

## Etymology

The species name means “*similar*”, alluding to a likeness with *Xenapates abyssinica* Benson.

## Distribution

Botswana, Cameroon, Mozambique, Namibia (Region: Otjozondjupa, Okavango) (Fig. 181), South Africa (Province: Limpopo, Mpumalanga), Zambia, Zimbabwe detailed distribution is presented by Koch (1995).

## Ecology and habitat

In Namibia, *Xenapates similis* was recorded from riverine habitats at the Okavango River [Kavango], in the Caprivi Strip, as well as from moist habitats with dense vegetation of the Northern Kalahari and from the foot of the Waterberg (Fig. 24). All localities belong to the Woodland Savanna Biome.

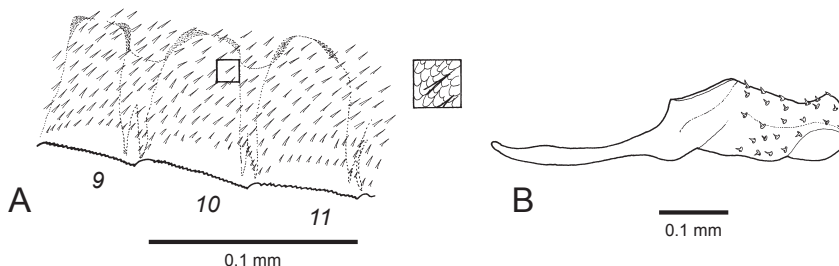
In the area of the Waterberg, *Xenapates similis* is highly attracted to yellow pan traps. The flight season is from December to February.

## Remarks

Based on the shape of the penis valve (Koch 1995), *Xenapates similis* is the only known species of the hypothetical *X. similis* species group.

The pale longitudinal stripe on the dorsal surface of the abdomen of *Xenapates similis* is similar to *X. damaraensis* especially in males. However, the latter species is distinguished by the whitish genal spot and by the entirely black mesopleuron.

Sometimes in females the sterna are paler, similar to males, and the mesoscutellum and mesoscutellar appendage may be more or less whitish.



**Fig. 148. A-B.** *Xenapates similis*. **A.** Serrulae 9-11, square illustrating enlarged microsculpture. **B.** Penis valve (left, lateral aspect).

## Subfamily Blennocampinae

### Genus *Distega* Konow, 1904

*Distega* Konow, 1904b: 244. Type species: *Distega sjoestedti* Konow, 1904b, by monotypy. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Blennocampinae/Distega/index.htm>

*Paradistega* Forsius, 1934: 394, 396. Type species: *Distega bevisi* Forsius, 1930, by original designation.

*Codistega* Pasteels, 1949: 19, 23. Type species: *Paradistega congolensis* Forsius, 1934 [= *Distega congolensis* (Forsius, 1934)], by original designation.

*Eudistega* Pasteels, 1949: 19, 24. Type species: *Eudistega formosus* Pasteels, 1949 [= *Distega formosa* (Pasteels, 1949)], by original designation.

*Pachydistega* Pasteels, 1949: 19, 20. Type species: *Distega mocsaryi* Enslin, 1913b, by original designation.

*Distegella* Pasteels, 1951: 197, 198. Type species: *Distegella velutina* Pasteels, 1951 [= *Distega velutina* (Pasteels, 1951)], by original designation.

### Description

Antenna 9-segmented (Fig. 150C). Head without especially conspicuous structures; clypeus separated by an epistomal suture from the supraclypeal area, anterior margin of clypeus truncate or very slightly emarginate (Fig. 150A); malar space absent (Fig. 150B). A continuous suture divides the upper and lower halves of the mesepisternum (Fig. 149A). Tarsal claws with a basal lobe and with a smaller inner tooth (Fig. 150D). Fore wing with radial cell (R1) divided by radial crossvein (2r), anal cell present only distally (2A), petiolate (1A), 2nd and 3rd anal vein (2A+3A) almost completely obliterated, only a stub present (Fig. 41G) or incompletely outlined (Fig. 41H); hind wing with closed radial cell (R1), with anal cell (A) and two middle cells (Rs and M) present (Fig. 41G). Tergum 1 with a rather wide and deep median split (Fig. 150E).

The colouration of the species is all black, or black with yellowish markings or yellowish with black markings.

Ranging from 6.0 to 10.0 mm in length.

### Remarks

The genus *Distega* is endemic to the Afrotropical Region, and with 25 valid species (Taeger *et al.* 2010) it is the largest genus of the Afrotropical Blennocampinae. This genus was revised by Pasteels (1955a), but it is urgently in need of a taxonomic revision.

For the south-west African study region only two species are reported, both of which have been collected in the Woodland Savanna Biome.

Sporadically, it is possible to find specimens of different species with variable reduction of the fore wing veins 2A+3A (Fig. 41H). In fact, apart from a basal stub of 2A+3A straight at apex, and in very few cases a very small vestige of these veins at the base of the anal crossvein (a) (Fig. 41G, arrowed), particularly in *D. bevisi* (Fig. 41H), these veins are almost completely obliterated (Fig. 41G) in all other species.

### Host plants

The larvae of the western African *Distega nigeriae* Forsius, 1927b (Fig. 37C) were observed feeding on *Commelina benghalensis*, *C. communis* (Commelinaceae) and *Digitaria horizontalis* (Poaceae) in Benin including recording of the complete metamorphosis (G. Goergen, unpublished) (**Chapter 7: Host plants**).

### *Distega bevisi* Forsius, 1930

*Distega bevisi* Forsius, 1930a: 71. ♀. Type locality: Widenham, Natal [KwaZulu-Natal], South Africa (BMNH).

#### Female (Figs 149A-C)

Head and antenna black; apical half of mandible reddish brown. Thorax yellow with following black: propleuron, a patch on ventro-lateral angle of pronotum, one small medial patch on median lobe of mesoscutum adjacent to pronotum, ventral half of mesopleuron downwards from transverse suture, mesosternum, metapleuron. The mesoscutellar appendage and metanotum blackish. Legs black with following yellow: dorsal surface of fore and mid femur, fore and mid tibia, narrow apical margin of hind coxa, fore tarsus, dorsal surface of hind trochanter, narrow base and apex of hind femur, mid basitarsomere, except for its apex, basal half of hind tibia. Wings slightly bicoloured with infusate apical half and basal half hyaline with narrow infusate at base; intercostal area dark fuscous, stigma, costa, subcosta and rest of venation blackish. Abdomen yellow; tergum 1 with two large black medial patches, terga 2-7 broadly black medially, sawsheath black with yellow at base.

Head parallel-sided behind eyes. Antenna 1.3× as long as maximum head width. Eyes converging below. Anterior margin of clypeus subtruncate, malar space absent. Postocellar area: width : length = 1.0 : 0.7; lateral furrows slightly convex towards posterior margin of head. Frontal area distinctly limited, anterior cross-ridge scarcely interrupted medially, lateral furrows convex. Interantennal area with two small moderately deep lateral grooves.

Vertex and supraclypeal area smooth and shiny; gena and frons scattered micropunctate, paraantennal area irregularly microsculptured, shiny, clypeus coarsely scattered punctate, shiny; pubescence whitish. Mesoscutum nearly impunctate, shiny; pubescence similar to that on head. Abdomen smooth and shiny. Sawsheath in dorsal view narrow, in lateral view obtusely pointed apically (Fig. 150F). Lancet with about 21 serrulae (Fig. 150G).

Length: 10.0-11.0 mm.

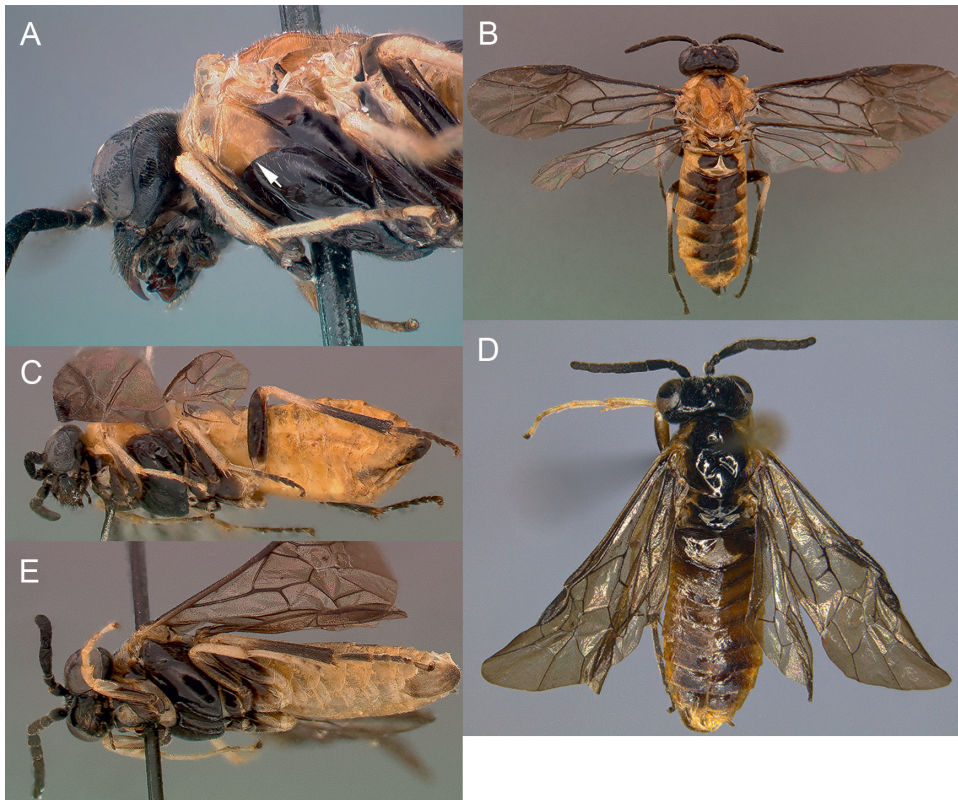
**Male** (Figs 149D, E)

Colouration similar to that of female, except for: mesonotum, metanotum and mesopleuron entirely black. Terga 1-8 broadly black, only narrowly laterally yellow, sternum 9 black.

Head conspicuously narrowed behind eyes. Antenna 1.5× as long as maximum head width. Malar space absent. Vertex, paraantennal and supraclypeal area scattered micropunctate, shiny, clypeus scattered punctate, shiny, frontal area irregularly microsculptured, shiny; pubescence dark brown. Median lobe of mesoscutum moderately densely punctate, shiny, lateral lobe scattered micropunctate, shiny; pubescence light brown. Genitalia: Figs 150H, I.

**Etymology**

This species was named after Lionel Bevis (1897-1985), who was an entomologist at the Durban Science Museum of KwaZulu-Natal.



**Fig. 149.** A-C. *Distega bevisi*, female. A. mesepisternum with transverse suture (arrowed), habitus. B. Dorsal aspect. C. Lateral aspect, male. D. Dorsal aspect. E. Lateral aspect (Photos by A.D. Liston)

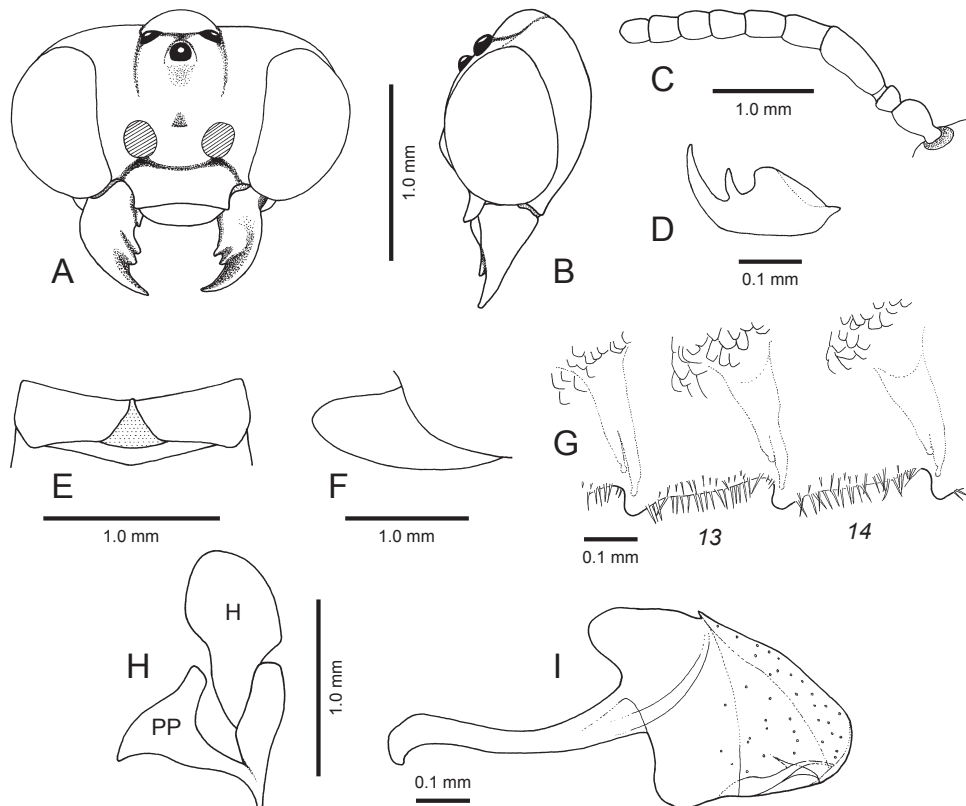


## Distribution

Botswana, Mozambique, Namibia (Region: Okavango, Omusati, Otjozondjupa) (Fig. 183), South Africa (Province: Eastern Cape, KwaZulu-Natal, Limpopo, North West).

## Ecology and habitat

In the Caprivi Strip of Namibia *D. bevisi* was recorded from riverine habitats at the Okavango River [Kavango] (Fig. 23), as well as from moist habitats of Northern Kalahari. All localities belong to the Woodland Savanna Biome. Further records exist from the Etosha Pan National Park (Thornbush Savanna Biome) at a temporary watering place. The flight season is from December to January.



**Fig. 150. A-I. *Distega bevisi*.** **A.** Head (frontal aspect). **B.** Head (lateral aspect). **C.** Antenna. **D.** Tarsal claw. **E.** Tergum 1. **F.** Sawsheath (lateral aspect). **G.** Serrulae 13-14. **H.** Parapenis and harpe (right, ventral aspect). **I.** Penis valve (left, lateral aspect).

## Remarks

In South Africa *D. bevisi*, including the holotype, has been reported from different areas near the coast of the KwaZulu-Natal Province, and from the mountain region of the Limpopo Province. Zoogeographically, this species belongs to the East African Coastal District, which is defined by Winterbottom (1978). This is a narrow belt between the Indian Ocean and the escarpment (Drakensberg mountain system) with some finger-like extensions further into the inland. Therefore the vegetation consists of lowland and mangrove forests at the coast and savanna and mountain forests on the plateau of the escarpment. *Distega bevisi* is the second known species beside *Arge braunsi* Konow, 1904a which has this pattern of distribution (Koch & Liston 2012b).

It was not possible to find any constant morphological differences between the specimens from South Africa and those from the Caprivi Strip as well as Botswana. Some females from the coast of the Indian Ocean Coastal Belt Biome differ in having a black mesonotum, metanotum and mesopleuron. On the other hand, in Namibian species the mesonotum and metanotum may be entirely yellow. Nevertheless, the possibility cannot be excluded that two different species are involved.

### *Distega montium* Konow, 1907

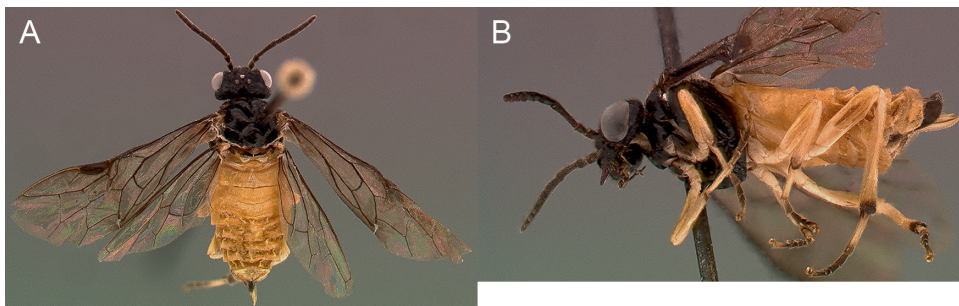
*Distega montium* Konow, 1907a: 2. ♂♀. Type locality: Kilimandjaro [Kilimanjaro], Africa or. [Tanzania] (NHRS).

*Distega braunsi* Enslin, 1911: 667, **syn. n.** ♀. Type locality: Lichtenberg [Lichtenburg], Transvaal (North West Province), South Africa (TMSA).

*Distega brunniventris* Enslin, 1913b: 314, **syn. n.** ♀. Type locality: Atusha [Arusha]-Ju, Ostafrika [Tanzania] (HNHM).

### Female (Figs 151A, B)

Head and antenna black; apical half of mandible dark reddish. Thorax black with



**Fig. 151. A-B.** *Distega montium*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

metanotum and metapleuron yellow. Legs yellow; fore coxa and fore trochanter, basal half of mid coxa, narrow apices of tibiae and tarsi blackish, only basal half of basitarsomeres yellowish. Wings infusate throughout; intercostal area dark fuscous, stigma, costa, subcosta and rest of venation blackish. Abdomen yellow; sawsheath black with yellow at extreme base.

Head parallel-sided behind eyes. Antenna 1.5× as long as maximum head width. Eyes converging below. Anterior margin of clypeus subtruncate, malar space very narrowly developed. Postocellar area: width : length = 1.0 : 0.7; lateral furrows slightly convex. Frontal area distinctly limited; anterior cross-ridge conspicuously interrupted medially; lateral furrows convex. Interantennal area with two small deep lateral grooves.

Vertex and frons smooth and shiny; posterior half of gena, supraclypeal area and paraantennal area micropunctate, shiny, clypeus moderately coarsely, densely punctate, shiny; pubescence light brown. Mesoscutum nearly impunctate, shiny; pubescence whitish. Abdomen smooth and shiny. Sawsheath in dorsal view narrow, in lateral view narrowly rounded apically (Fig. 152A). Lancet with about 21 serrulae (Fig. 152B).

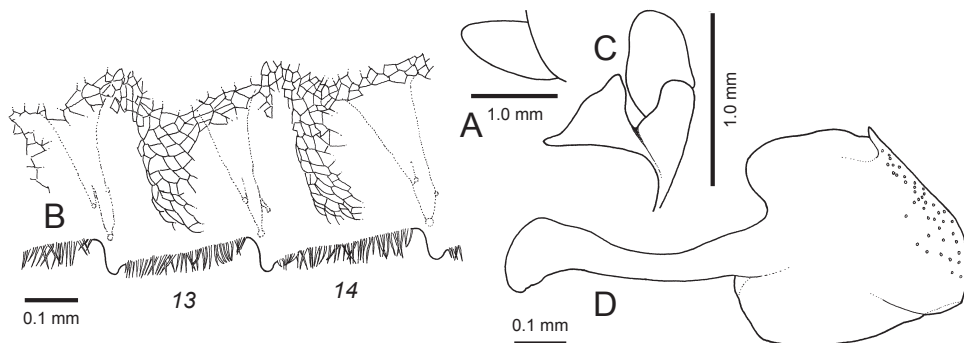
Length: 7.5-9.2 mm.

#### Male

Colouration similar to that of female. Flagellomeres 4-7 with brown ventral surface, thorax entirely black, tergum 1 black, posterior margin of tergum 6, dorsal surface of tergum 7,8 and sternum 9 blackish.

Head conspicuously narrowed behind eyes. Antenna 1.3× long as maximum head width. Malar space absent. Genitalia (Figs 152C, D).

Length: 8.0-9.0 mm.



**Fig. 152. A-D.** *Distega montium*. **A.** Sawsheath (lateral aspect). **B.** Serrulae 13-14. **C.** Parapenis and harpe (right, ventral aspect). **D.** Penis valve (left, lateral aspect).

## Etymology

The species name means “of the mountain”, referring to the type locality on Mt. Kilimanjaro.

## Distribution

Burundi, Democratic Republic of the Congo, Ethiopia, Kenya, Mozambique, Namibia (Otjozondjupa Region) (Fig. 183), Rwanda, South Africa (North West Province), Tanzania, Uganda.

## Ecology and habitat

Collected at the foot of the Waterberg Mountain (Namibia), located in the Thornbush Savanna Biome. The habitat is moist with dense vegetation (Fig. 24). The flight season is not well known, the Namibian specimen was collected in February.

## Remarks

It was not possible to find any morphological differences between the specimens from southern Africa and those from East Africa. Nevertheless, it cannot be excluded that two different species are involved.

Sometimes the dorso-lateral angle of the pronotum and a narrow posterior margin of the mesoscutellum can be yellow. The colouration of the mid coxa varies from entirely yellow to black.

The holotypes of *Distega braunsi* and *D. bruniventris* have been examined, and it was impossible to find any differences to *D. montium*, which are relevant for distinguishing them as different species; thus, they are synonymised here with *D. montium*.

## Genus *Durbadnus* Pasteels, 1954

*Durbadnus* Pasteels, 1954a: 503. Type species: *Monophadnus chubbi* Forsius, 1930a, by original designation. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Blennocampinae/Durbadnus/index.htm>

## Description

Antenna filiform, 9-segmented, longer than maximum head width, flagellomere 1 conspicuously longer than flagellomere 2 or flagellomere 3. Head without strongly developed structures; occipital carina absent; each mandible with strongly developed, double-shouldered, subapical tooth; clypeus subtruncate, very slightly enlarged medially; malar space absent (Koch & Liston 2012c: 657, fig. 27); supraantennal crest moderately developed; frontal area indistinctly limited. Epicnemium absent. Tarsal claws cleft apically, with inner tooth somewhat shorter, and large basal lobe (Koch & Liston, 2012c: 654, fig. 16). Fore wing with radial

crossvein (2r) present, media (M) slightly curved and parallel to crossvein (1m-cu) (Fig. 41E), cells 1Rs and 2Rs subequal in length (Fig. 41E) or 2Rs is as long as 1R1 and 1Rs united, anal cell present only distally (2A), petiolate (1A), stub of 2nd and 3rd anal veins (2A+3A) nearly straight or furcate at apex (Koch & Liston, 2012c); hind wing with closed radial cell (R1), without closed middle cells (Rs and M), anal cell (A) present and about equal to width of anal cell, short petiolate (1A) (Fig. 41E). Tergum 1 with more or less wide and deep median split (Fig. 153A).

Head and abdomen black, thorax black with orange yellow markings.

Ranging from 6.0-8.0 mm in length.

### Remarks

Pasteels (1949) recognized that *Monophadnus chubbi* Forsius, 1930a is atypical for *Monophadnus* Hartig, 1837, because as described by Forsius (1930a) the tarsal claws are cleft apically and lobed basally, whilst *Monophadnus* has simple claws, without basal lobe and subapical tooth. Pasteels (1954a) described *Durbadnus*, after he had seen a male of *D. chubbi* collected by Marley in 1945. However, he perpetuated a mistake made by Forsius (1930a): "Hind wings with one closed middle cell". Actually, in *Durbadnus* the hind wing is without a closed middle cell, i.e. cells RS and M are missing.

Three valid species of *Durbadnus* (*D. taegeri* Koch & Liston, 2012c, *D. chubbi* (Forsius, 1930a) and *D. obscuripes* Forsius, 1931) have so far only been found in South Africa (Koch & Liston 2012c)

### Host plants

Nothing is known about their host plants.

### ***Durbadnus taegeri* Koch & Liston, 2012**

*Durbadnus taegeri* Koch & Liston, 2012c: 655 ♂. Type locality: Hexrivier, Citrusdal, Cape Province (Western Cape Province), South Africa (USNM).

### Female (Figs 153A, B)

Head and antenna black; apical half of mandible reddish brown. Thorax black; pronotum, postspiracular sclerite, lateral half of lateral lobe of mesoscutum, medial lobe of mesoscutum at extreme angle and tegula orange yellow. Legs black; anterior surface of apical half and apex of posterior surface of fore femur yellow, fore tibia and fore basitarsomere at base dirty whitish. Wings uniformly slightly infusate; stigma, costa, subcosta and rest of venation blackish. Abdomen black.

Head very slightly narrowed behind eyes. Antenna 1.4× as long as maximum head width; flagellomere 1 as long as flagellomeres 2,3 combined. Eyes converging downwards. Postocellar area: width : length = 1.0 : 0.7; lateral furrows slightly



convex. Supraclypeal furrow deep. Supraantennal grooves large and deep, with conspicuous furrow at lateral margin of torulus. Interantennal area with rounded groove and small longitudinal furrow medially, ending at front margin of frontal area. In fore wing cells 1Rs and 2Rs subequal in length; stub of 2A+3A furcate (Fig. 41E). Median split of tergum 1 wide and deep.

Head sparsely micropunctate, shiny; pubescence on head brown. Mesoscutum more densely punctate, shiny; pubescence yellow. Terga 1,2 smooth and shiny, following terga transversely microridged and micropunctate, shiny. Sawsheath in dorsal view narrowed towards apex, in lateral view narrowly rounded at apex (Fig. 154A). Lancet with about 23 serrulae (Fig. 154B, C).

Length: 6.7 mm.

### Male

Unknown.

### Etymology

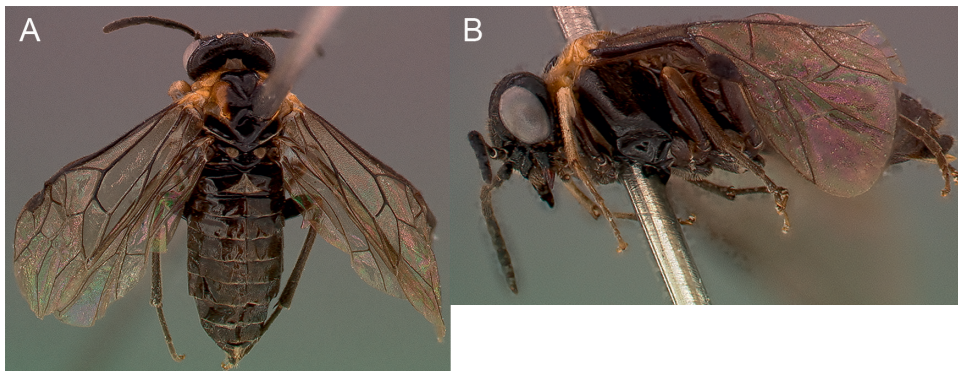
The species was named after our colleague and specialist on Symphyta Dr. Andreas Taeger, curator of Hymenoptera and Lepidoptera at the Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.

### Distribution

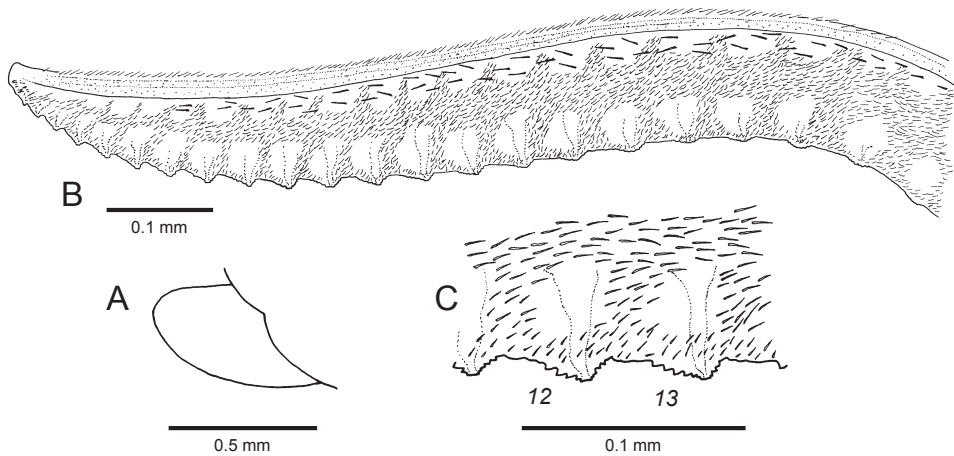
South Africa (Western Cape Province) (Fig. 183).

### Ecology and habitat

The riverine habitat is characterised by different shrub species and quite dense herbaceous plant vegetation and is located in the Mountain Fynbos of the winter rainfall zone (Fig. 8).



**Fig. 153. A-B.** *Durbadnus taegeri*, habitus, female (holotype). **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)



**Fig. 154. A-C.** *Durbadnus taegeri*. **A.** Sawsheath (lateral aspect). **B.** Lancet. **C.** Serrulae 12-13.

The flight season is more or less unknown. Only one specimen has been collected in October.

#### Remarks

*Durbadnus taegeri* was the first recorded member of the Tenthredinidae in the winter rainfall zone of southern Africa (Koch & Liston 2012c).

#### Genus *Trisodontophyes* Enslin, 1911

*Trisodontophyes* Enslin, 1911: 666. Type species: *Trisodontophyes nigroflava* Enslin, 1911, by original designation. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Blennocampinae/Trisodontophyes/index.htm>

#### Description

Antenna 9-segmented (Fig. 155D). Clypeus separated by an epistomal suture from the supraclypeal area, anterior margin of clypeus more or less circularly emarginate; malar space conspicuously developed (Fig. 155A); frontal area conspicuously domed, supraantennal bulges very strongly developed (Figs 155B, C). Tarsal claws tridentate with a basal lobe and two subapical teeth (Fig. 155E). Fore wing with radial cell (R1) divided by radial crossvein (2r), anal cell present only distally (2A), petiolate (1A), 2nd and 3rd anal vein (2A+3A) not outlined, only a basal stub present straight at apex (Fig. 41F); hind wing with closed radial cell, with anal cell (A) and one middle cell (M) present (Fig. 41F). Median split of tergum 1 moderately wide and deep (Fig. 155).

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

Ranging from 6.0-11.5 mm in length.

### Remarks

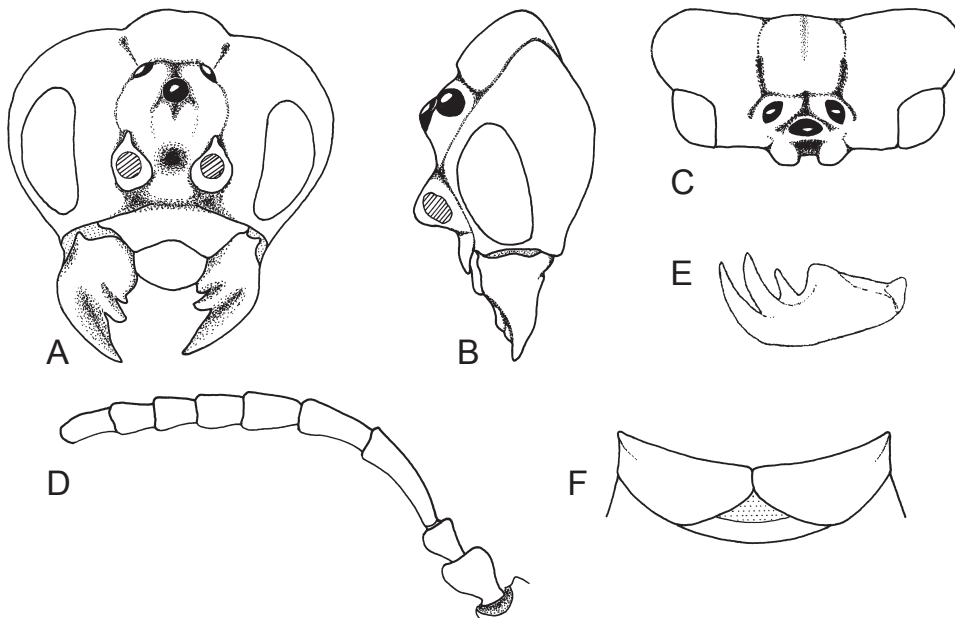
*Trisodontophyes* are readily separated from other African Blennocampinae by their tridentate claws (Fig. 155E).

Together with *Distega*, the endemic genus *Trisodontophyes* is one of the most species rich genera of Afrotropical Blennocampinae. Taeger *et al.* (2010) list 21 extant species as valid. The genus was revised by Koch (2001).

For the south-west African study region only one species is reported, which has been collected in the Woodland Savanna Biome.

### Host plants

Nothing is known about their host plants.



**Fig. 155.** A-F. *Trisodontophyes* sp. **A.** Head (frontal aspect). **B.** Head (lateral aspect). **C.** Head (dorsal aspect). **D.** Antenna. **E.** Tarsal claw. **F.** Tergum 1.

### ***Trisodontophyes diversa* Koch, 2001**

*Trisodontophyes diversa* Koch, 2001: 266, 273. ♂♀. Type locality: Ufipa, Tanganyika [Tanzania] (BMNH).

#### **Female**

Head and antenna black; mandible light brown in basal half becoming dark reddish apically. Thorax black with following yellow: propleuron (narrowly black at dorsal angle), pronotum, mesoscutellum, mesoscutellar appendage, metanotum, mesopleuron except for narrow ventral margin, katepimeron and metapleuron. Legs yellow: tibiae blackish ringed apically, tarsi blackish with basitarsomeres yellow on basal half. Wings slightly bicoloured with infusate apical half and flavescent-hyaline basal half, intercostal area dark fuscous, stigma, costa, subcosta dark brown, rest of venation yellow at base and dark brown in apical half. Abdomen yellow; sawsheath black margined apically.

Head slightly enlarged behind eyes. Antenna 1.3× as long as maximum head width. Eyes slightly converging below. Anterior margin of clypeus shallowly emarginate. Postocellar area: width : length = 1.0 : 0.6; lateral furrows diverging towards posterior margin of head (Fig. 156A), without median furrow. Frontal area distinctly limited laterally; anterior cross-ridge scarcely developed. Interantennal furrow shallow, with two small lateral grooves.

Vertex scattered punctate with some coarser punctures between, shiny; gena more densely punctate, subshiny; frons and clypeus rugosely sculptured, dull; pubescence light brown. Mesoscutum moderately densely punctate, shiny; pubescence similar to that on head. Sawsheath in dorsal view narrow, in lateral view moderately pointed apically. Lancet with about 18 serrulae (Figs 156B-D).

Length: 9.0-10.5 mm.

#### **Male** (Figs 157A, B)

Colouration similar to that of female. Antenna 1.4× as long as maximum head width. Postocellar area: width : length = 1.0 : 0.7, median furrow slightly developed. Genitalia: Figs 156E, F.

Length: 7.5-8.0 mm.

#### **Etymology**

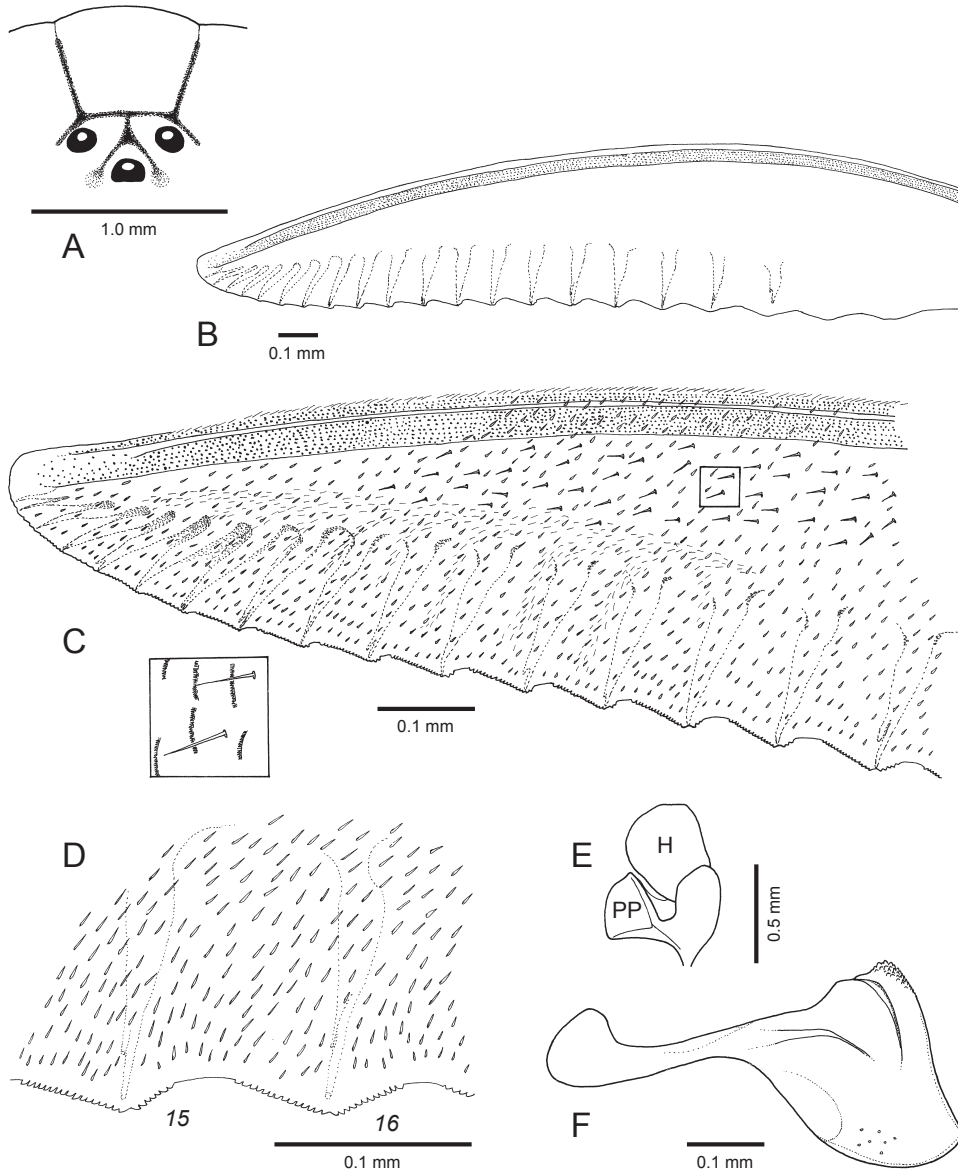
Derived from Latin *diversus*, various, with reference to the intraspecific variability of this species.

#### **Distribution**

Malawi, Namibia (Region: Okavango, Otjozondjupa) (Fig. 183) Tanzania.

## Ecology and habitat

The Namibian collection site “Omaramba-Omatako” is a dry-river located in the Woodland Savanna Biome. Furthermore, this species is recorded from the



**Fig. 156. A-F.** *Trisodontophyes diversa*: **A.** Postocellar area (dorsal aspect). **B.** Lancet. **C.** Lancet (apical portion), square illustrating enlarged microsculpture. **D.** Serrulae 15-16. **E.** Parapenis and harpe (right, ventral aspect). **F.** Penis valve (left, lateral aspect).





**Fig. 157. A-B.** *Trisodontophyes diversa*, habitus, male. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

Okavango River and from Grootfontein, localities also belonging to this biome. It seems that *T. diversa* prefers moist habitats with dense vegetation.

The flight season is not well known, the specimens were collected in February and December.

#### Remarks

The first record of *T. diversa* is from 1887, the second from 1918. Numerous entomological expeditions to these localities over the past 20 years, with the objective of obtaining new material, were unsuccessful.

Variability of colouration in this species is visible in the reduction of the largely black mesosternum to a small median patch. On the other hand, the mesoscutellum and the mesoscutellar appendage may be also black. The median furrow of the postocellar area is also developed to different degrees.

#### Subfamily Selandriinae

<http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Selandriinae/index.htm>

#### Genus *Dulophanes* Konow, 1907

*Dulophanes* Konow, 1907d: 132. Type species: *Dulophanes morio* Konow, 1907d, by monotypy. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Selandriinae/Dulophanes/index.htm>

*Dulophanella* Forsius, 1934: 405. Type species: *Dulophanella gracilis* Forsius, 1934 [= *Dulophanes gracilis* (Forsius, 1934)], by original designation.

*Phanodules* Pasteels, 1949: 80, 88. Type species: *Dulophanes antennatus* Enslin, 1913a, by original designation.

## Description

Antenna with 9-11 segments. Head without especially conspicuous structures; clypeus separated by an epistomal suture from the supraclypeal area, anterior margin of clypeus truncated or subtruncated. Anterior portion of mesepisternum with epicnemium, separated by a more or less conspicuous epicnemial groove. Tarsal claws simple (Fig. 159A) or with subapical tooth and basal lobe. Fore wing with radial cell (R1) divided by radial crossvein (2r), the origins of veins M and Rs+M with distinct distance about as long as crossvein Rs (Fig.), anal cell (A) without cross vein a (1A and 2A are fused), contracted medially (Fig. 41B); hind wing with closed radial cell (R1), with anal cell (A) and two middle cells (Rs and M) present (Fig. 41B). Tergum 1 with a rather narrow, but deep median split.

The colouration of the species is predominantly black.

Ranging from 4.0 to 6.5 mm in length.

## Remarks

According to Taeger *et al.* (2010) 21 species of *Dulophanes* are known as endemic to the Afrotropical Region. However, most of them belong to the central African fauna. For the study region only one species is reported. The genus *Dulophanes* desperately needs a taxonomic revision. The revision produced by Pasteels (1949) is outdated and in some cases incorrect.

Most species other than *D. obscurus* are coloured more or less yellow, and except for *D. bensoni*, and *D. obscurus* have tarsal claws with an inner tooth and basal lobe (Pasteels 1949). In addition, in the hind wing of *D. bensoni* the cells Rs and M are absent (Forsius 1931, Malaise 1963).

Until now three valid species of *Dulophanes* are known for Lesotho, Namibia and South Africa.

## Host plants

Nothing is known about their host plants.

## Key to species

- 1 Tarsal claw simple (Fig. 159A) .....2
- 1\* Tarsal claw with smaller inner tooth and enlarged basal lobe. Lesotho, South Africa .....***D. natalensis* Forsius, 1931**
- 2 Legs nearly entirely yellow; hind wing with cells Rs and M absent. South Africa .....***D. bensoni* Forsius, 1931**
- 2\* Legs black with fore tibia light light brown; hind wing with cells Rs and M present. Lesotho, Namibia, South Africa .....***D. obscurus* Forsius, 1931**

***Dulophanes obscurus* Forsius, 1931**

*Dulophanes obscurus* Forsius, 1931: 35. ♀. Locus typicus: Van Reenen, Drakensberg, Natal [KwaZulu-Natal Province], South Africa (BMNH).

**Female** (Figs 158A, B)

Head and antenna black; apical half of mandible light brown becoming dark reddish apically. Thorax black. Wings uniformly strongly infusate throughout, intercostal area somewhat darker; costa, stigma, subcosta, and rest of venation blackish. Legs black; extreme apex of fore femur and fore tibia light brown. Abdomen black; sterna with narrow whitish posterior margins.

Head slightly narrowed behind eyes. Antenna 10-segmented, as long as maximum head width. Anterior margin of clypeus truncated. Frontal area laterally limited. Postocellar area about twice as broad as long, laterally inconspicuously limited. Malar space very narrow, about a half diameter of lateral ocellus. Interantennal furrow transverse, moderately deep. Tarsal claws simple, without subapical tooth and basal lobe (Fig. 159A).

Head very sparsely micropunctate, shiny; pubescence brownish. Thorax somewhat more micropunctate, shiny, pubescence similar to that on head. Sawsheath in lateral view pointed apically, conspicuously shorter than lancet. Lancet: Fig. 159B.

Length: 6.2-5.3 mm.

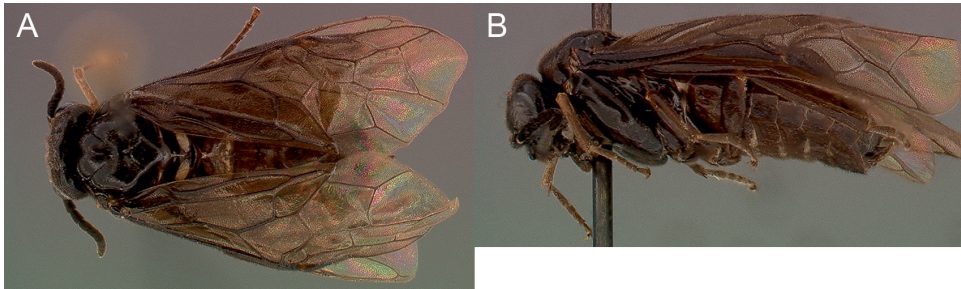
**Male**

Colouration and structure similar to that of female. Mid tibia brown. Malar space absent. Genitalia: Figs 159C, D.

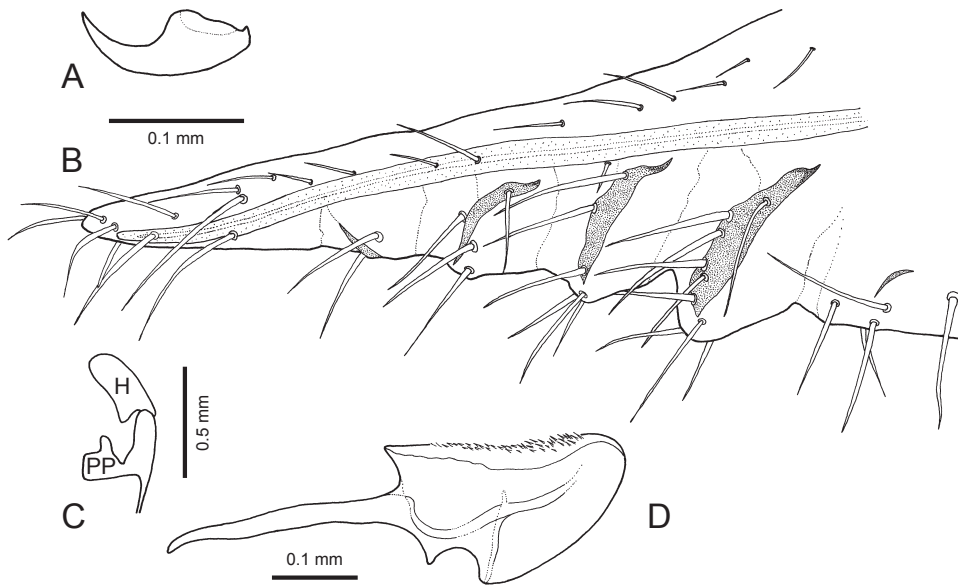
Length: 4.8-5.5 mm.

**Etymology**

The Latin adjective *obscurus* means “dark”.



**Fig. 158. A-B.** *Dulophanes obscurus*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)



**Fig. 159.** A-D. *Dulophanes obscurus*. **A.** Tarsal claw. **B.** Lancet. **C.** Parapenis and harpe (right, ventral aspect). **D.** Penis valve (left, lateral aspect).



**Fig. 160.** The habitat of *Dulophanes obscurus* on the Farm “Vaalgrass” southwest of Windhoek (Nama Karoo Biome). (Photo by F. Koch)



## Distribution

Lesotho, Namibia (Khomas Region), South Africa (Western Cape Province) (Fig. 184).

## Ecology and habitat

*Dulophanes obscurus* has been found in different biomes: Woodland Savanna, Thornbush Savanna (Fig. 160), Grassland and Fynbos Biome. The flight season is dependent on the biome, from September to March.

## Remarks

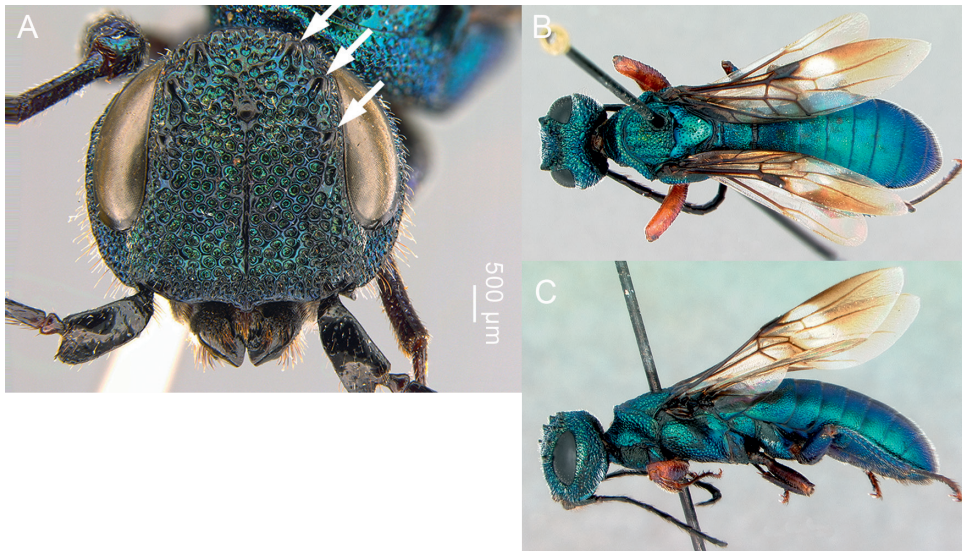
Only *Dulophanes obscurus* is recorded from the study area, and its occurrence in several different biomes suggests that it may be a group comprising a number of different species. Further taxonomic investigations are necessary.

*Dulophanes obscurus* was only recently recorded as the second representative species of Tenthredinidae in the winter rainfall zone of western South Africa, following on the record of *Durbadnus taegeri* (see discussion under that species).

## 9.5 Family Orussidae

<http://www.waspweb.org/Orussoidea/Orussidae/index.htm>

With their long ovipositor the females so that attacking the larvae of wood-boring Buprestidae and Cerambycidae (Coleoptera), as well as Xiphydriidae and Siricidae

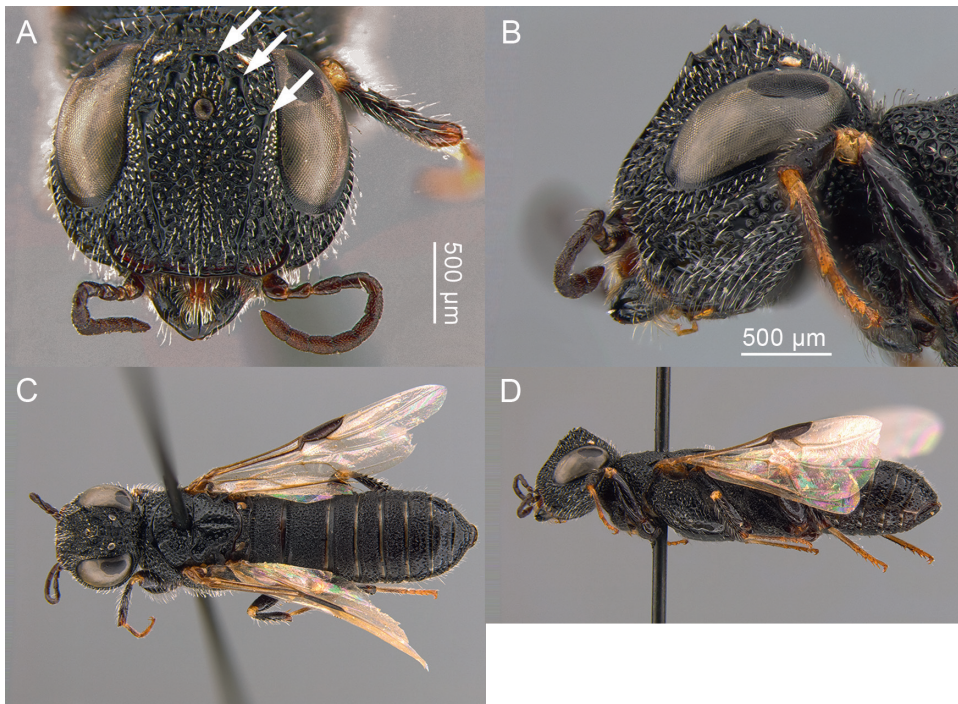


**Fig. 161. A-C.** *Chalinus braunsi*. **A.** Head (frontal aspect), coronal teeth arrowed, habitus, male. **B.** Dorsal aspect. **C.** Lateral aspect. (Photos S. van Noort)



(Hymenoptera). The larvae of the orussids living as ectoparasitoids (Vilhelmsen *et al.* 2013).

No species of this family are known from the study area. Up to now only three orussid species were reported in South Africa: The metallic bluish-green coloured *Chalinus braunsi* (Enslin, 1911) (Figs 161A-C) known from the Limpopo Province, Botswana, Mozambique and Zimbabwe, the black *Pedicrista hyalina* Benson, 1935 (Figs 162A-D) known from the North West Province, Malawi and Zimbabwe, as well as the very small (2.6 mm), blackish coloured *Leptorussus kwazuluensis* Vilhelmsen, 2003 from the KwaZulu-Natal Province.



**Fig. 162. A-D. *Pedicrista hyalina*.** **A.** Head (frontal aspect), coronal teeth arrowed. **B.** Lateral aspect, habitus, male. **C.** Dorsal aspect. **D.** Lateral aspect. (Photos by S.M. Blank)

## 9.6 Introduced (aliens) and invasive species

### Family Tenthredinidae

### Subfamily Heterarthrinae

### Genus *Caliroa* Costa, 1859

*Caliroa* Costa, 1859: 59. Type species: *Caliroa sebetia* Costa, 1859 [*Caliroa cothurnata* (Serville, 1823)], by monotypy. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Heterarthrinae/Caliroa/index.htm>

Synonyms are listed by Taeger *et al.* (2010).

### *Caliroa cerasi* (Linnaeus, 1758). Pear-slug

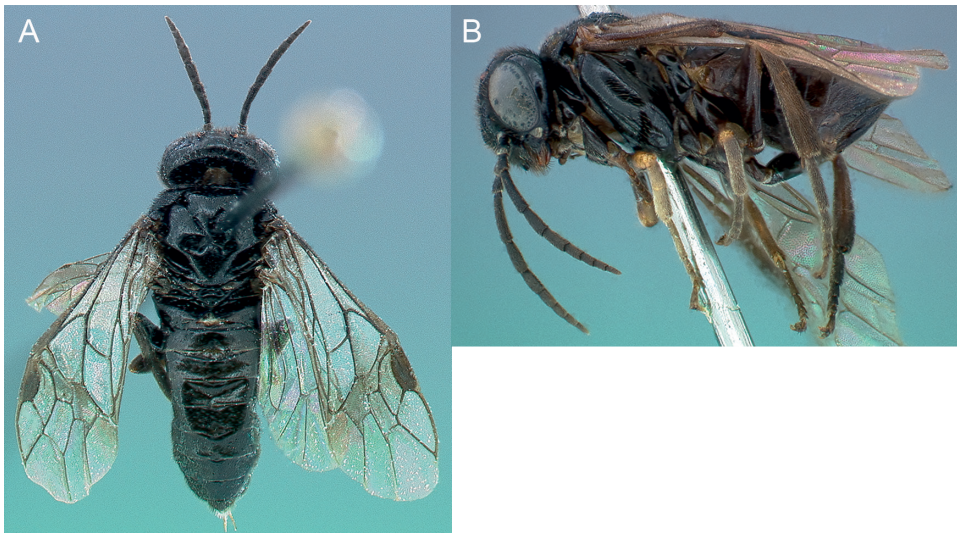
*Tenthredo cerasi* Linnaeus, 1758: 557 [by indication on the work of Réaumur; the description is mainly of the larva and the type locality is Paris, France].

Pear-slug is the approved common name.

Synonyms listed by Taeger *et al.* (2010).

### Female (Figs 163A, B)

Black with fore and mid tibia brownish. Mandible in apical half yellow to reddish towards apex. Wings very slightly infuscate throughout; stigma, costa, subcosta and rest of venation blackish.



**Fig. 163. A-B.** *Caliroa cerasi*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

Head parallel-sided behind eyes. Antenna 1.9× as long as maximum head width. Anterior margin of clypeus shallowly, triangularly emarginate. Postocellar area: width : length = 1.6 : 1.0; without longitudinal furrow, lateral furrows convex. Tarsal claws with a large basal lobe (Fig. 164A).

Head and thorax very scattered micropunctate; pubescence blackish. Abdomen smooth and shiny. Sawsheath in dorsal view parallel-sided; in lateral view pointed apically (Fig. 164B). Lancet with about 18 serrulae (Fig. 164C).

Length: 4.8–5.7 mm.

### Male

Unknown in southern Africa.

### Etymology

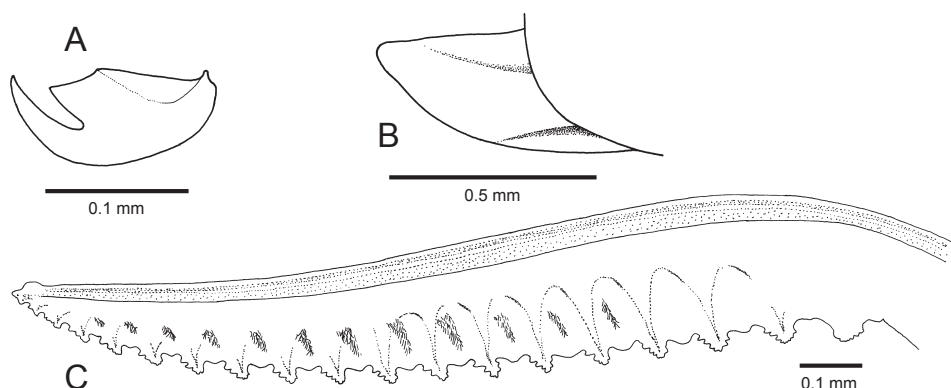
The species name alludes to *cerasus* (cherry), one of the host plants of the species.

### Distribution

Widespread in the Palearctic Region, and has been introduced into North America, Argentina, Chile, Uruguay, Australia (including Tasmania), New Zealand (Smith 1971) and South Africa. In South Africa *C. cerasi* is reported from the following provinces: Eastern Cape, Free State, Gauteng, KwaZulu-Natal, North West, Western Cape (Fig. 184) (Koch & Smith 2012). Additionally, a map of distribution is published by Picker & Griffiths (2011).

### Host plants

In South Africa *C. cerasi* is known as a pest on deciduous fruit trees such as peach, quince, apricot and plum (Prinsloo 1985).



**Fig. 164. A-C. *Caliroa cerasi*. A. Tarsal claw. B. Sawsheath (lateral aspect). C. Lancet.**

### **Ecology and habitat**

The males of this species are very rare in the Palaearctic Region, except in parts of the Mediterranean Region, and unknown in southern Africa. Therefore *Caliroa cerasi* seems to be parthenogenetic in southern Africa.

In the study region records are known from November and January. The flight season throughout South Africa is from September to April and July.

### **Remarks**

The introduced *Caliroa cerasi* is separated from the indigenous *C. blanki* Koch & Smith, 2011, known from the western provinces Limpopo and Mpumalanga by its entirely black legs and presence of complete vein 2A+3A in the fore wing (Fig. 41C). Furthermore, in the hind wing of *C. cerasi* the cells Rs and M usually present, sometimes both absent, or either Rs or M present, whereas in *C. blanki* cell RS is present and M is absent.

### **Genus *Fenusa* Leach, 1817**

*Fenusa* Leach, 1817: 126. Type species: *Tenthredo (Emphytus) pumila* Klug, 1818 [= *Fenusa (Fenusa) pumila* Leach, 1817, by monotypy]. <http://www.waspweb.org/Tenthredinoidea/Tenthredinidae/Heterarthrinae/Fenusa/index.htm>

Synonyms are listed by Taeger *et al.* (2010).

### ***Fenusa dohrnii* (Tischbein, 1846)**

*Kaliosysphinga dohrnii* Tischbein, 1846: 80. ♀ [the sex is not mentioned, but this species is entirely parthenogenetic]. Type locality: Herrstein, Fürstenthum Birkenfeld (Germany).

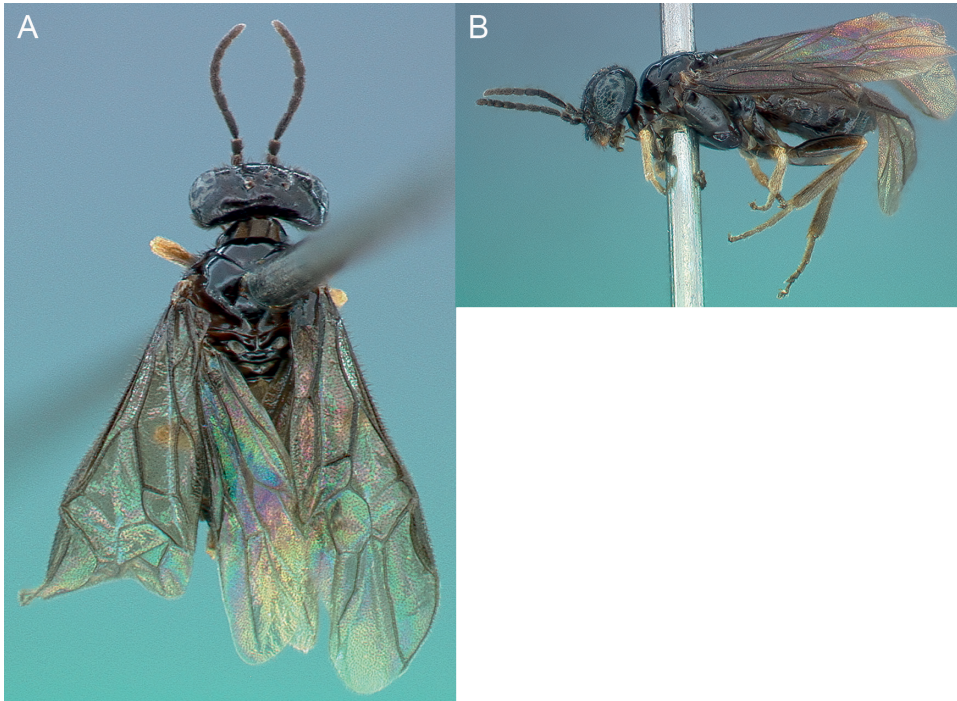
Synonymys are listed by Taeger *et al.* (2010).

### **Female (Figs 165A, B)**

Black with fore and mid tibia dirty whitish to light brown, hind tibia brown. Mandible in apical half yellow to reddish towards apex. Wings moderately infuscate throughout; stigma, costa and subcosta light brown, rest of venation brown in basal half becoming light brown towards apex.

Head narrowed behind eyes. Antenna 1.1× as long as maximum head width. Anterior margin of clypeus truncated. Postocellar area: width : length = 2.1 : 1.0; without longitudinal furrow, lateral furrows more or less parallel-sided. Tarsal claws simple (Fig. 166A)

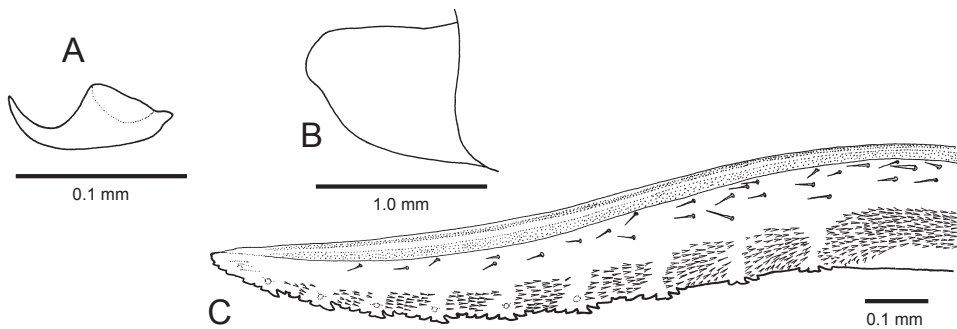




**Fig. 165. A-B.** *Fenusa dohrnii*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

Head, thorax and abdomen smooth and shiny; pubescence light brown. Sawsheath in dorsal view gradually narrowed towards apex; in lateral view rounded apically (Fig. 166B). Lancet with about 9 serrulae (Fig. 166C).

Length: 3.2–3.5 mm.



**Fig. 166. A-C.** *Fenusa dohrnii*. **A.** Tarsal claw. **B.** Sawsheath (lateral aspect). **C.** Lancet.



**Male**

Unknown; parthenogenetic.

**Etymology**

Named after Carl August Dohrn (1806-1892), a German entomologist.

**Distribution**

Widespread in the Palaearctic Region, and has been introduced into North America and South Africa; distribution in Western Cape Province (Fig. 184).

**Host plant**

According to Prinsloo (1985) the larvae of *F. dohrnii* make blotch mines in the leaves of species of *Alnus* spp. (alder) (Betulaceae).

**Ecology and habitat**

In the study region the flight season is in November and December.

**Subfamily Nematinae****Genus *Nematus* Panzer, 1801**

*Nematus* Panzer, 1801: 82: 10. Type species: *Tenthredo (Nematus) lucida* Panzer, 1801 [= *Nematus (Nematus) lucidus* (Panzer, 1801)], by monotypy.

Synonyms are listed by Taeger *et al.* (2010).

***Nematus oligospilus* Förster, 1854**

*Nematus oligospilus* Förster, 1854: 284. ♀. Type locality: Aachen, Deutschland [Germany].

Synonym only included if relevant to Afrotropical fauna. The full synonymy is listed by Taeger *et al.* (2010).

*Nematus desantisi* Smith, 1983: 260. ♀. Type locality: Chubut, Argentina.

**Female (Figs 167A, B)**

Green when alive; dry specimens faded yellow. Ocelli sometimes very narrowly black margined; apex of mandible reddish brown; antenna pale yellow, dorsal surface of scape, pedicel and flagellomere 1 black, following flagellomeres more or less brownish on dorsal surface. Hind tarsus brownish. Wings hyaline; costa and stigma yellow (green when alive), subsosta and rest of venation brown. Sawsheath apically with narrow blackish margin.

Head parallel-sided behind eyes. Antenna 3.1× as long as maximum head width. Eyes slightly diverging below. Anterior margin of clypeus circularly emarginate medially. Malar space 1.4× diameter of lateral ocellus. Frontal area moderately limited; anterior cross-ridge conspicuously interrupted medially. Interantennal fovea rounded, slightly more than diameter of lateral ocellus. Postocellar area: width: length = 2.3 : 1.0; with very shallow longitudinal furrow, lateral furrows convex.

Head and thorax shiny, with duller microsculpture at middle of vertex and frons; pubescence white. Sawsheath in dorsal view gradually narrowed towards apex; in lateral view pointed apically. Lancet with about 20 serrulae (Koch & Smith 2000: 293, figs 1, 2).

Length: 5.2-7.0 mm.

### Male

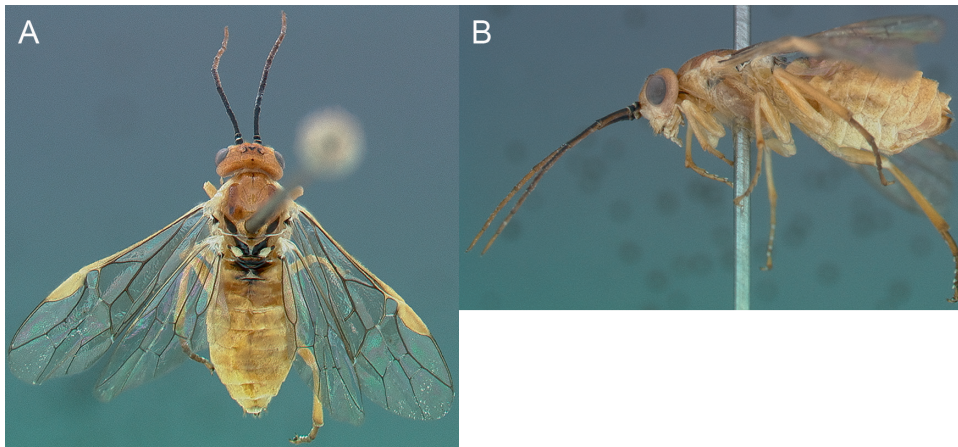
Unknown in southern Africa.

The description is based on European males:

Colouration similar to that of female, except for black postocellar area, occiput behind and frontal area. Mesonotum, except for notauli, metascutellum and metapostnotum black, propleuron and anepimeron brownish. Dorsal surface of abdomen with a broad, black longitudinal stripe.

Other features similar to that of female. Penis valve: (Koch & Smith 2000: 293, fig. 5).

Length: 4.7-5.3 mm.



**Fig. 167. A-B.** *Nematus oligospilus*, habitus, female. **A.** Dorsal aspect. **B.** Lateral aspect. (Photos by A.D. Liston)

### **Etymology**

*Oligos* (Greek) means “small”, and *pilus* (Latin) means “hair”. Possibly the name alludes to the rather small cerci of the female.

### **Distribution**

Widespread in the Northern Hemisphere; introduced into Argentina, Chile, Lesotho, South Africa, Australia and New Zealand (Koch & Smith 2000).

### **Host plants**

In South Africa: *Salix babylonica* Linnaeus, *S. fragilis* Linnaeus (Salicaceae) (Urban & Eardley (1995, 1997).

### **Ecology and habitat**

The males of this species are unknown in southern Africa, where *N. oligospilus* is probably parthenogenetic. The species has sometimes been reported to be abundant on cultivated willows (Urban & Eardley 1995, 1997). Currently this species is only known from the summer rainfall zone in South Africa (Koch & Smith 2000). However, this species is also expected to occur in the Cape region. The flight season is from January to March.

### **Remarks**

The southern African specimens are conspicuously paler than the European material. In Europe the specimens are black marked on the head, especially on the frons and postocellar area; mesoscutum with three black longitudinal stripes, and terga 1-3 with black medial spots.

## **9.7 Family Siricidae**

<http://www.waspweb.org/Siricoidea/Siricidae/index.htm>

Woodwasps or horntails is the approved common name.

### **Description**

Antenna with about 18 flagellomeres. Fore tibia with one apical spine. Apical tergum of female (Fig. 168A, arrowed) and apical sternum of male (Fig. 168B, arrowed) with a horn-like projection (cornus). Pronotum laterally bulging and, collar-shaped.

### **Genus *Sirex* Linnaeus, 1760**

*Sirex* Linnaeus, 1760: 396. Type species: *Sirex juvenicus* (Linnaeus, 1758), designated by Curtis, 1829. <http://www.waspweb.org/Siricoidea/Siricidae/Sirex/index.htm>

Synonyms are listed by Taeger *et al.* (2010).

***Sirex noctilio* Fabricius, 1793. Sirex woodwasp, European woodwasp**

*Sirex noctilio* Fabricius, 1793: 87-91 [sex not stated, but the description is of a male]. Type locality: Germania [Germany].

*Sirex* woodwasp and European woodwasp are the approved common names.

Synonyms are listed by Taeger *et al.* (2010).

**Female** (Fig. 168A)

Body black with blue metallic luster. Legs light brown; coxae and trochanters black, and apical two tarsal segments infusate. Wings flavescent-hyaline; first radial cell (1R1) more or less infusate, stigma, costa, subcosta and rest of venation light brown.

An important character separating females of *S. noctilio* in the presence of large, closely set pits on the ovipositor.

Length: 15.0-36.0 mm.

**Male** (Fig. 168B)

Body black with blue metallic luster; abdomen with terga 4-7 and sterna 4-7 yellow. Legs light brown; coxae, trochanters, hind tibia and hind tarsus black. Wings similarly coloured to those of female.

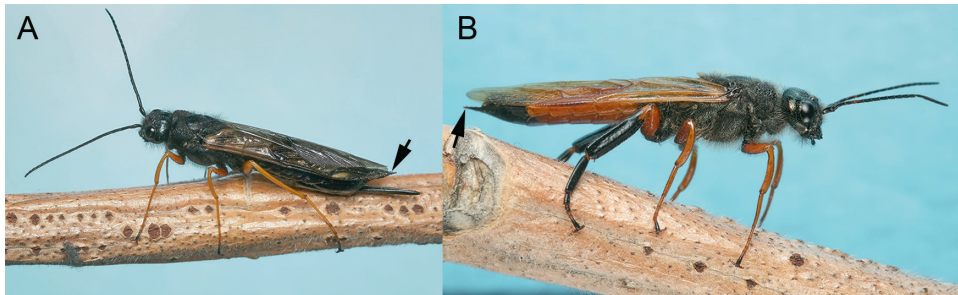
Length: 9.0-32.0 mm.

**Etymology**

The species name means “of the night”; from Latin *nocte*.

**Distribution**

Widespread in the Palaearctic Region; introduced to Australia, New Zealand, South Africa, South America, and North America (Schiff *et al.* 2006).



**Fig. 168. A-B.** *Sirex noctilio*: The tube-like projections (arrowed): **A.** On apical tergum of female. **B.** On apical sternum of male. (Photos by H. Goulet)

Within eight years of its discovery in the Cape Peninsula in 1994, the European woodwasp had spread up to 380 km along both the western and southern coasts of South Africa (Tribe & Cillie 2004). Its dispersal direction follows the *Pinus* plantations located in the mountains of Western Cape Province, especially in the Bokkeveld direction to the North as well as Riviersonderendberge, Langeberg, Outenikwaberger to Kougaberge in the East (Fig. 183). It has now reached Eastern Cape and KwaZulu-Natal (van Noort & Picker 2010) provinces.

The trade in products comprising untreated timber from small sawmills in Western Cape Province has facilitated the uncontrolled spread of this pest.

### **Host plants**

Pine (*Pinus* spp.) and other coniferous trees (Prinsloo 1985); larvae live in tunnels in the wood of the trunk. In Western Cape Province larvae have been found in *P. patula* Schlechtendal & Chamisso (patula pine) introduced from east-central Mexico and on *P. radiata* David Don (radiata pine) native to California. Although *Sirex noctilio* was regarded as having not become established in southern Africa in the mid 1980's (Prinsloo 1985), this species is currently the most important pest of *Pinus* spp. in South Africa and is regarded as a serious threat to the forestry industry (Tribe & Cillie 2004).

### **Ecology and habitat**

The invasive species *S. noctilio* needs the introduced species of *Pinus* spp. as host plants.

In the study region the flight season begins in the middle of November and ends in the middle of April, with a maximum in March and a second, smaller peak in January (Tribe & Cillie 2004). Most of the reported localities belong to the Fynbos Biome.

### **Remarks**

*Sirex noctilio* displays a high degree of sexual dimorphism.

In South Africa some methods of biological pest control are employed, especially with nematodes and other parasitoid Hymenoptera (Tribe & Cillie 2004).

## **10. Checklist of species recorded in south-western Africa**

### **Family Argidae**

*Arge angulifera* Pasteels, 1953

*Arge annulipes* (Klug, 1834)

*Arge bensoni* Pasteels, 1953

*Arge bisignata* Konow, 1907

*Arge capensis* (Klug, 1814)



*Arge cochraneae* Koch & Goergen, 2010  
*Arge deckerti* Koch, 2005  
*Arge dirce* (W. F. Kirby, 1882)  
*Arge elandsbayensis* Koch & Goergen, 2010  
*Arge furvipes* Konow, 1907  
*Arge hereroensis* Koch & Goergen, 2010  
*Arge iota* Pasteels, 1953  
*Arge krabbefonteinensis* Koch & Goergen, 2010  
*Arge kungveldensis* Koch & Eardley, 2011  
*Arge langebergensis* Koch & Goergen, 2010  
*Arge meyi* Koch, 2006  
*Arge montana* Koch & Goergen, 2010  
*Arge namaensis* Koch & Goergen, 2010  
*Arge rufocyanea* (Enslin, 1911)  
*Arge sjoestedti* Konow, 1907  
*Arge speciosa* (Klug, 1834)  
*Arge spei* (Enslin, 1911)  
*Arge stuhlmanni* (Kohl, 1893)  
*Arge taeniata* (Klug, 1834)  
*Arge vannoorti* Koch & Liston, 2012  
*Arge whiteheadi* Koch & Goergen, 2010

*Pampsilota brandbergensis* Koch, 2006  
*Pampsilota luederitzensis* Koch, 2006

*Triarge citrusdalensis* Koch, 2006  
*Triarge driehoekensis* Koch, 2010  
*Triarge flavoapicalis* Koch, 2006  
*Triarge karoensis* Koch, 2006  
*Triarge mosselbayensis* Koch, 2006  
*Triarge namaquaensis* Koch, 2006  
*Triarge nigra* Koch, 2006  
*Triarge plumbea* Forsius, 1931  
*Triarge winterhoekensis* Koch, 2006

## **Family Tenthredinidae**

### **Subfamily Allantinae**

*Xenapates beateae* Koch, 1996  
*Xenapates damaraensis* Koch, 1995  
*Xenapates eardleyi* Koch, 1995  
*Xenapates similis* Benson, 1939

### **Subfamily Athaliinae**

*Athalia brevicornis* Benson, 1962  
*Athalia incomta* Konow, 1908

*Athalia maraisi* Koch, 2010  
*Athalia marginipennis* Enderlin, 1920  
*Athalia turneri* Forsius, 1931  
*Athalia ustipennis* Mocsáry, 1909

#### **Subfamily Blennocampinae**

*Distega bevisi* Forsius, 1930  
*Distega montium* Konow, 1907  
*Durbadnus taegeri* Koch & Liston, 2012  
*Trisodontophyes diversa* Koch, 2001

#### **Subfamily Selandriinae**

*Dulophanes obscurus* Forsius, 1931

### **Introduced and invasive species**

#### **Family Tenthredinidae**

##### **Subfamily Heterarthrinae**

*Caliroa cerasi* (Linnaeus, 1758)  
*Fenusa dohrnii* (Tischbein, 1846)

##### **Subfamily Nematinae**

*Nematus oligospilus* Förster, 1854

#### **Family Siricidae**

*Sirex noctilio* Fabricius, 1793

## **11. Acknowledgements**

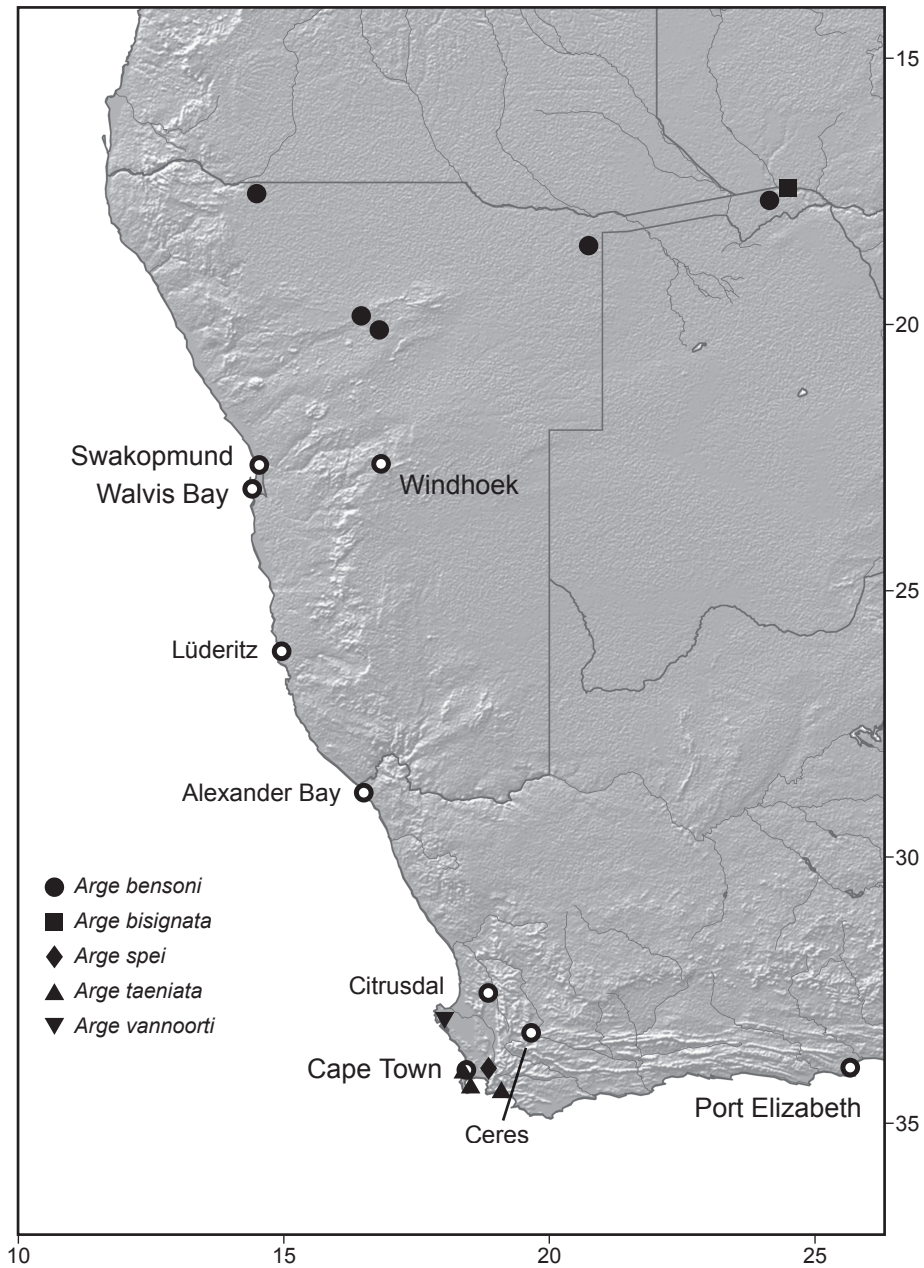
We are most grateful to the following for allowing us to examine the specimens in their care, without which this study could not have been completed: C. van Achterberg (RMNH), S.M. Blank (SDEI), M. Cochrane (SAMC), E. De Coninck (MRAC), the late P. Dessart and J.-L. Bouvé (RBINS), E. Diller and S. Schmidt (ZSM), B. Dombrowsky and M. Krueger (TMSA), C.D. Eardley (PPRI), M. S. Engel (SEMC), M. Madl and H. Zettel (NHMW), H. Geertsema (DEUS), F.W. Gess (AMGS), F. Gusenleitner (OLML), T. Huflejt (ZMPA), M. Kuhlmann (BMNH), A.D. Liston (SDEI), G. Lungi (DMSA), E. Marais (NNIC); M. Mostovski (NMSA), M.N. Mungai (NMKE), the late T. Osten (SMNS), W.J. Pulawski (CASC), V. Raineri (MCSN), S. Ryder (BMNH), D.R. Smith (USNM), the late R.R. Snelling (LACM), A. Taeger (SDEI), C. Taylor (BMNH), A. Teräs (UZMT), J. Vauras (UZMT), B. Viklund, H. Vårdal (NHRS), C. Villemant (MNHN), L. Zombori and S. Csösz (HNHM). Many thanks are due to N. Jürgens and U. Schmiedel, University of Hamburg, that we had the opportunity to participate in the BIOTA-Southern Africa Project. S.M.

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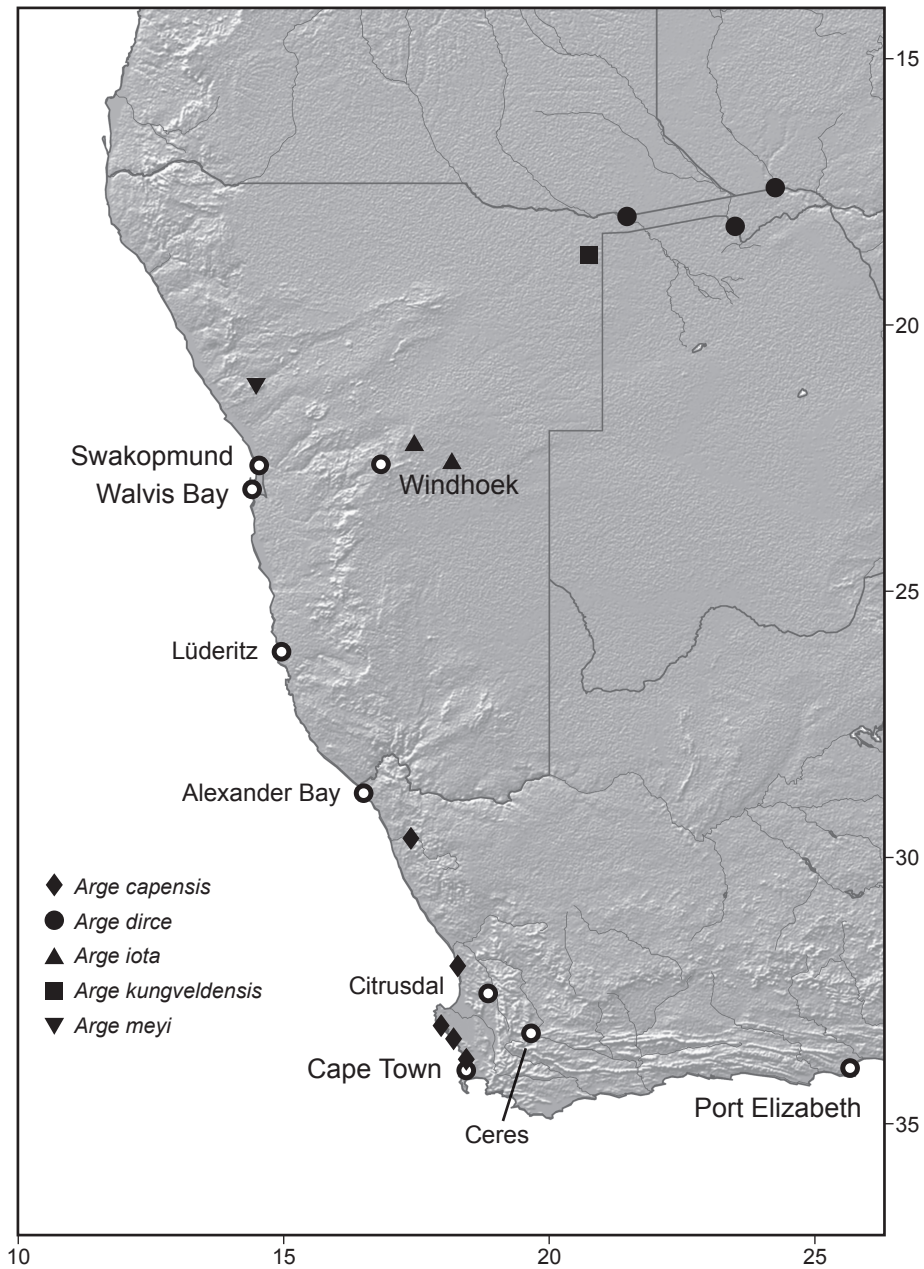
**Fig. 169.** The entomologists and staff from MFN, who collect sawflies on a regular basis (from left): J. Deckert, F. Koch, W. Mey and K. Ebert.  
(Photo by J. Deckert)

## 12. Distribution maps



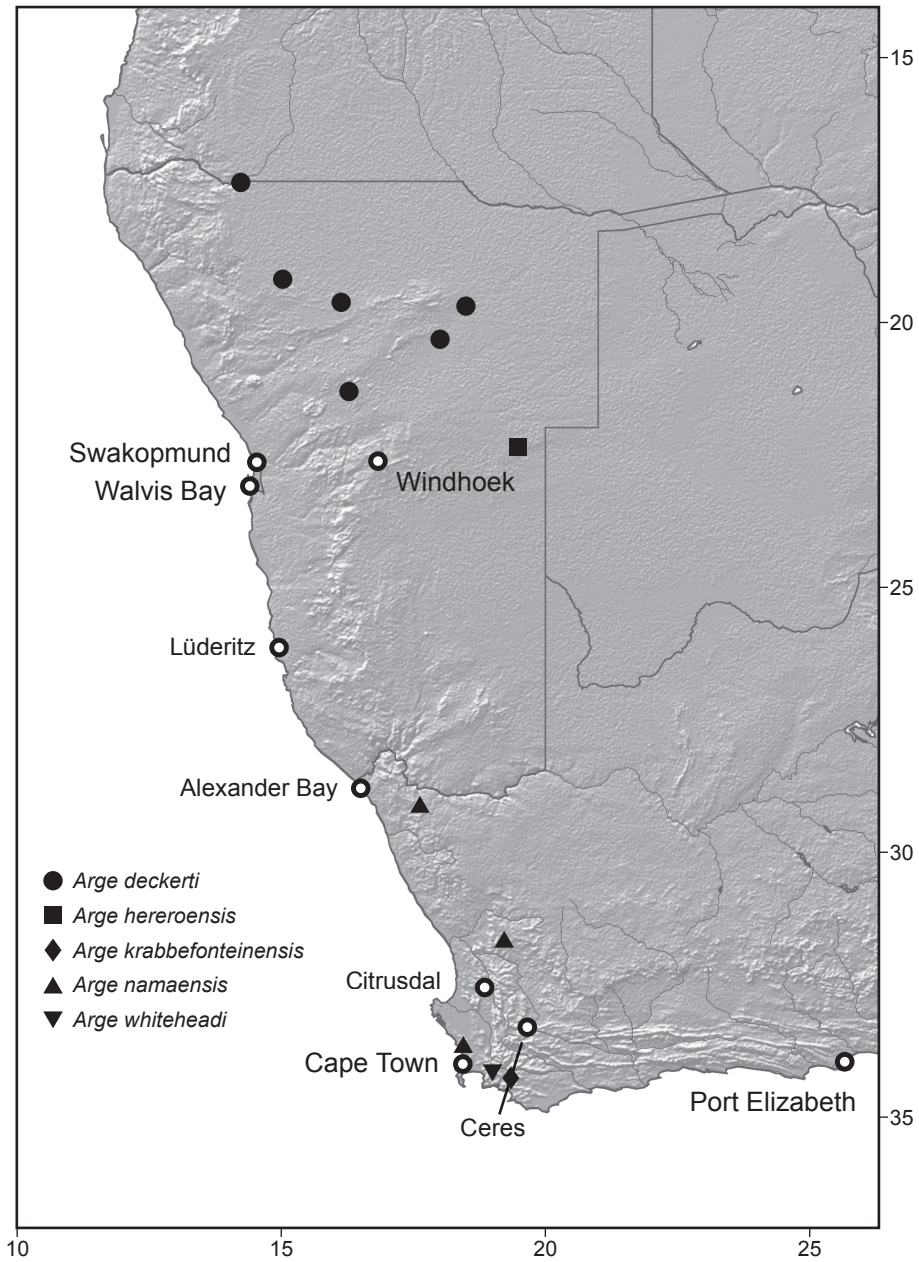
**Fig. 170.** Distribution map of *Arge bensoni* Pasteels, *A. bisignata* Konow, *A. spei* (Enslin), *A. taeniata* (Klug) and *A. vannooti* Koch & Liston.



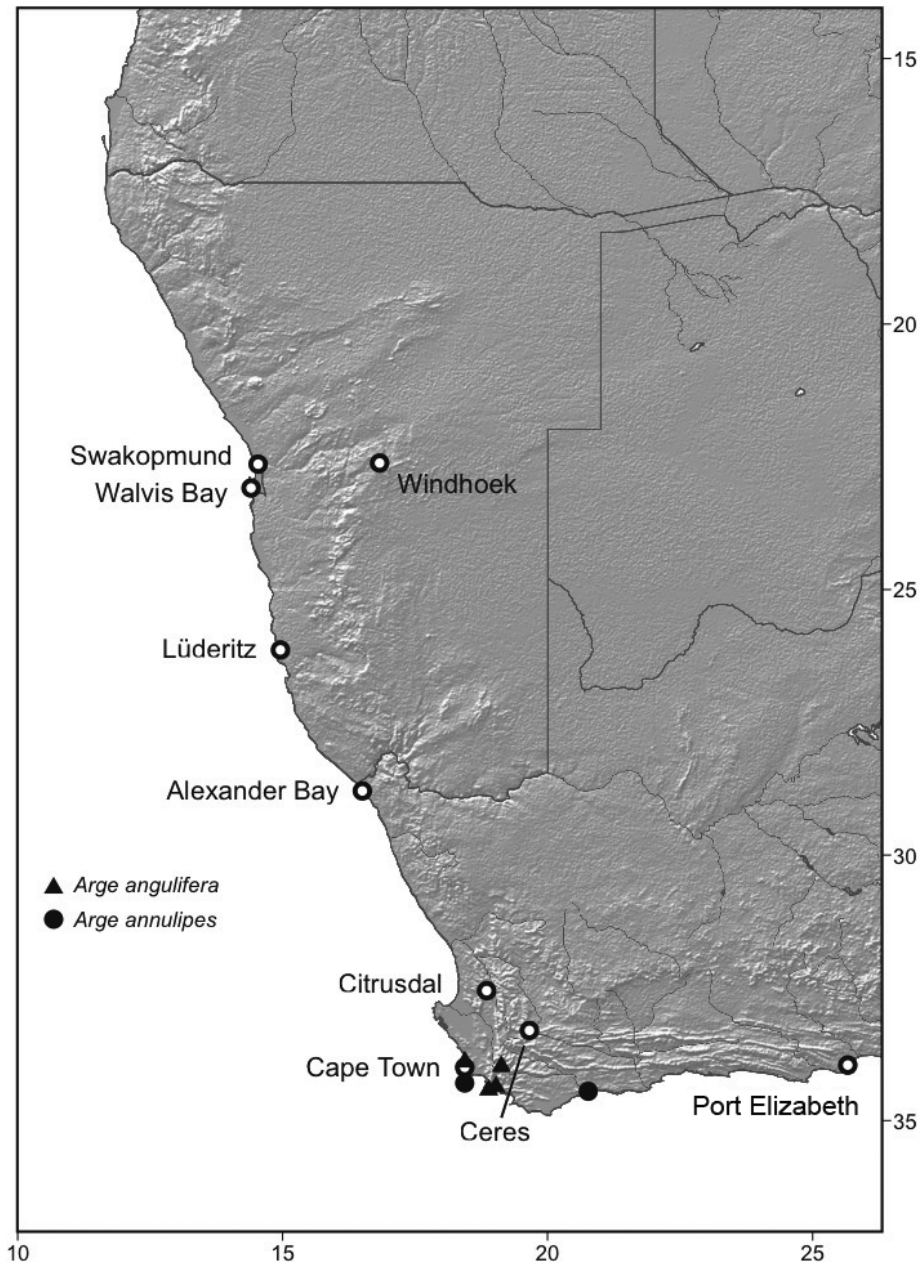


**Fig. 171.** Distribution map of *Arge capensis* (Klug), *A. dirce* (W.F. Kirby), *A. iota* Pasteels, *A. kungveldensis* Koch & Eardley and *A. meyi* Koch.

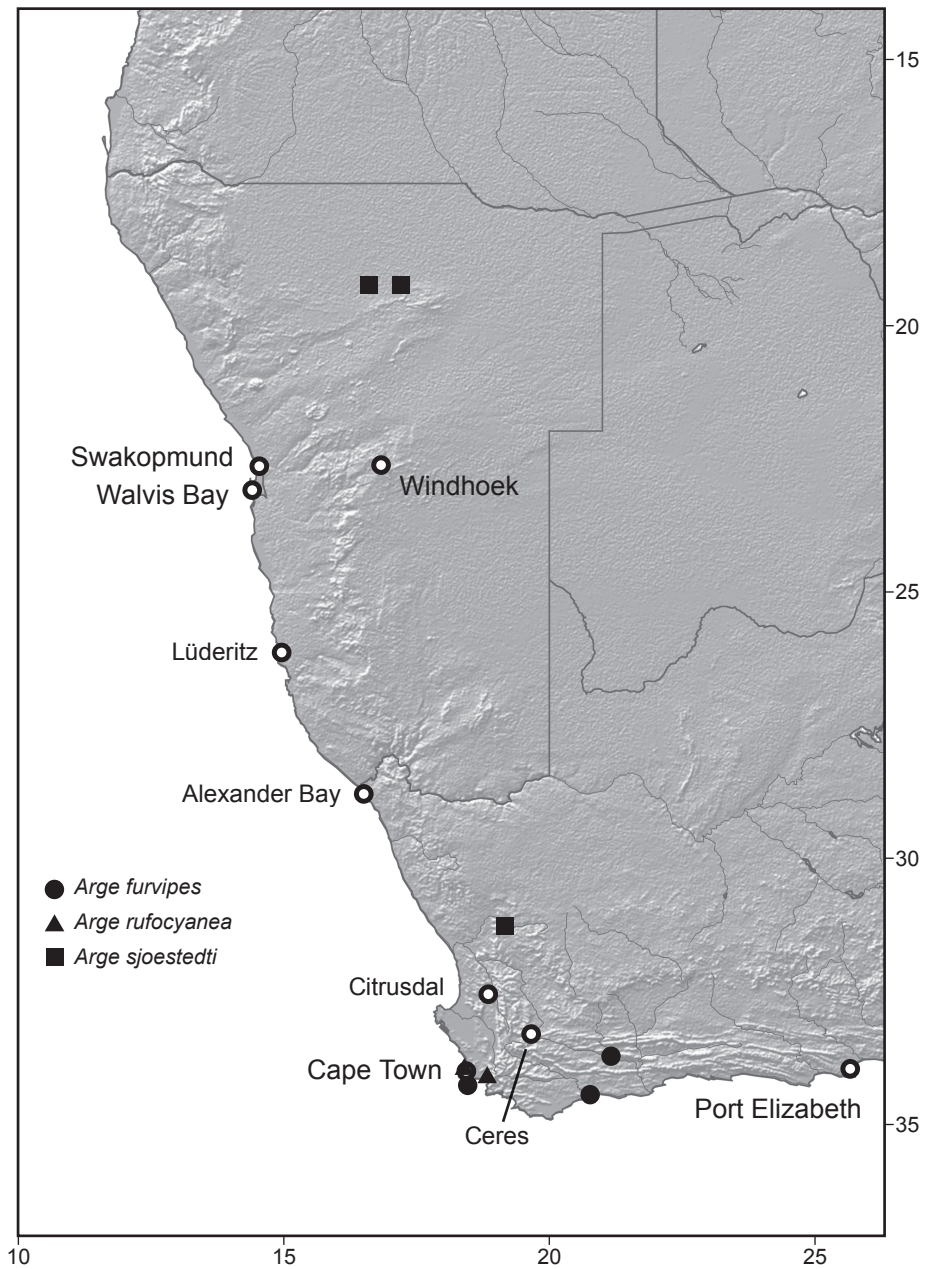




**Fig. 172.** Distribution map of *Arge deckerti* Koch, *A. hereroensis* Koch & Goergen, *A. krabbefonteinensis* Koch & Goergen, *A. namaensis* Koch & Goergen and *A. whiteheadi* Koch & Goergen.

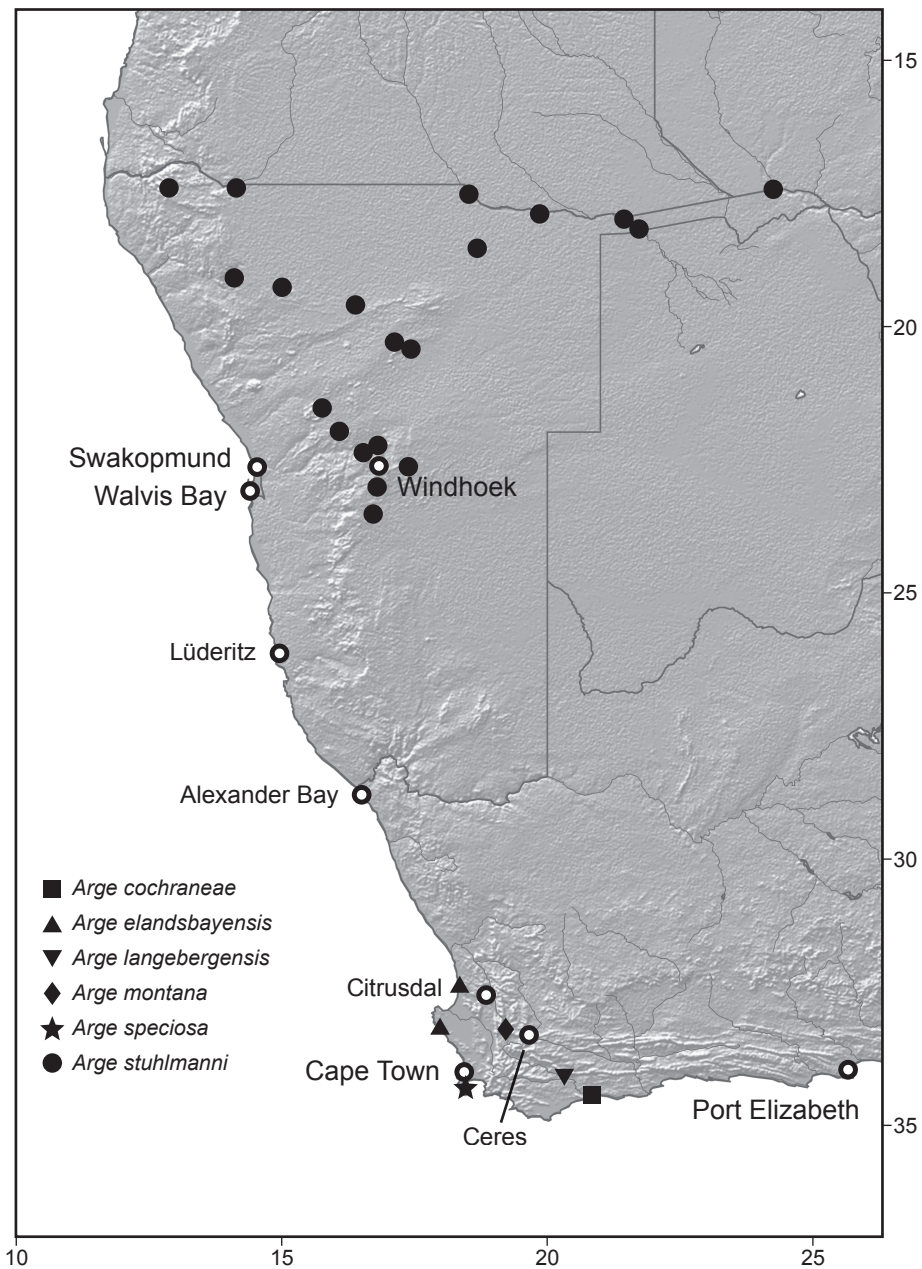


**Fig. 173.** Distribution map of *Arge angulifera* Pasteels and *A. annulipes* (Klug).

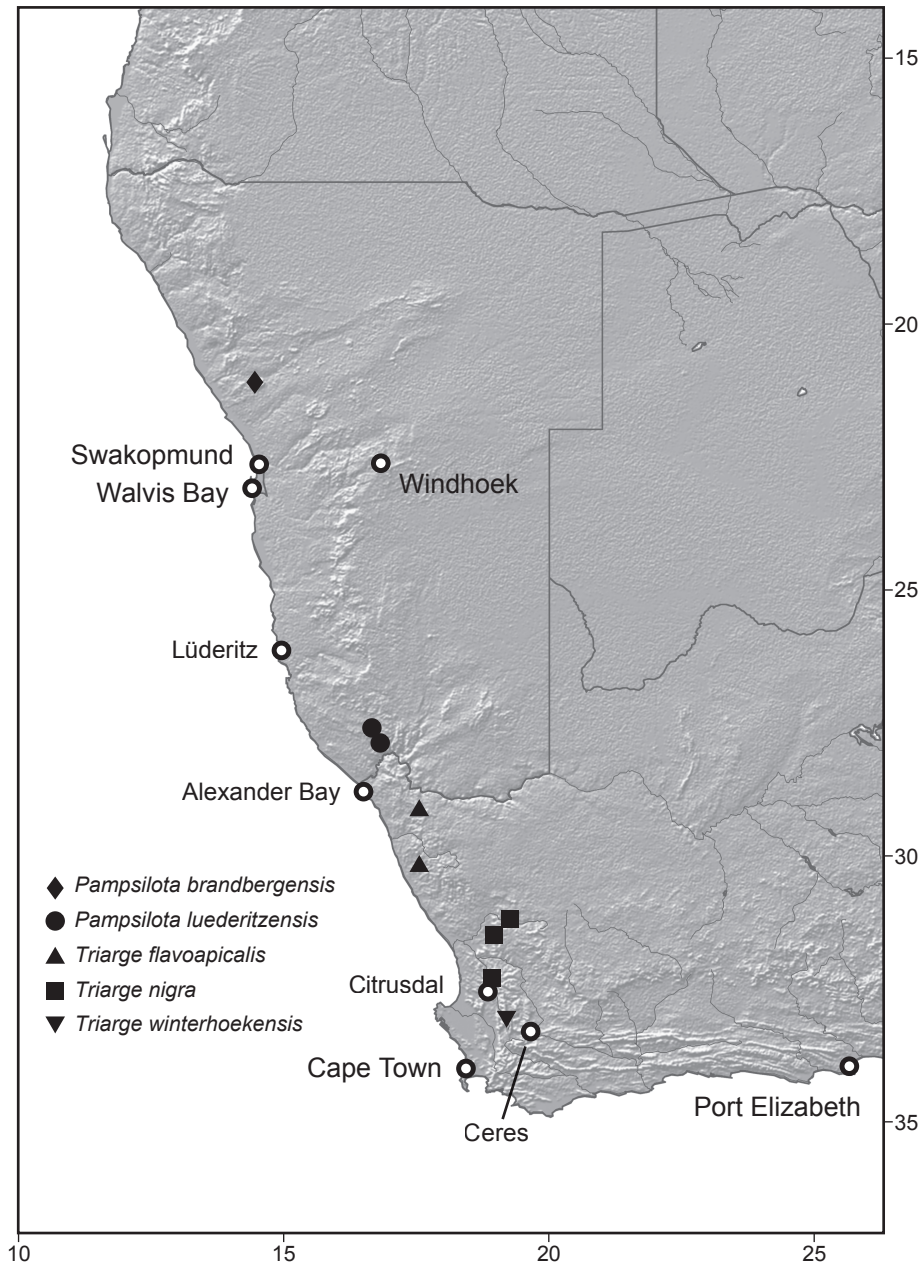


**Fig. 174.** Distribution map of *Arge furvipes* Konow, *A. rufocyanea* (Enslin) and *A. sjoestedti* Konow.



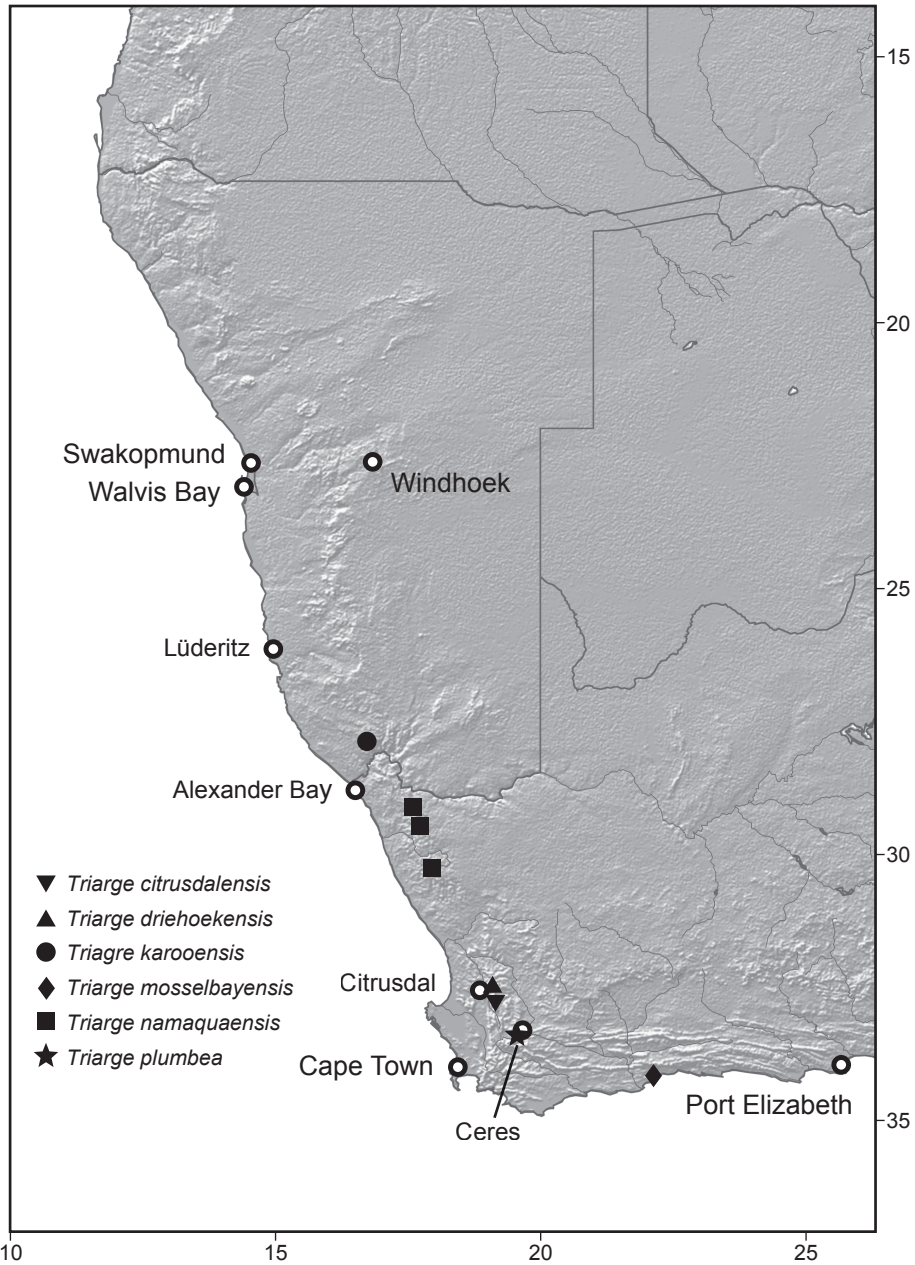


**Fig. 175.** Distribution map of *Arge cochraneae* Koch & Goergen, *A. elandsbayensis* Koch & Goergen, *A. langebergensis* Koch & Goergen, *A. montana* Koch & Goergen, *A. speciosa* (Klug) and *A. stuhlmanni* (Kohl).

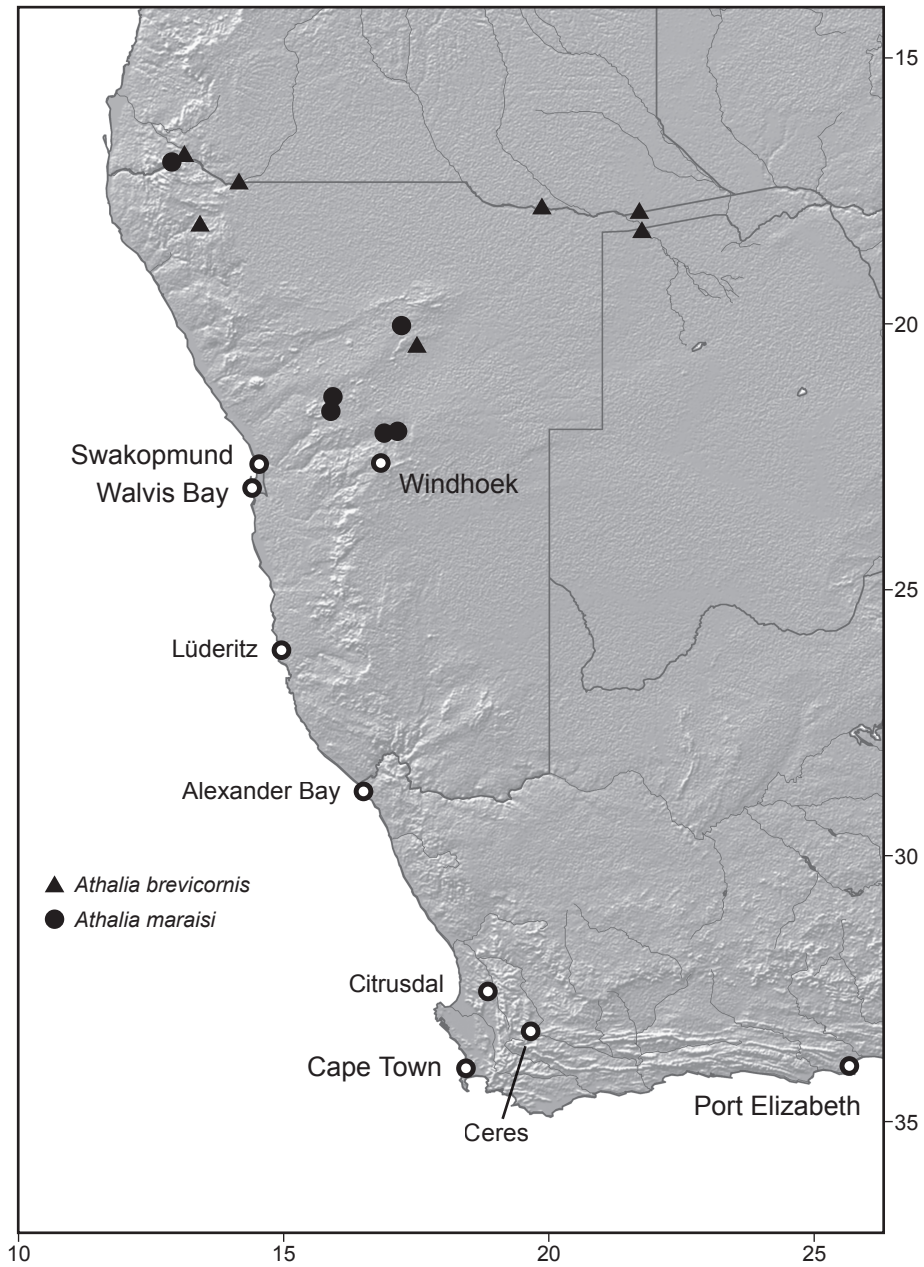


**Fig. 176.** Distribution map of *Pampsilota brandbergensis* Koch, *P. luederitzensis* Koch, *Triarge flavoapicalis* Koch, *T. nigra* Koch and *T. winterhoekensis* Koch.

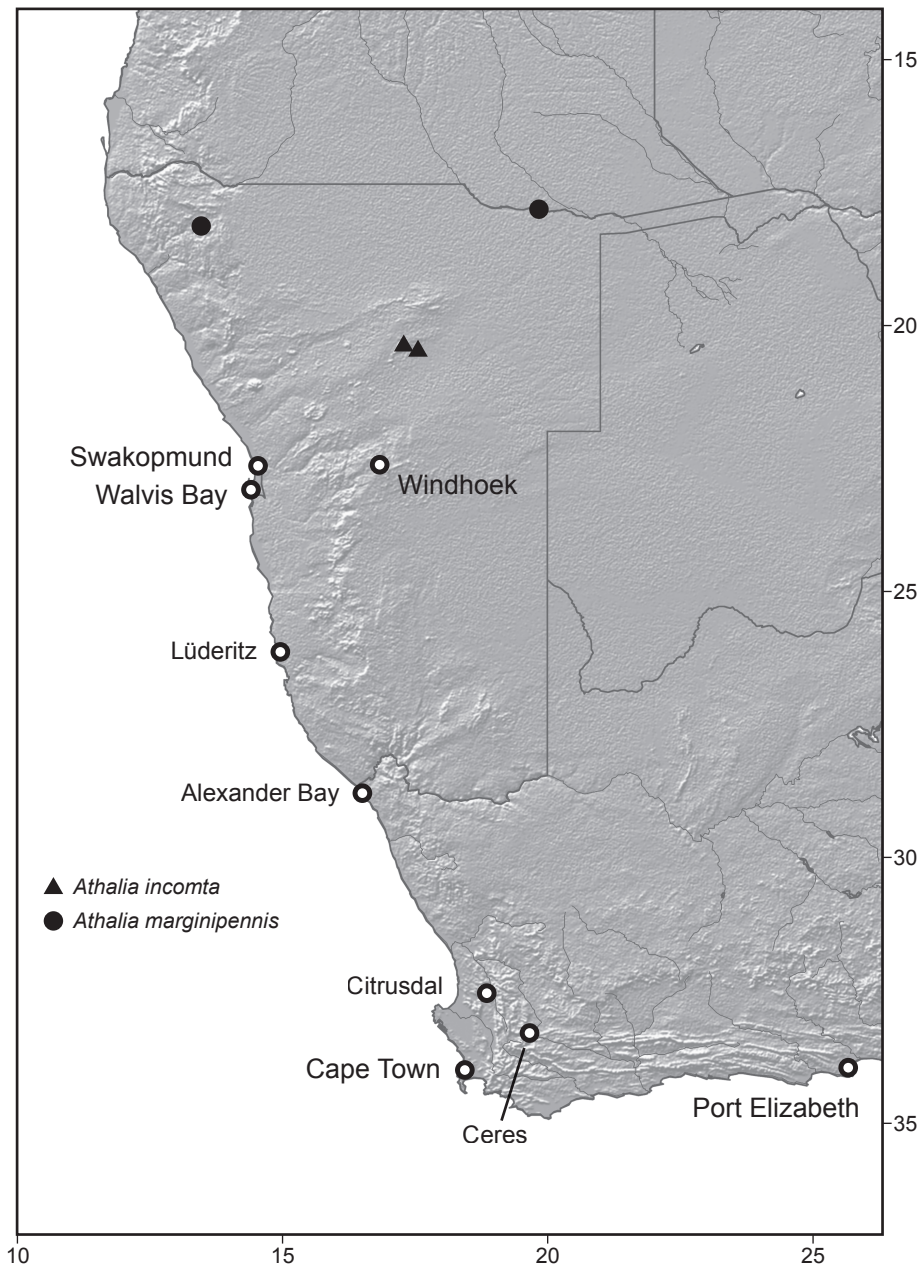




**Fig.177.** Distribution map of *Triarge citrusdalensis* Koch, *T. driehoekensis* Koch, *Triagre karoensis* Koch, *T. mosselbayensis* Koch, *T. namaquaensis* Koch and *T. plumbea* Forsius.

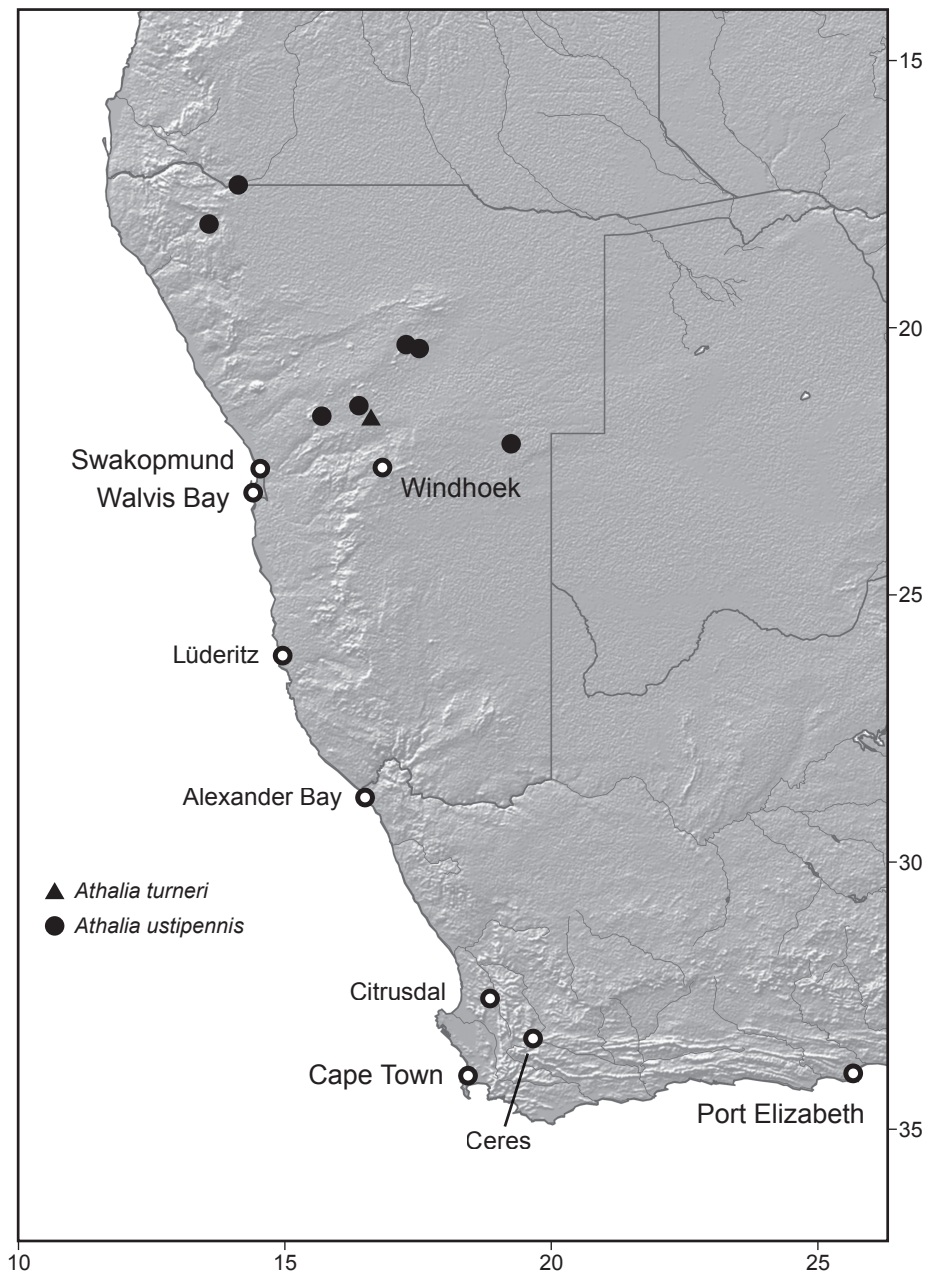


**Fig. 178.** Distribution map of *Athalia brevicornis* Benson and *A. maraisi* Koch.

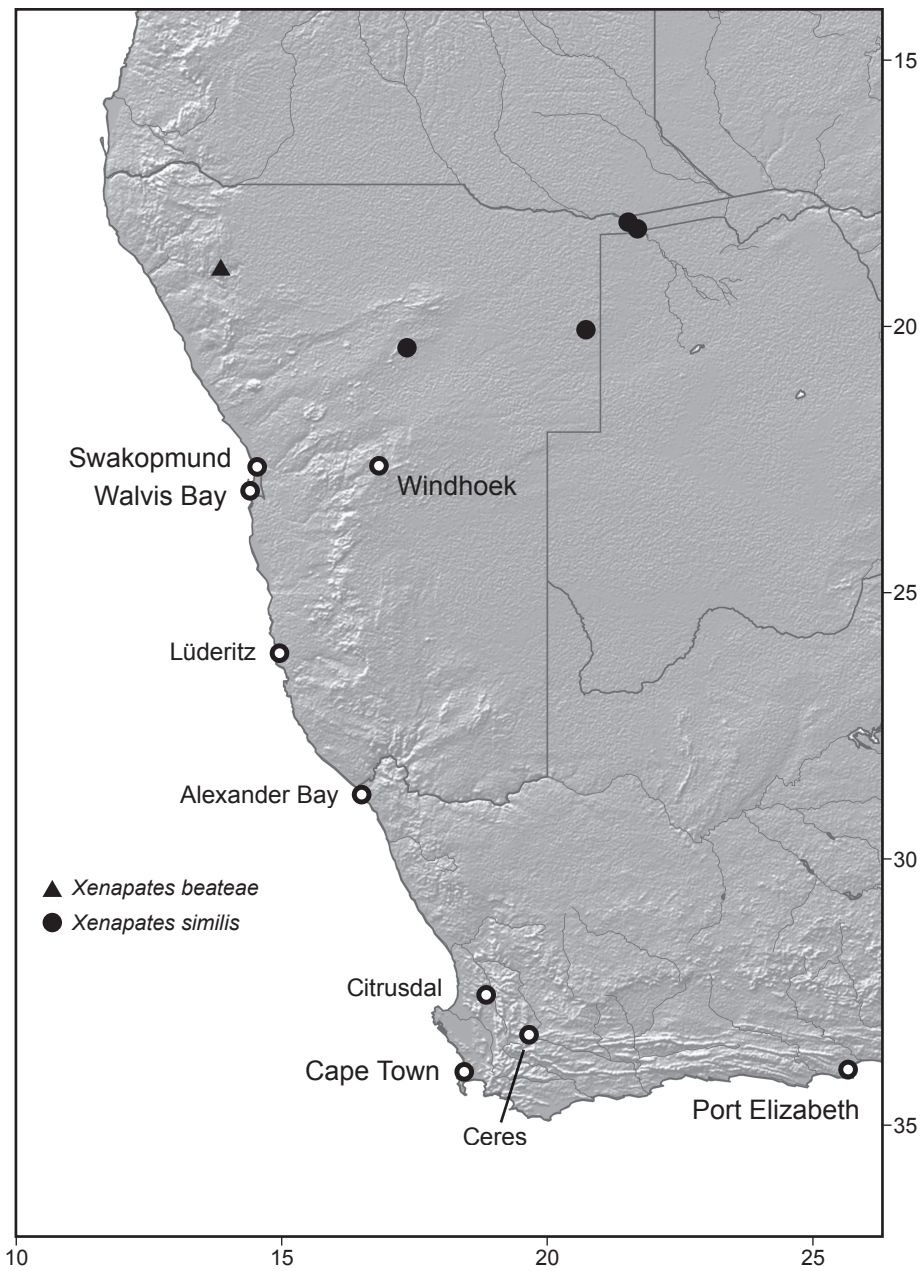


**Fig. 179.** Distribution map of *Athalia incomta* Konow and *A. marginipennis* Enderlin.



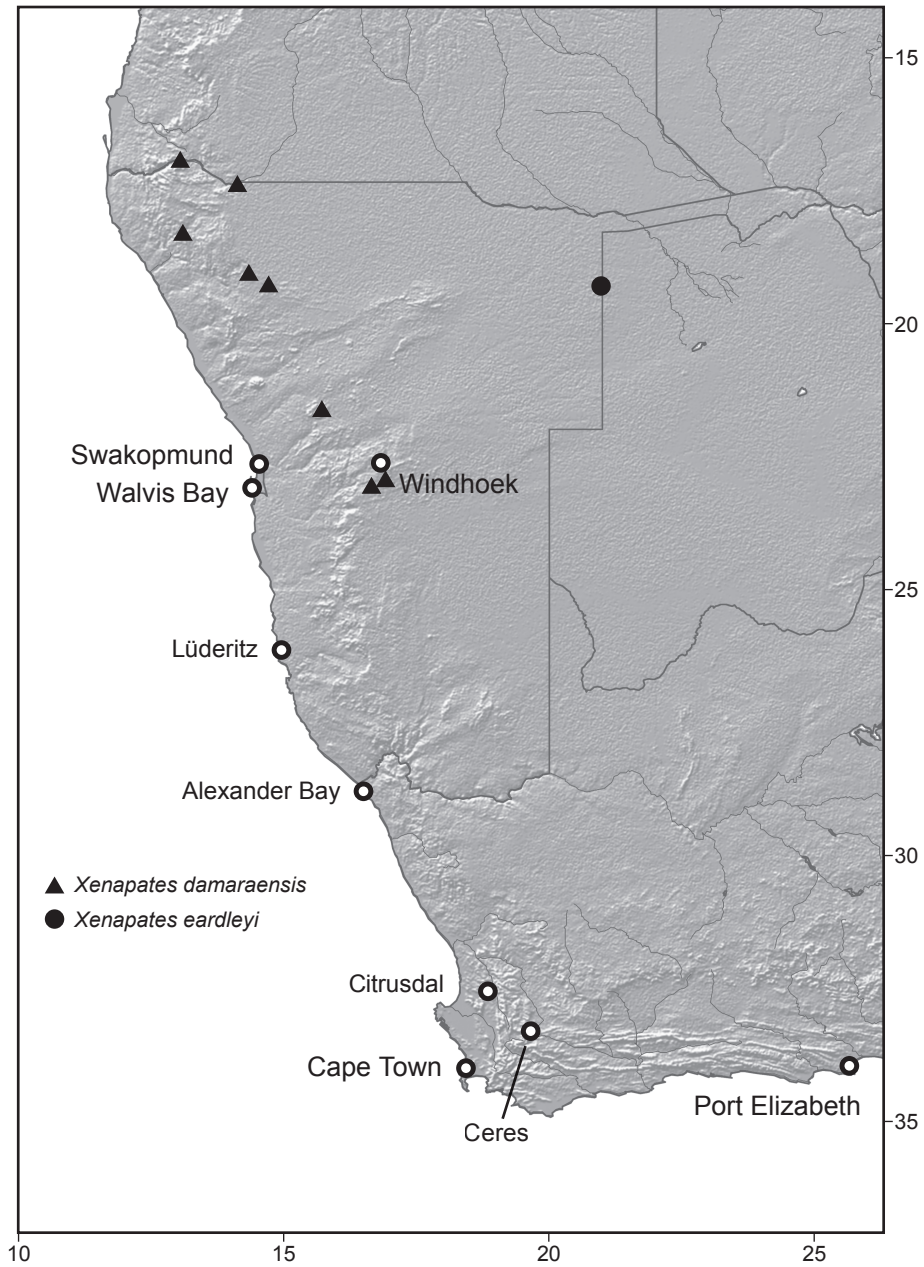


**Fig. 180.** Distribution map of *Athalia turneri* Forsius and *A. ustipennis* Mocsáry.

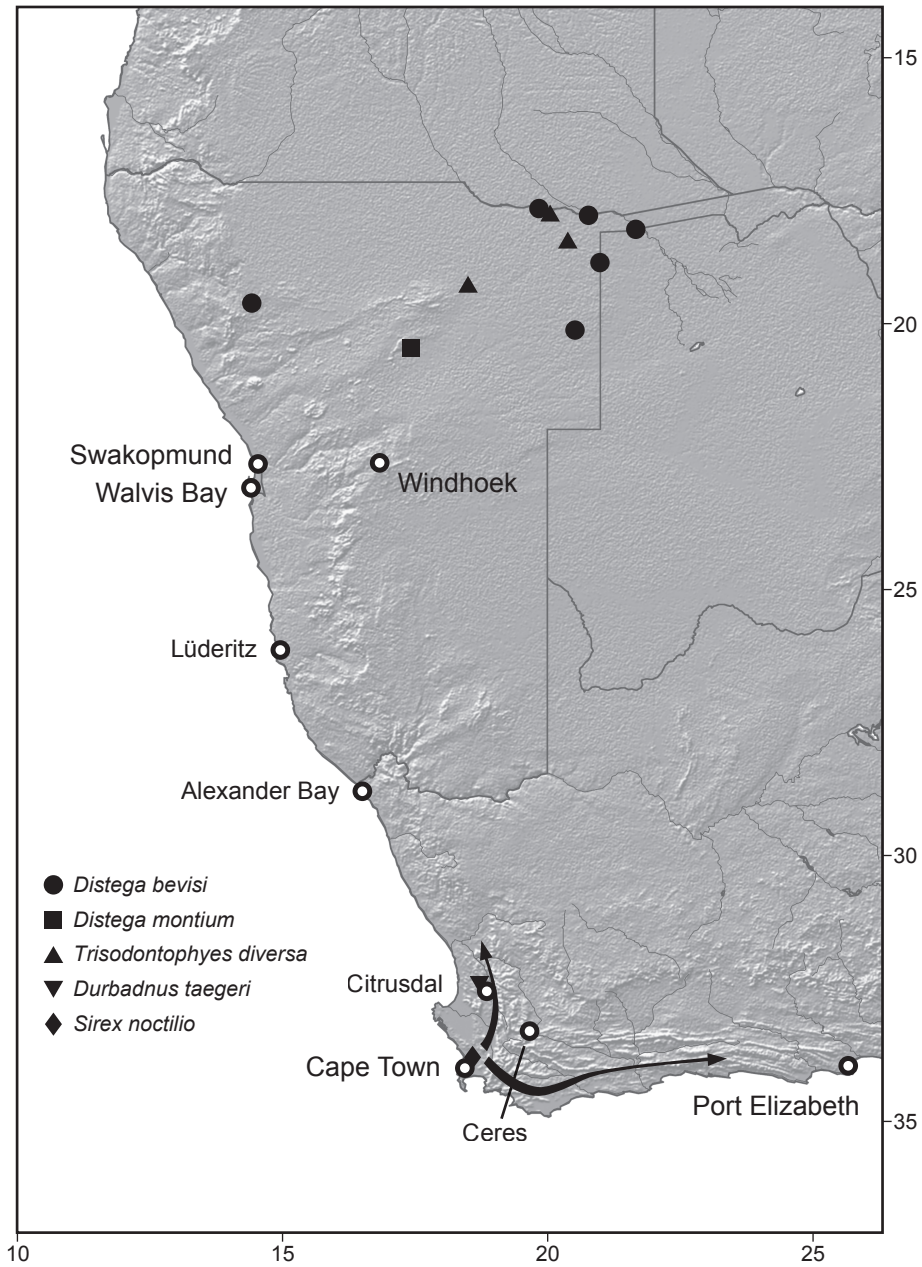


**Fig. 181.** Distribution map of *Xenapates beateae* Koch, 1996 and *X. similis* Benson, 1939.

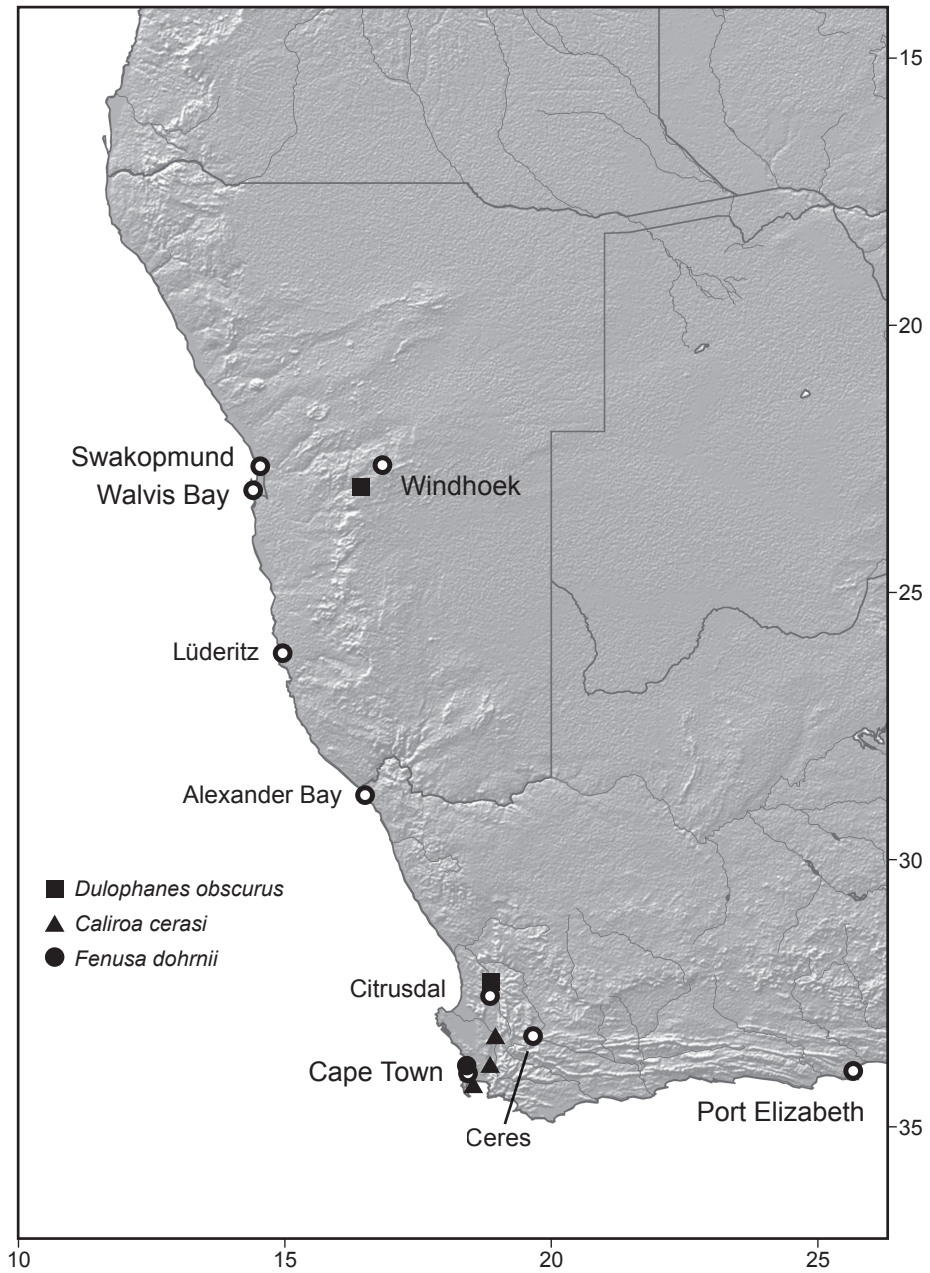




**Fig. 182.** Distribution map of *Xenapates damaraensis* Koch and *X. eardleyi* Koch.



**Fig. 183.** Distribution map of *Distega bevisi* Forsius, *D. montium* Konow, *Durbadnus taegeri* Koch & Liston, *Trisodontophyes diversa* Koch and *Sirex noctilio* Fabricius.



**Fig. 184.** Distribution map of *Dulophanes obscurus* Forsius, *Caliroa cerasi* (Linnaeus) and *Fenusa dohrnii* (Tischbein).



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## 14. Taxonomic index to the families, subfamilies, genera and species

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