

### Host plant

*Pelargonium* L'Héritier de Brutelle ex Aiton (Geraniaceae) (Skaife 1954, Prinsloo 1985).

### Ecology and habitat

The known localities belong to the Coastal Fynbos vegetation type of the winter rainfall zone. One female was sampled in the Grassland Biome of KwaZulu-Natal Province, which is situated in the summer rainfall zone.

The flight season is not well known. Single specimens have been recorded in February, April, May, August and December.

### Remarks

*Arge taeniata* belongs to the *A. annulipes* species group (Pasteels 1953).

Most of the material seen was collected in the wider area of Cape Town. So far the record of one female from Escourt (KwaZulu-Natal Province) in 1894 seems to be unusual.

*Arge taeniata* is characterized among other things by a narrow black longitudinal stripe on the dorsal surface of abdomen. Sometimes on terga 2-4 this stripe is interrupted.

Skaife (1954) misidentified this species as belonging to *Athalia*, which led him to conclude that it was the new species *Athalia pelargonii*.

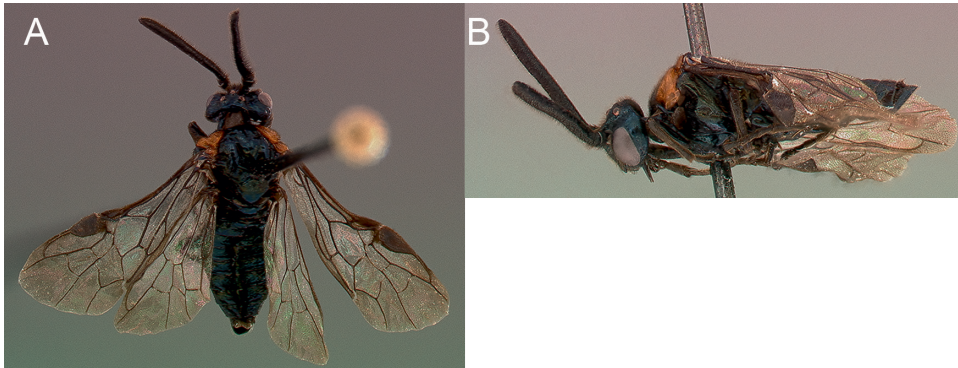
### ***Arge vannoorti* Koch & Liston, 2012**

*Arge vannoorti* Koch & Liston, 2012b: 178. ♂. Type locality: West Coast Fossil Park, Western Cape Province, South Africa (SAMC).

#### **Male** (Figs 98A, B)

Head black with blue metallic lustre; apical half of mandible light brown becoming reddish brown towards apex; antenna black. Thorax black with blue metallic lustre; pronotum extensively orange laterally, tegula orange. Legs black. Wings slightly infuscate; fore wing with a small smoky substigmal spot; intercostal area somewhat darker, stigma, costa, subcosta and rest of venation dark brown. Abdomen black with blue metallic lustre.

Head very slightly enlarged behind eyes. Antenna 1.9× long as maximum head width; flagellum not enlarged towards apex, triangular in cross section, ventral surface with strongly compressed and sharp longitudinal carina, other longitudinal carinae more weakly compressed. Eyes converging below. Anterior margin of clypeus circularly emarginate, supraclypeal area flatly rising up to base of



**Fig. 98. A-B.** *Arge vannoorti*, habitus, male (holotype). **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

interantennal carinae, interantennal carinae sharply ridged between antennae, slightly converging downward, extending nearly half way to clypeus.

Head rather densely micropunctate, subshiny, postocellar area nearly impunctate, shiny; pubescence brown. Thorax nearly impunctate, shiny; pubescence similar to that on head. Abdomen irregularly microsculptured, subshiny. Genitalia (Figs 99A, B).

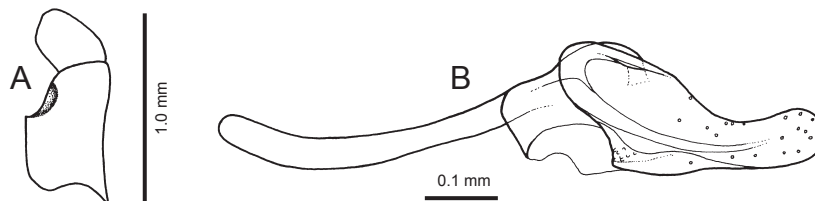
Length: 5.7-6.4 mm.

#### Female

Unknown.

#### Etymology

This species was named after Dr. Simon van Noort, the curator of Entomology at the Iziko South African Museum, Cape Town, South Africa.



**Fig. 99. A-B.** *Arge vannoorti*. **A.** Harpe and parapenis (right, ventral aspect). **B.** Penis valve (left, lateral aspect).

### **Distribution**

South Africa (Western Cape Province) (Fig. 170).

### **Host plant**

Unknown.

### **Ecology and habitat**

The habitat belongs to the winter rainfall zone and is characterized as Sand Plain Fynbos vegetation type (Fynbos Biome).

The flight season is not well known, the specimens were collected in September.

### **Remarks**

*Arge vannooti* is placed in the *Arge capensis* species group (Koch & Liston 2012a) and is distinguished from the other species of the group by the restriction of the orange colouration to the pronotum and tegulae. In the other species the orange colouration extends partly to the mesonotum, mesopleuron and mesosternum.

In the shape of the penis valve *A. vannooti* is similar to *A. capensis*. Apart from colouration, *A. capensis* differs in the following characters: antennae 1.8× long as head maximum width; supraclypeal area flatly rounded; interantennal carinae scarcely converging downwards, extending about a third of the way to clypeus, and intercarinal area conspicuously broader than in *A. vannooti*.

### ***Arge whiteheadi* Koch & Goergen, 2010**

*Arge whiteheadi* Koch & Goergen, 2010: 28. ♀. Type locality: Stellenbosch (Western Cape Province, South Africa) (SAMC).

### **Female** (Figs 100A, B)

Head black with slight blue metallic lustre; mandible reddish brown with blackish basal half; flagellum dark brown. Thorax orange with the following being black with blue metallic lustre: lateral markings of anterior margin of pronotum, a medial longitudinal stripe becoming broader apically on median lobe of mesoscutum, mesoscutellum except for two lateral spots, mesoscutellar appendage, propleuron, prosternum, mesosternum, ventral part of mesopleuron, katepimeron, metapleuron. Legs black with slight blue metallic lustre. Wings slightly infuscate; fore wing with a small smoky substigmal spot; intercostal area infuscate, stigma brown, costa, subcosta, and rest of venation brown with dark brown at base. Abdomen black with conspicuous blue metallic lustre.

Head parallel behind eyes. Antenna 1.4× as long as maximum head width; flagellum slightly enlarged towards apex and quadrangular in cross section, somewhat flattened toward apex, interior surface with moderately compressed longitudinal

carina, other longitudinal carinae more weakly compressed. Eyes converging below. Anterior margin of clypeus shallowly circularly emarginate, supraclypeal area flatly rising up to base of interantennal carinae, interantennal carinae sharply ridged between antennae, converging downwards, and extending one quarter of distance to clypeus.

Vertex and gena moderately densely micropunctate, shiny; frons, supraclypeal area and clypeus more densely punctate with larger punctures, shiny; pubescence yellowish. Mesoscutum very sparsely micropunctate, shiny; pubescence similar to head. Abdomen shiny, terga 1-4 transversely microsculptured, following terga irregularly punctate. Sawsheath: Figs 101A, B. Lancet with about 15 serrulae (Figs 101C, D).

Length: 7.2 mm.

### Male

Unknown.

### Etymology

This species was named after the late Dr. Vincent Booth Whitehead (1921 – 2005), the former Head of the Entomology department at the Iziko South African Museum, Cape Town.

### Distribution

South Africa (Western Cape Province) (Fig. 172).



**Fig. 100. A-B.** *Arge whiteheadi*, habitus, female (holotype). **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Host plant

Unknown.

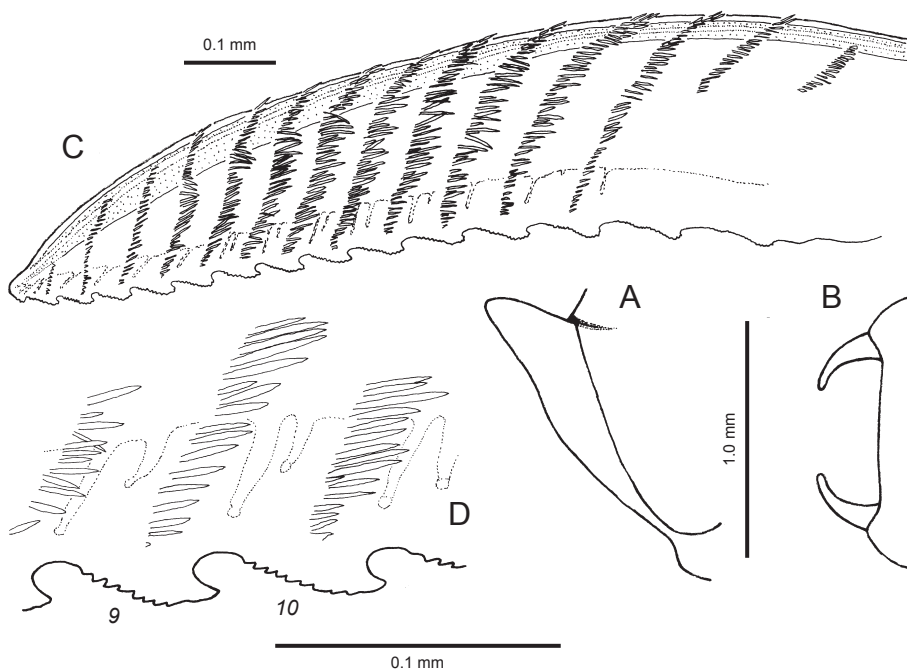
## Ecology and habitat

The collection locality belongs to the Mountain Fynbos vegetation type of the winter rainfall zone.

This species was collected in 1897, but remained undetected in the collection of the Iziko South African Museum, Cape Town. Despite many efforts, it has not been possible to collect more recent material. Probably, this species has become extinct as a consequence of changed land use (urbanization of rural areas as well as agricultural and forestry land use; Figs 2-6) and the associated destruction of natural habitats. This is especially true of the Greater Cape Town area, to which Stellenbosch belongs.

## Remarks

*Arge whiteheadi* belongs to the *A. capensis* species group (Koch & Liston 2012a), and is similarly coloured to *A. capensis*. *Arge capensis* differs distinctly in the nearly entirely orange thorax and the yellow apex of the abdomen, as well as in the nearly uniform and filiform trichoid sensilla of the lancet (Figs 55C, D).



**Fig. 101.** A-D. *Arge whiteheadi*. **A.** Sawsheath (lateral aspect). **B.** Sawsheath (dorsal aspect). **C.** Lancet. **D.** Serrulae 9-10.

### Genus *Pampsilota* Konow, 1899

*Pampsilota* Konow, 1899: 76. Type species: *Pampsilota afer* Konow, 1899, designated by Rohwer, 1911. <http://www.waspweb.org/Tenthredinoidea/Argidae/Athermantinae/Pampsilota/index.htm>

#### Description

Antenna 3-segmented (Fig. 40A), scape and pedicel short, flagellum very long and unsegmented. Clypeus not clearly separated by an epistomal suture from the supraclypeal area (Fig. 103A). Hind tibia without preapical spine; tarsal claws simple (Fig. 44E). Fore wing with radial crossvein (2r) absent and crossvein 2r-m present, with basal anal cell (1A) closed and anal cell (2A) long petiolate (1A) (Fig. 41N); radial cell of hind wing (R1) closed, with anal cell (A) and two middle cells (Rs and M) present (Fig. 41N). Tergum 1 with a more or less narrow and deep median split.

The colouration of the species is black with more or less blue metallic lustre and with yellowish markings. The size ranges from 5.0 to 15.0 mm in length.

#### Host plants

Nothing is known about their host plants.

#### Remarks

According to Taeger *et al.* (2010) three species of *Pampsilota* are distributed in the East Palaearctic and the Oriental Region as well as five valid species are known for the Afrotropical Region.

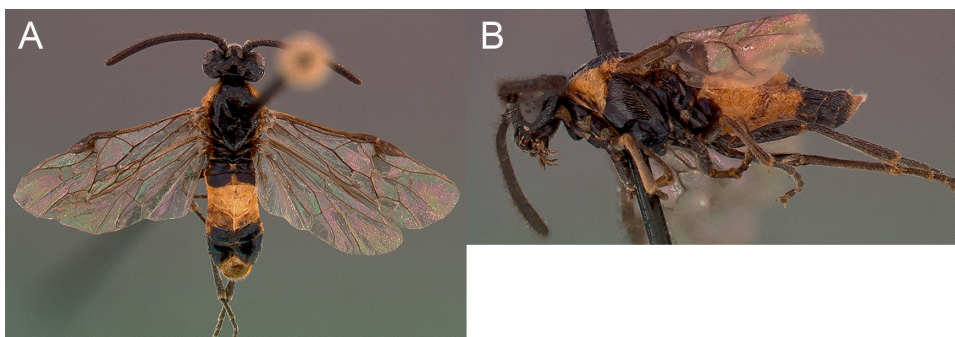
The absence of the preapical spine on the hind tibia distinguishes species of the genus *Pampsilota* from *Arge* species. The following two known southern African species are currently classified as *Pampsilota* species, despite their relatively small size compared to the West African type species *P. afer* (length 14.0 to 15.0mm), because it is not possible to find any significant morphological differences warranting the placement of these species in a separate genus. However, a revision of the genus *Pampsilota* may possibly provide evidence that the Namibian species do not belong in this genus.

### *Pampsilota brandbergensis* Koch, 2006

*Pampsilota brandbergensis* Koch, 2006a: 120. ♂. Type locality: Brandberg Massif, Namibia (NNIC).

#### Male (Figs 102A, B)

Head black; apical half of mandible brown becoming dark reddish apically; flagellum dark brown. Thorax black; pronotum and tegula yellow. Legs black; anterior surface of fore tibia brownish yellow, posterior surface brown. Wings subhyaline; fore wing



**Fig. 102. A-B.** *Pampsilota brandbergensis*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

with slightly infusate substigmal spot; costa and stigma light brown, subcosta and rest of venation brown. Abdomen black; terga 3-5 yellow with medio-apical blackish spot on tergum 5, terga 2,6 yellow laterally, terga 7-9 with very slight metallic lustre; sterna 3-6 yellow with medio-apical blackish marking, sternum 9 (subgenital plate) with yellow apical half.

Head narrowed behind eyes. Antenna 2.0× as long as maximum head width; flagellum scarcely enlarged towards apex, triangular in cross section, somewhat flattened apically, interior surface with sharply compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes slightly converging below. Anterior margin of the clypeus shallowly circularly emarginate (Fig. 103A), supraclypeal area flatly rising up to base of interantennal carinae, interantennal carinae sharply ridged, scarcely converging downwards, extending about one third way to clypeus.

Vertex, frons and clypeus impunctate, shiny; gena with micropunctures, shiny; pubescence whitish. Mesoscutum nearly impunctate, shiny; pubescence similar to that on head. Abdomen shiny; terga 1-3 with irregular microsculpture, posterior margin of tergum 8 with large triangular membranous medial depression. Genitalia: as in Figs 103B-D.

Length: 5.5-6.0 mm.

#### **Female**

Unknown.

#### **Etymology**

This species is named after its collection locality, the Brandberg Massif in Namibia.

## Distribution

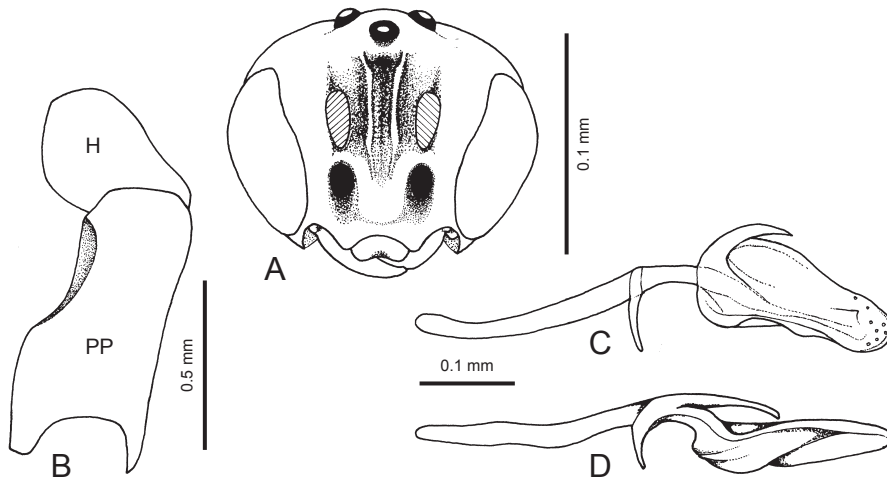
Namibia (Erongo Region) (Fig. 176).

## Ecology and habitat

The Brandberg Massif (Fig. 16) is located in the Nama Karoo Biome (for further details see *Arge meyi* and Fig. 80). The flight season is not well known, the specimens were sampled in March.

## Remarks

Variability in colour pattern is scarcely noticeable. Tergum 5 may be entirely yellow and the pronotum may have a small ventro-lateral blackish spot.



**Fig. 103. A-D.** *Pampsilota brandbergensis*. **A.** Head (frontal aspect). **B.** Harpe and parapenis (right, ventral aspect). **C.** Penis valve (left, lateral aspect). **D.** Penis valve (right, ventral aspect).

## *Pampsilota luederitzensis* Koch, 2006

*Pampsilota luederitzensis* Koch, 2006b: 224. ♀. Type locality: Scorpion Hills, Lüderitz, Namibia (NNIC).

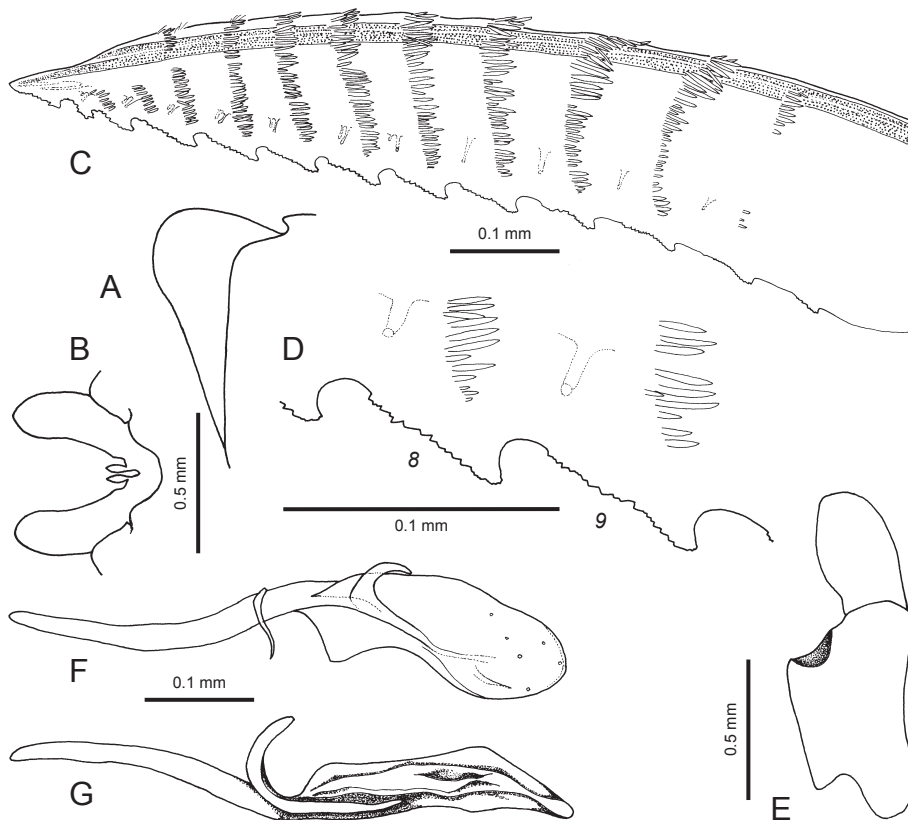
## Female

Head and antenna black; apical half of mandible brown, gradually becoming blackish apically. Thorax black. Legs black; tibiae whitish, apically slightly brownish, tarsi brownish. Wings hyaline; fore wing with very small, slightly infuscate substigmatal spot; intercostal area slightly flavescent-hyaline, costa light brown with basal half



white, stigma, subcosta and rest of venation light brown. Abdomen yellowish brown; terga 1,2 black, terga 3-5 with small light brown medial spot, tergum 5 additionally with light brown posterior margin, terga 6,7 brown; ventral surface of abdomen brown with yellow longitudinal medial strip.

Head parallel-sided behind eyes. Antenna 1.6× as long as maximum head width; flagellum scarcely enlarged towards apex, quadrangular in cross section, somewhat flattened toward apex, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes slightly converging downwards. Anterior margin of clypeus shallowly circularly emarginate medially, supraclypeal area roundly protruding up to start of interantennal carinae, interantennal carinae sharply ridged between antennae, converging downwards, extending about one third of way to clypeus.



**Fig. 104. A-G. *Pampsilota luederitzensis*.** A. Sawsheath (lateral aspect). B. Sawsheath (dorsal aspect). C. Lancet. D. Serrulae 8-9. E. Harpe and parapenis (right, ventral aspect). F. Penis valve (left, lateral aspect). G. Penis valve (right, dorsal aspect).

Vertex, frons, gena, clypeus and supraclypeal area sparsely micropunctate, shiny. Pubescence whitish. Mesoscutum nearly impunctate, shiny; pubescence similar to that on head; lateral lobe of mesoscutum with narrow glabrous strip. Sawsheath: Figs 104A, B. Lancet with about 13 serrulae (Figs 104C, D).

Length: 6.0 mm.

**Male** (Fig. 105A)

Generally colouration similar to that of female. Head and mesoscutum with slight metallic lustre; anterior margin of labrum brownish, apex of mandible dark brown. Tarsi light brown. Costa of fore wing almost entirely whitish. Abdomen blackish, tergum 3 yellowish with light brown median spot, terga 4,7 light brown, distal terga yellow; sternum 7,9 yellow.

Antenna 1.7× as long as maximum head width; apex of flagellum flattened, interior surface with sharply compressed longitudinal carina. Other features as for female. Genitalia: Figs 104E-G.

Length: 5.3 mm.



**Fig. 105.** *Pampsilota luederitzensis*, habitus, male. Dorsal aspect.  
(Photo by A.D. Liston)

## Etymology

The species is named after Lüderitz, the district where the specimens were collected.

## Distribution

Namibia (Karas Region) (Fig. 176).

## Ecology and habitat

*Pampsilota luederitzensis* seems to be endemic to the Succulent Karoo Biome of the winter rainfall zone. The collection localities Scorpion Hills and Rosh Pinah (Fig. 106) are considered by Burke (2004) and Mendelsohn *et al.* (2002) as hotspots of plant endemism and plant diversity. The flight season is not well known, the specimens were sampled in August.

## Remarks

*Pampsilota luederitzensis* is the second known species of this genus in the Namibian sawfly fauna together with *P. brandbergensis* Koch, 2006a.

The yellow pronotum, the entirely yellow terga and the entirely black legs of *P. brandbergensis* immediately distinguish this species from *P. luederitzensis*.



**Fig. 106.** Scorpion Hills near Rosh Pinah in the Succulent Karoo Biome (southern Namibia), the habitat of *Pampsilota luederitzensis* and *Triarge karoensis*. (Photo by F. Koch)

## Genus *Triarge* Forsius, 1931

*Triarge* Forsius, 1931: 19. Type species: *Triarge plumbea* Forsius, 1931, by original designation. <http://www.waspweb.org/Tenthredinoidea/Argidae/Arginae/Triarge/index.htm>

### Description

Antenna 3-segmented (Fig. 40A), scape and pedicel short, flagellum very long and unsegmented, in females subclavate segment. Clypeus not clearly separated by an epistomal suture from the supraclypeal area (Fig. 107B); interantennal area with a pair of more or less sharply ridged interantennal carinae (Fig. 107B). Hind tibia with a preapical spine (Fig. 40C); tarsal claws simple (Fig. 44E). Fore wing with radial crossvein (2r) absent, crossvein 2r-m absent, thus there are three cells (1R1, a long 2Rs, 3Rs), anal cell (2A) long petiolate (1A), basal cell (1A) nearly closed (Fig. 41L); hind wing with closed, appendiculated radial cell (R1), with anal cell (A) and with two middle cells (Rs and M) present (Fig. 41L). Tergum 1 with narrow, deep median split. Sawsheath in dorsal view conspicuously forcipated.

The colouration of the species is completely black, sometimes with a slight blue metallic lustre (with a single exception, *T. flavoapicalis* that has a yellow abdominal apex).

Ranging from 5.0 to 7.5 mm in length.

### Host plants

Nothing is known about their host plants.

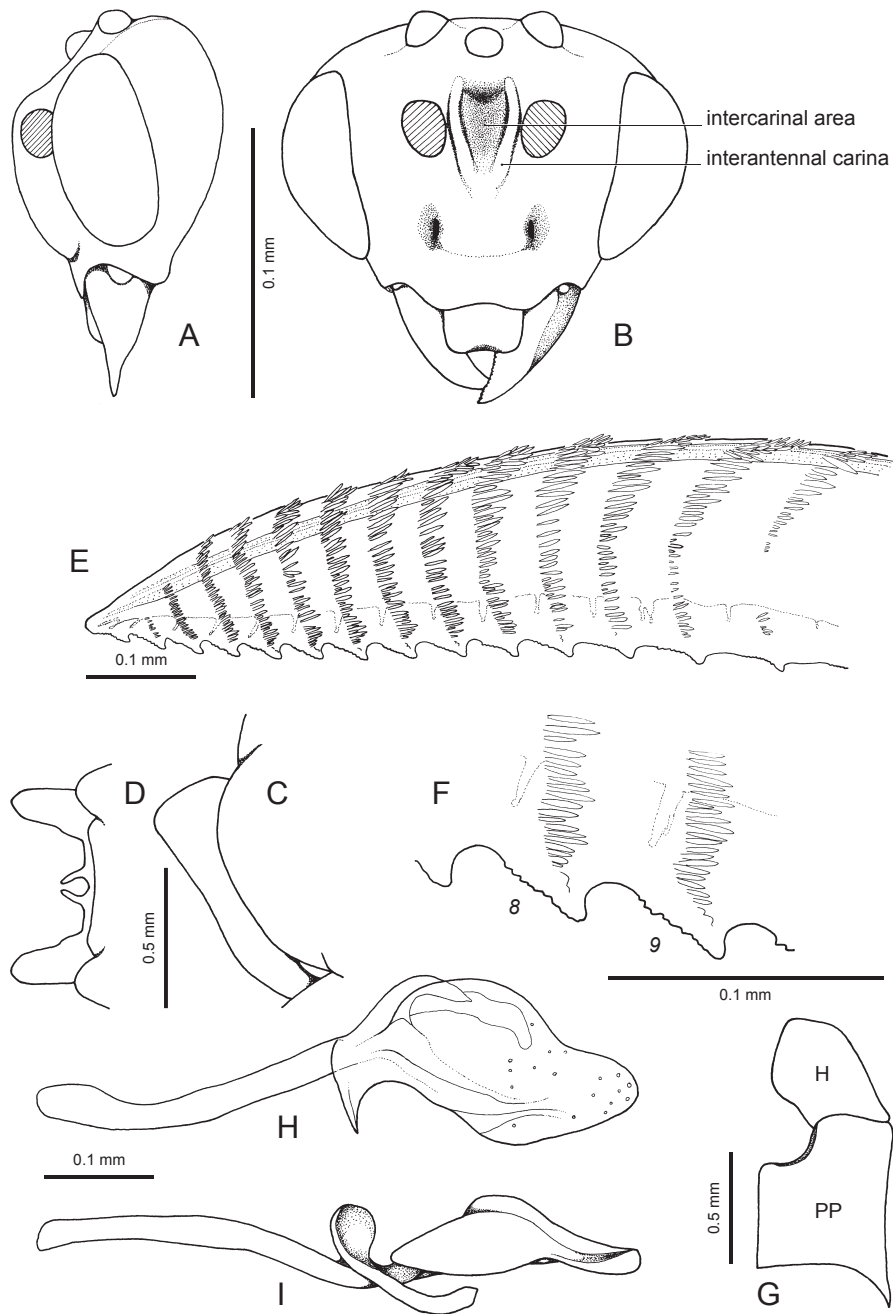
### Remarks

The species of the genus *Triarge* are known only from the winter rainfall zone of southern Africa, and inhabit very small ranges. Their habitats belong to the Succulent Karoo Biome and Fynbos Biome. In total 9 species are known, which were revised by Koch (2006b, 2010a). *Triarge* species are distinguished from *Arge* by possessing the radial cell 1R1 and the long radial sector 2Rs (1Rs fused with 2Rs; Fig. 41L), as well as in their nearly entirely black colouration.

Differentiation of the females, based on the combination of both the shape of the serrulae and the shape of the sawsheath, is clearly easier than for the males. The genitalia of the males show only a few distinct interspecific differences. Not all of the *Triarge* species are imaged, because they do not differ externally to any considerable extent.

### *Triarge citrusdalensis* Koch, 2006

*Triarge citrusdalensis* Koch, 2006b: 227. ♀. Type locality: Citrusdal Distr[ict] (Western Cape Province, South Africa) (SAMC).



**Fig. 107. A-I.** *Triarge citrusdalensis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lance. **F.** Serrulae 8-9. **G.** Harpe and parapenis (right, ventral aspect). **H.** Penis valve (left, lateral aspect). **I.** Penis valve (right, dorsal aspect).

## **Female**

Head and antenna black; apical half of mandible light reddish brown. Thorax black. Legs black; apices of femora very narrowly light brown, fore tibia light brown, basal third of mid and hind tibia light brown gradually becoming brown apically. Wings very slightly infusate; fore wing with very small, slightly infusate substigmatal spot; costa, stigma, subcosta, and rest of venation brown. Abdomen black with slight blue metallic lustre.

Head slightly narrowed behind eyes. Antenna 1.5× as long as maximum head width; flagellum very slightly enlarged towards apex, and quadrangular in cross section, ventral surface with moderately compressed longitudinal carina, gradually disappearing apically, other longitudinal carinae more weakly compressed. Eyes very slightly converging downwards, anterior margin of clypeus shallowly circularly emarginate, supraclypeal area roundly protruding up to start of interantennal carinae (Fig. 107A), interantennal carinae sharply ridged between antennae, extending about one quarter of way to clypeus (Fig. 107B).

Vertex, frons, gena, clypeus, and supraclypeal area with scattered micropunctures, shiny; pubescence whitish. Mesoscutum scarcely micropunctate, shiny, and pubescent similarly to head. Abdomen shiny, terga with transverse microsculpture. Sawsheath: Figs 107C, D. Lancet with about 15 serrulae (Figs 107E, F).

Length: 7.0 mm.

## **Male (Figs 108A, B)**

Colouration generally similar to that of female. Tibiae brown, basal third of mid and hind tibia and anterior surface of hind tibia downward to apex somewhat paler. Head slightly narrowed behind eyes. Antenna 2.5× as long as maximum head width; third antennomere not enlarged towards apex, ventral surface with conspicuously compressed longitudinal carina. Head and thorax more micropunctate than in female. Other features as for female. Genitalia: Figs 107G-I.

Length: 6.5 mm.

## **Etymology**

This species is named after its collection locality, Citrusdal.

## **Distribution**

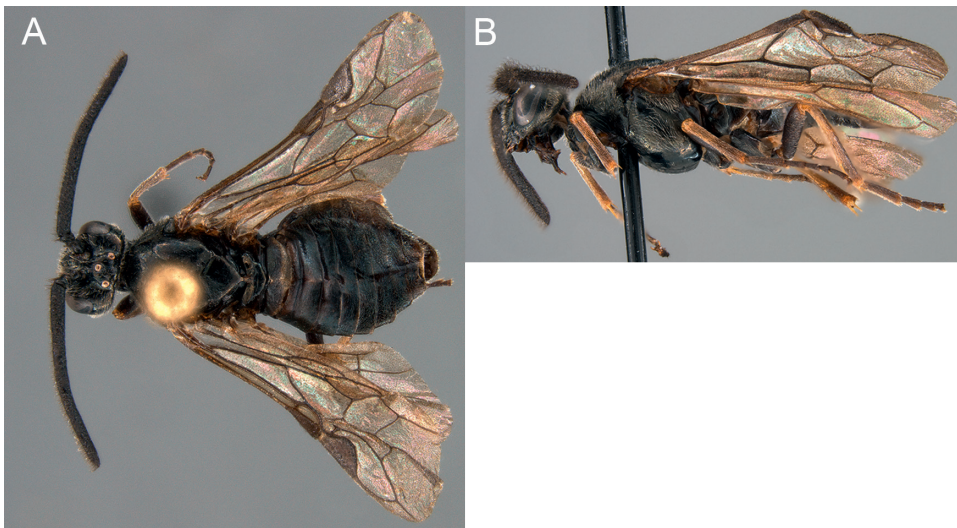
South Africa (Western Cape Province) (Fig. 177).

## **Ecology and habitat**

The habitat is located in the Mountain Fynbos vegetation type of the winter rainfall zone. The flight season is not well known, only a few specimens were collected from September to November.

## Remarks

In its morphological structures and sculpture, especially in the head *T. citrusdalensis* could be confused with *T. nigra*, but in dorsal view the apices of sawsheath of *T. citrusdalensis* are more swollen (Figs 107D, 119D) and the serrulae are rounded at the anterior edge, whereas in *T. nigra* the serrulae are pointed on the anterior edge with one additional subbasal tooth (Fig. 119F). Furthermore the tibiae of *T. nigra* are darker. The shape of serrulae in *T. citrusdalensis* is most similar to *T. winterhoekensis*. However, in dorsal view the serrulae are flatter in *T. winterhoekensis* (Figs 122E, F), the shape of its sawsheath (Figs 122C, D) is distinctly distinguishable, and the legs are almost entirely black.



**Fig. 108. A-B.** *Triarge citrusdalensis*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

### ***Triarge driehoekensis* Koch, 2010**

*Triarge driehoekensis* Koch, 2010a: 99. ♀. Type locality: Driehoek, Cederberg, Western Cape Province, South Africa (SAMC).

#### **Female** (Figs 109A, B)

Head and antenna black; apical half of mandible light brown gradually becoming dark reddish apically. Thorax black. Legs black; apices of femora very narrowly light brown, anterior surface of fore and hind tibia light brown, basal third of hind tibia light brown, anterior surface downwards to the preapical spine dirty whitish. Wings hyaline, apical half very slightly infuscate; fore wing with very small, smoky

substigmal spot; costa, stigma, subcosta and rest of venation black. Abdomen black.

Head scarcely narrowed behind eyes. Antenna 1.5× as long as maximum head width; flagellum very slightly enlarged towards apex, triangular in cross section, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes slightly converging downwards. Anterior margin of clypeus very shallowly emarginate, supraclypeal area very gently rounded up to start of interantennal carinae (Fig. 110A), interantennal carinae sharply ridged between antennae, converging downwards, extending about one third of way to clypeus (Fig. 110B).

Vertex, frons, gena and clypeus with scattered micropunctures, shiny; supraclypeal area slightly shallowly rugosely sculptured, shiny; pubescence whitish. Mesoscutum scarcely micropunctate, shiny and pubescence similar to head. Abdomen shiny; terga irregularly microsculptured. Sawsheath: Figs 110C, D. Lancet with about 14 serrulae (Figs 110E, F).

Length: 6.7 mm.

#### **Male**

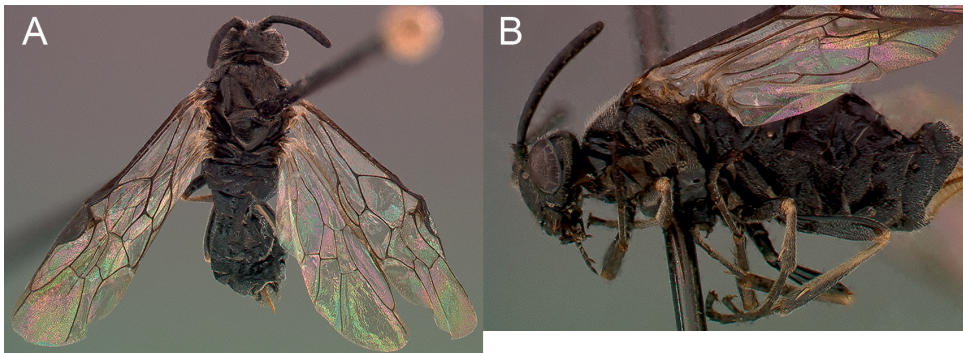
Unknown.

#### **Etymology**

This species was named after its collection locality, Driehoek, an area in the central Cederberg Mountains.

#### **Distribution**

South Africa (Western Cape Province) (Fig. 177).



**Fig. 109. A-B.** *Triarge driehoekensis*, habitus, female (holotype). **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

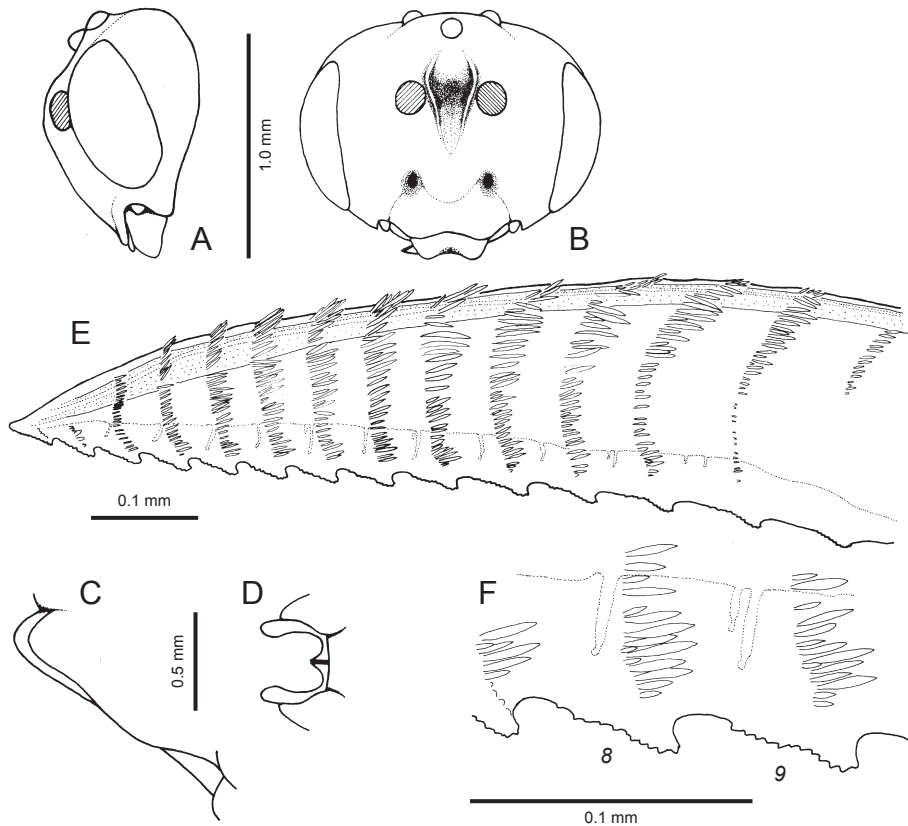


### Ecology and habitat

The collection locality (Fig. 111) belongs to the Mountain Fynbos vegetation type of the winter rainfall zone. The flight season is not well known. The species is only represented by the holotype, which was collected in September.

### Remarks

In its morphological structures and sculpture *T. driehoekensis* could be confused with *T. namaquaensis*, but in lateral view the sawsheath of *T. namaquaensis* is narrowly rounded at the apex (Fig. 116C), and in dorsal view the sawsheath is more broadly forcipated (Fig. 116D). Furthermore, the serrulae of *T. namaquaensis* are flat and hook-like (Figs 116E, F).



**Fig. 110. A-F.** *Triarge driehoekensis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9.



**Fig. 111.** The landscape of Driehoek in the Cederberg Mountains (Western Cape Province); the habitat of *Triarge driehoekensis*. (Photo by F. Koch)

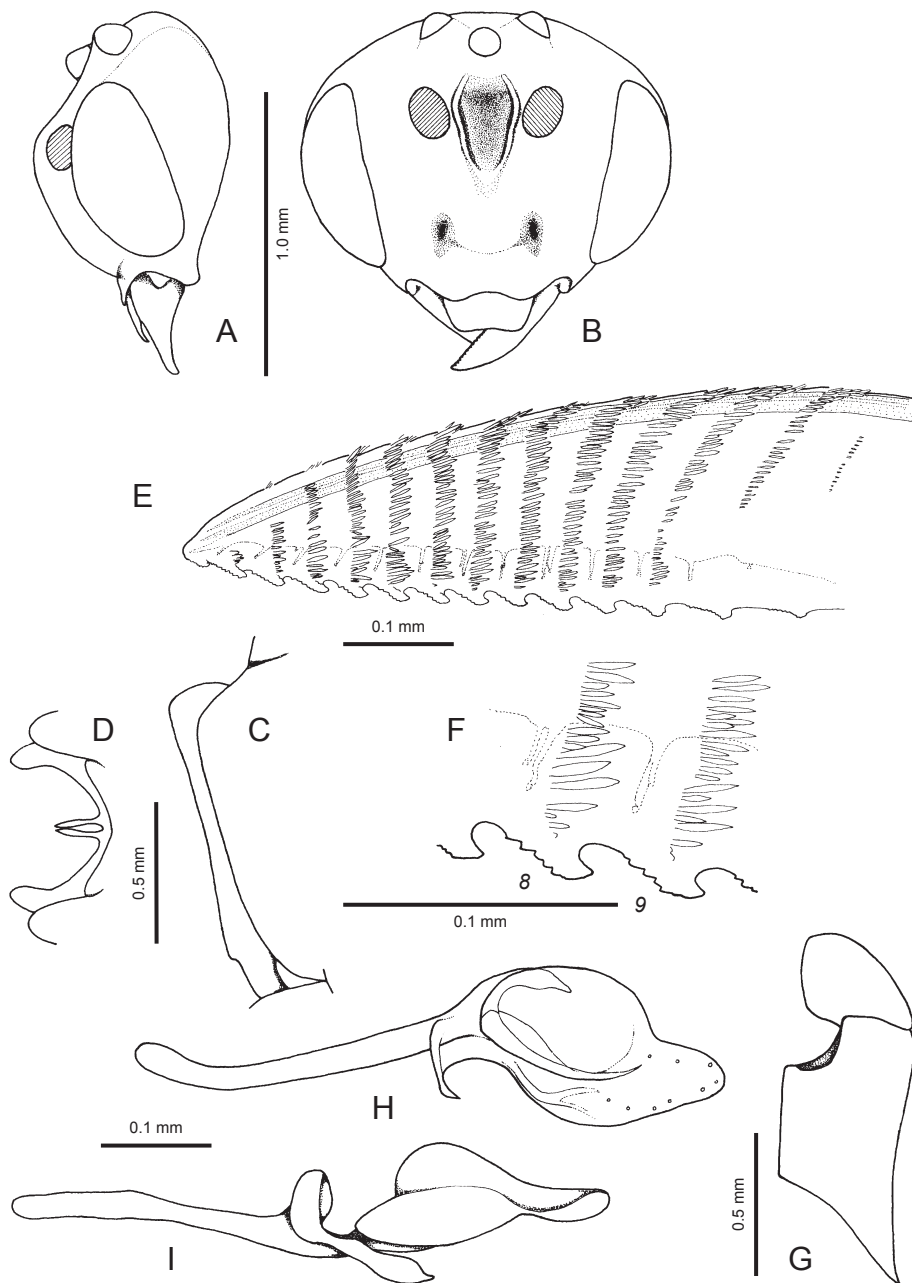
***Triarge flavoapicalis* Koch, 2006**

*Triarge flavoapicalis* Koch, 2006b: 226, 228. ♀. Type locality: Bowesdorp, Namaqualand (Northern Cape Province, South Africa) (SAMC).

**Female**

Head black with slightly copper lustre; labrum brown, apical half of mandible light brown gradually becoming dark reddish apically; antenna black. Thorax black. Legs black; apices of femora very narrowly light brown, basal half of fore tibia light brown becoming dark brown apically, basal third of mid and hind tibia yellowish becoming dark brown apically, anterior surface of hind tibia yellowish downwards to the preapical spine. Wings slightly flavescent-hyaline throughout; fore wing with very small, slightly infuscate substigmal spot; costa yellowish, stigma, subcosta and rest of venation light brown. Abdomen black; tergum 8 laterally, terga 9, 10 and sawsheath yellow.

Head narrowed behind eyes. Eyes converging below. Anterior margin of clypeus shallowly circularly emarginate, supraclypeal area roundly protruding up to base



**Fig. 112. A-I.** *Triarge flavoapicalis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9. **G.** Harpe and parapenis (right, ventral aspect). **H.** Penis valve (left, lateral aspect). **I.** Penis valve (right, dorsal aspect).

of interantennal carinae (Fig. 112A), interantennal carinae sharply ridged between antennae, converging downwards, extending about half way to clypeus (Fig. 112B). Vertex, frons, gena, clypeus and supraclypeal area scarcely punctate, shiny; pubescence whitish. Mesoscutum nearly impunctate, shiny; pubescence similar to that on head. Abdomen shiny; terga with transverse microsculpture. Sawsheath: Figs 112C, D. Lancet with about 14 serrulae (Figs 112E, F).

Length: 6.3 mm.

#### **Male** (Figs 113A, B)

Colouration generally similar to that of female. Tibiae pale yellow, hind tibia becoming darker apically, tarsi brown. Tergum 8, sterna 5,6 medio-apically and sterna 7-9 entirely yellow. Antenna 2.2× as long as maximum head width; flagellum not enlarged towards apex, triangular in cross section, interior surface with distinctly compressed longitudinal carina, apex slightly flattened. Other features as for female. Genitalia: Figs 112G-I.

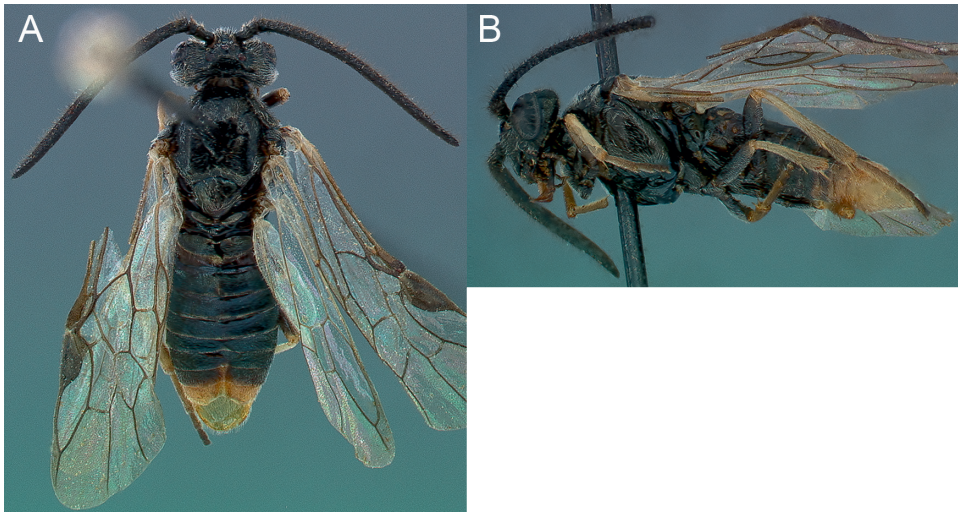
Length: 6.3 mm.

#### **Etymology**

The name of this species refers to the yellow apex of the abdomen.

#### **Distribution**

South Africa (Northern Cape Province) (Fig. 176).



**Fig. 113. A-B.** *Triarge flavoapicalis*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Ecology and habitat

The collection locality belongs to the Succulent Karoo Biome of the winter rainfall zone. The flight season is not well known, only single records exist from September.

## Remarks

*Triarge flavoapicalis* differs conspicuously from the other known species of this genus in its yellow apex of the abdomen. The antennae of the female are missing and therefore not described.

## *Triarge karoensis* Koch, 2006

*Triarge karoensis* Koch, 2006b: 226, 229. ♀. Type locality: Scorpion Hill, Lüderitz, Namibia (NNIC).

## Female

Head and antenna black; apical half of mandible light brown, gradually becoming dark reddish apically. Thorax black. Legs black; apices of femora very narrowly light brown, basal half of tibiae yellowish, gradually becoming brown apically, anterior surface of hind tibia dirty whitish, downwards from the preapical spine brown. Wings subhyaline; fore wing with very small, infuscate substigmal spot; costa, stigma, subcosta and rest of venation brown. Abdomen black.

Head slightly narrowed behind eyes. Antenna 1.4× as long as maximum head width; flagellum very slightly enlarged towards apex, triangular in cross section, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes very slightly converging downward. Anterior margin of clypeus very shallowly circularly emarginate, supraclypeal area flatly rising up to base of interantennal carinae (Fig. 114A), interantennal carinae sharply ridged between antennae, converging downwards, ending about one third distance to clypeus (Fig. 114B).

Vertex, frons, gena, clypeus, and supraclypeal area nearly impunctate, shiny; pubescence white. Mesoscutum micropunctate and pubescent similarly to head. Abdomen moderately shiny; terga with transverse microsculpture. Sawsheath: Figs 114C, D. Lancet about 13 serrulae (Figs 114E, F).

Length: 6.3 mm.

## Male

Unknown.

## Etymology

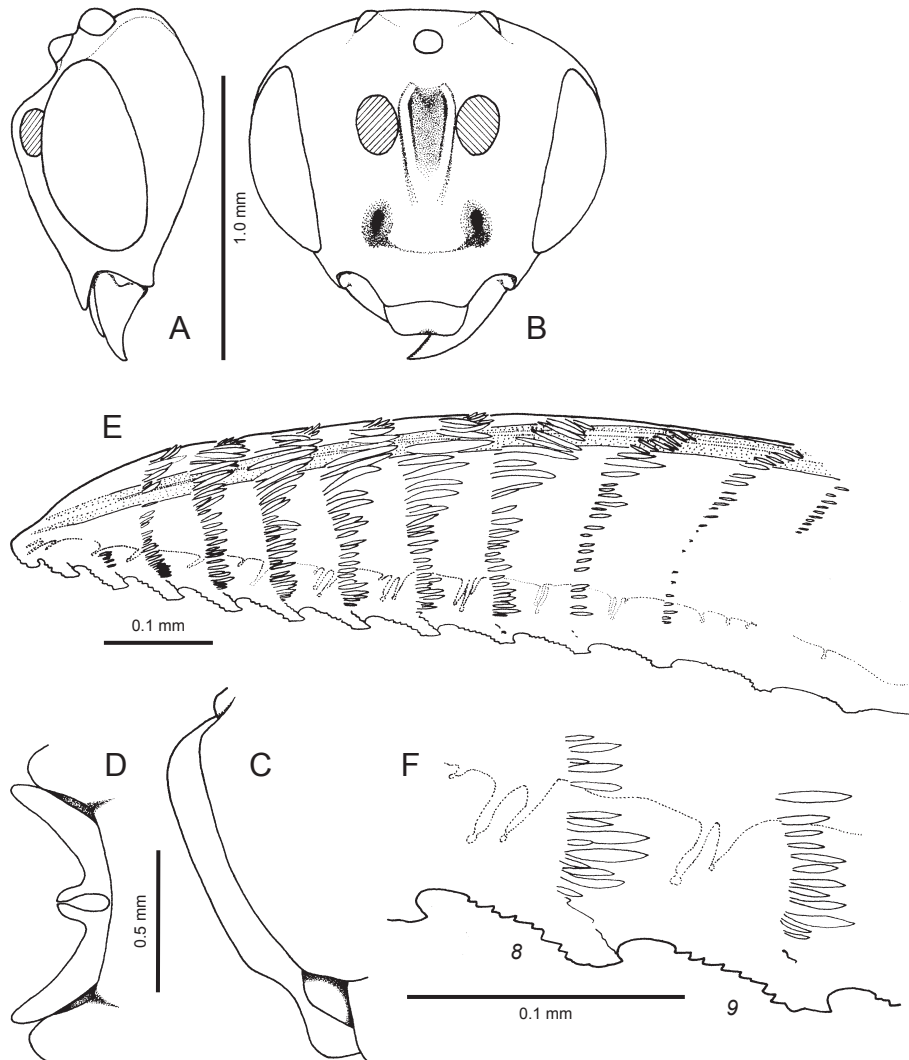
The species is named after the Succulent Karoo Biome of its habitat.

## Distribution

Namibia (Karas Region) (Fig. 177).

## Ecology and habitat

The habitat of the holotype is located in the Succulent Karoo Biome of the winter rainfall zone. The holotype was found in August.



**Fig. 114. A-F.** *Triarge karoensis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9.

## Remarks

In dorsal view the apical gap of the forcipated sheath is very wide, similar to *T. mosselbayensis* (Fig. 115D). The tibiae of *T. karooensis* are more or less yellowish whereas in *T. mosselbayensis* the tibiae are black. Further differences between both species are discussed under *T. mosselbayensis*.

## *Triarge mosselbayensis* Koch, 2006

*Triarge mosselbayensis* Koch, 2006b: 226, 231. ♀. Type locality: Mossel Bay, Western Cape Province, South Africa (UZMT).

## Female

Head and antenna black; apical half of mandible reddish brown. Thorax black. Legs black; apices of femora very narrowly light brown. Wings hyaline; apical half slightly greyish-hyaline infused; fore wing with very small, slightly infuscate substigmatal spot; costa, stigma, subcosta, and rest of venation brown. Abdomen black.

Head slightly narrowed behind eyes. Antenna 1.6× as long as maximum head width; flagellum very slightly enlarged towards apex, triangular in cross section, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes converging downwards. Anterior margin of clypeus very shallowly circularly emarginate, supraclypeal area nearly flatly rising up to start of interantennal carinae (Fig. 115A), interantennal carinae sharply ridged between antennae, converging downwards, extending about one third way to clypeus (Fig. 115B).

Vertex, frons, gena, clypeus and supraclypeal area nearly impunctate, shiny; pubescence greyish. Mesoscutum nearly impunctate, shiny, with pubescence similar to head. Abdomen moderately shiny; terga with distinctly contiguous micropunctures. Sawsheath: Figs 115C, D. Lancet with about 15 serrulae (Figs 115E, F).

Length: 6.0 mm.

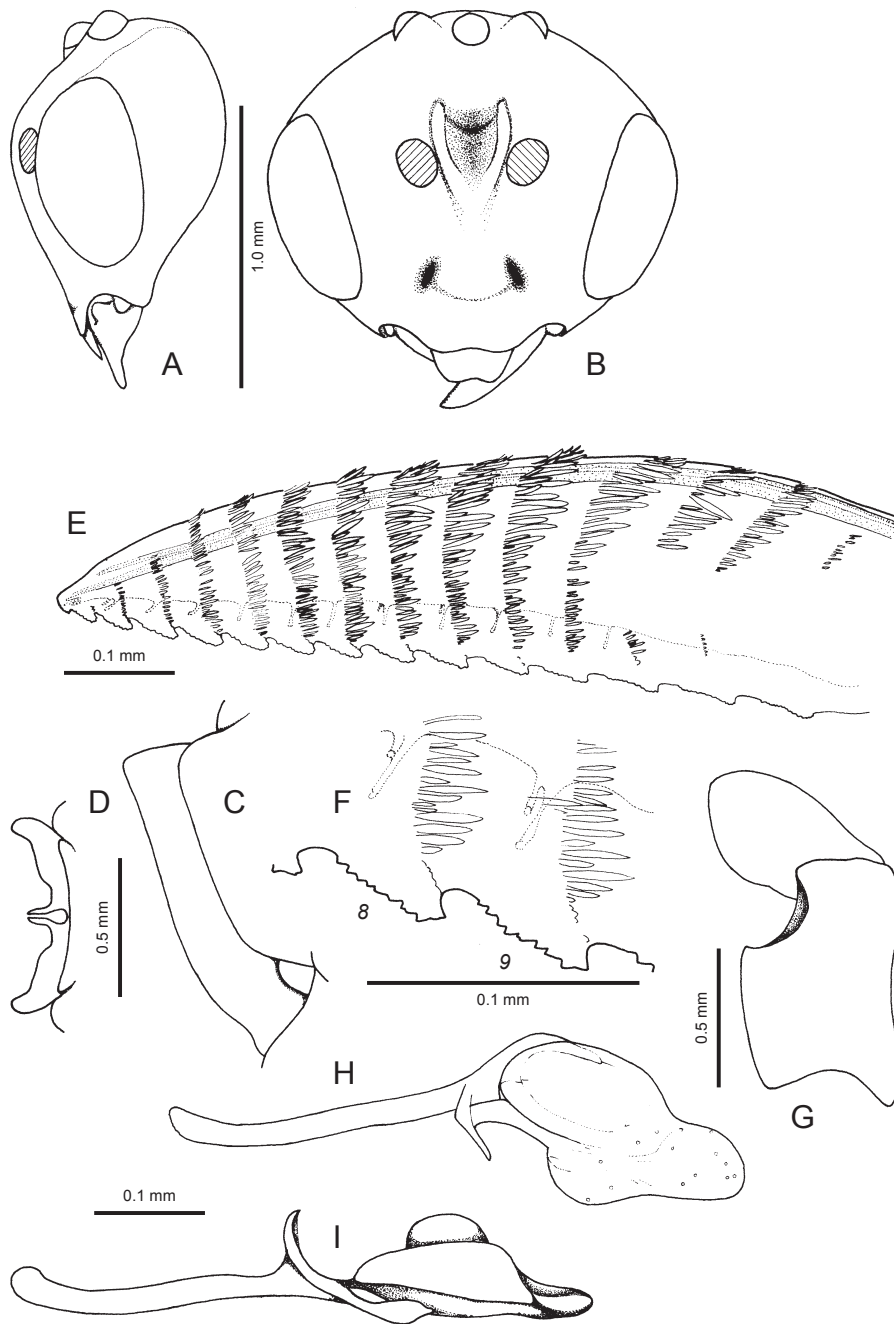
## Male

Colouration similar to that of female, except for brown tibiae. Other features as for female. Genitalia: Figs 115G-I.

Length: 6.0 mm.

## Etymology

This species is named after its collection locality, Mossel Bay, Western Cape Province.



**Fig. 115. A-I.** *Triarge mosselbayensis*: **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lance. **F.** Serrulae 8-9. **G.** Harpe and parapenis (right, ventral aspect). **H.** Penis valve (left, lateral aspect). **I.** Penis valve (right, dorsal aspect).



## Distribution

South Africa (Western Cape Province) (Fig. 177).

## Ecology and habitat

The habitat of this species belongs to the Coastal Fynbos vegetation type of the winter rainfall zone. The flight season is poorly known, only two records are known from the type locality in May and August.

## Remarks

The holotype and paratype of *T. mosselbayensis* were the paratypes of *T. plumbea*. The differential diagnosis with *T. plumbea* is discussed under the treatment of the latter species. With the nearly flatly arising supraclypeal area and the shape of the sawsheath in dorsal view, *T. mosselbayensis* is similar to *T. karooensis* (Fig. 114D), but differs distinctly in the pointed apex of the sawsheath in lateral view and in the shape of the lancet including the serrulae, which are rather flattened in *T. karooensis* (Figs 114E, F).

### *Triarge namaquaensis* Koch, 2006

*Triarge namaquaensis* Koch, 2006b: 226, 232. ♀. Type locality: Steinkopf, Kl.[ein] Namaland (Northern Cape Province, South Africa) (MFN).

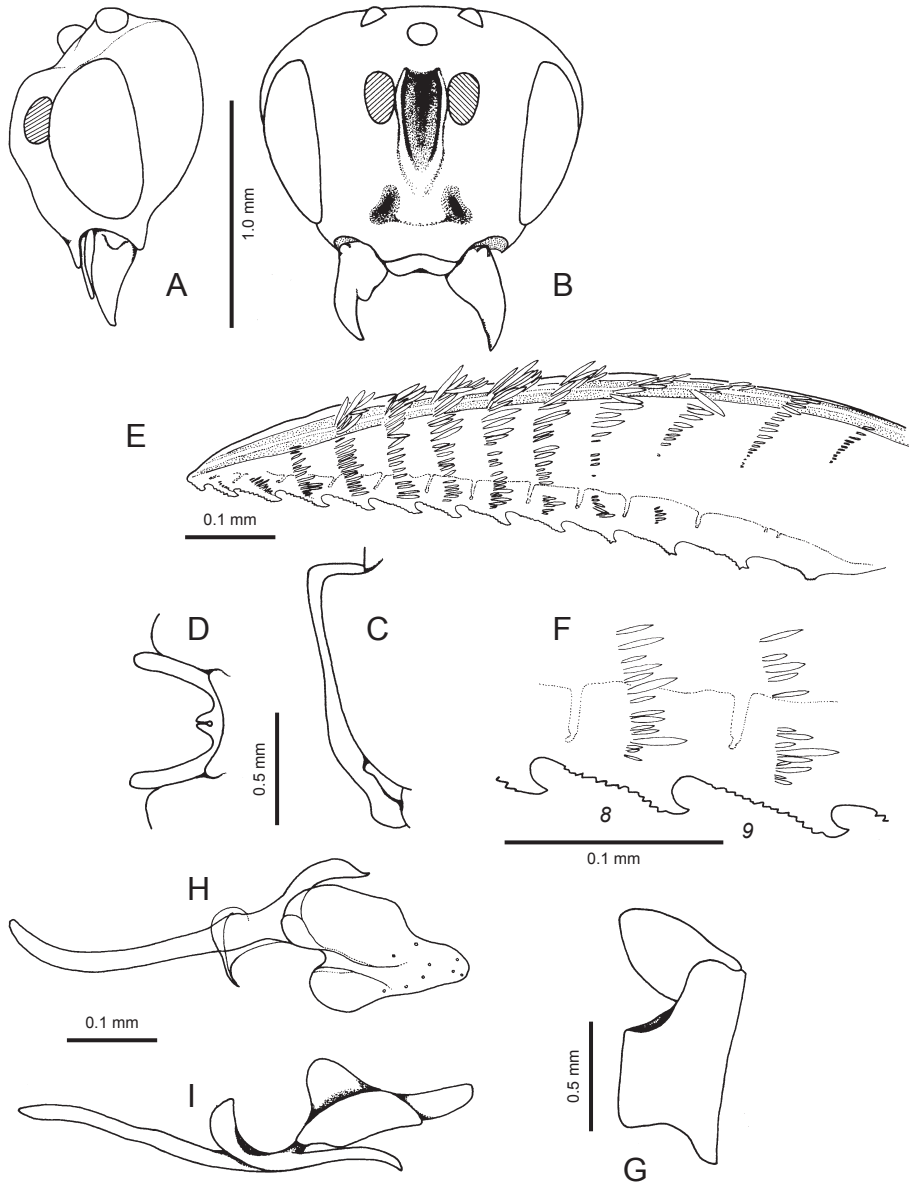
## Female

Head and antenna black; apical half of mandible light brown, gradually becoming dark reddish; flagellum apically dark brown. Thorax black. Legs black; apices of femora very narrowly light brown, basal half of tibiae fuscous, anterior surface of mid and hind tibia dirty whitish, downwards from the preapical spine blackish. Wings subhyaline; fore wing with very small, slightly infuscate substigmal spot; costa light brown, basal half and anterior margin whitish, stigma, subcosta and rest of venation brown. Abdomen black.

Head very slightly enlarged behind eyes. Antenna 1.2× as long as maximum head width; flagellum enlarged towards apex, quadrangular in cross section, ventral surface with slightly compressed longitudinal carina gradually disappearing apically, other longitudinal carinae more weakly compressed. Eyes very slightly converging downwards. Anterior margin of clypeus very shallowly triangularly excised, supraclypeal area very flatly rounded up to base of interantennal carinae (Fig. 116A), interantennal carinae sharply ridged between antennae, and converging downwards, extending about half way to clypeus (Fig. 116B).

Vertex, frons, gena, clypeus, and supraclypeal area sparsely micropunctate, shiny; pubescence white. Mesoscutum micropunctate and pubescence similar to head. Abdomen shiny; terga with transverse microsculpture. Sawsheath: Figs 116C, D. Lancet with about 13 serrulae (Figs 116E, F).

Length: 5.3 mm.



**Fig. 116. A-I.** *Triarge namaquaensis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9. **G.** Harpe and parapenis (right, ventral aspect). **H.** Penis valve (left, lateral aspect). **I.** Penis valve (right, dorsal aspect).

### Male

Colouration similar to that of female. Tibiae light brown becoming blackish apically. Wings slightly infuscate; costa, stigma, subcosta, and rest of venation brown. Terga with slight blue metallic lustre.

Head behind eyes slightly narrowed. Antenna 2.0× as long as maximum head width; flagellum not enlarged, somewhat flattened towards apex, ventral carina distinctly compressed. Other features as for female. Genitalia: Figs 116G-I.

Length: 5.0 mm.

### Etymology

This species is named after the Namaqualand, the landscape around the locality of its origin.

### Distribution

South Africa (Northern Cape Province) (Fig. 177).



**Fig. 117.** Habitat of *Triarge namaquaensis* (Succulent Karoo Biome) in the centre of the Namaqualand near Kamieskroon (Northern Cape Province).  
(Photo by F. Koch)

### Ecology and habitat

The habitat (Fig. 117) belongs to the Succulent Karoo Biome of the winter rainfall zone. The flight season is not well known. The specimens were collected in June and September.

### Remarks

Intraspecific variability of males is visible in the colouration of the sternum 9 which varies from black to light brown. Furthermore, the posterior margin of sternum 9 may be shallowly emarginated medially. The female of *T. namaquaensis* is clearly distinguished from other species in the sharp, hook-like serrulae (Figs 116E, F). The shape of the penis valve is similar to that of *T. mosselbayensis* and the differential diagnosis is given under that species.

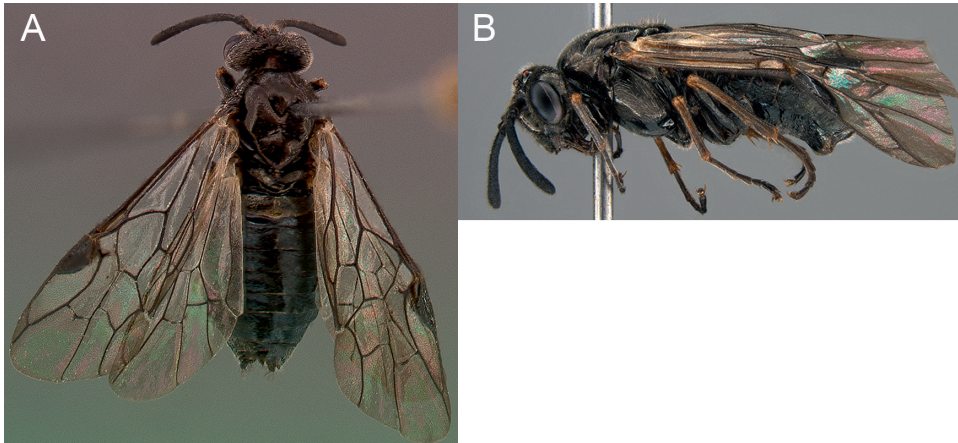
### *Triarge nigra* Koch, 2006

*Triarge nigra* Koch, 2006b: 227, 233. ♀. Type locality: Pakhuis Pass, C[ape], P[rovince] (Western Cape Province, South Africa) (SAMC).

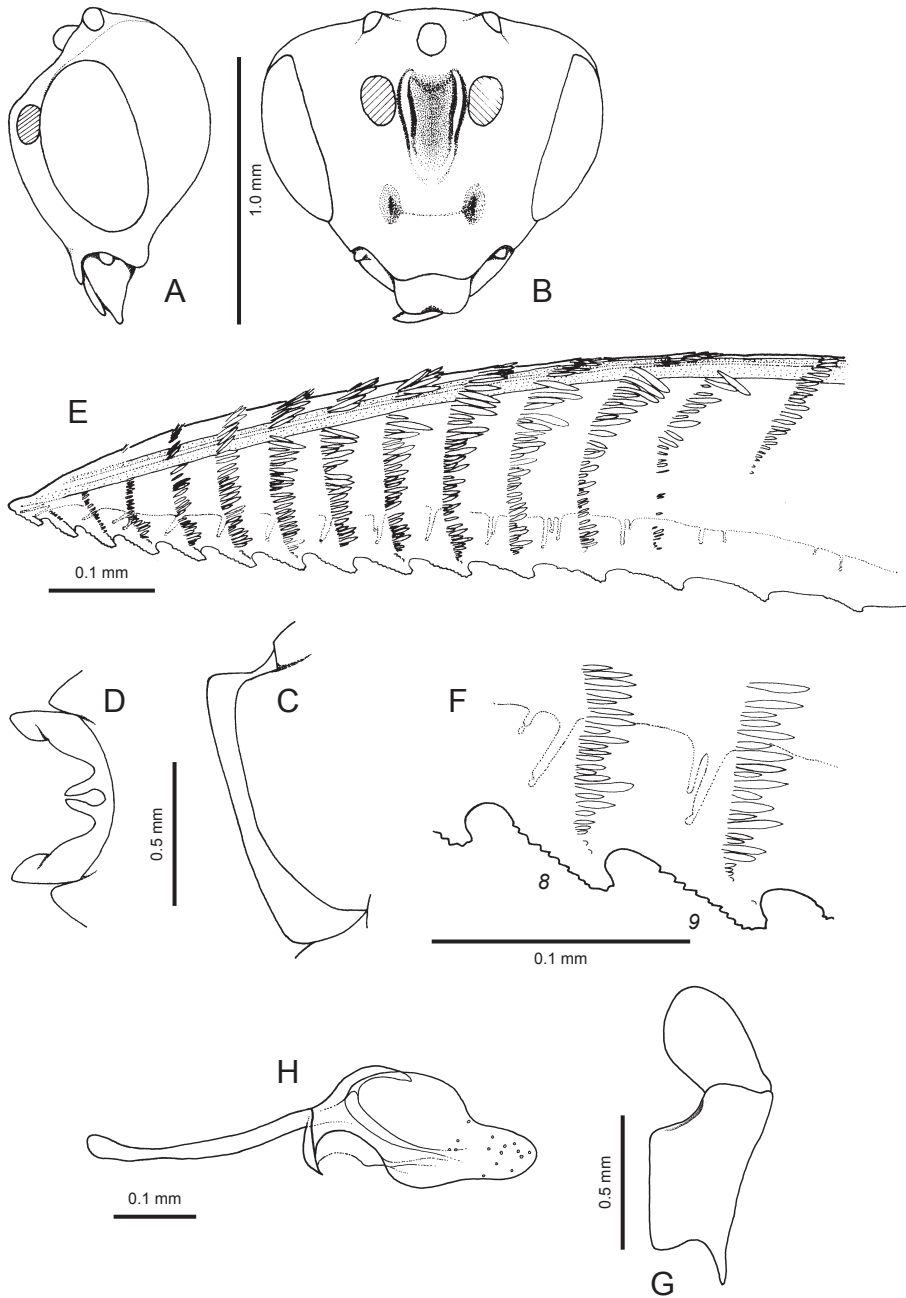
### Female (Figs 118A, B)

Head and antenna black; apical half of mandible dark reddish brown. Thorax black. Legs black; apices of femora very narrowly light brown, basal third of hind tibia light brown. Wings hyaline, in apical half very slightly infuscate; fore wing with very small, slightly infuscate substigmatal spot; costa, stigma, subcosta, and rest of venation brown. Abdomen black with slight blue metallic lustre.

Head slightly narrowed behind eyes. Antenna 1.3× as long as maximum head width; flagellum slightly enlarged towards apex, triangular in cross section, ventral



**Fig. 118. A-B.** *Triarge nigra*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)



**Fig. 119. A-H. *Triarge nigra*.** **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lanceet. **F.** Serrulae 8-9. **G.** Parapenis and harpe (right, ventral aspect). **H.** Penis valve (left, lateral aspect).

surface with moderately compressed longitudinal carina, other longitudinal carinae more weakly compressed. Eyes slightly converging downwards. Anterior margin of clypeus very shallowly circularly emarginate, supraclypeal area very flatly rounded up to start of interantennal carinae (Fig. 119A), interantennal carinae sharply ridged between antennae, scarcely converging downwards, extending about one quarter of way to clypeus (Fig. 119B).

Vertex, frons, gena, clypeus, and supraclypeal area scattered micropunctate, shiny; pubescence white. Mesoscutum scarcely micropunctate, shiny, with pubescence similar to head. Abdomen shiny; terga contiguously micropunctate on basal half and with transverse microsculpture on apical half. Sawsheath: Figs 119C, D. Lancet with about 15 serrulae (Figs 119E, F).

Length: 6.8-7.5 mm.

### Male

Colouration similar to that of female. Costa, stigma, subcosta, and rest of venation veins dark brown. Terga with slight blue metallic lustre.

Head behind eyes slightly narrowed. Antenna 2.5× as long as maximum head width; flagellum not enlarged, flattened towards apex, ventral carina distinctly compressed. Other features as for female. Genitalia: Figs 119G, H.



**Fig. 120.** The habitat (Sandstone Fynbos) of *Triarge nigra* in the Cederberg Mountains near Clanwilliam (Western Cape Province). (Photo by F. Koch)

Length: 5.5 mm.

### **Etymology**

The specific name refers to the almost entirely black body of the imago.

### **Distribution**

South Africa (Western Cape Province) (Fig. 176).

### **Ecology and habitat**

The habitats are located in the Mountain Fynbos vegetation type of the winter rainfall zone (Fig. 120). The flight season is not well known. The specimens were collected in August and September.

### **Remarks**

In its morphological structures *T. nigra* could be confused with *T. citrusdalensis*. The differential diagnosis is discussed under the latter species.

The shape of serrulae in *T. nigra* is most similar to *T. mosselbayensis* (Figs 115E, F) and *T. plumbea* (Figs 121E, F), but in these species the serrulae are flatter and in dorsal view the shape of their sawsheaths (Figs 115D, 121D) is distinctly different.

The male of this species is described here for the first time.

## ***Triarge plumbea* Forsius, 1931**

*Triarge plumbea* Forsius, 1931: 19. ♀. Type locality: Ceres, Cape Province (Western Cape Province, South Africa) (BMNH).

### **Female**

Head and antenna black; apical half of mandible light brown. Thorax black. Legs black; apices of femora very narrowly light brown, basal third of tibiae light brown, gradually becoming brown apically, anterior surface of hind tibia dirty whitish, downwards from the preapical spine brown. Wings hyaline; apical half slightly flavescent-hyaline infused, fore wing with very small, slightly infuscate substigmatal spot; costa, stigma, subcosta, and rest of venation light brown. Abdomen black with slight blue metallic lustre.

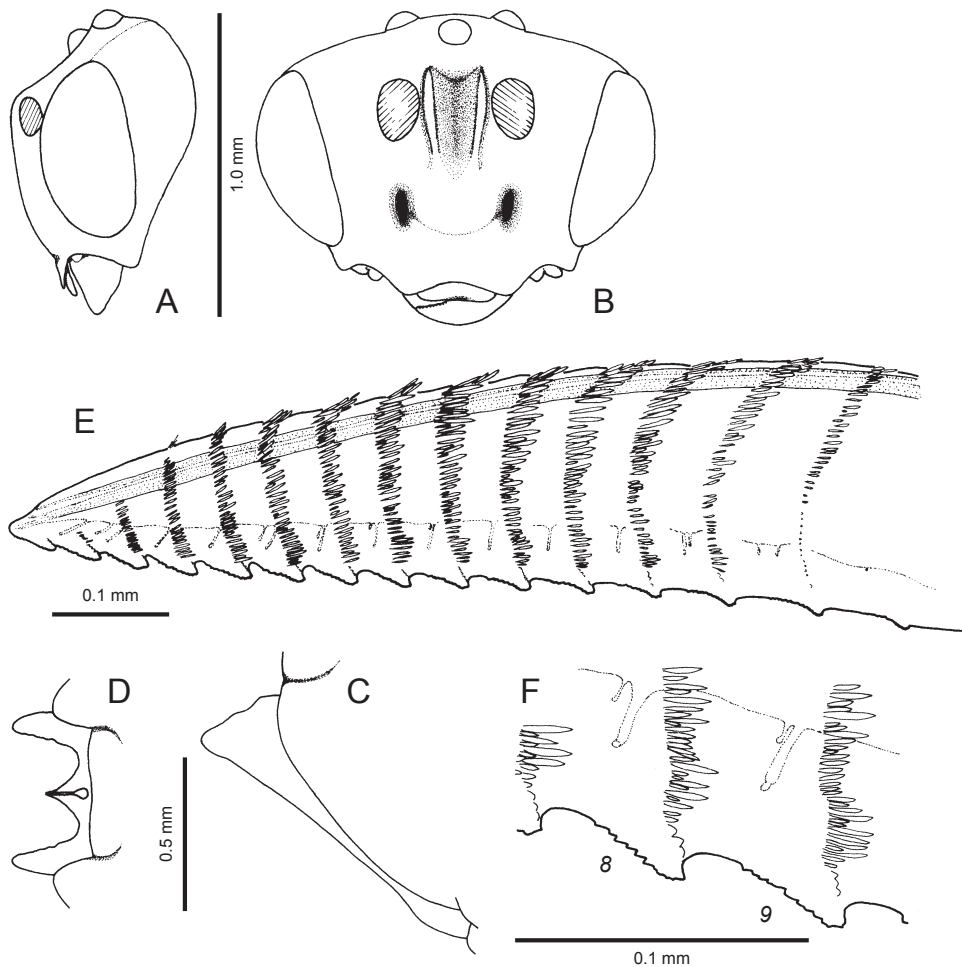
Head slightly narrowed behind eyes. Antenna 1.6× as long as maximum head width; flagellum slightly enlarged towards apex, triangular in cross section, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae weaker compressed. Eyes converging downwards. Anterior margin of clypeus shallowly emarginate medially, supraclypeal area very flatly rounded to the point of interantennal carinae (Fig. 121A), interantennal carinae sharply ridged between antennae, converging downwards, ending about half way to clypeus (Fig. 121B).

Vertex, frons, gena, clypeus, and supraclypeal area scattered micropunctate, shiny; pubescence white. Mesoscutum scarcely micropunctate, shiny; pubescence similar to head. Abdomen moderately shiny; terga with distinctly transverse microsculpture. Sawsheath. Figs 121C, D. Lancet with about 15 serrulae (Figs 121E, F).

Length: 6.8 mm.

**Male**

Unknown.



**Fig. 121. A-F.** *Triarge plumbea*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9.



## Etymology

The Latin adjective *plumbea* means “coloured like lead”, and refers to the body colour.

## Distribution

South Africa (Western Cape Province) (Fig. 177).

## Ecology and habitat

The type locality belongs to the Mountain Fynbos vegetation type of the winter rainfall zone. The flight season is poorly known, only one specimen has been collected, in November.

## Remarks

The paratypes of *T. plumbea* from Mossel Bay belong *T. mosselbayensis* (Koch 2006b).

The apical gap in the sawsheath of *T. mosselbayensis* (Fig. 115D) is conspicuously wider than in *T. plumbea*. The abdomen of *T. mosselbayensis* is contiguously micropunctate and without blue metallic lustre.

## *Triarge winterhoekensis* Koch, 2006

*Triarge winterhoekensis* Koch, 2006b: 227, 236. ♀. Type locality: Gt.[Great] Winterhoek [Winterhoek], Tulbagh (Western Cape Province, South Africa) (SAMC).

### Female

Head and antenna black; apical half of mandible dark reddish brown. Thorax black. Legs black; apices of femora very narrowly light brown, tibiae light brown, hind tibia becoming somewhat darker apically. Wings slightly flavescent-hyaline; fore wing with very small, slightly infuscate substigmal spot; costa, stigma, subcosta, and rest of venation light brown. Abdomen black without blue metallic lustre.

Head scarcely narrowed behind eyes. Antenna 1.4× as long as maximum head width; flagellum slightly enlarged towards apex, quadrangular in cross section, ventral surface with moderately compressed longitudinal carina, other longitudinal carinae weaker compressed. Eyes slightly converging downwards. Anterior margin of clypeus very shallowly circularly emarginate, supraclypeal area nearly flatly rising up to start of interantennal carinae (Fig. 122A), interantennal carinae moderately ridged between antennae, scarcely converging downwards, very short, extending at the anterior margin of toruli (Fig. 122B).

Vertex, frons, gena, clypeus, and supraclypeal area scarcely micropunctate, shiny; pubescence white. Mesoscutum scarcely micropunctate, pubescence similar to that on head. Abdomen shiny; terga with transverse microsculpture. Sawsheath: Figs 122C, D. Lancet with about 15 serrulae (Figs 122E, F).

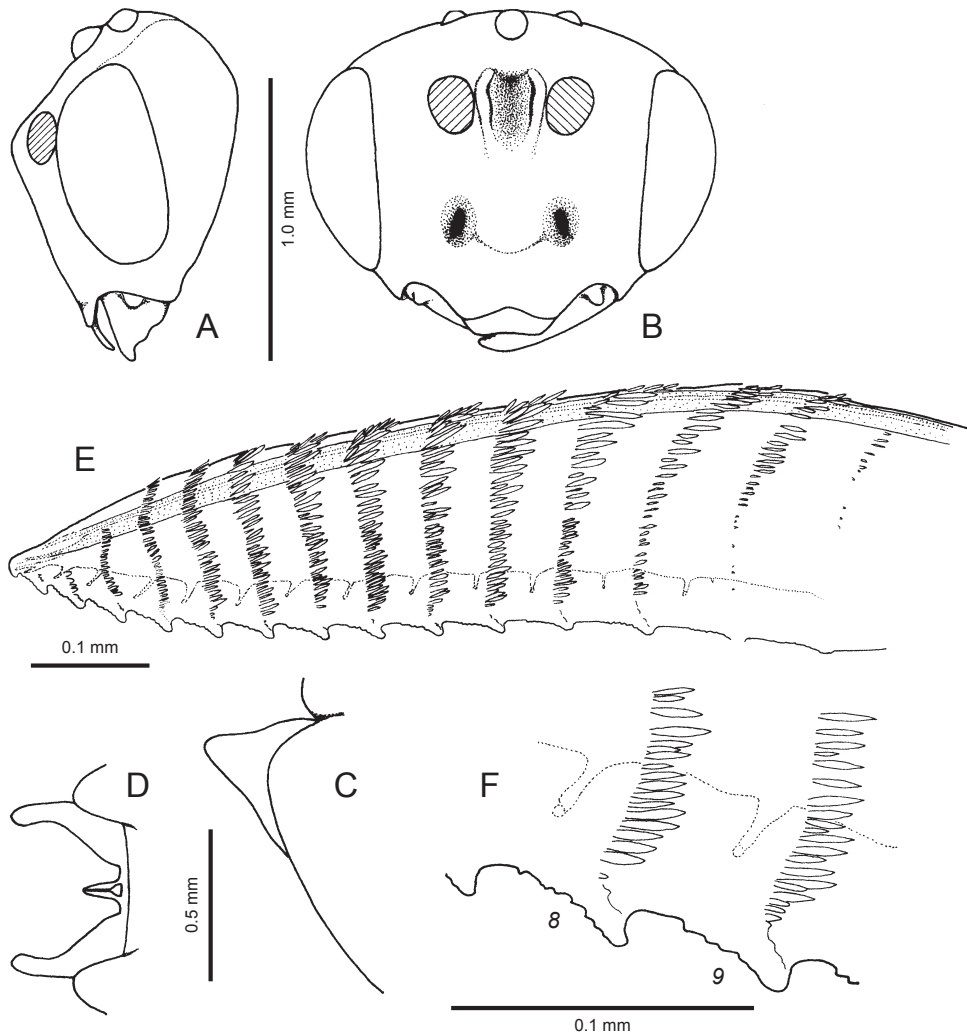
Length: 5.5-6.0 mm.

**Male**

Unknown.

**Etymology**

This species is named after its collection locality, Great Winterhoek (shortened on the label).



**Fig. 122. A-F.** *Triarge winterhoekensis*. **A.** Head of female (lateral aspect). **B.** Head (frontal aspect). **C.** Sawsheath (lateral aspect). **D.** Sawsheath (dorsal aspect). **E.** Lancet. **F.** Serrulae 8-9.

## Distribution

South Africa (Western Cape Province) (Fig. 176).

## Ecology and habitat

The habitat belongs to the Mountain Fynbos vegetation type of the winter rainfall zone. The flight season is not well known, some specimens have been recorded in November.

## Remarks

The distinct short interantennal carina and relatively narrowed apical gap of the sawsheath differentiate *Triarge winterhoekensis* from the other known *Triarge* species. The shape of serrulae resembles *T. citrusdalensis* (Figs 107E, F). The differences between these two species are discussed under *T. citrusdalensis*.

## Family Tenthredinidae

### Subfamily Athaliinae

### Genus *Athalia* Leach, 1817

*Athalia* Leach, 1817: 126. Type species: *Tenthredo spinarum* Fabricius, 1793 [= *Athalia rosae rosae* (Linnaeus, 1758)], by subsequent designation of Curtis (1836). <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Athaliinae/Athalia/index.htm>

## Description

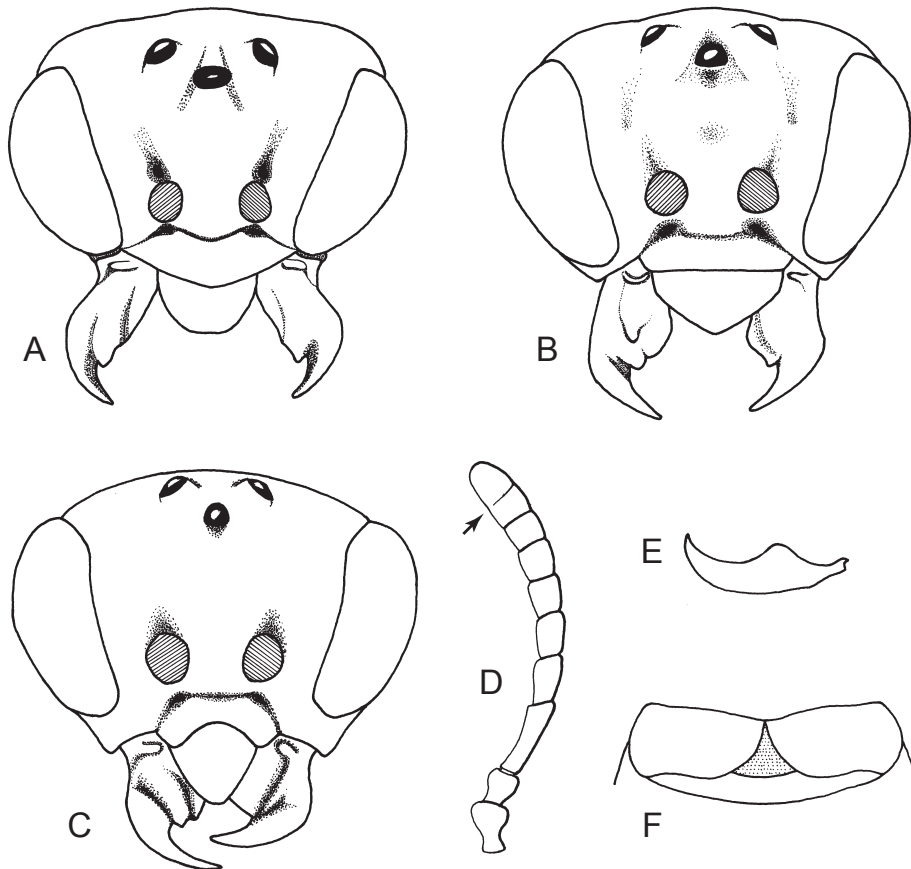
Antenna moderately long, 9(10)-12-segmented, apical flagellomere mostly indistinctly separated, distal flagellomeres often slightly broader than long (Figs 123D, 125A, 128A, 130B, C, 134C). Head without especially conspicuous structures, surface smooth and shiny; clypeus separated by epistomal suture from supraclypeal area (Figs 123A-C); clypeus elongate medially and rounded at anterior margin (Fig. 123A) as for *Athalia* “*incomta*” species group, truncated to subtruncated at anterior margin (Fig. 123B) as for *A. himantopus* species group (Koch 2007), or very short medially and conspicuously excised at anterior margin (Fig. 123C) as for *A. vollenhoveni* species group (Koch 2006c); malar space variably developed in female, in male almost linear or absent; frontal area indistinctly limited; lateral furrows of postocellar area indistinct. Tarsal claws simple (Fig. 123E). Fore wing with radial crossvein (2r) present, anal cell with crossvein (a), 2nd and 3rd anal vein (2A+3A) outlined (Fig. 41K); hind wing with closed radial cell (R1), petiolate (1A) anal cell (A) and two middle cells (Rs and M) (Fig. 41K). Tergum 1 with rather wide and deep median split (Fig. 123F).

Head predominantly black; thorax yellowish with black markings or completely black; abdomen entirely yellow or with tergum 1 more or less black.

Ranging from 4.5-9.5 mm in length.

## Remarks

The species of the genus *Athalia* are distributed in the Afrotropical, Oriental and Palaearctic Region. Currently 48 valid species are known from the Afrotropical Region: Taeger *et al.* (2010) listed 46 species and additionally Koch (2010b) described two further species for southern Africa. Only two of the species groups have been recently revised: *Athalia vollenhoveni* species group (Koch 2006c), 10 species with excised anterior margin of clypeus (Fig. 123C), and *A. himantopus* species group (Koch 2007), 8 species with truncated or subtruncated anterior margin of clypeus (Fig. 123B).



**Fig. 123. A-F.** *Athalia* spp. Frontal aspect of head: **A.** *Athalia* “*incomta*” species group. **B.** *Athalia himantopus* species group. **C.** *Athalia vollenhoveni* species group. **D.** antenna (apical flagellomere indistinctly separated, arrowed). **E.** tarsal claw. **F.** tergum 1.

Sexual dimorphism of *Athalia* is relatively highly developed. The malar space of the male is conspicuously narrower than in the female. The male usually differs from the female by having a pale clypeus. The thorax of the male is uniformly pubescent, but in the female of several species there is a more or less large glabrous patch on the mesosternum.

For a correct identification of males it is necessary to examine the genitalia, especially the digitus and cuspis. In females the shape of the hypopygium is of importance for their classification.

### Host plants

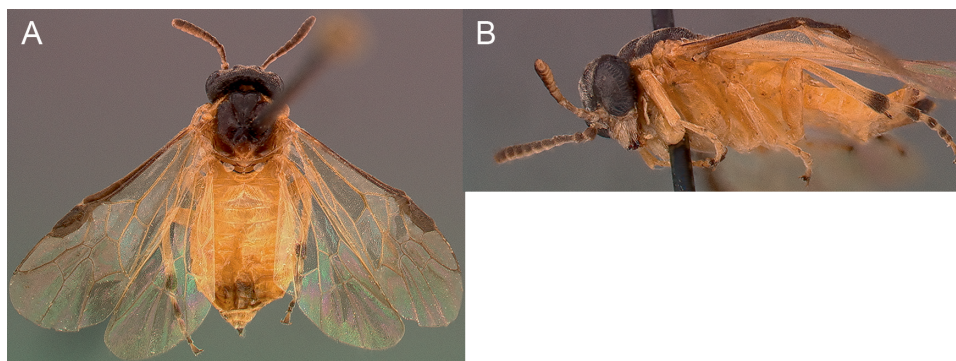
Most information on host plants is from Benson (1962) or based on notes on the labels. For most species reliable details are missing. The larvae of several species feed on different species of Brassicaceae (Benson 1962). Opitz *et al.* (2012) pioneered a new approach to identification of host plants, based on chemicals derived from the host that are sequestered in the adults. These results are discussed under the applicable species in the following treatments.

Adults commonly visit flowers or plants other than the larval hosts (Smith 1989). For example in 2001 *Athalia gessi* Koch, 2003 and *A. mashonensis* Enslin, 1911 were sampled in large numbers on the flowers of the Lemon Bush / Fever tea (*Lippia javanica* (Burman f.) Sprengel) (Verbenaceae) in the Lekgalameetse Nature Reserve, Limpopo Province, South Africa (Koch 2003).

### *Athalia brevicornis* Benson, 1962

*Athalia brevicornis* Benson, 1962: 358, 361. ♂♀. Type locality: Maseru, Basutoland [Lesotho] (BMNH).

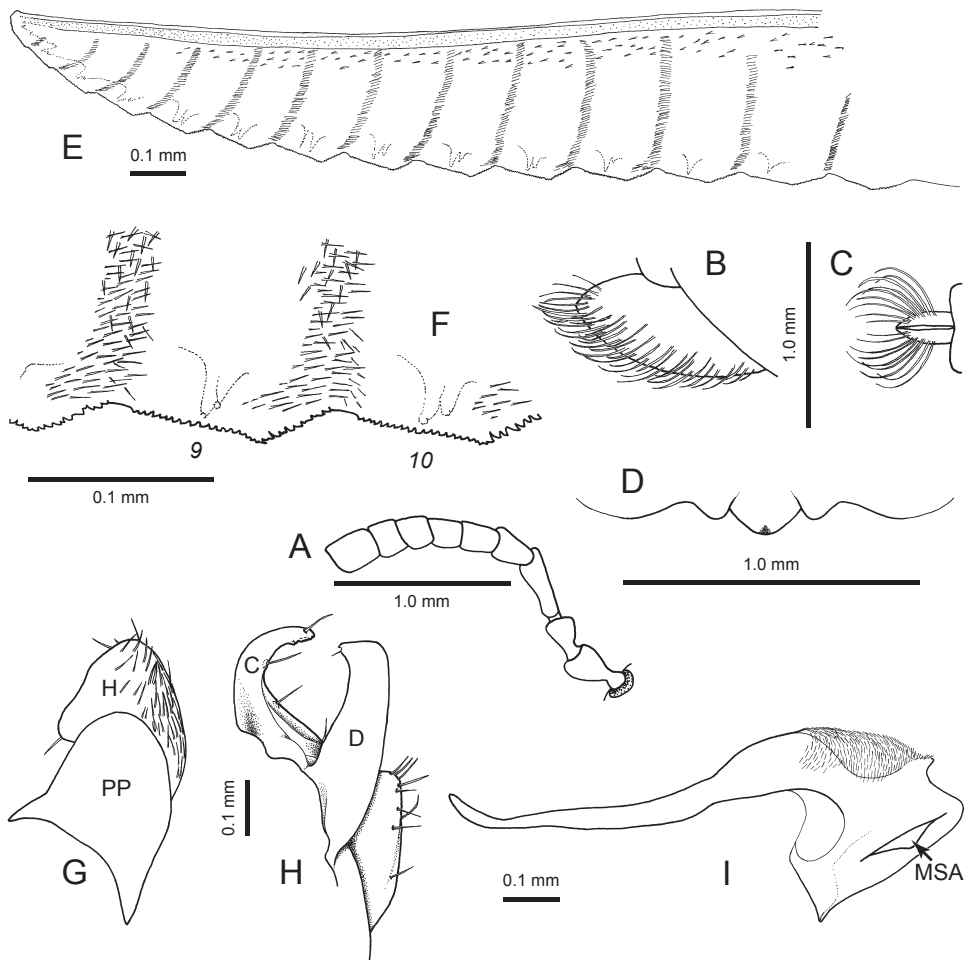
*Athalia limpopo* Benson, 1962: 373, 374, **syn. n.** ♀. Type locality: Delagoa Bay, Mozambique (BMNH).



**Fig. 124. A-B.** *Athalia brevicornis*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

**Female** (Figs 124A, B)

Head black, supraclypeal area pale; basal half of mandible whitish becoming reddish to dark reddish apically; labrum and clypeus dirty whitish; ventral surface of antenna pale. Thorax yellow with mesoscutum black and basal half of mesoscutellum blackish. Legs yellow; hind tibia and hind tarsomeres black ringed apically. Wings slightly bicoloured with very slightly flavescent-hyaline in basal half and very slightly infusate apically; intercostal area fuscous, stigma, costa and subcosta dark brown, rest of venation yellow, in apical half somewhat darker. Abdomen entirely yellow with apical half of sawsheath black.



**Fig. 125. A-I.** *Athalia brevicornis*. **A.** Antenna. **B.** Sawsheath (lateral aspect). **C.** Sawsheath (dorsal aspect). **D.** Hypopygium (posterior margin). **E.** Lancet. **F.** Serrulae 9-10. **G.** Parapenis and harpe (right, ventral aspect). **H.** Cuspis and digitus (left, inner lateral aspect). **I.** Penis valve (left, lateral aspect), MSA (arrowed).

Antenna 1.2× as long as maximum head width, slightly enlarged towards apex, 9-segmented (Fig. 125A). Clypeus elongate medially, anterior margin rounded. Malar space absent.

Head and thorax moderately densely micropunctate, shiny; pubescence on head and mesoscutum whitish. Abdomen smooth and shiny. Sawsheath in lateral view obtusely pointed apically (Fig. 125B), in dorsal view narrowed and pointed apically (Fig. 125C), Hypopygium: Fig. 125D. Lancet with about 14 serrulae (Figs 125E, F).

Length: 5.7-7.5 mm.

### Male

Colouration similar to that of female. Antenna 1.2× as long as maximum head width, somewhat more enlarged as in female. Other features as for female. Genitalia: Figs 125G-I.

Length: 4.8-5.7 mm.

### Etymology

The Latin adjective *brevicornis* means “short-horned”, with reference to the short antennae.



**Fig. 126.** The habitat of *Athalia brevicornis* and *A. ustipennis* in the riverine vegetation along the Kunene River in north-western Namibia (Thornbush Savanna Biome). (Photo by F. Koch)

## Distribution

Botswana, Lesotho, Malawi, Mozambique, Namibia (Region: Kunene, Okavango, Otjozondjupa) South Africa (Province: Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo) (Fig. 178), Zambia, Zimbabwe.

## Host plant

Unknown.

## Ecology and habitat

The Namibian collection sites are situated in riverine habitats on the Kunene River (Fig. 126), Okavango [Kavango]-River as well as in the Caprivi Strip, which are located in the Thornbush Savanna and Woodland Savanna Biomes. It appears that *A. brevicornis* prefers moist habitats with dense vegetation. The flight season is from December to April.

## Remarks

Intraspecific variability of this species is apparent in the colouration of the supraclypeal area and mesoscutellum. The supraclypeal area may be nearly entirely black especially in females. The same applies to the colouration of the mesoscutellum. Furthermore, the costa and subcosta of the fore wing may be basally more or less yellow. Sometimes the bicolouration of the fore wing is faded.

The holotype of *A. limpopo* was examined, and it was not possible to find any differences to *A. brevicornis*, which are relevant for distinguishing them as different species; thus, it is synonymised with *A. brevicornis*.

### ***Athalia incomta* Konow, 1908**

*Athalia incomta* Konow, 1908: 168. ♂. Type locality: Algoa Bay, Capland (Eastern Cape Province, South Africa) (SDEI).

*Athalia xantha* Benson, 1962: 364, 365, **syn. n.** ♀. Type locality: Weenan, Natal [KwaZulu-Natal Province], South Africa (BMNH).

## Female (Figs 127A, B)

Head black; basal half of mandible whitish becoming reddish to dark reddish apically; clypeus sometimes brown or dirty yellow, labrum whitish; ventral surface of flagellum brownish. Thorax black with following yellow; metascutellum, mesosternum and metapleuron sometimes with blackish spot. Legs yellow; hind tibia with black apex, distal tarsomeres of fore and mid legs as well as hind tarsomeres black ringed apically. Wings sharply bicoloured with flavescent basal half and dark fuscous apical half, intercostal area blackish infusate; stigma, costa and subcosta black, rest of venation yellow in basal half becoming blackish apically. Abdomen yellow; sawsheath with black apical half.



Antenna length 1.4× as long as maximum head width, 11-12-segmented, flagellomeres 11,12 mostly indistinctly separated (Fig. 128A). Clypeus elongate medially, anterior margin shallowly rounded. Malar space very narrowly developed. Head smooth and shiny, clypeus with scattered, flat punctures, shiny; pubescence greyish-brown. Mesoscutum smooth and shiny; pubescence similar to that on head. Abdomen smooth and shiny, tergum1 slightly microsculptured. Sawsheath in lateral view obtusely pointed apically (Fig. 128B), in dorsal view slightly narrowed and obtusely pointed apically (Fig. 128C). Hypopygium as in Fig. 128D. Lancet with about 16 serrulae (Fig. 128E).

Length: 6,0-8,5 mm.

### Male

Colouration similar to that of female. Clypeus whitish. Antenna 1.2× as long as maximum head width. Other features as for female. Genitalia: Figs 128G-H.

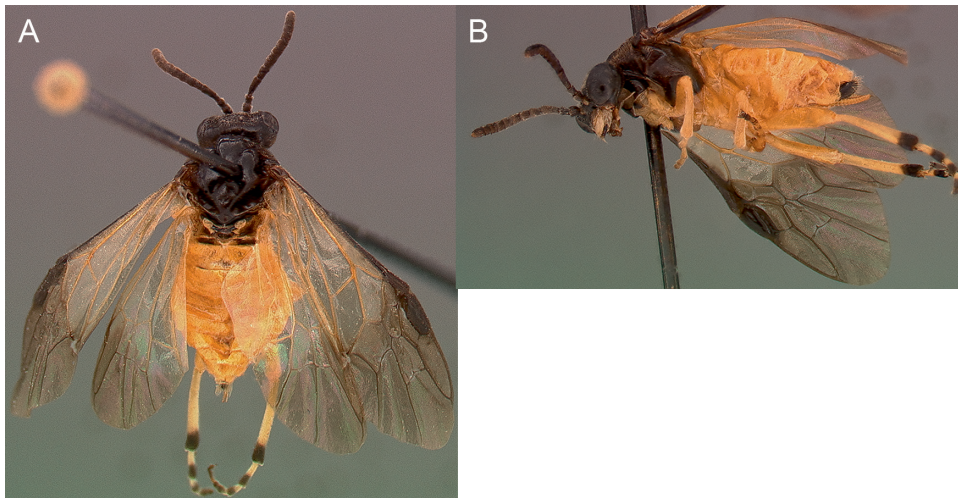
Length: 5.5-7.0 mm.

### Etymology

The species name is a Latin adjective meaning untidy or unadorned.

### Distribution

Botswana, Lesotho, Malawi, Namibia (Otjozondjupa Region), South Africa (Province: Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga) (Fig. 179), Zambia, Zimbabwe, (Democratic Republic of the Congo, Benson 1962).



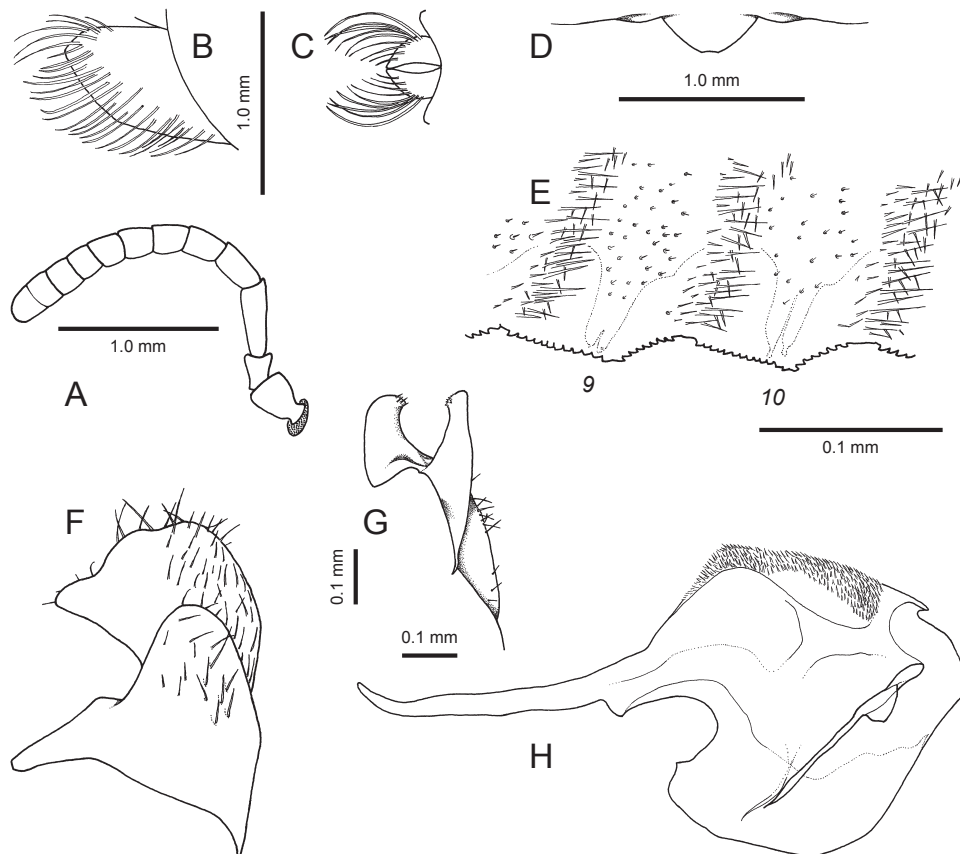
**Fig. 127. A-B.** *Athalia incomta*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Host plant

Adults were repeatedly observed on *Selago dinteri* Rolfe (Scrophulariaceae, Lamiales) on the plateau of the Waterberg. Based on biochemical analyses Opitz *et al.* (2012) determined plant species of Lamiales as host plants.

## Ecology and habitat

Collected at the foot of and slightly higher up the Waterberg Mountain (Namibia) (Thornbush Savanna Biome), and in the Caprivi Strip in the Woodland Savanna Biome. The habitat is moist with dense vegetation (Fig. 24). All specimens were collected in February.



**Fig. 128. A-H. *Athalia incomta*.** A. Antenna. B. Sawsheath (lateral aspect). C. Sawsheath (dorsal aspect). D. Hypopygium (posterior margin). E. Serrulae 9-10. F. Parapenis and harpe (right, ventral aspect). G. Cuspis and digitus (left, inner lateral aspect). H. Penis valve (left, lateral aspect).

## Remarks

At the first glance *Athalia incomta* is easy to recognize by its pattern of colouration – yellow mesosternum and bicoloured wings. Furthermore *A. incomta* is one of the most abundant sawfly species in southern Africa. In the Eastern provinces of South Africa and Zimbabwe this species is sampled regularly on *Tecomaria capensis* (Thunberg) Spach (Bignoniaceae). In the mountain region of the provinces Limpopo and Mpumalanga adults were collected on *Helichrysum krausii* (Schultz Bipontinus) (Asteraceae).

Prompted by the wide distribution of the species and its association with different plants, sequencing of the mitochondrial COI gene was carried out. Provisionally, it seems that three different species may be involved, but distinct morphological differences have not so far been found.

The holotype of *A. xantha* was examined, and it was not possible to find any differences to *A. incomta*, which are relevant for distinguishing them as different species; thus, it is synonymised with *A. incomta*.

### *Athalia maraisi* Koch, 2010

*Athalia maraisi* Koch, 2010b: 279. ♂♀. Type locality: Okaputa, Grootfontein, Namibia (NNIC).

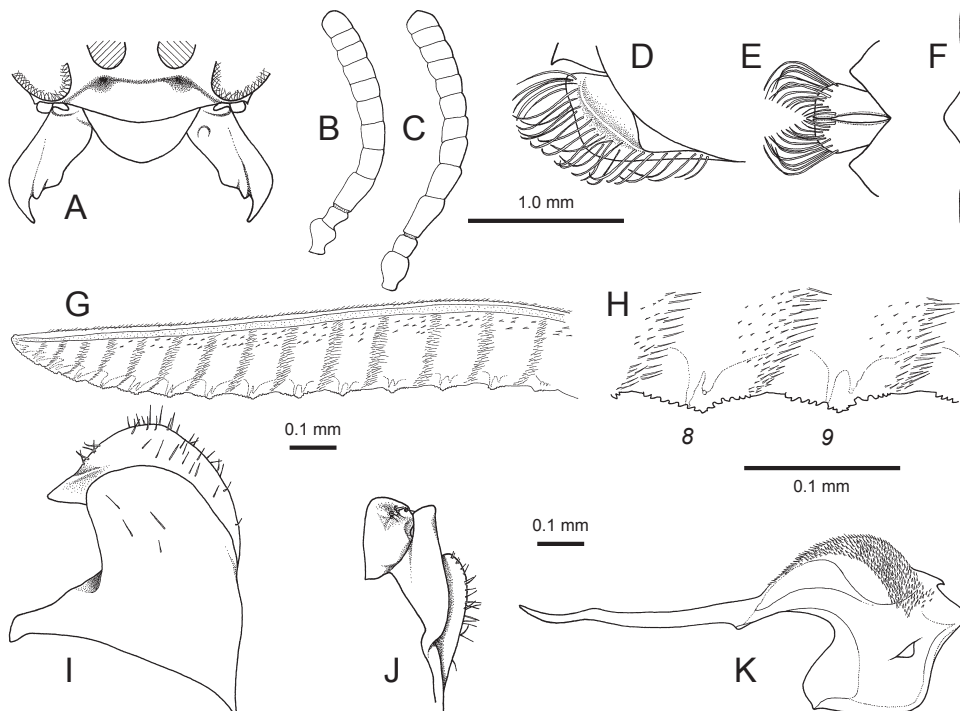


**Fig. 129. A-B.** *Athalia maraisi*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

**Female** (Figs 129A, B)

Head black, narrow ventral angle of gena and malar space yellow; mandible yellow becoming brown to black apically; clypeus and labrum yellow; ventral surface of flagellum and scape light brown. Thorax yellow with following black: dorsal part of propleuron, pronotum medially, mesonotum, dorso-lateral margin of mesopleuron. Legs yellow; hind tibia black ringed apically, hind tarsus black with tarsomeres 1-3 yellow ringed basally. Wings slightly bicoloured, with basal half slightly flavescent-hyaline and apical half slightly infusate; costa black with narrow yellow base, stigma and subcosta black, rest of venation yellow becoming blackish in apical half. Abdomen yellow; sawsheath with black apex.

Antenna 11-segmented, 1.2× as long as maximum head width, flagellomeres 9,10 conspicuously broader than long (Figs 130B, C). Clypeus slightly elongated medially, anterior margin shallowly rounded (Fig. 130A). Malar space very narrowly developed. Head smooth and shiny, clypeus with scattered, flat punctures, shiny;



**Fig. 130. A-K. *Athalia maraisi*.** A. Female, mouthparts with clypeus (frontal aspect). B–C. Female, antenna. D. Sawsheath (lateral aspect). E. Sawsheath (dorsal aspect). F. Hypopygium (posterior margin). G. Lancet. H. Serrulae 8-9. I. Parapenis and harpe (right, ventral aspect). J. Cuspis and digitus (left, inner lateral aspect). K. Penis valve (left, lateral aspect).

pubescence light yellow to whitish. Mesoscutum smooth and shiny; pubescence similar to that on head. Sawsheath in lateral view obtusely pointed (Fig. 130D), in dorsal view conspicuously enlarged apically (Fig. 130E). Hypopygium as in Fig. 130F. Lancet with about 15-16 serrulae (Figs 130G, H).

Length: 7.0-7.8 mm.

### **Male**

Colouration similar to that of female. Pronotum black except narrow yellow lateral margin, propleuron and dorsal part of mesopleuron black. Antenna 1.3× as long as maximum head width. Malar space absent. Pubescence similar to that of female. Other features as for female. Genitalia: Figs 130I-K.

Length: 6.7 mm.

### **Etymology**

The species was named after Eugene Marais, Curator of Entomology of the Namibian National Insect Collection, Windhoek.

### **Distribution**

Namibia (Region: Erongo, Khomas, Kunene, Otjozondjupa, (Fig. 178), South Africa (Free State Province).

### **Host plant**

Unknown.

### **Ecology and habitat**

All sampling localities belong to the Thornbush Savanna Biome. The flight season is December and February to March.

### **Remarks**

*Athalia maraisi* differs from all other *Athalia* species of the study region by the conspicuous enlargement of the sawsheath towards the apex.

Variability of *A. maraisi* is apparent in the colour pattern. The yellow colouration on the head and thorax may be extended, so that the supraclypeal area, scape, pronotum, propleuron and mesopleuron are entirely yellow. Additionally, the antero-lateral angle of the mesonotal median lobe, mesoscutellum, mesoscutellar appendage and metanotum are more or less yellow, and the down-turned portion of each mesonotal lateral lobe is light brown. In males, the scape and pedicel may be entirely yellow. In the female from the locality "Sandveld Nature Reserve" (Free State Province, South Africa) the antenna is 12-segmented (Fig. 130C).

***Athalia marginipennis* Enderlein, 1920**

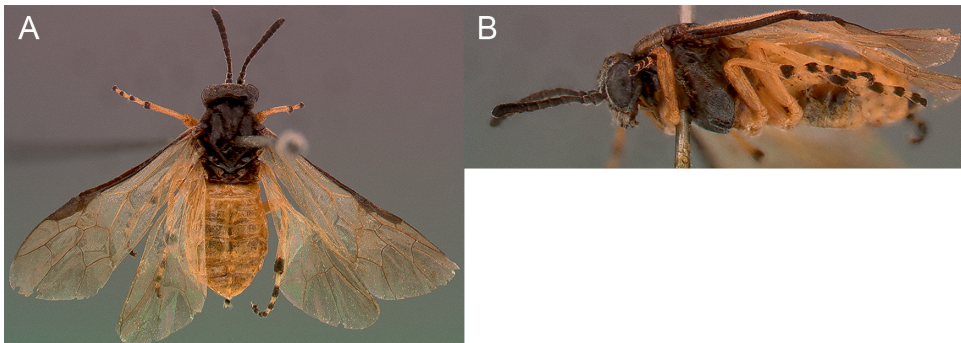
*Athalia marginipennis* Enderlein, 1920: 354. ♀. Type locality: Nyembe-Bulungwa, Deutsch-Ostafrika [Tanzania] (ZMPA).

**Female** (Figs 131A, B)

Head and antenna black; basal half of mandible whitish becoming dark reddish apically; clypeus brown with dirty yellow anterior margin, labrum light brown. Thorax black; metascutellum yellow, metepisternum with narrow yellow posterior margin. Legs yellow; fore and mid coxa narrowly at base and lateral surface more or less blackish, hind coxa with very small blackish spot at extreme base; tibiae apically black, broadening from front to rear, tarsomeres 1-3 black ringed apically, tarsomeres 4,5 entirely black. Wings bicoloured, with basal half slightly flavescent-hyaline and apical half infuscate; intercostal area strongly infuscate; costa, subcosta and stigma dark brown, rest of venation yellow in basal half becoming brown in apical half. Abdomen yellow; tergum 1 with two blackish medial spots, sawsheath with black apical half.

Antenna 1.4× as long as maximum head width, 10-segmented. Clypeus truncated. Malar space conspicuously developed (Fig. 132). Head smooth and shiny, clypeus moderately densely punctate; pubescence on head whitish to yellowish. Mesoscutum smooth and shiny; mesonotum yellowish pubescent, mesopleuron whitish pubescent with a small glabrous ventro-lateral patch, mesosternum with a large conspicuous glabrous patch. Abdomen smooth and shiny. Sawsheath in lateral view narrowly rounded apically (Fig. 132B), in dorsal view parallel sided and obtusely pointed apically (Fig. 132C). Hypopygium as in Fig. 132D. Lancet with about 16 serrulae (Fig. 132E).

Length: 7.5–9.3 mm



**Fig. 131. A-B.** *Athalia marginipennis*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Male

Colouration similar to that of female, except for: clypeus whitish, metapleuron nearly entirely yellow and mid coxa very narrowly blackish at base. Mesopleuron and mesosternum rather densely white pubescent, without glabrous patch. Antenna 1.4× as long as maximum head width, very slightly enlarged towards apex. Other features as for female. Genitalia: Figs 132F-H.

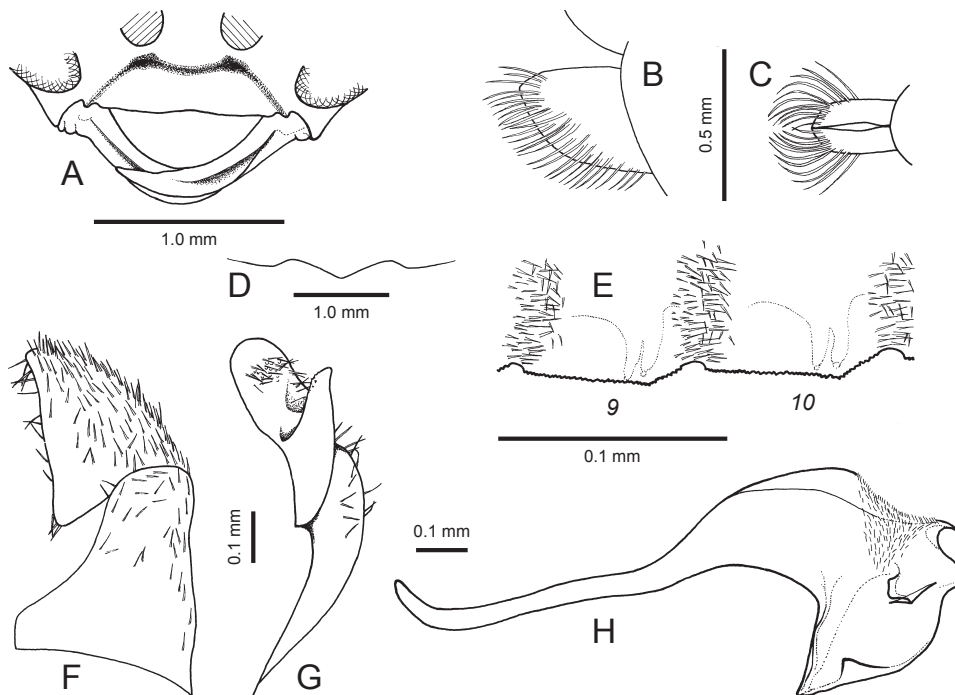
Length: 7.0–8.3 mm.

## Etymology

From Latin: *margini* (marginated) and *pennis* (wing), referring to the bicoloured fore wing.

## Distribution

Botswana , Burundi, Democratic Republic of Congo, Kenya, Lesotho, Malawi, Namibia (Region: Kunene, Okavango) (Fig. 179), Rwanda, South Africa (Province:



**Fig. 132. A-H. *Athalia marginipennis*.** A. Female, mouthparts with clypeus (frontal aspect). B. Sawsheath (lateral aspect). C. Sawsheath (dorsal aspect). D. Hypopygium (posterior margin). E. Serrulae 9-10. F. Parapenis and harpe (right, ventral aspect). G. Cuspis and digitus (left, inner lateral aspect). H. Penis valve (left, lateral aspect).

Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West), Tanzania, Uganda, Zimbabwe; detailed distribution is presented by Koch (2007).

### Host plant

Brassicaceae (Opitz *et al.* 2012).

### Ecology and habitat

The Namibian collection sites are located on the Okavango [Kavango] River as well as at the foot of the Waterberg (Fig. 24). Some old records are known from the Kaokoveld. The more or less moist habitats with dense and species rich vegetation belong to the Woodland Savanna Biome and the Thornbush Savanna Biome. The flight season is from January to March.

### Remarks

*Athalia marginipennis* belongs to the *A. himantopus* species group (Koch 2007), and is clearly distinguished by the truncated clypeus from all other *Athalia* species in Namibia.

### *Athalia turneri* Forsius, 1931

*Athalia turneri* Forsius, 1931: 21. ♀. Type locality: Okahandja, South West Africa [Namibia] (BMNH).

### Female (Figs 133A, B)

Head black, narrow ventral angle of gena and supraclypeal area yellow; basal half of mandible whitish becoming reddish to black apically; clypeus and labrum whitish; scape and pedicel yellow, ventral surface of flagellum yellowish brown.

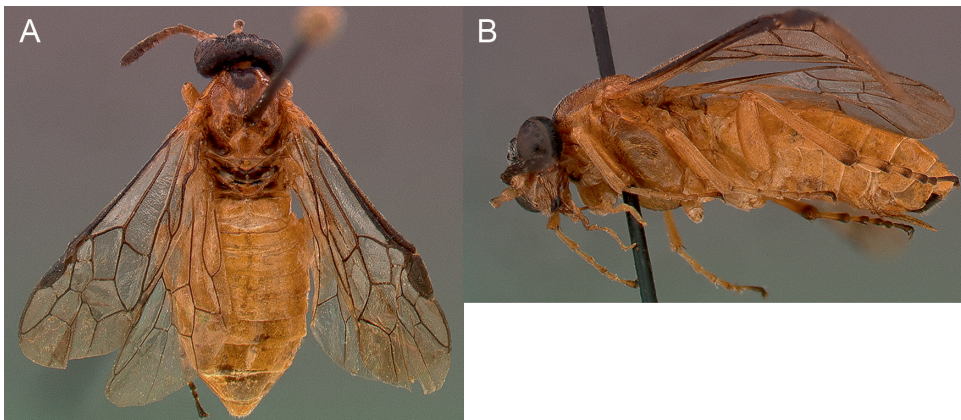
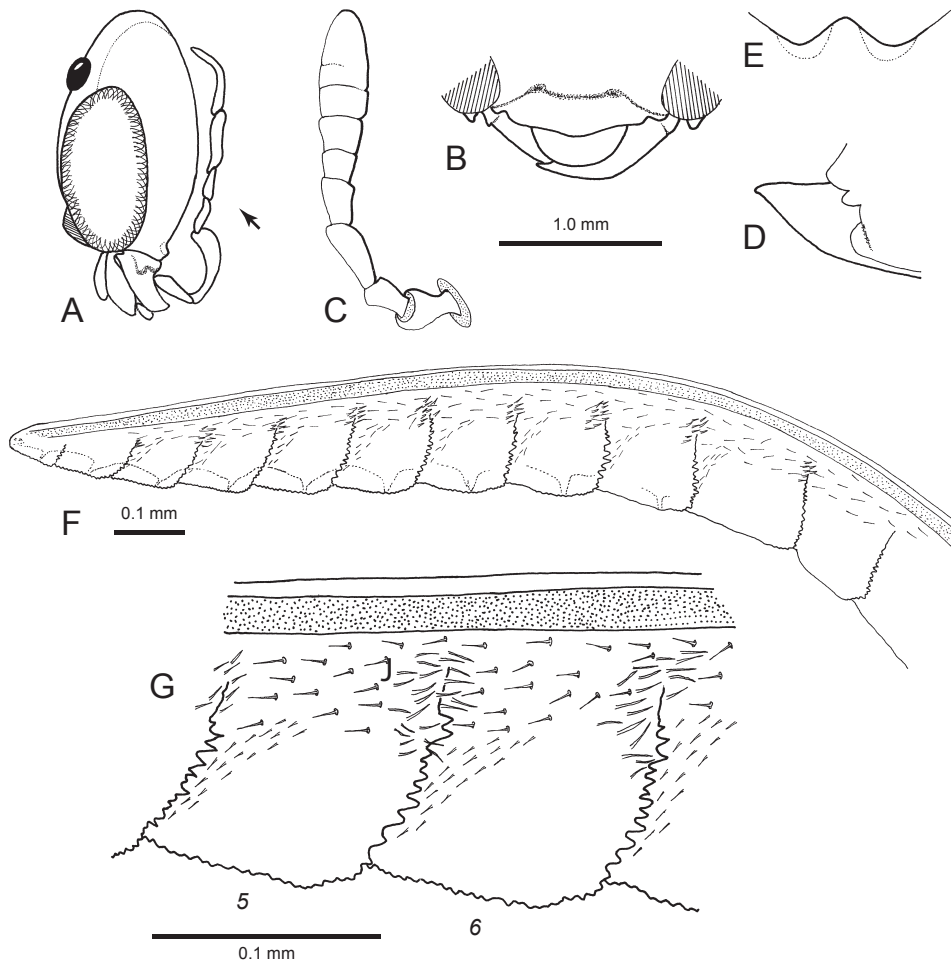


Fig. 133. A-B. *Athalia turneri*, habitus, female. A. Dorsal aspect. B. Lateral aspect. (Photos by B. Schurian)



Thorax yellow with median lobe of mesoscutum blackish. Legs yellow; hind tibia narrowly blackish apically, hind tarsomeres blackish ringed in apical half. Wings subhyaline throughout; intercostal area infusate, costa blackish with yellow basal half, stigma and subcosta blackish, rest of venation brown. Abdomen yellow; sawsheath with black apical half.

Antenna short, 1.1× as long as maximum head width, 9-segmented, conspicuously enlarged towards apex (Fig. 134C). Clypeus elongated medially, anterior margin shallowly rounded (Fig. 134B). Malar space absent. Maxillary palps abnormally elongated (Fig. 134A). Head smooth and shiny, clypeus with scattered, flat



**Fig. 134. A-G.** *Athalia turneri*. **A.** Head (lateral aspect) with abnormally elongated maxillary palps (arrowed). **B.** Mouthparts with clypeus (frontal aspect). **C.** Antenna. **D.** Sawsheath (lateral aspect). **E.** Hypopygium (posterior margin). **F.** Lancet. **G.** Serrulae 5-6.

punctures, shiny. Pubescence whitish. Thorax smooth and shiny. Pubescence similar to that on head. Abdomen smooth and shiny. Sawsheath in dorsal view narrowed and pointed apically, in lateral view pointed apically (Fig. 134D). Hypopygium as in Fig. 134E. Lancet with about 11 serrulae (Figs 134F,G).

Length: 6.5-9.0 mm.

### **Male**

Unknown.

### **Etymology**

Named after Rowland Edwards Turner (1863-1945; born in Australia, deceased in South Africa), an amateur hymenopterist of major significance, who for many years worked voluntarily for the BMNH and was a recognised specialist on the Thynninae (= Tiphidae).

### **Distribution**

Namibia (Otjozondjupa Region) (Fig. 180), Zimbabwe.

### **Host plant**

Unknown.

### **Ecology and habitat**

From the study region only the holotype of *A. turneri* is known, collected in February 1928 from Okahandja, which is located in the Thornbush Savanna Biome. The second known specimen of this species was collected in South Zimbabwe (near Breitbridge, Limpopo River) in 1998.

### **Remarks**

Over the past 20 years numerous field trips specifically targeting sawflies were undertaken in the area of Okahandja, but no additional specimens of this species were collected.

*Athalia turneri* is separated from all other Namibian *Athalia* species by its predominantly yellow colouration and the abnormally elongated maxillary palps.

### ***Athalia ustipennis* Mocsáry, 1909**

*Athalia ustipennis* Mocsáry, 1909: 12. ♂. Type locality: Kilima-Ndjaru [Kilimanjaro], Arusha-Ju, Africa orientalis [Tanzania] (HNHM).

*Athalia elisabethae* Mucbe, 1979: 55, **syn. n.** ♀. Type locality: Francistown, Botswana (MFN).

**Female** (Figs 135A, B)

Head black; basal half of mandible whitish becoming reddish to black apically; clypeus yellow, labrum whitish; ventral surface of flagellum pale, apical flagellomere with whitish spot at apex. Thorax yellow with following black; propleuron except for ventral margin, pronotum except for narrow ventro-lateral angle, mesoscutum, anepimeron and anterior half of mesoscutellum, postspiracular sclerite and dorsal angle of mesepisternum blackish, tegula blackish to dirty whitish. Legs yellow with black apices of tibiae, broadening from front to rear; tarsomeres black ringed apically. Wings sharply bicoloured with flavescent basal half and dark fuscous apical half; intercostal area blackish infuscate, stigma, costa and subcosta black, rest of venation yellow in basal half becoming black apically. Abdomen yellow; sawsheath with black apical half.

Antenna length 1.6× as long as maximum head width, 10-segmented. Clypeus elongate medially, anterior margin shallowly rounded. Malar space narrowly developed. Head smooth and shiny, clypeus with scattered, flat punctures, shiny; pubescence greyish-brown. Mesoscutum smooth and shiny; pubescence similar to that on head. Abdomen smooth and shiny. Sawsheath in lateral view obtusely pointed apically (Fig. 136A), in dorsal view slightly narrowed and obtusely pointed apically (Fig. 136B). Hypopygium: Fig. 136C. Lancet with about 18 serrulae (Fig. 136D).

Length: 6.3-7.8 mm.

**Male**

Colouration similar to that of female; clypeus whitish, supraclypeal area dirty



**Fig. 135. A-B.** *Athalia ustipennis*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by B. Schurian)

whitish, scapus yellow. Antenna 1.2× as long as maximum head width, slightly enlarged towards apex. Other features as for female. Genitalia: Figs 136E-G.

Length: 6.3-7.0 mm.

### Etymology

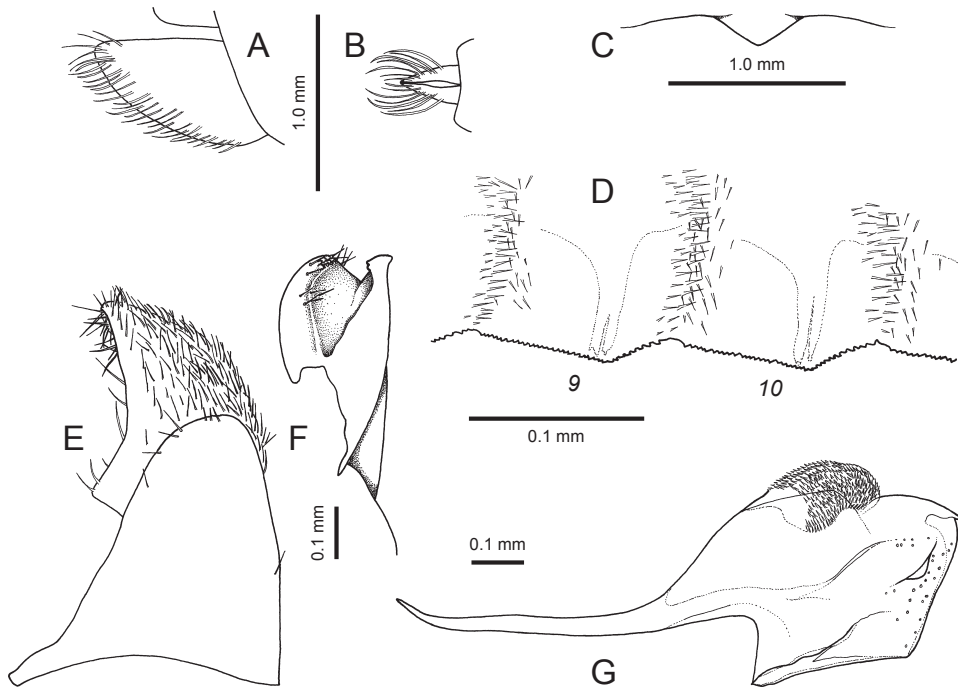
From Latin *usti-* (burnt) and *pennis* (wing), referring to the dark tips of the fore wings.

### Distribution

Botswana, Democratic Republic of the Congo, Kenya, Malawi, Namibia (Region: Erongo, Kunene, Omaheke, Otjozondjupa), South Africa (Province: Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga) (Fig. 180), Tanzania, Uganda, Zambia, Zimbabwe.

### Host plant

Brassicaceae (Opitz *et al.* 2012).



**Fig. 136. A-G.** *Athalia ustipennis*. **A.** Sawsheath (lateral aspect). **B.** Sawsheath (dorsal aspect). **C.** Hypopygium (posterior margin). **D.** Serrulae 9-10. **E.** Parapenis and harpe (right, ventral aspect). **F.** Cuspis and digitus (left, inner lateral aspect). **G.** Penis valve (left, lateral aspect).

## Ecology and habitat

At the foot of the Waterberg adults were repeatedly observed on *Grewia flavescens* Jussieu (Malvaceae). Further records are from the dense vegetation of moist habitats of the Waterberg area and the Kunene River (Fig. 126). All habitats belong to the Woodland Savanna Biome and the Thornbush Savanna Biome.

Despite the great abundance of this species, it has not been possible to discover the host plant. In the area of the Waterberg *A. ustipennis* shows a high attraction to yellow pan traps. The flight season is from February to March.

## Remarks

The very widely distributed and common *Athalia ustipennis* is relatively easy to recognize because of its black anepimeron and sharply bicoloured wings. Prompted by its wide distribution, especially in southern Africa, sequencing of the mitochondrial COI gene was carried out. First results point to the existence of two different species, but distinct morphological differences have not so far been found.

Intraspecific variability is especially visible in the colouration of tegulae and mesoscutellum, from entirely black to more or less yellow.

The holotype of *Athalia elisabethae* Mucbe was examined and compared with that of *A. ustipennis*. It was not possible to find any significant differences between these species, which are relevant for distinguishing them as different species; therefore they are considered to be conspecific.

## Subfamily Allantinae

### Genus *Neacidiophora* Enslin, 1911

*Neacidiophora* Enslin, 1911, 665. Type species: *Neacidiophora africana* Enslin, 1911 [= *Neacidiophora calo* (Konow, 1907c)], by original designation. <http://www.wasweb.org/Tenthredinoidea/Tenthredinidae/Allantinae/Neacidiophora/index.htm>

*Netrocerina* Enderlein, 1920: 370. Type species: *Netrocerina fuscipennis* Enderlein, 1920 [= *Neacidiophora calo* (Konow, 1907c)], by original designation.

## Description

Antenna short, about 1.2-1.5× as long as maximum head width, 9-segmented, medially slightly enlarged, distal flagellomeres slightly broader than long (Fig. 137E) or about twice as long as maximum head width (Koch 1998: 86, fig. 5). Supraantennal crests conspicuously developed (Figs 137B, C); clypeus separated by epistomal suture from supraclypeal area; more or less truncated to subtruncated at anterior margin (Fig. 138A); mandibles subsymmetrical, each with subapical tooth (Fig. 137A); malar space absent (Figs 137A, B); frontal area indistinctly limited; lateral grooves of postocellar area deep. Tarsal claws with a large basal

lobe, subapical tooth larger than the apical one (Fig. 137D). Fore wing with radial crossvein (2r) present, anal cell with crossvein (a), 2nd and 3rd anal vein (2A+3A) outlined (Fig. 411); hind wing with closed radial cell (R1) and middle cells (Rs and M) absent, anal cell (A) scarcely or very short petiolate (Fig. 411). Tergum 1 with small median split. Sawsheath in dorsal view enlarged medially and pointed apically.

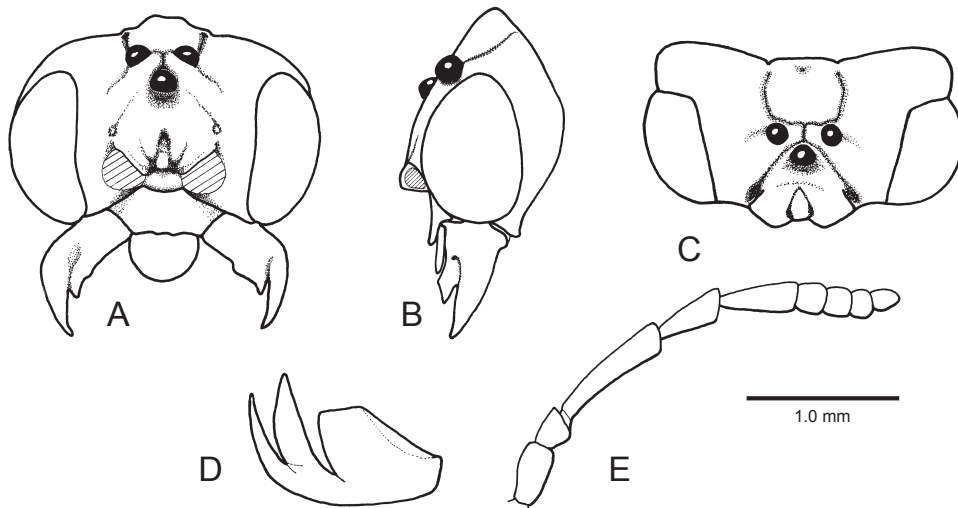
The head is mostly black, the thorax is black or black with yellowish markings, and the abdomen is predominantly yellow.

Ranging from 6.5-14.0 mm in length.

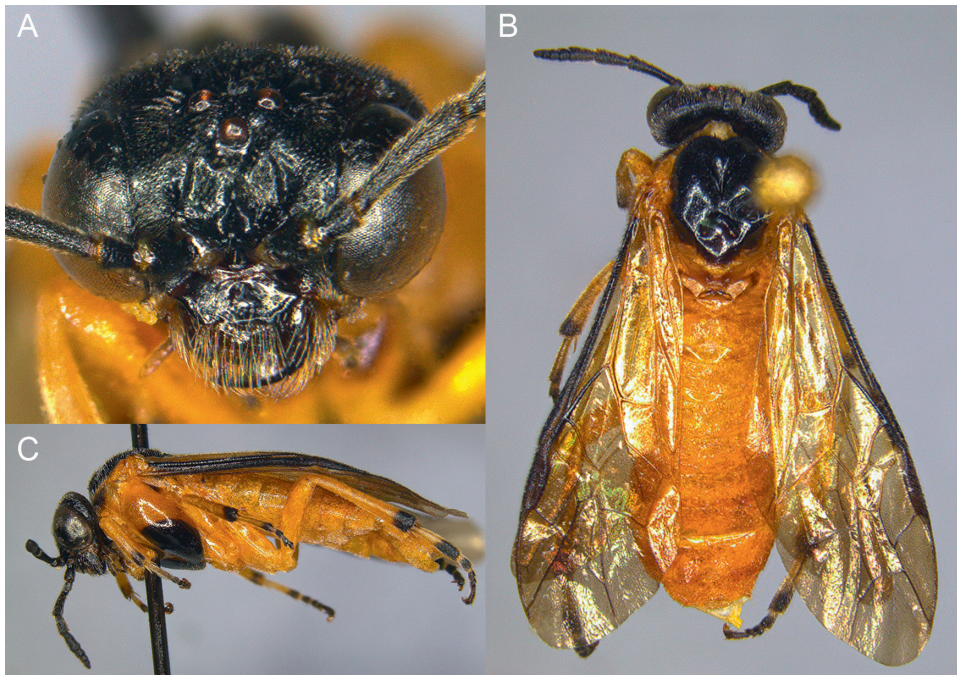
### Remarks

The 16 species (Taeger *et al.* 2010) of the genus *Neacidiophora* are endemic to the Afrotropical Region, and were revised by Koch (1998). Meanwhile, *N. quadrioveata* Koch, 1998 is recognized as a misidentification and is synonymized with *Kivua incrassata* Pasteels, 1949 by Koch & Liston (2012c). Therefore 15 valid *Neacidiophora* species are known.

Until now only one species namely *Neacidiophora brevicornis* Pasteels, 1954a, is reported for the eastern provinces of South Africa (Koch 1998), however, so far not from the current study area. As a species possessing short antennae (Fig. 137E) it is expected that *N. brevicornis* (Figs 138A-C), is most likely to occur in the Woodland Savanna Biome (Northeast Namibia) along with *Distega bevisi*, *Xenapates eardleyi* and *X. similis*.



**Fig. 137. A-E.** *Neacidiophora* sp. **A.** Head (frontal aspect). **B.** Head (lateral aspect). **C.** Head (dorsal aspect). **D.** Tarsal claw. — **E.** *N. brevicornis*. Antenna.



**Fig. 138. A-C.** *Neacidiophora brevicornis*. **A.** Head (frontal aspect). habitus, male. **B.** Dorsal aspect. **C.** Lateral aspect. (Photos by A.D. Liston)

The species with long antennae are particularly distributed in the equatorial region of Africa (Koch 1998).

#### Host plants

Nothing is known about their host plants.

#### Genus *Xenapates* W.F. Kirby, 1882

*Xenapates* W.F. Kirby, 1882: 180. Type species: *Dineura africana* Cameron, 1876 [= *Xenapates africanus* (Cameron, 1876)], by monotypy. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Allantinae/Xenapates/index.htm>

*Anataxates* Benson, 1939: 122. Type species: *Taxonus gaullei* Konow, 1896 [= *Xenapates gaullei* (Konow, 1896)], by original designation.

#### Description

Antenna short or about twice as long as maximum head width. In *X. variator* and *X. tessmanni* groups (Koch 1995), mostly 1.5-1.7× as long as maximum head width, 9-segmented (Fig. 142 D). Clypeus separated by epistomal suture from

supraclypeal area; very narrow, anterior margin emarginate with large lateral teeth; mandibles asymmetrical, left mandible with large subbasal tooth; labrum sinistral asymmetrical (Fig. 142A); malar space absent (Figs 142A, B); frons in lateral view obtusely angled (Fig. 142B); frontal area domed, lateral furrows distinctly developed (Figs 142A, C). Tarsal claws with a large basal lobe (Fig. 142E). Fore wing with radial crossvein (2r) present, anal cell with cross vein (a), 2nd and 3rd anal vein (2A+3A) outlined (Fig. 41J); hind wing with closed radial cell (R1), anal cell (A) and two middle cells (Rs and M) (Fig. 41J). Tergum 1 with a wide and deep median split (Fig. 142F).

The Namibian and South African species are mostly black with whitish markings, and short antennae.

Ranging from 6.0-10.0 mm in length.

### Remarks

This genus is endemic to the Afrotropical Region, and was recently revised by Koch (1995) with 36 valid species, and now comprises 47 species. Taeger *et al.* (2010) listed 43 species, and additionally a further 4 new species are described by Koch (2012b, c). Most species are recorded from equatorial Africa. In the study region only 4 species are known.

For correct identification, it is necessary to examine the genitalia of males (penis valve) and females (lancet). In females the shape of the serrulae is important for species determination.

### Host plants

Nothing is known about the host plants of the species occurring in the study region. In Benin, larvae of *Xenapates braunsi* (Konow, 1896) were found on *Digitaria horizontalis* (Jamaican crabgrass), *Pennisetum purpureum* (elephant grass), and *Setaria barbata* (bristly foxtail grass) (Poaceae), as well as *Zea mays* (corn, maize) (Poaceae), larvae of *Xenapates gaullei* (Konow, 1896) were feeding on *Commelina communis* (Asiatic dayflower) and *C. benghalensis* (Bengal dayflower) (Commelinaceae) (**Chapter 7: Host plants**).

### *Xenapates beateae* Koch, 1996

*Xenapates beateae* Koch, 1996: 307. ♂. Type locality: 50 km N Sesfontein, Kaokoveld, Namibia (NNIC).

### Male (Figs 139A, B)

Head black; apical half of mandible dark reddish; anterior margin of clypeus very narrowly whitish; distal flagellomeres ventrally brightened. Thorax black with following whitish: dorso-lateral angles of pronotum, partly postspiracular sclerite and outer lateral margin of tegula. Legs blackish with following whitish: apical



margin of mid coxa, apical half of hind coxa, trochanters, dorsal surface of fore femur, broadly base and narrow apex of hind femur, fore and mid tibiae, hind tibia except for its broadly blackish apex, fore and mid tarsi, hind tarsus gradually darkened towards apex. Wings hyaline; stigma, costa, subcosta black and rest of venation blackish. Abdomen black; terga with narrow whitish posterior margins.

Head conspicuously narrowed behind eyes. Antenna 1.3× as long as maximum head width, flagellomeres 8,9 about as long as width. Eyes converging below. Postocellar area: width : length = 1.0 : 0.8; lateral furrows convex. Frontal area distinctly limited; anterior cross-ridge shallowly interrupted medially; lateral furrows convex. Interantennal area with shallow semicircular furrow.

Head smooth and shiny; pubescence whitish. Mesoscutum scattered micropunctate, shiny; pubescence similar to that on head. Abdomen scattered micropunctate, shiny. Penis valve: Fig. 140.

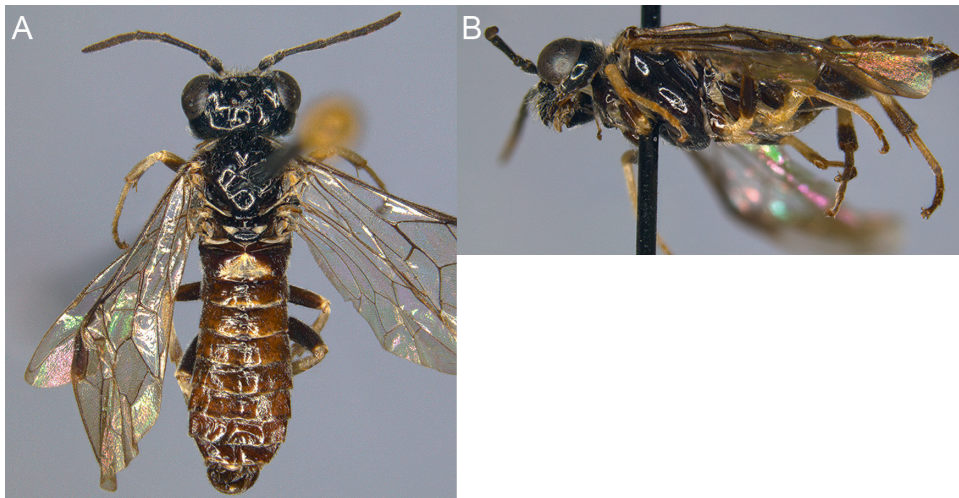
Length: 6.5-7.0 mm.

#### Female

Unknown.

#### Etymology

This species was named after Dr. med. Beate Koch, the daughter of the describing author.



**Fig. 139. A-B.** *Xenapates beatae*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Distribution

Namibia (Kunene Region) (Fig. 181).

## Ecology and habitat

This species is only known from the type locality, being a comparatively small shallow moist dip in the terrain located in the Thornbush Savanah Biome.

The vegetation of this habitat (Fig. 141) is dominated by the small *Acacia*-like tree *Dichrostachys cinerea* (Linnaeus) Wight & Arnott (Fabaceae), and in their semi-shade the herbaceous plant *Achyranthes aspera* Linnaeus var. *sicula* Linnaeus (Amaranthaceae). All specimens were observed on leaves of the latter species, and therefore it may be the food plant. The area was visited on three occasions, but females were not collected. The flight season is February and March.

## Remarks

*Xenapates beateae* belongs to the *X. brevicornis* species group (Koch 1995) and inhabits together with *X. damaraensis* the same habitat north of Sesfontein.

In its colouration *X. beateae* is similar to *X. damaraensis*. *Xenapates beateae* differs strikingly from the other *Xenapates* species of the study region by its nearly entirely black clypeus and labrum. Further morphological differences between the species are discussed under *X. damaraensis*.

The ratio of length of antenna to the maximum head width varied from 1.3x to 1.4x.

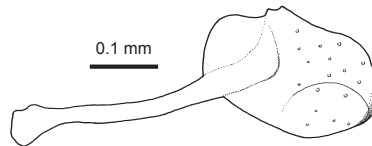


Fig. 140. *Xenapates beateae*. Penis valve (left, lateral aspect).

## *Xenapates damaraensis* Koch, 1995

*Xenapates damaraensis* Koch, 1995: 373, 389. ♂♀. Type locality: Kaross, S.[outh] W.[est] A.[frica] [Namibia] (NNIC).

## Female

Head black, gena with white spot; base of mandible white, blackish medially becoming reddish in apical half; labrum white with very narrow anterior margin black, lateral teeth and narrow anterior margin of clypeus white; distal flagellomeres



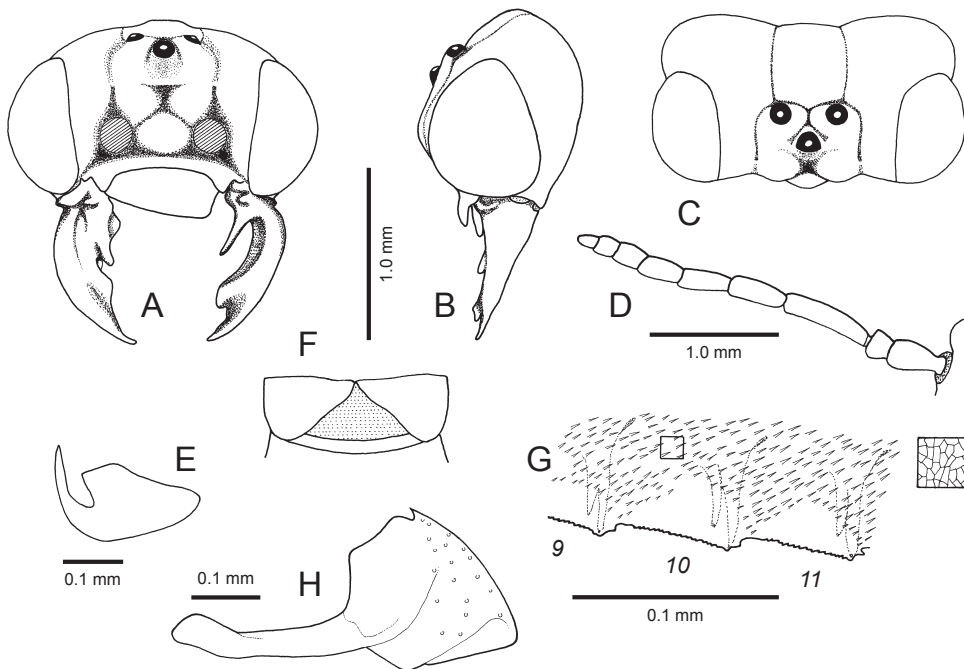
**Fig. 141.** The habitat of *Xenapates beateae* and *X. damaraensis* about 40 km north of Sesfontein in northwestern Namibia (Thornbush Savanna Biome).  
(Photo by F. Koch)

ventrally brightened. Thorax black with following whitish: dorso- and ventro-lateral angels of pronotum, postspiracular sclerite, margin of tegula and small dorsal angel of mesopleuron. Legs whitish with following blackish: more or less basal half of coxae, broad apex of posterior surface of fore and mid femur, apex of hind femur and hind tibia, distal tarsomeres darkened. Wings hyaline; stigma and costa blackish with narrow pale at base, subcosta and rest of venation blackish. Abdomen black; terga and sterna with very narrow whitish posterior margins.

Head parallel-sided behind eyes. Antenna 1.2× as long as maximum head width. Eyes converging below. Postocellar area: width : length = 1.0 : 1.2, lateral furrows slightly convex towards posterior margin of head. Frontal area distinctly limited; anterior cross-ridge deeply and broadly interrupted medially; lateral furrows convex. Interantennal area with deep triangular groove.

Vertex and gena smooth and shiny, frons and supraclypeal area scattered micropunctate, shiny, paraantennal field densely punctuate, subshiny; pubescence whitish. Thorax smooth and shiny; pubescence similar to that on head. Abdomen smooth and shiny. Sawsheath in dorsal view very narrow, in lateral view obtusely pointed apically. Lancet with about 21 serrulae (Fig. 142G).

Length: 7.0-7.5 mm.

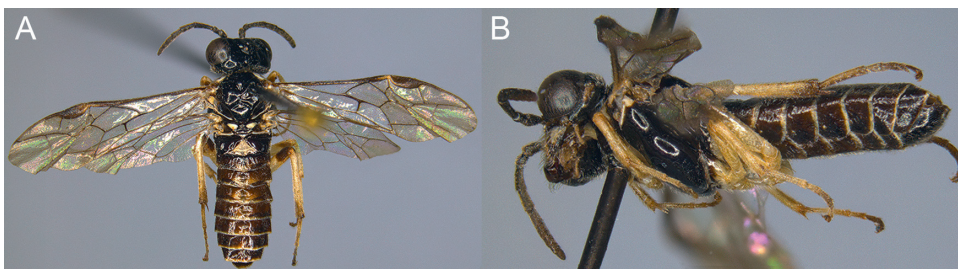


**Fig. 142. A-H.** *Xenapates damaraensis*. **A.** Head (frontal aspect). **B.** Head (lateral aspect). **C.** Head (dorsal aspect). **D.** Antenna. **E.** Tarsal claw. **F.** Tergum 1. **G.** Serrulae 9-11, square illustrating enlarged microsculpture. **H.** Penis valve (left, lateral aspect).

**Male** (Figs 143A, B)

Colouration similar to that of female. Terga 2-7 light brown in the middle so that abdomen appears to be pale longitudinally striped, sterna also light brown medially, sternum 9 black. Head slightly narrowed behind eyes. Antenna 1.3× as long as maximum head width. Other features as for female. Penis valve: Fig. 142H.

Length: 6.0-7.0 mm.



**Fig. 143. A-B.** *Xenapates damaraensis*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Etymology

This species is named after Damaraland in Namibia, the landscape of the type locality.

## Distribution

Namibia (Region: Erongo, Kunene, Omusati) (Fig. 182).

## Ecology and habitat

*Xenapates damaraensis* was found together with *X. beateae* in the described habitat (Fig. 141) under the latter species.

*Xenapates damaraensis* seems to prefer moist habitats, which are located mostly in the Thornbush Savanna Biome (Fig. 144). Furthermore this species was collected in the dense and species rich vegetation at the banks of the Kunene River in the Thornbush Savanna Biome. Further material was collected from the Brandberg Massif (Figs 16, 80) during the rainy season, and from the immediate surroundings of a dry-river south of Windhoek. The flight season is February and March.



**Fig. 144.** The habitat of *Xenapates damaraensis* in the vicinity of the Ongongo Falls in the Kaokoveld (Thornbush Savanna Biome) in north-western Namibia. an especially large Malaise trap with two collecting heads, designed by Gressitt & Gressitt (1962), is depicted on the right of the photograph. (Photo by F. Koch)

## Remarks

*Xenapates damaraensis* is the most abundant species of *Xenapates* in Namibia, and belongs to the *X. brevicornis* species group (Koch 1995). At the first glance, it differs from *X. beateae* mainly by the possession of the white genal spot and the more whitish legs. Both species are clearly distinguished in the shape of the penis valve (Figs 140, 142H).

Sometimes the hind tibia of males is only dark spotted apically. In some females the terga and sterna may be medially dirty white.

## *Xenapates eardleyi* Koch, 1995

*Xenapates eardleyi* Koch, 1995: 374, 392. ♂♀. Type locality: D'Nyala Nat.[ure] Res.[erve], Ellisras District, Tvl. [Transvaal] (Limpopo Province), South Africa (PPRI).

## Female

Head black with following whitish, a small spot on the dorso-interior angle of the eye, ventral half of gena and a narrow posterior margin rising up to top of the eye; base of mandible whitish, blackish medially becoming reddish in apical half, labrum and clypeus whitish; distal flagellomeres ventrally brightened. Thorax black; with pronotum extensively white, postspiracular sclerite, tegula, a large spot on mesopleuron and narrow posterior margin of mesoscutellar appendage white. Legs whitish; fore and mid coxa at the extreme base black, hind coxa dorsally and ventrally extended blackish, posterior surface of fore and mid femur blackish in apical half, hind femur with entirely broad black apex, fore and mid tibia with blackish stripe on posterior surface, hind tibia only in apical half blackish striped, hind tarsus light brown. Wings hyaline with very slightly infusate apical half; stigma and costa dark brown with pale at base, subcosta and rest of venation dark brown. Abdomen black; terga with very narrow whitish posterior margins, sterna more whitish.

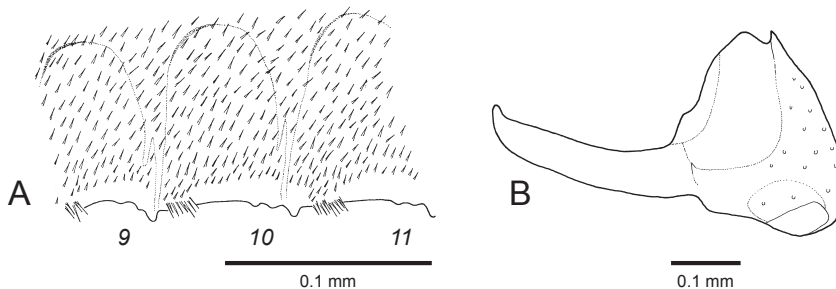


Fig. 145. A-B. *Xenapates eardleyi*. A. Serrulae 9-11. B. Penis valve (left, lateral aspect).

Head parallel-sided behind eyes. Antenna 1.3× as long as maximum head width. Eyes converging below. Postocellar area: width : length = 1.0 : 1.0L; lateral furrows convex. Frontal area distinctly limited; anterior cross-ridge deeply interrupted medially; lateral furrows convex. Interantennal area with a deep triangular groove.

Vertex, frons and supraclypeal area smooth and shiny, gena scattered micropunctate, shiny, paraantennal field shallowly punctate, shiny; pubescence whitish. Mesoscutum smooth and shiny; pubescence similar to that on head. Abdomen smooth and shiny. Sawsheath in dorsal view very narrow, in lateral view acutely rounded. Lancet with about 22 serrulae (Fig. 145A).

Length: 8.5 mm.

#### **Male** (Figs 146A, B)

Colouration similar to that of female. Sterna extensively whitish, except for black sternum 9. Head slightly narrowed behind eyes. Antenna 1.4× as long as maximum head width. Other features as for female. Penis valve: Fig. 145B.

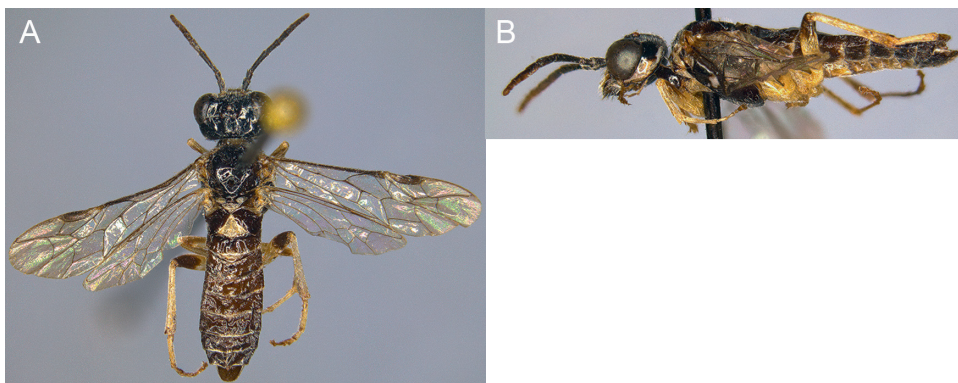
Length: 7.0-7.8 mm.

#### **Etymology**

This species was named after Dr. Connal Desmond Eardley, specialist scientist of Agricultural Research Council, Plant Protection Research Institute, Pretoria, South Africa.

#### **Distribution**

Namibia (Otjozondjupa Region) (Fig. 182), South Africa (Province: KwaZulu-Natal, Limpopo), Zambia, Zimbabwe.



**Fig. 146. A-B.** *Xenapates eardleyi*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

## Ecology and habitat

The Namibian locality of *Xenapates eardleyi* is Aha Hills in the Northern Kalahari, and belongs to the Kalahari Basin as part of the Woodland Savanna Biome. The vegetation is quite dense and floristically species rich. The flight season is December and February-March.

## Remarks

Externally, *Xenapates eardleyi* is distinguished from all other *Xenapates* species occurring in the study region by its white colouration pattern on the gena.

*Xenapates eardleyi* is clearly separated from the *X. brevicornis* species group (Koch 1995) by the shape of the serrulae, which are apically rounded (Fig. 145A). This shape is unique in all known species of this genus, and therefore it is the only species of the hypothetical *X. eardleyi* species group (Koch 1995).

In males the sterna 2-8 may be entirely whitish, and sometimes the extreme apex of hind tibia is blackish.

## *Xenapates similis* Benson, 1939

*Xenapates similis* Benson, 1939: 121. ♀. Type locality: Sawmills, S.[outh] Rhodesia [Zimbabwe] (BMNH).

## Female (Figs 147A, B)

Head and antenna black; base of mandible white, dark reddish medially becoming reddish in apical half; labrum, lateral teeth and narrow anterior margin of clypeus white. Thorax black; with pronotum extensively whitish, postspiracular sclerite, tegula and a large spot on mesopleuron white. Legs light yellow; coxae very narrowly blackish marginate, posterior surface of fore and mid femur blackened apically, hind femur with entirely black apex, fore and mid tibia blackish striped at posterior surface, hind tibia blackish ringed apically, distal tarsomeres of fore and mid legs blackish, hind tarsus black. Wings subhyaline; stigma, costa, subcosta and rest of venation blackish. Abdomen black; terga and sterna with narrow whitish posterior margins, medially broadened.

Head parallel behind eyes. Antenna 1.3× as long as maximum head width. Eyes converging below. Postocellar area: width : length = 1.0 : 0.9, lateral furrows slightly convex towards posterior margin of head. Frontal area distinctly bordered; anterior cross-ridge shallowly interrupted medially; lateral furrows convex. Interantennal area with two lateral grooves.

Vertex, frons and supraclypeal area smooth and shiny, gena scattered micropunctate, shiny, paraantennal field densely, shallowly punctuate, subshiny; pubescence whitish. Mesoscutum smooth and shiny; pubescence similar to that on head. Terga 1,2 smooth and shiny, following terga slightly microsulptured, shiny.



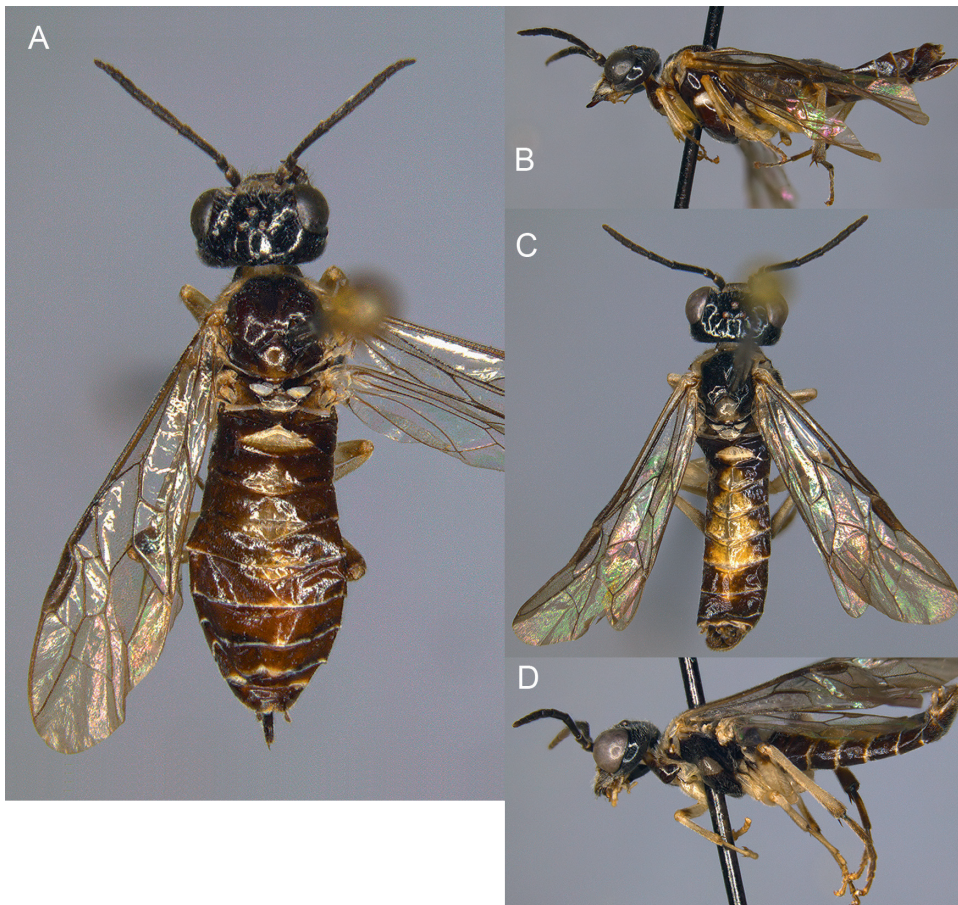
Sawsheath in dorsal view very narrow, in lateral view pointed apically. Lancet with about 23 serrulae (Fig. 148A).

Length. 6.5-8.0 mm.

**Male** (Figs 147C, D)

Colouration similar to that of female. Mesoscutellum, mesoscutellar appendage and small dorsal angle of mesopleuron white. Terga 2-5(6) pale in the middle, so that the abdomen appears to have a pale longitudinal stripe; sterna nearly entirely whitish; sternum 9 black with whitish posterior margin. Fore and mid tarsus nearly entirely pale yellow. Head slightly narrowed behind eyes. Antenna 1.4× as long as head maximum width. Other features as for female. Penis valve: Fig. 148B.

Length. 6.0-7.0 mm.



**Fig. 147. A-D.** *Xenapates similis*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect, male. **C.** Dorsal aspect. **D.** Lateral aspect. (Photos by A.D. Liston)