtruncate apically, slightly longer dorsally and its inner apex simple (fig. 35); apical antennal segment acute apically (fig. 34); eyes glabrous, and hardly emarginate (fig. 40), with a short subocular groove behind eyes, just above the malar suture (fig. 32); clypeus without dorsal carina (fig. 40); malar suture present (figs. 32, 40); labio-maxillary complex not distinctly protruding (fig. 32); labrum concave and glabrous; mesoscutum with long remote setae, but lateral lobes glabrous medially; notauli completely absent (figs. 32, 42), without posterior depression; pleural and mesosternal sulci smooth; antescutal depression indistinct (fig. 32); metapleural flange absent; scutellar sulcus narrow, rather shallow and densely crenulate (fig. 42); metanotum without medial carina; propodeum without medial carina and propodeal spiracle slightly elliptical, and situated medially (fig. 32); angle between veins 1-SR and C+SC+R of fore wing about 65° (fig. 41); vein 1-SR+M of fore wing straight; vein cu-a of fore wing slightly postfurcal (fig. 33); vein 1-M of fore wing straight (fig. 33); vein CU1b of fore wing much shorter than vein 3-CU1; vein m-cu of fore wing shortly antefurcal, and converging to vein 1-M posteriorly (fig. 33); vein 1-R1 of fore wing much longer than pterostigma and ending rather close to wing apex but basad of level of apex of vein 3-M (fig. 33); vein r of fore wing medium-sized, shorter than maximum width of pterostigma (fig. 33); vein 1-SR of fore wing normal (fig. 41); second submarginal cell of fore wing slightly widened apically (fig. 33); vein 1r-m of hind wing short and straight (fig. 33); vein 2-SC+R of hind wing transverse (fig. 33); marginal cell of hind wing parallel-sided subapically (fig. 33); tarsal claws robust, setose and with acute medial lobe (fig. 38); fourth tarsal segments truncate apically, with spiny setae; fore tibia with one spur and setose only; dorso-lateral carina of first metasomal tergite complete (figs. 32, 43); dorsal carinae absent; first

tergite with short and deep groove medio-basally (fig. 43); second suture of metasoma strongly sinuate, wide and crenulate (fig. 43); second tergite with medio-basal area and with pair of slightly converging sublateral grooves (fig. 43); third-fifth tergites with antero-lateral grooves (fig. 32) and third tergite convex apically (fig. 43); second-fifth tergites with sharp lateral crease (fig. 32); fourth and fifth tergites convex (fig. 32), not emarginate medio-posteriorly; ovipositor rather short, about 0.2 times fore wing, apically with its upper valve strongly enlarged, much larger than lower valve (fig. 36); hypopygium medium-sized and obtuse apically.

Distribution. — Afrotropical: one species.

Note. — Runs in the key by Quicke (1987) to *Pachybracon* Cameron, 1908, but *Pachybracon* has the hind leg with long setae, apical third of the fore wing translucent white, notauli present anteriorly, vein 1-SR+M of fore wing bent basally, tarsal claws without acute lobe, hind tibia more or less with a lateral groove, and second tergite with medial carina.

***Iphibracon flavovariegatus* spec. nov.**
(figs. 32-43)

Material. — Holotype, ♀, (Muséum National d'Histoire Naturelle, Paris): "Madagascar, Bekily, Reg. Sud de l'île", "Muséum Paris, VI. (19) 36, A. Seyrig", "Type", "*Campyloneurus flavovariegatus* sp. n." (this label is not by Granger).

Holotype, ♀, length of body 4.2 mm, of fore wing 4.8 mm.

Head. — Antennal segments 41, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 1.4, 1.2 and 1.6 times their width, respectively (figs. 34, 35); length of maxillary palp 0.7 times height of head; length of eye in dorsal view 1.8 times temple (fig. 39); temple directly narrowed posteriorly (fig. 39); frons with shallow medial groove and slightly convex (fig. 39); POL : diameter of posterior ocellus : OOL = 5 : 3 : 8; face moderately convex and smooth; clypeus elevated basally and smooth; length of malar space equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.2 times its height; episternal scrobe sublinear, small (fig. 32); mesoscutal lobes rather convex; scutellum smooth; surface of propodeum smooth.

Wings. — $r : 3\text{-SR} : \text{SR1} = 6 : 24 : 34$; angle between veins 1-SR and C+SC+R 64° ; cu-a straight; $1\text{-CU1} : 2\text{-CU1} = 1 : 13$; $2\text{-SR} : 3\text{-SR} : r\text{-m} = 9 : 24 : 9$; r-m inclivous (fig. 33).

Legs. — Hind coxa indistinctly punctulate; length of femur, tibia and basitarsus of hind leg 3.1, 8.4 and 4.8 times their width, respectively; length of

hind tibial spurs 0.5 and 0.4 times hind basitarsus; hind tibia without lateral groove.

Metasoma. — Length of first tergite 1.4 times its apical width, its surface largely smooth, with some large punctures (fig. 43); second tergite with some rugae laterally, with crenulate sublateral grooves and some large punctures (fig. 43); third tergite with pattern of puncture-series, and with large smooth patches; fourth tergite sparsely punctate, remainder of metasoma smooth; fifth tergite with posterior lamella (fig. 32) and slightly concave medio-posteriorly; length of ovipositor sheath 0.24 times fore wing.

Colour. — Brownish-yellow; head and mesosoma (except propodeum and metapleuron) yellow with black pattern; narrow patch on face medially, stemmaticum, frons medially, occiput, temples dorsally, propleuron, mesopleuron largely (except a medio-anterior patch), pronotum medio-anteriorly, mesoscutum (except notaulic courses and medio-posteriorly), black; metapleuron anteriorly yellowish, remainder brownish; propodeum medio-anteriorly darkened; tegula yellow; humeral plate, antenna, pterostigma and veins dark brown; middle trochanter dark brown; hind coxa, trochanter, trochantellus (except apex), tibia (except base) and tarsus black; remainder of legs yellow; palpi (except both apical maxillary palp segments) dark brown; wing membrane brownish.

Note. — Runs in Granger (1949) to *Ipobracon subrugosus* Granger, 1949, but *I. subrugosus* has 47-50 antennal segments, second tergite less robust, second suture less sinuate, and lateral grooves of second tergite diverging posteriorly. The genus *Campyloneurus* is not included in the paper by Granger.

Kenema Van Achterberg

Kenema Van Achterberg, 1983: 188, figs. 110-122 (diagnosis); Quicke, 1987: 133 (synonymized with *Trigastrotheca* Cameron, 1906).

Type-species: *Kenema quickei* Van Achterberg, 1983.

The genus *Kenema* is closely related to the genus *Trigastrotheca* Cameron, 1906 and doubtless both are sister-groups. Synapomorphies are: presence of propodeal tubercles, short vein Ir-m of hind wing, strong lateral carina of propodeum below tubercle, transverse frontal aspect of head, sculpture of body, oblique sides of fifth metasomal tergite. Together with the superficially similar genus *Soter* Saussure, 1892, it can be separated as follows:

1. Propodeum without medio-longitudinal carina; mesoscutum largely glabrous and smooth; clypeus with fine dorsal carina; second submarginal cell of fore wing long, vein 3-SR about twice length of vein 2-SR; second

- metasomal tergite with small medio-basal area, surrounded by grooves; fifth metasomal tergite distinctly serrate posteriorly; propodeal spiracle situated submedially and without carinae dorsad of it; vein r of fore wing short *Soter* Saussure
- Propodeum with complete medio-longitudinal carina (fig. 57); mesoscutum setose and (coriaceous-)rugose (fig. 44); clypeus without dorsal carina (fig. 55); second submarginal cell of fore wing short, vein 3-SR shorter than vein 2-SR (fig. 46); second metasomal tergite without medio-basal area (fig. 58); fifth metasomal tergite at most finely serrate (fig. 44); propodeal spiracle in front of middle of propodeum and with a carina protruding dorsad of it (fig. 44); vein r of fore wing medium-sized to rather long (fig. 46) 2
2. Vein r emerging near basal third of pterostigma and basal margin straight or nearly so posteriorly; medial length of fifth metasomal tergite (of both sexes) 1.2-1.3 times medial length of fourth tergite; fifth tergite distinctly (♀) or slightly (♂) protruding medio-apically; antero-lateral grooves of third-fifth metasomal tergites deep and (nearly) complete; (Oriental, E. Afrotropical) *Trigastrotheca* Cameron
- Vein r emerging near middle of pterostigma and basal margin curved (fig. 46); medial length of fifth tergite (only ♂ known) 1.4-1.5 times medial length of fourth segment; fifth tergite slightly concave or straight medio-apically (fig. 56) or evenly convex and serrate; antero-lateral grooves of third-fifth tergites shallow and incomplete; (W. Afrotropical) *Kenema* Van Achterberg

Key to species of the genus *Kenema* Van Achterberg

1. Third-fifth metasomal tergites finely serrate latero-posteriorly (fig. 44); fifth tergite slightly emarginate medio-posteriorly (fig. 56); second tergite with sublateral grooves converging posteriorly (fig. 58); oblique antero-lateral grooves of third-fifth tergites nearly absent (fig. 44); vein 2-SC+R of hind wing vertical (fig. 46); medial lobe of tarsal claws wide (fig. 51); antennal segments of ♂ about 43; length of eye of ♂ in dorsal view about 3.8 times temple (fig. 53); vein SR of hind wing sclerotized basally (fig. 46) *serrata* spec. nov.
- Third-fifth tergites straight latero-posteriorly (fig. 110, Van Achterberg, 1983); fifth tergite straight medio-posteriorly (fig. 122, l.c.); second tergite with sublateral grooves subparallel (fig. 121, l.c.); oblique antero-lateral grooves of third-fifth tergites distinct (fig. 110, l.c.); vein 2-SC+R of hind wing horizontal (fig. 114, l.c.); medial lobe of tarsal claws rather narrow (fig. 118, l.c.); antennal segments of ♂ about 52; length of eye of ♂ in

dorsal view about 2.6 times temple (fig. 117, l.c.); vein SR of hind wing unsclerotized basally (fig. 114, l.c.) *quickei* Van Achterberg

***Kenema serrata* spec. nov.**
(figs. 44-58)

Material. — Holotype, ♂, (Muséum National d'Histoire Naturelle, Paris): "Senegal, Dakar, Bel Air, 22.9.(19)80, Sigwalt".

Holotype, ♂, length of body 5 mm, of fore wing 3.7 mm.

Head. — Antennal segments 43, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 1.9, 1.7 and 1.4 times their width, respectively (figs. 45, 48); apical antennal segment with apical spine (fig. 45); length of eye in dorsal view 3.8 times temple (fig. 53); temple finely striate; POL : diameter of posterior ocellus : OOL = 10 : 7 : 17; frons slightly convex, with weak stria medially, medially coriaceous and laterally rugulose (fig. 53); stemmaticum less protruding (fig. 55); face transversely rugulose; length of malar space 0.9 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum indistinctly coriaceous (fig. 44); mesopleuron coriaceous; episternal scrobe absent; scutellum dull and coriaceous; surface of propodeum coriaceous.

Fore wing. — $r : 3\text{-SR} : \text{SR1} = 6 : 10 : 31$; angle between veins 1-SR and C+SC+R 78° ; cu-a shortly postfurcal, straight (fig. 46); $1\text{-CU1} : 2\text{-CU1} = 1 : 22$; $2\text{-SR} : 3\text{-SR} : r\text{-m} = 11 : 10 : 7$; r-m straight and not sclerotized (fig. 46).

Hind wing. — SR sclerotized basally; 2-SC+R vertical (fig. 46).

Legs. — Hind coxa superficially coriaceous; length of femur, tibia and basitarsus of hind leg 3.4, 6.7 and 5.0 times their width, respectively; length of both hind tibial spurs 0.4 times hind basitarsus.

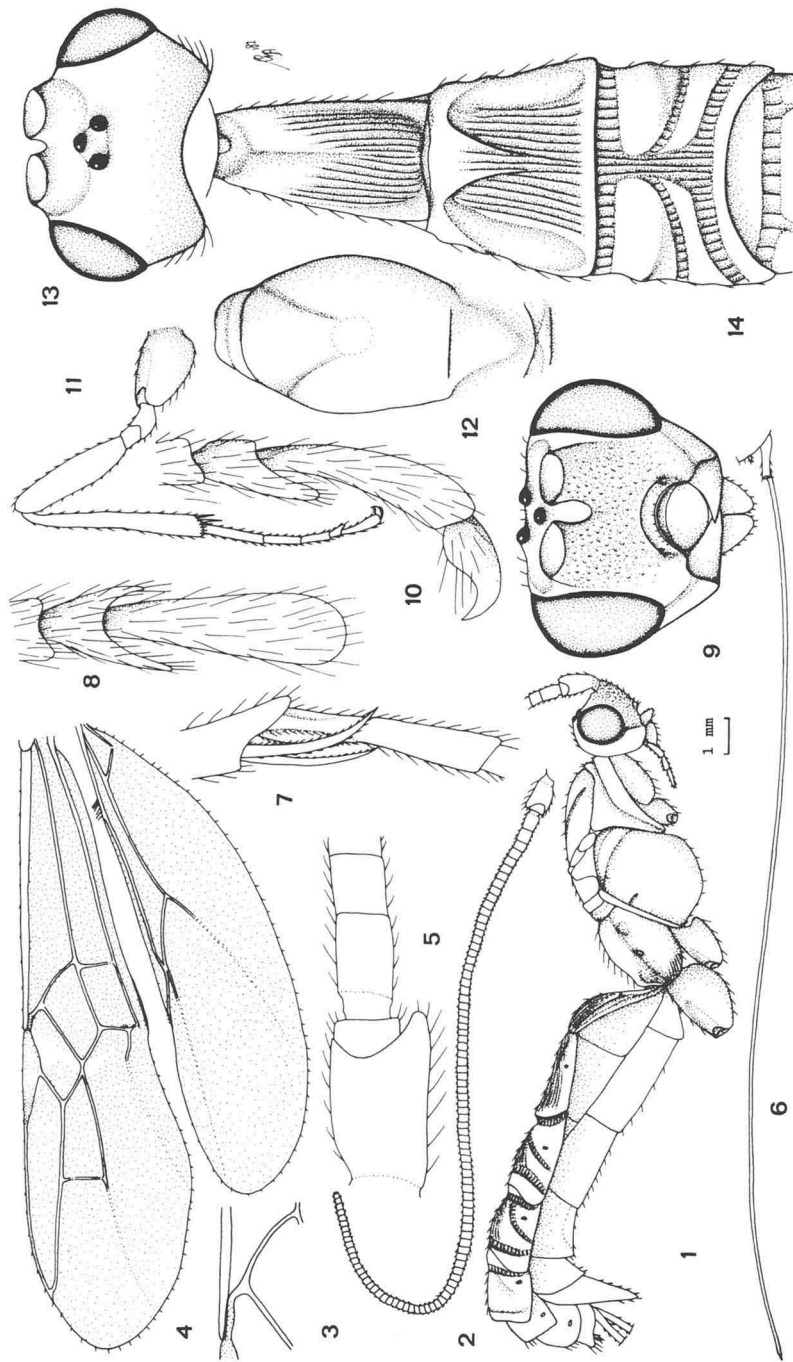
Metasoma. — Length of first tergite 0.6 times its apical width, its surface rugose, basally largely striate and concave (fig. 58); second tergite with sublateral grooves converging posteriorly, reticulate (fig. 58); third-fifth tergites densely reticulate and with indistinct short antero-lateral grooves (fig. 44); remainder of metasoma depressed and smooth.

Colour. — Yellowish-brown; stemmaticum, stripe on outer side of scapus and pedicellus, apices of third-sixth antennal segments, blackish; wing membrane subhyaline; pterostigma, vein C+SC+R apically and vein 1-R1 dark brown; rest of veins and parastigma (light) brown, but basal half of vein C+SC+R and vein 1+2-1A yellowish.

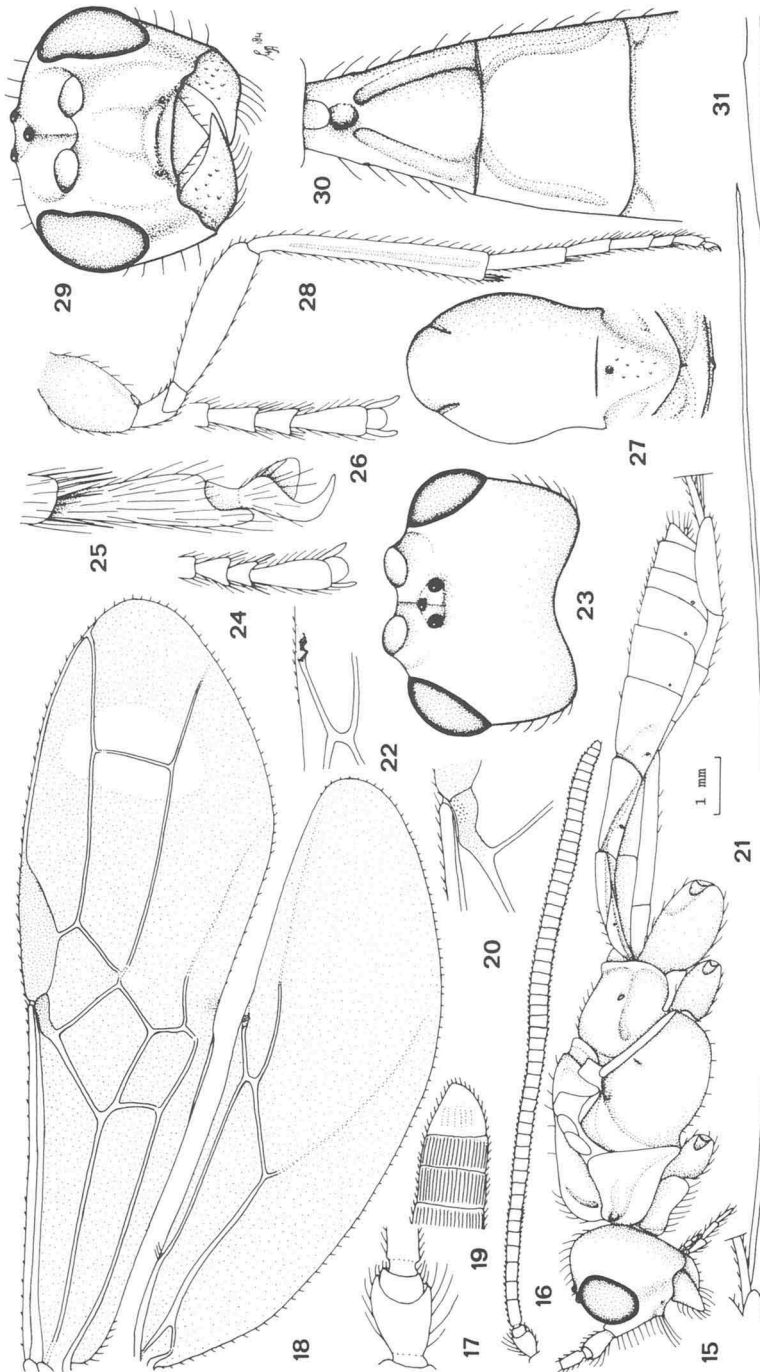
Note. — Runs in the keys of Braconinae of the Afrotropical region by Fahringer (1928-35) to *Odontogaster caudata* Szépligeti from Tanzania, but this species has pterostigma yellow with its apical half black, and wing membrane pale brown with base of wing yellowish.

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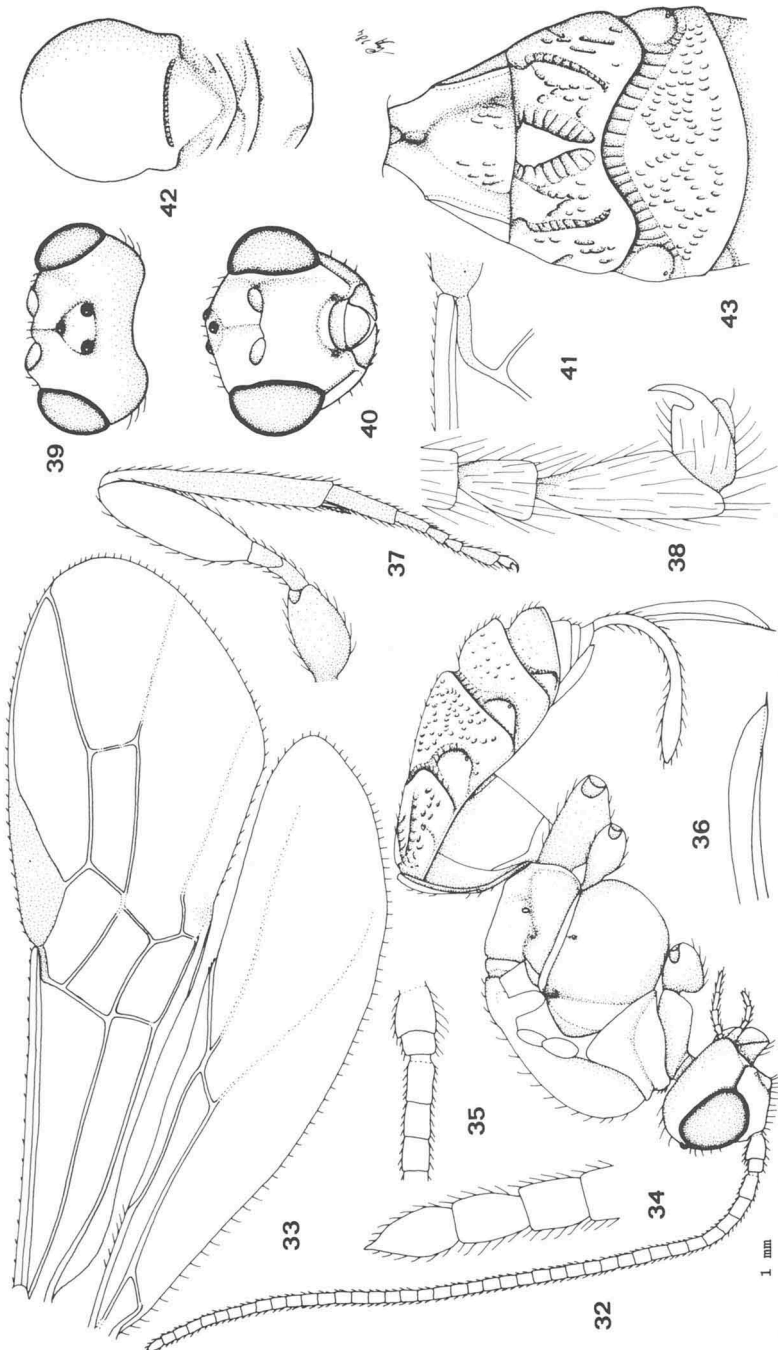
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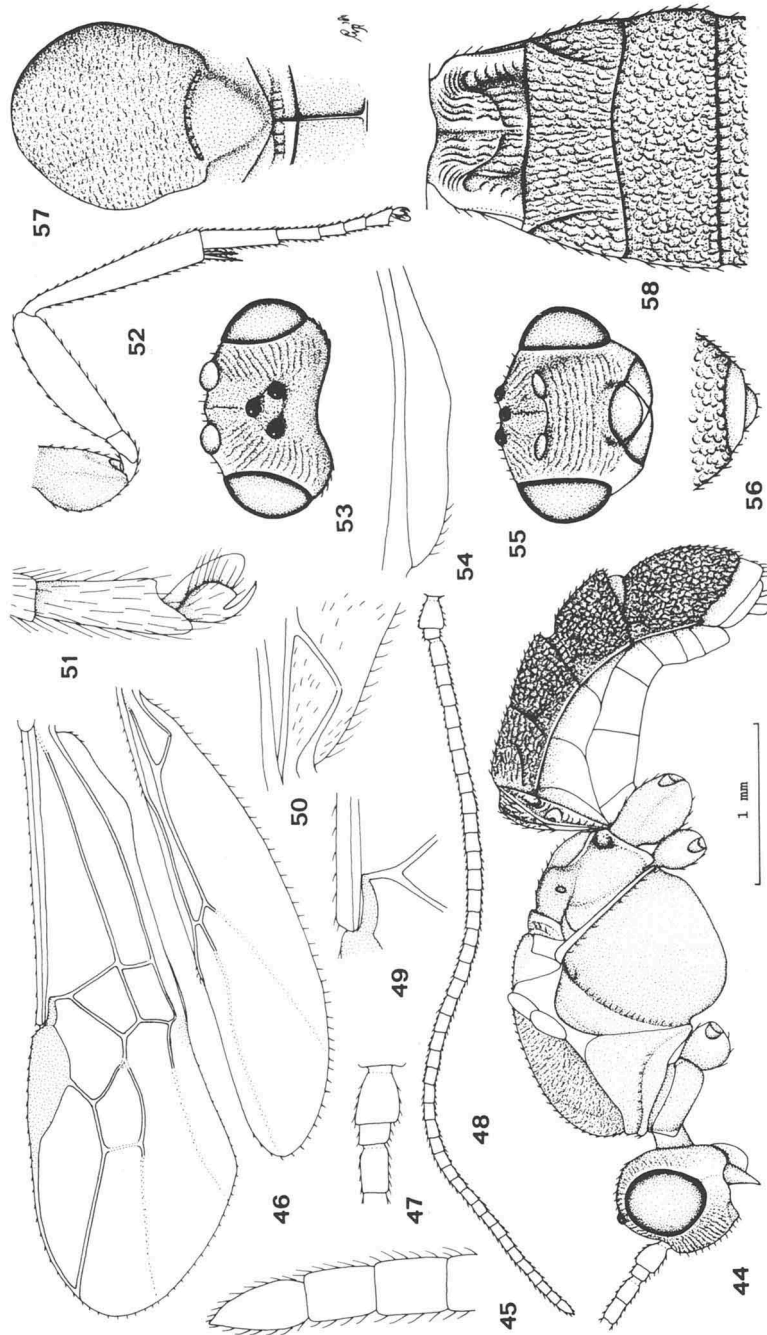
Figs. 1-14, *Bicentra concavitaris* gen. et spec. nov., ♀, holotype. 1, habitus, lateral aspect; 2, antenna; 3, detail of veins 1-M and 1-SR of fore wing; 4, wings; 5, scapus, outer lateral aspect; 6, ovipositor; 7, spurs of fore tibia; 8, four and fifth hind tarsal segments, dorsal aspect; 9, head, frontal aspect; 10, hind leg; 11, hind leg; 12, thorax, dorsal aspect; 13, head, dorsal aspect; 14, first-third metasomal tergites, dorsal aspect. 1, 2, 4, 6, 11: scale-line (= 1 ×); 3, 12, 14: 2 ×; 5, 7, 8, 10: 5 ×; 9, 13: 2.5 ×.



Figs. 15-31, *Comnatopsis cyanea* gen. et spec. nov., ♀, holotype. 15, habitus, lateral aspect; 16, antenna, lateral aspect; 17, scapus, outer lateral aspect; 18, wings; 19, apex of antenna; 20, detail of vein 1-SR of fore wing; 21, ovipositor; 22, detail of vein 2-SC + R of hind wing; 23, head, dorsal aspect; 24, third-fifth middle tarsal segments, dorsal aspect; 25, hind tarsal claw; 26, third-fifth hind tarsal segments, dorsal aspect; 27, thorax, dorsal aspect; 28, hind leg; 29, head, frontal aspect; 30, first and second metasomal tergites, dorsal aspect; 31, apex of ovipositor, lateral aspect. 15, 16, 18, 21, 28: scale-line (1 ×); 17, 20, 22-24, 26, 29: 2 ×; 19, 25, 31: 5 ×; 27, 30: 1.6 ×.



Figs. 32-43. *Iphibracon flavovariegatus* gen. et spec. nov., ♀, holotype. 32, habitus, lateral aspect; 33, wings; 34, apex of antenna; 35, base of antenna, outer lateral aspect; 36, apex of ovipositor; 37, hind leg; 38, hind tarsal claw; 39, head, dorsal aspect; 40, head, frontal aspect; 41, detail of vein 1-SR of fore wing; 42, mesosoma, dorsal aspect; 43, first-third metasomal tergites, dorsal aspect. 32, 33, 37: scale-line (= 1 ×); 34, 38, 39, 40: 1.4 ×; 42, 43: 1.2 ×.



Figs. 44-58, *Kenema serrata* spec. nov., ♂, holotype. 44, habitus, lateral aspect; 45, apex of antenna; 46, wings; 47, scapus, outer lateral aspect; 48, antenna; 49, detail of vein 1-SR of fore wing; 50, base of hind wing; 51, outer hind claw; 52, hind leg; 53, head, dorsal view; 54, base of fore wing, posterior part; 55, head, frontal view; 56, apex of fifth tergite, dorsal aspect; 57, mesosoma, dorsal aspect; 58, first-third metasomal tergites, dorsal aspect. 44, 46, 48, 52: scale-line (= 1 ×); 45, 51: 5 ×; 47, 49, 50, 54, 56: 2 ×; 53, 55, 57, 58: 1.2 ×.