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Revision of the Afrotropical *Arge mirabilipes* group, with description of two new species and annotations to other *Arge* species of this region (Hymenoptera: Symphyta: Argidae: Arginae)

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ABSTRACT

The *Arge mirabilipes* group of the Afrotropical Region is revised. The previously known species *Arge mirabilipes* Pasteels, 1955, *A. tibialis* Pasteels, 1963 and *A. intermedia* Pasteels, 1963 from South Africa, are redescribed. Two additional species from Namibia and Kenya are described: *Arge kungveldensis* sp. n. and *A. taitaensis* sp. n. The species of this group are characterized by the medially slightly widened hind tibia, a very short hind basitarsomere, and the sawsheath is broadly and obtusely pincer-shaped apically. According to these characters, *Arge tibialis* (= *A. bisignata* Konow, 1907) and *A. intermedia* are removed from this group. *A. tibialis* is synonymised under *A. bisignata*. A key to the three valid species is provided. The genitalia of all species are illustrated, and geographic distribution and taxonomic relationships are discussed.

KEY WORDS: Hymenoptera, Symphyta, Argidae, Arginae, *Arge*, sawflies, new species, Afrotropical Region, Namibia, Kenya, South Africa.

INTRODUCTION

In the process of preparing a field guide to the Symphyta of Namibia and the western part of South Africa, an unusual female of the genus *Arge* Schrank, 1802, was found in the collection of Transvaal Museum, Pretoria. It was collected in Tsumkwe, Kungveld (Boesmanland). Additionally, another female similar to the female from Tsumkwe was discovered in the collection of the Muséum d'Histoire Naturelle, Paris. About 100 years ago this female was collected in the Taita Hills, south-east Kenya.

Following Pasteels (1963), both females were identified as *A. mirabilipes* Pasteels, 1955. However the description of Pasteels (1955) is somewhat poor and the lancet is not illustrated. Therefore, it was essential to study the holotype of *A. mirabilipes*, which was collected in 1952 in the area of Johannesburg. Because of small differences in the colouration and other outer morphological structures, the ovipositors of all three females were checked thoroughly. As a result of these investigations, three different species are separated.

In this context it was necessary to revise the *A. mirabilipes* group designated by Pasteels (1963), who included the following species: *A. mirabilipes* Pasteels, *A. tibialis* Pasteels syn. n. = *A. bisignata* Konow and *A. intermedia* Pasteels. We redefine the *Arge mirabilipes* group and include three species, *A. mirabilipes* and two new species. *Arge bisignata* and *A. intermedia* are removed from the *A. mirabilipes* group.

Originally, Pasteels (1955) classified *A. mirabilipes* as a member of the *A. sugillata* group (1955) based on the shape of the sawsheath. Later, Pasteels (1963) substantiated the separation of *A. mirabilipes* from the *A. sugillata* group based of the shape of the evenly widened tibiae and the short hind basitarsomere.

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In the past 20 years, numerous entomological field trips have been undertaken in Namibia and South Africa specifically targeting sawflies. However, specimens of the group in question have never been recovered.

The disappearance of *A. mirabilipes* from the area of Johannesburg and *A. intermedia* from the Durban area have probably resulted from changes in ecological conditions, including the destruction of the original habitats in the past 60 years. Similar changes have occurred in the Western Cape region, especially in the area stretching from Cape Town to Stellenbosch (Koch & Goergen 2010). In this area the natural vegetation has been displaced by extensive agriculture, industry and community development. Perhaps *A. mirabilipes* and *A. intermedia* can be regarded as extinct or endangered species. *A. bisignata* was also collected in the area of Nylstroom (Modimolle) and Nelspruit more then 50 years ago, and only two specimens are known. In this case, it is difficult to determine what reasons are responsible for their apparent disappearance.

It is exceedingly difficult to find an explanation for the rareness of *A. kungveldensis* sp. n. from Tsumkwe, also recorded 50 years ago. The area of Tsumkwe was regularly visited for collecting, and it was impossible to find further specimen of this species even though its habitat has barely changed.

The documentation of these species is significant because it allows the reconstruction of the original sawfly diversity of southern Africa and the appraisal of changes over space and time, specifically through shifts between urban and rural land use.

MATERIAL AND METHODS

The revision is based on 23 specimens deposited in the following collections:

BMNH – The Natural History Museum, London, UK;
DEI – Deutsches Entomologisches Institut im ZALF, Müncheberg, Germany;
MCSN – Museo Civico di Storia Naturale "Giacomo Doria", Genoa, Italy;
MNHN – Muséum d'Histoire Naturelle, Paris, France;
MNHU – Museum für Naturkunde, Humboldt-Universität, Berlin, Germany;
MRAC – Musée Royal de l'Afrique Centrale, Tervuren, Belgium;
NMNW – National Museum of Namibia, Windhoek, Namibia;
OLML – Oberösterreichisches Landesmuseum, Linz, Austria;
PPRI – ARC-Plant Protection Research Institute, Pretoria, South Africa;
SAMC – South African Museum, Cape Town, South Africa;
TMSA – Ditsong National Museum of Natural History (formerly Transvaal Museum), Pretoria, South Africa;
USNM – National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.

The following abbreviations and measurements are used in the text: HT – holotype; IA – interantennal area, the shortest distance between the inner margins of the toruli; MS – malar space, the shortest distance between the base of the mandible and the edge of the compound eye; OOL – ocellar ocular line; POL – posterior ocellar line (postocellar line).

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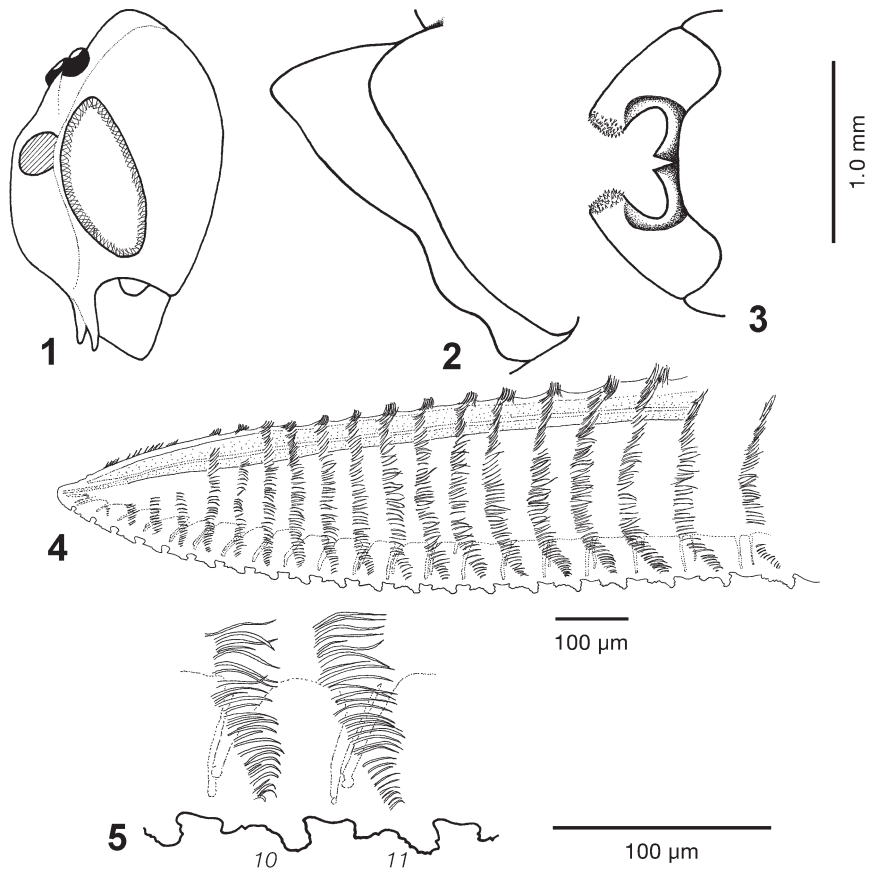
Arge mirabilipes *group*

The species of the *Arge mirabilipes* group are characterized by the combination of a very short hind basitarsomere (a quarter of the tibia length), a medially slightly widened hind tibia (Fig. 7), and a sawsheath broadly and obtusely pincer-shaped apically (Figs 3, 10, 15).

Key to the species of the *Arge mirabilipes* group

1 Hind tibia dark brown with dirty whitish posterior surface ..... **mirabilipes** Pasteels
– Hind tibia dark brown, without whitish markings.....2

2 Postocellar area dirty yellow, ventral part of pronotum and tegula dark brown, abdomen yellow, terga$_{1–8}$ broadly black, tergum$_{9}$ black ..... **kungveldensis** sp. n.
– Postocellar area black, pronotum and tegula entirely yellow, abdomen yellow, tergum$_{1}$ black with yellow posterior margin, terga$_{2–7}$ with large blackish medial spots becoming smaller posteriorly ..... **taitaensis** sp. n.



Figs 1–5. *Arge kungveldensis* sp. n.: (1) head, lateral aspect; (2) sawsheath, lateral aspect; (3) sawsheath, dorsal aspect; (4) lancet, lateral aspect; (5) serrulae 10–11.

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Arge kungveldensis sp. n.

Figs 1–5, 24

Etymology: This species is named after its collection locality Kungveld, the earlier name of the Namibian Bushmanland in North-East Namibia.

Description:

Female.

Head black; labrum light brown margined, apical half of mandible dark brown; frons and base of clypeus dark brown, postocellar area dirty yellow; scape and pedicel black (flagellum missing). Thorax black, pronotum with dark brown ventral part and yellow centre, tegulae dark brown, mesoscutellum and mesoscutellar appendage yellow. Legs dark brown. Wings infuscate; substigmal spot of forewing moderately developed, stigma blackish, costa brown, somewhat darker apically, subcosta and rest of venation blackish becoming brown apically. Abdomen yellow; terga$_{1–8}$ broadly black, tergum$_{9}$ black, sterna$_{6/7}$ brown with yellow posterior margin, sawsheath black, ventral margin and apex yellow.

Head enlarged behind eyes. POL:OOL = 1.0:1.0; MS:IA = 1.0:2.9. Eyes nearly parallel, lower interocular distance 1.5× eye length; clypeus circularly emarginated medially, supraclypeal area flatly rounded to point of interantennal carinae (Fig. 1), interantennal carinae obtusely ridged between antennae, becoming gradually flattened, scarcely converging downward, short, ending about ¼ way from ventral margin of toruli to clypeus. Vertex and gena very sparsely micropunctate, shining; frons, supraclypeal area, clypeus somewhat densely punctate, shining, malar space rugosely sculptured, dull; pubescence whitish, shorter than the diameter of lateral ocellus. Mesoscutum nearly impunctate, pubescence similar to that on vertex. Abdomen smooth and shining; tergum$_{1}$ transversally microridged. Sawsheath in lateral view slightly pointed at apex (Fig. 2), in dorsal view broadly and obtusely pincer-shaped apically, as in Fig. 3. Lancet as in Fig. 4 with filiform trichoid sensillae, with about 22 serrulae; serrulae at centre saddle-shaped, broadly rounded at apex, with about 3 or 4 flat, irregular posterior subbasal denticles and two small anterior sub-basal denticles (Fig. 5).

Length: 9.3 mm.

Male. Unknown.

Holotype: ♀ "Tsumkwe, Kungveld, I.1959, C. Koch"; "Holotypus, *Arge kungveldensis* sp. n. ♀, det.: F. Koch, 2009" [red] (TMSA). *Note*: The flagella of the holotype are missing.

Distribution: Namibia (Fig. 28).

Host plant: Unknown.

Remarks: *A. kungveldensis* differs mainly from *A. taitaensis* by the dark brown tegulae and ventral part of pronotum, and the extensive black colouration of the abdomen. The differences from *A. mirabilipes* are discussed under the latter species.

Arge taitaensis sp. n.

Figs 6–12, 25

Etymology: This species is named after its collection locality Taita, in the south-west part of Kenya's Coast Province.

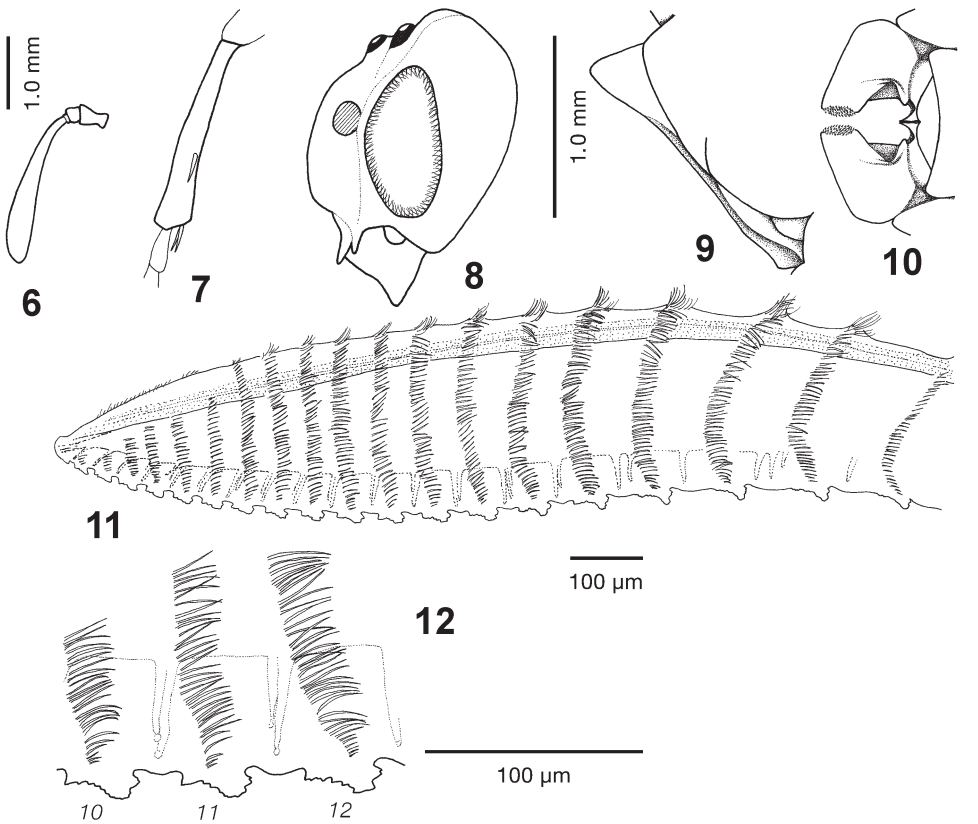
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Description:

Female.

Head black; labrum dark brown, apical half of mandible light brown, becoming reddish brown apically; frons and base of clypeus dark brown; antenna black. Thorax black with pronotum, tegulae, mesoscutellum and mesoscutellar appendage yellow. Legs dark brown except for femora black, fore tibia and fore tarsus light brown. Wings slightly infuscate; substigmal spot of forewing indistinct, stigma dark brown, costa yellow, dark brown at apex, subcosta and rest of venation dark brown, becoming light brown apically. Abdomen yellow, except $tergum_1$ black with yellow posterior margin, $terga_{2–7}$ with large black medial spots becoming smaller posteriorly, sawsheath black, ventral margin and apex yellow.

Head slightly enlarged behind eyes. Antenna 1.4× maximum head width; 3rd segment conspicuously enlarged toward apex (Fig. 6), slightly quadrangular in cross section, interior surface with distinctly compressed longitudinal carina, dorsal surface with weaker compressed longitudinal carina, ventral and lateral surface with indistinct longitudinal carina, more rounded and gradually disappearing apically. PO:OOL =



Figs 6–12. *Arge taitaensis* sp. n.: (6) antenna; (7) hind tibia with basitarsomere; (8) head, lateral aspect; (9) sawsheath, lateral aspect; (10) sawsheath, dorsal aspect; (11) lancet, lateral aspect; (12) serrulae 10–12.

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1.0:1.2; MS:IA = 1.0:3.9. Eyes scarcely converging below, lower interocular distance 1.4× eye length; clypeus circularly emarginated medially, supraclypeal area roundly protruding to point of interantennal carinae (Fig. 8), interantennal carinae obtusely ridged between antennae, becoming gradually flattened, converging downward, extending about ⅓ way from ventral margin of toruli to clypeus. Vertex and gena sparsely micropunctate, shining; frons, supraclypeal area and clypeus irregularly, densely punctuate, shining, malar space rugosely sculptured, dull; pubescence white, shorter than the diameter of lateral ocellus. Micropunctures and pubescence of mesoscutum similar to those on vertex. Abdomen smooth and shining; $tergum_1$ irregularely transversally microridged. Sawsheath in lateral view moderately pointed at apex (Fig. 9), in dorsal view broadly pincer-shaped apically (Fig. 10). Lancet as in Fig. 11 with filiform trichoid sensillae, with about 20 serrulae; serrulae at centre saddle-shaped, broadly rounded at apex, with about 5–7 irregular posterior sub-basal teeth and one large notched anterior sub-basal tooth (Fig. 12).

Length: 8.3 mm.

Male. Unknown.

Holotype: ♀ "det. R. B. Benson, 1963"; "*Arge mirabilipes* ♀, dét. J. Lacourt"; "Holotypus, *Arge taitaensis* sp. n. ♀, det.: F. Koch, 2010" [red] (MNHN).

Distribution: Kenya (Fig. 28).

Host plant: Unknown.

Remarks: The large posterior subapical tooth of the serrulae of *A. taitaensis* is typical for this species (Fig. 12) and differentiates it from *A. mirabilipes* and *A. kungveldensis*. Further differences are discussed under those species.

Arge mirabilipes Pasteels, 1955

Figs 13–17, 26

Arge mirabilipes: Pasteels 1955: 333, figs 7–10. Type locality: South Africa, Johannesburg.

Redescription:

Female.

Head black; labrum with light brown margin, apical half of mandible light brown becoming reddish brown apically; frons and base of clypeus dark brown, postocellar area light brown medially; antenna black. Thorax black with pronotum, tegulae, mesoscutellum and mesoscutellar appendage yellow. Legs black except for: fore tibia yellowish, mid tibia brown, hind tibia dark brown with posterior surface from basal quarter downwards to narrow apex dirty whitish. Forewings infuscate, with hyaline apex, substigmal spot of forewing distinct, stigma blackish, costa yellowish with dark brown at apex, subcosta and rest of venation blackish; hindwings hyaline. Abdomen yellow; $tergum_1$ black with yellow posterior margin, $terga_{2–7}$ broadly black coloured becoming narrower posteriorly, sawsheath black ventro-lateral, apex yellow.

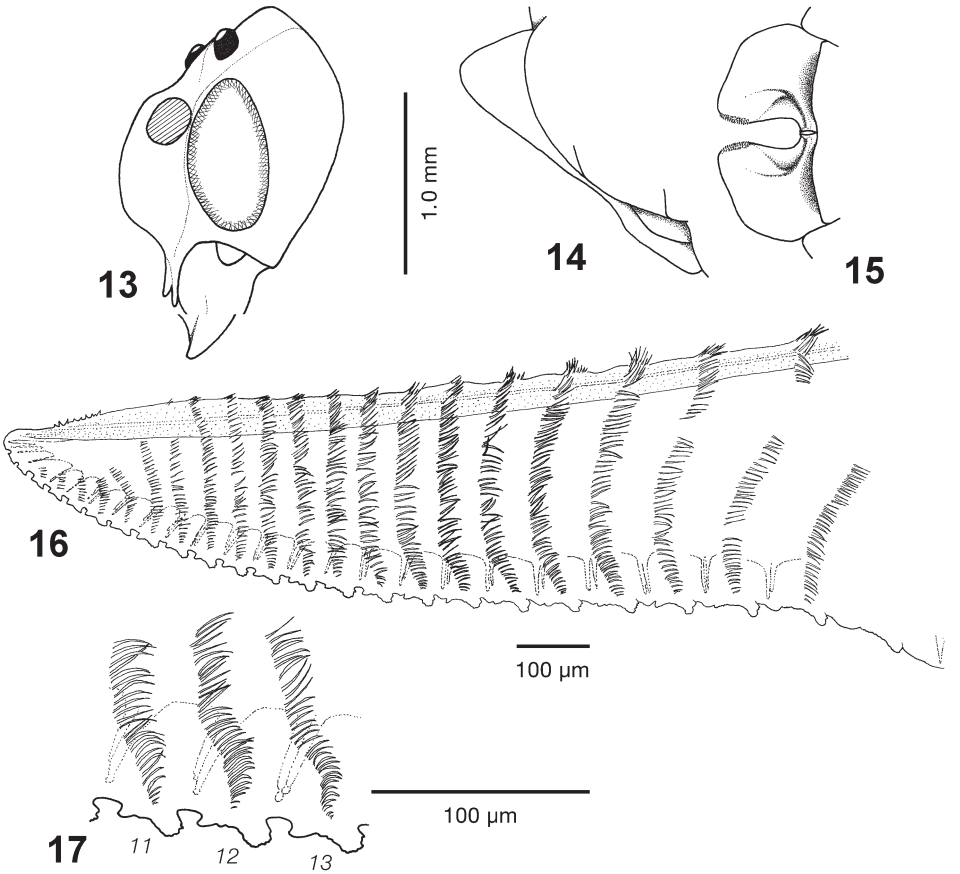
Head enlarged behind eyes. Antenna 1.2 times as long as maximum head width; 3rd segment conspicuously enlarged toward apex and slightly quadrangular in cross section, interior surface with distinctly compressed longitudinal carina, dorsal and ventral surface with weaker compressed longitudinal carina, lateral surface with indistinct longitudinal carina, more rounded. POL:OOL = 1.0:0.7; MS:IA = 1.0:4.9.

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Eyes scarcely converging below, lower interocular distance 1.5× eye length; clypeus shallowly, circularly emarginated medially, supraclypeal area roundly protruding to point of interantennal carinae (Fig. 13), interantennal carinae obtusely ridged between antennae, becoming gradually flattened, converging downward, very short, ending about at the ventral margin of toruli. Vertex and gena sparsely micropunctate, shining; frons, supraclypeal area and clypeus somewhat coarsely and densely punctate, shining, malar space rugosely sculptured, dull; pubescence whitish, shorter than diameter of lateral ocellus. Micropunctures and pubescence of mesoscutum similar to that on vertex. Abdomen smooth and shining; $tergum_1$ transversally microridged medially. Sawsheath in lateral view rounded at apex (Fig. 14), in dorsal view broadly and obtusely pincer-shaped apically (Fig. 15). Lancet as in Fig. 16 with filiform trichoid sensillae and about 25 serrulae; serrulae at centre saddle-shaped, broadly rounded at apex, with about 3 or 4 flat, irregular posterior sub-basal teeth and one small anterior sub-basal tooth (Fig. 17).

Length: 8.5 mm.

Male. Unknown.



Figs 13–17. *Arge mirabilipes* Pasteels: (13) head, lateral aspect; (14) sawsheath, lateral aspect; (15) sawsheath, dorsal aspect; (16) lancet, lateral aspect; (17) serrulae 11–13.

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Holotype: ♀ "Type" [red circle]; "S. Africa, Johannesburg, Bedford view, 22.XI.1952, Pres. by A. L. Capener"; "B. M. Type, Hym., 1-755"; "Brit. Mus., 1956-593."; "Bedford view, Jo.burg, Dr. Hattingh, 22.XI.1952"; "Holotype"; "*Arge mirabilipes* n. sp., J. Pasteels det., 1955"; "Holotypus, *Arge mirabilipes* Pasteels ♀, teste: F. Koch, 2009" [red]; "*Arge mirabilipes* Pasteels ♀, det.: F. Koch, 2009" (BMNH).

Distribution: South Africa (Fig. 28).

Host plant: Unknown.

Remarks: The whitish coloured hind tibia of *A. mirabilipes* differs conspicuously from the dark brown hind tibiae of *A. taitaensis* and *A. kungveldensis*. Furthermore, the ratios MS:IA and especially POL:OOL are considerably different among these three species. In addition the 25 serrulae of the lancet of *A. mirabilipes* differ from the 20 of *A. taitaensis* and the 22 of *A. kungveldensis*. Further differences are visible in the shape of the sawsheaths (Figs 2, 3, 9, 10, 14, 15).

Species removed from the Arge mirabilipes *group*

Arge bisignata Konow, 1907

Figs 18–23, 27

Arge bisignata: Konow 1907: 308. Type locality: [South Africa] Natal.
Arge tibiale Pasteels, 1963: 558, figs 21–24. Type locality: South Africa, Middlefontein. **Syn. n.**
Arge tibialis: Taeger *et al*. 2010: 141 (correction of spelling).

Redescription:

Female.

Head black; mandible broadly yellow ringed medially; antenna black, dorsal surface of scape brown. Thorax black; metanotum yellow. Legs yellow except for: fore coxa and trochanter as well as mid coxa and trochanter blackish, tarsi black, only fore basitarsomere yellowish with blackish apex. Wings sharply bicoloured, basal half slightly flavescent-hyaline and apical half fuscous; substigmal spot of fore wing indistinct, stigma blackish with yellowish centre, costa, subcosta, basal half of venation yellow, rest of venation blackish. Abdomen yellow.

Head very slightly enlarged behind eyes. Antenna 1.3× as long as maximum head width; 3rd segment enlarged toward apex, and triangular in cross section, interior surface with compressed longitudinal carina, dorsal and ventral surface with weaker compressed longitudinal carina, lateral surface more rounded. POL:OOL = 1.0:0.7–0.9 (0.8 HT); MS:IA = 1.0:2.6–3.4 (2.9 HT). Eyes scarcely converging below, lower interocular distance 1.6× eye length; anterior margin of clypeus shallowly emarginated, supraclypeal area flatly protruding to point of interantennal carinae, interantennal carinae very obtusely ridged between antennae, becoming gradually flattened, converging downward, very short, ending about at the ventral margin of toruli. Vertex and gena scattered micropunctate, shining; frons, supraclypeal area, clypeus and malar space densely punctate, subshining; pubescence whitish, about as long as diameter of lateral ocellus. Micropunctures and pubescence of mesoscutum similar to that on vertex. Abdomen smooth and shining. Sawsheath in lateral view rounded at apex (Fig. 18), in dorsal view moderately rounded apically, interior surface slightly convex (Fig. 19). Lancet as in Fig. 20 with short filiform trichoid sensillae, with about 19 serrulae; serrulae at centre prominent, broadly rounded at apex, with about 17–20 small, subbasal teeth (Fig. 21).

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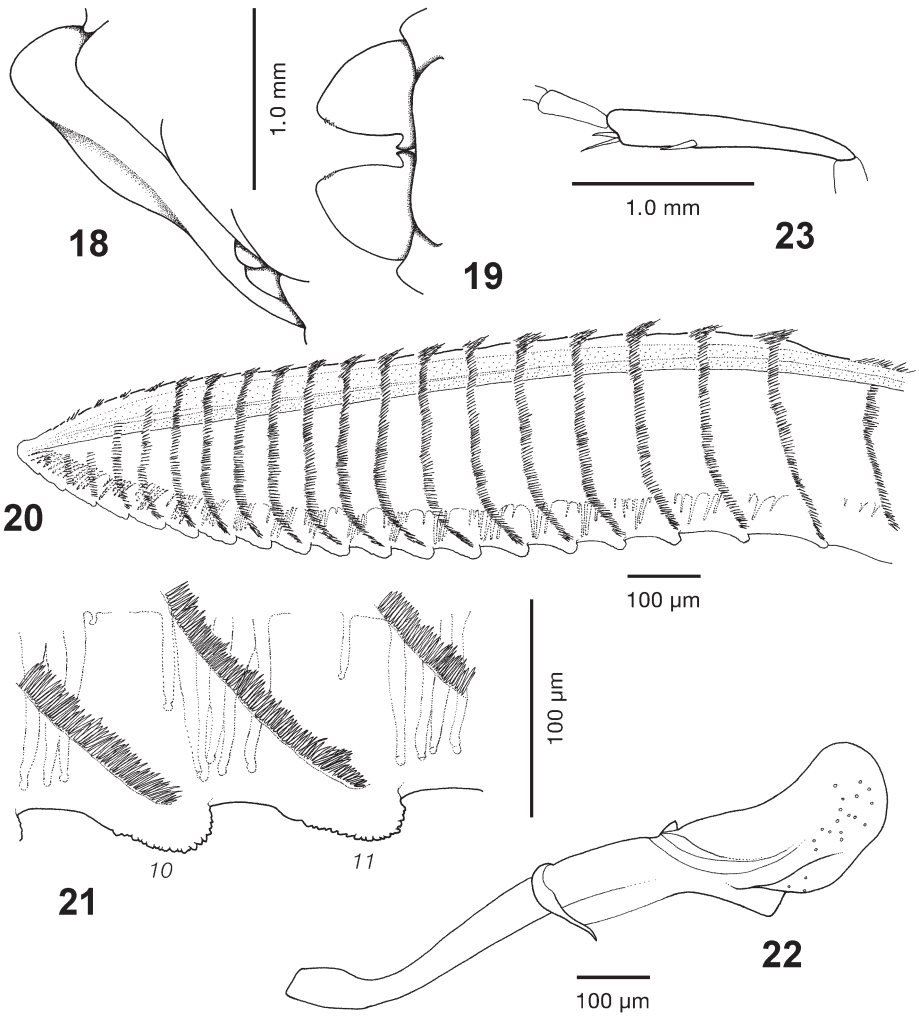
Length: 9.7–11.7 mm.

Male.

Colouration similar to that of female. Scape and pedicel brown; fore and mid coxae only blackish at base, fore basitarsomere and mid basitarsomere entirely yellow (hind legs are missing).

Head scarcely enlarged behind eyes. Antenna 1.8× as long as maximum head width; 3rd segment not enlarged toward apex. POL:OOL = 1.0:0.7–0.9. MS:IA = 1.0:3.0–4.0. Eyes scarcely converging below, lower interocular distance 1.4× eye length.
Other features as for female. Penis valve as in Fig. 22.

Length: 7.5–9.0 mm.



Figs 18–23. *Arge bisignata* Konow: (18) sawsheath, lateral aspect; (19) sawsheath (dorsal aspect); (20) lancet (lateral aspect); (21) serrulae 10–11; (22) penis valve (left, lateral aspect); (23) hind tibia with basitarsomere.

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Type material (examined):

Arge bisignata. Holotype: ♀ "*Arge bisignata* Knw., Natal", "Coll. Konow"; "Holotypus" [red]; "GBIF-GISHym, 2951"; "Holotypus, *Arge bisignata* Konow, teste: F. Koch, 2009" [red]; "*Arge bisignata* Konow, det.: F. Koch, 2009" (DEI).

Arge tibialis. Holotype: ♀ "Type" [red circle]; "S. Africa, Middlefontein, near Nylstroom, 16.XII.1953, A. L. Capener", "B. M. Type, Hym., 1.762"; "Brit. Mus., 1957-172."; "*Arge tibiale* n. sp. ♀, J. Pasteels det., 1957"; "Holotypus, *Arge tibiale* Pasteels ♀, teste: F. Koch, 2011" [red]; "*Arge bisignata* Konow ♀, det.: F. Koch, 2011" (BMNH).

Paratype: 1♂ "E. Transvaal, Elandshoek, 15–18.II.1956, A.L. Capener" (MRAC).

Other material examined: NAMIBIA: 1♂ Caprivi Zipfel, Katima Mulilo, 15–24.i.1995, M. Snižek (MNHU). MOZAMBIQUE: 2 ♂ Rikatla, P. Magretti (MCSN); 1♀ Lourenzo Marquez [= Maputo], 1911, J.B. Paulus; 1♂ Masiene, xii.1923; 1♂ Nyaka, ii.1924, R.F. Lawrence (SAMC). SOUTH AFRICA: *KwaZulu-Natal*: 1♂ Pinetown [29°49'S:30°50'E] (PPRI); 1♀ Mfongosi [28°43'S:30°50'E], iii.1917, W.E. Jones (SAMC); 1♀ Maputoland, 20 km S Emanguzi [27°00'S:32°43'E], Mobela, 2.xii.2002, M. Snižek (MNHU); 1♀ SW of Emanguzi [27°00'S:32°43'E], 29.i.2003, M. Snižek (MNHU); 1♂ Tembe Elephant Park [26°56'S:32°28'E], 8.xii.2002, M. Halada (OLML). ZAMBIA: 1♀ 5 km SE Livingstone, 17°54'S:25°51'E, 15.iii.1993, E. Marais (NMNW). ZIMBABWE: 1♀ Sebakwe, xi.1901, D. Dods (SAMC); 1♀ Umtali, 1903, A. Bodong (SAMC); 1♂ Bulawayo, 1936, Rhodesia Museum (SAMC); 1♂ Dorowa (Mutare), 29.xii.1998, M. Snižek (OLML).

Distribution: South Africa (Fig. 28).

Host plant: Unknown.



Figs 24–27. (24) *Arge kungveldensis* sp. n., female; (25) *A. taitaensis* sp. n., female; (26) *A. mirabilipes*, female; (27) *A. bisignata*, female.

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Remarks: The holotype and paratype of *A. tibialis* were examined, and it was not possible to find any differences from *A. bisignata*; thus, it is synonymised with *A. bisignata*.

According to Pasteels (1963) the species of the *Arge mirabilipes* group are characterized by a very short hind basitarsomere, a quarter of the hind tibia length. In *A. bisignata* the hind basitarsomere is only about a third of the tibia length. Furthermore, Pasteels (1963, fig. 9) separated these species by an evenly widened hind tibia over its total length. The hind tibia of *A. bisignata* is not evenly widened over its total length (Fig. 23) and clearly distinct from the medially slightly widened hind tibiae of *A. mirabilipes*, *A. kungveldensis* and *A. taitaensis* (Fig. 7). Furthermore, the sawsheath in dorsal view of *A. bisignata* is not pincer-shaped, but valvulae$_3$ are compact, broader at the base and moderately rounded at the apex, as well as with very slightly convex interior surface (Fig. 19). Also, the broadly rounded serrulae of *A. bisignata* (Fig. 21) are clearly distinct from the other species. Because of these different characters *A. bisignata* does not belong to the *A. mirabilipes* group, but rather to the *A. petacacia* group (Konow 1907; Pasteels 1953).

The variability of *A. bisignata* is apparent in the pattern of colouration. The tergum$_8$ of some males is marked with two large black medial spots. In old material the bicolouration of the wings is somewhat bleached and thus slightly contrasted.

The collecting locality "Landshoek" for the paratype of *A. tibialis*, that was given by Pasteels (1963) is incorrect. The correct locality is "Elandshoek" according to the collecting label of the paratype.

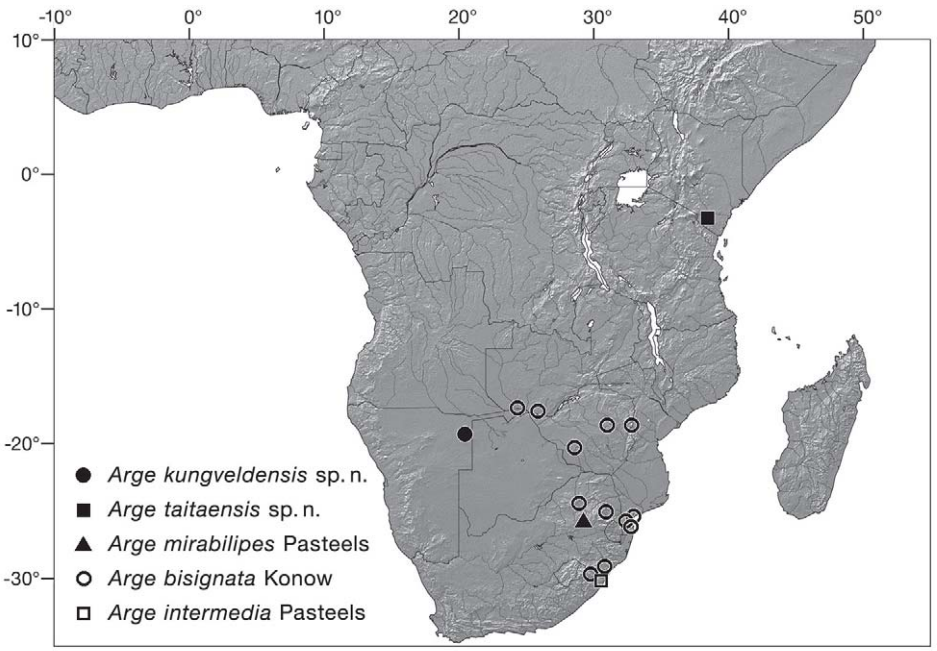


Fig. 28. Distribution of *Arge kungveldensis* sp. n., *A. taitaensis* sp. n., *A. mirabilipes* Pasteels, *A. bisignata* Konow and *A. intermedia* Pasteels.

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Arge intermedia Pasteels, 1963

Figs 29–31

Arge intermedia: Pasteels 1963: 558, fig. 25. Type locality: South Africa, Durban.

Redescription:

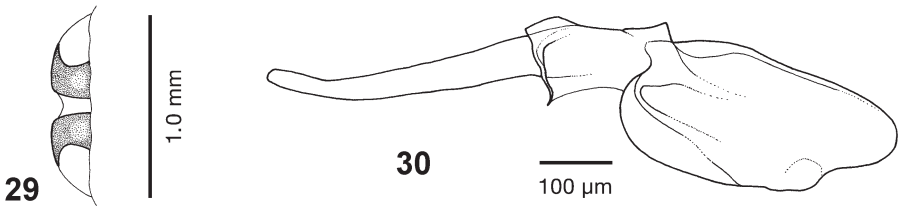
Female. Unknown.

Male.

Head black; apical half of mandible yellow, becoming reddish brown apically; anterior margin of labrum yellow. Thorax black; posterior margin of katepimeron, metapleuron yellow, a small median spot on posterior margin of mesoscutellum light brown. Legs yellow: fore coxa and trochanter as well as mid coxa blackish, apex of mid tibia narrow, hind tibia broadly blackish ringed apically, apexes of tarsomere$_3$ and tarsomeres$_{4/5}$ of fore tarsus blackish, tarsomeres$_{1–3}$ of mid tarsus blackish ringed, following tarsomeres entirely black, tarsomeres$_{1/2}$ of hind tarsus broadly blackish ringed, following tarsomeres entirely black. Wings infuscate; substigmal spot of forewing and intercostal area somewhat darker, stigma, subcosta and rest of venation dark brown, subcosta light brown. Abdomen yellow; tergum$_1$ blackish with yellow median and lateral markings, tergum$_5$ with blackish median spot, terga$_{6–8}$ nearly entirely black only lateral parts and anterior margin of tergum$_6$ yellow.

Head very slightly narrowed behind eyes. Antenna 2.2× as long as maximum head width; segment 3 not enlarged toward apex and conspicuously flattened, interior surface with distinctly compressed longitudinal carina, lateral surface with weaker compressed longitudinal carina, gradually disappearing apically. POL:OOL = 1.0:0.8; MS:IA = 1.0:6.5. Eyes conspicuously converging below, lower interocular distance 1.2× eye length; anterior margin of clypeus deeply circularly emarginated medially, supraclypeal area flatly protruding to point of interantennal carinae, interantennal carinae sharply ridged between antennae, becoming gradually flattened, scarcely converging downward, short, ending about ¼ way from ventral margin of toruli to clypeus. Vertex scattered micropunctuate, shining; gena, frons, supraclypeal area and interantennal area, somewhat more densely punctuate with larger punctures, shining; paraantennal area and clypeus densely and irregularly sculptured, shining; malar space densely punctate, dull; pubescence yellowish, a little shorter than diameter of lateral ocellus. Micropunctures and pubescence of mesoscutum similar to that on vertex. Abdomen smooth and shining; tergum$_1$ with transverse microsculpture, tergum$_8$ with two lateral and one medial membranous hollows (Fig. 29). Penis valve as in Fig. 30.

Length: 7.0 mm.



Figs 29, 30. *Arge intermedia* Pasteels: (29) tergum$_8$ with two lateral and one medial membranous tergal hollows; (30) penis valve, left, lateral aspect.

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Fig. 31. *Arge intermedia,* male.

Holotype. ♂ "Type" [red circle]; "Durban, 8.XII.1955, Nat. Museum S. Rhodesia"; "B. M. Type, Hym., 1.760"; "Brit. Mus., 1957-171."; "*Arge intermedia* n. sp., J. Pasteels det., 1957"; "Holotypus, *Arge intermedia* Pasteels ♂, teste: F. Koch, 2011" [red]; "*Arge intermedia* Pasteels ♂, det.: F. Koch, 2011" (BMNH).

Host plant: Unknown.

Distribution: South Africa (Fig. 28).

Remarks: According to Pasteels (1963), the typical characters of the *A. marabilipes* group (evenly widened hind tibia over its total length and a very short hind basitarsomere, a quarter of the tibia length) are not present in *A. intermedia*.

Furthermore, the tergum$_8$ with its membranous tergal hollows in a more or less conspicuous form seems to be typical for the males of the *Arge xanthomela* group (Pasteels 1953), for example *Arge braunsi* Konow, 1904 and *A. fenestralis* Forsius, 1927 (see Pasteels 1953: 19, figs 16, 17). Therefore *A. intermedia* probably belongs in the *A. xanthomela* group. This character of *A. intermedia* is clearly distinct from the male of *A. bisignata.*

The penis valve (Fig. 30) of *A. intermedia* resembles that of *A. pasteelsi* Blank, Liston & Taeger, 2009 in Blank *et al*. (2009). *Arge pasteelsi* is a replacement name for *Arge nigrescens* Pasteels, 1955, which was recognized as secondary homonym by Blank *et al*. (2009). The penis valve of *A. pasteelsi* is illustrated by Pasteels (1953: 21, fig. 18).

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