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Revision of the wasp genus *Ammophila* KIRBY, 1798 (Hymenoptera: Apoidea: Sphecidae) of the Sub-Saharan Region of Africa

Hermann DOLLFUSS

Abstract: A key and description to Sub-Saharan species of *Ammophila* KIRBY 1798 are provided and 46 species are included. The following 22 new species are described: *A. africana*, *A. arnoldi*, *A. bispinosa*, *A. centroafricana*, *A. clypeolineata*, *A. fischeri*, *A. kenyensis*, *A. kohli*, *A. longiclypeata*, *A. malickyi*, *A. namibiensis*, *A. nigri*, *A. nigrifrons*, *A. parapunctaticeps*, *A. pseudodolichodera*, *A. pseudokalaharica*, *A. ressl*, *A. schalleri*, *A. snizeki*, *A. turneri*, *A. zambiensis*, *A. zetteli*. The hitherto unknown males of *A. barbarorum* ARNOLD 1951, *A. bechuana* (R. TURNER 1929), *A. curvistriata* CAMERON 1908 and the unknown female of *A. crassifemoralis* (R. TURNER 1919) are described. The following are new synonyms in *Ammophila* (the valid name is listed last): *A. koppenfelsii* Taschenberg 1880 = *A. beniniensis* (PALISOT de BEAUVOIS 1806). *Sphex laticeps* ARNOLD 1928 = *A. braunsi* (R. TURNER 1919). *Sphex egregia* race *littoralis* ARNOLD 1920 = *A. insignis* F. SMITH 1856. *Sphex bonaespei* var. *ferrugineipes* ARNOLD 1920 = *A. rubiginosa* LEPELETIER de SAINT FARGEAU 1845. *A. bonaespei* LEPELETIER de SAINT FARGEAU 1845, *A. ferrugineipes* LEPELETIER de SAINT FARGEAU 1845 and *A. rufipes* var. *obscura* BISCHOFF 1912 = *A. rubripes* SPINOLA 1839. Lectotypes for four species have been designated.

Key words: Apoidea, Sphecidae, *Ammophila*, Key.

Introduction

This study results from my attempts to identify the large collection of *Ammophila* in the Biologiezentrum Linz, Austria. I found that the only key to the Sub-Saharan species was Arnold's (1928) old treatment of the Sub-Saharan fauna. In addition to my revision of the genus *Ammophila* of the Palearctic Region and India (DOLLFUSS 2013a) I decided to produce a revision of the Sub-Saharan Region. Dissection of male genitalia revealed that these structures offer good species characters for the most species. I have also included a key to genera of Ammophilini.

Forty six species have been included in this paper. Not included is *Ammophila confusa* A. COSTA, 1864, poorly described and of which I could not get the type.

This study is based on the examination of 5547 specimens (2441 ♀ ♀, 3106 ♂ ♂). Terminology follows BOHART & MENKE (1976).

Note : Dark wings can become pale in old specimens and stylized specimens have a shorter petiole than usual. The determination of females is in some case difficult and some female can not be identified with certainty.

The complete information of the material of "Biologiezentrum-Linz-collection" (OÖLM) examined, including localities, dates of capture and the names of the collectors will be published in a separate paper. However, a list of localities for rare species is provided here.

Sources of material

The following is a list of institutional and private collections where the material is housed (the capitalized abbreviations preceding the names are used in the text to designate these collections). The names of the contact persons are given in parentheses.

- AMG Albany Museum, Grahamstown, South Africa
- BMNH The Natural History Museum, London, Great Britain (David Notton)
- CAS..... California Academy of Sciences, San Francisco, California, USA
(Wojciech J. Pulawski, Vincent F. Lee)
- Coll. Jacobs Private collection of Hans-Joachim Jacobs, Ranzin, Germany
- Coll. Schmid-Egger..... Private collection of Christian Schmid-Egger, Berlin, Germany
- Coll. Zettel Private collection of Herbert Zettel, Vienna, Austria
- GENOA Museo Civico di Storia Naturale di Genova, Genova, Italy
- HALLE Zoologisches Institut der Martin-Luther Universität, Halle, Germany
(Karla Schneider)
- MHNG Musée d'Histoire Naturelle, Genève, Switzerland
- MNHN Muséum National d'Histoire Naturelle, Paris, France (A. Touret-Alby, L. Albenga)
- NHMW Naturhistorisches Museum, Wien, Austria (Dominique Zimmermann)
- NRS..... Naturhistoriska Riksmuseet, Stockholm, Sweden (Helge Vårdal)
- OÖLM..... Oberösterreichisches Landesmuseum, Linz, Austria (Fritz Gusenleitner)
- RMNH Nationaal Natuurhistorisch Museum, Leiden, the Netherlands
- SAM..... Museum of Cape Town, South Africa (Simon van Noort)
- TMB..... Természettudományi Múzeum, Budapest, Hungary (Sandor Csösz)
- TMP Transvaal Museum, Pretoria, South Africa
- TORINO Museo Regionale di Scienze Naturali, Torino, Italy
- ZIN..... Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia
(Serge A. Belokobylskiy)
- ZMB..... Zoologisches Museum Berlin, Berlin, Germany (Michael Ohl)
- ZÜRICH..... Eidgenössische Technische Hochschule, Institut für Pflanzenwissenschaften, Entomologische Sammlung, Zürich, Switzerland

Key to Genera of Ammophilini

(from BOHART & MENKE 1976, slightly modified)

- 1 Episternal sulcus curving back to scrobe from subalar fossa, then extending obliquely ventrad to anteroventral area of mesopleuron (Fig. 1); New World forms..... *Eremnophila* MENKE
- Episternal sulcus extending straight down from subalar fossa (in some species absent), not passing through scrobe (Fig. 2).....2
- 2 Claws in most specimens simple but if with single basal tooth on inner margin then mouthparts very long, galea attaining base of stipes when folded3
- Claws with one or two basal teeth on inner margin; galea not extending beyond stipes midlength when folded and in most specimens shorter; Old World forms.....4
- 3 Apex of sternum I (petiole) meeting and in many specimens overlapping base of sternum II (Fig. 3); spiracle of tergum I located before apex of sternum I (in profile); petiole in many specimens bent upward at level of base of tergum I.....*Podalonia* FERNALD
- Apex of sternum I not reaching base of sternum II, intervening space mostly long and consisting of membrane and ligament (Fig. 4); spiracle of tergum I located at or beyond apex of sternum I; sternum I in many specimens bent downward or straight at level of base of tergum I..... *Ammophila* W. KIRBY
- 4 Mesothoracic venter with anteromedian projection behind forecoxa; petiole socket nearly completely surrounded by propodeal tergum (Fig. 6); inner orbits of female markedly converging below; midtibia with single spur*Eremochaes* GRIBODO
- Mesothoracic venter without anteromedian projection, at most obtusely angled (exception: *Parapsammophila foleyi*); petiole socket broadly bounded ventrally by T-shaped propodeal sternum (Fig. 5); inner orbits of female only slightly converging below or parallel or diverging below; midtibia with two spurs (one may be reduced or absent).....5
- 5 Foretarsomere I of female markedly asymmetrical, its outer apex prolonged (Fig. 9); free margin of male clypeus rounded or truncate; male gonostyle of usual shape*Parapsammophila* TASCHENBERG
- Foretarsomere I of female nearly symmetrical, outer apex only slightly produced (Fig. 10); male clypeus triangular; male gonostyle of unusual shape: Fig. 8.....*Hoplammophila* de BEAUMONT

Key to Sub-Saharan species of *Ammophila* W. KIRBY, 1798

Females

Unknown and not included: *A. africana*, *A. arnoldi*, *A. bispinosa*, *A. centroafricana*, *A. kenyensis*, *A. longiclypeata*, *A. malickyi*, *A. nigri*, *A. nigrifrons*, *A. pseudodolichodera*, *A. zambiensis*.

- 1 Forewing with two submarginal cells (Note: in some specimens of *A. gracillima* and *A. dolichodera* crossvein 1 r-m is lost, resulting in two submarginal cells. If mesothoracic venter produced anteriorly go to couplet 7 **and** if pronotal collar elongate, not transversely striate and scutum with coarse transverse rugae, as in Fig. 103, go to couplet 23)2
- Forewing with three submarginal cells.....6
- 2 Anterior angles of pronotal collar elevate to form obliquely truncated tubercles (Fig. 119). Scutellum and metanotum distinctly elevate and tuberculate medially (Figs 528, 529). Pronotal collar characteristically shaped in lateral view: Fig. 83. 21-22 mm. Kenya, Namibia*A. tuberculiscutis* (R. TURNER)

- Anterior angles of pronotal collar rounded and not distinctly tuberculate laterally. Scutellum slightly and metanotum more distinctly tuberculate medially (Fig. 530) or scutellum and metanotum not elevate. Pronotal collar differently shaped in lateral view (Figs 84, 85, 86) 3
- 3 Pronotal collar finely transversely striate (Figs 86, 122). Episternal sulcus extends to anteroventral margin of mesopleuron. Propodeum dorsolaterally with reddish-brown patch. 17.5 mm. Namibia *A. namibiensis* DOLLFUSS **nov.sp.**
- Pronotal collar and scutum coarsely transversely ridged (Figs 84, 85). Episternal sulcus ends at level of scrobe. Propodeum dorsolaterally black 4
- 4 Scutellum slightly, metanotum more distinctly tuberculate medially (Fig. 530). Mesopleuron clearly punctate (punctures 0-2 diameters apart). Pronotal collar: Figs 84, 120. 17.5-22 mm. Angola, Mozambique, Namibia, South Africa, Tanzania, Zimbabwe *A. saussurei* (du BUYSSON)
- Scutellum and metanotum not elevate medially. Mesopleuron irregularly transversely rugose and more or less punctate 5
- 5 Mesopleuron irregularly transversely rugose and coarsely punctate. Scutum anteromedially with triangular patch of golden appressed setae (Fig. 121). Larger specimens: 24 mm. Central African Republic, Uganda. *A. crassifemoralis* (R. TURNER)
- Mesopleuron irregularly, finely, transversely rugose. Scutum anteromedially without triangular patch of golden appressed setae. Smaller specimens: 15-18 mm. Algeria, Egypt (Sinai Peninsula), Israel, Iran, Jordan, Kenya, Morocco, Niger, Syria *A. theryi* (GRIBODO)
- 6 Pronotal collar more or less transversely striato-rugose. Episternal sulcus ends at level of scrobe 7
- Pronotal collar smooth or punctured, without rugae. Episternal sulcus ends at level of scrobe or extends to anteroventral margin of mesopleuron 13
- 7 Mesothoracic venter anteriorly produced and concave for reception of forecoxa, depression margined by carina that forms in most specimens two distinct lobes. Pronotal collar elongate, covered by coarse transverse rugae (Figs 88, 126). Head, thorax and propodeum laterally covered with dense appressed silvery setae. Clypeus nearly flat, with straight foremargin (Figs 16, 52). 16-19 mm. Ethiopia, Sudan, North Africa, Saudi Arabia, Israel, Syria, Central Asia, China, India *A. gracillima* TASCHEBERG
- Mesothoracic venter anteriorly not distinctly produced, rounded. Pronotal collar and clypeus differently shaped. Appressed silvery setae varying 8
- 8 Anterior border of pronotal collar distinctly marginate, forming sharp angle with almost vertical anterior surface (Figs 87, 89, 125, 127). Arolia absent 9
- Anterior border of pronotal collar slightly rounded, anterior face more obliquely in lateral view (Figs 91, 94). Arolia present or absent 10
- 9 Dorsal surface of pronotal collar with not more than three straight, more or less complete transverse carinae, medially not elevate (Figs 87, 125). Propodeal enclosure irregularly reticulate medially, transversely ridged laterally. Large specimens: 28-36 mm. Benin, Namibia, Senegal, South Africa, Tanzania, Zambia, Zimbabwe *A. vulcania* du BUYSSON
- Dorsal surface of pronotal collar with more than three transverse carinae and medially slightly elevate (Figs 89, 127). Propodeal enclosure all transversely striate. Smaller specimens: 26-28.5 mm. Central African Republic, Ivory Coast, Namibia, Nigeria, Uganda *A. clypeolineata* DOLLFUSS **nov.sp.**
- 10 Arolia absent. Gastral apex with metallic shine. Pronotal collar not elongate (Figs 123, 124) 11
- Arolia present. Gastral apex without metallic shine or with slight one. Pronotal collar elongate (Figs 128, 129) 12
- 11 Thorax with at least traces of reddish-brown collar. Dorsal surface of pronotal collar as long medially as laterally (Fig. 123). Gastral apex pruinose. 19-31 mm. Widely distributed and fairly abundant *A. beniniensis* (PALISOT de BEAUVOIS)

- Thorax entirely black. Dorsal face of pronotal collar shorter medially than laterally (Fig. 124). Gastral apex in most specimens not pruinose. 27-34 mm. Botswana, Ethiopia, Kenya, Mozambique, Senegal, South Africa, Tanzania, Zambia, Zimbabwe
.....*A. calva* (ARNOLD)
- 12 Pronotal collar coarsely transversely striate (5-7 striae more or less interrupted medially, space between them shiny, not pruinose), marginated anteriorly (Figs 92, 128). Median lobe of clypeus with lateral teeth (Fig. 21). Pronotal collar reddish-brown. Gastral apex with slight metallic shine. 19-23.5 mm. Botswana, Kenya, Malawi, Namibia, South Africa, Tanzania, Yemen, Zambia, Zanzibar, Zimbabwe
.....*A. bechuana* (R. TURNER)
- Pronotal collar finely transversely striate (10-11 striae), pruinose (Figs 94, 129). Median lobe of clypeus without lateral teeth (Fig. 22). Pronotal collar black or reddish-brown. Gastral apex black. 17.5-20 mm. Namibia, South Africa*A. braunsi* (R. TURNER)
- 13 Gastral apex with metallic shine. 17-20 mm. Chad, Egypt, Iran, Israel, Kenya, Libya, Malta, Morocco, Somalia, Sudan, Tanzania, Yemen*A. dubia* KOHL
- Gastral apex without metallic shine 14
- 14 Ventral part of clypeus elongate, abruptly truncate in front, with sharp angle to lateral margins, these in many specimens concave (Figs 23, 24) 15
- Ventral margin of clypeus convex, or if slightly truncate then not sharply angular on each side of median lobe and lateral margins not concave 16
- 15 Scutum transversely striate and punctate between striae. Clypeus: Fig. 23. Large specimens: 26-33 mm. Widely distributed in Africa and western Asia
.....*A. insignis* F. SMITH
- Scutum transversely striate, without punctures. Clypeus: Fig. 24. Smaller specimens: 18.5 mm. South Africa (Kalahari desert)*A. snizeki* DOLLFUSS **nov.sp.**
- 16 Pronotal collar dorsally elevate to form prominent median tubercle or distinctly trituberculate (Figs 133-136) 17
- Pronotal collar not tuberculate dorsally 22
- 17 Pronotal collar smooth, excavated in front of each side of midpoint, appearing bluntly trituberculate when viewed from above, shoulders forming additional tubercles (ARNOLD 1928: 269) (Fig. 133). 20-28 mm. South Africa*A. peringueyi* (ARNOLD)
- Pronotal collar not distinctly trituberculate 18
- 18 Episternal sulcus ends at level of scrobe. Scutum dull and sparsely punctate to nearly impunctate. Pronotal collar distinctly elevate and in most specimens with longitudinal furrow dorsally (Figs 136, 524). 17.5-20.5 mm. Namibia*A. kohli* DOLLFUSS **nov.sp.**
- Episternal sulcus extends to anteroventral margin of mesopleuron. Scutum distinctly transversely striate and punctate **or** dull and finely transversely striate laterally. Pronotal collar more or less elevate dorsally 19
- 19 Pronotal collar distinctly elevate dorsomedially (Figs 522, 523). Scutum distinctly transversely striate and punctate 20
- Pronotal collar slightly elevate dorsomedially and anterior face slightly concave on each side of midpoint (Figs 525, 138). Scutum dull, finely, sparsely punctate and finely transversely striate laterally 21
- 20 Pronotal collar impunctate or at most finely, sparsely punctate (Figs 134, 522). 20.5-23.5 mm. Mozambique, Namibia, South Africa, Zambia, Zimbabwe *A. confifera* (ARNOLD)
- Pronotal collar distinctly coarsely punctate (Figs 135, 523). 21-23 mm. South Africa
.....*A. turneri* DOLLFUSS **nov.sp.**
- 21 Pronotal collar impunctate, anterior face oblique (Figs 101, 525). Clypeus distinctly elongate (Fig. 30). Sterna III-V in most specimens reddish-brown. 19-28 mm. Namibia, Kenya, South Africa, Zimbabwe*A. dolichocephala* CAMERON
- Anterior face of pronotal collar nearly vertical (Fig. 102). Clypeus slightly elongate (Fig. 29). Sterna III-V black. 21 mm. Ethiopia, Kenya, Tanzania*A. barbarorum* ARNOLD

- 22 Scutum coarsely transversely rugose and without erect setae (Fig. 139). Clypeus not elongate (Fig. 31). Episternal sulcus ends at level of scrobe. Forecoxa with little tooth ventrally. Pronotal collar dull and more or less elongate (Fig. 103)23
- Scutum differently shaped and in most specimens with erect setae. Clypeus more or less elongate. Episternal sulcus extends to anteroventral margin of mesopleuron. Forecoxa without little tooth ventrally. Pronotal collar not elongate24
- 23 Pronotal collar distinctly elongate and oblique in lateral view (Figs 103, 139). Mesopleuron more or less reddish-brown. 16-25 mm. Ethiopia, Kenya, Mali, Mozambique, Namibia, Niger, Senegal, South Africa, Tanzania, Yemen, Zambia, Zimbabwe.....*A. dolichodera* KOHL
- Pronotal collar slightly elongate and nearly vertical anteriorly (Figs 117, 153). Mesopleuron black. 23-26 mm. Burkina Faso, Kenya, Namibia.....*A. pseudodolichodera* DOLLFUSS **nov.sp.**
- 24 Head (except vertex), thorax and propodeum evenly covered with fine appressed silvery setae that obscure underlying sculpture (Note: in old specimens appressed setae on scutum disk may be destroyed, then integument shiny and finely punctate, punctures partly confluent). Pronotal collar reddish-brown. 20-24 mm. Burkina Faso, Ethiopia, Kenya, Mali *A. schalleri* DOLLFUSS **nov.sp.**
- At least scutum not covered with appressed silvery setae, underlying sculpture not obscured. Scutum clearly punctate **or** punctures on scutum laterally confluent **or** scutum transversely striate and more or less punctate **or** scutum microstriate. Pronotal collar black or reddish-brown25
- 25 Scutum clearly punctate (punctures 0-2 diameters apart), punctures not confluent26
- Punctures on scutum laterally confluent **or** scutum all transversely striate and more or less punctate **or** microstriate27
- 26 Pronotal collar and thorax laterally all black. 16.5-20.5 mm. Botswana, Namibia, South Africa (Kalahari).....*A. kalaharica* (ARNOLD)
- Pronotal collar reddish-brown, mesopleuron and propodeum laterally with reddish-brown spots. 19.5-22 mm. Mozambique, South Africa.....*A. pseudokalaharica* DOLLFUSS **nov.sp.**
- 27 Mesopleuron along mesopleural suture with dense appressed silvery setae, metapleuron without such setae or with distinctly more sparse ones28
- Mesopleuron, metapleuron and propodeum laterally uniformly covered with more or less dense appressed silvery setae31
- 28 Mesopleuron and propodeum laterally partly reddish-brown. 19-25 mm. South Africa.....*A. parapuncticeps* DOLLFUSS **nov.sp.**
- Mesopleuron and propodeum laterally black29
- 29 Vertex and pronotal collar dull, nearly impunctate. Scutum distinctly transversely striate and punctate (Fig. 143). Pronotal collar anteriorly oblique in lateral view (Fig. 107). 20-21 mm. Angola, Botswana, Burkina Faso, Cameroon, Ethiopia, Kenya, Mali, Mozambique, Nigeria, Senegal, South Africa, Tanzania, Togo, Zambia, Zimbabwe*A. curvistriata* CAMERON
- Vertex and pronotal collar more or less punctate. Scutum and pronotum varying.....30
- 30 Pronotal collar black, shiny and distinctly punctate. Pronotal collar more vertical anteriorly in lateral view (Fig. 110). Scutum coarsely, densely punctate and transversely rugose laterally. 17.5-23.5 mm. Angola, Cameroon, Kenya (Mt. Kenya 3000 m), Zambia*A. zetteli* DOLLFUSS **nov.sp.**
- Pronotal collar reddish-brown and slightly punctate. Pronotal collar more oblique anteriorly in lateral view (Fig. 109). 19-26 mm. Mozambique, South Africa, Tanzania, Uganda, Zambia *A. fischeri* DOLLFUSS **nov.sp.**
- 31 Pronotal collar distinctly punctate (0-1 diameter apart), punctures as large as on frons. Scutum densely punctate, punctures transversely confluent32
- Pronotal collar impunctate or at most finely punctate. Scutum finely transversely striate **or** densely punctate and transversely rugose **or** microstriate transversely33

- 32 Mesopleuron and propodeum laterally black. 21-23 mm. Ethiopia, Kenya (Mt. Kenya 3000 m), Malawi, Mali, Namibia, Rwanda, South Africa, Tanzania, Zanzibar, Zaire, Zimbabwe..... *A. punctaticeps* (ARNOLD)
- Mesopleuron and propodeum laterally partly reddish-brown. 19-25 mm. South Africa.....
..... *A. parapunctaticeps* DOLLFUSS **nov.sp.**
- 33 Erect setae on head and pronotal collar as long as scape. Scutum densely, clearly punctate and transversely rugose. 24 mm. Angola, Burkina Faso, Central African Republic, Ethiopia, Nigeria, Togo, Zambia *A. caprella* ARNOLD
- Erect setae shorter. Scutum coarsely transversely striate and distinctly punctate or scutum dull and transversely microstriate 34
- 34 Vertex and pronotal collar dull and impunctate. Scutum transversely microstriate and more or less finely striate. Mesopleuron, metapleuron and propodeum laterally covered with dense appressed silvery setae that more or less obscure underlying sculpture. Mesopleuron black. 15.5-23 mm. Botswana, Burkina Faso, Ethiopia, Kenya, Mozambique, Namibia, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
..... *A. argyrocephala* ARNOLD
- Pronotal collar more or less shiny and more or less punctate. Scutum more or less shiny and more or less coarsely transversely striate and punctate. Mesopleuron black or with reddish-brown spots and covered with more or less dense appressed silvery setae ...35
- 35 Thorax laterally black, covered in most specimens with dense appressed silvery setae that in many specimens obscure underlying sculpture. Vertex sparsely punctate, pronotal collar shiny and sparsely punctate (punctures 1-3 diameters apart). Scutum transversely striate and distinctly punctate (Fig. 150). Clypeus: Fig. 42. 18.5-21 mm. South Africa *A. resslii* DOLLFUSS **nov.sp.**
- Thorax laterally black or with reddish-brown spots, covered with fine appressed silvery setae that not obscure underlying sculpture. Vertex and pronotal collar at most finely punctate. Scutum transversely striate and more or less punctate36
- 36 Thorax and propodeum with reddish-brown spots, not all black. 20-26 mm. Widely distributed. (Not all females can be separated from *A. rubripes*, when in doubt see males)..... *A. rubiginosa* LEPELETIER
- Thorax and propodeum all black or with reddish-brown spots. 17.5-23.5 mm. Widely distributed *A. rubripes* SPINOLA

Males

Unknown and not included: *A. fischeri*, *A. peringueyi*, *A. snizeki*.

- 1 Forewing with two submarginal cells. (Note: in some specimens of *A. gracillima* and *A. dolichodera* crossvein 1 r-m is lost, resulting in two submarginal cells. If mesothoracic venter produced anteriorly go to couplet 9 and if pronotal collar elongate, without transverse striae and scutum with coarse transverse rugae go to couplet 26).....2
- Forewing with three submarginal cells.....6
- 2 Clypeus triangularly elongate (Fig. 155). Anterior angles of pronotal collar rise to form obliquely truncate tubercles (Figs 242, 284). Scutellum and metanotum distinctly elevate and tuberculate medially. Gonostyle bifid apically: Fig. 326. 22-24 mm. Kenya, Namibia *A. tuberculiscutis* (R. TURNER)
- Clypeus not triangularly elongate. Anterior angles of pronotal collar rounded, not distinctly tuberculate. Scutellum and metanotum elevate or not. Gonostyle not bifid apically3
- 3 Pronotal collar and scutum finely, transversely striate (Fig. 286). Pronotal collar nearly flat in lateral view (Fig. 244). Episternal sulcus extends to anteroventral margin of mesopleuron. 15-16 mm. Namibia *A. namibiensis* DOLLFUSS **nov.sp.**
- Pronotal collar and scutum coarsely, transversely ridged. Pronotal collar not so flat in lateral view. Episternal sulcus ends at level of scrobe4

- 4 Scutellum slightly, metanotum distinctly elevate (Fig. 530). Clypeus distinctly elongate and slightly emarginate apically (Fig. 156). Mesopleuron clearly punctate (punctures 0-2 diameters apart). Gonostyle (Fig. 327) and penis valve characteristically shaped (Figs 368, 442, 482). 19-20 mm. Angola, Mozambique, Namibia, South Africa, Tanzania, Zimbabwe.....*A. saussurei* (du BUYSSON)
- Scutellum and metanotum not distinctly elevate. Clypeus elongate and broadly truncate (Fig. 158) or slightly elongate and more rounded ventrally (Fig. 159). Mesopleuron transversely rugose and more or less punctate or finely transversely rugose. Gonostyle and penis valve differently shaped5
- 5 Clypeus elongate, its free margin broadly truncate (Fig. 158). Scutum anteromedially with triangular patch of appressed golden setae (Fig. 287). Mesopleuron transversely rugose and punctate. 24 mm. Central African Republic, Uganda*A. crassifemoralis* (R. TURNER)
- Clypeus slightly elongate, its free margin rounded (Fig. 159). Scutum without triangular patch of appressed setae. Mesopleuron transversely finely rugose. Gonostyle: Fig. 329; penis valve: Figs 370, 408, 484. 12-16 mm. Kenya, Niger, Algeria, Egypt (Sinai Peninsula), Israel, Iran, Jordan, Morocco, Syria*A. theryi* (GRIBODO)
- 6 Pronotal collar more or less transversely striato-rugose. Episternal sulcus ends at level of scrobe.....7
- Pronotal collar smooth or punctate, without rugae. Episternal sulcus ends at level of scrobe or extends to anteroventral margin of mesopleuron.....13
- 7 Clypeus elongate, free margin emarginate medially (Fig. 160). Pronotal collar sharply marginate in front with two to four transverse rugae (Figs 247, 289). Hypostomal carina with lobe near mandibular socket (Fig. 532). Genitalia characteristically shaped: gonostyle: Fig. 330; penis valve: Figs 375, 413, 444, 487). 24-29 mm. Benin, Namibia, Senegal, South Africa, Tanzania, Zambia, Zimbabwe.....*A. vulcania* du BUYSSON
- Clypeus and pronotal collar differently shaped. Hypostomal carina without lobe. Genitalia differently shaped8
- 8 Clypeus laterally with a longitudinal carina on each side (Fig. 161). Penis valve without transverse spine apicoventrally (Figs 371, 445, 488). Gonostyle: Fig. 331. 24-26 mm. Central African Republic, Ivory Coast, Namibia, Nigeria, Uganda.....*A. clypeolineata* DOLLFUSS **nov.sp.**
- Clypeus lateral without longitudinal carina. Genitalia differently shaped9
- 9 Mesothoracic venter anteriorly produced, concave for reception of forecoxa, depression margined by carina that forms two lobes in most specimens. Pronotal collar distinctly elongate (Figs 249, 291). Head, thorax and propodeum covered with dense appressed silvery setae. 13-18 mm. Ethiopia, Sudan, Arabia, Israel, Syria, North Africa, Central Asia, China, India.....*A. gracillima* TASCHENBERG
- Mesothoracic venter anteriorly not produced, rounded. Pronotal collar elongate or not. Head, thorax and propodeum not evenly covered with dense appressed setae (except in *A. schalleri*).....10
- 10 Pronotal collar not elongate (Figs 250, 251). Gastral apex with metallic shine. Gonostyle: Figs 334, 33211
- Pronotal collar elongate (Figs 252, 253). Gastral apex black or with metallic shine. Gonostyle narrower and more acute at apex12
- 11 Penis valve apicoventrally with oblique outwards directed spine (Fig. 409). Pronotal collar: Fig. 292. 17.5-28 mm. Widely distributed and fairly abundant*A. beniniensis* (PALISOT de BAUVOIS)
- Penis valve apicoventrally with oval ring of minute denticles (Fig. 410). Pronotal collar: Fig. 293. 26.5-28 mm. Botswana, Ethiopia, Kenya, Mozambique Senegal, South Africa, Tanzania, Zambia, Zimbabwe.....*A. calva* (ARNOLD)
- 12 Free margin of clypeus broad (Fig. 164). Gastral apex with metallic shine. Pronotal collar abruptly vertical anteriorly (Figs 252, 294). 17.5-20 mm. Botswana, Kenya, Malawi, Namibia, South Africa, Tanzania, Zambia, Zanzibar, Zimbabwe, Yemen*A. bechuana* (R. TURNER)

- Clypeus narrowing toward free margin (Fig. 166). Gastral apex without metallic shine. Pronotal collar oblique anteriorly (Figs 253, 295). 15.5-18 mm. Namibia, South Africa
.....*A. braunsi* (R. TURNER).....
- 13 Genitalia unusually shaped (Figs 452-456, 459-461, 463, 539). Clypeus in most species distinctly elongate and characteristically shaped (except: *A. nigri* and *A. pseudodolichodera*).....14
- Genitalia usually shaped (Figs 457, 458, 462, 465-480). Clypeus more or less elongate23
- 14 Clypeus narrowing toward free margin, with longitudinal carina medially (Figs 167, 208). Gonostyle (Fig. 337) and penis valve characteristically shaped (Figs 378, 452, 493). 21.5-25 mm. Kenya, Namibia, South Africa, Zimbabwe.....
.....*A. dolichocephala* CAMERON.....
- Clypeus without longitudinal carina. Genitalia differently shaped15
- 15 Free margin of clypeus emarginate (Figs 168, 209). Hypostomal carina with blunt tooth near mandibular socket (Fig. 533). Gonostyle (Fig. 338) and penis valve characteristically shaped (Figs 379, 418, 453, 492). 19.5-22.5 mm. Ethiopia, Kenya, Tanzania.....
.....*A. barbarorum* ARNOLD.....
- Free margin of clypeus not emarginate. Hypostomal carina with or without tooth near mandibular socket. Genitalia differently shaped16
- 16 Hypostomal carina with long tooth near mandibular socket (Fig. 534). Gonostyle (Fig. 339) and penis valve characteristically shaped (Figs 380, 454, 494). 20.5 mm. Kenya.....
.....*A. kenyensis* DOLLFUSS **nov.sp.**.....
- Hypostomal carina without tooth. Genitalia differently shaped17
- 17 Pronotal collar slightly elevate dorsomedially. Gonostyle (Fig. 344) and penis valve characteristically shaped (Figs 381, 415, 459, 495). Clypeus: Fig. 170. 21 mm. Mozambique, Namibia, South Africa, Zambia, Zimbabwe.....
.....*A. confifera* (ARNOLD).....
- Pronotal collar not or slightly elevate. Genitalia differently shaped18
- 18 Gonostyle (Fig. 340) and penis valve characteristically shaped (Figs 382, 416, 463, 496). Clypeus: Figs 171, 212. 18 mm. Namibia.....
.....*A. longiclypeata* DOLLFUSS **nov.sp.**.....
- Gonostyle and penis valve differently shaped.....19
- 19 Genitalia large (2 mm) and characteristically shaped: Gonostyle: Fig. 345; penis valve: Figs 384, 419, 460, 498. Pronotal collar: Fig. 526. Clypeus: Figs 172, 213. 19-21.5 mm. South Africa.....
.....*A. turneri* DOLLFUSS **nov.sp.**.....
- Gonostyle and penis valve differently shaped.....20
- 20 Gonostyle pointed apically (Figs 342, 343). Clypeus distinctly elongate (Figs 175, 173). Scutum finely transversely rugose and punctate, with erect setae21
- Gonostyle broadly rounded apically (Figs 341, 538). Clypeus slightly elongate (Figs 174, 239). Scutum coarsely transversely rugose, without erect setae.....22
- 21 Pronotal collar slightly elevate dorsomedially (Fig. 304). Genitalia characteristically shaped: gonostyle: Fig. 342; penis valve: Figs 386, 421, 461, 500. Clypeus: Figs 175, 216. 22 mm. South Africa.....
.....*A. arnoldi* DOLLFUSS **nov.sp.**.....
- Pronotal collar not elevate dorsomedially. Penis valve in lateral view characteristically shaped (Fig. 455). Clypeus: Figs 173, 214. 16.5-20 mm. Botswana, Burkina Faso, Ethiopia, Kenya, Mozambique, Namibia, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.....
.....*A. argyrocephala* ARNOLD.....
- 22 Sternum VIII with two small tubercles and sterna VII and VIII covered with dense erect setae (Figs 536, 537). Penis valve characteristically shaped (Figs 539-542). Gonostyle: Fig. 538. Clypeus: Fig. 239. 22 mm. Niger
.....*A. nigri* Dollfuss **nov.sp.**.....
- Sterna VII and VIII simple. Penis valve differently shaped (Figs 385, 420, 456, 499). Gonostyle: Fig. 341. 17-20 mm. Burkina Faso, Kenya, Namibia
.....*A. pseudodolichodera* DOLLFUSS **nov.sp.**.....
- 23 Scutum shiny, clearly punctate, punctures never confluent (punctures 0-2 diameters apart). Gastral apex without metallic shine (if scutum covered with appressed setae and finely punctate go to couplet 40 *A. schalleri*)24

- Scutum coarsely punctate, with some punctures confluent, or more or less transversely striate.....25
- 24 Penis valve in apical view rounded ventrally (Fig. 515). Mesopleuron black. 16-21 mm. Botswana, Namibia, South Africa..... *A. kalaharica* (ARNOLD)
- Penis valve in apical view pointed ventrally (Fig. 516). Mesopleuron partly reddish-brown. 17.5-20 mm. Mozambique, South Africa..... *A. pseudokalaharica* DOLLFUSS **nov.sp.**
- 25 Gastral apex with metallic shine. Pronotal collar: Fig. 263. 15-17 mm. Chad, Egypt, Iran, Israel, Kenya, Libya, Malta, Morocco, Somalia, Sudan, Yemen..... *A. dubia* KOHL
- Gastral apex without metallic shine26
- 26 Pronotal collar elongate, nearly flat, anteriorly low (Fig. 264). Scutum dull, coarsely transversely ridged (Fig. 306). Episternal sulcus ends at level of scrobe. Forecoxa ventrally with small tooth (Fig. 535). Gonostyle: Fig. 347. 15.5-21 mm. Ethiopia, Kenya, Mali, Mozambique, Namibia, Niger, Senegal, South Africa, Tanzania, Yemen, Zambia, Zimbabwe *A. dolichodera* KOHL
- Pronotal collar and scutum differently shaped. Episternal sulcus ends at level of scrobe or extends to anteroventral margin of mesopleuron. Forecoxa without tooth. Gonostyle differently shaped.....27
- 27 Clypeus produced, free margin truncate or slightly concave and subrectangular on each side (Figs 179, 181, 177).....28
- Clypeus not produced, if produced then not subrectangular on each side.....30
- 28 Median lobe of clypeus broadly produced (Fig. 177). Pronotal collar elevate, with short longitudinal furrow (Fig. 307). Penis valve without apicoventral spine (Fig. 464). Gonostyle with long setae dorsally and ventrally (Fig. 351). 19 mm. Namibia..... *A. kohli* DOLLFUSS **nov.sp.**
- Clypeus narrower (Figs 179, 181). Pronotal collar not elevate. Penis valve with ventroapical spine. Gonostyle differently shaped29
- 29 Penis valve with well-developed apicoventral spine (Figs 424, 462). Gonostyle abruptly narrowed at apical third (Fig. 348). Mesopleuron without appressed setae. Erect setae short. Clypeus: Fig. 179. 21-30 mm. Widely distributed *A. insignis* F. SMITH
- Penis valve with small apicoventral spine (Fig. 465). Gonostyle: Fig. 349. Mesopleuron in most specimens with appressed silvery setae. Erect setae on head nearly as long as scape and more or less long on thorax. Clypeus: Fig. 181. 21-23 mm. Angola, Burkina Faso, Central African Republic, Ethiopia, Nigeria, Togo, Zambia..... *A. caprella* ARNOLD
- 30 Pronotal collar elevate dorsomedially, with short longitudinal furrow (Fig. 307). Clypeus broadly elongate, with semicircular carina (Fig. 177). Penis valve without apicoventral spine (Fig. 464). Gonostyle with long setae dorsally and ventrally (Fig. 351). 19 mm. Namibia..... *A. kohli* DOLLFUSS **nov.sp.**
- Pronotal collar not elevate. Clypeus differently shaped. Penis valve and gonostyle differently shaped.....31
- 31 Penis valve apicoventrally without spine and characteristically shaped in lateral and apical view (Figs 458, 506). Metapleuron without appressed silvery setae. Gonostyle: Fig. 350. 21.5 mm. Angola, Cameroon, Kenya (Mt. Kenya 3000 m), Zambia *A. zetteli* DOLLFUSS **nov.sp.**
- Penis valve differently shaped. Metapleuron with or without appressed silvery setae.....32
- 32 Penis valve in apical view not distinctly emarginate basally (Fig. 507). Mesopleuron, metapleuron and propodeum laterally evenly covered with appressed silvery setae. Penis valve in lateral view: see Fig. 466. 16-19 mm. Botswana, Namibia, South Africa, Zimbabwe..... *A. nigrifrons* DOLLFUSS **nov.sp.**
- Penis valve in apical view distinctly emarginate. Metapleuron with or without appressed setae.....33
- 33 Penis valve apicoventrally with two different kinds of spines (Figs 467, 430). Clypeus: Fig. 182. 16.5-23 mm. Angola, Zambia *A. bispinosa* DOLLFUSS **nov.sp.**
- Penis valve apicoventrally with one kind of spines or without spines34

- 34 Mandible basally and apically dark-brown, medially reddish-brown, in some specimens nearly all black. Penis valve in lateral and apical view: Figs 468, 509. Mesopleuron along mesopleural suture covered with dense appressed silvery setae, metapleuron in most specimens with distinctly fewer setae. Scutum transversely striate and coarsely punctate. Clypeus: Fig. 184. 19-22 mm. Angola, Botswana, Burkina Faso, Cameroon, Kenya, Mali, Nigeria, Senegal, South Africa *A. curvistriata* CAMERON
- Mandible reddish-brown, apically black. Penis valve differently shaped or similar. Metapleuron with or without appressed setae. Scutum punctate or transversely striate and punctate 35
- 35 Penis valve without distinct spines apicoventrally (Figs 469, 470, 471). Mesopleuron with dense appressed silvery setae along mesopleural suture, metapleuron with distinctly fewer setae. 36
- Penis valve with distinct spines apicoventrally. Metapleuron with or without appressed setae 38
- 36 Penis valve in apical view not abruptly emarginate basally (Fig. 510). Pronotal collar in most specimens reddish-brown. 19-21 mm. Angola, Ethiopia, Kenya, Namibia, South Africa, Zambia, Zimbabwe *A. malickyi* DOLLFUSS **nov.sp.**
- Penis valve in apical view abruptly emarginate basally (Figs 511, 512). Pronotal collar in most specimens black 37
- 37 Pronotal collar and vertex distinctly punctate, punctures nearly as large as on scutum. Penis valve: Figs 470, 511. 17.5-21 mm. Ethiopia, Ghana, Kenya (Mt. Kenya 3000 m), Malawi, Namibia, Rwanda, South Africa, Tanzania, Zaire, Zanzibar, Zimbabwe *A. punctaticeps* (ARNOLD)
- Pronotal collar and vertex at most finely, sparsely punctate. Penis valve: Figs 471, 512. 17-19 mm. Ethiopia, Ivory Coast, Kenya, Senegal *A. africana* DOLLFUSS **nov.sp.**
- 38 Penis valve abruptly emarginate basally in apical view (Fig. 512). Pronotal collar black. Metapleuron without appressed silvery setae. 17-19 mm. Ethiopia, Ivory Coast, Kenya, Senegal *A. africana* DOLLFUSS **nov.sp.**
- Penis valve not abruptly emarginate basally in apical view (Fig. 513). Pronotal collar black or reddish-brown. Metapleuron with or without appressed silvery setae 39
- 39 Penis valve with distinct spine apicoventrally (Fig. 472). Mesopleuron, metapleuron or propodeum laterally with reddish-brown spots and propodeal enclosure laterally without erect setae and reddish-brown. Pronotal collar in most specimens reddish-brown and finely punctate. Scutum transversely striate. 16-21 mm. Botswana, Kenya, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Togo, Zambia, Zimbabwe *A. rubiginosa* LEPELETIER
- Penis valve differently shaped in lateral view. Mesopleuron black or with reddish-brown spots, propodeal enclosure laterally black, all with erect setae. Pronotal collar black or reddish-brown and distinctly or finely punctate. Scutum punctate or transversely striate 40
- 40 Head, thorax and propodeum all covered with dense appressed silvery setae that obscure underlying sculpture (Note: in old specimens scutum may be without setae, then fine punctation is seen). Pronotal collar reddish-brown. 18-24 mm. Burkina Faso, Ethiopia, Kenya, Mali, Senegal *A. schalleri* DOLLFUSS **nov.sp.**
- At least scutum not covered with appressed setae that obscure underlying sculpture. Scutum transversely striate. Pronotal collar reddish-brown or black 41
- 41 Metapleuron without or with sparse appressed silvery setae. Mesopleuron along mesopleural suture covered with dense appressed silvery setae 42
- Mesopleuron, metapleuron and propodeum laterally evenly covered with more or less dense appressed silvery setae. 44
- 42 Mandible medially reddish-brown, basally and apically black. Clypeus slightly elongate (Fig. 184). Pronotal collar sparsely punctate. Penis valve in lateral view see Fig. 468. 19-22 mm. Angola, Botswana, Burkina Faso, Cameroon, Ethiopia, Kenya, Mali, Mozambique, Nigeria, Senegal, South Africa, Tanzania, Togo, Zambia, Zimbabwe *A. curvistriata* CAMERON

- Mandible reddish-brown except apex. Clypeus more or less elongate. Pronotal collar distinctly punctate or impunctate43
- 43 Clypeus elongate (Fig. 193). Pronotal collar not elongate (Fig. 280). Penis valve characteristically shaped in lateral view (Fig. 477). Mesopleuron black. 19-22 mm. Angola, Democratic Republic Kongo, Tanzania, Zambia.....*A. zambiensis* DOLLFUSS **nov.sp.**
- Clypeus slightly elongate (Fig. 195). Pronotal collar more elongate (Fig. 282). Penis valve differently shaped in lateral view (Fig. 479). Mesopleuron and propodeum laterally with reddish-brown spots. 18-19 mm. South Africa.....*A. parapunctaticeps* DOLLFUSS **nov.sp.**
- 44 Mesopleuron, metapleuron and propodeum laterally in most specimens covered with dense appressed silvery setae that obscure underlying sculpture. Scutum transversely striate and coarsely punctate (Fig. 321). Penis valve characteristically shaped (Fig. 476). Mesopleuron black. Pronotal collar shiny and sparsely finely punctate. 16-20 mm. Kenya, South Africa, Tanzania*A. resslii* DOLLFUSS **nov.sp.**
- Mesopleuron, metapleuron and propodeum laterally covered with fine appressed silvery setae that not obscure underlying sculpture. Scutum more or less transversely striate and punctate. Penis valve differently shaped (Figs 478, 480). Mesopleuron black or with reddish-brown spot. Pronotal collar impunctate or at most finely punctate45
- 45 Penis valve in lateral view: see Fig. 480. Mesopleuron black or with reddish-brown spots. 17.5-22 mm. Common, widely distributed species *A. rubripes* SPINOLA
- Penis valve characteristically shaped (Fig. 478). Mesopleuron black. 19-23 mm. Benin, Burkina Faso, Central African Republic, Cameroon, Ghana, Guinea, Ivory Coast, Liberia, Namibia, Nigeria, Sierra Leone, Togo, Zimbabwe*A. centroafricana* DOLLFUSS **nov.sp.**

***Ammophila africana* DOLLFUSS nov.sp. (Figs 187, 228, 274, 316, 357, 398, 431, 471, 512)**

Records: Holotype: ♂, **Kenya**: Archer's Post at Uaso Nyiro river, 2300', 12.XII.1969, leg. Irwin & Ross (CAS). Paratypes: same locality (2♂♂ CAS); Eastern Province, 5 km NE Isiolo, 0°24.3'N 37°35.7'E, 1.XII.2002, leg. Prentice (1♂ CAS); Rift Valley Province near S shore of Lake Naivasha, 0°49.1'S 36°16.5'E, 30.XI.2002, leg. Prentice (1♂ CAS); Rift Valley Province, 77 km N Narok, 1°00.6'S 36°30.2'E, 16.VI.1999, leg. Pulawski & Schweikert (1♂ CAS); Voi (Tsavo), 23.III.-3.IV.1997, leg. Ma. Halada (1♂ OÖLM). **Ethiopia**: Sidamo Province, near Bitata, 1480 m, 27.IV.2007, leg. J. Halada (1♂ OÖLM); Harerge, 37 km SE Jijiga, 9°11'N 43°05'E, 27.VIII.1997, leg. Ahrens, Pulawski & Seyoum (1♂ CAS). **Senegal**: Ndanagane 45 air km SE Mbour, 26.VII.1991, leg. Pulawski (1♂ CAS); Ndanagane 45 air km SE Mbour, 10.VII.1991, leg. Pulawski (1♂ CAS). **Ivory Coast**: Ferkessedougou, 12.I.1991, leg. Pulawski (1♂ CAS).

Recognition: The male of *Ammophila africana* has a gastral apex black, without a metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly and the claws have no basal tooth. The penis valve has no apicoventral spine and is abruptly emarginate basally in apical view (Fig. 512). The male of *A. punctaticeps* is similar to *A. africana* but differs in having the pronotal collar and the vertex distinctly punctate, the punctures are nearly as large as those on scutum (*A. africana* has the pronotal collar and the vertex nearly impunctate). The male of *A. malickyi* is similar to *A. africana* but differs in having the penis valve not so abruptly emarginate basally in apical view (Fig. 510) and the pronotal collar is in most specimens reddish-brown (*A. africana* has the penis valve abruptly emarginate basally in apical view (Fig. 512) and the pronotal collar is black). The male of *A. curvistriata* differs from *A. africana* in having the mandible basally and apically dark brown and the penis valve with apical spines (Figs 428, 468, 509) (*A. africana* has the mandible only apically black and the penis valve without

apicoventral spines, Figs 471, 512). The male of *A. nigrifrons* differs from *A. africana* in having the penis valve only slightly emarginate basally in apical view (Fig. 507) and differently shaped in lateral view (Fig. 466) (*A. africana* has a differently shaped penis valve).

Description: ♂: 17-19 mm. Gastral apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midlegs (except coxa), hindtibia, petiole, tergum I laterally, tergum II laterally and gastral segment III partly. Clypeus, frons, pronotal lobe, mesopleuron (densely along mesopleural suture), propodeum posterolaterally, hindcoxa dorsally covered with appressed silvery setae. Metapleuron without or with distinctly less appressed setae; remaining body parts more or less pruinose. Erect setae white and long (on head as long as scape). Clypeus slightly elongate (Fig. 187), disk: Fig. 228. Frons sparsely punctate, vertex nearly impunctate. Pronotal collar at most finely, sparsely punctate. Scutum transversely striate and punctate (punctures transversely confluent). Scutellum punctate anteriorly, longitudinally striate posteriorly. Propodeal enclosure irregularly transversely rugose, all covered with erect setae. Propodeum laterally densely, coarsely punctate; mesopleuron and metapleuron punctate. Gonostyle: Fig. 357. Penis valve without or with small apicoventral spines (Fig. 471), in apical view abruptly emarginate basally (Fig. 512). Penis valve dorsally: Fig. 398, ventrally: Fig. 431. Flagellomere I:II=1.3-1.5; length of petiole = hindtarsomeres I+II+ 0.6 × III to I+II+III.

♀: unknown.

Geographic distribution: Ethiopia, Ivory Coast, Kenya, Senegal.

***Ammophila argyrocephala* ARNOLD (Figs 41, 77, 113, 149, 173, 214, 260, 302, 343, 417, 455, 497)**

Ammophila argyrocephala ARNOLD 1951: 143, ♀. **Syntypes:** Ethiopia: River Errer, Meisso (BMNH). Syntype examined.

Material examined: 116 ♀♀, 59 ♂♂ (OÖLM); 92 ♀♀, 40 ♂♂ (CAS); 18 ♀♀, 5 ♂♂ (ZMB); 9 ♀♀ (BMNH); 1 ♀ (NHMW); 1 ♀ (coll. Jacobs); 1 ♀, 1 ♂ (coll. Schmid-Egger).

Recognition: *Ammophila argyrocephala* has the gastral apex black without metallic shine. The mesothoracic venter is not produced anteriorly, the episternal sulcus extends to the anteroventral margin of the mesopleuron. The subantennal lamellate projection is absent, the arolia are present and the claws have no basal tooth. The mesopleuron, the metapleuron and the propodeum laterally are covered with dense appressed silvery setae that obscure the underlying sculpture. The penis valve is characteristically shaped (Fig. 455).

The female of *A. argyrocephala* differs from *A. punctaticeps* and *A. parapunctaticeps* in having the frons, the vertex and the pronotal collar dull and impunctate and the scutum finely, transversely striate and more or less micropunctate (*A. punctaticeps* and *A. parapunctaticeps* have the frons and vertex (except ocellar area) closely punctate with large moderately deep punctures and the scutum is punctate with confluent punctures and laterally transversely rugose.). The female of *A. barbarorum* differs from *A. argyrocephala* in having the scutum transversely striate and coarsely, densely punctate. The female of *A. rubripes* differs from *A. argyrocephala* in having the scutum more coarsely transversely

rugose and punctate. The female of *A. fischeri* differs from *A. argyrocephala* in having the metapleuron without appressed setae.

The male of *A. dolichocephala* differs from *A. argyrocephala* in having the clypeus more elongate and with a longitudinal carina (Fig. 167) and a characteristically shaped gonostyle (Fig. 337) and penis valve (Figs 378, 452, 493) (*A. argyrocephala* has the clypeus without longitudinal carina and a differently shaped penis valve, Fig. 455). The male of *A. barbarorum* differs from *A. argyrocephala* in having the clypeus free margin distinctly emarginate (Fig. 168), characteristically shaped gonostyle (Fig. 338) and penis valve (Fig. 379, 418, 453). The male of *A. conifera* differs from *A. argyrocephala* in having a characteristically shaped gonostyle (Fig. 344) and penis valve (Figs 381, 415, 459, 495). The male of *A. kenyensis* differs from *A. argyrocephala* in having a long tooth on the hypostomal carina near mandibular socket (Fig. 534) and a characteristically shaped penis valve (Figs 380, 454, 494). The male of *A. arnoldi* differs from *A. argyrocephala* in having a characteristically shaped penis valve (Figs 386, 421, 461, 500).

Description: Gastral apex black, without metallic shine but pruinose. Mesothoracic venter anteriorly not produced, episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, arolia present and claws have no basal tooth. Wings hyaline.

♀: 15.5-23 mm. Black, with following variably reddish-brown: mandible (except apex), tegula, subalar area, fore- and midlegs (coxa, trochanter and femora more or less black), hindtibia, petiole ventrally, terga II and III laterally, sterna II and III. In some specimens scape, clypeus free margin, pronotal collar, nearly all legs, petiole and gastral segments I-III (except black stripe dorsally) reddish-brown. Wings hyaline. Head (except vertex), prothorax laterally, mesopleuron, metapleuron, propodeum laterally and hindcoxa dorsally covered with appressed silvery setae that in most specimens obscure underlying sculpture; remaining body parts more or less pruinose. Erect setae whitish. Clypeus slightly elongate, ventral margin rounded (Fig. 41), clypeal disk convex (Fig. 77). Frons, vertex and pronotal collar dull, impunctate. Scutum transversely microstriate and more or less finely striate; scutellum finely longitudinally striate. Propodeal enclosure finely, transversely, irregularly striate, pruinose and covered with erect setae. Mesopleuron, metapleuron and propodeum laterally finely punctato-rugose. Dorsal surface of pronotal collar gradually merging into sloping anterior surface (Figs 113, 149). Foretarsomere I:II= 1.5-1.8; length of petiole = hindtarsomere I+II.

♂: 16.5-20 mm. Black, with following reddish-brown: mandible (except apex), pronotal collar in most specimens, tegula, fore- and midlegs, hindleg (partly), petiole (dorsally darkened), tergum I laterally, gastral segments II+III (dorsally black). Clypeus and frons covered with appressed silvery or brassy setae; remaining parts on head (except vertex), thorax and propodeum evenly covered with fine, short appressed silvery setae. Legs and gaster pruinose. Erect setae silvery-white. Clypeus elongate, free margin straight or slightly emarginate (Fig. 173), disk slightly concave on ventral half, slightly convex on dorsal half (Fig. 214). Hypostomal carina in some specimens with blunt tooth near mandibular socket. Pronotal collar shiny, finely and sparsely punctate. Scutum finely transversely striate. Scutellum longitudinally striate. Propodeal enclosure transversely punctato-rugose, all covered with fine appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Gonostyle: Fig. 343;

penis valve laterally: Fig. 455, dorsally: Fig. 383, apically: Fig. 497. Sternum VIII distinctly emarginate. Flagellomere I:II=1.3-1.5; length of petiole = hindtarsomeres I+II+0.5 × III to I+II+III.

Geographic distribution: Botswana, Burkina Faso, Ethiopia, Kenya, Mozambique, Namibia, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

***Ammophila arnoldi* DOLLFUSS nov.sp. (Figs 175, 216, 262, 304, 342, 386, 421, 461, 500)**

Records: Holotype: ♂, South Africa: Western Cape: Knersvlakte Kalkgate, 31°07'30"S 18°55'30"E, 20.IX.-15.X.2000, leg. U. Schmidel & M. Kuhlmann (ZMB).

Name derivation: In remembrance of G. Arnold, the outstanding specialist on African Sphecidae, Rhodesian Museum, Bulawayo (now Zimbabwe).

Recognition: The male of *A. arnoldi* is characterized by the large, unusually shaped genitalia (Figs 342, 386, 421, 461, 500), an elongate clypeus (Fig. 175) and the pronotal collar elevate dorsomedially (Fig. 304). The male of *A. turneri* is similar to *A. arnoldi*, but differs in having characteristically shaped genitalia: gonostyle: Fig. 345; penis valve: Figs 384, 419, 460, 498. The male of *A. conifera* is similar to *A. arnoldi* but differs in having differently shaped gonostyle (Fig. 344) and penis valve (Figs 381, 415, 459, 495). The male of *A. kenyensis* differs from *A. arnoldi* in having the hypostomal carina with a long erect tooth near the mandibular socket (Fig. 534) and characteristically shaped genitalia: gonostyle: Fig. 339; penis valve: Figs 380, 454, 494). The male of *A. africana* differs from *A. arnoldi* in having differently shaped penis valve (Figs 398, 431, 471).

Description: Gastral apex black, without metallic shine but pruinose. Episternal sulcus ends at level of scrobe, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth.

♂: 22 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midlegs (except coxae, trochanters dorsally and femora dorsally), hindtibia basally, tergum I laterally, gastral segment II, segment III (except dorsally) and sternum III partly. Wings hyaline. Clypeus, frons, gena, pronotal lobe, mesopleuron, metapleuron and propodeum laterally covered with appressed silvery setae that obscure underlying sculpture; remaining body parts pruinose. Erect setae whitish. Clypeus distinctly elongate (Fig. 175), disk slightly concave on ventral half, convex on dorsal half (Fig. 216). Vertex dull, nearly impunctate. Pronotal collar shiny, nearly impunctate, dorsomedially elevate (Fig. 262, 304). Scutum transversely rugose and punctate, scutellum longitudinally rugose and punctate, metanotum punctate. Propodeal enclosure obliquely striate and all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally covered with appressed setae. Genitalia characteristically shaped: gonostyle laterally: Fig. 342; penis valve laterally: Fig. 461, ventrally: Fig. 421, dorsally: Fig. 386, apically: Fig. 500. Flagellomere I:II = 1.5; length of petiole = hindtarsomeres I+II.

♀ unknown.

Geographic distribution: South Africa.

***Ammophila barbarorum* ARNOLD (Figs 29, 66, 102, 138, 168, 209, 255, 297, 338, 379, 418, 453, 492, 533)**

Ammophila barbarorum ARNOLD 1951: 141, ♀. Lectotype: Ethiopia: Addis Abeba (BMNH), examined. Paralectotype: ♀, same locality (SAM), photograph examined.

Material examined: Kenya: S Mackinnon Road, 13.IV.2007, leg. M. Halada (3♂♂ OÖLM). Tanzania (4♂♂ CAS).

Recognition: The gastral apex is black, without a metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron. Mesothoracic venter is not produced anteriorly, the arolia are present and the claws have no basal tooth. The male genitalia are unusually shaped. The female of *A. barbarorum* is similar to *A. dolichocephala* but differs in having the pronotal collar not elongate, the anterior surface is nearly vertical (Fig. 102), the clypeus is much less elongate (Fig. 29) and the disk lightly convex (Fig. 66) (*A. dolichocephala* has the pronotal collar slightly elongate and oblique in lateral view (Fig. 101), the clypeus more elongate (Fig. 30) and the disk distinctly concave, Fig. 65). The male of *A. barbarorum* differs from *A. dolichocephala* in having the clypeus elongate, narrowed and emarginate medially (Fig. 168), a blunt tooth on hypostomal carina near the mandibular socket (Fig. 533) and differently shaped genitalia (*A. dolichocephala* has the clypeus elongate and with long longitudinal carina (Fig. 167), the hypostomal carina has no tooth, and the genitalia are differently shaped). The male of *A. conifera* differs from *A. barbarorum* in having the clypeus free margin not emarginate medially (Fig. 170) and differently shaped genitalia (Figs 344, 381, 415, 459, 495). The male of *A. kenyensis* differs from *A. barbarorum* in having a long tooth on the hypostomal carina near the mandibular socket (Fig. 534) and differently shaped genitalia (Figs 339, 380, 454, 494).

Description: Gaster apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter anteriorly not produced, arolia present and claws have no basal tooth.

♀: 21 mm. Black, with following reddish-brown: mandible (except apex), scape (ventrally), tegula, foreleg (except coxa), midleg (except coxa, trochanter dorsally, femur dorsally), hindtibia (dorsally), tergum I (except dorsally), gastral segment II and sternum III. Wings hyaline, slightly tinged with yellow. Clypeus and frons (densely), thorax and propodeum (sparsely) covered with appressed silvery setae. Erect setae whitish and unusually long on head, thorax, propodeum, forelegs, hindcoxa and hindtrochanter. Clypeus slightly elongate, sparsely punctate (Fig. 29), disk slightly convex (Fig. 66). Vertex dull, sparsely punctate. Pronotal collar not elongate, shiny, finely punctate, anterior surface nearly vertical (Fig. 102, 138). Scutum transversely striate and densely, coarsely punctate. Scutellum longitudinally rugose and punctate. Propodeal enclosure obliquely striate, punctate, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Foretarsomere I:II = 1.6; length of petiole = hindtarsomere I + 0.5 × II.

♂ **hitherto unknown**: 19.5-22.5 mm. Black, with following reddish-brown: mandible (except apex), scape (ventrally), pronotal collar, foreleg, midleg, hindleg (except femur dorsally), petiole (dorsally darkened), tergum I laterally, gastral segment II (darkened dorsally), sterna III-VII (more or less). Wings hyaline, slightly brownish. Clypeus and frons covered with brassy appressed silvery setae; gena, thorax and propodeum covered

with more or less fine appressed silvery setae; remaining body parts pruinose. Erect setae whitish. Clypeus distinctly elongate, narrowed ventrally, with free margin deeply emarginate (Fig. 168), disk slightly concave on ventral half, slightly convex on dorsal half (Fig. 209). Vertex dull, impunctate. Hypostomal carina with blunt tooth near mandibular socket (Fig. 533). Pronotal collar shiny, nearly impunctate, anterior surface nearly vertical (Fig. 255, 297). Scutum transversely striate, admedian line indistinct. Scutellum longitudinally striate. Propodeal enclosure transversely striate, all covered with short appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.4-1.6; length of petiole = hindtarsomeres I+0.7 × II to I+II + 0.5 × III. Genitalia characteristically shaped: gonostyle laterally: Fig. 338; penis valve laterally: Fig. 453, dorsally: Fig. 379, ventrally: Fig. 418, apically: Fig. 492.

G e o g r a p h i c d i s t r i b u t i o n : Ethiopia, Kenya, Tanzania.

***Ammophila bechuana* (R. TURNER) (Figs 21, 56, 92, 128, 164, 206, 252, 294, 335, 376, 412, 448, 490)**

Sphex bechuanus R. TURNER 1929: 554, ♀. Holotype or Syntype: ♀, Botswana: Ghanzi, Mongalatsila (BMNH) examined.

M a t e r i a l e x a m i n e d : Botswana (1 ♀ CAS); Kenya (1 ♂ coll. Zettel, 4 ♂ ♂ CAS); Malawi (1 ♂ CAS); Namibia (1 ♀ coll. Schmid-Egger); South Africa (1 ♀ ZMB, 5 ♂ ♂ OÖLM); Tanzania (1 ♀, 5 ♂ ♂ CAS, 5 ♂ ♂ OÖLM); Yemen (1 ♂ OÖLM); Zambia (2 ♀ ♀, 4 ♂ ♂ OÖLM); Zanzibar (1 ♀ NHMW); Zimbabwe (1 ♀, 3 ♂ ♂ OÖLM).

R e c o g n i t i o n : The forewing has three submarginal cells and the gastral apex is black, with a slight metallic shine, and pruinose. The pronotal collar is elongate and coarsely, transversely striate, the striae numbering five to seven, more or less interrupted medially and the space between the striae is shiny (Figs. 128, 294). The arolia are present. The female of *A. braunsi* differs from *A. bechuana* in having the pronotal collar with striae much closer together and less elevate (Figs 94, 129) and the median lobe of the clypeus without distinct tooth laterally (Fig. 22) (*A. bechuana* has a clypeal median lobe with a distinct tooth laterally (Fig. 21) and a pronotal collar more coarsely transversely striate, Figs 92, 128). The female of *A. beniniensis* differs from *A. bechuana* in having a pronotal collar not elongate (Figs. 91, 123) and lacking arolia. The male of *A. bechuana* differs from *A. braunsi* in having a clypeal free margin broad and truncate (Fig. 164), the pronotal collar marginate anteriorly (Fig. 252) and a gastral apex in most specimens with metallic shine (*A. braunsi* has a clypeal free margin narrowing (Fig. 166), the pronotal collar anteriorly not distinctly margined (Fig. 253) and the gastral apex without metallic shine). The male of *A. bechuana* differs from *A. beniniensis* in having a pronotal collar more elongate (Fig. 294) and the gonostyle in lateral view narrower and more acute at the apex (Fig. 335) (*A. beniniensis* has a pronotal collar not so elongate (Fig. 292) and the gonostyle in lateral view is not so acute apically, Fig. 334). The male of *A. calva* differs from *A. bechuana* in having the pronotal collar not so elongate (Fig. 251), the gonostyle in lateral view rounded apically (Fig. 332) and the penis valve in ventral view with an oval ring of minute denticles (Fig. 410) (*A. bechuana* has the pronotal collar more elongate (Fig. 294), the gonostyle in lateral view narrow and acute apically (Fig. 335) and the penis valve with transverse spines in ventral view, Fig. 412).

D e s c r i p t i o n : Forewing with three submarginal cells, gastral apex black, with slight metallic shine and pruinose. Episternal sulcus ends at level of scrobe, supra-

antennal lamellate projection absent, arolia present, claws have no basal tooth. Wings dark brown.

♀: 19-23.5 mm. Black, with following reddish-brown: mandible (except apex), ventral half of clypeus, scape, pronotal collar, pronotal lobe, tegula, fore- and midlegs (partly), hindleg nearly all black, petiole (basally), tergum I and gastral segment II (partly). Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with fine appressed silvery setae; remaining body parts more or less pruinose. Erect setae on clypeus and foreleg brown, on frons and gena white. Clypeus on ventral half smooth, median lobe with distinct tooth laterally (Fig. 21), disk nearly flat (Fig. 56). Frons and vertex dull, nearly impunctate. Pronotal collar elongate, coarsely transversely striate (five to seven striae; Figs 92, 128), striae more or less interrupted medially, space between striae shiny. Scutum coarsely, transversely striate like pronotal collar, posterior third obliquely striate. Scutellum and metanotum longitudinally striate. Propodeal enclosure transversely rugose, pruinose medially, glabrous laterally. Mesothoracic venter not produced. Mesopleuron and metapleuron transversely punctato-rugose, propodeum laterally obliquely punctato-rugose. Flagellomere I:II=1.5-2.5; length of petiole = hindtarsomeres I+II to I+II+ 0.5 × III.

♂ **hitherto unknown**: 17.5-20 mm. Black, with following reddish-brown: mandible (except apex), pronotal collar (partly or all), tegula, fore- and midlegs (partly), petiole (basally), tergum I (laterally), gastral segment II (black dorsally); in some specimens mesopleuron and propodeum partly. Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with appressed silvery setae; remaining body parts more or less pruinose. White erect setae only on head and prothorax. Clypeus slightly elongate, free margin broadly truncate (Fig. 164), ventral half of clypeal disk nearly flat or slightly concave (Fig. 206). Vertex dull, nearly impunctate. Pronotal collar shiny, elongate, transversely ridged, anterior margin distinct (Figs 252, 294). Scutum transversely ridged like pronotal collar, shiny, admedian line distinctly developed. Scutellum and metanotum longitudinally ridged. Propodeal enclosure irregularly rugose and pruinose medially, transversely rugose laterally. Mesopleuron, metapleuron and propodeum laterally coarsely obliquely rugose-punctate. Mesothoracic venter slightly produced anteriorly. Flagellomere I:II=1.5-1.7; length of petiole = hindtarsomeres I+II+ 0.3 × III to I+II+ 0.75 × III. Gonostyle laterally: Fig. 335; penis valve laterally : Fig. 448, ventrally: Fig. 412, dorsally: Fig. 376, apically: Fig. 490.

Geographic distribution: Botswana, Kenya, Malawi, Namibia, South Africa, Tanzania, Yemen, Zambia, Zanzibar, Zimbabwe.

***Ammophila beniniensis* (PALISOT de BEAUVOIS) (Figs 19, 55, 91, 123, 163, 204, 250, 292, 334, 373, 409, 447, 486)**

Sphex beniniensis PALISOT de BEAUVOIS 1806: 48, sex not indicated. Holotype or syntypes: Nigeria: city of Benin (destroyed?).

Sphex tenuis PALISOT de BEAUVOIS 1837: 48, sex not indicated. Holotype or syntypes: Nigeria: city of Benin (destroyed?). Synonymized with *Sphex beniniensis* by ARNOLD 1945: 86.

Ammophila cyaniventris GUÉRIN-MÉNEVILLE 1843: 9, ♂. Holotype or syntypes: ♂, Senegal: no specific locality (MNHN). Synonymized with *Sphex beniniensis* by R. TURNER 1919: 394.

Ammophila rugicollis LEPELETIER de SAINT FARGEAU 1845: 373, ♂ (authorship attributed to Klug). Holotype or syntypes: ♂, South Africa: Cape of Good Hope (originally in M. Spinola coll., Torino, now missing). Synonymized with *Sphex tenuis* by ARNOLD 1928: 265.

- Ammophila lugubris* GERSTAECKER in PETERS 1858: 510, ♀, ♂. Lectotype: ♀, Mozambique: no specific locality (ZMB), examined, **present designation**. Synonymized with *Sphex beniniensis* by R. TURNER 1919a: 394, synonymy confirmed.
- Ammophila lugubris* GERSTAECKER 1862: 480, ♀, ♂. Objective synonym of *Ammophila lugubris* GERSTAECKER 1858.
- Ammophila guineensis* RITSEMA 1874: 192, ♀. Syntypes: ♀, Guinea: no specific locality (RMNH). Synonymized with *Sphex tenuis* by R. TURNER 1919a: 394.
- Ammophila koppenfelsii* TASCHENBERG 1880: 777, ♀, ♂. Syntypes: West Africa: no specific locality (Halle), examined. **New synonym.**
- Ammophila coeruleornata* CAMERON 1910: 135, ♂. Holotype or syntypes: ♂, South Africa: Transvaal: Berea Park [in Pretoria?]. Synonymized with *Sphex tenuis* by R. TURNER 1919a: 394 and BRAUNS 1917: 241 (as *coeruleornata*).
- Ammophila maculifrons* CAMERON 1910: 134, ♂, actually ♀. Holotype or syntypes: ♀, South Africa: Transvaal: Berea Park [in Pretoria?]. Synonymized with *Ammophila tenuis* by R. TURNER 1919a: 394 and BRAUNS 1917: 241.
- Ammophila massaica* CAMERON 1908: 264, ♂. Syntypes: ♂, Kenya: Mount Meru lowlands: Ngare na nyuki (NRS). Synonymized with *Sphex tenuis* by ARNOLD 1928: 279.
- Ammophila sjoestedti* CAMERON 1908: 267, ♂. Holotype or syntypes: ♂, Kenya: Mt. Meru lowlands: Ngare na nyuki (NRS), syntype ♂ examined, synonymy confirmed. Synonymized with *Sphex tenuis* by ARNOLD 1928: 279.
- Ammophila imerinae* de SAUSSURE 1892: 435, ♂. Syntypes: ♂, Madagascar: Imerina, Antanarivo (MHNG). Synonymized with *Sphex beniniensis* by ARNOLD 1945: 87.
- Sphex beniniensis* race *tomentosus* ARNOLD 1920: 39, ♀, junior primary homonym of *Sphex tomentosus* FABRICIUS 1787. Holotype: ♀, Namibia: Windhoek (TMP).
- Material examined**: 555 ♀♀, 928 ♂♂ (OÖLM); 133 ♀♀, 159 ♂♂ (ZMB); 7 ♀♀, 10 ♂♂ (BMNH); 107 ♀♀, 150 ♂♂ (CAS); 21 ♀♀, 31 ♂♂ (NHMW); 12 ♀♀, 22 ♂♂ (coll. Jacobs); 3 ♀♀ (coll. Schmid-Egger).

Recognition: *Ammophila beniniensis* has the gaster black with metallic shine. The episternal sulcus ends at the level of the scrobe and the wings in most specimens are dark brown with a violaceous shine. The pronotal collar and the scutum are transversely ridged. The female of *A. beniniensis* is similar to *A. calva* but differs in having a partly reddish-brown thorax and the dorsal face of the pronotal collar is as long in the middle as on the sides (*A. calva* has a thorax entirely black and the dorsal face of the pronotal collar is shorter in the middle than at the sides). The female of *A. vulcania* differs from *A. beniniensis* in having the pronotal collar with the anterior border sharply marginate, forming a sharp angle with the almost vertical anterior surface and the dorsal surface with no more than three straight, more or less complete transverse carinae (Fig. 87, 125) (*A. beniniensis* has the pronotal collar with more than three transverse carinae (Fig. 91, 123) and rounded anteriorly in lateral view). The female of *A. clypeolineata* differs from *A. beniniensis* in having the pronotal collar with an anterior border sharply marginate, forming a sharp angle with the almost vertical anterior surface (Figs 89, 127). The females of *A. bechuana* and *A. braunsi* differ distinctly from *A. beniniensis* in having distinctly developed arolia and the pronotal collar distinctly elongate (Figs 128, 129) (In *A. beniniensis* the arolia are absent and the pronotal collar is not elongate). The male of *A. calva* is similar to *A. beniniensis* but differs in having the penis valve in ventral view with an oval ring of minute denticles in ventral view (Fig. 410) (*A. beniniensis* has the penis valve with a stout spine directed obliquely outwards in ventral view, Fig. 409). The male of *A. vulcania* differs from *A. beniniensis* in having a characteristically shaped clypeus (Fig. 160) and penis valve (Figs 375, 413, 444, 487). The male of *A. clypeolineata* differs from *A. beniniensis* in having the clypeus with a longitudinal carina on each side (Fig. 161) and in the shape of penis valve in the lateral view (Fig. 445). The

males of *A. bechuana* and *A. braunsi* differ from *A. beniniensis* in having the pronotal collar elongate (Figs. 294, 295) and in the shape of gonostyle in lateral view (Figs 335, 336).

Description: Gaster black with metallic shine, episternal sulcus ends at level of scrobe, mesothoracic venter anteriorly not produced, supra-antennal lamellate projection absent, wings in most specimens dark-brown with metallic shine and claws have no basal tooth.

♀: 19-31 mm. Black, with following variably reddish-brown: mandible (except apex), head and prothorax more or less, scape, tegula, fore- and midlegs partly, in some specimens also hindleg and gaster. Head, thorax, propodeum and gaster pruinose. Erect setae on head, prothorax and scutum black or dark-brown, on remaining body parts whitish. Clypeus slightly elongate (Fig. 19), disk distinctly convex (Fig. 55). Frons dull, vertex dull, nearly impunctate. Pronotal collar not elongate, distinctly transversely ridged (5-6 ridges; Figs 91, 123). Scutum all transversely ridged, midline slightly developed. Scutellum and metanotum longitudinally striate. Propodeal enclosure irregularly rugose and covered with short erect setae. Mesopleuron, metapleuron and propodeum laterally transversely or obliquely punctato-rugose. Arolia rudimental or absent. Flagellomere I:II=1.6-2; length of petiole = hindtarsomeres I+ 0.5 × II to I+II.

♂: 17.5-28 mm. Black, with following variably reddish-brown: mandible (except apex), scape, clypeus next to free margin, tegula, pronotum partly, legs partly, pronotal enclosure laterally; some specimens nearly all black. Clypeus, frons, pronotal lobe and in some specimens propodeum posterolaterally covered with appressed silvery setae; remaining body parts pruinose. Erect setae on head, prothorax and scutum black, on remaining body parts whitish. Clypeus slightly elongate (Fig. 163), disk nearly flat (Fig. 204). Frons densely punctate, vertex dull and nearly impunctate. Pronotal collar and scutum distinctly transversely ridged (Figs 250, 292). Scutellum and metanotum longitudinally striate. Propodeal enclosure irregularly rugose and covered with short erect setae medially, transversely rugose and glabrous laterally; in some specimens nearly all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally transversely punctato-rugose. Arolia present. Gonostyle in lateral view gradually narrowed and slightly incurved towards apex which is subacute (Fig. 334), penis valve with stout spine directed obliquely outwards in ventral view: Fig. 409, laterally: Fig. 447, dorsally: Fig. 373, apically: Fig. 486. Flagellomere I:II=1.3-1.6; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+III.

Geographic distribution: Widely distributed and fairly abundant.

***Ammophila bispinosa* DOLLFUSS nov.sp. (Figs 182, 224, 271, 312, 353, 389, 430, 467, 508)**

Records: **Holotype:** ♂, **Zambia:** 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 2.IX.2008, leg. M. Halada (OÖLM). **Paratypes:** same locality (4♂♂ OÖLM). **Zambia:** 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 18.X.2008, leg. M. Halada (3♂♂ OÖLM); 140 km NE Kapiri Mashi, 13°31'S 29°48'E, 1500 m, 23.XI.2005, leg. M. Halada (1♂ OÖLM); 62 km SW Serenje, 22.XI.2005, leg. Snižek (1♂ OÖLM). **Angola:** Nova Chavez, Lunda, 15.XI.1949, leg. Malkin (1♂ CAS).

Name derivation: The penis valve has two different kinds of spines.

Recognition: The gastral apex is black, without metallic shine but pruinose.

The mesothoracic venter is anteriorly not produced, the episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The male of *A. bispinosa* differs from *A. insignis*, *A. kalaharica*, *A. punctaticeps*, *A. rubripes* and *A. africana* in having a penis valve with two different types of spines (Fig. 467, 430).

D e s c r i p t i o n : Gastral apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent and mesothoracic venter anteriorly not produced. Arolia present and claws have no basal tooth.

♂: 16.5-23 mm. Black, with following reddish-brown: mandible (except apex), scape (dorsally darkened), pronotal collar, tegula, foreleg, midleg (except femur dorsally), petiole ventrally, tergum I laterally, gastral segment II (black dorsally), sternum III. Wings slightly brownish infumate. Clypeus, frons and pronotal lobe covered with appressed silvery setae, remaining parts of head, thorax and propodeum more or less pruinose. Erect setae yellowish-brown to whitish. Clypeus elongate and its free margin truncate (Fig. 182), disk slightly convex (Fig. 224). Vertex dull. Pronotal collar finely punctate, subrectangular laterally (Figs 271, 312). Scutum transversely striate and coarsely punctate between striae. Scutellum longitudinally striate and punctate. Propodeal enclosure transversely punctato-rugose, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally distinctly punctate, punctures 0-1 diameter apart. Gonostyle laterally: Fig. 353; penis valve laterally: Fig. 467, ventrally: Fig. 430, dorsally: Fig. 389, apically: Fig. 508. Flagellomere I:II=1.4-1.5; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+ 0.75 × III.

♀. unknown.

G e o g r a p h i c d i s t r i b u t i o n : Angola, Zambia.

***Ammophila braunsi* (R. TURNER) (Figs 22, 57, 94, 129, 166, 207, 253, 295, 336, 347, 414, 449, 491)**

Sphex braunsi R. TURNER 1919a: 395, ♀, ♂. **Syntype:** ♀, **South Africa:** Cape Province: Willowmore (BMNH), examined.

Sphex laticeps ARNOLD 1928: 268, ♀. **Holotype:** ♀, **Namibia:** Koakoveld: Warmbad (SAMC), photograph examined. **New synonym.**

Note: In the key of Arnold 1928: 249, the species "*braunsi* TURNER" actually is *A. bechuana* and the species "*A. laticeps*" actually is *A. braunsi*.

Material examined: **South Africa:** North Cape (5♀♀, 1♂ OÖLM); West Cape (1♀ OÖLM); Capland (1♀ ZMB); Cape Province (1♀ ZMB); West cape (1♀, 2♂♂ CAS). **Namibia** (1♀ CAS).

R e c o g n i t i o n : Forewing with three submarginal cells and the gastral apex black, without metallic shine. The episternal sulcus ends at the level of the scrobe, the arolia are present and the claws have no basal tooth. The female of *Ammophila braunsi* is similar to *A. bechuana* but differs in having the pronotal collar with striae much closer together and less elevate (Figs 94, 129) and the median lobe of the clypeus has no distinct tooth laterally (Fig. 22) (*A. bechuana* has the pronotal collar with coarse, transverse striae (Figs 92, 128) and the clypeal median lobe has a distinct, slightly erected tooth laterally, Fig. 21). The female of *A. beniniensis* differs from *A. braunsi* in having the pronotal collar not elongate (Fig. 123) and lacking arolia. The male of *A. braunsi* is similar to *A.*

bechuana but differs in having the clypeus slightly elongate, narrowing and slightly emarginate (Fig. 166) and the pronotal collar anteriorly rounded in lateral view (Fig. 253) (*A. bechuana* has the clypeal free margin broad and truncate (Fig. 164) and the pronotal collar margined anteriorly, Fig. 252). The male of *A. beniniensis* differs from *A. braunsi* in having the pronotal collar not elongate (Fig. 292) and the gonostyle broadly rounded apically in lateral view (Fig. 334) (*A. braunsi* has the pronotal collar elongate (Fig. 295) and the gonostyle narrower and acute apically in lateral view, Fig. 336).

Description: Forewing with three submarginal cells, gastral apex black, without metallic shine. Supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe, arolia present and claws have no basal tooth.

♀: 17.5-20 mm. Black, with following reddish-brown: mandible (except apex), clypeus next to free margin, pronotal lobe, tegula, fore- and midlegs (partly), in some specimens petiole, tergum I, gastral segment II, sternum III. Wings yellowish-brown. Clypeus, frons and propodeum laterally covered with appressed silvery setae; remaining body parts more or less pruinose. White erect setae only on head and prothorax. Clypeus slightly elongate, ventral half smooth, median lobe rounded (Fig. 22), disk nearly flat (Fig. 57). Frons and vertex dull, nearly impunctate. Pronotal collar elongate, transversely striate (10-11 striae), not distinctly margined anteriorly, rounded (Figs 94, 129). Scutum transversely striate, obliquely posteriorly, admedian line distinctly developed. Propodeal enclosure reticulate and pruinose. Mesopleuron, metapleuron and propodeum laterally reticulate. Flagellomere I:II = 1.5-1.8; length of petiole = hindtarsomeres I+II.

♂: 15.5-18 mm. Black, with following reddish-brown: inner surface of forefemur (except basally), foretibia and metatarsus basally, midfemur (except basally), midtibia, tergum I, gastral segments II and III (except dorsal apical half). Clypeus and frons covered with appressed silvery setae; remaining areas on thorax and propodeum more or less pruinose. Erect whitish setae only on head and prothorax. Clypeus elongate, narrowing ventrally, free margin slightly emarginate (Fig. 166), disk flat (Fig. 207). Frons and vertex dull, sparsely, finely punctate. Pronotal collar elongate, transversely ridged, anterior margin rounded (Figs 253, 295). Scutum distinctly transversely ridged, admedian line distinctly developed. Scutellum and metanotum longitudinally ridged. Propodeal enclosure irregularly transversely rugose, pruinose. Mesopleuron, metapleuron and propodeum laterally irregularly rugose. Flagellomere I:II = 1.7; length of petiole = hindtarsomeres I+II+ 0.25 × III. Gonostyle laterally: Fig. 336; penis valve laterally: Fig. 449, dorsally: Fig. 277, ventrally: Fig. 414, apically: Fig. 491.

Geographic distribution: Namibia, South Africa.

***Ammophila calva* (ARNOLD) (Figs 18, 54, 90, 124, 165, 205, 251, 293, 332, 374, 410, 450, 489)**

Sphex beniniensis var. *calvus* ARNOLD 1920: 38, ♀, ♂. **Syntypes:** Zimbabwe: Umgusa and Sawmills; South Africa: Zululand (SAM). **Syntypes:** ♀, ♂ Zimbabwe: Sawmills (SAM), photographs examined.

Material examined: Botswana: (1 ♀ CAS). Ethiopia: Sidamo pr., 50 km NE Yabelo, 1540 m (1 ♂ OÖLM). Kenya: Voi (Tsava) (7 ♂ OÖLM); Taita Hills Voi riv. (2 ♂ OÖLM); Ngon Hills 8 km S Kiserian 1°27'S 36°38'E (2 ♂ OÖLM); Mwingi Nguni (2 ♂ OÖLM); Simba 1911 (1 ♂ BMNH); (2 ♂ CAS). Mozambique: 15 km SSE Manje 15°29'S 33°16'E 530 m (1 ♀ OÖLM). Senegal: Nokolo Koba NP 13°01'N 13°18.48'W (1 ♂ OÖLM). South Africa:

Kwazulu-Natal pr. 25 km NE Ladysmith 28°27'S 29°52'E 1100 m (1 ♂ OÖLM). **Tanzania:** (2 ♂ ♂ CAS). **Zambia:** 70 km NE Kapiri Mposi 13°41'S 29°18'E 1250 m (2 ♂ ♂ OÖLM). **Zimbabwe:** 50 km S Bulawayo Matobo NP. (12 ♀ ♀, 1 ♂ OÖLM); 30 km W Harare (6 ♀ ♀, 1 ♂ OÖLM); Ngezi Rec. Park Kwekwe (1 ♂ OÖLM); 15 km SE Muzarabani Mavhuradonha Saf. (2 ♀ ♀ OÖLM); 25 km NE Samva Nyagui Bindura (2 ♀ ♀ OÖLM); 60 km SW Gweru Shangani (1 ♀ OÖLM); Bulawayo 1924 (1 ♂ ZMB); (1 ♂ BMNH).

R e c o g n i t i o n : *Ammophila calva* is a large species (♀: 27-34 mm, ♂: 26.5-28 mm) and has the gaster black with a slight metallic shine. The episternal sulcus ends at the level of the scrobe and the wings are dark-brown with a violaceous shine. The pronotal collar and the scutum are transversely ridged. The female is similar to *A. beniniensis* but differs in having the thorax all black and in the shape of pronotal collar: the anterior face is longer and slopes backwards and upwards obliquely, therefore reducing the length of dorsal face, which is distinctly longer at the sides than in the middle (Fig. 124) (*A. beniniensis* has a partly reddish-brown thorax and a pronotal collar rounded as usual). The female of *A. vulcania* differs from *A. calva* in having a pronotal collar with an anterior border sharply marginate, forming a sharp angle with the almost vertical anterior surface, and the dorsal surface with not more than three straight, more or less complete transverse carinae (Figs 87, 125). The female of *A. clypeolineata* differs from *A. calva* in having the anterior border of the pronotal collar sharply marginate and forming a sharp angle with the almost vertical anterior face (Figs 89, 127). The male of *A. calva* is similar to *A. beniniensis* but differs in having a penis valve in ventral view with an oval ring of minute denticles (Fig. 410) (*A. beniniensis* has the penis valve in ventral view with a stout spine directed obliquely outwards and proceeding from the inner inferior margin, Fig. 409). The male of *A. vulcania* differs from *A. calva* in having an elongate clypeus (Fig. 160), a lobe on the hypostomal carina near the mandibular socket (Fig. 532), the pronotal collar as in Figs 247, 289, and the penis valve is characteristically shaped (Figs 375, 413, 444, 487). The male of *A. clypeolineata* differs from *A. calva* in having the clypeus with two longitudinal carinae (Fig. 161) and a differently shaped penis valve (Figs 416, 488).

D e s c r i p t i o n : Gaster black with slight metallic shine and wings dark-brown with violaceous shine. Mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe and claws have no basal tooth. Supra-antennal lamellate projection absent and scutum transversely ridged. Scutellum and metanotum longitudinally ridged. Propodeal enclosure reticulate and covered with erect setae medially, transversely rugose and glabrous laterally.

♀: 27-34 mm. Black, with the following dark reddish-brown: mandible (except apex), scape, pedicel, flagellomere I (partly), clypeus, frons, gena, fore- and midtibia (partly darkened), forefemur apically. Pronotal lobe posteriorly with appressed silvery setae, remaining body parts more or less pruinose. Erect setae on head, prothorax, foreleg and scutum black, on mesopleuron and propodeum white. Clypeus slightly elongate, without distinct median lobe (Fig. 18), disk convex (Fig. 54). Frons and vertex dull. Pronotal collar transversely ridged, anterior surface long and sloping backwards and upwards obliquely, therefore reducing length of dorsal surface medially. Mesopleuron, metapleuron and propodeum laterally transversely ridged. Arolia reduced or lacking. Flagellomere I:II = 1.7-1.8; length of petiole = hindtarsomeres I + 0.75 × II to I + II.

♂: 26.5-28 mm. Black with following dark reddish-brown: mandible (except apex), scape, foreleg (except coxa and tarsomeres), midleg partly darkened, hindleg nearly all

black, tergum I lateroventrally. In some specimens prothorax, pedicel, flagellomere I and II, tegula and legs more or less dark reddish-brown. Clypeus, frons and pronotal lobe posteriorly covered with appressed silvery setae, remaining body parts slightly pruinose. Erect setae on head black, on scutum black and white and on scutum, metanotum and propodeum white. Clypeus slightly elongate (Fig. 165), disk flat (Fig. 205). Pronotal collar and scutum transversely ridged (Figs 251, 293). Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.5; length of petiole = hindtarsomeres I+II to I+II+ 0.75 × III. Gonostyle laterally: Fig. 332; penis valve in ventral view with oval ring of minute denticles. (Fig. 410), laterally: Fig. 450, dorsally: Fig. 374, apically: Fig. 489.

Geographic distribution: Botswana, Ethiopia, Kenya, Mozambique, Senegal, South Africa, Tanzania, Zambia, Zimbabwe.

***Ammophila caprella* ARNOLD (Figs 40, 76, 112, 148, 181, 221, 268, 309, 349, 392, 425, 465, 505)**

Ammophila caprella ARNOLD 1951: 142, ♀, ♂. **Syntypes:** Ethiopia: Addis Ababa, Mangasha (BMNH). Syntype: ♀ examined.

Material examined: **Zambia:** 62 km SW Serenje, 22.XI.2005, leg. Snižek (1♂ OÖLM); 60 km W Solwezi 4.-6.I.2003, leg. J. Halada (1♂ OÖLM). **Central African Republic:** 60 km SE Bouar, 860 m, 05°42'N 16°00'E, 30.II.2010, leg. J. Halada (1♂ OÖLM); 70 km NNE Bangui, 430 m, 04°57'N 18°46'E, 8.IV.2010, leg. J. Halada (1♂ OÖLM). **Togo:** Hinterland, 16.V.1889, leg. Kling (1♂ ZMB). **Angola:** 10 mi. W Malange, 1120m, 4.XII.1966, leg. Ross & Lorenzen (1♂ CAS). **Burkina Faso:** 69 km W Kondougou, 12°14.8'N 2°57.7'W, 6.VII.2004, leg. Pulawski (1♂ CAS). **Nigeria:** (1♂ CAS).

Recognition: *Ammophila caprella* has the gastral apex black, without a metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron and the arolia are present. The female of *A. insignis* differs from *A. caprella* in having the clypeus distinctly elongate, abruptly truncate in front, the truncate and lateral margins meeting at a sharp angle (Fig. 23), a larger body length (26-33 mm) and in having no erect setae on the body. The female of *A. argyrocephala* differs from *A. caprella* in having the scutum dull and finely, transversely striate and microstriate and the mesopleuron, the metapleuron and the propodeum laterally covered with dense appressed silvery setae that obscure the underlying sculpture; the erect setae are distinctly shorter than the scape (*A. caprella* has the scutum densely, clearly punctate and laterally transversely rugose; the erect setae are nearly as long as the scape). The male of *A. caprella* is similar to *A. insignis* but differs in having erect setae on head and thorax as long as the scape, the mesopleuron along mesopleural suture covered with dense appressed silvery setae and a differently shaped gonostyle (Fig. 349) and penis valve in lateral view (Fig. 465) (*A. insignis* has the erect setae shorter, the mesopleuron pruinose and the gonostyle (Fig. 348) and the penis valve are differently shaped, Fig. 462).

Description: Gaster apex black, without metallic shine but pruinose. Pronotal collar without transverse rugae, episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Wings hyaline.

♀: 24 mm. Black, with following reddish-brown: mandible (except apex), fore- and midlegs (except coxae and femora dorsally), hindtibia dorsally, tergum I partly, gastral segment II partly. Clypeus, frons, pronotal lobe, mesopleuron, metapleuron and propo-

deum laterally covered with fine appressed silvery setae, obscuring sculpture except on scutum. Erect setae whitish. Clypeus slightly elongate, without distinct median lobe, densely and coarsely punctate (Fig. 40), clypeal disk convex (Fig. 76). Frons densely punctate, vertex dull and sparsely punctate. Pronotal collar shiny, sparsely punctate (Figs 112, 148). Scutum densely, distinctly punctate, slightly transversely rugose laterally; scutellum punctate and slightly longitudinally striate. Pronotal enclosure transversely striate and punctate, all covered with erect setae. Mesopleuron and propodeum punctato-rugose. Flagellomere I:II=2; length of petiole = hindtarsomeres I+II.

♂: 21-23 mm. Black, with following reddish-brown: mandible (except apex), foreleg (except coxa), midleg (tibia and femur black dorsally), hindfemur and hindtibia (black dorsally), tergum I laterally, gastral segment II (black dorsally). Wings hyaline, slightly yellowish-brown. Clypeus and frons covered with appressed silvery-golden setae; gena, pronotal lobe, in some specimens mesopleuron along mesopleural suture covered with dense appressed silvery setae; remaining body parts more or less pruinose. Erect yellowish-white setae on head, thorax and propodeum nearly as long as scape. Clypeus distinctly elongate, median lobe slightly concave and rectangular on both sides (Fig. 181), disk nearly flat (Fig. 221). Vertex dull, finely and sparsely punctate. Pronotal collar slightly punctate (Figs 268, 309). Scutum transversely striate and densely punctate between striae. Scutellum longitudinally striate and coarsely punctate. Propodeal enclosure irregularly transversely striate and punctate. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.5; length of petiole = hindtarsomeres I+II+ 0.5 × III. Gonostyle laterally: Fig. 349; penis valve laterally: Fig. 465, dorsally: Fig. 392, ventrally: Fig. 425, apically: Fig. 505.

Geographic distribution: Angola, Burkina Faso, Central African Republic, Ethiopia, Nigeria, Togo, Zambia.

***Ammophila centroafricana* DOLLFUSS nov.sp. (Figs 194, 235, 281, 364, 404, 438, 478, 519)**

Records: Holotype: ♂, Central African Republic: 60 km SE Bouar, 860 m, 15°42'N 16°00'E, 30.III.2010, leg. J. Halada (OÖLM).

Paratypes: Central African Republic: res. Koukorou-Bamingui, 440 m, 07°15'N 20°03'E, 20.IV.2010, leg. J. Halada (6♂♂ OÖLM, 1♂ CAS); 60 km SE Bouar, 860 m, 05°42'N 16°00'E, 30.III.2010, leg. J. Halada (2♂♂ OÖLM); 60 km SE Bouar, 860 m, 05°42'N 16°00'E, 4.VI.2009, leg. J. Halada (1♂ OÖLM); 85 km NW Bangui, 380 m, 04°46'N 18°04'E, 4.IV.2010, leg. J. Halada (1♂ OÖLM); 40 km N Bangui, 380 m, 04°41'N 18°36'E, 8.V.2009, (2♂♂ OÖLM); 45 km SSW Bamingui, 07°15'N 20°03'E, 14.V.2009, leg. J. Halada (1♂ OÖLM); 70 km NNE Bangui, 430 m, 04°57'N 18°46'E, 8.IV.2010, leg. J. Halada (1♂ OÖLM); 35 km E Ndélé, 450 m, 08°29'N 20°57'E, 17.V.2009, leg. J. Halada (1♂ OÖLM). Benin: Save env., 16.VI.2001, leg. Kantner (1♂ OÖLM). Nigeria: Gashaka Gumfi N.P., 25 km SW Serti env., 07°20'N 11°13'E, 400 m, 9.-13.V.2011, leg. J. Halada (1♂ OÖLM). Guinea: Mont Nimba, 07°41.66'N 08°24.11'W, Lola, 8.VII.2004, leg. Ma. Halada (1♂ OÖLM); Waldguinea, Umg. Dicke, Primärwald, 500 m, 8.-9.II.2003, leg. Oehlke (1♂ Coll. Jacobs). Zimbabwe: 30 km W Harare, 29.XI.1998, leg. Ma. Halada (1♂ OÖLM). Cameroon: Tsad-See, Satsche, 19.V.1909, leg. Riggenbach (1♂ ZMB). Namibia: Klein-Nama-Land, leg. Schultze (1♂ ZMB). Burkina Faso: 28 km NE Dédougou, 12°35.5'N 3°15.6'W, 8.VII.2004, leg. Bourbin & Pulawski (1♂ CAS); 14 km W Koudougou, 12°12.8'N 2°29.8'W, 6.VII.2004, leg. Bourbin & Pulawski (1♂ CAS). Ivory Coast: 30 km S Odiéné, 14.I.1991, leg. Pulawski (1♂ CAS); Oumé, 20.I.1991, leg. Pulawski (1♂ CAS); 20 S Soubre, 16.I.1991, leg. Pulawski (1♂ CAS); 40 km S Toumodi, 21.I.1991, leg. Pulawski (1♂ CAS); 40 km NW Abidjan, 6.I.1991, leg. Pulawski (1♂ CAS); 40 km S Toumodi, 7.I.1991, leg. Pulawski (1♂ CAS). Togo: 5 km W Sokodé, 20.II.1991, leg. Pulawski (1♂ CAS); 5 km W Sokodé, 17.II.1991, leg. Pulawski (1♂ CAS).

Liberia: 8 mi. NW Belefuanai, S. Fork St. Paul river, 11.VIII.1966, leg. Ross & Lorenzen (1♂ CAS). Sierra Leone: Freetown Bot. Gardens, 25.-26.VII.1966, leg. Ross & Lorenzen (1♂ CAS). Ghana: Kawampo, 8°30'N 1°35'W, 45 km N Kintampo, 5.II.1991, leg. Pulawski (1♂ CAS); Techiman, 1.II.1991, leg. Pulawski (1♂ CAS).

N a m e d e r i v a t i o n : The holotype was collected in the Central African Republic.

R e c o g n i t i o n : *Ammophila centroafricana* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly. The mesopleuron, the metapleuron and the propodeum laterally are covered with more or less sparsely appressed silvery setae. The male of *A. zambiensis* is similar to *A. centroafricana* but differs in having no appressed silvery setae on the metapleuron. The male of *A. rubripes* is similar to *A. centroafricana* but differs in the shape of the penis valve in the lateral view (Fig. 480). The male of *A. curvistriata* is similar to *A. centroafricana* but differs in having a slightly elongate clypeus (Fig. 184) and a differently shaped penis valve in lateral view (Fig. 468).

D e s c r i p t i o n : Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Mesopleuron, metapleuron and propodeum laterally evenly covered with more or less sparse appressed silvery setae.

♂: 19-23 mm. Black, with following reddish-brown: mandible (except apex), scape, in most specimens pronotal collar, tegula, subalar area, fore- and midlegs (femora dorsally darkened), hindleg (dorsally darkened), petiole basally, tergum I and II laterally. Wings brownish. Erect setae whitish. Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with appressed silvery setae. Frons, vertex and pronotal collar more or less sparsely punctate. Scutum coarsely punctate, with short transverse rugae. Scutellum longitudinally punctato-rugose. Metanotum punctate. Propodeal enclosure transversely punctato-rugose. Mesopleuron, metapleuron and propodeum laterally transversely punctato-rugose. Flagellum I:II=1.3-1.5; length of petiole = hindtarsomere I+II+ 0.75 × III to I+II+III. Gonostyle laterally: Fig. 364; penis valve laterally: Fig. 478, dorsally: Fig. 404, ventrally: Fig. 438, apically: Fig. 519.

♀: unknown.

G e o g r a p h i c d i s t r i b u t i o n : Benin, Burkina Faso, Cameroon, Central African Republic, Ghana, Guinea, Ivory Coast, Liberia, Namibia, Nigeria, Sierra Leone, Togo, Zimbabwe.

***Ammophila clypeolineata* DOLLFUSS nov.sp. (Figs 17, 53, 89, 127, 161, 203, 248, 331, 371, 445, 488)**

R e c o r d s : **Holotype**: ♂, Central African Republic: 90 km NE Nola, 04°07'N 16°37'E, 560 m, 5.-9.XII.2010, leg. J. Halada (OÖLM). **Paratypes**: Central African Republic: 70 km NNE Bangui, 04°57'N 18°46'E, 445 m, 24.-28.XI.2010, leg. J. Halada (1♀ OÖLM) Uamgebiet Bosum, 21.30.IV.1914, leg. Tessimann (2♂♂ ZMB). Nigeria: Gashaka Gumfi N.P., 30 km SE Serti env., 07°21'N 11°32'E, 450 m, 24.IV.-8.V.2011, leg. J. Halada (2♂♂ OÖLM); 26 km SSE Abuja, 09°06'N 07°45'E, 400 m, 14.V.2011, leg. J. Halada (1♀ OÖLM). Kenya: Mtido Andei, 2500ft, 26.-28.V.1911, leg. S.A. Neave (1♀ BMNH). Namibia: D. SW Afrika, 1901, leg. Lübbert (1♀ ZMB). Uganda: SW Albert See, Mboga, III.1908, Expedition Herzog Friedrich zu Meklenburg (2♀♀ ZMB). Ivory Coast: Abidjan, Forêt de Banco, 5.I.1991, leg. Pulawski (4♂♂ CAS).

Name derivation: The male of *Ammophila clypeolineata* has a longitudinal carina on each side of the clypeus.

Recognition: *Ammophila clypeolineata* has the gaster black with a slight metallic shine. The pronotal collar and the scutum are coarsely, transversely ridged and the wings are dark-brown. The episternal sulcus ends at the level of the scrobe, the mesothoracic venter is not produced anteriorly and the claws have no basal tooth. The female of *A. clypeolineata* is similar to *A. beniniensis* and *A. calva* but differs in having the pronotal collar sharply marginate by a carina anteriorly and slightly elevate dorsomedially, additionally, the anterior border is nearly vertical (Figs 89, 127) and the propodeal enclosure is all transversely striate (*A. beniniensis* and *A. calva* have the pronotal collar anteriorly more rounded (Figs 91, 90) and the propodeal enclosure irregularly reticulate medially, transversely striate laterally). The female of *A. clypeolineata* is similar to *A. vulcania* but differs in having the pronotal collar slightly elevate dorsomedially, with more than three rugae, the propodeal enclosure all covered with transverse striae and a smaller body length (26-28.5mm) (*A. vulcania* has a pronotal collar evenly rounded dorsomedially, with no more than three rugae (Figs 87, 125) and the propodeal enclosure is irregularly reticulate medially and transversely striate laterally; additionally, the body length is 28-36 mm). The male of *A. clypeolineata* is similar to *A. beniniensis* and *A. calva* but differs in having the clypeus with a longitudinal carina on each side (Fig. 161) and in the shape of the penis valve in lateral view (Fig. 445) (*A. beniniensis* has a penis valve with a transverse spine (Fig. 409) and *A. calva* has a penis valve with an oval ring of minute denticles in ventral view (Fig. 410), both have the clypeus without a lateral carina). The male of *A. vulcania* differs from *A. clypeolineata* in having the ventral margin of the clypeus characteristically shaped (Fig. 160) and the penis valve differently shaped (Figs 413, 444).

Description: ♂: 24-26 mm. Black, with following dark reddish-brown: mandible (except apex), pronotal collar partly or all, legs (dorsally darkened), pronotal lobe all or partly, tegula partly. Gaster black, with slight metallic shine. Clypeus, frons and pronotal lobe posteriorly covered with appressed silvery setae; remaining body parts finely pruinose. Erect setae on clypeus, frons and pronotal collar black, on remaining body parts white. Wing dark-brown. Clypeus elongate, blunt, with a longitudinal carina on each side (Fig. 161), clypeal disk flat (Fig. 203). Supra-antennal lamellate projection absent and vertex dull and impunctate. Pronotal collar coarsely, transversely striate, anterior surface almost vertical (Fig. 248, 290). Scutum transversely ridged, like pronotal collar, anterior half punctate between ridges. Scutellum and metanotum longitudinally ridged. Propodeal enclosure coarsely transversely ridged, with short setae medially, glabrous laterally. Mesopleuron, metapleuron and propodeum laterally transversely punctato-rugose. Mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe and arolia present. Claws have no basal tooth. Flagellomere I:II=1.5-1.7; length of petiole = hindtarsomeres I+II+III. Gonostyle laterally: Fig. 331; penis valve laterally: Fig. 445, dorsally: Fig. 371, apically: Fig. 488.

♀: 25-28.5 mm. Black, with following dark reddish-brown: mandible (except apex), clypeus, frons, gena, scape, pronotal collar partly, legs (black dorsally). Wing dark brown with slight metallic shine. Thorax and propodeum finely, sparsely pruinose. Erect setae on head, prothorax and forelegs black, on remaining thorax and propodeum white. Clypeus slightly elongate (Fig. 17), disk convex (Fig. 53). Clypeus, frons, gena and

vertex dull, nearly impunctate. Supra-antennal lamellate projection absent. Pronotal collar coarsely, transversely ridged, anterior surface almost vertical (Figs 89, 127). Scutum coarsely transversely ridged, like pronotal collar, median line indistinct. Scutellum and metanotum longitudinally ridged. Propodeal enclosure coarsely, transversely striate, covered with fine short setae medially, glabrous laterally. Mesopleuron, metapleuron and propodeum laterally transversely striate and punctate. Episternal sulcus ends at level of scrobe and mesothoracic venter not produced anteriorly. Arolia absent and claws have no basal tooth. Flagellomere I:II=1.8; length of petiole = hindtarsomeres I+ 0.75 × II to I+II.

Geographic distribution: Central African Republic, Ivory Coast, Namibia, Nigeria, Uganda.

***Ammophila conifera* (ARNOLD) (Figs 26, 62, 98, 134, 170, 211, 257, 299, 344, 381, 415, 459, 495, 522)**

Sphex conifer ARNOLD 1920: 47, ♀, ♂. **Syntypes:** South Africa: Cape Province: Willowmore (SAM), photographs examined.

Material examined: South Africa: (13 ♀♀, 11 ♂♂ OÖLM); (1 ♂ BMNH); (4 ♀♀, 2 ♂♂ ZMB); (1 ♀, 2 ♂♂ CAS). Mozambique: (3 ♀♀, 1 ♂ OÖLM). Namibia: (2 ♀♀, 1 ♂ OÖLM); (1 ♀ ZMB); Kalahari (3 ♀♀, 1 ♂ coll. Zettel); Kalahari (1 ♂ ZMB). Zimbabwe: (2 ♂♂ OÖLM).

Recognition: *Ammophila conifera* has the gastral apex black, without a metallic shine but pruinose, the episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The pronotal collar of the female is characteristically shaped (Fig. 522), the male clypeus is distinctly elongate (Fig. 170) and the male genitalia are large (1.5 mm) and unusually shaped. The female of *A. conifera* is similar to *A. dolichocephala* but differs in having the scutum more coarsely punctured between the striae, the pronotal collar in lateral view narrower above and more compressed laterally, therefore appearing subconical (Fig. 134, 522) and the sterna IV-V are black. (*A. dolichocephala* has the scutum sparsely, finely punctate, transversely striate only laterally, the pronotal collar slightly gibbous medially and the anterior surface is slightly concave on each side of the midpoint (Fig. 137), additionally, the sterna IV-V are reddish-brown). The female of *A. peringuei* is similar to *A. conifera* but differs in having the pronotal collar excavated in front of each side of the midpoint, so that viewed from above it is bluntly trituberculate, the shoulders forming the lateral tubercles (Fig. 133) (*A. conifera* has the pronotal collar with a blunt tubercle dorsomedially and no distinct lateral tubercle, Fig. 522). The female of *A. turneri* is similar to *A. conifera* but differs in having the pronotal collar coarsely punctate, punctures 0-1 diameter apart (*A. conifera* has the pronotal collar without or at most with fine and sparse punctures).

The male of *A. conifera* differs from *A. dolichocephala* in having no median longitudinal carina on the clypeus (Fig. 170), tergum VII without a triangular tubercle or carina, the gonostyle abruptly narrowed at the posterior fourth and without spines or teeth (Fig. 344) and the characteristically shaped penis valve (Figs 381, 415, 459, 495). The male of *A. barbarorum* differs from *A. conifera* in having the clypeal free margin distinctly emarginate medially (Fig. 168) and characteristically shaped gonostyle (Fig. 338) and penis valve (Figs 379, 418, 453, 492) (*A. conifera* has the clypeal free margin not emarginate and differently shaped gonostyle and penis valve). The male of *A. kenyensis*

differs from *A. conifera* in having a distinct lobe on the hypostomal carina near the mandibular socket (Fig. 534) and differently shaped gonostyle (Fig. 339) and penis valve (Figs 380, 454, 494). The males of *A. arnoldi*, *A. longiclypeata*, *A. turneri* and *A. africana* differ from *A. conifera* in having differently shaped penis valves. The male of *A. pseudodolichodera* differs from *A. conifera* in having the clypeus not so elongate and differently shaped genitalia.

D e s c r i p t i o n : Gastral apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, arolia present, claws have no basal tooth. Supra-antennal lamellate projection absent and mesopleural venter anteriorly not prominent.

♀: 20.5-23.5 mm. Black, with following variably reddish-brown: mandible (except apex), tegula, fore- and midlegs (partly), hindtibia (basally), tergum I (laterally), gastral segment II and III (partly). In some specimens ventral half of clypeus, scape, pronotal lobe and petiole reddish-brown. Wings hyaline to slightly brownish. Clypeus, frons, gena, pronotal lobe, mesopleuron, metapleuron and propodeum laterally more or less covered with appressed silvery setae; erect setae whitish. Clypeus slightly elongate, ventral half coarsely punctate, without distinct median lobe (Fig. 26), disk convex (Fig. 62). Vertex dull, nearly impunctate. Pronotal collar shiny, impunctate or at most finely, sparsely punctate, narrowing above, compressed laterally, therefore appearing subconical (Figs 98, 134, 522). Scutum more or less transversely striate and coarsely punctate. Scutellum longitudinally ridged. Propodeal enclosure transversely rugose, all covered with short appressed silvery setae and white erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II = 1.7-2.0; length of petiole = hindtarsomeres I+II to I+II + 0.7 × III.

♂: 21-22 mm. Black, with following reddish-brown: mandible (except apex), pronotal collar, tegula, foreleg, midleg (except femur dorsally), hindtibia (dorsally), petiole (basally), tergum I (laterally), gastral segment II (black dorsally). Wings hyaline. Clypeus and frons (extending up to midocellus) covered with dense, silvery appressed setae. Gena, thorax and propodeum more or less covered with fine appressed silvery setae; legs and gaster pruinose; erect setae whitish. Clypeus distinctly elongate (Fig. 170), disk slightly concave on ventral half, slightly convex on dorsal half (Fig. 211). Vertex dull, impunctate. Pronotal collar slightly eleviate medially, but not so high as in female (Fig. 257, 299). Scutum transversely striate and distinctly punctate, scutellum longitudinally striate and punctate. Propodeal enclosure transversely punctato-rugose, all covered with short appressed silvery setae and white erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II = 1.5-1.6; length of petiole = hindtarsomeres I+II + 0.25 × III to I+II + 0.5 × III. Genitalia characteristically shaped: gonostyle laterally: Fig. 344; penis valve laterally: Fig. 459, dorsally: Fig. 381, ventrally: Fig. 415, apically: Fig. 495.

G e o g r a p h i c d i s t r i b u t i o n : Mozambique, Namibia, South Africa, Zambia, Zimbabwe.

***Ammophila crassifemoralis* (R. TURNER) (Figs 13, 49, 85, 121, 158, 200, 245, 287)**

Sphex crassifemoralis R. TURNER 1919a: 48, ♂. Holotype: ♂, Uganda: Mt. Elgon (BMNH), examined. Paratype: ♀, Central African Republic: Uamgebiet Bosum (ZMB), examined.

Material examined: Holotype ♂ (BMNH), Paratype: ♀, Central African Republic: Uamgebiet, Bosum, 11.-20.IV.1914, leg. Tessmann (ZMB).

Recognition: *Ammophila crassifemoralis* has a forewing with two submarginal cells and the gastral apex is black, without a metallic shine. The pronotal collar is distinctly, transversely ridged, the mesothoracic venter is not produced anteriorly, the episternal sulcus ends at the level of scrobe, the arolia are present and the claws have no basal tooth. The supra- antennal lamellate projection is absent. Erect setae present only on head and prothorax. The female of *A. crassifemoralis* is similar to *A. saussurei* but differs in having a simple longitudinally ridged scutellum and metanotum and on the scutum a triangular patch of pale golden appressed setae anteriorly (*A. saussurei* has a medially rised scutellum and metanotum (Fig. 530) and the scutum without triangular patch anteriorly). The female of *A. namibiensis* differs from *A. crassifemoralis* in having the pronotal collar finely, transversely striate (Fig. 86) and the episternal sulcus extends to the anteroventral margin of the mesopleuron. The male of *A. crassifemoralis* shares with *A. tuberculiscutis* and *A. saussurei* the forewing with two submarginal cells, but differs in having the clypeal free margin truncate (Fig. 158) and a simple scutellum and metanotum (*A. tuberculiscutis* has the clypeus triangularly produced (Fig. 155) and the scutellum and the metanotum are elevate medially to form an elongate tubercle, Fig. 529); *A. saussurei* has the clypeus elongate with a slight emargination medially (Fig. 156) and an elevate metanotum (Fig. 530). The male of *A. namibiensis* differs from *A. crassifemoralis* in having the pronotal collar and the scutum finely, transversely striate (Figs 244, 286).

Description: Forewing with two submarginal cells, gastral apex black, without metallic shine, pronotal collar and scutum transversely ridged and episternal sulcus ends at level of scrobe. Supra-antennal lamellate projection absent, mesothoracic venter not prominent anteriorly, arolia present and claws have no basal tooth. Erect setae on head and prothorax developed only ventrally.

♀ (**hitherto unknown**): 24 mm. Black, with following reddish-brown: mandible (except apex), clypeus medially, scape, pedicel, flagellomeres I and II, prothorax (except black stripe laterally), scutum laterally, tegula, legs (more or less darkened dorsally), petiole ventrally, tergum I laterally; terga II-V dark brown, sterna II-VI reddish-brown. Clypeus, frons, triangular patch on scutum anteriorly (Fig. 121) and propodeum posterolaterally covered with pale golden appressed setae. Mesopleuron, metapleuron and propodeum laterally pruinose. Sparse erect setae present on clypeus, gena and prothorax, remaining body parts without erect setae. Wings dark brown. Clypeus slightly elongate with distinct median lobe (Fig. 13), disk convex (Fig. 49). Frons and vertex dull, impunctate. Pronotal collar shiny, distinctly transversely ridged, laterally rounded (Figs 85, 121). Scutum shiny and distinctly transversely ridged. Scutellum flat and longitudinally ridged, metanotum longitudinally ridged. Mesopleuron and propodeum laterally irregularly transversely rugose and coarsely punctate; metapleuron slightly obliquely striate. Flagellomere I:II=1.7; length of petiole = hindtarsomeres I+II.

♂: 24 mm. Black with following reddish-brown: mandible (except apex), scape, pedicel, flagellomeres I-VI, pronotal collar laterally, pronotal lobe, patch on prosternum, scutum laterally, tegula, foreleg (except femur dorsally), midleg (except coxa, trochanter, femur dorsally and tibia ventrally), petiole (darkened dorsally), tergum I (black dorsally); hindleg dark reddish-brown. Clypeus, frons, scutum anteriorly, patch below pronotal lobe, band along mesopleural suture and propodeum posterolaterally covered with

appressed pale-golden setae; remaining body parts slightly pruinose; erect setae on gena and pronotum anteriorly whitish. Clypeus elongate, free margin broadly truncate (Fig. 158), clypeal disk flat on ventral half, slightly convex on dorsal half (Fig. 200). Frons and vertex dull. Pronotal collar and scutum distinctly transversely ridged (Figs 245, 287). Scutellum and metanotum longitudinally ridged. Propodeal enclosure reticulate medially, obliquely rugose laterally. Mesopleuron, metapleuron and propodeum laterally transversely striate and deeply punctate between striae. Hindfemur stout and massive as compared with similar species. Flagellomere I:II = 1.6; length of petiole = hind-tarsomeres I+II+ 0.6 × III. Genitalia not examined.

G e o g r a p h i c d i s t r i b u t i o n : Central African Republic, Uganda.

***Ammophila curvistriata* CAMERON (Figs 35, 71, 197, 143, 184, 225, 273, 313, 354, 395, 428, 468, 505)**

Ammophila curvistriata CAMERON 1908: 265, ♂ (actually ♀). **Holotype:** ♀, **Kenya:** Mt Kilimanjaro, Kibonoto (NRS), examined, **resurrected status.** **Paratype:** ♂, **Mali:** Mourdiah, 13.-25.III.1986, leg. M. Mathews (BMNH), examined.

M a t e r i a l e x a m i n e d : **Kenya:** (3 ♀♀ OÖLM). **South Africa:** (2 ♀♀ OÖLM; 1 ♂ CAS). **Senegal:** (5 ♀♀, 1 ♂ OÖLM; 6 ♀♀, 7 ♂♂ CAS). **Ethiopia:** (1 ♀ OÖLM; 2 ♀♀ ZMB). **Nigeria:** (1 ♀ BMNH; 5 ♀♀, 2 ♂♂ CAS). **Mali:** (6 ♀♀, 6 ♂♂ BMNH; 24 ♀♀, 13 ♂♂ CAS). **Angola:** (1 ♂ BMNH). **Botswana:** (2 ♀♀ coll. Jacobs). **Togo:** (3 ♀♀ ZMB). **Tanzania:** (1 ♀ ZMB). **Burkina Faso, Kenya:** (5 ♀♀, 17 ♂♂ CAS). **Cameroon:** (6 ♀♀, 4 ♂♂ CAS).

N o t e : *Ammophila curvistriata* was tentatively synonymized with *Sphex ferrugineipes* LEPELETIER DE SAINT FARGEAU 1845 by ARNOLD 1928: 279, but he did not examine the types.

R e c o g n i t i o n : *Ammophila curvistriata* has the gaster apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly and the arolia are present. The female of *A. zetteli* is similar to *A. curvistriata* but differs in having the pronotal collar distinctly punctate and nearly vertical anteriorly in lateral view (Fig. 110). The female of *A. fischeri* differs from *A. curvistriata* in having a reddish-brown and slightly punctate pronotal collar. The female of *A. punctaticeps* differs from *A. curvistriata* in having the metapleuron covered with appressed silvery setae and a coarsely punctate pronotal collar. The male of *A. zambiensis* is similar to *A. curvistriata* but differs in having a differently shaped penis valve (Fig. 477) and a more elongate clypeus (Fig. 193). The male of *A. centroafricana* is similar to *A. curvistriata* but differs in having a differently shaped penis valve (Fig. 478), a more elongate clypeus (Fig. 194) and the mandible reddish-brown except the apex. The male of *A. rubripes* differs from *A. curvistriata* in having a differently shaped penis valve in lateral view (Fig. 480) and a mandible reddish-brown except the apex (*A. curvistriata* has the mandible medially reddish-brown, basally and apically black). The male of *A. africana* differs from *A. curvistriata* in having no apicoventral spines on the penis valve (Fig. 471), in apical view the penis valve is abruptly emarginate basally (Fig. 512) and the mandible is black only on the apex.

D e s c r i p t i o n : Gaster apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, supra-antennal lamellate projection absent, arolia present and claws have no basal tooth.

♀: 20-21 mm. Black, with following reddish-brown: mandible (except apex), scape partly, clypeus next free margin, tegula, fore and midlegs, hindfemur ventrally, hindtibia, petiole (dorsally darkened), tergum I laterally, gastral segment II (with black stripe dorsally), segment III (partly black dorsally). In some specimens pronotal collar reddish-brown. Wings hyaline, slightly brownish. Clypeus, frons, gena, pronotal lobe, mesopleuron (especially along mesopleural suture) and propodeum posterolaterally covered with dens appressed silvery setae. Remaining body parts more or less pruinose. Metapleuron without appressed setae. Clypeus slightly elongate (Fig. 35), disk distinctly convex (Fig. 71). Frons sparsely punctate, punctures 1-2 diameters apart. Vertex impunctate, dull. Pronotal collar nearly impunctate (Figs 107, 143). Scutum distinctly transversely striate and punctate; scutellum longitudinally rugose and coarsely punctate, metanotum punctate. Propodeal enclosure reticulate, transversely rugose laterally. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomeres I+II to I+II + 0.5 × III.

♂ (**hitherto unknown**): 19-22 mm. Black, with following reddish-brown: tegula, foreleg (except coxa) midleg, hindfemora ventrally, hindtibia and -tarsus, petiole ventrally, tergum I laterally, gastral segment II (dorsally darkened). Mandible reddish-brown medially, basally and apically black. In some specimens mesopleuron partly reddish. Clypeus, frons, gena, pronotal lobe, mesopleuron, propodeum posterolaterally and hindcoxa dorsally covered with dense appressed silvery setae. Metapleuron, pronotal collar, scutum and propodeal enclosure covered with fine, sparse appressed setae; legs pruinose. Erect setae whitish. Clypeus slightly elongate (Fig. 184), disk slightly convex (Fig. 225). Frons distinctly punctate, vertex and pronotal collar sparsely punctate. Scutum transversely striate and coarsely punctate, scutellum coarsely punctate anteriorly, longitudinally striate posteriorly. Propodeal enclosure transversely striate. Metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.3-1.6; length of petiole = hindtarsomeres I+II + 0.25 × III to I+II + 0.75 × III. Gonostyle: Fig. 354; penis valve laterally: Fig. 468, ventrally: Fig. 428, dorsally: Fig. 395, apically: Fig. 509.

Geographic distribution: Angola, Botswana, Burkina Faso, Cameroon, Ethiopia, Kenya, Mali, Mozambique, Nigeria, Senegal, South Africa, Tanzania, Togo, Zambia, Zimbabwe.

***Ammophila dolichocephala* CAMERON (30, 65, 101, 137, 525, 167, 208, 254, 296, 337, 378, 452, 493)**

Ammophila dolichocephala CAMERON 1910b: 135, ♂. **Syntypes:** ♂, South Africa: Pretoria (TMP), not examined. ♀: South Africa: Capland: Willowmore, det. Arnold (SAM), photograph examined.

Material examined: Kenya: Makindu (1♀ OÖLM). Namibia: 25 km N Karibib (1♂ OÖLM); 25 km SE Tsumeb (1♂ OÖLM); 10 km SW Gobasis (1♂ OÖLM); ~30 km W Okahandja, 21°55.56'S 16°31.61'E, 1500 m, (2♀♀ ZMB); Khomas Region, 106 km ESE Windhoek, Kalahari desert, 1465 m, 22°42'S 18°07'E (4♂♂ coll. Zettel); Kavango Gebiet 1: 15 km SW Rundu (1♀, 2♂♂ CAS); Okahandja District: 27 km S Okajandja (1♂ CAS); Karibib District: 55 km SW Usakos (1♀ CAS); Otjiwarongo District: 15-20 km NW Otjiwarongo (1♀ CAS); Tsumeb District: 10 km SE Tsumeb (1♀ CAS); Okahandja District: 17 km W Okahandja (1♀ CAS); (1♀, 2♂♂ CAS); (1♀, 2♂♂ ZMB); Erongo province (4♀♀, 2♂♂ OÖLM); Okavango province (2♀♀ OÖLM); Khomas province (1♀ OÖLM). South Africa: (5♀♀ NHMW); Limpopo province 40 km SSW Musina 22°37'S 29°51'E 650m (2♀♀ OÖLM); Free State 30 km N Colesberg, Orange river (1♀ OÖLM); West Cape Nuwerus (1♀ OÖLM); Cape Province (1♀ ZMB); Capland (4♂♂ ZMB); Capland, Willowmore (1♀ BMNH). Zimbabwe: (1♀ NHMW);

50 km S Bulawayo Matobe (2♀ ♀, 2♂ ♂ OÖLM); 30 km W Harare (1♂ OÖLM); Bubi river 80 km NE Beitbridge (1♂ OÖLM).

R e c o g n i t i o n : *Ammophila dolichocephala* has a gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The genitalia of the male are large (2 mm) and unusually shaped. The female of *A. conifera* is similar to *A. dolichocephala* but differs in having the scutum more coarsely punctured between the transverse striae, the pronotal collar narrower in lateral view and compressed laterally, therefore appearing subconical (Fig. 522) and the sterna (III) IV-V are black (*A. dolichocephala* has the scutum sparsely, finely punctate and the pronotal collar is dorsally broader, Fig. 525). The male of *A. dolichocephala* is characterized by the shape of the clypeus (Fig. 167) and the structure of the genitalia that are unlike of any other species (Fig. 337, 378, 452, 493).

D e s c r i p t i o n : Gastral apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly. Arolia present, claws have no basal tooth.

♀: 19-28 mm. Black, with following reddish-brown: mandible (except apex), ventral third of clypeus, scape, pronotal collar, tegula, fore- and midlegs, hindtibia (dorsally), petiole (basally), tergum I (laterally), gastral segment II (with black stripe dorsally) and sterna III-V. In some specimens clypeus, scape, pronotal collar and petiole are all black. Wings hyaline. Clypeus, frons, thorax and propodeum covered with appressed silvery-golden setae; erect setae whitish. Clypeus distinctly elongate, ventral half shiny and coarsely punctate (Fig. 30), disk distinctly convex (Fig. 65). Vertex dull, impunctate. Pronotal collar slightly gibbous medially, anterior surface feebly concave on each side of midpoint (Fig. 525). Scutum dull, sparsely, finely punctate medially, finely transversely striate laterally, admedian line flat. Scutellum longitudinally striate, with shallow longitudinal impression medially. Propodeal enclosure irregularly rugose medially, obliquely striate laterally, all covered with silvery appressed setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II = 1.5-1.7; length of petiole = hindtarsomeres I+II to I+II + 0.5 × III.

♂: 21.5-25 mm. Black, with following reddish-brown: mandible (except apex), scape (ventrally), fore- and midlegs (except dorsal black stripe on femora), hindtibia, pronotal collar (in some specimens only small patch dorsally), tegula, petiole (basally), tergum I (laterally), gastral segment II (dorsally black), sterna II-VIII (nearly all). Wings hyaline to slightly brown. Clypeus, frons, gena, thorax and propodeum more or less covered with fine appressed silvery setae. Erect setae silvery-white. Clypeus distinctly elongate, free margin angularly emarginate with depression behind it, longitudinal carina runs from middle of depression to angle of apical excision (Fig. 167), clypeal disk (Fig. 208). Labrum with minute tooth apically. Pronotal collar slightly elongate, nearly smooth, sparsely, finely punctate (Figs 254, 296). Vertex dull, impunctate. Scutum punctate (punctures 0-2 diameters apart), more or less transversely rugose laterally. Scutellum and metanotum longitudinally ridged. Propodeal enclosure irregularly transversely rugose, all covered with short appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Tergum VII with median carina or tubercle. Flagellomere I:II = 1.6; length of petiole = hindtarsomeres I+II to I+II + 0.6 × III.

Genitalia large (2 mm) and characteristically shaped: gonostyle laterally: Fig. 337; penis valve laterally: Fig. 452, dorsally: Fig. 378, apically: Fig. 493.

G e o g r a p h i c d i s t r i b u t i o n : Kenya, Namibia, South Africa, Zimbabwe.

***Ammophila dolichodera* KOHL (Figs 31, 67, 103, 139, 178, 218, 264, 306, 347, 388, 423, 457, 502)**

Ammophila dolichodera KOHL 1884: 383, ♂. **Lectotype:** ♂, South Africa: "Prince Albert Land" (NHMW), examined, **present designation**.

Ammophila macrocola KOHL 1884: 377, ♂. Error in the key, should be named *Ammophila dolichodera*.

Ammophila pulchricollis CAMERON 1910: 133, ♂, actually ♀ (BRAUNS 1917: 241). **Holotype:** ♀, South Africa: Transvaal: Masemola (TMP). Synonymized with *Ammophila dolichodera* by R. TURNER 1919: 369.

Ammophila lucombensis CAMERON 1912: 398, ♀, Zaire: Lukombe (MRAC). Synonymized with *Ammophila dolichodera* by LECLERCQ 1955: 86.

M a t e r i a l e x a m i n e d : Ethiopia: (1♀ OÖLM). Kenya: (3♀♀, 3♂♂ OÖLM); (4♀♀, 5♂♂ CAS). Mali: (1♂ CAS). Mozambique: (5♀♀, 2♂♂ OÖLM). Namibia: (14♀♀, 22♂♂ OÖLM); (2♀♀, 3♂♂ ZMB); (1♂ Coll. Schmid-Egger); Kalahari (1♀, 3♂♂ coll. Zettel); (1♀, 1♂ CAS); Kalahari (1♀ ZMB). Niger: (1♀, 1♂ CAS). South Africa: (11♀♀, 29♂♂ OÖLM); (2♀♀ CAS); Kalahari (1♀ CAS). Tanzania: (1♀, 1♂ OÖLM); (3♂♂ ZMB); (6♀♀, 8♂♂ CAS). Yemen: (2♀♀ OÖLM). Zambia: (1♂ OÖLM). Zimbabwe: (1♀, 3♂♂ OÖLM); (1♂ CAS). Senegal (2♀♀, 1♂ CAS).

N o t e : In some specimens of *A. dolichodera* crossvein 1 r-m is lost, resulting in two submarginal cells.

R e c o g n i t i o n : *Ammophila dolichodera* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus ends at the level of the scrobe, the mesothoracic venter is not produced anteriorly and the arolia are present. The pronotal collar is elongate, without transverse rugae, nearly flat and low anteriorly. The scutum is coarsely, transversely striate. The female of *A. dolichodera* differs from *A. rubripes* in having the pronotal collar elongate (Fig. 103, 139) and the clypeus not elongate (Fig. 31) (*A. rubripes* has a pronotal collar not elongate (Fig. 116, 152) and the clypeus is elongate and rounded, Fig. 43). The male of *A. africana* differs from *A. dolichodera* in having the penis valve without spines apicoventrally (Fig. 471). (*A. dolichodera* has the penis valve with spines, Fig. 457). The male of *A. pseudodolichodera* shares with *A. dolichodera* the shape of pronotal collar and scutum but differs in having unusually shaped gonostyle (Fig. 341) and penis valve (Figs 385, 420, 456, 499). The male of *A. nigri* differs from *A. dolichodera* in having an unusually shaped gaster apex (Figs 536, 537) and unusually shaped genitalia (Figs 538-542).

D e s c r i p t i o n : Gastral apex black, without metallic shine but pruinose. Episternal sulcus ends at level of scrobe, mesothoracic venter not produced anteriorly, supra-antennal lamellate projection absent, arolia present and claws have no basal tooth. Forecoxal venter with minute tooth (difficult to see).

♀: 16-25 mm. Black, with following variably red: mandible (except apex), clypeus, frons (partly), scape, pedicel, flagellomeres I+II (partly), tegula, propleuron, mesopleuron (partly), propodeum laterally (partly), legs (partly), petiole, tergum I (dorsally darkened), gastral segment III, sterna IV-VI. Wings hyaline. Following covered with appressed silvery setae: clypeus, pronotal lobe and propodeum posterolaterally; remaining body parts distinctly pruinose. Yellowish-brown erect setae on gena, propleuron and foreleg

nearly as long as scape; pronotal collar, scutum, mesopleuron, metapleuron and propodeum without erect setae. Clypeus not elongate, ventral half shiny (Fig. 31), disk convex (Fig. 67). Vertex dull, impunctate. Scutum coarsely, transversely ridged, admedian line indistinct; scutellum and meatanotum longitudinally ridged. Propodeal enclosure transversely striate, all pruinose. Mesopleuron, metapleuron and propodeum laterally transversely punctato-rugose. Flagellomere I:II = 1.6-1.8; length of petiole = hindtarsomeres I+II to I+II+ 0.5 × III.

♂: 15.5-21 mm. Black, with following variably reddish-brown: mandible (except apex), scape, pronotal collar, pronotal lobe, tegula, mesopleuron (partly), propodeum posterolaterally, legs (partly), petiole (dorsally darkened), tergum I (laterally), gastral segment II (dorsally darkened), sterna III-VII (partly). Wings hyaline, slightly brownish. Clypeus and frons covered with dense appressed silvery setae; remaining body parts more or less covered with fine, short appressed silvery setae or pruinose. Long and whitish erect setae only on head and propleuron. Clypeus slightly elongate and truncate (Fig. 178), disk nearly flat (Fig. 218). Vertex impunctate. Pronotal collar elongate, dull, impunctate (Fig. 306), anteriorly low in lateral view (Fig. 264). Scutum coarsely transversely rugose, admedian line distinct; scutellum coarsely, longitudinally rugose. Propodeal enclosure finely transversely striate, all pruinose. Mesopleuron, metapleuron and propodeum laterally obliquely rugose. Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomere I+II+ 0.3 × III to I+II+III. Gonostyle laterally: Fig. 347; penis valve laterally: Fig. 457, ventrally: Fig. 423, dorsally: Fig. 388, apically: Fig. 502.

G e o g r a p h i c d i s t r i b u t i o n : Ethiopia, Kenya, Mali, Mozambique, Namibia, Niger, Senegal, South Africa, Tanzania, Yemen, Zambia, Zimbabwe.

***Ammophila dubia* KOHL (Figs 20, 58, 93, 130, 176, 217, 263, 305, 346, 387, 422, 451, 501)**

Ammophila dubia KOHL 1901: 159, ♀, ♂. **Lectotype:** ♀, Egypt (no specific locality) (NHMW), designated by DOLLFUSS 2013a: 425, examined.

M a t e r i a l e x a m i n e d : Ethiopia: (2♂♂ CAS). Kenya: (1♀, 2♂♂ OÖLM); (1♀, 5♂♂ CAS). Somalia: (2♀♀, 1♂ BMNH). Tanzania: (1♀, 2♂♂ CAS).

R e c o g n i t i o n : *Ammophila dubia* has the gastral apex with a metallic shine, terga V-VI (VII) pruinose, the pronotal collar with no transverse rugae and the mesothoracic venter not prominent anteriorly. Additionally, the episternal sulcus extends to the anteroventral margin of the mesopleuron. The head (except vertex), the thorax and the propodeum (including propodeal enclosure) are evenly covered with appressed silvery setae that partly obscure the underlying sculpture; the erect setae are silvery-white. The female of *A. dubia* differs from *A. rubripes* in having the gastral apex with a metallic shine. The male of *A. dubia* differs from all species with with a pronotal collar without transverse rugae and usually shaped genitalia in having the gaster apex with metallic shine.

D e s c r i p t i o n : Gastral apex with metallic shine, terga V-VI (VII) pruinose. Supra-antennal lamellate projection absent, pronotal collar without transverse rugae and mesothoracic venter not prominent anteriorly. Episternal sulcus extends to anteroventral margin of mesopleuron, arolia present and claws have no basal tooth. Head (except vertex), thorax and propodeum (including propodeal enclosure) evenly covered with appressed silvery setae that partly obscure underlying sculpture; erect setae silvery-white.

♀: 17-20 mm. Black, with following yellowish-brown: mandible (except apex), legs (partly darkened), petiole, tergum I and gastral segments II and III (in some specimens with dorsal black stripe); in some specimens clypeus adjacent to free margin, scape, pronotal collar and pronotal lobe also yellowish-brown. Scutum transversely punctatopunctate, scutellum longitudinally striate and punctate. Propodeal enclosure irregularly transversely rugose, covered with fine appressed silvery setae and silvery-white erect setae. Flagellomere I:II = 1.6-1.7; length of petiole = hindtarsomeres I+II to I+II+0.5 × III. Clypeus: Fig. 20, disk: Fig. 58. Pronotal lobe: Figs 93, 130.

♂: 15-17 mm. Black, with following yellowish-brown: mandible (except apex), scape (partly), tegula, petiole, tergum I, gastral segments II and III (all with black dorsal stripe) and legs (coxa, trochanter, mid- and hindfemora black dorsally). Clypeus slightly elongate and emarginate (Fig. 176), disk slightly convex (Fig. 217). Scutum punctate, in some specimens punctures confluent to transverse rugae, Scutellum coarsely punctate anteriorly and longitudinally ridged posteriorly. Gonostyle laterally: Fig. 346; penis valve laterally: Fig. 451, dorsally: Fig. 387, ventrally: Fig. 422, apically: Fig. 501. Flagellomere I:II=1.4; length of petiole = hindtarsomeres I+II+0.5 × II to I+II+0.75 × III.

G e o g r a p h i c d i s t r i b u t i o n : Chad, Egypt, Ethiopia, Iran, Israel, Kenya, Libya, Malta, Morocco, Somalia, Sudan, Tanzania, Yemen.

***Ammophila fischeri* DOLLFUSS nov.sp. (Figs 38, 73, 109, 145)**

R e c o r d s : Holotype, ♀, Zambia: 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 18.X.2008, leg. M. Halada (OÖLM).

Paratypes: Zambia: same locality (14 ♀ ♀ OÖLM, 1 ♂ CAS); 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 2.IX.2008, leg. M. Halada (14 ♀ ♀ OÖLM); 150 km S Mwinilunga, 13°11'S 24°14'E, 1100 m, 18.X.2008, leg. M. Halada (4 ♀ ♀ OÖLM); 150 km S Mwinilunga, 13°11'S 24°14'E, 1100 m, 2.XI.2008, leg. M. Halada (7 ♀ ♀ OÖLM); 60 km W Solwezi, 4.-6.I.2003, leg. J. Halada (1 ♀ OÖLM); 62 km SW Serenje, 22.XI.2005, leg. Snižek (1 ♀ OÖLM); 20 km SE Mwinilunga, 8.I.2003, leg. J. Halada (1 ♀ OÖLM); Central province, 54 road km NE Serenje, 13°05'S 30°35'E, 17.III.1998, leg. Pulawski (1 ♀ CAS); Eastern province, 31 km E Petauke, 14°18'S 31°36'E, 4.III.1998, leg. Pulawski (1 ♀ CAS); Northern province, 16 km W Mbala, 8°53'S 31°16'E, 20.III.1998, leg. Pulawski (1 ♀ CAS); Eastern province Wildlife Camp at Luangwa river, 7 km SW Mfuwe, 13°06'S 31°45'E, 7.-9.III.1998, leg. Pulawski (1 ♀ CAS); 16 mi. SE Mbala (Albercorn), 5900', 30.I.1970, leg. Irwin & Ross (1 ♀ CAS); 5 mi. S Senga Hill, 5700', 1.II.1970, leg. Irwin & Ross (1 ♀ CAS). Kenya: 26 mi SW of Nairobi, 5300', 11.I.1970 leg. Irwin & Ross (1 ♀ CAS). Mozambique: 65 km S Vlóngné, 15°13'S 34°19'E, 1250 m, 8.XII.2005, leg. J. Halada (5 ♀ ♀ OÖLM). South Africa: Kwaza Zulu Natal-NE, 20 km S Emanguzi, 3.XII.2002, leg. Ma. Halada (1 ♀ OÖLM); Capland, Krebs (1 ♀ ZMB); Transvaal, Lydenburg, Wilms (1 ♀ ZMB); Mpumalanga, 20 km S Waterval-Boven, 28.XI.2003, leg. J. Halada (1 ♀ OÖLM); Mpumalanga, 30 km NE Lydenbrug NR., Ohrig, 9.-12.I.2004, leg. J. Halada (1 ♀ OÖLM). Tanzania: Mbeya prov., 70 km NW Tunduma, 08°58'S 32°25'E, 1500 m, 2.I.2007, leg. J. Halada (2 ♀ ♀ OÖLM); Matengo Hochland, WSW Songea, Ugano, 15-1700 m, 11.-20.I.1936, leg. Zerny (2 ♀ ♀ NHMW). Uganda: Prot. Western Ankole, 4500-5000ft, 10.-14.X.1911, leg. Neave (1 ♀ BMNH). Zimbabwe: Abercain 1951 (3 ♀ ♀ BMNH). Democratic Republic Congo: 10 mi. S Kapona, 1570m, 13.I.1958, leg. Ross & Leech (1 ♀ CAS); Nasoni, 28 mi. N Kasaji, 1070 m, 31.I.1958, leg. Ross & Leech (1 ♀ CAS); Muye, Park Upemba, 1570 m, 17.I.1958, leg. Ross & Leech (1 ♀ CAS); 5 mi. S Fizi, 1320 m, 10.I.1958, leg. Ross & Leech (1 ♀ CAS); 34 mi. N Pweto, 1050 m, 14.I.1958, leg. Ross & Leech (1 ♀ CAS); 54 mi. W Kinda, 2.II.1958, leg. Ross & Leech (1 ♀ CAS). Ruanda: Gabiro Kagera Park, 1325 m, 8.XII.1957, leg. Ross & Leech (2 ♀ ♀ CAS).

N a m e d e r i v a t i o n : In honor of Univ-Doz. Mag. Dr. Max Fischer curator emer. of the Hymenoptera collection in the Museum of Natural History of Vienna, Austria.

Recognition: The female of *Ammophila fischeri* has the gaster apex black, without a metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not prominent anteriorly and the arolia are present. The mesopleuron along the mesopleural suture is covered with dense appressed silvery setae, the metapleuron has none. The female of *A. curvistriata* is similar to *A. fischeri* but differs in having the vertex and the pronotal collar nearly impunctate, the pronotal collar in most specimens black and the scutum distinctly transversely striate and punctate. The female of *A. zetteli* is similar to *A. fischeri* but differs in having a black pronotal collar distinctly punctate (punctures 0-2 diameters apart) (*A. fischeri* has a reddish-brown pronotal collar only slightly punctate). The female of *A. rubripes* differs from *A. fischeri* in having the mesopleuron, the metapleuron and the propodeum laterally evenly covered with appressed silvery setae.

Description: Gaster apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not prominent anteriorly, arolia present and claws have no basal tooth.

♀: 19-26 mm. Black, with following reddish-brown: mandible (except apex), ventral third of clypeus, scape, pronotal collar, tegula, subalar area, fore- and midlegs, petiole ventrally, tergum I laterally, gastral segment II (black stripe dorsally) and segment III basally. Some specimens with reddish-brown spot on scutellum. Wings hyaline to brownish. Clypeus, frons, gena, pronotal lobe, mesopleuron along mesopleural suture (metapleuron not), propodeum laterally and hindcoxa dorsally covered with appressed silvery setae; remaining body parts more or less pruinose. Erect setae whitish. Clypeus slightly elongate (Fig. 38), disk convex (Fig. 73). Frons punctate (punctures 1 diameter apart), Vertex sparsely, finely punctate (punctures 1-2 diameters apart). Pronotal collar indistinctly, sparsely punctate (punctures 1-2 diameters apart). Scutum coarsely punctate between short transverse rugae. Scutellum longitudinally ridged and punctate. Mesopleuron, metapleuron and propodeum laterally coarsely, densely punctate. Propodeal enclosure reticulate. Pronotal collar: Figs 109, 145. Flagellomere I:II=1.4-1.8; length of petiole = hindtarsomere I+II.

♂ unknown. **Note:** Maybe the female of *A. fischeri* ♀ and the male of *A. zambiensis* ♂ are conspecific.

Geographic distribution: Mozambique, Democratic Republic Kongo, Ruanda, South Africa, Tanzania, Uganda, Zambia.

***Ammophila gracillima* TASCHENBERG (Figs 16, 52, 88, 126, 162, 249, 291, 383, 372, 411, 446, 485)**

Ammophila gracillima TASCHENBERG 1869: 433, ♀. **Lectotype:** ♀, Sudan: Khartum (Halle), designated by MENKE in BOHART & MENKE 1976: 152, examined.

Ammophila longicollis KOHL 1884: 379, ♀. **Lectotype:** ♀, Russia: Sarepta, now Krasnoarmeysk near Volgograd (NHMW), designated by Dollfuss 2013a: 433, examined. Synonymized with *Ammophila gracillima* by ROTH 1928: 188.

Ammophila debilis F. MORAWITZ 1889: 125, ♀. **Holotype or syntypes:** ♀, Mongolia: Tsagan Buryuk on Edsin-gol river (ZIN). Synonymized with *Ammophila gracillima* by KOHL 1906: 324, not examined.

Ammophila philomela NURSE 1903: 519, ♀. **Syntype:** ♀, India: Gujarat: Deesa (BMNH), examined. Synonymized with *Ammophila gracillima* by DOLLFUSS 2013a: 433.

Note: In some specimens of *A. gracillima* crossvein 1 r-m is lost, resulting in two submarginal cells.

Material examined: 77 ♀♀, 165 ♂♂ (OÖLM); 9 ♀♀, 8 ♂♂, + 2 ♀♀ Sudan Kartun (NHMW); 1 ♀, 1 ♂ (BMNH); 20 ♀♀, 16 ♂♂ (coll. Schmid-Egger).

Recognition: *Ammophila gracillima* is black and variably red, the gastral apex without a metallic shine and the pronotal collar in most specimens is transversely rugose. The episternal sulcus ends at the level of the scrobe. The mesothoracic venter is produced and concave anteriorly for the reception of the forecoxa, the depression is margined by a carina that forms one projection on each side. The head, the thorax and the propodeum (including propodeal enclosure) are covered with dense appressed silvery setae. *A. gracillima* differs from all Sub-Saharan species in having the mesothoracic venter produced anteriorly and in most specimens the anterior carina forms one projection on each side.

Description: Gastral apex without metallic shine, head, thorax, legs, propodeum and gaster variably red. Supra-antennal lamellate projection absent, episternal sulcus ends at level of scrobe, claws have no basal tooth. Mesothoracic venter produced and concave anteriorly for reception of forecoxa, depression margined by carina that forms one projection on each side. Head, thorax and propodeum covered with dense appressed silvery setae; erect setae silvery-white, unusually long on gena, prothorax and female forelegs; wings hyaline.

♀: 16-19 mm. Clypeus not elongate, free margin nearly straight (Fig. 16), disk nearly flat (Fig. 52). Pronotal collar distinctly elongate and covered by coarse transverse rugae (Figs. 88, 126), in some specimens rugae reduced or lacking. Scutum transversely rugose and with deep admedian line. Scutellum and metanotum longitudinally ridged and in most specimens with longitudinal furrow medially. Propodeal enclosure irregularly longitudinally ridged and covered with appressed silvery setae. Arolia small but present, spines of foretarsal rake slender. Flagellomere I:II = 1.9-2.1; length of petiole = hindtarsomeres I + II to I + II + 0.3 × III.

♂: 13-18 mm. Clypeus elongate (Fig. 162), disk slightly concave on ventral half and slightly convex on dorsal half. Pronotal collar as long as medially broad, coarsely transversely ridged (ridges reduced in some specimens), nearly rectangular anteriorly (Figs. 291, 249). Scutum transversely ridged with distinct admedian line, arolia present. Gonostyle evenly narrowing apically: Fig. 333; penis valve laterally: Fig. 446, ventrally: Fig. 411, dorsally: Fig. 372, apically: Fig. 485. Flagellomere I:II = (1.3)1.8-2.2; length of petiole = hindtarsomeres I+II to I+II + 0.5 × III.

Geographic distribution: North Africa, Sudan, Ethiopia, Arabia, Syria, Israel, India, Central Asia, China.

***Ammophila insignis* F. SMITH (Figs 23, 60, 95, 131, 179, 220, 267, 308, 348, 393, 424, 462, 504)**

Ammophila insignis F. SMITH 1856: 213, ♀, ♂. **Syntypes:** Gambia: no specific locality (BMNH), not examined.

Ammophila egregia MOSÁRY 1881: 327, ♀, ♂. **Syntypes:** Lebanon: Beirut (TMB), examined. Synonymized with *A. insignis* by DOLLFUSS 2013a: 451.

Ammophila transvaalensis CAMERON 1910b: 134, ♂. **Holotype or syntypes:** ♂, South Africa: Transvaal: no specific locality (TMP). Synonymized with *Sphex egregia* race *transvaalensis* by ARNOLD 1928: 270.

Sphex egregia race *litoralis* ARNOLD 1920: 45, ♀, ♂. Syntypes: ♀, South Africa: Cape province: Algoa Bay; ♂, South Africa: Cape Province: Willowmore (SAM), photographs examined, **new synonym**.

Ammophila insignis race *litoralis* var. *nigricollis* ARNOLD 1960: 83. Syntype: ♂, South Africa: Natal: Drakensberg Mts.: Little Berg Summits (SAM), photograph examined. Synonymized with *Ammophila insignis litoralis* by BOHART & MENKE 1976: 152.

Sphex egregia race *promontorii* ARNOLD 1920: 43, ♀, ♂ (authorship attributed to Kohl) Syntypes: Zimbabwe and South Africa: no specific localities (SAM). Synonymized with *Sphex egregia transvaalensis* by ARNOLD 1928: 270.

Material examined: 35 ♀♀, 67 ♂♂ (OÖLM); 5 ♀♀, 3 ♂♂ (MHNG); 40 ♀♀, 9 ♂♂ (ZMB); 10 ♀♀, 4 ♂♂ (NHMW); 1 ♀, 1 ♂ (BMNH); 21 ♀♀, 13 ♂♂ (CAS); 4 ♀♀, 1 ♂ (coll. Jacobs); 1 ♀ (coll. Schmid-Egger).

Recognition *Ammophila insignis* is a large species (♀: 26-33 mm, ♂: 21-30 mm) and has the gastral apex black, without a metallic shine. The reddish-brown colour is extremely variable. The pronotal collar has no transverse rugae, the episternal sulcus extends to the anteroventral margin of the mesopleuron and the mesothoracic venter is not prominent anteriorly. The arolia are present and the wings distinctly yellowish, in most subsaharan specimens dark-brown with a slight violet shine. The erect setae are brownish on the head and the forelegs, greyish on the thorax and the propodeum. The female of *Ammophila insignis* differs from all species that have a pronotal collar without transverse rugae in having the clypeus distinctly elongate and a median lobe subrectangular on each side (Fig. 23), additionally, in most specimens by the bodylength (26-33 mm). The male of *A. beniniensis* differs from *A. insignis* in having the pronotal collar coarsely transversely ridged and the gonostyle is gradually narrowed and slightly incurved towards apex which is subacute (Fig. 334) (*A. insignis* has the pronotal collar without transverse rugae and the gonostyle is abruptly narrowed at the apical third (Fig. 348). The male of *A. caprella* is similar to *A. insignis* but differs in having erect setae on head and thorax nearly as long as the scape, the mesopleuron along mesopleural suture covered with appressed silvery setae and the penis valve in lateral view is differently shaped (Fig. 465).

Description: Gastral apex black, without metallic shine. Reddish-brown colour extremely variable. Pronotal collar without transverse rugae, episternal sulcus extends to anteroventral margin of mesopleuron and mesothoracic venter not prominent anteriorly. Arolia present, claws have no basal tooth and wings dark-brown with slight violet shine. Brownish erect setae on head and foreleg, greyish on thorax and propodeum.

♀: 26-35 mm. Black, with following variably reddish-brown: mandible (except apex), scape, pedicel, flagellomere I-IV, pronotal collar, pronotal lobe, foreleg, midleg (except coxa and femur dorsally), hindtarsus, in some specimens also tergum I and II. Wings yellowish-brown to dark-brown, in some specimens with slight violet shine. Clypeus (partly), frons (finely), pronotal lobe and propodeum posterolaterally covered with appressed silvery setae; remaining body parts more or less pruinose. Clypeus distinctly elongate, median lobe subrectangular on each side (Fig. 23), disk distinctly convex (Fig. 60). Vertex dull, impunctate. Pronotal collar sparsely, finely punctate (Figs 95, 131). Scutum transversely striate and punctate between striae. Scutellum longitudinally striate and punctate. Propodeal enclosure reticulate, all covered with erect setae. Mesopleuron transversely punctato-rugose, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomeres I+II to I+II+ 0.2 × III.

♂: 21-30 mm. Black, with following variably reddish-brown: mandible (except apex),

scape and flagellum (partly), in most specimens pronotal collar, pronotal lobe, fore- and midlegs (more or less). Gaster in most specimens black. Clypeus, frons, pronotal lobe covered with appressed silvery-golden setae, remaining body parts more or less pruinose. Clypeus distinctly elongate, median lobe truncate and subrectangular on each side (Fig. 179), disk slightly convex (Fig. 220). Pronotal collar dorsally: Fig. 308, laterally: Fig. 267. Gonostyle abruptly narrowed at apical third (Fig. 348). Penis valve laterally: Fig. 462, ventrally: Fig. 424, dorsally: Fig. 393, apically: Fig. 504. Flagellomere I:II=1.5; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+ 0.66 × III.

V a r i a t i o n : Specimens from Senegal have the scutum reddish-brown anterolaterally and a small stripe of appressed silvery setae along the mesopleural suture.

G e o g r a p h i c d i s t r i b u t i o n : North Africa, Near East, Sub-Saharan Region.

***Ammophila kalaharica* (ARNOLD) (Figs 33, 69, 105, 141, 190, 231, 277, 319, 361, 400, 474, 515)**

Sphex kalaharica ARNOLD 1935: 502, ♀, ♂. **Syntypes:** Namibia: Damara Pan (TMP), photograph examined.

M a t e r i a l e x a m i n e d : Botswana: Ghanzi (1♀ BMNH); Serowe (1♀ CAS); Kuke Pan (1♀ BMNH), Kalkfontein (1♀ BMNH). Namibia: Karibib (2♀ ♀, 1♂ OÖLM); Karibib (1♂ CAS); Kalahari (3♀ ♀, 1♂ coll. Zettel); Kalahari (2♀ ♀ ZMB). South Africa: Kalahari (4♀ ♀, 20♂ ♂ OÖLM); Kalahari (2♀ ♀ CAS); West Cape (1♀ OÖLM); Cape Province (1♂ CAS); Eastern Cape (1♂ CAS).

R e c o g n i t i o n : *Ammophila kalaharica* has a gastral apex black, without metallic shine. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the supra-antennal lamellate projection is absent and the mesothoracic venter is not prominent anteriorly. The arolia are present and the claws have no basal tooth. The female of *A. rubripes* differs from *A. kalaharica* in having the scutum transversely striate or puncto-rugose and the pronotal collar not elongate (Fig. 152) (*A. kalaharica* has a clearly punctate scutum and a slightly elongate pronotal collar, Fig. 141). The female of *A. barbarorum* differs from *A. kalaharica* in having the scutum transversely striate and coarsely punctate, the pronotal collar not elongate (Fig. 138) and the sterna V-VI pruinose (*A. kalaharica* has the scutum clearly punctate and the gastral apex not pruinose). The female of *A. punctaticeps* differs from *A. kalaharica* in having the pronotal collar distinctly punctate and not elongate (Fig. 147) and the scutum with transversely confluent punctures. The female of *A. curvistriata* differs from *A. kalaharica* in having the scutum transversely striate and coarsely punctate and the metanotum without appressed silvery setae (*A. kalaharica* has the thorax evenly covered with fine appressed silvery setae). The female of *A. dolichodera* differs from *A. kalaharica* in having the scutum coarsely transversely rugose (Fig. 139), the clypeus not elongate (Fig. 31) and the pronotal collar more distinctly elongate (Fig. 139). The female of *A. pseudo-kalaharica* is similar to *A. kalaharica* but differs in having the pronotal collar, the mesopleuron and the propodeum laterally with reddish-brown spots. The male of *A. dolichodera* differs from *A. kalaharica* in having the scutum coarsely transversely rugose (Fig. 306), a more elongate pronotal collar (Fig. 364), a differently shaped gonostyle (Fig. 347) and a medioventral tooth on the forecoxa. The male of *A. curvistriata* differs from *A. kalaharica* in having the scutum transversely punctato-rugose and the metapleuron without appressed silvery setae. The male of *A. kalaharica* differs from *A. rubripes* in having the scutum clearly punctate, punctures never confluent, and the apical

lamina of the gonostyle more thickened in lateral view (Fig. 361). The male of *A. punctaticeps* differs from *A. kalaharica* in having characteristically shaped penis valve in apical view (Fig. 511) and the scutum densely, coarsely punctate, punctures transversely confluent. The male of *A. pseudokalaharica* is similar to *A. kalaharica* but differs in having the mesopleuron partly reddish-brown and the penis valve unusually shaped in apical view (Fig. 516) and dorsal view (Fig. 401).

Description: Gaster apex black, without metallic shine. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not prominent anteriorly. Arolia present, claws have no basal tooth. Clypeus and frons covered with appressed silvery setae; remaining body parts covered with more or less sparse appressed silvery setae. Erect setae silvery-white.

♀: 16.5-20.5 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midlegs (except coxa), petiole basally, tergum I laterally, gastral segments II and III (III apically half black); hindleg black, hindtibia dorsally brownish. Frons distinctly punctate, vertex impunctate to sparsely, finely punctate. Clypeus slightly elongate (Fig. 33), disk convex (Fig. 69). Pronotal collar shiny, sparsely, finely punctate and slightly elongate (Figs 105, 141). Scutum shiny, distinctly punctate (punctures 0-2 diameters apart), punctures never confluent. Scutellum shiny, punctate and more or less longitudinally striate. Propodeal enclosure coarsely punctato-rugose, smooth or finely transversely striate laterally, nearly all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally coarsely, clearly punctate. Flagellomere I:II = 1.4-1.6; length of petiole = hindtarsomeres I+II+ 0.25 × III to I+II+ 0.5 × III.

♂: 16-21 mm. Black, with following reddish-brown: mandible (partly darkened), tegula, fore- and midlegs (except coxa), petiole basally, tergum I laterally, gastral segment II and III (III apically black). Clypeus slightly elongate (Fig. 190), disk convex (Fig. 231). Frons densely punctate, vertex sparsely punctate. Pronotal collar slightly elongate, shiny, finely and sparsely punctate (Figs 277, 319). Scutum shiny, coarsely punctate (punctures 0-2 diameters apart); scutellum coarsely punctate anteriorly, with short longitudinal rugae posteriorly. Metanotum coarsely punctate. Propodeal enclosure transversely punctato-rugose, all covered with sparse appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctate. Flagellomere I:II = 1.3-1.5; length of petiole = hindtarsomeres I+II+0.5 × III to I+II+III. Apical lamina of gonostyle thickened in lateral view (Fig. 361); penis valve laterally: Fig. 474, dorsally: Fig. 400, ventrally: Fig. 434, apically: Fig. 515.

Geographic distribution: Botswana, Namibia, South Africa.

***Ammophila kenyensis* DOLLFUSS nov.sp. (Figs 169, 210, 256, 298, 339, 380, 454, 494, 534)**

Records: Holotype: ♂, Kenya: W Mwingi, 14.V.2007, leg. M. Halada (OÖLM).

Name derivation: The holotype was collected in Kenya.

Recognition: *Ammophila kenyensis* has the gastral apex black, without a metallic shine but pruinose. The episternal sulcus extends nearly to the anteroventral margin of the mesopleuron, the mesopleural venter is not produced anteriorly, the arolia are present and the claws have no basal tooth. The clypeus of the male is distinctly elongate (Fig. 169), the hypostomal carina has a long erect tooth near the mandibular socket (Fig. 534) and the genitalia are unusually shaped (Figs 339, 380, 454, 494).

The male of *A. kenyensis* differs from *A. barbarorum* in having the clypeus free margin not emarginate (Fig. 169), a distinctly longer tooth on the hypostomal carina near mandibular socket (Fig. 534) and differently shaped genitalia (*A. barbarorum* has the clypeal free margin distinctly emarginate (Fig. 168) and only a blunt tooth on the hypostomal carina, Fig. 533). The male of *A. dolichocephala* differs from *A. kenyensis* in having the clypeus with a distinct longitudinal carina (Fig. 167), no tooth on the hypostomal carina and differently shaped genitalia. The males of *A. conifera* and *A. arnoldi* differ from *A. kenyensis* in having differently shaped genitalia and no tooth on the hypostomal carina near the mandibular socket.

Description: Gaster apex black, without metallic shine but pruinose. Episternal sulcus extends nearly to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesopleural venter not produced anteriorly, arolia present and claws have no basal tooth.

♂: 20.5 mm. Black, with following reddish-brown: mandible (except apex), pronotal collar, tegula, fore- and midlegs, hindleg (dorsally black), petiole ventrally, tergum I laterally, gastral segment II (black stripe dorsally) and sterna III-VIII. Wings hyaline. Clypeus, frons and pronotal lobe covered with dense appressed silvery setae; gena, thorax and propodeum more or less covered with short appressed silvery setae; legs and gaster more or less pruinose. Erect setae whitish. Clypeus distinctly elongate, narrowed anteriorly (Fig. 169), clypeal disk slightly concave on ventral half, slightly convex on dorsal half (Fig. 210). Hypostomal carina with long erect tooth near mandibular socket (Fig. 534). Vertex dull, nearly impunctate. Pronotal collar shiny, finely and sparsely punctate (Figs 256, 298). Scutum transversely punctato-rugose, admedian line slightly developed. Scutellum longitudinally ridged. Propodeal enclosure irregularly rugose, all covered with fine appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.6; length of petiole = hindtarsomeres I+II+ 0.5 × III. Sternum VIII emarginate apically. Gonostyle laterally: Fig. 339; penis valve laterally: Fig. 454, dorsally: Fig. 380, apically: Fig. 494.

♀ unknown.

Geographic distribution: Kenya.

***Ammophila kohli* DOLLFUSS nov.sp. (Figs 27, 64, 99, 136, 177, 219, 265, 307, 351, 394, 464, 503, 524)**

Records: Holotype: ♂, Namibia: Outjo District: Ugab River, 11 km SE Outjo, 3.III.1990, leg. Pulawski (CAS). Paratypes: Namibia: Outjo District: 25 km S Kamanjab, 5.III.1990, leg. Pulawski (1♀, CAS); Kuene province, 50 km NEE Khorixas, 20°15'S 15°24'E, 1130 m, 25.III.2014, leg. J. Halada (6♀, 2♂ OÖLM); Erongo province, 20 km NW Uis, 21°04'S, 14°41'E, 530 m, 24.III.2014, leg. J. Halada (1♀ OÖLM); Erongo province, 20 km W Omaru, 21°21'S 15°40'E, 1130 m, 22.III.2014, leg. J. Halada (1♀ OÖLM).

Name derivation: In remembrance of the outstanding specialist of Sphecidae Dr. Franz F. Kohl, Vienna, Austria.

Recognition: *Ammophila kohli* is characterized by a gastral apex black, without metallic shine and the pronotal collar elevate dorsomedially with a short longitudinal furrow (Figs 136, 307). Additionally, the episternal sulcus ends at level of the scrobe, the mesothorax venter is not prominent anteriorly and the arolia are present. The female of *A. kohli* is similar to *A. dolichocephala* but differs in having an episternal

sulcus ending at the level of the scrobe, the pronotal collar is distinctly elevate dorsomedially and with a longitudinal furrow (Figs 136, 524) (*A. dolichocephala* has an episternal sulcus extending to the anteroventral margin of the mesopleuron and the pronotal collar has no distinct longitudinal furrow dorsomedially). The male of *A. kohli* differs from *A. zetteli* in having the pronotal collar elevate dorsomedially and with a small longitudinal furrow (Fig. 307) and in the shape of the gonostyle (Fig. 351) (*A. zetteli* has a pronotum not elevate dorsomedially and a differently shaped gonostyle). The male of *A. insignis* differs from *A. kohli* in having the pronotal collar not elevate dorsomedially, the penis valve with spines ventrally (Fig. 462) and a differently shaped gonostyle (Fig. 348).

Description: Gastral apex black, without metallic shine, pronotal collar elevate dorsomedially with small longitudinal furrow (Figs 136, 307), episternal sulcus ends at level of scrobe, supra-antennal lamellate projection absent, mesothoracic venter not prominent anteriorly, arolia present and claws have no basal tooth.

♀: 20 mm. Black, with following reddish-brown: mandible (except apex), free margin of clypeus, pronotal collar, pronotal lobe, tegula, foreleg, midleg (except coxa, trochanter and femur dorsally), hindtibia, petiole basally, tergum I (except basally) and gastral segments II and III. Wings hyaline, slightly yellowish-brown. Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with dens appressed silvery setae. Mesopleuron, metapleuron and propodeum laterally covered with fine, short appressed setae. Erect setae whitish. Clypeus slightly elongate, rounded, without tooth laterally (Fig. 27), disk flat on anterior half, convex on posterior half (Fig. 64). Frons and vertex dull, nearly impunctate. Pronotal collar dull, impunctate, dorsomedially elevate with small longitudinal furrow, slightly concave laterally (Figs 99, 136, 524). Scutum dull, sparsely finely punctate (punctures 2-4 diameters apart), on posterior half slightly transversely striate laterally. Scutellum punctate on anterior half, longitudinally striate on posterior half. Metanotum slightly elevate, punctate. Propodeal enclosure transversely striate. Mesopleuron and metapleuron punctate (punctures 2-5 diameters apart); propodeum obliquely punctato-rugose laterally. Flagellomere I:II=1.8; length of petiole = hindtarsomeres I+0.5 × II.

♂: 19 mm. Black, with following reddish-brown: mandible (except apex), scape, pronotal collar, pronotal lobe, tegula, foreleg, midleg (except trochanter and femur dorsally), hindleg partly, petiole basally, tergum I laterally, gastral segments II and III, terga IV and V partly. Wing hyaline, slightly yellowish-brown. Clypeus, frons, gena, pronotal lobe, mesopleuron, metapleuron and propodeum laterally covered with appressed silvery aetae, remaining body parts pruinose. Erect setae whitish. Clypeus broadly elongate, free margin straight (Fig. 177), anterior half of clypeus disk slightly concave with semicircular carina (Fig. 219). Vertex sparsely punctate. Pronotal collar dull, elevate dorsomedially with small longitudinal furrow, slightly concave laterally. Scutum dull, finely sparsely punctate (punctures 2-4 diameters apart), pruinose. Scutellum punctate anteriorly, longitudinally striate posteriorly. Propodeal enclosure irregularly sculptured medially, transversely striate laterally. Mesopleuron and metapleuron punctate, propodeum punctato-rugose laterally. Gonostyle with long setae dorsally and ventrally (Fig. 351); penis valve without spine, laterally: Fig. 464, dorsally: Fig. 394, apically: Fig. 503. Flagellomere I:II=1.6; length of petiole = hindtarsomeres I+II.

Geographic distribution: Namibia.

***Ammophila longiclypeata* DOLLFUSS nov.sp. (Figs 171, 212, 258, 300, 340, 382, 416, 463, 496)**

Records: Holotype: ♂, Namibia: Karibib District: 55 km SW Usakos, I.II.1990, leg. W.J. Pulawski (CAS).

Name derivation: : The clypeus of the male is distinctly elongate.

Recognition: The male of *Ammophila longiclypeata* has a clypeus distinctly elongate (Fig. 171), with a disk concave on anterior half and convex on posterior half (Fig. 212) and the penis valve is unusually shaped (Figs 382, 416, 463, 496). The male of *A. conifera* differs from *A. longiclypeata* in having a differently shaped gonostyle (Fig. 344) and penis valve (Figs 381, 415, 459, 495). The male of *A. turneri* and *A. arnoldi* are similar to *A. longiclypeata* but differ in having characteristically shaped penis valves. The male of *A. kenyensis* differs from *A. longiclypeata* in having the hypostomal carina with a distinct tooth near the mandibular socket (Fig. 534) and a differently shaped penis valve.

Description: Gastral apex black, without metallic shine but distinctly pruinose, episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth.

♂: 18 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midleg, hindfemur apically, hindtibia, tergum I laterally, gastral segments II and III (partly darkened dorsally) and sterna IV-VI (partly darkened). Head (except vertex), thorax and propodeum covered with appressed silvery setae that more or less obscure underlying sculpture; remaining body parts pruinose. Wings hyaline, erect setae whitish. Clypeus distinctly elongate (Fig. 171), clypeal disk concave on anterior half, convex on posterior half (Fig. 212). Vertex impunctate. Pronotal collar nearly impunctate, slightly elevate dorsomedially (Figs 258, 300). Scutum finely, transversely striate and punctate; scutellum coarsely punctate, metanotum punctate. Propodeal enclosure transversely striate, all covered with dense appressed silvery setae and erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.5; length of petiole = hindtarsomeres I+II. Gonostyle Fig. 340; penis valve laterally: Fig. 463, ventrally: Fig. 416, dorsally: Fig. 382, apically: Fig. 496.

♀: unknown.

Geographic distribution: Namibia.

***Ammophila malickyi* DOLLFUSS nov.sp. (Figs 185, 226, 272, 314, 355, 396, 429, 469, 510)**

Records: Holotype: ♂, Zimbabwe: 20 km W Gwanda, 6.VII.1998, leg. Ma. Halada (OÖLM).

Paratypes: Angola: 5 min E Arriaba, 21.VI.1958 (2♂♂ CAS). Ethiopia: Sidamo province, near Bitata, 1480 m, 27.IV.2007, leg. J. Halada. Kenya: Elementeita lake, 00°28'S 36°16'E, 15.IV.2006, leg. Jendek (2♂♂ CAS); Voi (Tsavo), 23.III-4.IV.1997, leg. Ma. Halada (1♂ OÖLM). Namibia: Tsumeb District: 30 km NE Grootfontein, 19.II.1990, leg. Pulawski (1♂ CAS). South Africa: Kwaz. Natal pr., 25 km S Pongola, 510 m, 27°34'S 31°35'E, 25.I.2010, leg. J. Halada (3♂♂ OÖLM); NC Lompopo Modimole, 30.XII.2008, leg. Snižek (1♂ OÖLM); Northern Transvaal, N Nylstrom, 24°40'S 28°30'E, 1200 m, 14.I.2008, leg. M. Halada (3♂♂ OÖLM); Kruger N.P., Sabie River-bank, Skukuza, 24.III.1998, leg. Geuerani & Acaramozzine (3♂♂ CAS); Kruger N.P., N'Watinwambu, River-bank Skukuza, 25.III.1998, leg. Geuerani & Scaramozzine (1♂ CAS); Natal

Province: Mkuzi, Game Park, 13.XII.1970, leg. Daly (1 ♂ CAS). Zambia: Zambia river 20 km NW Sesheka, 17°17'S 24°09'E, 8.XI.2006, leg. Kubik (1 ♂ OÖLM); 6-18 km SW Mfuwe, 13°07'S 31°45'E, 20.-22.III.1995, leg. Pulawski (1 ♂ CAS). Zimbabwe: 25 km NE Samva Nyagui r. (Bindura), 15.VII.1998, leg. M. Halada (8 ♂ OÖLM); 30 km SE Kariba end Nyadara river, 19.XII.1998, leg. M. Halada (2 ♂ OÖLM); 50 km S Bulawayo Matobe, 3.-5.XII.1998, leg. J. Halada (1 ♂ OÖLM); Matobo N.P. S Bulawayo, 3.-5.XII.1998, leg. Kudrna (1 ♂ OÖLM); Khami Ruins Bulawayo, 29.I.1998, leg. Ma. Halada (1 ♂ OÖLM).

Name derivation: In honor of Univ.-Prof. Dr. Hans Malicky, Lunz, Austria.

Recognition: The male of *Ammophila malickyi* has the gaster apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesopleural venter is not produced anteriorly and the claws have no basal tooth. The male of *A. punctaticeps* differs from *A. malickyi* in having the vertex and the pronotal collar distinctly punctate, punctures nearly as large as on scutum. The male of *A. rubripes* differs from *A. malickyi* in having the mesopleuron, the metapleuron and the propodeum laterally evenly covered with appressed silvery setae and the penis valve apicoventrally with spines (Fig. 480) (*A. malickyi* has the mesopleuron along mesopleural suture with dense appressed silvery setae, the metapleuron at most with sparse ones and the penis valve has no spines apicoventrally, Fig. 429).

Description: Gaster apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not prominent anteriorly, supra-antennal lamellate projection absent, arolia present and claws have no basal tooth.

♂: 19-21 mm. Black, with following reddish-brown: mandible (except apex), pronotal collar, tegula, subalar area, foreleg, midleg (except trochanter and tibia partly), hind-femur apically, hindtibia, petiole ventrally, tergum I laterally, tergum II laterally and sternum II. Clypeus, frons, gena, pronotal lobe, mesopleuron along mesopleural suture and propodeum posterolaterally covered with dense appressed silvery setae; metapleuron without appressed setae or with sparse ones. Remaining parts of thorax and propodeum covered with fine appressed silvery setae that not cover underlying sculpture. Erect setae whitish. Leg pruinose. Clypeus slightly elongate (Fig. 185), disk convex (Fig. 226). Frons sparsely, shallowly punctate, vertex nearly impunctate. Pronotal collar nearly impunctate (Figs 272, 314). Scutum transversely striate and punctate. Scutellum longitudinally punctato-rugose. Propodeal enclosure coarsely, transversely punctato-rugose, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.3-1.5; length of petiole = hindtarsomeres I+II+ 0.3 × III to I+II+III. Gonostyle laterally: Fig. 355; penisvalve without apicoventral spines: laterally: Fig. 469, dorsally: Fig. 396, ventrally: Fig. 429, apically: Fig. 510.

♀ unknown.

Geographic distribution: Angola, Ethiopia, Kenya, Namibia, South Africa, Zambia, Zimbabwe.

***Ammophila namibiensis* DOLLFUSS nov.sp. (Figs 14, 50, 86, 122, 157, 199, 244, 286, 328, 369, 407, 483)**

Records: Holotype: ♂, Namibia: Karibib District: 17 km W Usakos, 21.II.1990, leg. Pulawski (CAS). Paratypes: same locality (1 ♀, 4 ♂ CAS). Namibia: Karibib District: 15 km W Karibib, 28.II.1990, leg. Pulawski (5 ♀ CAS, 1 ♀ OÖLM); Karibib District: 65 km SW Usakos, 24.II.1990, leg. Pulawski (1 ♂ CAS).

Name derivation: The species is named after Namibia, where the holotype was collected.

Recognition: *Ammophila namibiensis* has the forewing with two submarginal cells and the gastral apex is black, with a slight metallic shine. Additionally, the supra-antennal lamellate projection is absent, the episternal sulcus extends to the anteroventral margin of the mesopleuron and the pronotal collar is elongate, dull and finely transversely striate. The scutum is dull, irregularly, finely, transversely striate and the admedian line is distinctly impressed. The mesothoracic venter is not produced anteriorly and the arolia are present. The female of *A. namibiensis* shares with *A. saussurei* and *A. crassifemoralis* the forewing with two submarginal cells, but differs in having the pronotal collar and the scutum finely, transversely striate (Figs 86, 122) and the episternal sulcus extends to the anteroventral margin of the mesopleuron (*A. saussurei* and *A. crassifemoralis* have the pronotal collar and the scutum more coarsely, transversely ridged (Figs 120, 121) and the episternal sulcus ends at the level of scrobe). The female of *A. namibiensis* is similar to *A. braunsi* but differs in having the forewing with two submarginal cells and the propodeum reddish dorsolaterally (*A. braunsi* has three submarginal cells and a black propodeum). The male of *A. namibiensis* shares with *A. saussurei* the forewing with two submarginal cells, but differs in having the pronotal collar and the scutum finely, transversely striate, the pronotal collar nearly flat (Figs 244, 286) and usually shaped genitalia (Figs 328, 369, 407, 483) (*A. saussurei* has the pronotal collar and the scutum more coarsely, transversely ridged (Figs 243, 285), the pronotal collar nearly vertical anteriorly and unusually shaped genitalia, Figs 327, 368, 442, 482). The male of *A. namibiensis* shares with *A. crassifemoralis* the forewing with two submarginal cells, but differs in having the pronotal collar and the scutum finely, transversely striate (Fig. 286) and the pronotal collar nearly flat (Fig. 244) (*A. crassifemoralis* has the pronotal collar and the scutum coarsely, transversely ridged and the pronotal collar is vertical anteriorly, Figs 245, 287).

Description: Forewing with two submarginal cells, gastral apex black, with slight metallic shine. Supra-lamellate projection absent, episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Pronotal collar elongate, dull, finely transversely striate and scutum dull, irregularly finely transversely striate and admedian line distinctly impressed.

♀: 17.5 mm. Black, with following reddish-brown: mandible (except apex), clypeus next free margin, scape, prothorax (except propleuron), tegula, metapleuron partly, broad patch on propodeum posterolaterally, lateral stripe on propodeal enclosure, fore- and midlegs (except femora dorsally), petiole ventrally, tergum I, gastral segments II and III (tergum III black apically). Hindleg brownish. Wing hyaline. Clypeus, frons, mesopleuron and propodeum posterolaterally covered with appressed silvery setae, remaining body parts more or less pruinose. White erect setae only on head, propleuron and foreleg. Clypeus slightly produced, ventral one third smooth (Fig. 14), disk nearly flat (Fig. 50). Frons and vertex dull, impunctate. Pronotal collar elongate, dull, finely transversely striate (Figs 86, 122), scutum dull, irregularly transversely striate, admedian line distinctly impressed. Scutellum longitudinally striate; metanotum slightly elevate. Propodeal enclosure transversely striate, propodeum irregularly rugose-reticulate laterally. Sculpture of mesopleuron obscured with appressed setae, metapleuron dull. Flagellomere I:II=1.8; length of petiole = hindtarsomeres I+II+ 0.5 × III.

♂: 15-16 mm. Black, with following variably reddish-brown: mandible (except apex), prothorax except propleuron), broad patch on propodeum posterolaterally, lateral stripe on propodeal enclosure, fore- and midlegs (except coxae, trochanters and femora dorsally), petiole ventrally, tergum I, gastral segments II and III (partly darkened ventrally); hindlegs brownish. Wings hyaline. Clypeus, frons, gena, mesopleuron and propodeum posterolaterally covered with appressed silvery setae, remaining body parts more or less pruinose. White erect setae only on head and propleuron. Clypeus broadly elongate (Fig. 157), disk flat (Fig. 199). Frons vertex dull, impunctate. Pronotal collar dull, finely and densely transversely striate (Figs 244, 286), scutum dull, densely transversely striate. Scutellum dull, longitudinally striate, metanotum slightly elevate. Pronotal enclosure dull, finely transversely striate, propodeum obliquely striate laterally. Sculptur of mesopleuron obscured with appressed setae, metapleuron dull. Gonostyle not abruptly narrowing to apical end: Fig. 328; penis valve dorsally: Fig. 369, ventrally: Fig. 407, apically: Fig. 483. Flagellomere I:II=1.4-1.6; length of petiole = hindtarsomere I+II+0.5 × III.

G e o g r a p h i c d i s t r i b u t i o n : Namibia.

***Ammophila nigri* DOLLFUSS nov.sp. (Figs 239, 238, 240, 241, 536, 537, 538, 539, 540, 541, 542)**

R e c o r d s : Holotype: ♂, Niger: Dosso Region, 15 km S Dosso, 12°53.5'N 3°10.1'E, 3.IX.2005, leg. Madougou Garba & W.J. Pulawski (CAS).

N a m e d e r i v a t i o n : The holotype was collected in Niger.

R e c o g n i t i o n : The male of *Ammophila nigri* has a scutum coarsely, transversely rugose without erect setae (Fig. 240). The pronotal collar is elongate (Fig. 241) and the coxa of the foreleg has a small tooth posteroventrally, the episternal sulcus ends at the level of the scrobe, the clypeus is slightly elongate, the free margin broadly blunt (Fig. 239) and the clypeal disk is flat (Fig. 238). Additionally, the sternum VI is characterized by two small tubuli and the sterna VII and VIII are covered by dense erect setae (Figs 536, 537). The genitalia are unusually shaped: the gonostyle is broadly rounded apically: Fig. 538) and the penis valve is characteristically shaped (Figs 539 - 542). The male of *A. dolichodera* shares with *A. nigri* the scutum without erect setae and coarse transverse rugae but differs in having usually shaped genitalia (Figs 347, 388, 423, 457, 502). The male of *A. pseudodolichodera* is similar to *A. nigri* but differs in having differently shaped genitalia (Figs 341, 385, 456, 499) and a gastral apex simple.

D e s c r i p t i o n : ♂: 22 mm. Black, with following reddish brown: mandible (except apex), pronotal lobe, tegula, wingvein, petiole ventrally, terga I-III laterally, fore- and midleg (except femora dorsally), hindleg partly. Wings hyaline. Gastral apex black, with slight metallic shine but pruinose. Clypeus, frons and propodeum posterolaterally covered with dense appressed silvery setae. Pronotum lateral, mesopleuron (including mesopleural venter), metapleuron, propodeum laterally and hindcoxa dorsally covered with fine, short appressed silvery setae. Pronotal collar, scutum, scutellum, metanotum and propodeal enclosure pruinose. Head and prothorax with erect setae, scutum without. Inner tooth of mandible triangularly elevated, apically blunt. Clypeus slightly elongate and broadly blunt (Fig. 239), clypeal disk flat (Fig. 338). Vertex impunctate. Pronotal collar elongate, impunctate, with two fine transverse rugae (Fig. 240). Scutum coarsely transversely ridged with distinct median line, scutellum and metanotum longitudinally

ridged. Pronotal enclosure finely transversely striate. Mesopleuron and metapleuron sparsely punctate, propodeum laterally transversely rugose. Episternal sulcus ends at level of scrobe, mesothoracic venter not produced and arolia present. Forecoxa with short spine postero-ventrally. Sternum VI with two small tubuli, sterna VII and VIII covered with dense erect setae (Figs 536, 537). Genitalia unusually shaped: gonostyle laterally: Fig. 538; penis valve dorsally: Fig. 541, laterally: Fig. 539, ventrally: Fig. 542, apically: Fig. 540. Flagellomeres I:II=1.7; length of petiole = hindtarsomeres I+II+ 0.3 x III.

♀: unknown.

G e o g r a p h i c d i s t r i b u t i o n : Niger.

***Ammophila nigrifrons* DOLLFUSS nov.sp. (Figs 180, 223, 270, 311, 352, 390, 426, 466, 507)**

R e c o r d s : Holotype: ♂, South Africa: Western Cape: South Lamberts Bay, 28.X.1999, leg. Snižek (OÖLM).

Paratypes: Botswana: Gaborone, 6.II.1997, leg. Snižek (1♂ OÖLM); Kalahari, Gemsbok National Park, 1.5 km E Cheleka, 27.III.1990, leg. Pulawski (1♂ CAS); Moremi Wildlife Reserve, 50 km N Maum, leg. Kuhlmann (1♂ ZMB). Namibia: 25 Km SE Tsumeb, 15.I.1993, leg. J. Gusenleitner (2♂♂ OÖLM); 40 km N Karibib, 14.I.1993, leg. J. Gusenleitner (1♂ OÖLM); 50 km E Karibib, 9.II.1993, leg. J. Gusenleitner (2♂♂ OÖLM); Tsumeb District: 10 km SE Tsumeb, 8.III.1990, leg. Pulawski (1♂ CAS); Outjo District: 55 km W Outjo, 4.III.1990, leg. Pulawski (1♂ CAS); Rehoboth District: 23 km N Rehoboth, 16.III.1990, leg. Pulawski (1♂ CAS); Rehoboth District: 7 km N Rehoboth, 7.II.1990, leg. Pulawski (1♂ CAS); Windhoek District: 48 km S Windhoek, 6.II.1990, leg. Pulawski (1♂ CAS); Okahandja District: 70 km N Okahandja, 16.III.1990, leg. Pulawski (1♂ CAS); Okahandja, 1972, (1♂ BMNH); ~30 km W Okahandja, 21°55.56'N 16°31.61'E, 1500 m, 2.-5.III.1997, leg. Niehuis (2♂♂ ZMB); Otjozondjupa, 15 km NE Okahandja, 21°49'S 16°48'E, 1480 m, 13.III.2014, leg. J. Halada (5♂♂ OÖLM); Erongo province, 1-5 km E Usakos, 21°58'S 15°36'E, 900 m, 14.III.2014, leg. J. Halada (3♂♂ OÖLM); Harda province, 15 km S Rehoboth, 23°28'S 17°07'E, 1400 m, 20.III.2014, leg. J. Halada (1♂ OÖLM). South Africa: Limpopo, Thabazimbi, 21.XII.2008, leg. Snižek (2♂♂ OÖLM); Limpopo province, 40 km SSW Musina, 22°37'S 28°51'E, 650 m, 13.XII.2009, leg. J. Halada (2♂♂ OÖLM); West Cape, Klein-karoo, Grot. River, Langberg, 24.XI.2002, leg. M. Halada (1♂ OÖLM); Kwazulu-Natal province, 29 km N Greytown, 28°58'S 30°34'E, 1140 m, 18.I.2010, leg. J. Halada (1♂ OÖLM); West Cape, Riversonderend river, Greytown, 28.XI.2002, leg. Ma. Halada (5♂♂ OÖLM); West Cape, 40 km S Lamberts Bay, 30.X.1999, leg. Ma. Halada (4♂♂ OÖLM); West Cape, Ashton (Robertson), 26.X.1999, leg. Ma. Halada (3♂♂ OÖLM); C. P. Welington Rooshoek, II.1960, leg. Verhoeff (1♂ CAS); Western Cape, Dasklippas NE Porterville, 10.I.1998, leg. Ohl (2♂♂ ZMB); Western Cape, Dasklippas Sederberge, NE Porterville, 10.I.1998, leg. Schröder (2♂♂ ZMB). Zimbabwe: Bubi river, Bubi, 8.XII.1998, leg. Ma. Halada (4♂♂ OÖLM); Bubi river, Bubi, 80 km NE Beitbridge, 8.XII.1998, leg. J. Halada (3♂♂ OÖLM); Khami Ruins, Bulawayo, 28.I.1998, leg. Ma. Halada (5♂♂ OÖLM); Matobo, Bulawayo, 30 I, 1998, leg. Ma. Halada (3♂♂ OÖLM).

R e c o g n i t i o n : *Ammophila nigrifrons* has a gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The male of *A. nigrifrons* differs from *A. rubripes*, *A. kalaharica*, *A. pseudokalaharica* and *A. punctaticeps* in having a penis valve not distinctly emarginate basally in apical view (Fig. 507).

D e s c r i p t i o n : Gastral apex black, without metallic shine but pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, supta-antennal lamellate projection absent, arolia present and claws have no basal tooth.

♂: 16-19 mm. Black, with following reddish-brown: mandible (except apex), tegula, wing vein, pronotal collar dorsally (in some specimens), fore- and midlegs, hindfemur apically, hindtibia dorsally, petiole ventrally, tergum I laterally, gastral segment II (except black stripe dorsally) and segment III partly. Wings hyaline to slightly infumate. Clypeus, frons, gena, thorax and propodeum more or less covered with appressed silvery setae. Erect setae on head, thorax and propodeum silvery-white. Clypeus slightly elongate (Fig. 180), disk slightly convex (Fig. 223). Vertex impunctate, dull. Pronotal collar impunctate or sparsely punctate (Figs 270, 311). Scutum transversely striate and more or less coarsely punctate. Scutellum longitudinally striate. Propodeal enclosure irregularly, transversely striate, all covered with fine, appressed silvery setae and white erect setae. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Flagellomere I:II=1.4-1.5; length of petiole = hindtarsomeres I+II+0.25 × III to I+II+0.75 × III. Gonostyle laterally: Fig. 352; penis valve laterally: Fig. 466, dorsally: Fig. 390, ventrally: Fig. 426, apically: Fig. 507).

♀ unknown.

Note: Maybe *A. nigrifrons* is actually the male of *A. argyrocephala*. In that case the male of *A. argyrocephala* should get a new name. I can not decide that at the moment, further studies about its status should be conducted.

Geographic distribution: Botswana, Namibia, South Africa, Zimbabwe.

***Ammophila parapuncticeps* DOLLFUSS nov.sp. (Figs 36, 72, 108, 144, 195, 236, 282, 324, 366, 406, 439, 479, 521)**

Records: **Holotype**: ♂, **South Africa**: West Cape, Greytown, Riviersonderend river, 21.X.1999, leg. Ma. Halada (OÖLM). **Paratypes**: **South Africa**: West Cape, NEN Clanwilliam Doringbos, 11.X.1999, leg. M. Halada (1♀ OÖLM); West Cape, Klein Karoo, Langberg Grot. River, 15.XII.2002, leg. Ma. Halada (1♀, 1♂ OÖLM); West Cape, NEN Clanwilliam Doringbos, 11.X.1999, leg. Halada (2♀♀ OÖLM); West Cape N, 60 km S Loriesfontein Kliprand, 31.X.1999, leg. Ma. Halada (2♀♀ OÖLM); West Cape, E Clanwilliam, 10.X.1999, leg. M. Halada (2♀♀ OÖLM); West Cape, Moseel Bay, route Herbertsdale-Laaberg, 19.I.2001, leg. Snižek (1♀ OÖLM); West Cape, Nuwerus, 31.X.1999, leg. M. Halada (1♀ OÖLM); West Cape, S Lambert's Bay, 7.-9.X.1999, leg. M. Halada (1♀ OÖLM); West Cape, E Cape Town, 8.XI.1999, leg. M. Halada (1♀ OÖLM); South-West Cape, Jonkershoek, 31.III.1988, leg. H. Malicky (1♀ OÖLM); North Cape, NW Sprinbok4.XI.1999, leg. M. Halada (1♀ OÖLM); North Cape, W Calvinia, 12.XII.1999, leg. M. Halada (1♀ OÖLM).

Name derivation: *Ammophila parapuncticeps* is similar to *A. puncticeps*.

Recognition: The gaster apex is black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly, the arolia are present and the claws have no basal tooth. The female of *A. curvistriata* differs from *A. parapuncticeps* in having the vertex and the pronotal collar nearly impunctate and the mesopleuron and the propodeum laterally black. The females of *A. zetteli* and *A. puncticeps* are similar to *A. parapuncticeps* but they differ in having the mesopleuron and the propodeum laterally black. The female of *A. fischeri* differs from *A. parapuncticeps* in having the pronotal collar reddish-brown, slightly punctate and the mesopleuron and the propodeum laterally black. The females of *A. rubripes* and *A. rubiginosa* differ from *A. parapuncticeps* in having the vertex and the pronotal collar nearly impunctate. The male of *A.*

parapuncticeps is similar to *A. puncticeps* but differs in having a differently shaped penis valve in apical view (Fig. 521) (*A. puncticeps* has the penis valve basally abruptly emarginate in apical view (Fig. 511).

D e s c r i p t i o n : Gaster apex black, without metallic shine, pruinose. Supra-antennal lamellate projection absent, episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth.

♀: 19-25 mm. Black, with following variably reddish-brown: mandible (except apex), forefemur (except dorsally), foretibia and -tarsae, midleg partly, hindtibia dorsally, mesopleuron partly, propodeum lateroventrally, tergum I laterally, gastral segment II, tergum III basally and sternum III. In some specimens pronotal collar with reddish patch dorsally. Wings slightly brownish. Clypeus, frons, pronotal lobe, mesopleuron along mesopleural suture, propodeum posterolaterally and hindcoxa dorsally covered with appressed silvery setae. In some specimens metapleuron also covered with fine appressed setae. Erect setae whitish. Clypeus slightly elongate, distinctly punctate (Fig. 36), disk distinctly convex (Fig. 72). Frons densely, clearly punctate, vertex sparsely, distinctly punctate. Pronotal collar distinctly punctate (punctures 0-1 diameter apart and as large as on frons). Scutum coarsely, densely punctate and more or less transversely rugose; scutellum longitudinally rugose and metanotum coarsely punctate. Propodeal enclosure reticulate and transversely rugose. Mesopleuron transversely punctato-rugose, metapleuron and propodeum laterally punctato-rugose. Pronotal collar laterally: Fig. 108, dorsally: Fig. 144. Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomeres I+II to I+II+ 0.3 × III.

♂: 18-19 mm. Black, with following reddish-brown: mandible (except apex), foreleg and midleg (except femora dorsally), mesopleuron, propodeum ventrolaterally, tergum I laterally, gastral segment II (except dorsal black stripe), tergum III (except posterior half) and sternum III. Wings slightly dark-brown. Clypeus, frons, pronotal lobe, mesopleuron, metapleuron, propodeum posterolaterally covered with appressed silvery setae. Erect setae whitish. Clypeus slightly elongate (Fig. 195), disk ventral half flat, slightly convex on dorsal half (Fig. 236). Frons densely, coarsely punctate, vertex sparsely punctate, pronotal collar distinctly punctate (punctures 0-2 diameters apart). Scutum densely, coarsely punctate, punctures confluent transversely. Scutellum densely punctate and longitudinally confluent. Metanotum punctate. Propodeal enclosure transversely punctato-rugose. Mesopleuron densely punctate, metapleuron and propodeum laterally punctato-rugose. Pronotal collar laterally: Fig. 282, dorsally: Fig. 324. Flagellomere I:II=1.4; length of petiole = hindtarsomeres I+II+ 0.3 × III to I+II+ 0.5 × III. Gonostyle laterally: Fig. 366; penis valve laterally: Fig. 479, dorsally: Fig. 406, ventrally: Fig. 439, apically: Fig. 521.

G e o g r a p h i c d i s t r i b u t i o n : South Africa.

Ammophila peringueyi (ARNOLD) (Figs 25, 61, 97, 133)

Sphex peringueyi ARNOLD 1928: 269, ♀. **Holotype:** ♀, South Africa: Cape Province: Tradouw Pass in Swellendam District (SAM), photograph examined.

M a t e r i a l e x a m i n e d : none.

R e c o g n i t i o n : *Ammophila peringueyi* has a gaster apex black, without metallic

shine. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The pronotal collar is fairly long, it is elevate in the middle and excavated on each side of the middle, the excavating sloping forwards; viewed from above, it therefore appears bluntly trituberculate, the rounded shoulders forming the outer tubercles (ARNOLD 1928: 269). The female of *A. dolichocephala* is similar to *A. peringueyi* but differs in having the pronotal collar not distinctly trituberculate (Fig. 137) and the scutum laterally and on posterior half with lateral striae. The female of *A. turneri* is similar to *A. peringueyi* but differs in having the pronotal collar dorsomedially elevate, subconical (Fig. 135) and coarsely punctate (*A. peringueyi* has the pronotal collar with few small punctures and trituberculate).

Description: (ARNOLD 1928: 269): Gaster apex black, without metallic shine. Episternal sulcus extends to anteroventral margin of mesopleuron, mesopleuron venter not produced anteriorly, arolia present and claws have no basal tooth.

♀: 25 mm. Black with following reddish-brown: mandible (except apex), tegula, tergum I ventrally, tergum II, sterna II-IV, fore- and midlegs (except femora and coxa dorsally). Wings hyaline. Clypeus and frons covered with appressed silvery setae, remaining body parts more or less pruinose. Erect setae whitish. Frons dull, finely punctate; vertex dull with few scattered, small punctures. Pronotum slightly shiny, with few small punctures on collar. Pronotal collar elevate medially and excavated on each side, excavation sloping forwards, viewed from above appears bluntly trituberculate, rounded shoulders forming outer tubercles (Fig. 133). Scutum dull, shallowly and sparsely punctate, punctures not much larger than those on face, laterally near tegula and on posterior fourth medially with trace of feebly transverse rugae. Scutellum punctate and impressed longitudinally medially. Mesopleuron, metapleuron and propodeum laterally dull, punctatoprugose. Propodeal enclosure transversely ridged medially, obliquely ridged laterally. Clypeus Fig. 25, disk: Fig. 61.

♂ unknown.

Note: Possibly *A. peringueyi* is a variation of *A. conifera*.

Geographic distribution: South Africa.

***Ammophila pseudodolichodera* DOLLFUSS nov.sp. (Figs 46, 81, 117, 153, 174, 215, 261, 303, 341, 385, 420, 456, 499)**

Records: Holotype: ♂, Namibia: 25 Km SE Tsumeb, 15.I.1993, leg. J. Gusenleitner (OÖLM). Paratypes: Namibia: Otjiwarongo District: 3 km NE Kalkfeld, 2.III.1090, leg. Pulawski (1 ♂ CAS); Okhandja District: 70 km N Okahandja, 16.II.1990, leg. Pulawski (1 ♂ CAS). Burkina Faso: 36 km E Koudougou, 12°12.0'N 2°01.6'W, 5.VII.2004, leg. Bourbin & Pulawski (1 ♀, 1 ♀+1 ♂ in copula CAS); 38 km SSW Dédougou, 12°10.5'N 3°36.5'W, 14.VII.2004, leg. Bourbin & Pulawski (1 ♀ CAS). Kenya: Coast province, Taita Discovery Centre, 3°42.3'S 38°46.6'E, 6.V.2000, leg. Lee & Pulawski (1 ♀ CAS); Coast province, 2 km S Voi, 3°24.7'S 38°32.3'E, 16. XII.2002, leg. Prentice. Zambia: Hasun 1872 (1 ♀ as *A. eurystoma* KOHL = nomen nudum, NHMW).

Name derivation: The male is similar to *Ammophila dolichodera*.

Recognition: The gastral apex is black, with slight metallic shine and pruinose. The episternal sulcus ends at the level of the scrobe and the mesothoracic venter is concave anteriorly for the reception of the forecoxa. The female of *Ammophila pseudodolichodera* is similar to *A. dolichodera* but differs in having the pronotal collar not so elongate, anteriorly not distinctly oblique in lateral view (Figs 117, 153) and the

mesopleuron is black (*A. dolichodera* has the pronotal collar distinctly elongate and anteriorly more oblique in lateral view (Figs 103, 139), additionally, the mesopleuron is more or less reddish-brown). The male of *A. pseudodolichodera* is characterized by unusually shaped genitalia (Figs 341, 385, 420, 456, 499), the scutum is coarsely transversely ridged (Fig. 303) and the forecoxa has a blunt spine ventroposteriorly. The male of *A. dolichodera* is similar to *A. pseudodolichodera* but differs in having usually shaped genitalia (Figs 347, 388, 423, 457, 502).

D e s c r i p t i o n : Gastral apex black, with slight metallic shine, pruinose. Episternal sulcus ends at level of scrobe and mesothoracic venter concave anteriorly fore reception of forecoxa.

♀: 23-26 mm. Black, with following reddish-brown: mandible (except apex), head (except dorsal half of frons up to hindocelli), scape, pedicel, flagellomere I partly, prothorax (except ventral part), tegula, subalar area, little spot on scutum anterior of tegula, little spot on propodeum posterolaterally, foreleg, midleg (except trochanter and femur dorsally), hindleg (except coxa, trochanter and femur dorsally), petiole ventrally, tergum I laterally, gastral segment II, segment III partly and sterna IV-VI partly. Clypeus (posterior half), frons, gena, prothorax lateral, mesopleuron more or less, propodeum and hindcoxa dorsally covered with appressed silvery setae; remaining body parts more or less pruinose. White erect setae only on gena, prothorax ventrally and foreleg. Clypeus not elongate, with small lateral teeth (Fig. 46), disk distinctly convex (Fig. 81). Frons and vertex dull, impunctate; pronotal collar slightly elongate (Fig. 117), dull and impunctate. Scutum coarsely transversely ridged (Fig. 153). Forecoxa with spine ventrally. Scutellum obliquely rugose, metanotum irregularly rugose. Propodeal enclosure transversely striate and distinctly pruinose. Mesopleuron, metapleuron and propodeum laterally obliquely rugose. Arolia present, claws have no basal tooth. Flagellomere I:II=1.8-2.0; length of petiole hindtarsomeres I+II.

♂: 20 mm. Black, with following reddish-brown: mandible (except apex), pronotum laterally (including lobe), tegula, forecoxa, foretrochanter (dorsally darkened), forefemur (except dorsally), foretibia, midcoxa, midfemur partly, midtibia, hindfemur apically, hindtibia partly, petiole ventrally, tergum I laterally, gastral segment II (dorsally darkened), mesopleuron posterolaterally. Wings hyaline. Gastral apex black, without metallic shine, pruinose. Clypeus, frons and pronotal lobe covered with dense appressed silvery setae. Remaining body parts covered with sparse, short appressed setae. Whitish erect setae only on head and prothorax. Clypeus slightly elongate (Fig. 174), clypeal disk slightly concave on ventral half and slightly convex on dorsal half (Fig. 215). Supra-antennal lamellate projection absent, frons sparsely punctate, vertex impunctate. Pronotal collar elongate, nearly flat, dull and impunctate (Fig. 261). Scutum coarsely transversely ridged, admedian line flat (Fig. 303); scutellum and metanotum longitudinally ridged. Propodeal enclosure transversely striate. Mesopleuron, metapleuron and propodeum laterally punctato-rugose. Mesothoracic venter concave anteriorly for reception of forecoxa; forecoxa with blunt spine ventro-posteriorly. Episternal sulcus ends at level of scrobe or slightly below, arolia present and claws have no basal tooth. Flagellomere I:II=1.9; length of petiole = hindtarsomere I + $0.6 \times$ II. Genitalia characteristically shaped: gonostyle laterally: Fig. 341; penis valve laterally: Fig. 456, dorsally: Fig. 385, ventrally: Fig. 420, apically: Fig. 499.

G e o g r a p h i c d i s t r i b u t i o n : Burkina Faso, Kenya, Namibia, Zambia.

***Ammophila pseudokalaharica* DOLLFUSS nov.sp. (Figs 34, 70, 106, 142, 191, 232, 278, 360, 401, 435, 475, 516)**

Records: Holotype: ♂, South Africa: Kwazulu Natal, Mbazwana, 6.XII.2002, leg. Marek Halada (OÖLM). Paratypes: Mozambique: 70 km N Maputo, 3.XII.2003, leg. J. Halada (4 ♀♀ OÖLM); Delagoabai, R. Monteiro (1 ♀ ZMB). South Africa: Kwazulu Natal, Mbazwana, 6.XII.2002, leg. Ma. Halada (3 ♀♀, 4 ♂♂ OÖLM); Kwazulu Natal, Tembe Elephant Park, 50 m, Ndumo, 27°02'S 32°23'E, 30.XII.2007, leg. Ma. Halada (5 ♀♀, 4 ♂♂ OÖLM, 1 ♂ CAS); Kwazulu Natal, Tembe Elephant Park, 50 m, Ndumo, 27°02'S 32°23'E, 4.I.2008, leg. Ma. Halada (4 ♀♀, 4 ♂♂ OÖLM); Northern Transvaal, N Nylstrom, 24°40'S 28°30'E, 1200 m, 14.I.2008, leg. M. Halada (2 ♂♂ OÖLM); Kwazulu Natal, Tembe Elephant Park, 50 m, Ndumo, 27°02'S 32°23'E, 10.I.2008, leg. M. Halada (3 ♀♀, 1 ♂ OÖLM); Kwazulu Natal-N, Tembe Elephant Park, 8.XII.2002, leg. Ma. Halada (1 ♀, 2 ♂♂ OÖLM); Maputoland, Tembe Elephant Park env. (Jozini), 22.I.2003, leg. Krivan & Snížek (2 ♀♀, 5 ♂♂ OÖLM); Kwazulu Natal, Tembe Elephant Park, 30.XI.2002, leg. Ma. Halada (4 ♀♀, 3 ♂♂ OÖLM); Kwazulu Natal-NE, 20 km S Emanguzi, 30.XII.2002, leg. Ma. Halada (1 ♀ OÖLM).

Name derivation: This species is similar to *Ammophila kalaharica*.

Recognition: *Ammophila pseudokalaharica* has the gaster apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron and the mesothoracic venter is not produced anteriorly. The scutum is punctate without transverse striae. The female of *A. pseudokalaharica* is similar to *A. kalaharica* but differs in having a reddish-brown pronotal collar and the mesopleuron and the propodeum laterally have reddish-brown spots. The male of *A. pseudokalaharica* is similar to *A. kalaharica* but differs in having the penis valve characteristically pointed in apical view (Fig. 516) (*A. kalaharica* has the penisvalve in apical view rounded, Fig. 515).

Description: Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Scutum punctate without transverse striae.

♀: Black, with following reddish-brown: mandible (except apex), scape, clypeus near free margin, pronotal collar, tegula, subalar area, foreleg, midleg, hindfemur apically, hindtibia (dorsally darkened), petiole ventrally, tergum I laterally, gastral segments II and III partly, mesopleuron partly and propodeum ventrolaterally. Wing hyaline. Clypeus and frons covered with densely appressed silvery setae, remaining parts on head, thorax and propodeum covered with less densely appressed silvery setae. Erect setae whitish. Clypeus slightly elongate (Fig. 34), disk convex (Fig. 70). Frons punctate (punctures 1 diameter apart). Vertex impunctate. Pronotal collar shiny, impunctate (Figs 106, 142). Scutum distinctly punctate (punctures 0-1 diameter apart); scutellum longitudinally striate and punctate; metanotum densely punctate. Propodeal enclosure irregularly transversely rugose and punctate. Mesopleuron, metapleuron and propodeum laterally distinctly punctate. Flagellomere I:II=1.5-1.7; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+ 0.75 × III.

♂: 17.5-20 mm. Black, with following reddish-brown: mandible (except apex), tegula, subalar area, fore- and midleg, hindfemur apically, hindtibia ventrally, patch on mesopleuron, propodeum posterolaterally, petiole ventrally, tergum I laterally, gastral segments II and III (both dorsally black). Wings hyaline. Clypeus and frons covered with dense appressed silvery setae, remaining parts on on head, thorax and propodeum covered with not so dense appressed silvery setae. Erect setae whitish. Clypeus slightly

elongate (Fig. 191), disk slightly convex (Fig. 232). Frons densely coarsely punctate, vertex at most sparsely punctate. Pronotal collar slightly elongate, shiny, sparsely finely punctate or impunctate (Figs 278, 320). Scutum distinctly punctate (punctures 0-2 diameters apart); scutellum coarsely punctate anteriorly, longitudinally striate posteriorly; metanotum densely punctate. Propodeal enclosure coarsely punctato-rugose, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally punctate (punctures 0-1 diameter apart). Flagellomere I;II=1.3-1.5; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+ 0.6 × III. Gonostype laterally; Fig. 360; penis valve characteristically shaped: apically: Fig. 516, ventrally: Fig. 435, laterally: Fig. 475.

G e o g r a p h i c d i s t r i b u t i o n : Mozambique, South Africa.

***Ammophila punctaticeps* (ARNOLD) (Figs 37, 75, 111, 147, 186, 227, 266, 315, 356, 397, 470, 511)**

Sphex punctaticeps Arnold 1920: 52, ♀, ♂. **Syntypes:** Zimbabwe: Salisbury, now Harare, and Shiloh; South Africa: Shiluvane and Algoa Bay (SAM), photographs examined.

M a t e r i a l e x a m i n e d : Democratic Republic Kongo: (1 ♀ CAS). Ethiopia: (1 ♂ OÖLM); (1 ♂ ZMB); (2 ♀ ♀ CAS). Kenya: (3 ♀ ♀, 14 ♂ ♂ OÖLM); Mount Kenya 3000 m (6 ♀ ♀ coll. Zettel); (2 ♀ ♀, 2 ♂ ♂ CAS). Malawi: (6 ♂ ♂ OÖLM). Namibia: (1 ♂ ZMB). South Africa: (1 ♀ OÖLM); (3 ♀ ♀ BMNH); (6 ♀ ♀ ZMB); (2 ♀ ♀ NHMW). Tanzania: (2 ♀ ♀, 3 ♂ ♂ CAS). Zambia: (1 ♂ OÖLM). Zanzibar: (1 ♀ ZMB).

R e c o g n i t i o n : *Ammophila punctaticeps* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron and the mesothoracic venter is not prominent anteriorly. The female of *A. parapunctaticeps* is similar to *A. punctaticeps* but differs in having the mesopleuron and the propodeum laterally with reddish-brown spots. The female of *A. rubripes* differs from *A. punctaticeps* in having the vertex and the pronotal collar impunctate or at most finely punctate. The female of *A. zetteli* is similar to *A. punctaticeps* but differs in having the metapleuron without appressed setae (not all females can be identified with certainty, in doubt see males). The male of *A. kalaharica* is similar to *A. punctaticeps* but differs in having the pronotal collar finely and sparsely punctate, the scutum more sparsely punctate (punctures 0-2 diameters apart, punctures never confluent) and in the shape of penis valve in apical view (Fig. 515) (*A. punctaticeps* has the pronotal collar coarsely punctate and the scutum densely, coarsely punctate (punctures partly transversely confluent) and a differently shaped penis valve in apical view, Fig. 511). The male of *A. rubripes* differs from *A. punctaticeps* in having the frons sparsely, finely punctate, the scutum transversely striate and a differently shaped penis valve in apical view (Fig. 520). The male of *A. africana* is similar to *A. punctaticeps* but differs in having the pronotal collar and the vertex nearly impunctate.

D e s c r i p t i o n : Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth.

♀: (17) 21-23 mm. Black, with following reddish-brown: mandible (except apex), tegula, wing veins basally, foreleg partly, midleg partly, hindtibia (darkened dorsally), petiole basally, tergum I laterally, gastral segments II and III partly. Wings slightly brownish. Clypeus, frons, pronotal lobe mesopleuron and propodeum laterally covered with more or less dense appressed silvery setae. Erect setae whitish. Clypeus elongate,

coarsely punctate (Fig. 37), disk distinctly convex (Fig. 75). Frons densely, coarsely punctate; vertex sparsely, coarsely punctate. Pronotal collar distinctly punctate as on vertex (punctures 0-1 diameters apart). Scutum more coarsely punctate than collar, punctures confluent laterally; scutellum coarsely punctate anteriorly, longitudinally rugose posteriorly. Propodeal enclosure coarsely punctato-rugose. Mesopleuron and propodeum laterally punctato-rugose; metapleuron densely punctate. Pronotal collar: Figs 111, 147. Flagellomere I:II=1.5-1.8; length of petiole = hindtarsomeres I+II to I+II+ 0.25 × III.

♂: 17.5-21 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore and midleg, hindtibia ventrally, petiole ventrally, tergum I laterally, gastral segments II (black stripe dorsally) and III (basal half). Wings slightly brownish. Clypeus and frons covered with dense silvery-golden setae, remaining body parts covered with more or less sparse appressed silvery setae. Erect setae whitish and long, especially on head and pronotum nearly as long as scape. Clypeus slightly elongate, free margin nearly straight (Fig. 186), disk convex (Fig. 227). Frons and vertex (except ocellar area) densely punctate. Pronotal collar distinctly punctate (punctures 0-1 diameter apart). Scutum densely coarsely punctate, punctures partly transversely confluent laterally; scutellum densely punctate, with short longitudinal rugae posteriorly; metanotum punctate. Propodeal enclosure transversely punctato-rugose, all covered with long erect setae. Mesopleuron, metapleuron and propodeum laterally densely coarsely punctate. Pronotal collar: Figs 266, 315. Flagellomere I:II=1.3-1.5; length of petiole = hindtarsomeres I+II+ 0.5 × III to I+II+ 0.75 × III. Gonostyle laterally: Fig. 356; penis valve laterally: Fig. 470, dorsally: Fig. 397, apically: Fig. 511.

Geographic distribution: Democratic Republic Kongo, Ethiopia, Kenya, Malawi, Namibia, South Africa, Tanzania, Zambia, Zanzibar, Zimbabwe.

***Ammophila ressl* DOLLFUSS nov.sp. (Figs 42, 78, 114, 150, 192, 233, 279, 321, 362, 402, 436, 476, 517)**

Records: Holotype: ♀, South Africa: West Cape, Riviersonderend river Greyton, 22.XI.2002, leg. Ma. Halada (OÖLM). Paratypes: South Africa: O.F.S. 30 km N Colesberg, Orange river, 25.XI.2002, leg. M. Halada (1♂ OÖLM); Western Cape, Dasklippas NE Porterville, 10.I.1998, leg. Ohl (3♀♀ ZMB); Western Cape, Dasklippas Sederberge NE Porterville, 10.I.1998, leg. Schröder (3♀♀ ZMB); Capland (2♀♀ ZMB); West Cape, 20 km N Citrusdal, 27.X.1999, leg. M. Halada (9♀♀ OÖLM); West Cape, Riviersonderend river Greyton, 22.XI.2002, leg. Ma. Halada (3♀♀ OÖLM); West Cape, 40 km S Lamberts Bay, 30.X.1999, leg. Ma. Halada (2♀♀ OÖLM); West Cape, S. Lambert's Bay, 7.-9.X.1999, leg. M. Halada (2♀♀ OÖLM); West Cape, Klein-Karoo, Grot river, Langberg, 24.X.2002, leg. M. Halada (2♀♀, 1♂ OÖLM); West Cape, SE Grot river, 25.X.1999, leg. M. Halada (1♀ OÖLM); West Cape, Greyton, Riviersonderend, 7.XI.1999, leg. M. Halada (1♀ OÖLM); Transvaal: Pretoria, 6.IV.1090, leg. Pulawski (1♂ CAS). Tanzania: Arusha Region, Mbula District, Ngorongoro Crater, 23.IX.1988, leg. Drewes (1♀ CAS).

Name derivation: In remembrance of Franz Ressler, Purgstall, Austria, an excellent collector of Sphecidae.

Recognition: *Ammophila ressl* has a gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly, the arolia are present and the claws have no basal tooth. The female of *A. punctaticeps* differs from *A. ressl* in having a more elongate clypeus (Fig. 37) and the frons, the vertex (except ocellar area) and the

pronotal collar distinctly punctate (punctures 0-1 diameter apart) (*A. ressli* has the clypeus slightly elongate, Fig. 42). The female of *A. argyrocephala* is similar to *A. ressli* but differs in having the scutum dull with fine transverse striae (*A. ressli* has the scutum more coarsely striate and distinctly punctate, Fig. 150). The female of *A. rubiginosa* differs from *A. ressli* in having reddish-brown spots on mesopleuron and propodeum laterally and appressed setae on mesopleuron that not obscure the underlying sculpture. The female of *A. rubripes* is similar to *A. ressli* but differs in having the mesopleuron, the metapleuron and the propodeum laterally with appressed setae that not obscure the underlying sculpture, the pronotal collar is in most specimens impunctate and the clypeus more elongate (Fig. 43). The male of *A. ressli* differs from *A. rubripes* in having the thorax and the propodeum laterally covered with appressed silvery setae that obscure the underlying sculpture and in the shape of penis valve in lateral view (Fig. 476) (*A. rubripes* has the thorax and the propodeum laterally covered with appressed silvery setae that not obscure the underlying sculpture and a differently shaped penis valve, Fig. 480). The male of *A. punctaticeps* differs from *A. ressli* in having a differently shaped penis valve in apical view (Fig. 511) (*A. ressli* has the penis valve in apical view as in Fig. 517). The male of *A. parapunctaticeps* differs from *A. ressli* in having a differently shaped penis valve in lateral view (Fig. 479).

Description: Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not prominent anteriorly, arolia present and claws have no basal tooth.

♀: 18.5-21 mm. Black, without following reddish-brown: mandible (except apex), tegula, fore- and midleg, hindtibia dorsally, petiole ventrally, tergum I laterally, gastral segment II (except black stripe dorsally) and segment III partly. Wings hyaline. Clypeus, frons, pronotal lobe, mesopleuron and propodeum posterolaterally covered with dense appressed silvery setae; metapleuron and propodeum laterally covered with more sparsely appressed setae. Propodeal enclosure with traces of appressed setae. Hindcoxa distinctly pruinose. Erect setae whitish. Clypeus not elongate, without distinct median lobe (Fig. 42), disk distinctly convex (Fig. 78). Frons distinctly punctate, vertex nearly impunctate. Propotal lobe shiny, sparsely punctate (punctures 1-2 diameters apart) and slightly elevate dorsomedially (Fig. 114). Scutum distinctly transversely striate with coarse punctures (Fig. 150); scutellum longitudinally striate and punctate; metanotum coarsely punctate. Propodeal enclosure transversely striate. Mesopleuron and metapleuron punctate. Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomeres I+II to I+II+ 0.3 × III.

♂: 16-20 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midleg, hindtibia dorsally, hindtarsomeres, petiole, tergum I laterally, gastral segments II and III (tergum III black dorsolaterally). Wings hyaline. Clypeus, frons, gena, mesopleuron, metapleuron, propodeum laterally and hindcoxa dorsally covered with appressed silvery setae. Erect setae whitish. Clypeus elongate (Fig. 192), disk slightly convex (Fig. 233). Frons densely punctate, vertex nearly impunctate. Pronotal collar shiny and sparsely, finely punctate (punctures 2-4 diameters apart). Scutum transversely striate and coarsely punctate between striae; metanotum irregularly structured. Propodeal enclosure transversely striate. Mesopleuron, metapleuron and propodeum laterally densely punctate. Pronotal collar laterally: Fig. 279, dorsally: Fig. 321.

Flagellomere I:II=1.5-1.6; length of petiole = hindtarsomeres I+II to I+II+ 0.5 × III. Gonostyle laterally: Fig. 362; penis valve laterally: Fig. 476, dorsally: Fig. 402, ventrally: Fig. 436, apically: Fig. 517.

Geographic distribution: South Africa, Tanzania.

***Ammophila rubiginosa* LEPELETIER de SAINT FARGEAU (Figs 44, 79, 115, 151, 188, 229, 275, 317, 358, 432, 472, 513)**

Ammophila rubiginosa LEPELETIER de SAINT FARGEAU 1845: 372, ♀ (authorship attributed to Klug). Holotype or Syntypes: ♀, **South Africa**: Cape of Good Hope (TORINO). "Type ?" det. A.S. Menke photograph examined.

Sphex bonaespei var. *ferrugineipes* ARNOLD 1920: 51, ♀ ♂. **New synonym.**

Material examined: 132 ♀♀, 100 ♂♂ (OÖLM); 1 ♀, 1 ♂ (BMNH); 63 ♀♀, 43 ♂♂ (CAS); 4 ♀♀ (coll. Jacobs); 2 ♀♀, 2 ♂♂ (coll. Schmid-Egger); 6 ♀♀ (NHMW); 1 ♀ (coll. Zettel); 29 ♀♀, 12 ♂♂ (ZMB).

Recognition: *Ammophila rubiginosa* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly and the scutum is transversely striate and punctate. The mesopleuron and the propodeum laterally have more or less developed reddish-brown patches. The female of *A. rubiginosa* is similar to *A. rubripes* and it cannot be distinguished in every case. The female of *A. resslii* differs from *A. rubiginosa* in having the thorax and the propodeum black. The male of *A. rubiginosa* differs from *A. rubripes* in having a differently shaped penis valve in lateral view (Fig. 472).

Description: Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth. Mesopleuron and propodeum with more or less developed reddish-brown spots.

♀: (17.5) 20-26 mm. Black, with following variably reddish-brown: mandible (except apex), clypeus near free margin, scape, pronotal collar, pronotal lobe, more or less developed patch on mesopleuron, propodeum posterolaterally, propodeal enclosure laterally, fore and midlegs partly, hindfemur laterally, petiole ventrally, tergum I laterally, sternum II partly. Wings slightly brownish. Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with dense appressed silvery setae, remaining body parts more or less pruinose. Erect setae whitish. Clypeus slightly elongate (Fig. 44), disk convex (Fig. 79). Frons sparsely punctate, vertex and pronotal collar nearly impunctate. Scutum transversely striate and distinctly punctate (punctures partly confluent); scutellum coarsely punctate and longitudinally rugose. Propodeal enclosure medially coarsely reticulate with erect setae, laterally transversely striate, reddish-brown and in most specimens without erect setae. Mesopleuron, metapleuron and propodeum laterally punctate to punctato-rugose. Pronotal collar (Figs 115, 151). Flagellomere I:II=1.5-1.8; length of petiole = hindtarsomeres I+II to I+II+ 0.25 × III.

♂: 16-21 mm. Black, with following reddish-brown: mandible (except apex), scape, pronotal collar, pronotal lobe, tegula, subalar area, patch on mesopleuron more or less developed, propodeum posterolaterally, propodeum laterally (in most specimens), fore- and midlegs (femora black dorsally), hindfemur apically, hindtibia dorsally, petiole

ventrally, tergum I laterally, tergum II laterally; gaster nearly black in some specimens. Wings hyaline, slightly brownish. Clypeus, frons and pronotal lobe covered with dense appressed silvery setae, remaining body parts covered with fine appressed setae that obscure only partly underlying sculpture. Erect setae whitish. Clypeus slightly elongate (Fig. 188), disk convex (Fig. 229). Frons densely punctate, vertex sparsely punctate. Pronotal collar shallowly punctate (Figs 275, 317). Scutum distinctly transversely striate or rugose and coarsely punctate; scutellum longitudinally striate and coarsely punctate. Propodeal enclosure as in females. Gonostyle laterally: Fig. 358; penis valve laterally: Fig. 472, ventrally: Fig. 432, apically: Fig. 513. Flagellomere I:II=1.4-1.5; length of petiole = hindtarsomeres I+II+ 0.25 × III to I+II+ 0.75 × III.

Geographic distribution: Botswana, Mozambique, Namibia, Nigeria, Kenya, South Africa, Tanzania, Togo, Zambia, Zimbabwe.

***Ammophila rubripes* SPINOLA (Figs 43, 80, 116, 152, 196, 237, 283, 325, 365, 440, 480, 520)**

Ammophila rubripes SPINOLA 1839: 465, ♀. Lectotype: ♀, Egypt: no specific locality (TORINO), designated by de BEAUMONT 1952: 45, photograph examined.

Ammophila bonaespei LEPELETIER de SAINT FARGEAU 1845: 382, ♀, ♂. Lectotype: ♀, South Africa: Cape Province: Cape of Good Hope (TORINO), designated by MENKE in BOHART & MENKE 1976: 151. Photograph examined, **new synonym**.

Ammophila ferrugineipes LEPELETIER de SAINT FARGEAU 1845: 383, ♀. Holotype or syntypes: ♀, South Africa: Cape of Good Hope (originally J. Serville collection, now TORINO) Syntype photograph examined, **new synonym**.

Ammophila rubriceps TASCHENBERG 1869: 432, ♀, ♂. Syntypes: South Africa: Cape Province: no specific locality (HALLE). Synonymized with *Ammophila bonaespei* by MENKE in BOHART & MENKE 1976: 151.

Ammophila propinqua TASCHENBERG 1869: 433, ♂. Holotype or syntypes: ♂, Sudan: Khartum (HALLE). Synonymized with *Ammophila rubripes* by GUIGLIA 1948: 32, synonymy confirmed by de BEAUMONT 1952: 45.

Ammophila syriaca MOCSÁRY 1883: 30, ♀. Holotype: ♀, Syria: no specific locality (TMB) Synonymized with *Ammophila propinqua* by KOHL 1906: 363.

Ammophila erythrospila CAMERON 1905a: 303, ♂. Holotype or syntypes: ♂, South Africa: Table Farm (AMG). Synonymized with *Sphex bonaespei ferrugineipes* by ARNOLD 1920: 51.

Ammophila dunbrodyensis CAMERON 1905b: 322, ♂. Holotype or Syntypes: ♂, South Africa: Cape Province: Dunbrody (BMNH). Synonymized with *Sphex bonaespei ferrugineipes* By R. TURNER 1919: 396.

Ammophila meruensis CAMERON 1908: 265, ♂. Lectotype: ♂, Tanzania: Mt. Kilimanjaro: Kibonoto (NRS), examined, **present designation**. Synonymized with *Sphex bonaespei ferrugineipes* by ARNOLD 1928: 279, synonymy confirmed.

Ammophila rufipes var. *obscura* BISCHOFF 1912: 220, ♂ (actually ♀). Lectotype: ♀, Democratic Republic Congo: Mwambi on Ituri River (ZMB), examined, **present designation, new synonym**.

Ammophila dantoni ROTH in NADIG 1933: 101, ♀, ♂ (♂ = *Ammophila erminea*). Holotype: sex not indicated, Morocco: no specific locality (originally in Nadig collection, now Zürich). Female synonymized with *Ammophila rubripes* by DOLLFUSS 2013a: 480, male synonymized with *Ammophila erminea* by DOLLFUSS 2013a: 428.

Material examined: 367 ♀♀, 539 ♂♂ (OÖLM); 20 ♀♀, 7 ♂♂ (NHMW); 6 ♀♀, 10 ♂♂ (coll. Schmid-Egger); 8 ♀♀, 24 ♂♂ (ZMB); 11 ♀♀, 10 ♂♂ (BMNH); 25 ♀♀, 60 ♂♂ (CAS); 5 ♀♀, 4 ♂♂ (coll. Jacobs); 1 ♀ (coll. Zettel); 1 ♀ (NRS); 1 ♀ (NRS).

Recognition: *Ammophila rubripes* has the gastral apex black, without metallic shine, but in most specimens pruinose, the mesothoracic venter is not prominent

anteriorly and the episternal sulcus extends to the anteroventral margin of the mesopleuron. Additionally, the scutum is more or less transversely striate and punctate (in some specimens the striation is reduced, but the punctures are confluent laterally). The head (except apex), the thorax and the propodeum are more or less covered with appressed silvery setae that in most specimens not obscure the underlying sculpture. The female of *A. rubiginosa* is similar to *A. rubripes* and it can not be distinguished in every case. The females of *A. fischeri* and *A. curvistriata* differ from *A. rubripes* in having the metapleuron without appressed setae. The male of *A. curvistriata* is similar to *A. rubripes* but differs in having the metapleuron without appressed silvery setae and the shape of penis valve in lateral view (Fig. 468). The male of *A. rubiginosa* is similar to *A. rubripes* but differs in having a characteristically shaped penis valve in lateral view (Fig. 472). The male of *A. puncticeps* differs from *A. rubripes* in having a characteristically shaped penis valve in apical view (Fig. 511) and the pronotal collar distinctly punctate (punctures as on scutum).

Note: This common species is extremely variable, further studies about its status should be conducted.

Description: Gastral apex black, without metallic shine, in most specimens pruinose. Mesothoracic venter not prominent anteriorly, episternal sulcus extends to anteroventral margin of mesopleuron, arolia present and claws have no basal tooth. Scutum transversely striate and punctate.

♀: 17.5-23.5 mm. Black, with following extremely variable reddish-brown: mandible (except vertex), ventral half of clypeus, scape, pronotal collar, pronotal lobe, tegula, petiole (partly darkened), tergum I (in some specimens with dorsal black stripe), terga II-III (variable), sterna II-V, legs (variable). Head, thorax, propodeum and hindcoxa dorsally covered with appressed silvery setae; setae sparser on pronotal collar, scutum and pronotal enclosure; erect setae silvery-white. Clypeus elongate, sparsely punctate (Fig. 43), disk distinctly convex (Fig. 80). Pronotal collar sparsely, finely punctate or nearly impunctate; scutellum slightly longitudinally striate and punctate. Propodeal enclosure transversely striate and nearly all covered with long, white, erect setae. Mesopleuron and metapleuron punctato-rugose. Pronotal collar laterally: Fig. 116, dorsally: Fig. 152. Flagellomere I:II = 1.6-1.9; length of petiole = hindtarsomeres I + 0.5 × II to I + II + 0.5 × III.

♂: 17.5-22 mm. Black, reddish-brown, extremely variable as in females. Head (except vertex), thorax and propodeum uniformly covered with appressed silvery setae that in most specimens do not obscure underlying sculpture; erect setae white. Clypeus elongate and median lobe straight (Fig. 196), disk convex (Fig. 237). Pronotal collar sparsely, finely, punctate (Figs 283, 325); scutellum longitudinally striate and punctate. Propodeal enclosure transversely rugose and covered with sparse, appressed setae and silvery-white erect setae. Genitalia: penis valve laterally: Fig. 480, ventrally: Fig. 440, apically distinctly narrowed basally: Fig. 520, gonostyle: Fig. 365. Flagellomere I:II = 1.4-1.5; length of petiole = hindtarsomeres I + II + 0.5 × III to I + II + III.

Geographic distribution: Benin, Botswana, Burkina Faso, Ethiopia, Central African Republic, Guinea, Kenya, Malawi, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Uganda, Zambia, Zimbabwe, Jordan, Israel, Syria, Arabian Peninsula, Morocco.

***Ammophila saussurei* (du BUYSSON) (Figs 12, 48, 84, 120, 156, 198, 243, 285, 327, 368, 442, 482)**

Coloptera saussurei du BUYSSON 1897: 357, ♀. Syntype: ♀, South Africa: Cape Province: Transvaal: Hamanskraal (MNHN), examined.

Material examined: Angola: (1 ♀ CAS). Namibia: 40 km NW Tsumeb (1 ♂ OÖLM); Rundu, Kaisosi Lodge (1 ♂ ZMB); (2 ♀ ♀, 1 ♂ CAS). Mozambique: 15 km SSE Manja, 15°29'S 33°16'E (1 ♂ OÖLM). Tanzania: Pwani-prov., 15 km E Uete, 08°03'S 38°53'E (1 ♀ OÖLM); Nyassa-See Wiedhafen (1 ♀ ZMB). South Africa: Limpopo, Thabazimbi (2 ♀ ♀, 2 ♂ ♂ OÖLM); Limpopo, Modimole (1 ♀ OÖLM); Limpopo, 35 km W Hoedspruit, 24°23'S 30°40'E (2 ♂ ♂ OÖLM); Northern Transvaal N Nylstroom, 24°40'S 28°30'E, 1200 m (4 ♀ ♀, 1 ♂ OÖLM); Nord Province, Thabazimbi, 40 km S Koedoskop (2 ♂ ♂ coll. Jacobs). Zimbabwe: 70 km W Karoi Msanga (1 ♂ OÖLM); 30 km W Harare (5 ♀ ♀, 9 ♂ ♂ OÖLM); 25 km NE Samva Nyagui (Bindura) (2 ♀ ♀, 3 ♂ ♂ OÖLM); Khami Ruins Balanayo (1 ♂ OÖLM); Mavhuradonha, 15 km SE Muzarabani (2 ♀ ♀ OÖLM); 30 km SE Kariba, Nyadera riv. (1 ♀ OÖLM); (4 ♀ ♀ CAS).

Recognition: *Ammophila saussurei* has a forewing with two submarginal cells and the gastral apex is black, without a metallic shine. Additionally, the legs are reddish-brown, the mesothoracic venter is not produced anteriorly, the episternal sulcus ends at level of scrobe, the arolia are present and the claws have no basal tooth. The female of *A. saussurei* shares with *A. tuberculicutis* the two submarginal cells, but differs in having the pronotal collar transversely ridged, rounded, not distinctly tuberculate laterally (Fig. 84) and the scutellum and metanotum not so high elevate and tubercular (Fig. 530) (*A. tuberculiscutis* has the anterior angles of pronotal collar produced into truncate tubercles, not transversely ridged (Figs. 83), and the scutellum and metanotum highly elevate and tubercular in lateral view, Figs. 529). The females of the Palearctic species *A. barbara* and *A. theryi* resemble *A. saussurei* in having two submarginal cells but differ in having the mesopleuron irregularly transversely rugose (*A. saussurei* has the mesopleuron distinctly punctate, punctures 0-1 diameter apart). The male of *A. saussurei* shares with *A. tuberculiscutis* the forewing with two submarginal cells but differs in having the clypeus not triangularly elongate (Fig. 156) and the gonostyle not bifid apically (Fig. 327) (*A. tuberculiscutis* has the clypeus triangularly elongate (Fig. 155) and the gonostyle bifid apically, Fig. 326). The male of *A. crassifemoralis* shares with *A. saussurei* the forewing with two submarginal cells, but differs in having the clypeus free margin broadly truncate (Fig. 158). The male of *A. saussurei* resembles the males of the Palearctic species *A. barbara* and *A. theryi* in having two submarginal cells but differs in having characteristically shaped gonostyle (Fig. 327) and penis valve (Figs 442, 482).

Description: Forewings with two submarginal cells and gastral apex black, without metallic shine. Mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe, supra-antennal lamellate projection absent, arolia present and claws have no basal tooth. Mesopleuron, metapleuron and propodeum laterally deeply punctate (punctures 0-1 diameter apart).

♀: 17.5-22 mm. Black, with following reddish-brown: mandible (except apex), ventral half of clypeus, scape, pedicel, flagellomeres III-IV (in some specimens black), pronotal collar, pronotal lobe, tegula, scutum laterally in front of tegula, legs (darkened dorsally), petiole (partly darkened), tergum I and gastral segment II (both darkened dorsally). Clypeus laterally, frons, pronotal lobe, small band along mesopleural suture and propodeum posterolaterally covered with pale-golden setae; remaining body parts more or less pruinose; Yellowish-brown erect setae only on head, pronotal lobe and foreleg developed. Clypeus not elongate, median lobe with distinct lateral tooth (Fig. 12), disk

nearly flat (Fig. 48). Frons and vertex dull. Pronotal collar and scutum coarsely, transversely ridged (Figs 84, 120). Scutellum slightly elevate and longitudinally ridged, metanotum longitudinally ridged and distinctly elevate medially. Propodeal enclosure coarsely reticulate medially, coarsely transversely rugose laterally. Flagellomeres I:II = 1.5-1.6; length of petiole = hindtarsomeres I + $0.75 \times$ II to I + II + $0.25 \times$ III.

♂: 19-20 mm. Black, with following reddish-brown: mandible (except apex), ventral half of clypeus (in some specimens black), scape pedicel, flagellomere II-V (in some specimens black), pronotal collar, pronotal lobe, tegula, scutum laterally in front of tegula, leg (dorsally darkened), petiole ventrally, tegum I and gastral segment II (both darkened dorsally). Clypeus, frons, pronotal lobe, small stripe along mesopleural suture and propodeum posterolaterally covered with appressed silvery-golden setae; remaining body parts more or less finely pruinose; whitish erect setae only on head. Clypeus elongate, free margin slightly emarginate medially (Fig. 156), disk flat on ventral half, convex on dorsal half (Fig. 198). Frons and vertex dull, impunctate. Pronotal collar regularly, coarsely, transversely rugose (ca. 7 rugae; Figs 243, 285); scutum similarly transversely rugose. Scutellum coarsely, longitudinally rugose, metanotum elevate and longitudinally rugose. Propodeal enclosure reticulate medially, obliquely ridged laterally, all finely pruinose. Flagellomere I:II = 1.3-1.5; length of petiole = hindtarsomeres I+II+ $0.3 \times$ III to I+II+III. Genitalia characteristically shaped: gonostyle laterally: Fig. 327; penis valve laterally: Fig. 442, dorsally: Fig. 368, apically: Fig. 482.

Geographic distribution: Angola, Mozambique, Namibia, South Africa, Tanzania, Zimbabwe.

***Ammophila schalleri* DOLLFUSS nov.sp. (Figs 32, 68, 104, 140, 189, 230, 276, 318, 359, 399, 433, 473, 514)**

Records: Holotype: ♂, Ethiopia: Sidamo province, near Bitata, 1400m, 127.IV.2007, leg. J. Halada (OÖLM).

Paratypes: Ethiopia: Arussi Gala Wabbi Fl., 10.VI.1900, leg. Erlanger (1♂ ZMB). Kenya: Mwingi Kangonde vadi, 18.IV.2007, leg. Mi. Halada (1♀ OÖLM); Voi, 10.XII.1999, leg. Snižek (1♂ OÖLM); Voi (Tsavo) env., 8.-18.XI.1996, leg. Mi. Halada (2♀♀ OÖLM); W Mwingi, 6.VI.2007, leg. M. Halada (1♀ OÖLM); Voi (Tsavo) env., 22.XI.-2.XII.1996, leg. Mi. Halada (1♀ OÖLM); Voi (Tsavo), 23.III.-4.IV.1997, leg. Ma. Halada (1♂ OÖLM); E Mwingi, 14.V.2007, leg. M. Halada (1♀ OÖLM); Tana river, Taerda cams env., 02°16'S 40°13'E, 13.IV.2006, leg. Jendek (1♀ OÖLM); Mwingi Kangonde vadi, 18.IV.2007, leg. M. Halada (3♀♀, 2♂♂ OÖLM); Mwingi env., 7.IV.2007, leg. M. Halada (1♀ OÖLM); Eastern Province, 5 km NNE Isiolo, 0°24.3'N 37°35.7'E, 30.V.2000, leg. Bourbin, Lee & Pulawski (2♀♀ CAS); Rift Valley Province, Marich Pass Field, Studies Centre, 1°32.2'N 35°27.4'E, 13.-14.VI.2000, leg. Bourbin, Lee & Pulawski (1♂ CAS); Archer's Post, Uaso Nyiro river, 2300', 12.XII.1969, leg. Irwin & Ross (3♂♂ CAS); Coast Province, Taita Hill, Discovery Centre, 3°42.3'S 38°46.6'E, 13.-14.XII.2002, leg. Prentice (1♂ CAS). Burkina Faso: 4 km NE Dori, 14°03.8'N 0°03.1'W, 24.-25.VII.2004, leg. Konate & Pulawski (3♀♀, 2♂♂ CAS); 9 km SSW Dori, 13°57.6'N 0°02.9'W, 20.VII.2004, leg. Konate & Pulawski (1♀ CAS). Senegal: 5 km SW Thiès, 8.VII.1991, leg. Pulawski (1♂ CAS).

Name derivation: In honor of Univ.-Prof. emer. Dr. Friedrich Schaller, University of Vienna, Austria.

Recognition: *Ammophila schalleri* has the gastral apex black, without a metallic shine but pruinose. The supra-antennal lamellate projection is absent, the episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesopleural venter is not produced anteriorly, the arolia are present and the claws have no basal

tooth. The female of *A. schalleri* is similar to *A. rubiginosa* and *A. rubripes* but differs in having the scutum finely sparsely punctate and in fresh specimens covered with fine appressed silvery setae (*A. rubiginosa* and *A. rubripes* have the scutum more or less transversely striate). The female of *A. kalaharica* differs from *A. schalleri* in having the scutum distinctly, deeply punctate (punctures 0-1 diameter apart) and in most specimens a black pronotal collar. The female of *A. pseudokalaharica* differs from *A. schalleri* in having the scutum distinctly, deeply punctate (punctures 0-2 diameters apart). The male of *A. schalleri* is similar to *A. rubiginosa* and *A. rubripes* but differs in having the scutum finely, sparsely punctate, in fresh specimens covered with fine appressed silvery setae and in the shape of penis valve in lateral view (Fig. 473) (*A. rubiginosa* and *A. rubripes* have the scutum more or less transversely striate). The male of *A. kalaharica* differs from *A. schalleri* in having the scutum distinctly, deeply punctate (punctures 0-1 diameter apart) and the pronotal collar shiny and black. The male of *A. pseudokalaharica* differs from *A. schalleri* in having the scutum distinctly, deeply punctate and the penis valve characteristically shaped (Figs 475, 435, 401, 516).

Description: Gastral apex black, without metallic shine, pruinose. Supra-antennal lamellae projection absent, episternal sulcus extends to anteroventral margin of mesopleuron, mesothoracic venter not produced anteriorly, arolia present and claws have no basal tooth.

♀: 20-24 mm. Black, with following variably reddish-brown: mandible (except apex), ventral half of clypeus, scape, pedicel, flagellomere I, pronotal collar, pronotal lobe, tegula, fore- and midlegs, hindleg (except coxa, trochanter and femur dorsally), petiole ventrally, tergum I laterally, gastral segments II and III (dorsally darkened), sterna IV-VI. Clypeus, frons, thorax and propodeum covered with more or less dense appressed silvery setae, remaining body parts more or less pruinose. Erect setae whitish. Wings hyaline. Clypeus slightly elongate (Fig. 32), disk distinctly convex (Fig. 68). Vertex dull, impunctate. Pronotal collar impunctate. Scutum finely, sparsely punctate, in fresh specimens covered with fine appressed setae; scutellum sparsely punctate. Propodeal enclosure transversely striate. Mesopleuron, metapleuron and propodeum laterally punctate. Flagellomere I:II=1.6-1.7; length of petiole = hindtarsomeres I+II to I+II + 0.3 × III.

♂: 18-24 mm. Black, with following reddish-brown: mandible (except apex), clypeus along free margin, scape, pronotal collar, pronotal lobe, tegula, fore- and midlegs, hindleg (partly darkened), petiole ventrally, tergum I laterally, gastral segment II (except black stripe dorsally), sternum III; terga III-IV posterior margin yellowish-brown. Erect setae whitish. Wings hyaline. Clypeus, frons, gena, thorax and propodeum more or less covered with appressed silvery setae; petiole and leg pruinose. Clypeus elongate (Fig. 189), disk slightly convex (Fig. 230). Vertex impunctate. Pronotal collar impunctate (Figs 276, 318). Scutum finely punctate, covered with fine appressed setae; scutellum punctate. Propodeal enclosure transversely striate. Mesopleuron, metapleuron and propodeum laterally punctate. Flagellomere I:II=1.5-1.7; length of petiole = hindtarsomeres I+II + 0.75 × III to I+II+III. Gonostyle laterally: Fig. 359; penis valve laterally: Fig. 473, dorsally: Fig. 399, ventrally: Fig. 433, apically: Fig. 514.

Geographic distribution: Burkina Faso, Ethiopia, Kenya.

***Ammophila snizeki* DOLLFUSS nov.sp. (Figs 24, 59, 96, 132)**

Records: Holotype: ♀, South Africa: North Cape: Kalahari desert, Van Zylrus, 15.I.2001, leg. Snižek (OÖLM).

Name derivation: In honor of the collector of the holotype M. Snižek, Czech Republic.

Recognition: The female of *A. snizeki* is characterized by a dorsally black gaster, without metallic shine. The episternal sulcus extends to the anteroventral margin of the mesopleuron and the arolia are present. Additionally, the clypeus, the frons, the vertex and the pronotal collar are impunctate. The female of *A. snizeki* is similar to *A. insignis* but differs in being smaller (18.5 mm) and having the frons and the vertex impunctate (*A. insignis* has a bodylength of 26-33 mm and frons and vertex are punctate). The female of *A. snizeki* differs from *A. rubripes* in having a characteristically shaped clypeus (Fig. 24) (Clypeus of *A. rubripes* see Fig. 43).

Description: Gaster dorsally black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesopleural venter not produced anteriorly, arolia present and claws have no basal tooth.

♀: 18.5 mm. Black, with following reddish-brown: mandible (except apex), scape, pedicel, flagellomeres I-III (remaining flagellomeres brownish ventrally), pronotal collar dorsally and laterally, pronotal lobe, tegula, foreleg, midlegs (except femur dorsally), hindleg (dorsally darkened) and petiole ventrally. Wings hyaline. Clypeus, frons, gena, pronotal lobe and propodeum posterolaterally covered with appressed silvery setae; remaining parts of thorax and propodeum covered with fine, sparse appressed setae. Erect setae whitish. Clypeus elongate, with truncate median lobe, lateral tooth distinct, lateral sides slightly concave (Fig. 24), disk distinctly convex (Fig. 59). Frons, vertex and pronotal collar impunctate. Scutum transversely striate, without distinct punctures; scutellum longitudinally striate; metanotum irregularly structured. Propodeal enclosure transversely striate. Mesopleuron, and mesopleural venter transversely striate, metapleuron and propodeum laterally punctato-rugose. Pronotal collar dorsally: Fig. 132, laterally: Fig. 96. Flagellomere I:II=1.6; length of petiole = hindtarsomeres I+II.

♂ unknown.

Geographic distribution: South Africa (Kalahari).

***Ammophila theryi* (GRIBODO) (Fig. 45, 82, 118, 154, 159, 291, 246, 288, 329, 370, 408, 443, 484)**

Coloptera theryi GRIBODO 1894: 3, ♀, ♂. Lectotype: ♂, Algeria: Biskra (GENOA), designated by DOLLFUSS 2013a: 496, examined.

Ammophila judaeorum KOHL 1901: 149, ♀, ♂. Lectotype: ♀, Palestine: Jericho (NHMW), designated by DOLLFUSS 2013a: 496, examined.

Ammophila barbara var. *airensis* BERLAND 1950: 296, ♀. Holotype: ♀, Niger: Air: Agadez (MNHN). Synonymized with *Ammophila theryi* by DOLLFUSS 2013a: 496, examined.

Material examined: Kenya: Eastern Province, Near Evaso Ngiri River opposite Archers Post, 0°38.1'N 37°40.4'E, 2.-8.XII.2002, leg. Prentice (1 ♀ CAS).

Recognition: *Ammophila theryi* has the forewing with two submarginal cells and the gastral apex without metallic shine, the episternal sulcus ends at the level of the

scrobe and the supra-antennal lamellate projection is absent. In addition, the mesothoracic venter is concave anteriorly for reception of the forecoxa, the concavity is margined by a carina that in most specimens forms one small projection on each side. The pronotal collar and the scutum are distinctly transversely ridged and the propodeal enclosure is irregularly rugose and covered with fine, appressed, silvery setae along the midline, transversely rugose and glabrous laterally. Both sexes of *A. theryi* differ from *A. barbara* in having partly reddish leg, the mesothoracic venter concave anteriorly for reception of the forecoxa, the concavity is margined by a carina that in most specimens forms one small projection on each side, the posterior face of the forecoxa is armed with a small spine (difficult to see) and the lateral part of the propodeal enclosure is glabrous (*A. barbara* has black legs, the mesothoracic venter not prominent anteriorly and a propodeal enclosure all covered with setae). The Sub-Saharan species *A. saussurei* differs from *A. theryi* in having the mesopleuron distinctly punctate (punctures 0-1 diameter apart) and more reddish collar on the thorax (*A. theryi* has the mesopleuron irregularly rugose). Flagellomere I:II = 1.7-1.8; length of the petiole = hindtarsomeres I + $0.6 \times$ II to I + $0.75 \times$ II.

D e s c r i p t i o n : Forewing with two submarginal cells, gastral apex without metallic shine, episternal sulcus ends at level of scrobe, supra-antennal lamellate projection absent, arolia present, claws without basal tooth. Mesothoracic venter concave anteriorly for reception of forecoxa, concavity margined by carina that in most specimens forms one projection on each side. Pronotal collar and scutum distinctly transversely ridged, propodeal enclosure irregularly rugose, covered with fine appressed silvery setae along midline, transversely rugose and glabrous laterally.

♀: (13)15-18 mm. Black, with following variably yellowish-brown: mandible (except apex), clypeus along free margin, scape (in most specimens), tegula, pronotal lobe, fore- and midlegs (except coxa, trochanter and tarsus), hindleg (partly), petiole, tergum I and gastral segments II-IV (IV dorsally black). Clypeus and frons covered with dense, appressed, silvery setae, remaining parts of head (except vertex), thorax and propodeum laterally covered with fine, sparse, appressed silvery setae. Clypeus slightly elongate (Fig. 45), disk convex (Fig. 82), posterior surface of forecoxa with small spine (difficult to see) and mesopleuron coarsely obliquely punctato-rugose. Pronotal collar dorsally: Fig. 154, laterally: Fig. 118.

♂: 12-16 mm. Black, with following yellowish-brown: mandible (except apex; in some specimens all black), tegula, fore- and midlegs (partly), hindleg (partly or all black), petiole, tergum I and gastral segments II-IV (in some specimens dorsally black). Clypeus and frons covered with dense, appressed, silvery setae, remaining parts of head (except vertex), thorax and propodeum laterally sparsely covered with appressed setae. Flagellomere I:II = 1.6-1.8; length of the petiole = hindtarsomeres I + II to I + II + $0.5 \times$ III. Clypeus: Fig. 159. Pronotal collar: Figs 246, 288. Gonostyle laterally: Fig. 329; penis valve dorsally: Fig. 370, ventrally: Fig. 408, laterally: Fig. 443, apically: Fig. 484.

G e o g r a p h i c d i s t r i b u t i o n : Kenya, Algeria, Egypt (Sinai Peninsula), Israel, Iran, Jordan, Morocco, Syria.

***Ammophila tuberculiscutis* (R. TURNER) (Figs 11, 47, 83, 119, 155, 197, 242, 284, 326, 367, 441, 481, 528, 529, 531)**

Sphex tuberculiscutis R. Turner 1919: 396, ♀, ♂. Syntypes: Kenya: several localities (BMNH)
 Syntype: ♀, Kenya: Masongaleni, examined.

Material examined: Kenya: E. Mwingi, 14.V.2007 (2♂♂ OÖLM); Voi env., Sagala env., 750m, 13.-19.XI.2011 (1♂ OÖLM).

Recognition: *Ammophila tuberculiscutis* has a forewing with two submarginal cells and the gastral apex brownish-black, without a metallic shine. The legs are red, the mesothoracic venter is not produced anteriorly, the episternal sulcus ends at level of the scrobe, the arolia are present and the claws have no basal tooth. The female of *A. tuberculiscutis* shares with *A. saussurei* the two submarginal cells but differs in having the anterior angles of pronotal collar produced into truncate tubercles, and a broad tubercle medially, wider than long (Fig. 119), additionally, in having the scutellum and metanotum much elevate and tubercular (Figs 528, 529) (*A. saussurei* has a pronotal collar rounded and not distinctly tuberculate laterally (Figs 84, 120) and the scutellum slightly, the metanotum more distinctly tuberculate medially, Fig. 530). The females of the Palearctic species *A. barbara* and *A. theryi* resemble *A. tuberculiscutis* in having two submarginal cells but differ in having the mesopleuron irregularly transversely rugose and the pronotal collar transversely striate, without angles elevate (*A. tuberculiscutis* has the mesopleuron distinctly punctate and the pronotal collar characteristically shaped, Figs 83, 119). The male of *A. tuberculiscutis* shares with *A. saussurei* and *A. crassifemorialis* the forewing with two submarginal cells but differs in having a triangularly elongate clypeus (Fig. 155), the anterior angles of the pronotal collar are elevate to form obliquely truncate tubercles (Figs 242, 284) and the gonostyle is bifid apically (Fig. 326). (*A. saussurei* and *A. crassifemorialis* have no triangularly elongate clypeus and the gonostyle is not bifid apically). The males of the Palearctic species *A. barbara* and *A. theryi* resemble *A. tuberculiscutis* in having two submarginal cells but differ in having the clypeus not triangularly elongate, the pronotal collar regularly transversely rugose and the gonostyle is not bifid apically.

Description: Forewing with two submarginal cells and gastral apex brownish-black, without metallic shine. Mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe, supra-antennal lamellate projection absent, arolia present, claws have no basal tooth. Propodeal enclosure irregularly rugose medially, obliquely rugose laterally, all pruinose. Mesopleuron, metapleuron and propodeum laterally distinctly irregularly punctate (punctures 0-2 diameters apart).

♀: 21-22 mm. Black, with the following reddish-brown: mandible (except apex), clypeus (except next to free margin), scape, pedicel, flagellomeres I-IV, pronotum, scutum laterally, upper part of mesopleuron and wing base, scutellum, metanotum, petiole, legs (femora darkened above), tergum I laterally, gastral segment II, sterna III-V (partly) and segment VI. Clypeus, frons, pronotal lobe (and patch below), band along mesopleural suture, propodeum posterolaterally and hindcoxa dorsally covered with appressed pale-golden setae; remaining parts of mesopleuron and propodeum pruinose. White erect setae only on head, propleuron and foreleg. Clypeus slightly elongate, with distinct median lobe and tooth laterally (Fig. 11). Frons and vertex dull, prothorax shiny. Anterior angles of pronotal collar raised to form truncate tubercles and broad tubercle medially (Figs 83, 119). Scutum transversely, regularly ridged. Scutellum and metanotum longitudinally rugose, both raised medially to form elongate, flattened tubercle sharply marginate on

each side (Figs 528, 529). Flagellomere I:II = 1.6; length of petiole = hindtarsomeres I+II.

♂: 22-24 mm. Black, with following reddish-brown: mandible (except apex), clypeus next free margin, flagellomeres III-V (partly), prothorax, scutum laterally, tegula, scutellum, metanotum, petiole (darkened dorsally), tergum I laterally, remaining gastral segments (darkened dorsally). Clypeus, frons, pronotal lobe, small band along mesopleural suture, propodeum posterolaterally covered with bright-golden appressed setae; remaining body parts more or less pruinose; yellowish-brown erect setae only on head. Clypeus triangularly elongate (Fig. 155), clypeal disk (Fig.197). Hypostomal carina broadly elevate ventrally and slightly hyaline (Fig. 531). Scutum transversely ridged. Scutellum and metanotum as in female. Flagellomere I:II=1.5; length of petiole = hindtarsomeres I+II+ 0.25 × III to I+II+ 0.5 × III. Gonostyle bifid apically: Fig. 326; penis valve laterally: Fig. 441, dorsally: Fig. 367, apically: Fig. 481.

G e o g r a p h i c d i s t r i b u t i o n : Kenya, Namibia.

***Ammophila turneri* DOLLFUSS nov.sp. (Figs 28, 63, 100, 135, 172, 213, 259, 301, 345, 384, 419, 460, 494)**

R e c o r d s : **Holotype:** ♂, **South Africa:** Cape Province: Swellendam, November 1933, leg. R.E. Turner (BMNH). **Paratypes:** 2♂♂, 3♀♀, same locality (BMNH). **South Africa:** Eastern cape province, 70 km SW Queenstown, 32°07'S 26°18'E, 1355 m, 2.I.2010, leg. J. Halada (1♀ OÖLM).

N a m e d e r i v a t i o n : : In honor of the collector R. E. Turner, Great Britain.

R e c o g n i t i o n : Both sexes of *Ammophila turneri* have the pronotal collar with a prominent median tubercle dorsomedially, subconical and distinctly punctate (Figs 135, 526). The mesothoracic venter is not prominent anteriorly, the episternal sulcus extends to the anteroventral margin of the mesopleuron, the arolia are present and the claws have no basal tooth. The gastral apex is black without metallic shine and the male genitals are large (2 mm) and unusually shaped (Figs 345, 384, 419, 460, 498). The female of *A. turneri* is similar to *A. conifera* and *A. dolichocephala* but differs in having the pronotal collar distinctly punctate (*A. conifera* and *A. dolichocephala* have the pronotal collar impunctate). The female of *A. turneri* differs also from *A. dolichocephala* in having the pronotal collar not elongate, nearly vertical on anterior surface (Figs 28, 63) and the scutum irregularly transversely rugose and coarsely punctate (*A. dolichocephala* has the pronotal collar slightly elongate, more oblique on the anterior face (Fig. 101) and the scutum is dull, sparsely punctate and transversely striate laterally). The male of *A. turneri* differs from *A. conifera*, *A. arnoldi* and *A. longiclypeata* in having differently shaped gonostyle (Fig. 345) and penis valve (Figs 384, 419, 460, 498).

D e s c r i p t i o n : Gastral apex black without metallic shine. Mesothoracic venter not produced anteriorly, supra-antennal lamellate projection absent, episternal sulcus extends to anteroventral margin of mesopleuron, arolia present and claws have no basal tooth.

♀: 21-23 mm. Black, with following reddish-brown: mandible (except apex), tegula, foreleg (except coxa and femur dorsally), apical half of midfemur, midtibia basal half, petiole basally, tergum I laterally, gastral segments II and III (dorsally black). Wings hyaline. Clypeus, frons, pronotal lobe propodeum posterolaterally covered with appressed silvery setae. Mesopleuron, metapleuron and propodeum laterally covered with sparse, fine appressed setae. Leg partly pruinose. Erect setae whitsh-brown. Clypeus

slightly elongate (Fig. 28), disk distinctly convex (Fig. 63). Frons densely coarsely punctate, vertex sparsely punctate. Pronotal collar coarsely, sparsely punctate with prominent median tubercle (Figs 100, 135). Scutum coarsely transversely punctato-rugose; scutellum longitudinally punctato-rugose; metanotum rugose. Propodeal enclosure reticulate medially, obliquely striate laterally, nearly all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally nearly all covered with erect setae. Flagellomeres I:II=1.7-1.9; length of petiole = hindtarsomeres I+II.

♂: 19-21.5 mm. Black, with following reddish-brown: mandible (except apex), tegula, foreleg (except coxa and femur dorsally), midleg (except trochanter and femur dorsally), hindtibia basal half, petiole basally, tergum I basally and gastral segment II. Clypeus, frons, pronotal lobe and propodeum posterolaterally covered with appressed silvery setae. The remaining body parts covered with sparse appressed setae that not obscure underlying sculpture. Leg and gaster pruinose. Erect setae whitish. Wings hyaline. Clypeus distinctly elongate, free margin rounded (Fig. 172), disk ventral half concave, dorsal half convex (Fig. 213). Frons densely punctate, vertex dull, sparsely punctate laterally. Pronotal collar distinctly punctate with prominent median tubercle (Figs 259, 301). Scutum irregularly transversely striate and coarsely punctate between striae. Scutellum longitudinally striate and coarsely punctate; metanotum coarsely punctate. Propodeal enclosure coarsely transversely striate and punctate. Mesopleuron, metapleuron and propodeum laterally coarsely punctato-rugose. Genitalia large (2 mm) and unusually shaped. Gonostyle laterally: Fig. 345; penis valve laterally: Fig. 460, dorsally: Fig. 384, ventrally: Fig. 419, apically: Fig. 498. Flagellomere I:II=1.3-1.7; length of petiole = hindtarsomeres I+II.

G e o g r a p h i c d i s t r i b u t i o n : South Africa.

***Ammophila vulcania* du BUYSSON (Figs 15, 51, 87, 125, 160, 202, 247, 289, 330, 375, 413, 444, 487, 532)**

Ammophila vulcania du BUYSSON 1897: 256, ♂. Holotype: South Africa: Gauteng: Makapan near Johannesburg (MNHN), examined.

M a t e r i a l e x a m i n e d : Benin: Dept. du Borqou kandi Saa env. (1 ♀ OÖLM). Namibia: 100 km NE Grotfounteine (2 ♂♂ OÖLM); 30 km E Rundu (1 ♀ OÖLM); (1 ♂ CAS). South Africa: Mpumalanga 20 km SE Nelspruit (1 ♀ OÖLM); West Cape Klein-karoo Grot riv. Langberg (1 ♀ OÖLM); North Province, Thabazimbi, 40 km S Koedoeskop (1 ♀ Coll. Jacobs); Sommerset East (2 ♂♂ ZMB). Senegal: 10 km E Medina Gounas, 13°08.05'N 13°42.03'W (1 ♀ OÖLM). Tanzania: 70 km N Dodoma 09°40.5'S 35°48'E, 1300 m (1 ♂ OÖLM); Shinyanga pr. 100 km NWW Kahama 03°25'S 31°47'E 1200 m (1 ♀ OÖLM); Tebora, Kalahari and Okanjandwater (5 ♀♀, 3 ♂♂ ZMB). Zambia: Kaoma env. 14°47'S 24°50'E (1 ♂ OÖLM); 70 km S Mpika 12°18'S 31°07'E 1500 m (1 ♀ OÖLM); (1 ♂ CAS). Zimbabwe: 60 km N Bulawayo Maraposa Rd. (1 ♂ OÖLM); 30 km W Harare (3 ♂♂ OÖLM); Gwayi riv. Fatima (1 ♀, 1 ♂ OÖLM).

R e c o g n i t i o n : *Ammophila vulcania* is a large species (♀: 28-36 mm, ♂: 24-29 mm), has the gaster black, with slight metallic shine and apically pruinose. The pronotal collar is sharply marginate in front and has two or three (four) coarse transverse rugae behind (Figs 87, 247). The episternal sulcus ends at the level of scrobe and the claws have no basal tooth. The females of *A. beniniensis* and *A. calva* differ from *A. vulcania* in having the pronotal collar anteriorly rounded and more transverse rugae (Figs 91, 90). The female of *A. clypeolineata* is similar to *A. vulcania* but differs in having the pronotal collar slightly elevate dorsomedially and with more than three rugae (Fig. 89), additionally, the propodeal enclosure is all covered with transverse striae and the

bodylength 26-28.5 mm. The male of *A. vulcania* differs from *A. beniniensis* and *A. calva* in having a differently shaped pronotal collar (Fig. 247), the clypeus elongate, narrowed medially and semicircularly emarginate (Fig. 160), a lobe on hypostomal carina near mandible socket (Fig. 532) and characteristically shaped penis valve (Figs 375, 413, 444). The male of *A. clypeolineata* differs from *A. vulcania* in having the clypeus with a longitudinal carina on each side laterally (Fig. 161) and a differently shaped penis valve (Figs 371, 445).

Description: Gaster black, with slight metallic shine, pruinose apically. Supra-antennal lamellate projection absent, mesothoracic venter not produced anteriorly, episternal sulcus ends at level of scrobe and claws have no basal tooth.

♀: 28-36 mm. Black, with following dark reddish-brown: head (including scape, pedicel and flagellomeres I-III), prothorax, propodeum (in some specimens) and legs (partly); some specimens nearly all black. Wings dark brown, in some specimens with violaceous shine. Pronotal lobe with appressed silvery setae posteriorly, remaining body parts more or less pruinose. Erect setae on head, prothorax and foreleg black, on mesothorax and propodeum white. Clypeus slightly elongate (Fig. 15), disk distinctly convex (Fig. 51). Frons and vertex dull, impunctate. Anterior border of pronotal collar sharply marginate, forming a sharp angle with almost vertical anterior surface and with not more than three straight more or less complete transverse rugae on dorsal face (Fig. 87, 125). Scutum coarsely, transversely ridged, median line indistinct. Scutellum and metanotum longitudinally ridged. Propodeal enclosure coarsely reticulate, with fine short setae medially, transversely ridged and glabrous laterally. Mesopleuron, metapleuron and propodeum laterally transversely rugose and punctate. Arolia rudimental or absent. Flagellomere I:II = 1.7-1.8; length of petiole = hindtarsomere I+ 0.6 × II to I+ 0.75 × II.

♂: 24-29 mm. Black, with following dark reddish-brown: Mandible (except apex), clypeus, scape, pedicel, flagellomeres I-III, pronotal collar, pronotal lobe, fore- and midlegs (darkened dorsally); hindleg, petiole and gaster dark brown to black. Wings yellowish-brown. Clypeus and frons with appressed silvery-golden setae; thorax pruinose. Brown erect setae on head and prothorax, white on mesothorax and propodeum. Clypeus elongate, narrowed anteriorly, projection rectangular at corners and deeply emarginate medially, appearing almost bidentate (Fig. 160), clypeal disk nearly flat (Fig. 202). Frons dull, nearly impunctate. Pronotal collar with two to four coarse transverse rugae (Fig. 247). Hypostomal carina with lobe near mandibular socket (Fig. 532). Forecoxa with small tooth dorsally. Scutum coarsely, transversely ridged, midline slightly developed. Scutellum and metanotum longitudinally ridged. Propodeal enclosure coarsely reticulate and covered with short erect setae medially, coarsely transversely rugose and glabrous laterally. Mesopleuron, metapleuron and propodeum laterally transversely rugose. Arolia present. Flagellomere I:II=1.5-1.7; Length of petiole = hindtarsomeres I+II to I+II+ 0.3 × III. Genitalia characteristically shaped: gonostyle laterally: Fig. 330; penis valve laterally: Fig. 444, dorsally: Fig. 375, ventrally: Fig. 413, apically: Fig. 487.

Geographic distribution: Benin, Namibia, Senegal, South Africa, Tanzania, Zambia, Zimbabwe.

***Ammophila zambiensis* DOLLFUSS nov.sp. (Figs 193, 234, 280, 322, 363, 403, 437, 477, 518)**

Records: Holotype: ♂, Zambia: 150 km S Mwinilunga, 13°11'S 24°14'E, 1100 m, 18.X.2008, leg. M. Halada (OÖLM). Paratypes: Angola: Luimbale, Mt. Moco, 1800-1900 m, III.1934 (1♂ BMNH). Tanzania: Matengo Hochland, SW Songea, Ugano, 1500-1700 m, 11.-20.I.1936 (1♂ NHMW). Zambia: 150 km S Mwinilunga, 13°11'S 24°14'E, 1100 m, 18.X.+2.XI.2008 (8♂♂ OÖLM, 1♂ CAS); 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 18.X.+2.XI.2008 (10♂♂ OÖLM); 95 km NW Mpika, 11°06'S 31°14'E, 1500 m, 27.XI.2005 (1♂ OÖLM). Democratic Republic Kongo: IDIOFA, 7.VII.1957 (1♂ CAS).

Name derivation: The holotype was collected in Zambia.

Recognition: The male of *Ammophila zambiensis* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not produced anteriorly and the metapleuron is not covered with dense appressed setae. The male of *A. zambiensis* differs from *A. rubripes* in having the metapleuron without dense appressed silvery setae and a characteristically shaped penis valve in lateral view (Fig. 477) (*A. rubripes* has the mesopleuron, the metapleuron and the propodeum laterally evenly covered with short appressed silvery setae and a differently shaped penis valve, Fig. 480). The male of *A. centroafricana* is similar to *A. zambiensis* but differs in having the mesopleuron, the metapleuron and the propodeum laterally evenly covered with fine appressed silvery setae that not obscure the underlying sculpture and in most specimens a reddish-brown pronotal collar. The male of *A. punctaticeps* differs from *A. zambiensis* in having a characteristically shaped penis valve in apical and lateral view (Figs 470, 511). The male of *A. nigrifrons* differs from *A. zambiensis* in having the penis valve in apical view not distinctly emarginate basally (Fig. 507) and the mesopleuron, the metapleuron and the propodeum laterally evenly covered with fine appressed silvery setae. The male of *A. malickyi* is similar to *A. zambiensis* but differs in having the penis valve without apical spines (Fig. 469). The male of *A. curvistriata* is similar to *A. zambiensis* but differs in having the clypeus slightly elongate (Fig. 184), a differently shaped penis valve in lateral view (Fig. 468) and the mandible is brown basally and apically.

Description: Gastral apex black, without metallic shine, pruinose. Episternal sulcus extends to anteroventral margin of mesopleuron, supra-antennal lamellate projection absent, mesopleural venter not produced anteriorly, arolia present and claws have no basal tooth.

♂: 19-22 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midlegs, petiole basally, tergum I laterally, gastral segment II (dorsally black), tergum III laterally, in some specimens hindtibia dorsally. Clypeus, frons, pronotal lobe and mesopleuron along mesopleural suture covered with dense appressed silvery setae (metapleuron not), remaining body parts more or less pruinose. Erect setae whitish. Clypeus elongate (Fig. 193), disk ventral half flat (Fig. 234). Frons densely punctate, vertex punctate (except ocellar area). Pronotal collar shiny, punctate, punctures 1-2 diameters apart (Figs 280, 322). Scutum coarsely punctate with short transverse rugae. Scutellum longitudinally ridged and coarsely punctate. Metanotum coarsely punctate. Propodeal enclosure coarsely reticulate and punctate, laterally transversely ridged, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally densely coarsely punctate. Flagellomere I:II=1.3-1.4; length of petiole = hindtarsomeres I+II+

0.25 × III to I+II+III. Gonostyle laterally: Fig. 363; penis valve laterally: Fig. 477, dorsally: Fig. 403, ventrally: Fig. 437, apically: Fig. 518.

♀ unknown.

Geographic distribution: Angola, Democratic Republic Kongo, Tanzania, Zambia.

Note: Maybe the female of *A. fischeri* and the male of *A. zambiensis* are conspecific, further examinations should be conducted.

***Ammophila zetteli* DOLLFUSS nov.sp. (Figs 39, 74, 110, 146, 183, 222, 310, 350, 391, 427, 458, 506)**

Records: Holotype: ♂, Kenya: Mt. Kenya, W Chogoria, Chog-Route, 3000-3200 m, 14.-18.I.1994, leg. Zettel (coll. Zettel). Paratypes: Angola: 5 mi. W Nova Lisboa, 1740m, 27.V.1958 (1 ♀ CAS); 14 mi. SE Hengue, 1720 m, 29.V.1958 (1 ♀ CAS); 19 mi. NE Sada Bandeira, 1600 m, 21.V.1968 (1 ♀ CAS). Cameroon: Humbo Bango, 28.XII.1908 (1 ♀ BMNH); Humbo Bango, 28.XII.1908, leg. Riggenschach (1 ♀ ZMB). Kenya: Mt. Kenya, 5 mi. NE Rotundu, 10.500ft, 10.VII.1949 (1 ♀ BMNH). Mt. Kenya, W Chogoria, Chog-Route, 3000-3200 m, 14.-18.I.1994 (3 ♀♀ coll. Zettel); Mt. Kenya, W Chogoria, Chog-Route, 3000-3500 m, 15.-17.I.1994 (1 ♂, 1 ♀ coll. Zettel, 1 ♀ OÖLM); Mt. Kenya, W Chogoria, Chog-Route, 2000-2900 m, 19.I.1994 (1 ♀ coll. Zettel). Zambia: 50 km E Mwinilunga, 11°43'S 24°47'E, 1400 m, 18.X.2008 (1 ♀ OÖLM). Democratic Republic Kongo: Lwiro river, 47 km N Bukavu, 1950m, 15.VII.1957 (1 ♀ CAS).

Name derivation: In honor of the collector of the holotype Dr. Herbert Zettel, Museum of Natural History, Vienna, Austria.

Recognition: *Ammophila zetteli* has the gastral apex black, without metallic shine but pruinose. The episternal sulcus extends to the anteroventral margin of the mesopleuron, the mesothoracic venter is not prominent anteriorly and the claws have no basal tooth. The female of *A. curvistriata* is similar to *A. zetteli* but differs in having the frons and the vertex sparsely, finely punctate and the pronotal collar in most specimens nearly impunctate. The female of *A. punctaticeps* is similar to *A. zetteli* but differs in having the metapleuron covered with appressed silvery setae. The female of *A. fischeri* is similar to *A. zetteli* but differs in having the pronotal collar reddish-brown and more or less slightly punctate. The female of *A. parapunctaticeps* differs from *A. zetteli* in having the mesopleuron and the propodeum laterally partly reddish-brown. The male of *A. zetteli* differs from *A. nigrifrons* in having the penis valve distinctly differently shaped, apically: Fig. 506 and laterally: Fig. 458 (*A. nigrifrons* has the penis valve not distinctly emarginate basally in apical view, Fig. 507). The male of *A. curvistriata* differs from *A. zetteli* in having a differently shaped penis valve (Figs 468, 509).

Description: Gaster apex black, without metallic shine, pruinose. Mesothoracic venter not produced anteriorly, episternal sulcus extends to anteroventral margin of mesopleuron, arolia present and claws have no basal tooth.

♀: 17.5-23.5 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midleg (except coxa and femur dorsally), tergum I laterally, gastral segment II (except dorsally), segment III laterally and ventrally. Wings hyaline, slightly brownish. Clypeus, frons, pronotal lobe, mesopleuron along mesopleural suture and propodeum posterolaterally covered with appressed silvery setae, metapleuron not. Erect setae whitish-brown. Clypeus slightly elongate, sparsely punctate (Fig. 39), disk convex (Fig. 74). Frons densely punctate; vertex sparsely punctate; pronotal collar shiny, punctate

(punctures 0-2 diameters apart). Scutum coarsely, densely punctate and transversely rugose laterally; scutellum densely punctate anteriorly, longitudinally rugose and punctate posteriorly; metanotum densely punctate. Propodeal enclosure irregularly transversely punctato-rugose, all covered with erect setae. Mesopleuron, metapleuron and propodeum laterally coarsely, densely punctate. Pronotal collar (Figs 110, 146). Flagellomere I:II=1.6-1.9; length of petiole = hindtarsomeres I+II to I+II+ 0.3 × III.

♂: 21.5 mm. Black, with following reddish-brown: mandible (except apex), tegula, fore- and midlegs (except coxa and femur dorsally), tergum I laterally, gastral segment II (black stripe dorsally). Clypeus, frons, pronotal lobe, mesopleuron (densely along mesopleural suture), propodeum posterolaterally covered with appressed silvery or slight brassy setae, metapleuron not; hindcoxa pruinose. Erect setae whitish-brown. Clypeus elongate (Fig. 183), disk flat on ventral half, convex on dorsal half (Fig. 222). Frons and vertex densely punctate; pronotal collar distinctly punctate (punctures 0-1 diameter apart). Scutum coarsely, densely punctate medially, transversely punctato-rugose laterally; scutum longitudinally ridged and coarsely punctate; metanotum coarsely punctate. Propodeal enclosure coarsely irregularly reticulate. Mesopleuron, metapleuron and propodeum laterally coarsely punctate. Flagellomere I:II=1.7; length of petiole = hindtarsomeres I+II. Gonostyle laterally: Fig. 350; penis valve without spines: laterally: Fig. 458, dorsally: Fig. 391, ventrally: Fig. 427, apically: Fig. 506.

G e o g r a p h i c d i s t r i b u t i o n : Angola, Cameron, Kenya, Zambia.

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Zusammenfassung

Eine Revision für die Arten der Gattung *Ammophila* KIRBY 1798 der subsaharan Region wird erstellt, die 46 Arten beinhaltet. Die folgenden 22 neuen Arten werden beschrieben: *A. africana*, *A. arnoldi*, *A. bispinosa*, *A. centroafricana*, *A. clypeolineata*, *A. fischeri*, *A. kenyensis*, *A. kohli*, *A. longiclypeata*, *A. malickyi*, *A. namibiensis*, *A. nigri*, *A. nigrifrons*, *A. parapunctaticeps*, *A. pseudodolichodera*, *A. pseudokalaharica*, *A. ressl*i, *A. schalleri*, *A. snizeki*, *A. turneri*, *A. zambiensis*, *A. zetteli*. Die bisher unbekanntenen Männchen von *A. barbarorum* ARNOLD 1951, *A. bechuana* (R. TURNER 1929) und *A. curvistriata* CAMERON 1908, sowie das Weibchen von *A. crassifemoralis* (R. TURNER 1919) werden beschrieben. Die folgenden Arten sind neue Synonyme in *Ammophila* (der gültige Name steht jeweils zuletzt): *A. koppenfelsii* TASCHENBERG 1880 = *A. beniniensis* (PALISOT de BEAUVOIS 1806). *Sphex laticeps* ARNOLD 1928 = *A. braunsi* (R. TURNER 1919). *Sphex egregia* race *littoralis* ARNOLD 1920 = *A. insignis* F. SMITH 1856. *Sphex bonaespei* var. *ferrugineipes* ARNOLD 1920 = *A. rubiginosa* LEPELETIER de SAINT FARGEAU 1845. *A. bonaespei* LEPELETIER de SAINT FARGEAU 1845, *A. ferrugineipes* LEPELETIER de SAINT FARGEAU 1845 und *A. rufipes* var. *obscura* BISCHOFF 1912 = *A. rubripes* SPINOLA 1839. Vier Lektotypen werden designiert.

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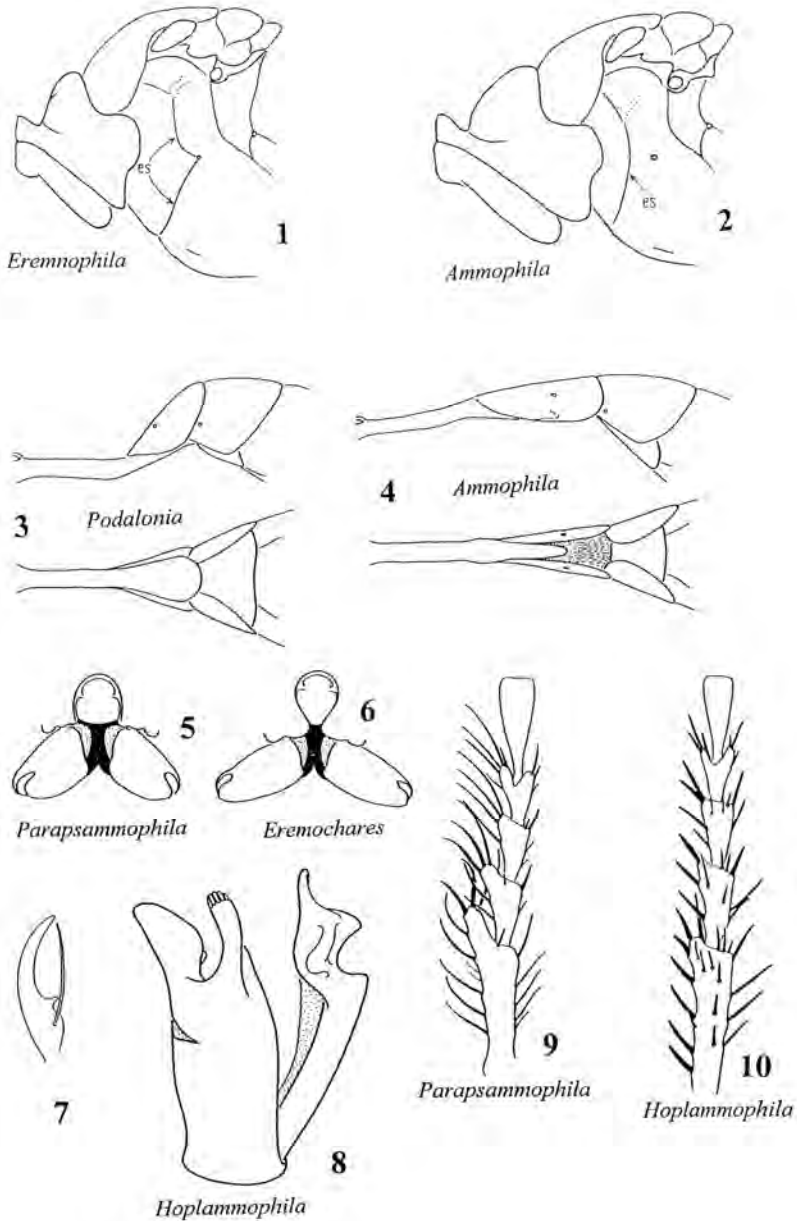
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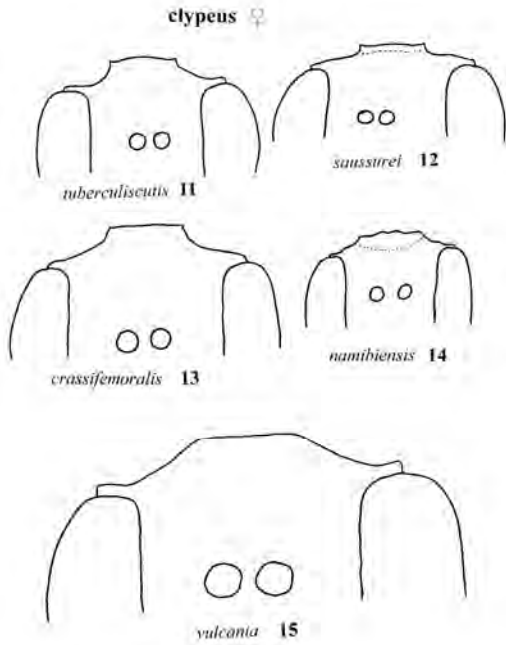
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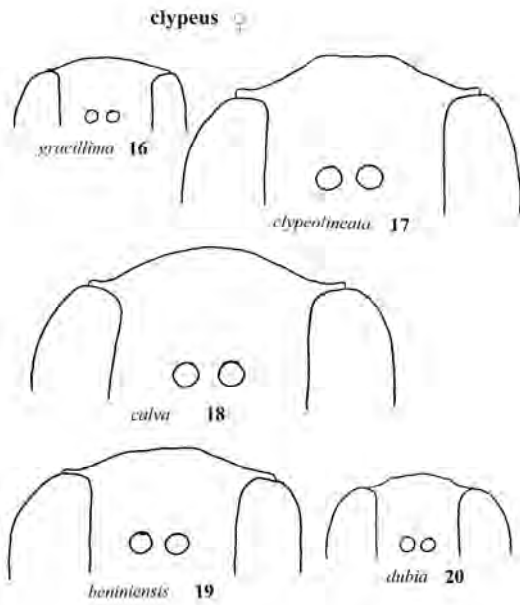
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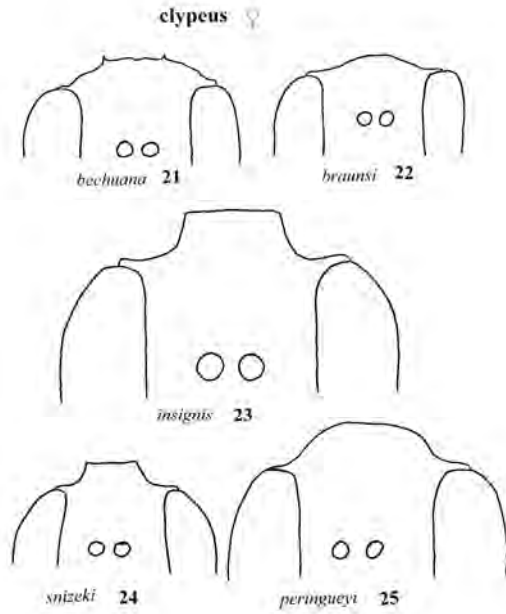
Figs 1-10: (1) *Eremnophila* and (2) *Ammophila*: lateral view of anterior half of thorax (es episternal sulcus); (3) *Podalonia*: gastral segments I-II lateral and ventral; (4) *Ammophila*: gastral segments I-II lateral and ventral; (5) *Parapsammophila* and (6) *Eremochares*: posterior view of petiole socket, hindcoxa, and propodeal sternite (solid black); (7) lateral view of hindtarsal claw with basal tooth; (8) *Hoplammophila*: male genitalia; (9) *Parapsammophila*: foretarsomere I of female; (10) *Hoplammophila*: foretarsomere I of female; (BOHART & MENKE 1976).



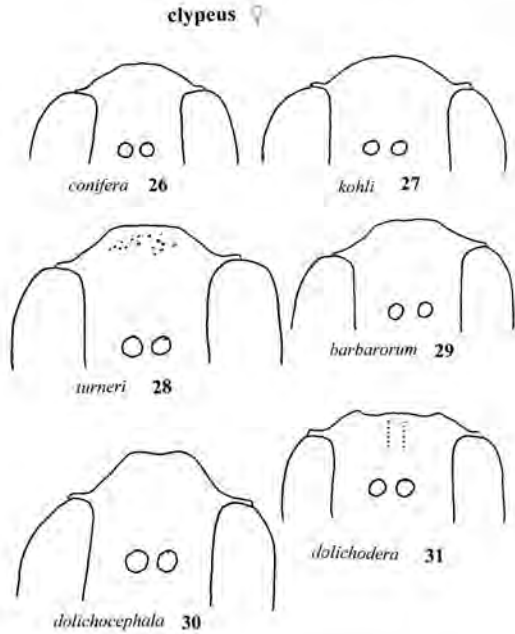
Figs 11-15: clypeus of female.



Figs 16-20: clypeus of female.

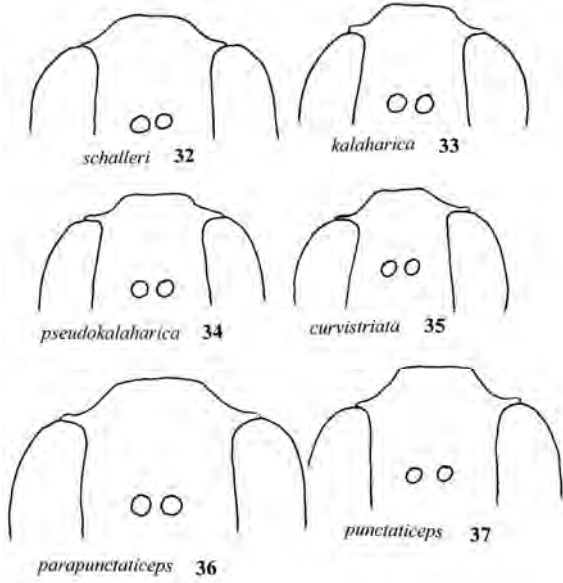


Figs 21-25: clypeus of female.



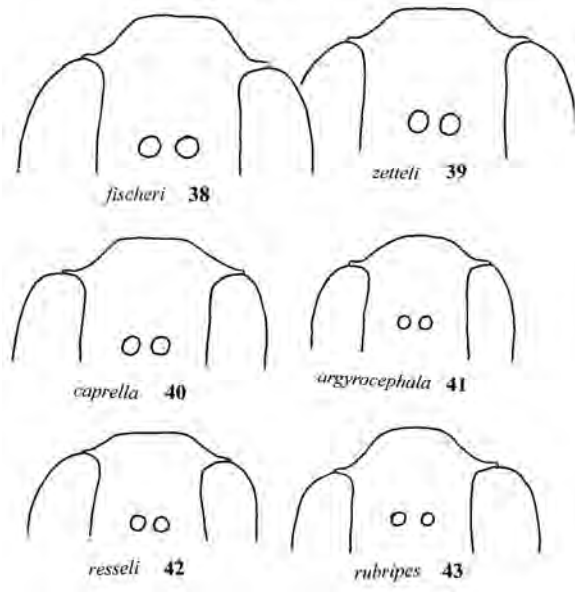
Figs 26-31: clypeus of female.

clypeus ♀

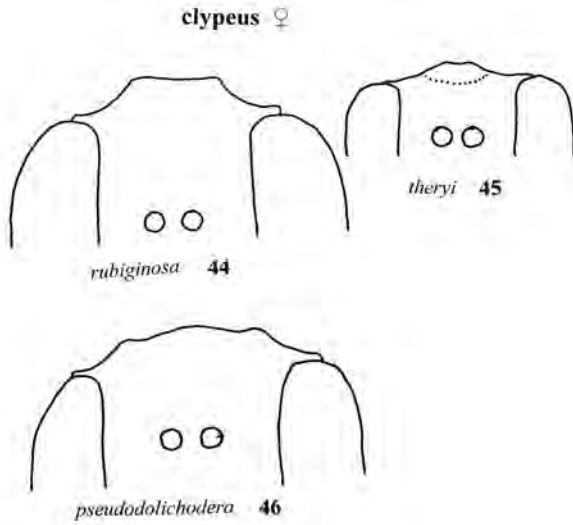


Figs 32-37: clypeus of female.

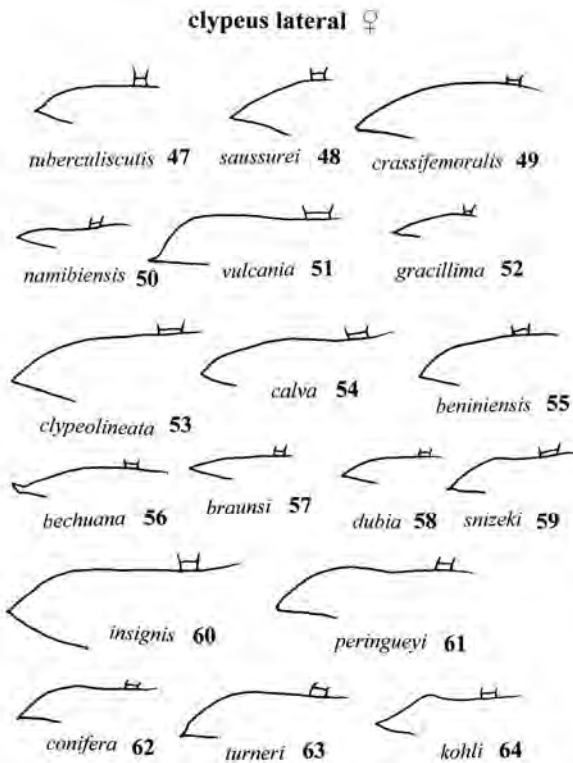
clypeus ♀



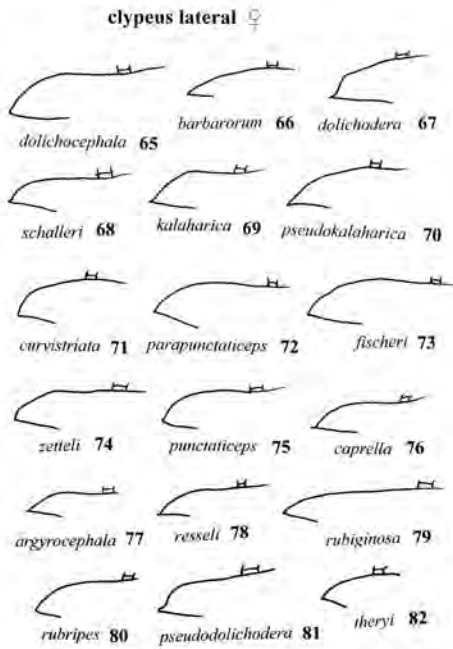
Figs 38-43: clypeus of female.



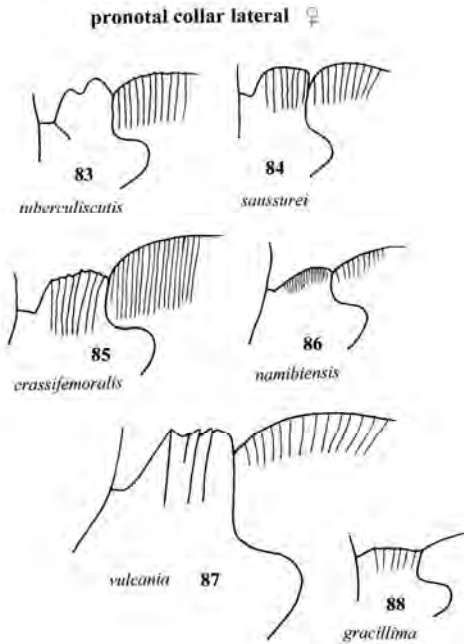
Figs 44-46: clypeus of female.



Figs 47-64: clypeus of female in lateral view.

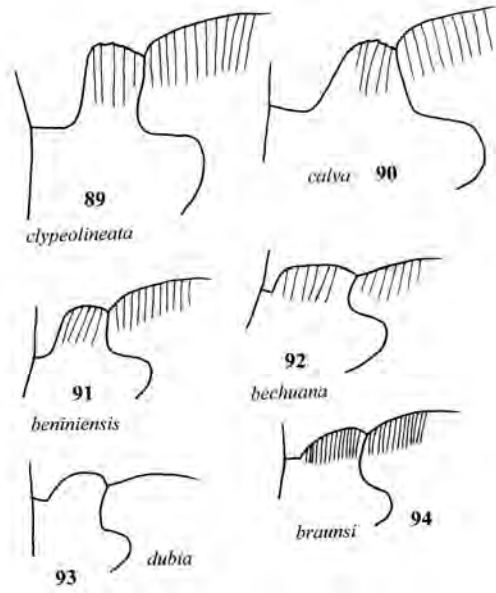


Figs 65-82: clypeus of female in lateral view.



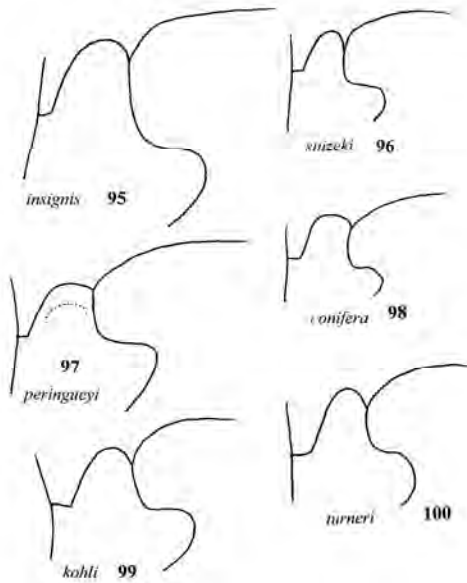
Figs 83-88: pronotal collar of female in lateral view.

pronotal collar lateral ♀

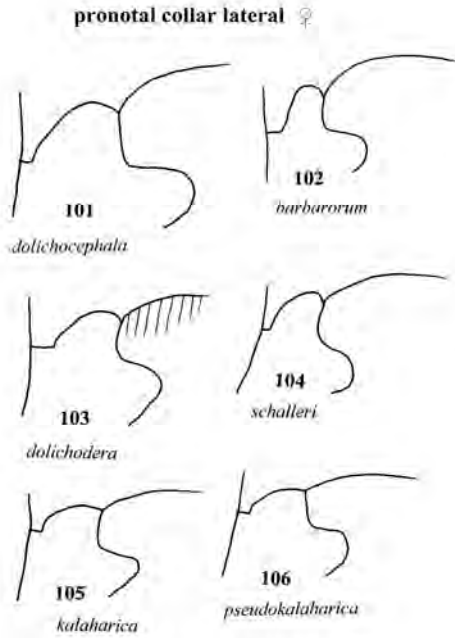


Figs 89-94: pronotal collar of female in lateral view.

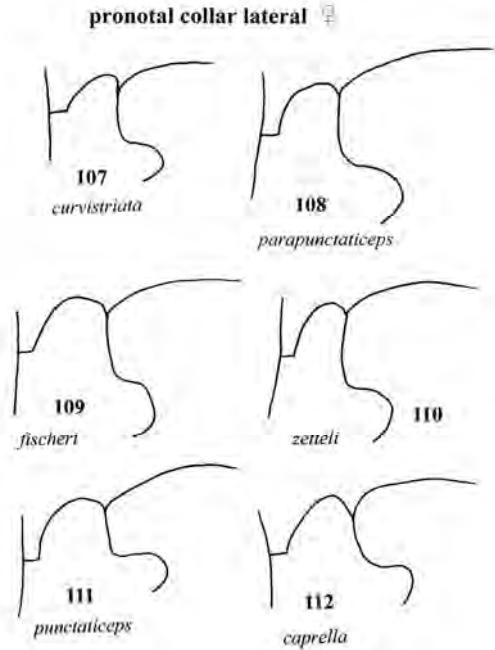
pronotal collar lateral ♂



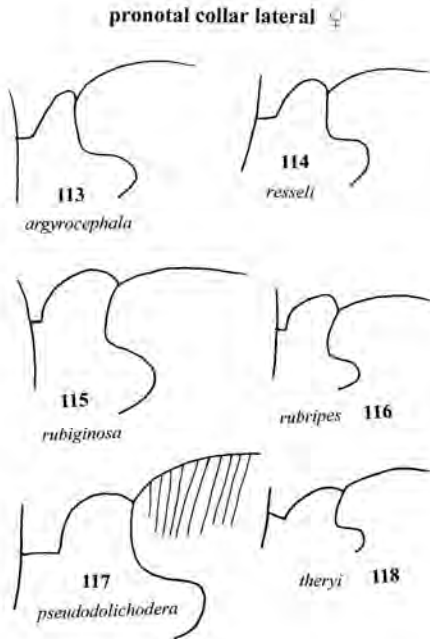
Figs 95-100: pronotal collar of female in lateral view.



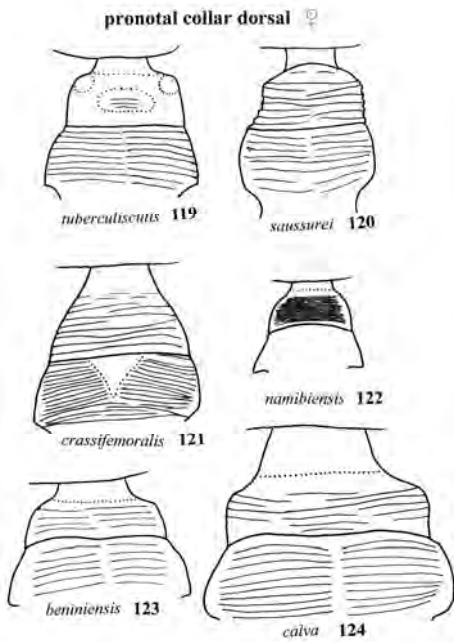
Figs 101-106: pronotal collar of female in lateral view.



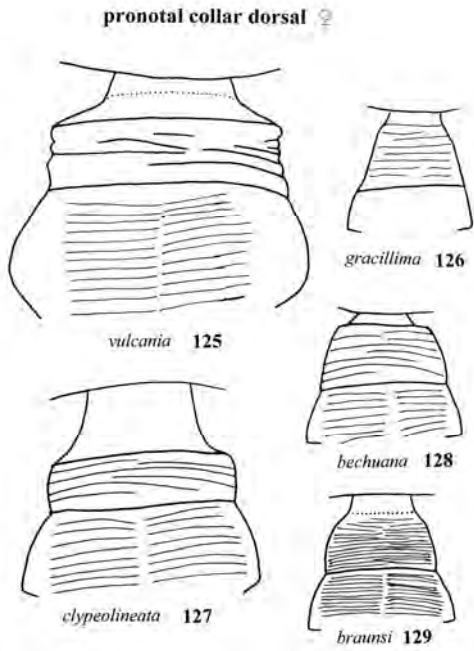
Figs 107-112: pronotal collar of female in lateral view.



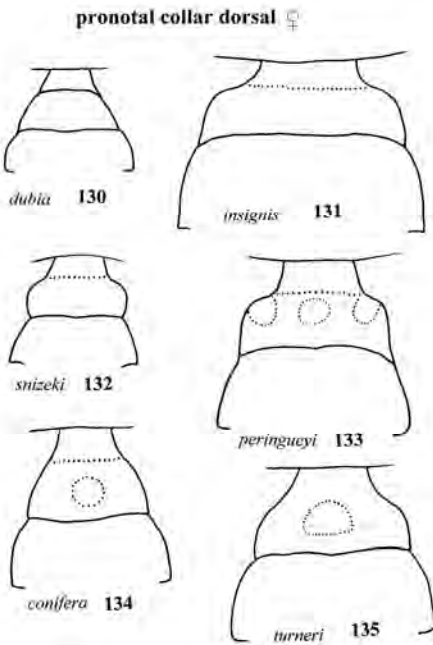
Figs 113-118: pronotal collar of female in lateral view.



Figs 119-124: pronotal collar of female in dorsal view.



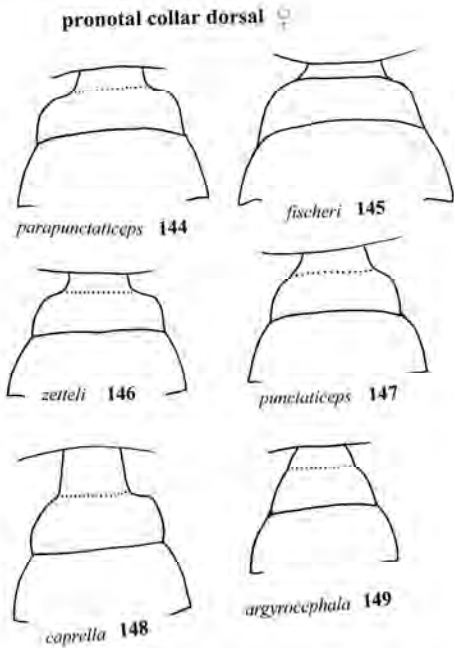
Figs 125-129: pronotal collar of female in dorsal view.



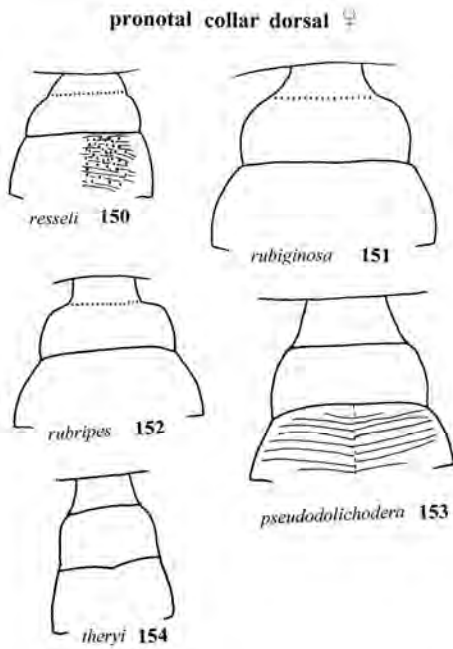
Figs 130-135: pronotal collar of female in dorsal view.



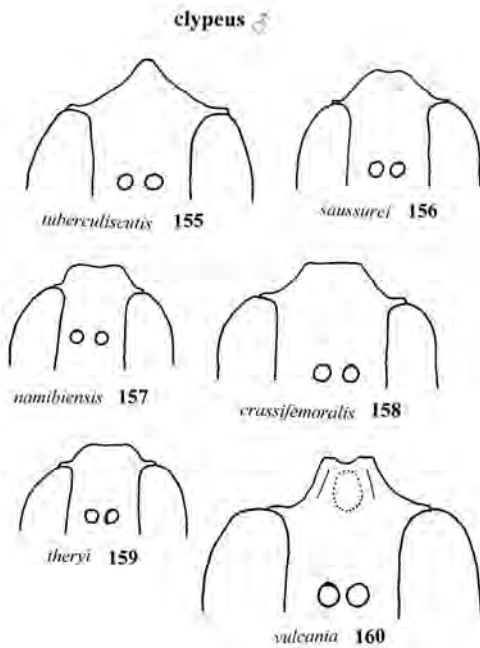
Figs 136-143: pronotal collar of female in dorsal view.



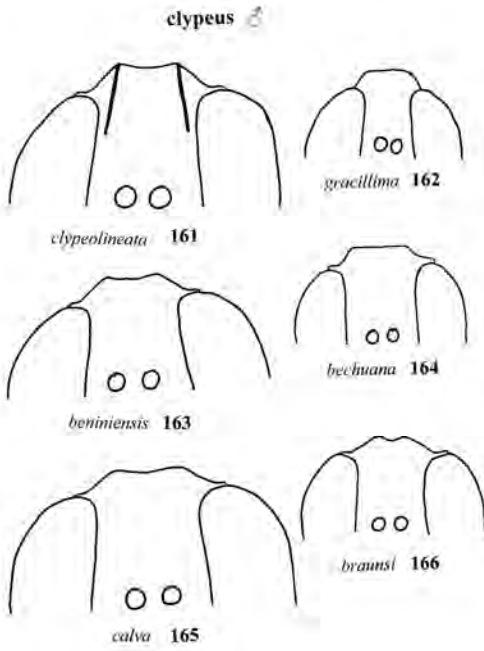
Figs 144-149: pronotal collar of female in dorsal view.



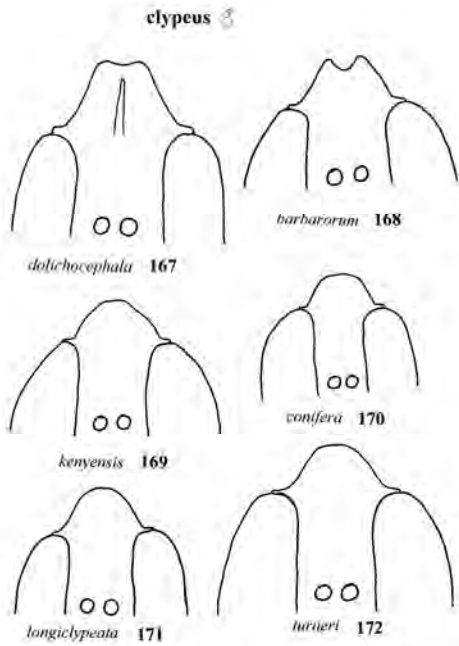
Figs 150-154: pronotal collar of female in dorsal view.



Figs 155-160: male clypeus.

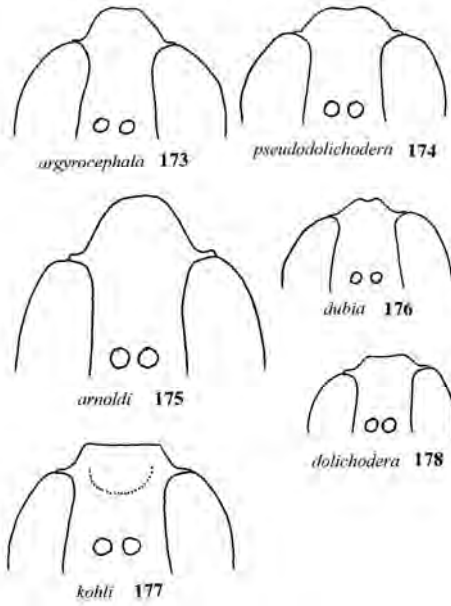


Figs 161-166: male clypeus.



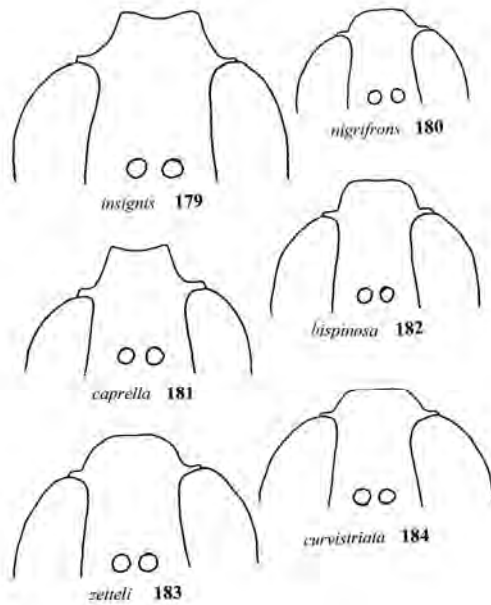
Figs 167-172: male clypeus.

clypeus ♂



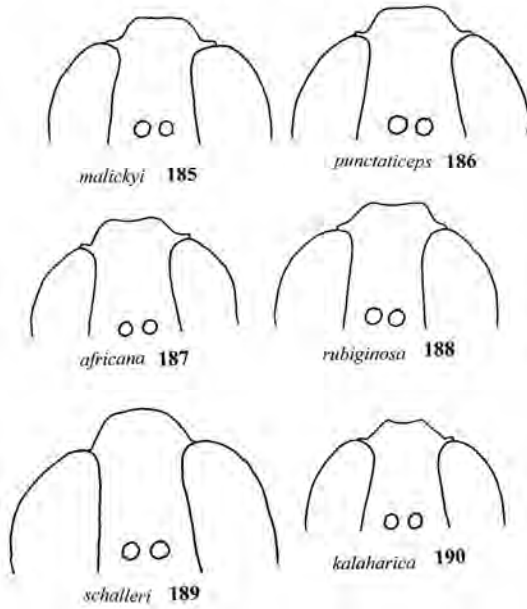
Figs 173-178: male clypeus.

clypeus ♂



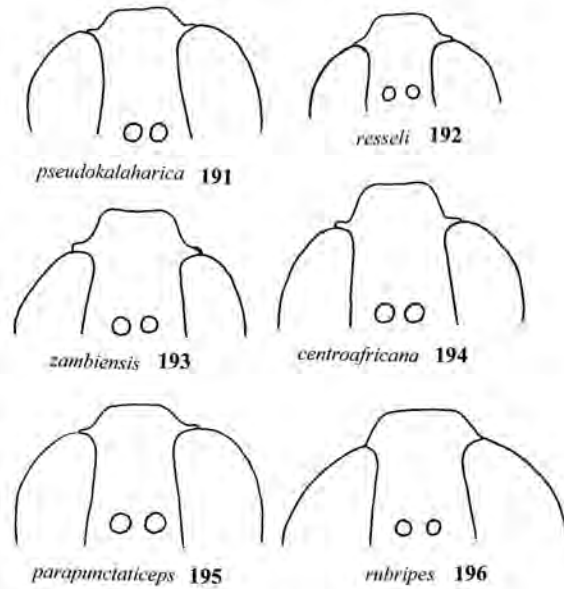
Figs 179-184: male clypeus.

clypeus ♂

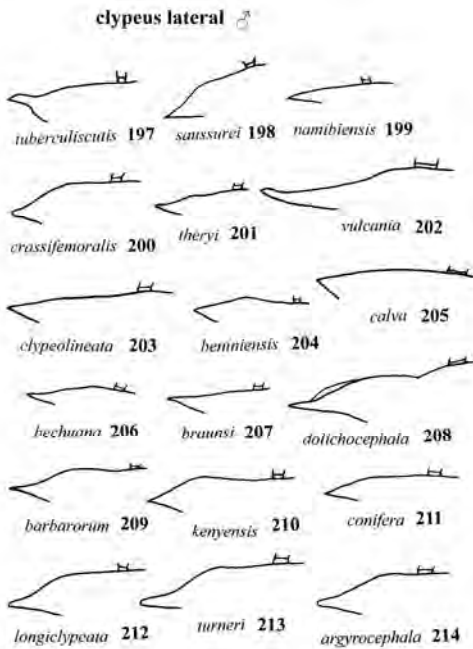


Figs 185-190: male clypeus.

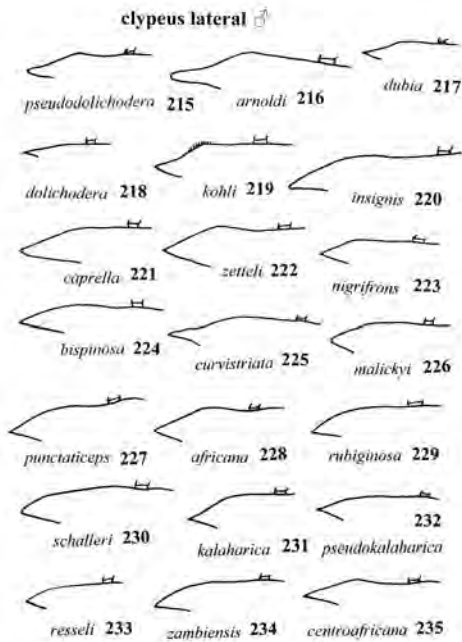
clypeus ♂



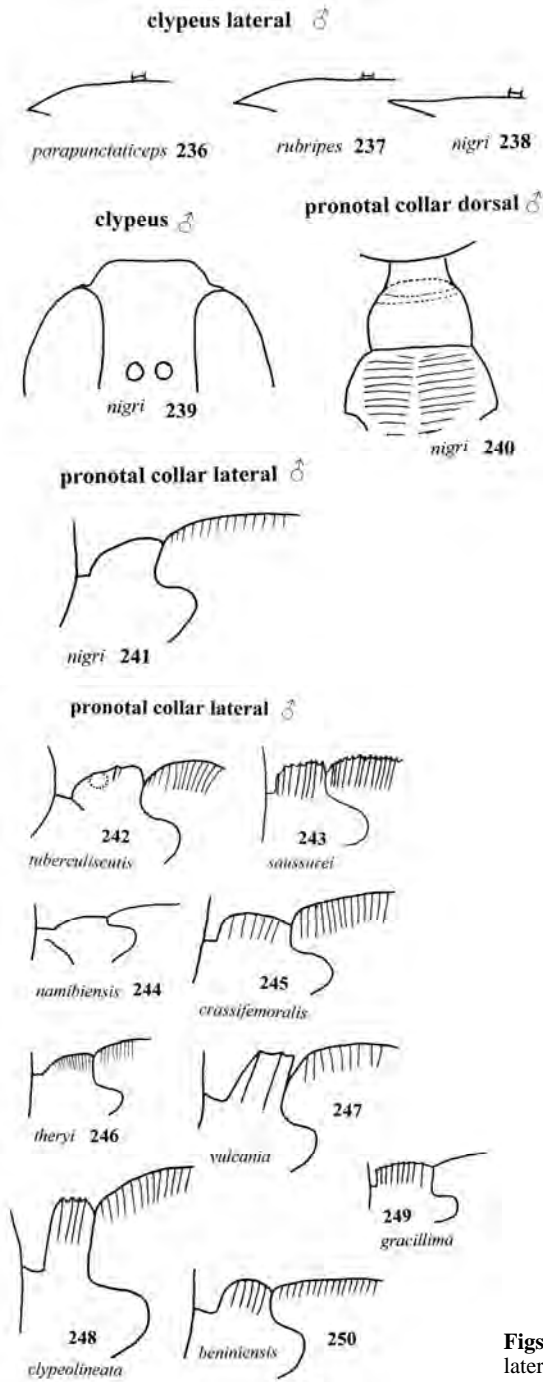
Figs 191-196: male clypeus.



Figs 197-214: male clypeus in lateral view.

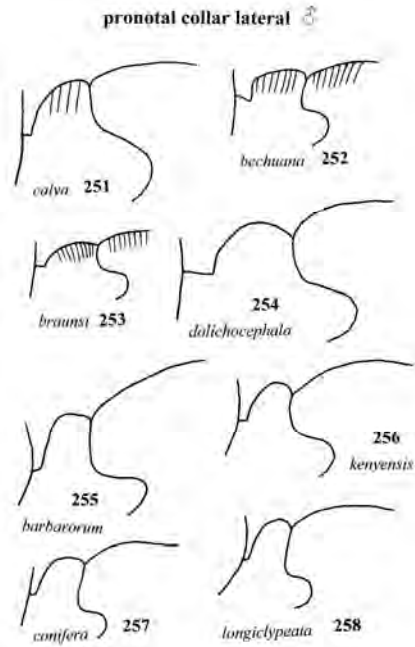


Figs 215-235: male clypeus in lateral view.

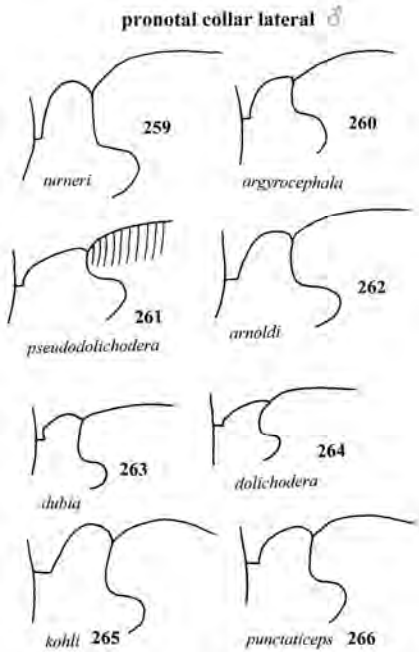


Figs 236-241: (236-238) male clypeus in lateral view; (239) *A. nigri*: male clypeus; (240) *A. nigri*: pronotal collar of male in dorsal view; (241) *A. nigri*: pronotal collar in lateral view.

Figs 242-250: pronotal collar of male in lateral view.

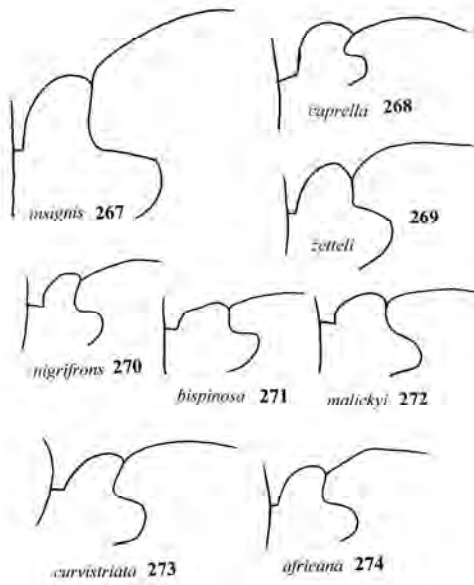


Figs 251-258: pronotal collar of male in lateral view.



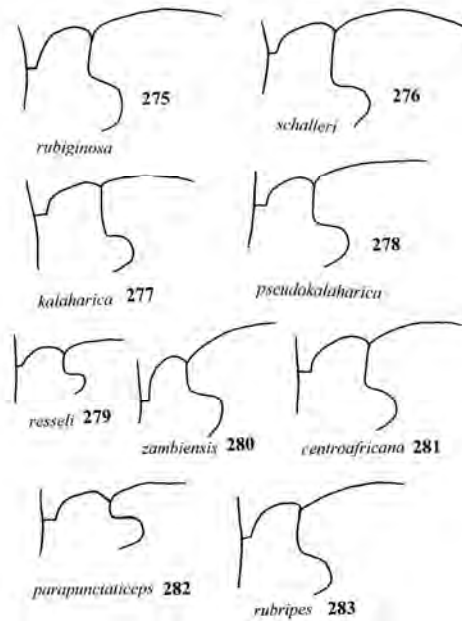
Figs 259-266: pronotal collar of male in lateral view.

pronotal collar lateral ♂

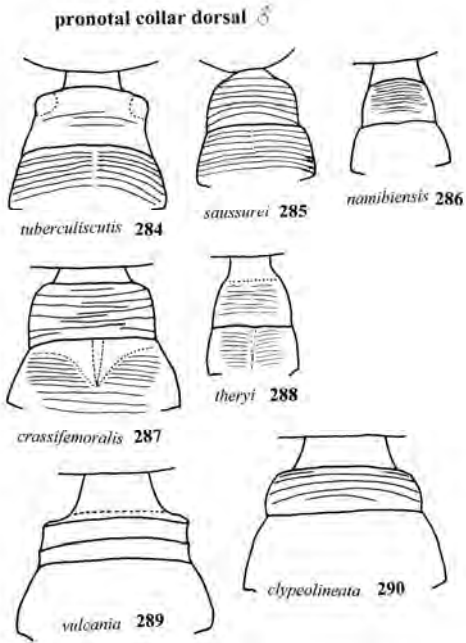


Figs 267-274: pronotal collar of male in lateral view.

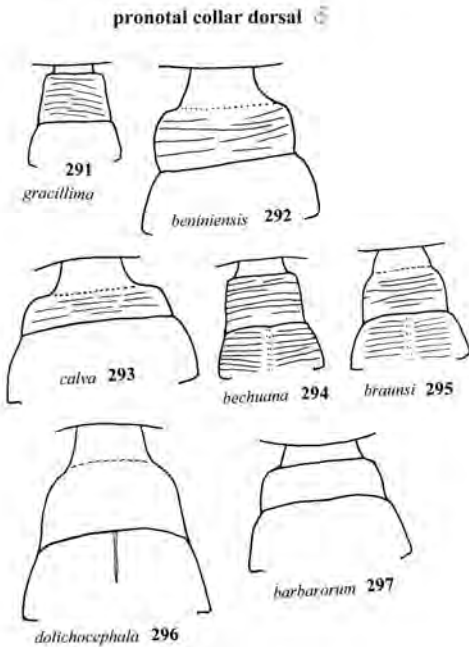
pronotal collar lateral ♂



Figs 275-283: pronotal collar of male in lateral view.



Figs 284-290: pronotal collar of male in dorsal view.



Figs 291-297: pronotal collar of male in dorsal view.

pronotal collar dorsal ♂

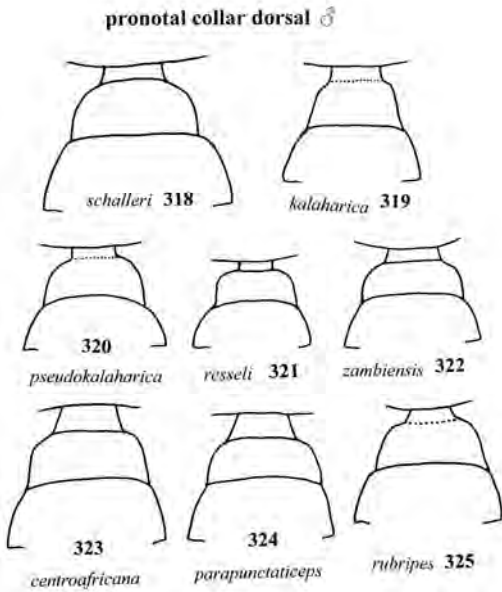


Figs 298-306: pronotal collar of male in dorsal view.

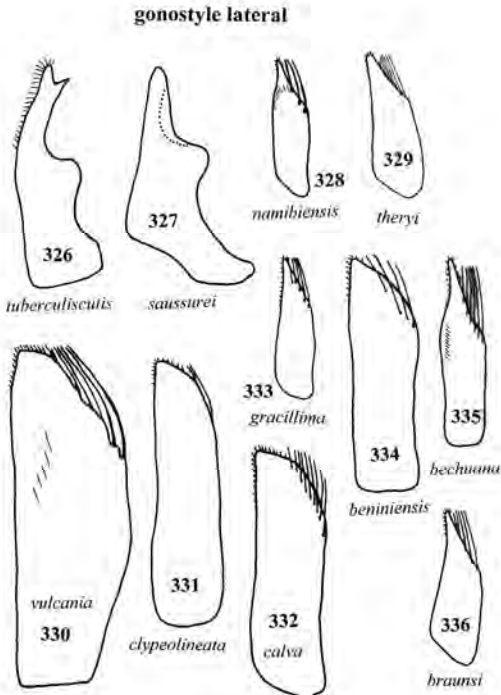
pronotal collar dorsal ♂



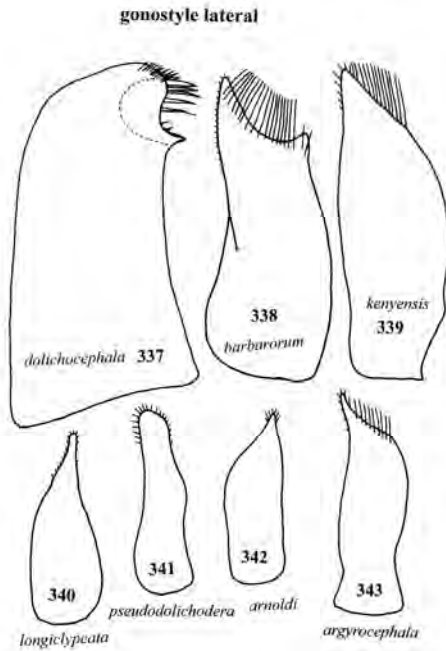
Figs 307-317: pronotal collar of male in dorsal view.



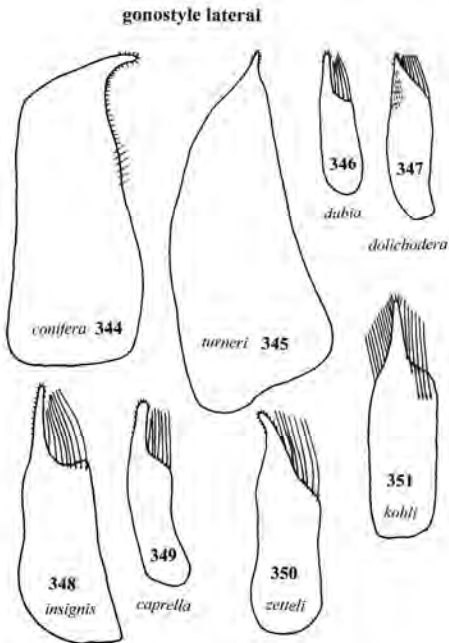
Figs 318-325: pronotal collar of male in dorsal view.



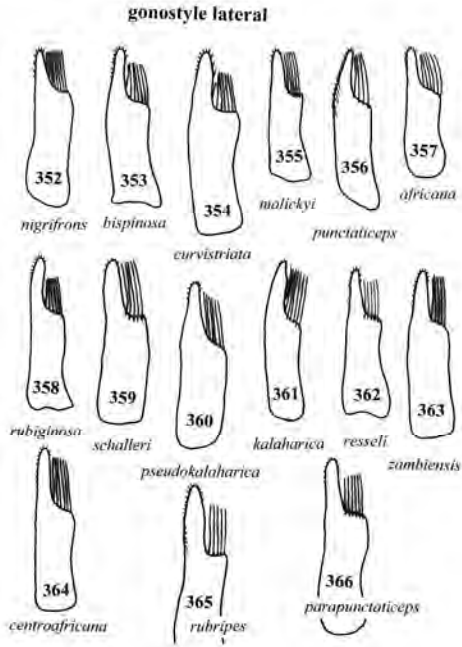
Figs 326-336: male genitalia: gonostyle in lateral view.



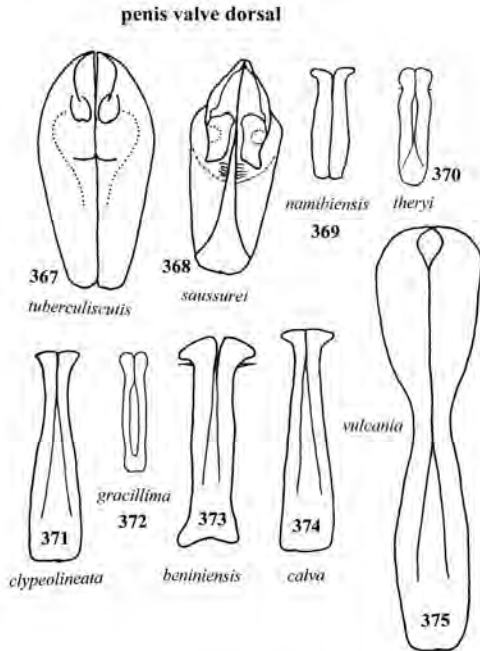
Figs 337-343: male genitalia: gonostyle in lateral view.



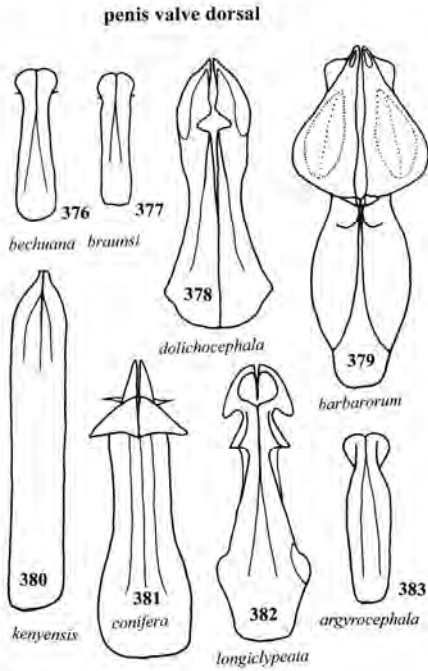
Figs 344-351: male genitalia: gonostyle in lateral view.



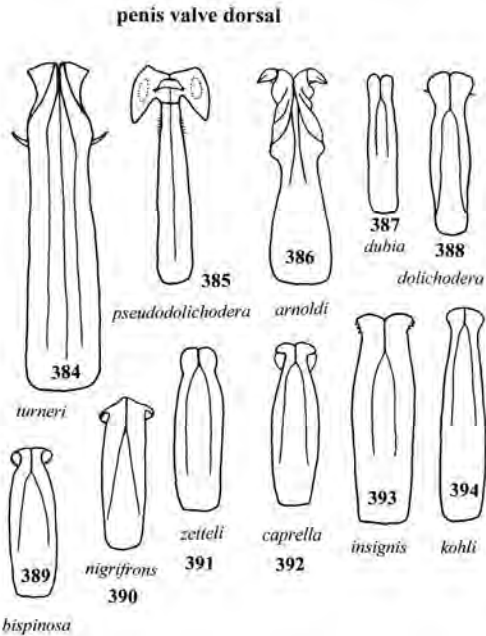
Figs 352-366: male genitalia: gonostyle in lateral view.



Figs 367-375: male genitalia: penis valve in dorsal view.

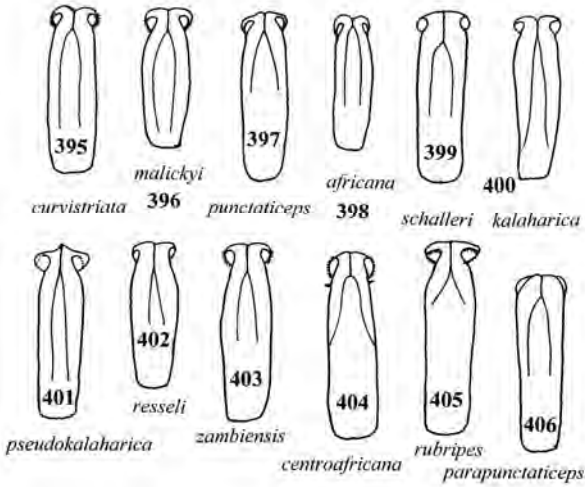


Figs 376-383: male genitalia: penis valve in dorsal view.



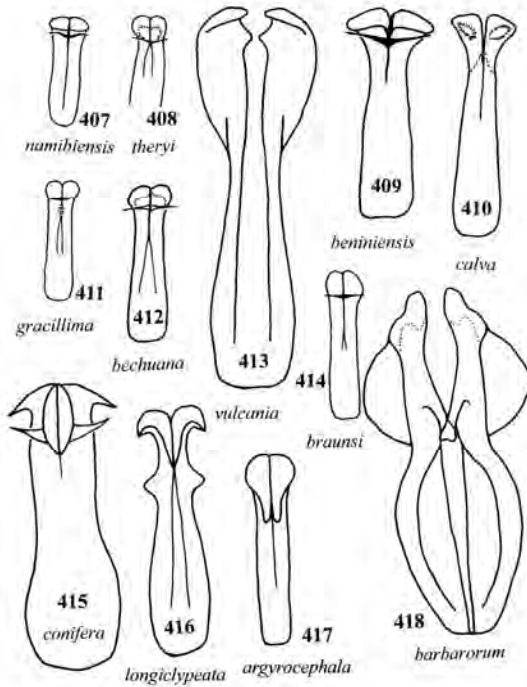
Figs 384-394: male genitalia: penis valve in dorsal view.

penis valve dorsal

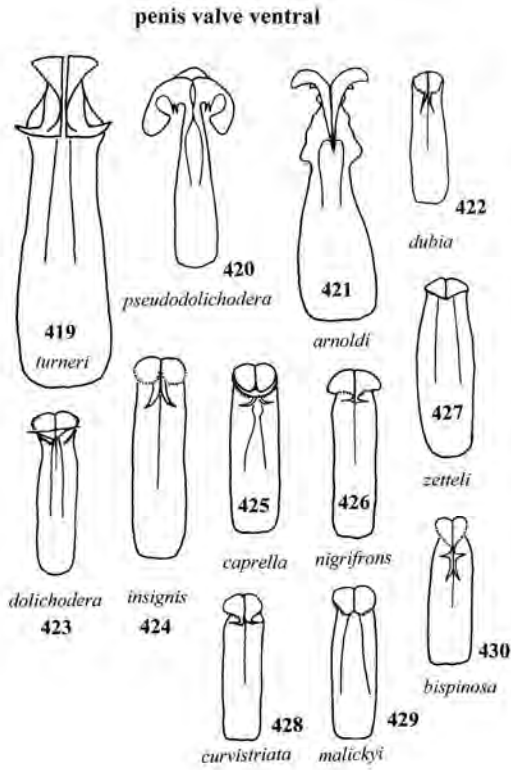


Figs 395-406: male genitalia: penis valve in dorsal view.

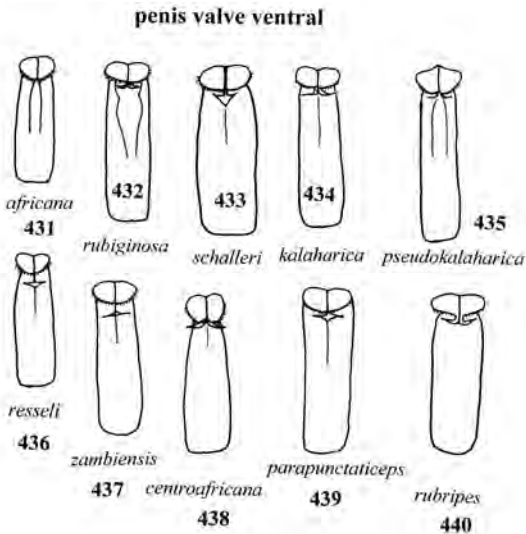
penis valve ventral



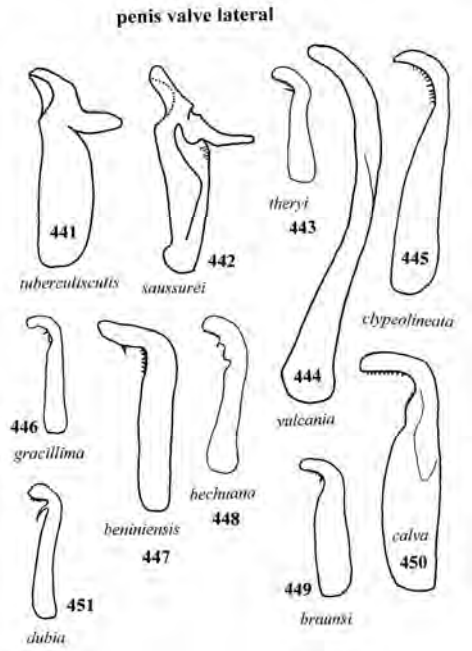
Figs 407-418: male genitalia: penis valve in ventral view.



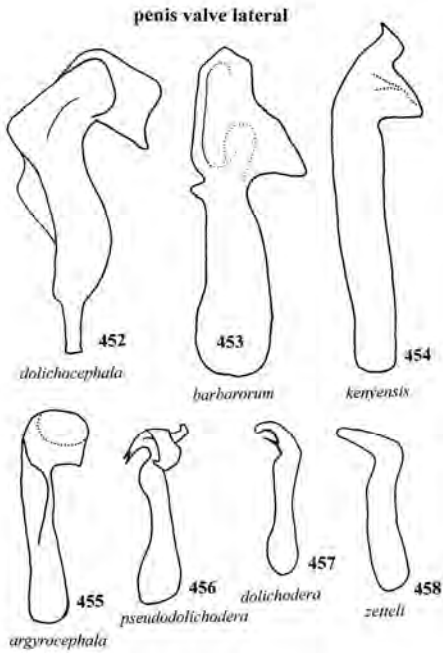
Figs 419-430: male genitalia: penis valve in ventral view.



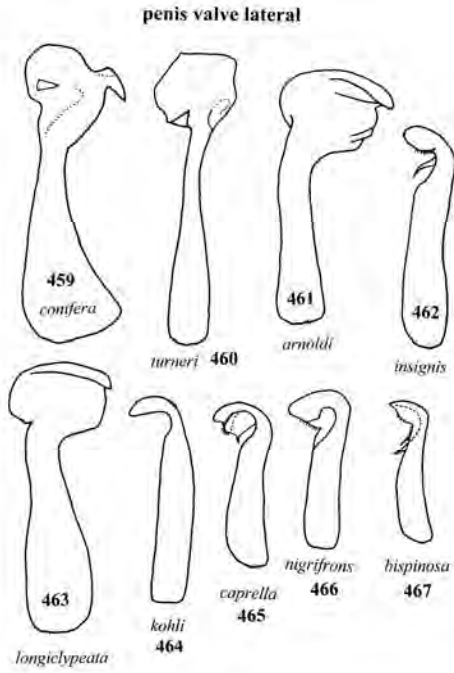
Figs 431-440: male genitalia: penis valve in ventral view.



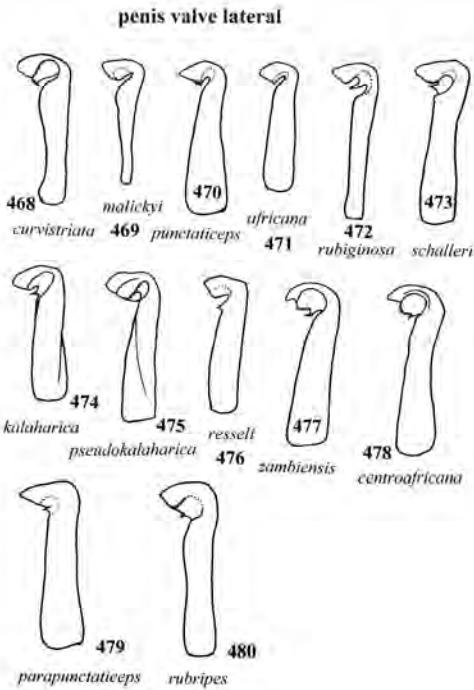
Figs 441-451: male genitalia: penis valve in lateral view.



Figs 452-458: male genitalia: penis valve in lateral view.

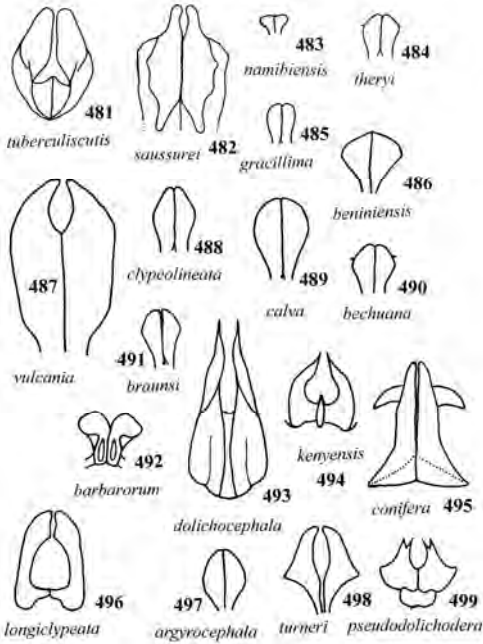


Figs 459-467: male genitalia: penis valve in lateral view.



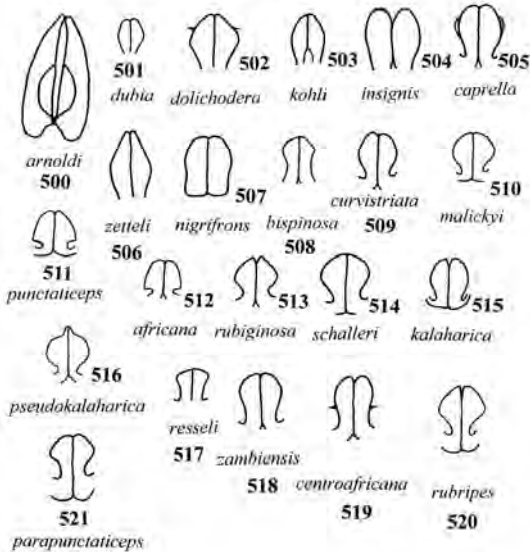
Figs 468-480: male genitalia: penis valve in lateral view.

penis valve apical



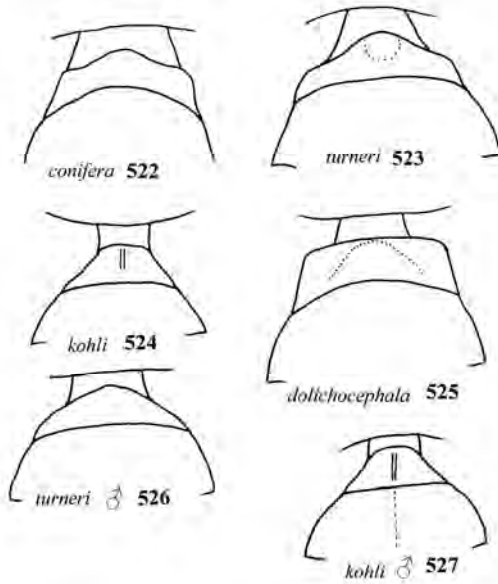
Figs 481-499: male genitalia: penis valve in apical view.

penis valve apical

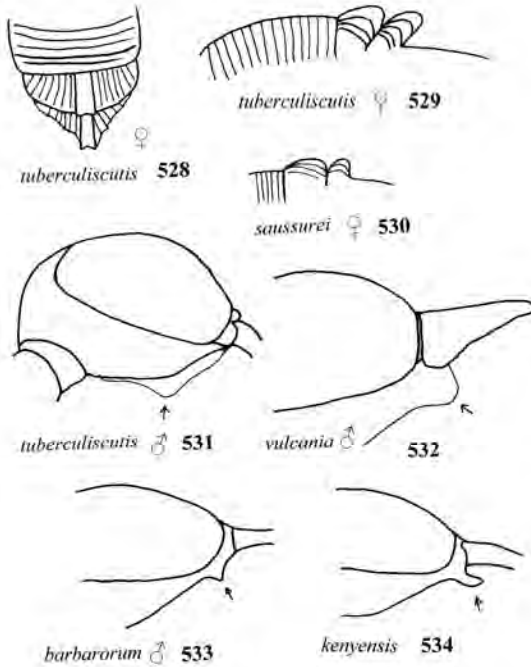


Figs 500-521: male genitalia: penis valve in apical view.

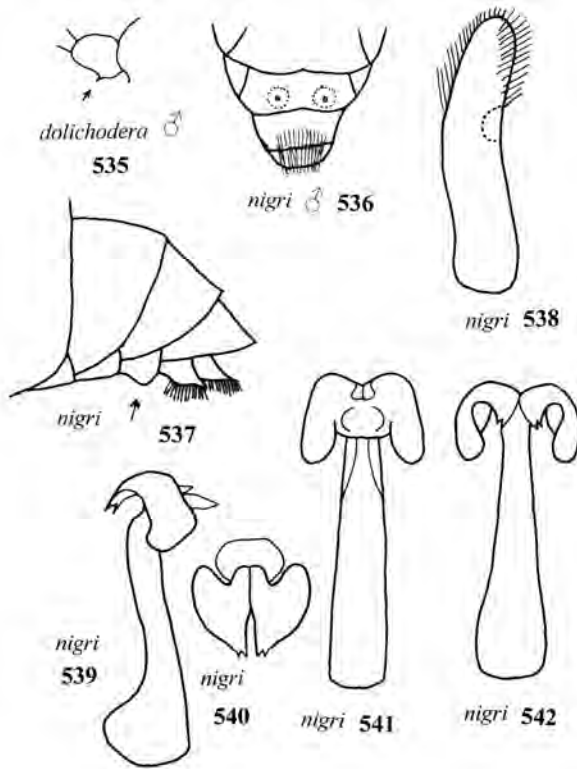
pronotal collar posterodorsal ♀



Figs 522-527: pronotal collar in posterodorsal view.



Figs 528-534: (528) *A. tuberculiscutis*: scutellum and metanotum of female in dorsal view; (529) *A. tuberculiscutis*: scutellum and metanotum of female in lateral view; (530) *A. saussurei*: scutellum and metanotum of female in lateral view; (531) *A. tuberculiscutis*: hypostomal carina of male in lateral view; (532) *A. vulcania*: hypostomal carina of male in lateral view; (533) *A. barbarorum*: hypostomal carina of male in lateral view; (534) *A. kenyensis*: hypostomal carina of male in lateral view.



Figs 535-542: (535) *A. dolichodera*: forecoxa in lateral view; (536) *A. nigri*: last sternites of male gaster in ventral view; (537) *A. nigri*: gastral apex of male in lateral view; (538) *A. nigri*: gonostyle in lateral view; (539) *A. nigri*: penis valve in lateral view; (540) *A. nigri*: penis valve in apical view; (541) *A. nigri*: penis valve in dorsal view; (542) *A. nigri*: penis valve in ventral view.