

## THE SPHEGIDAE OF SOUTH AFRICA

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### PART IX

With 1 Plate and 18 Text-figures

#### AMPULEX Group

THIS group comprises four genera, of which *Aphelotoma* Westw. is confined to Tasmania and *Trirogma* Westw. to the Indian and Malayan Region. Of the remaining genera *Dolichurus* Latr. is a small and well-defined genus with five African species and a few others in other parts of the world, and *Ampulex* Jurine, a large and widely distributed one with about 90 species, of which 39 are found in the Ethiopian Region.

GENERAL CHARACTERS. Eyes large, reaching the base of the mandibles or nearly as far, their inner margins parallel or converging above. Ocelli round and normal. Maxillary palpi 6-, labial palpi 4-jointed. Antennae 12-jointed in the ♀, 13-jointed in the ♂; the flagellum long and filiform. Episternal suture sometimes present, an epicnemium absent. Prothorax long, the collar well developed. Epinotum quadrate, the dorsum with two or more distinct and oblique carinae or reticulate-rugose, the posterior lateral angles dentiform (except in *Aphelotoma*), or the lateral margins of the declivity dentate at about the middle. Abdomen more or less petiolated (except in *Dolichurus*), the petiole formed by the first tergite and sternite. The apical segments of the abdomen in the ♀ more or less compressed transversely in *Ampulex*, those of the ♂ very short and with the sternites reduced, and more or less invaginated within the third segment. A pygidial area is absent. Anterior wing with two or three cubital cells and two recurrent veins. Middle tibiae with two spurs. Claws with one or two teeth.

The sculpture of the epinotal dorsum usually consists of a medium longitudinal carina or sharply defined ruga, and four oblique ones on each side of it. Their length and distance apart vary in the different species and afford thereby a character of some diagnostic value. For this purpose they are

referred to by numbers, the middle one being carina No. 1, and those on each side of it 2, 3 and 4.

The spaces between the longitudinal carinae are covered by transverse carinulae, often inaccurately described as striae by some authors. These carinulae are usually largest and more widely spaced in the interval between the median and second carinae than elsewhere. (In the text-figures these carinulae, and the irregular rugae which cover the areola between the apex of the median carina and the posterior margin of the segment, have been omitted.)

Genus DOLICHURUS Latr.

*Gen. Crust. et Insect.* IV, p. 387. 1809.

CHARACTERS. Mandibles acute at the apex, with two small teeth just behind the apex in the ♀, and with one tooth behind the apex in the ♂. In both there is an angular projection on the inner margin near the base. The lateral sclerites of the clypeus are not defined, being completely fused with the median area. Antennae inserted under a tegular protuberance which arises from the lower half of the face. All the joints of the flagellum, excepting the first, very much longer than wide. Pronotum large, as high as the mesonotum. The latter is divided lengthwise into three subequal parts by two deep sulci. The ♀ usually has four macrochaetae on the clypeus, two rows of the same on the face, and a pair or more on the pronotum and scutellum. The pronotal tubercles extend back as far as the tegulae. Scutellum large and flat, with a deep transverse groove just behind its anterior margin. Lateral margins of the epinotal declivity furnished with a triangular tooth near or below the middle. Apical margin of the first tergite widely depressed and transversely rugulose. First sternite raised in the middle to form a low and more or less wedge-shaped prominence; second sternite abruptly truncate at the base.

Forewing. Radial cell lanceolate, without an accessory cell, the radius ending at the costa. Three cubital cells, the second and third receiving the first and second recurrent veins respectively; the basal vein arises some distance beyond the end of the submedial cell.

Hindwing. The retinaculum arises a little beyond the origin of the radius; the cubitus is emitted before the apex of the submedial cell. Basal lobe small and round.

Posterior femora swollen near the base, more or less clavate. The ♂♂ are usually considerably smaller than the ♀♀.

Distribution. Palaearctic, Ethiopian, Neotropical and Australian Regions.

The insects of this genus, like *Ampulex*, provision their young with cockroaches. Very little is known about their life-history.

Judging by a fairly large series of *D. ignitus* and *D. bimaculatus*, the venation in this genus varies too much within the species to afford a diagnostic character of the slightest value.

*D. ignitus* Smith (figs. 1 and 1 a-c). *Trans. Ent. Soc. London*, p. 304, ♀. 1869.

♀. 8.5-9.5 mm. long. Black. Mandibles, anterior margin of the clypeus in the middle, extreme base of the scapes, anterior and middle tarsi and extreme apices of the anterior and middle femora, anterior tibiae and last three segments of the abdomen, ferruginous. Tibiae of the middle and hind legs dark brown, their tarsi fusco-ferruginous. Wings hyaline, the veins and stigma black.

Clypeus with a sparse outstanding pubescence and four black macrochaetae, the inner pair inserted near the middle, the outer pair at about the outer fourth. Lower half of the face with a long, decumbent and whitish



pubescence, the temples and sides of the thorax with a sparse, exserted and whitish pilosity. There are about six macrochaetae on the head above the antennal plate, and three on each side of the scutellum.

Clypeus shining, produced in the middle, the apex of the projection transverse, with the corners rounded, the rest of the anterior margin concave on each side. The basal half or more of the median portion is tumid, and has a poorly defined longitudinal carina. Lower half of the face, as far as the base of the antennal plate, coriaceous; beyond that point and as far as the ocellar area it is shining, obliquely and not closely rugose, shallowly punctate between the rugae, the latter smooth. The rugae extend over the antennal plate, which is longitudinally carinate in the middle, the carina almost reaching the anterior ocellus. The antennal plate is concave transversely, with the lateral margins sharply carinate, and the anterior half of the sides swollen.

Vertex and temples shining, the former sparsely and coarsely punctured, the latter very shallowly so. Ocelli arranged in an equilateral triangle, the posterior pair a little nearer to the eyes than they are to each other. Pronotum polished, the anterior face of the collar and the extreme front of the dorsal face, the sides at the middle and at the base with a few broad transverse rugae. The collar is sharply marginate in front, the raised margins being continued to the slightly lower and angular shoulders. On each side, behind the middle, its dorsal face is raised into a broad, sub-conical tubercle, wider than high. Mesonotum and scutellum very shining, with a few fine and scattered punctures. Mesopleurae and mesosternum rugose, partly reticulate, fairly dull, the rugae low and close together. Metapleurae smooth and shining. Sides of the epinotum obliquely and strongly rugose, the rugae attenuated towards the anterior margin; dorsum of epinotum with three median longitudinal carinae which do not reach the posterior margin, and a continuous carina which forms the lateral and posterior margins of the segment. Between the latter and the inner longitudinal carinae there are oblique carinae on each side and posteriorly. The spaces between the longer carinae are shining and have a few transverse rugae. The dorsum of the epinotum is about one-fourth wider at the apex than long in the middle. The declivity of the epinotum is dull, transversely rugose, but with a few short vertical rugae in the middle above. Its lateral margins have a short triangular tooth below the middle. Abdomen smooth and shining, with a very few small and scattered punctures, the last segment truncated at the apex. Distance between the eyes on the vertex equal to the length of the second joint of the flagellum; the latter is a trifle more than one-fourth longer than the third joint. The mesonotum is about one-third longer than the pronotal collar, and as long as the scutellum and metanotum united.

♂. 7-7.5 mm. long. Apical margins of the last four abdominal segments fusco-testaceous, otherwise entirely black, including the legs. Clypeus and

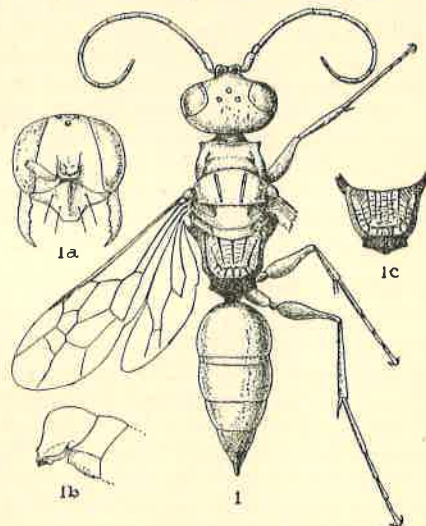


Fig. 1. *Dolichurus ignitus*, ♀. a. Head. b. Base of abdomen. c. ♂, epinotum.



face below the antennal sockets with long whitish pubescence, much more abundant than in the ♀. The pilosity on the thorax is also more abundant. Sculpture of the face and vertex much weaker than in the ♀, the rugae on the former distinctly low and ill-defined, the punctures on the vertex very shallow, the antennal plate smooth and shining. The dorsum of the epinotum differs from that of the ♀ by having a different sort of sculpture; the longitudinal carinae are less distinct, not stronger than the transverse ones, and the middle longitudinal one present in the ♀ is replaced by two irregular rugae (see fig. 1 c). Tergites much less shining than in the ♀, almost dull, microscopically alutaceous, finely, shallowly and not closely punctured, the puncturation distinctly sparse in the middle. Sternites dull, shallowly and very finely punctured. Clypeus not produced, its anterior margin convex from end to end, longitudinally carinate in the middle, the carina projecting over the anterior margin as a small tooth. The antennal plate arises from the face more abruptly than in the ♀, and is therefore shorter; it is shallowly impressed lengthwise in the middle and feebly convex on each side, and its anterior and lateral margins are sharp, not swollen as in the ♀. Second joint of the flagellum not longer than the third. Pronotal collar shorter than in the ♀ owing to the part in front of the posterior tubercles sloping rapidly downwards and forwards; the tubercles are somewhat thicker than in the ♀ and the anterior angles are less prominent. Otherwise like the ♀, excepting the sexual differences in the shape of the abdominal segments.

Natal; Sawmills, Bulawayo and Umtali, S. Rhodesia. October–February. Usually seen running up and down the trunks of trees searching for small cockroaches in the crevices of the bark. (R.M. coll.)

*D. rubripyx* Brauns (*nom. in litt.*).

♀. 8.5 mm. long. Very closely allied to *ignitus*, if not a race of that species. Posterior tibiae slightly paler than in *ignitus*, otherwise like that species in colour. The sculpture of the epinotum is stronger and the declivity reticulate-rugose. The mesopleurae are obliquely rugose, without reticulations. The joints of the flagellum are relatively slightly shorter than in *ignitus*, and the second joint is only one-eighth longer than the third. The head behind the eyes is narrower and longer; the distance from the level of the posterior ocelli to the occipital margin is as long as the second joint of the flagellum, whereas in *ignitus* it is only half as long. The interocular distance on the vertex is greater, being equal to the length of the second joint of the flagellum plus three-fifths of the third. The dorsum of the epinotum is shorter, being two and a quarter times wider (a little beyond the middle) than long in the middle, whereas in *ignitus* it is widest at the middle and only twice as wide there as long. The venation differs a little from that of *ignitus*, but no reliance can be placed on the venation in this genus. Otherwise like *ignitus*.

Willowmore, November. 1 ♀ bred from the larva. Type in coll. Brauns.

*D. venator* n.sp. (figs. 2 and 2 a).

♀. 9 mm. long. Black, the last two abdominal segments and the apical half of the fourth, pale ferruginous. Apical fourth of the mandibles fusco-ferruginous. Very much like *ignitus*, from which it differs as follows.

Face shallowly rugoso-punctate, the rugae ill-defined, the punctures elongate and shallow. Sides of pronotum smooth, without striae. Mesopleurae punctured, without vertical rugae, the punctures large, shallow and fairly close together. Dorsum of epinotum with a widely spaced rugose reticulation, the rugae not emphasised longitudinally, *i.e.* without sharply defined carinae; the sculpture on this segment resembles that of the male



of *ignitus*, rather than of the female. Apical segment of the abdomen slightly depressed from the middle to the apex, longer and relatively narrower than in *ignitus*. The median area of the clypeus is not produced so far forwards as in *ignitus*, and the projection is wider at the apex. The carina at the base is less distinct. The clypeus in the middle is only one-third longer than it is wide across the anterior margin of the median area. The antennal plate is shorter and its margins are raised at the sides, not thickened as in the other species. Second joint of the flagellum one-sixth longer than the third. Interocular distance on the vertex equal to the length of the second joint of the flagellum. Pronotal collar tumid behind, but without tubercles; there is a shallow median longitudinal impression, and on each side of it and a little in front of the middle, a shallow oblong pit. The lower anterior angles or shoulders are much less prominent. Mesonotum in the middle twice as long as the pronotal collar.

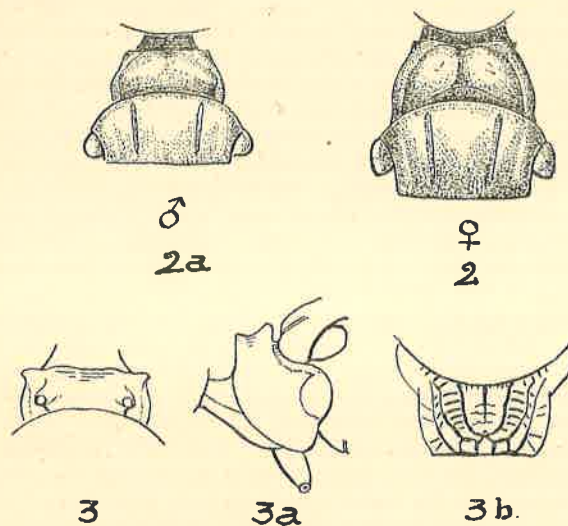


Fig. 2. *Dolichurus venator*, ♀, pronotum. a. ♂.

Fig. 3. *Dolichurus bimaculatus*, ♂, pronotum. a. Pronotum, lateral view. b. Epinotum.

♂. 6 mm. long. Black. Pilosity and pubescence longer and more abundant than in the ♀, especially on the head and thorax; apical margins of the third-fifth sternites fringed with white pubescence. Face shallowly rugoso-punctate, and slightly glossy; the vertex shining, sparsely and very shallowly punctured. Anterior face of the pronotal collar and the mesopleurae shallowly and not closely punctured. Scutellum with a few fine punctures along the lateral and posterior margins. Dorsum of epinotum almost dull, longitudinally rugose in the middle, obliquely and transversely so at the sides. Tergites shining, finely but sharply punctured, the punctures few and scattered. Sternites less shining, microscopically punctured. The first three tergites very convex lengthwise, so that the second and third appear to be constricted at the base. Clypeus convex, carinate in the middle, the anterior margin convex. Second and third joints of the flagellum of equal length. Interocular distance on the vertex a little shorter than the length of the second and third joints of the flagellum. Pronotal collar more tumid on each side than in the ♀; the outline of the tumid areas when viewed from above is oblique and semi-elliptical. Otherwise like the ♀.

Bulawayo. April-December. Types in R.M. coll.



*D. Kohli* Brauns (*nom. in litt.*).

♀. ca. 6.6 mm. long (the head and thorax together 3 mm. long, the abdomen being curled under in the unique specimen cannot be accurately measured). Black, apices of the mandibles fusco-ferruginous, the tibiae and tarsi blackish brown. Mandibles, clypeus, middle of the face, vertex, pronotum and scutellum with a few long, erect and black macrochaetae. Temples with a few whitish hairs, lower margins of the sides of the thorax above the coxae with a little white pubescence. Shining, only the face below the anterior ocellus and the declivity of the epinotum slightly dull. Clypeus smooth and shining.

Lower two-thirds of the face closely rugoso-punctate at the sides, less closely in the middle; the antennal plate is concave, smooth and shining, except over the basal third which is rugose, slightly longer than wide, parallel-sided, and rounded at the apical margin. The upper third of the face, the vertex, occiput and temples sparsely punctured, the punctures fairly strong on the face and vertex, small and very shallow on the other parts; the spaces between the punctures are mostly two or three times the width of the largest puncture. The anterior face of the pronotal collar is closely, finely and shallowly punctured; the dorsal face resembles that of *D. venator* but is a little shorter and its median longitudinal impression is not so deep. Mesonotum with a few punctures along the anterior and lateral margins; scutellum with two large and shallow punctures at the sides. Metanotum closely and obliquely striate. Mesopleurae closely and finely punctate in front, coarsely and sparsely over the posterior two-thirds. Sides of epinotum transversely rugose, the rugae becoming gradually smaller in front; the declivity is closely and transversely rugose and the dorsum reticulate-rugose, not clearly carinate lengthwise, since the longitudinal rugae are no stronger than the transverse ones. Abdomen smooth and impunctate. Clypeus half as long again in the middle as wide across the anterior margin of the median area. Eyes moderately convergent above and below, the face very little wider below (at the level of the lower margin of the eyes) than above at the level of the posterior ocelli. Interocular distance on the vertex equal to a very little more than the length of the first two joints of the flagellum. The second joint of the flagellum is two-sevenths longer than the third. The distance between the posterior ocelli is the same as their distance from the eyes. The declivity of the epinotum has a blunt angle on the lateral margins below the middle, not a sharp tooth as in *venator*.

Willowmore, September (Dr H. Brauns), 1 ♀. Type in coll. Brauns. I assign specific rank to this insect with considerable hesitation, since the study of a larger amount of material might well prove it to be only a race or variety of *venator*.

*D. bimaculatus* n.sp. (figs. 3, 3 a and b).

♂. 4.3-6 mm. long. Black; mandibles, antennae, tibiae, tarsi and apices of the femora, ferruginous. A round spot on each side of the middle of the clypeus, the anterior margin of the antennal plate, and an oval spot on the apices of the tubercles of the pronotal collar, ivory white. Sometimes, and chiefly in the smaller examples, the antennae and tibiae are darker, the former in some cases almost black; and in one small specimen the white spots are absent from the clypeus and pronotum. Tegulae piceous, with a whitish mark in front. Wings hyaline, the veins and stigma black. Clypeus and lower third of the face covered with whitish and rather long pubescence. The temples and thorax have a sparse, exserted and white pilosity. The face, from the base



of the antennal plate to the posterior ocelli, is widely reticulate-rugose and moderately shining; vertex and occiput shining, sparsely punctured with large shallow punctures. In small specimens the sculpture of the head is often more or less obliterated. Temples smooth and shining. Pronotum shining, the collar with a few transverse rugae behind the anterior margin. On each side of the pronotal collar posteriorly there is a subconical tubercle, truncated at the apex and directed obliquely outwards and backwards. Mesonotum and scutellum shining, sparsely, finely and shallowly punctured. Metanotum dull, rugulose. Mesopleurae and sides of the epinotum fairly dull and obliquely, closely striated. Dorsum of epinotum shining; the first or median carina is short, the space between it and the second carina is transversely rugose in the apical half, the space between the second and third carinae has six strong transverse rugae, and that between the third and fourth has four weaker rugae. The declivity is dull, irregularly rugose, the lateral margins with a small dentiform angle below the middle. Tergites and sternites 1-3 nearly dull, sharply, fairly finely and closely punctured, the punctures smallest and crowded on the third segment, the sternite of that segment with the apical margin widely and abruptly depressed. Clypeus not so convex as in *ignitus* or *venator*, carinate longitudinally in the middle, the anterior margin concave over the middle third. Second joint of the flagellum barely longer than the third. Interocular distance on the vertex equal to the length of the second joint of the flagellum plus four-fifths of the third. Mesonotum two and a half times longer than the pronotal collar.

Bulawayo and Fort Rixon, S. Rhodesia, August-January. Numerous ♂♂. Type in R.M. coll.

Allied to the European *D. corniculus* Spin. but smaller and with ferruginous tibiae and tarsi.

#### Genus AMPULEX Jurine

*Nouv. méth. de class. Hymén.* p. 132. 1807.

CHARACTERS. Mandibles sickle-shaped in the ♀, when closed there is a gap between them and the margin of the clypeus; in the ♂ there is a strong tooth just behind the acute apex. Clypeus tectiform and strongly carinate, except in a few species, the carina ending in a tooth on the anterior margin. In the ♀ there is usually a tooth on each side of the median one. Eyes margined by a narrow, impressed and punctate line. Antennae filiform and long, as in *Dolichurus*, the second joint of the flagellum the longest. The antennal sockets are situated below a median plate which differs from that of *Dolichurus* in not being porrect; except near the apex it lies flat and parallel to the plane of the face so that posteriorly only the lateral margins rise above the general level of the face. These margins form the frontal carinae (as in Myrmicine ants) and sometimes extend back to behind the anterior ocellus. Sometimes there is a median carina between them. Pronotum large, the collar decidedly long, often as long as wide or as long as the mesonotum. The pronotal tubercles do not extend back quite as far as the tegulae. Mesonotum divided into three longitudinal areas by two deep grooves as in *Dolichurus*, and deeply excavated at the posterior corners. Scutellum traversed by a deep and sharply clathrate groove behind its anterior margin. Metanotal disc usually covered with a dense decumbent pubescence. Epinotum horizontal above, the declivity vertical, the posterior lateral angles of the dorsum nearly always produced into teeth, the surface with a median carina and four slightly oblique ones on each side, the spaces between more or less closely and transversely carinate.



Abdomen with a short petiole, formed in greater part by the first sternite; in the ♀ the posterior part of the abdomen is laterally compressed, in the ♂ depressed and invaginated to a large extent into the third segment.

Forewing. The apex of the radial cell does not end on the costa but lies a little below it. Three cubital cells usually present, but in some species only two are apparent owing to the obliteration of the first transverse cubital vein. The genus *Rhinopsis* erected by Westwood for the species with only two cubital cells is a purely artificial one, since some species which normally have three cubital cells may sometimes exhibit only two. The first recurrent vein enters the first cubital cell and the second enters the third. The basal vein arises either at the end of the first submedial cell or a little before it. Second submedial cell much shorter than the first.

Hindwing. Cubital vein interstitial with the apex of the submedial cell, or arising just behind it. Retinaculum unbroken. A basal lobe is absent, and the anal vein terminates behind the sinus formed by the anal lobe.

Legs long; the coxae very large, the posterior pair separated by a lamella which is bifurcate posteriorly. The fourth tarsal joint is usually enlarged and the apical joint is inserted at its base. The ventral surface of the fourth joint is densely pubescent, and the apical joint lacks a pulvillus. The claws have a tooth on the inner margin near the middle or near the apex, in the latter case the claws appear almost bifid.

Distribution. Both hemispheres.

These insects provision their young with cockroaches. They do not appear to make special nests in which to lay their eggs and store the provender but drag their prey to any convenient hole or crack in the ground.

The genus in the Ethiopian Region is a large one, and out of the total of 39 species I have seen examples of only 16. The genus was monographed by Kohl in 1893 (*Ann. K.K.N.H. Mus. Wien*, VIII, Hefte 3 and 4), and since that time only ten new species have been added to the list for the Ethiopian Region.

In the majority of the species the coloration of the body consists of metallic greens, blue-greens and purple, but it is to be noted that, as in the Chrysididae or Cuckoo-wasps, the colour has a tendency to darken with the drying-up of the body after death, so that the greens may become blues, and the latter turn to purple.

Owing to the monotonous uniformity in the structure of the majority of the species, the student will have some difficulty in identifying many of them. The material available for study in most museums and private collections is not plentiful, with the result that our knowledge of the range of variation of certain characters is very limited. I have seen, however, a fair number of specimens of two species, *denticollis* Cameron and *cyanura* Kohl race *rhodesiana*, and as a result of the study of that material I am inclined to believe that at least two characters which some authors have regarded as of importance are too variable to be reliable. One is the structure of the clypeus and the other the spacing of the carinae on the epinotum. In the ♀♀ of the greater number of our species, the clypeus has a median carina which ends on the anterior margin in a more or less sharp point or tooth, and on each side of the latter there is another tooth. These lateral teeth are undoubtedly subjected to variation in the degree of acuteness and of length so that they should not be used for distinguishing closely allied species. Similarly, the distance between the carinae on the epinotal dorsum is not invariable. Incidentally, it may be remarked that the spacing of the carinae often differs in the two sexes. The venation, with the exception of the case of *A. sibirica*, is quite worthless as a specific character. Not only do the relative proportions of the abscissae of the radius differ at times within the species, but even the



number of cubital cells is not constant. *A. assimilis* Kohl has three cubital cells, but by obliteration of the first transverse cubital vein it may sometimes have only two. A similar condition has been observed by myself in two other species. In the B.M. coll. there is a *sibirica* ♂ which has only two cubital cells, and in a ♂ of *apicalis* in Dr Brauns's collection the left wing has only one cubital cell, owing to the suppression of both the first and second transverse cubital veins. In other species normally with three cubital cells specimens are not uncommon in which the upper half or more of the first transverse cubital vein is obsolete. Nevertheless, I regret that in regard to two species, one of which is unknown to me in nature, I have been obliged to fall back on the venation in drawing up a key to the species. A character of some value is the shape of the postocular region of the head. The degree of curvature of the sides of this part and its length vary in the different species, and the easiest way to express this is to give the ratio between the length in the middle to the width, the latter being measured along a line tangential to the posterior margin of the eyes. In making such comparisons it is essential that the insects should be orientated so that they are all viewed at the same angle. The drawings in Plate VIII have been made in this way, the heads of the insects having been so placed that the lower half of the face is vertical and the ocellar area horizontal, or nearly so. In the following descriptions the measurements of the epinotal dorsum are given as follows: the length is measured from the base to the middle of the apical margin and the width is taken across the middle point of the length. In regard to the pronotal collar the measurements include only the actual collar and not the lower parts, which in Plate VIII, fig. 1 are shaded. In the text-figures the various parts are not all drawn to the same scale, the clypeus, tarsi and epinotal dorsum being in most cases more highly magnified than the others.

In the following pages the descriptions of the species described by Kohl are made up of extracts from his key to the species, the diagnoses of the species being embodied in the key and distributed over several paragraphs; in consequence, a certain amount of repetition has been found unavoidable.

The original descriptions of *cyaneipes* Westw. and *venusta* Stal. are so insufficient that it has not seemed worth while to reproduce them in these pages. The following species, with which I am insufficiently acquainted, or are known to me only from descriptions, have been omitted from the key to the species: *cyclostoma* Grib., *crassicornis* Kohl, *purpurea* Westw., *striolata* Sauss., and *chalybea* Smith.

#### KEY TO THE SPECIES OF *AMPULEX* ♀♀

- (20) 1. Pronotal collar without a conical tubercle behind.
- (3) 2. Pronotal collar with two little teeth at about the middle; body black, without any metallic lustre. (Forewing with two cubital cells.)  
*denticollis* Cameron
- (2) 3. Pronotal collar unarmed; body with at least some metallic lustre (blue, green or purple).
- (5) 4. Clypeus produced into a long, narrow and nasiform process; back of the head, pronotal collar, mesonotum and scutellum bright ferruginous and without metallic lustre. (Three cubital cells.) *mutilloides* Kohl
- (4) 5. Clypeus not nasiform; head and thorax without ferruginous colour.
- (7) 6. Clypeus produced into a broad, subquadrangular and transversely convex plate, not carinate longitudinally in the middle and without a median tooth on the anterior margin; fundamental sculpture on the head and pro-mesonotum exceedingly fine, consisting of a microscopic and very close puncturation, so that those parts are dull. Fourth carina of the epinotal dorsum obsolete. (Two cubital cells.) Small species, 8 mm. long.  
*Arnoldi* Brauns



- (6) 7. Clypeus tectiform, strongly carinate lengthwise in the middle, the carina ending on the anterior margin in a distinct tooth.
- (11) 8. Forewing with two cubital cells, exceptionally with three.
- (10) 9. Interocular distance on the vertex nearly equal to the length of the first three joints of the flagellum; the third joint two and a half times longer than its apical width. (11 mm. long.) *apicalis* Smith
- (9) 10. Interocular distance on the vertex slightly less than the length of the second joint of the flagellum; the third joint about four times longer than its apical width. (14.5 mm. long.) *honesta* Kohl
- (8) 11. Forewing with three cubital cells.
- (13) 12. Small species, less than 7 mm. long. *nebulosa* Smith
- (12) 13. Larger species, 13 mm. long or longer.
- (15) 14. Collar of pronotum longer than wide; mesonotum and mesopleurae sparsely punctured. *splendidula* Kohl
- (14) 15. Collar of pronotum wider than long, twice as wide behind as long in the middle.
- (19) 16. Clypeus and scapes black.
- (18) 17. First two tergites sparsely, finely and very shallowly punctured; third carina of the epinotal dorsum at the second third of its course as far from the second carina as from the fourth; second joint of the flagellum a little more than half as long again as the third. *cyanura* Kohl
- (17) 18. First two tergites sparsely, deeply and strongly punctured; third carina of the epinotal dorsum at the second third of its course twice as far from the second carina as from the fourth; second joint of the flagellum one-seventh longer than the third. *cyanura*, race *monticola* Arnold
- (16) 19. Clypeus and scapes ferruginous; second joint of the flagellum one-third longer than the third. *cyanura*, race *rhodesiana* Arnold
- (1) 20. Pronotal collar with a conical tubercle behind.
- (26) 21. All, or at least the middle and hind femora ferruginous.
- (25) 22. Anterior tibiae entirely ferruginous.
- (24) 23. Interocular distance on the vertex hardly greater than the length of the second joint of the flagellum. *Kristenseni* Turner
- (23) 24. Interocular distance on the vertex a little greater than the length of the second joint of the flagellum. *conigera* Kohl
- (22) 25. Anterior tibiae ferruginous below, metallic blue above. *compressa* Fab.
- (21) 26. All the femora metallic blue and green.
- (28) 27. Fourth abscissa of the radius very long, greater than the length of the first or second transverse cubital veins. *sibirica* Fab.
- (27) 28. Fourth or third abscissa of the radius shorter than the first or second transverse cubital veins.
- (32) 29. Interocular distance on the vertex a little more than the length of the second joint of the flagellum.
- (31) 30. Pronotal collar with distinct transverse rugae in the middle; the penultimate joint of hind tarsus extends nearly as far as the second half of the apical joint; clypeus with a tooth on each side of the median tooth. *lazulina* Kohl
- (30) 31. Collar without transverse rugae; penultimate joint of hind tarsus short, barely extending as far as the second third of the apical joint; clypeus with two teeth on each side of the median tooth. *spectabilis* Kohl
- (29) 32. Interocular distance on the vertex as long as, or shorter than the length of the second joint of the flagellum.
- (38) 33. Wings fuscous, without distinctly darker transverse bands.
- (35) 34. Hind tibiae fairly abundantly punctured; interocular distance on the vertex equal to three-quarters of the length of the second joint of the



- flagellum. The median impressed line on the pronotal collar extends back as far as the apex of the conical tubercle. (Three cubital cells present, sometimes only two.) *assimilis* Kohl
- (34) 35. Hind tibiae very sparsely punctured.
- (37) 36. Interocular distance on the vertex only a little less than the length of the second joint of the flagellum. The median impressed line on the pronotal collar does not extend beyond the middle of the segment. (Two cubital cells.) *toroensis* Turner
- (36) 37. Interocular distance on the vertex two-thirds the length of the second joint of the flagellum. (Three cubital cells.) *psilopus* Kohl
- (33) 38. Wings hyaline, with a transverse fuscous cloud beyond the middle, the medial, submedial and anal cells also slightly fuscous. (See fig. 13 b.)
- (40) 39. Face, vertex, temples and mentum with a dense pubescence which obscures the sculpture. *senex* Bischoff
- (39) 40. Pubescence on the head scanty, not obscuring the sculpture.
- (48) 41. Pronotal collar with a clearly defined, longitudinal, impressed line, although sometimes subconcave and depressed in front.
- (45) 42. Head and pro-mesonotum black, with only the slightest trace of metallic lustre.
- (44) 43. Second joint of the flagellum half as long again as the third. *nigro-coerulea* Saussure
- (43) 44. Second joint of the flagellum four-fifths longer than the third. *spiloptera* Cameron
- (42) 45. Head and pro-mesonotum with metallic lustre like the rest of the body.
- (47) 46. Head very minutely and closely punctured, and with a few larger, shallow and scattered punctures. (Interocular distance on the vertex scarcely more than three-quarters of the length of the second joint of the flagellum; hind tibiae very sparsely punctured.) *nitidicollis* Turner
- (46) 47. Head with coarse puncturation; mandibles ferruginous. *Moebii* Kohl
- (41) 48. Pronotal collar with a distinct median longitudinal impressed line.
- (50) 49. Interocular distance on the vertex only a little more than half the length of the second joint of the flagellum. (Two cubital cells.) *dives* Kohl
- (49) 50. Interocular distance on the vertex only a trifle less than the length of the second joint of the flagellum. (Three cubital cells.) *Crawshayi* Turner

KEY TO THE SPECIES OF *AMPULEX* ♂♂

- (12) 1. Pronotal collar without a conical tubercle behind.
- (3) 2. Pronotal collar with two little teeth at about the middle; body black, without metallic lustre. (Two cubital cells.) *denticollis* Cameron
- (2) 3. Pronotal collar unarmed; body with at least some metallic lustre, blue or green or purple.
- (5) 4. Pronotal collar ferruginous. *mutilloides* Kohl
- (4) 5. " not ferruginous.
- (7) 6. Clypeus without a median carina, but slightly convex transversely; head very wide, the interocular distance on the vertex being equal to the length of the second and third joints of the flagellum. Small species, 5-6 mm. long. (Two cubital cells.) *Arnoldi* Brauns
- (6) 7. Clypeus tectiform, carinate longitudinally in the middle; head not very wide, the interocular distance on the vertex much less than the length of the second and third joints of the flagellum. (Body and legs with abundant exserted pilosity.)
- (9) 8. Pilosity entirely white. *pilipes* Kohl



- (8) 9. Pilosity on the head and dorsum of thorax black.
- (11) 10. Colour purplish black; second joint of the flagellum half as long again as the third. *nebulosa* Smith
- (10) 11. Colour metallic blue and green; second joint of the flagellum one-fourth longer than the third (or one-third longer, *cyanura*, race *rhodesiana* Arnold). *cyanura* Kohl
- (1) 12. Pronotal collar with a conical tubercle behind.
- (16) 13. At least the hind femora ferruginous.
- (15) 14. The anterior tibiae and all the femora ferruginous; interocular distance on the vertex equal to the length of the first and second joints of the flagellum. *Kristenseni* Turner
- (14) 15. Middle and hind femora ferruginous, anterior femora metallic blue above, ferruginous below. Interocular distance on the vertex equal to two-thirds the length of the second joint of the flagellum. *compressa* Fab.
- (13) 16. None of the femora ferruginous.
- (18) 17. The fourth abscissa of the radius long, as long as the first or second transverse cubital veins; the third cubital cell is therefore only half as wide on the radius as on the cubitus. *sibirica* Fab.
- (17) 18. The fourth or third abscissa of the radius shorter than the first or second transverse cubital veins.
- (24) 19. Wings fuscous, without distinctly darker transverse bands.
- (21) 20. Interocular distance on the vertex about equal to the length of the second joint of the flagellum. (Two cubital cells.) *toroensis* Turner
- (20) 21. Interocular distance on the vertex equal to the length of the second joint of the flagellum plus two-thirds of the following joint. (Three cubital cells.)
- (23) 22. Dorsum of epinotum only slightly wider across the middle than long; second sternite black in the middle. *formosa* Kohl
- (22) 23. Dorsum of epinotum considerably wider than long; second sternite metallic blue and green all over. *Dahlbomii* Kohl
- (19) 24. Wings hyaline, with a fuscous cloud beyond the middle, and slightly fuscous near the apex of the medial and submedial cells.
- (28) 25. Interocular distance on the vertex equal to the length of the first two joints of the flagellum, or very nearly. (Three cubital cells.)
- (27) 26. 11 mm. long; apical teeth of the epinotum triangular; second tergite about as long as wide in the middle. *Moebii* Kohl
- (26) 27. 13 mm. long; apical teeth of epinotum curved; second tergite one-fourth wider across the middle than long. *Crawshayi* Turner
- (25) 28. Interocular distance on the vertex a little less than the length of the second joint of the flagellum. (Two cubital cells.) *gratiosa* Kohl

*A. apicalis* Smith (figs. 4 and 4 a-d; Plate VIII, figs. 1 and 2). *Ann. Mag. N.H.* XII, p. 292, ♀. 1873.

♀. 11 mm. long. Metallic blue and green, the last three tergites and the apical half of the third, the last four sternites, clypeus, mandibles, scapes and first joint of the antennae, ferruginous. Legs with metallic lustre on the femora and middle and hind tibiae, the rest of the legs black. Apex of the medial cell, the discoidal and second submedial cells of the forewing and the whole of the hindwing hyaline, tinged with brown, the rest of the forewing fuscous. Head including the scapes, thorax and femora with a sparse, coarse and black pilosity. Head closely and coarsely punctured, the punctures wider than the spaces between them, the clypeus smooth. Pronotal collar with a median, longitudinal and deep groove, extending from the brow to the base. Pro-mesothorax with deep and large punctures, elongate and partially confluent, except on the mesopleurae where the puncturation is somewhat less

close. The mesosternum rugulose, sparsely and very shallowly punctured. Dorsum of epinotum very nearly twice as wide as long; the second carina at the base twice as far from the median carina as from the third, the space between the second and third more closely transversely carinate than the rest, the teeth at the apical angles stout and triangular. The declivity and upper part of the sides of the epinotum reticulate-rugose, the lower part of the sides smooth and with a few large punctures posteriorly. Abdomen shining, the first three tergites sparsely and finely punctured, the second sternite shining, microscopically rugulose, sparsely and finely punctured, highest at the middle.

Carina of clypeus acute, ending in a blunt tooth on the anterior margin, with a tooth on each side. Frontal carinae divergent and short, not longer than the scapes. Second joint of the flagellum one-fifth longer than the third, the latter about two and a half times longer than wide at the apex. Eyes moderately convergent above, the interocular distance on the vertex nearly equal to the length of the first three joints of the flagellum. Head not much narrowed behind the eyes, the width of the postocular portion being three times the length. Collar of pronotum one and a half times wider across the middle than long, as long as the mesonotum. Second abdominal segment a little wider than long. Penultimate joint of the hind tarsus half as long as the apical joint. Claws of hind tarsi bifid. Forewing with two cubital cells. (There is a specimen in the Durban Museum which has three.)

♂. 10 mm. long. Colour as in the ♀. Pilosity white, the third and following segments of the abdomen also with a white, exserted pilosity. Puncturation of the head and thorax somewhat closer than in the ♀, on the head more distinctly reticulate and punctate, the punctures on the pro-mesonotum discrete and round. Tergites 1 and 2 strongly punctured, but the punctures are smaller and shallower than those on the mesonotum; tergites 3-6 closely and more finely punctured. Second sternite purplish black and sparsely punctured in the middle, green and more closely punctured at the sides, highest at the basal third. Clypeus sharply tridentate, the distance between the outer teeth about as long as the clypeus measured in the middle. The inner margin of the mandibles with a strong and acute tooth beyond the middle. Second joint of the flagellum very slightly longer than the third. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. Back of the head less convex than in the ♀. Pronotal collar wider and relatively shorter than in the ♀; it is almost twice as wide across the middle as long. Second abdominal segment one-fourth wider than long. Penultimate joint of hind tarsus less than half as long as the apical joint. Otherwise like the ♀.

Durban and Port St John, C.P.

*A. nebulosa* Smith (figs. 5 and 5 a-c; Plate VIII, fig. 3). *Cat. Hym. B.M.* iv, p. 270, ♀. 1856.

*A. cribrata* Kohl. *Ann. K.K.N.H. Mus. Wien*, viii, p. 484, ♂. 1893.

♀. 6.5 mm. long. Metallic blue and purple, the epinotum (in dried specimens at least) metallic green. Mandibles, apex of clypeus, scapes, first joint of the flagellum and apical segment of the abdomen, fusco-ferruginous. Except on the epinotum, first two tergites and tarsi, the whole body, including

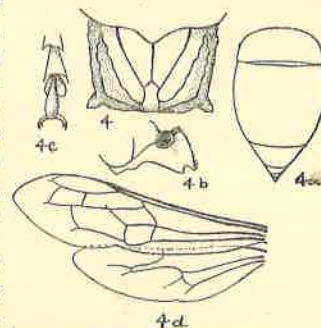


Fig. 4. *Ampulex apicalis*, ♀, epinotum. a. Abdomen. b. Half of clypeus. c. Last three tarsal joints of hind leg. d. Wings.



the metatarsi, has a sparse, long, erect and black pilosity, intermixed with shorter whitish hairs on the temples, sides of thorax and apical half of the abdomen. Metanotum and posterior coxae with a dense, decumbent, silvery pubescence. Clypeus punctulate and dull. Head and pro-mesothorax very deeply and closely punctured, the spaces between narrower than the punctures and raised to form a prominent rugose reticulation. The sculpture is much coarser relatively, considering the difference in size, than in the closely allied *A. apicalis*. The pronotal collar has a median longitudinal groove as in that species. First two tergites and second sternite sparsely punctured, the punctures largest on the first tergite and very shallow on the second segment, separated by spaces which are for the greater part at least three times wider than the largest puncture. Posterior femora and tibiae closely and coarsely punctured. Upper half of metapleurae rugose; lower half of the sides of the epinotum with a few vertical rugae, the upper part with the usual coarse reticulation. Dorsum of epinotum two-thirds wider across the middle than long, briefly narrowed just in front of the apical teeth; the latter are acute and as long as wide at the base. The arrangement of the carinae is the same as in *apicalis*. The carina of the clypeus ends in a sharp tooth, and on each side of the same there is a blunt tooth, beyond which the margin is feebly festooned. Head wide, the interocular distance on the vertex being equal to the length of the second and third joints of the flagellum. Head not much narrowed behind, the postocular region four and a half times wider than long in the middle. Second joint of the flagellum nearly half as long again as the third, the latter three times longer than wide at the apex. Frontal carinae divergent, extending back to about the level of the middle of the eyes. Pronotal collar like that of *apicalis*, but with the brow more widely rounded lengthwise, twice as wide at the base as long. First tergite longer than in *apicalis*, being more than half as long as wide; the second segment as long as wide, the sternite highest a little in front of the middle. Penultimate joint of the hind tarsus half as long as the apical joint, the claws with a small tooth between the apex and the middle, therefore not bifid. Wings hyaline and with a fuscous band like that of *apicalis*, the forewing with three cubital cells; fourth abscissa of the radius two-thirds the length of the second.

♂. 6.5 mm. long. In the only example which I have seen of this sex, the colour is purplish black, the second and following joints of the flagellum dark brown, the femora dark reddish brown, and the wings less deeply infuscated than in the ♀. The sculpture of the head and thorax is the same as in the ♀, but that of the abdomen very different. The first three tergites are strongly and deeply punctured, the puncturation weakest on the third. On the first two the punctures are not much smaller than those on the pronotal collar, and are fairly close together. The abdomen is covered with a sparse and outstanding white pilosity, which is also present on the legs. The second sternite has the lateral margins slightly metallic and as strongly and closely punctured as the tergite, but in the middle it is black, shining and has a few large and shallow punctures. Clypeus sparsely and shallowly punctured, the

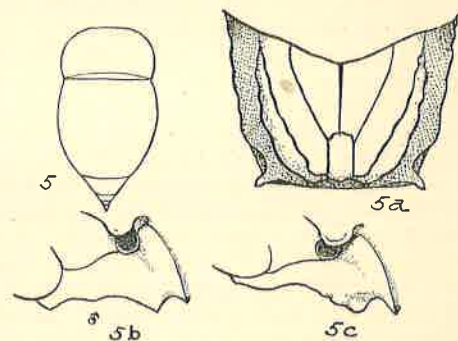


Fig. 5. *Ampulex nebulosa*, ♀, abdomen. a. ♀, epinotum. b. ♂, half of clypeus. c. ♀, half of clypeus.



lateral teeth on the anterior margin acute. Second joint of the flagellum half as long again as the third, the latter three times longer than wide. Interocular distance on the vertex equal to the length of the second joint of the flagellum plus two-thirds of the third joint. The postocular region of the head is wider and less convex than in the ♀, to the same degree as in the ♂ of *apicalis*. The second sternite is highest at the basal fourth, and beyond that point fairly flat. The fourth abscissa of the radius is a little longer than the second. Otherwise like the ♀.

Although Kohl gives the length of his *cribrata* as 11.5 mm., there can be little doubt that his species is the ♂ of *nebulosa*.

Willowmore (Dr H. Brauns); Mossel Bay, March (R. E. Turner).

*A. mutilloides* Kohl (figs. 6 and 6 a; Part v, Plate II, fig. 3; Plate VIII, fig. 4).

*Ann. K.K.N.H. Mus. Wien*, VIII, p. 468, ♀. 1893.

*A. sanguinicollis* Brauns. *Loc. cit.* XIII, p. 394, ♂. 1899.

♀. 15.5–17 mm. long. Vertex and occiput, pronotal collar, mesonotum, scutellum and apical abdominal segment, ferruginous. Mandibles, clypeus, antennae and tarsi brownish black, the front of the head and the temples black, with a bluish tinge. The rest of the body metallic purple and blue. Forewing brownish, except a streak across the middle, which like the hindwing, is flavo-hyaline. Head and thorax with a sparse, erect and black pilosity. Posterior lower angles of the mesopleurae and of the declivity of the epinotum, the middle of the metanotum, coxae and an ovate patch on each side of the second tergite covered with a dense silvery white pubescence. Head strongly and rather irregularly punctured; the punctures smallest on the middle of the face and on the temples, on the face fairly far apart; the sides of the face are closely punctured and somewhat rugose. The vertex and occiput have widely spaced, large and deep punctures, the spaces between them smooth and shining. Pro-mesonotum, scutellum and mesopleurae closely and deeply punctured, the declivity of the epinotum irregularly rugose. First and second abdominal segments with a very few small punctures; otherwise the abdomen is smooth and shining.

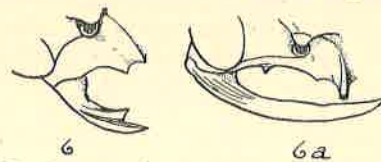


Fig. 6. *Ampulex mutilloides*, ♂, mandible and half of clypeus. a. ♀.

Clypeus produced far forwards in the middle to form a nasiform projection, subcarinate over its basal half, the anterior margin depressed and with an acute tooth on each side about half way between the middle and the lateral angles. Eyes small, the inner margins nearly parallel. Head very wide and short, the interocular distance on the vertex equal to the length of the first four joints of the flagellum plus half of the fifth. The postocular region of the head is three times wider than long in the middle. The posterior ocelli are two and a half times as far from the eyes as they are from each other. Second joint of the flagellum fully half as long again as the third. Pronotal collar short, three times wider at the base than long. Prosterna conically produced posteriorly. Metanotum with a raised semicircular area in the middle which is densely pubescent. Dorsum of epinotum fully twice as wide across the middle as long, the apical teeth fairly small. Second tergite as long as wide across the basal third. Forewing with three cubital cells, the fourth abscissa of the radius about as long as the first.

A more detailed description of this species in this sex is unnecessary, since in colour and in the shape of the head it is quite unlike any other of the genus.

♂. 11 mm. long. Pronotal collar red, with a tinge of purple. Mandibles,



clypeus, antennae and tarsi black, the head and mesothorax metallic purple, the rest blue-green. Wings not so deeply clouded as in the ♀. Second tergite without the lateral patches of pubescence which are present in the ♀. Head, pronotum and mesothorax very strongly punctured, the spaces between the punctures raised and forming a reticulate rugosity. The upper half of the sides of the epinotum with similar sculpture. Tergites 1 and 2 strongly punctured, the punctures elongate and separated by shining spaces which are about twice as wide as the punctures. First sternite transversely rugose, the second sternite black in the middle and with very large shallow punctures, greenish and more closely punctured at the sides. Posterior femora and tibiae strongly and closely punctured on the outer side. The sculpture of the epinotal dorsum resembles that of the ♀, but the fourth carina is less prominent, and the apical teeth are more acute. Mandibles with a sharp tooth a little behind the apex. Clypeus of the usual form. Frontal carinae short and divergent, not reaching the level of the anterior ocellus. Interocular distance on the vertex equal to a little more than the length of the first three joints of the flagellum. The second joint is two-thirds longer than the third. Posterior ocelli not quite twice as far from the eyes as from each other. Postocular region of the head four times wider than long in the middle. The median longitudinal groove on the pronotal collar is much less distinct than in the ♀. Dorsum of the epinotum two-thirds wider across the middle than long. First tergite twice as wide at the apical margin as long in the middle, the second about as long as wide and twice as long as the first.

S. Africa (Drège); Carolina, Transvaal, January (C. H. Bedford); Pretoria; Port Elizabeth (Dr H. Brauns).

*A. cyanura* Kohl (figs. 7, 7 a-d and f; Plate VIII, fig. 5). *Ann. K.K.N.H. Mus. Wien*, VIII, p. 471, ♀. 1893.

*A. capensis* Cam. *Rec. Albany Mus.* 1, p. 254, ♀ (?). 1905.

*A. africana* Cam. *Loc. cit.* p. 256, ♂. 1905.

♀. 13-15.5 mm. long. Antennae, fore tibiae and all the tarsi black, the rest of the body metallic blue and purple, here and there with greenish reflections. Mandibles ferruginous, apical segment and apical margins of the second and following segments, reddish brown. Wings hyaline, faintly tinged with fuscous, the radial, second and third cubital and second discoidal cells darker. Pilosity on the head, thorax and legs black, the posterior inferior angles of the mesopleurae and the sides of the epinotum with a dense silvery pubescence. Head strongly punctured, the punctures behind the ocelli larger and farther apart than in front of them, separated by spaces not much wider than the punctures. On the temples the punctures are smaller than those on the vertex and also wider apart. Pronotum, mesonotum and scutellum with punctures as large as those on the vertex, on the pronotum as dense as on the vertex, but much more sparse on the mesonotum and scutellum. Mesopleurae not closely punctured, the punctures as large as those on the temples. Metapleurae smooth and shining, except the upper corner which is traversed by four oblique carinulae. Declivity and upper part of the sides of the epinotum reticulate-rugose, the lower part of the latter punctured posteriorly. First two tergites and apical half of the third very sparsely, shallowly and finely punctured, the basal half of the third closely and very finely so. Second sternite almost impunctate. Clypeus with a fairly acute tooth on each side of the median tooth. Interocular distance on the vertex equal to the length of the second joint of the flagellum plus two-thirds of the third joint. The second joint is a little more than half as long again as the third; the latter is three times longer than wide at the apex. Frontal carinae divergent, not reaching



back to the level of the anterior ocellus. Head not much narrowed behind, the postocular portion being three and a half times wider than long in the middle. Pronotal collar twice as wide behind as long in the middle, with a distinct median longitudinal groove.

Dorsum of epinotum nearly twice as wide as long; the median carina is not very distinct, and at about the posterior third of the segment the third carina is as far from the fourth as from the second. The apical teeth are small and acute. Second tergite as long as wide, the first more than half as long as the second and only one and a half times wider across the apical margin than long in the middle. The second sternite is almost vertically truncate at the base, and lengthwise is only feebly convex. Posterior tibiae punctured. The penultimate joint of the hind tarsus is a little longer than half the apical joint. The tooth on the claws is inserted a little beyond the middle. Second and fourth abscissae of the radius subequal, the second cubital cell half as wide again on the cubitus as on the radius.

♂. 9 mm. long. Mandibles piceous, with a fusco-ferruginous band just behind the apex. Lower face and clypeus with a sparse, whitish pubescence. Temples, sternum and apical half of the abdomen with a sparse and white pilosity. On the femora there are a few white hairs intermixed with the black ones. Puncturation of the head and thorax stronger than in the ♀, the metapleurae without the carinulae in the upper angle which are present in the ♀. Tergites strongly and deeply punctured, the largest punctures hardly smaller than those on the middle of the scutellum. The second sternite is black except at the sides, the latter parts fairly

closely and not coarsely punctured, the middle sparsely and very coarsely punctured. Lateral teeth of the clypeus less acute than in the ♀. Frontal carinae more strongly developed than in the ♀, divergent except near their ends which slightly converge and fall not far short of the level of the anterior ocellus. Back of the head less convex than in the ♀, the postocular region being nearly four times as wide as long in the middle. Second joint of the flagellum one-fourth longer than the third; the latter three and a half times longer than wide. Second abscissa of the radius one-third longer than the fourth, and not much shorter than the base of the second cubital cell, so that the latter is almost as wide above as below. Otherwise like the ♀.

Eastern Cape Province (Dr H. Brauns).

*A. cyanura*, race *rhodesiana*, n.r. (fig. 7 e).

♀. 11.5-14.5 mm. long. Mandibles, clypeus, scapes and apex of the antennal plate, ferruginous. The rest of the body metallic blue-green. Disc

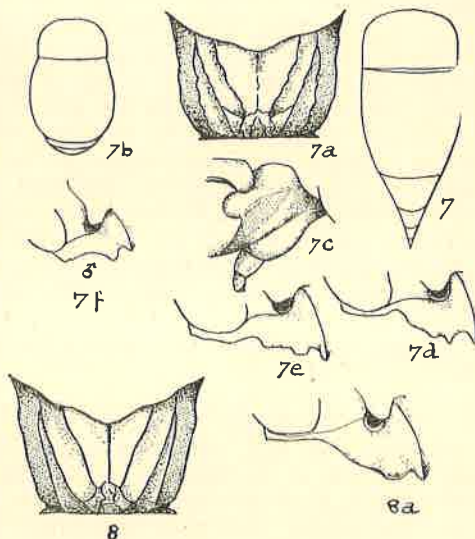


Fig. 7. *Ampulex cyanura*, ♀, abdomen. a. Epinotum. b. ♂, abdomen. c. ♀, pronotum. d. ♀, half of clypeus. f. ♂, half of clypeus. e. Race *rhodesiana*, ♀, half of clypeus.

Fig. 8. *Ampulex cyanura*, race *monticola*, ♀, epinotum. a. Half of clypeus.



of the metanotum covered with a dense, white pubescence. Upper third of the mesopleurae and the sides of the epinotum, excepting the anterior fourth, reticulate-rugose. Punctuation of the abdomen stronger than in the type of the species, especially the first tergite. The posterior margin of the head is less convex. Second joint of the flagellum only one-third longer than the third joint. The clypeus differs from that of the type in having the lateral teeth broadly truncated. The apical margin of the second tergite and the apical half of the third are covered with a fine, decumbent and whitish pubescence, and the legs have white hairs intermixed with the black ones. The dorsum of the epinotum is a little broader and the transverse carinulae are much stronger than in the type of the species. The second abscissa of the radius is one-third longer than the fourth. Otherwise like the type of the species.

♂. 7-9 mm. long. Colour like that of the ♀. The joints of the flagellum are thicker than in the ♂ type of the species, the third joint is three times longer than wide, and the second joint is one-third longer than the following joint. The punctuation of the first two tergites is usually much closer and coarser. In the majority of the specimens which I have seen the punctures on the middle of the second tergite are larger and deeper than those on the middle of the scutellum, and are separated by spaces hardly half as wide as the punctures; there are, however, some examples in which the punctuation is hardly coarser than in the type of the species. The second tergite is a little wider than in the type of the species, and the frontal carinae are more clearly defined and extend farther back, that is, to the level of the anterior ocellus.

Bulawayo, Matopos, and Hope Fountain, S.R. Types in R.M. coll. (R.M. and T.M. colls.).

*A. cyanura*, race *monticola* n.r. (figs. 8 and 8 a).

♀. 11.5 mm. long. Head, thorax and legs metallic blue-green, the tarsi and the whole of the antennae black; abdomen metallic green. Mandibles and apical half of the clypeus ferruginous, apical segment of the abdomen fusco-ferruginous. Sculpture considerably coarser than in the type of the species, or in the race *rhodesiana*; on the head and thorax, excepting the scutellum, it is reticulate-punctate, with the spaces between the punctures narrower than the punctures and forming a distinct network. The punctuation of the first two tergites, and to a lesser degree also of the third, is deep and very distinct, and clearly more abundant than in the type of the species or in the race *rhodesiana*. The second sternite is more convex than in the type, and is highest at the middle. The space between the second and third carinae on the epinotum is wider, being about twice as wide at the middle as the space between the third and fourth. Clypeus like that of the race *rhodesiana*, but with the lateral teeth wider and less prominent. Second joint of the flagellum one-seventh longer than the third. Ventral surface of the thorax and abdomen with a sparse, long and white pilosity. Legs with black and white hairs as in the race *rhodesiana*. Otherwise like the type of the species.

Vumbu Mts, 5200 ft., Umtali, S.R. February. 1 ♀. Type in R.M. coll.

*A. denticollis* Cameron (figs. 9, 9 a and b; Plate VIII, fig. 6). *Ann. Trans. Mus.* 11, p. 141, ♂. 1910.

♀. 8 mm. long. Black. Tibiae, tarsi, mandibles, clypeus and apical segments of the abdomen, ferruginous. Coxae and femora fusco-ferruginous. Occasionally the legs are entirely ferruginous. Fore wings pale fuscous, with a band across the middle and also the apical margin broadly clear hyaline.



Hind wings hyaline. Antennae ferruginous or fusco-ferruginous over the four basal joints, thence becoming gradually darker or blackish towards the apex. Posterior lower angle of the metapleurae, declivity of the epinotum and posterior coxae with a fine, dense and whitish pubescence, the mesonotum and scutellum with a few bristles, and the posterior tibiae with one or two white and exserted hairs. Sides of pronotum, middle of the metanotum, mesopleurae and sternum with a microscopic, depressed and grey pubescence; otherwise the insect is glabrous. Head and pro-mesothorax dull; the head is microscopically rugulose and punctulate, the clypeus almost smooth and slightly shining. Pro-mesothorax microscopically coriaceous, sparsely punctured with large and widely separated punctures, which on the mesonotum are most plentiful on the lateral margins. Scutellum closely and finely punctured. Pronotal collar with two small teeth at about the middle. Dorsum of epinotum closely and transversely rugose between the longitudinal carinae, the declivity and upper part of the sides reticulate-rugose, the rest of the sides smooth and slightly shining. Abdomen dull, microscopically reticulate-punctate.

Median area of the clypeus acutely tridentate on the anterior margin, sharply carinate longitudinally in the middle, the carina ending abruptly just in front of the median tooth. Posterior margin of the clypeus, between the antennal sockets, margined by a narrow and transversely striated groove. Lower face without the antennal plate and frontal carinae which are usually present in the genus. First joint of the flagellum longer than wide, the second joint twice as long as the third, the latter twice as long as its apical width. Vertex wide, the interocular distance there being equal to the length of the first three joints of the flagellum.

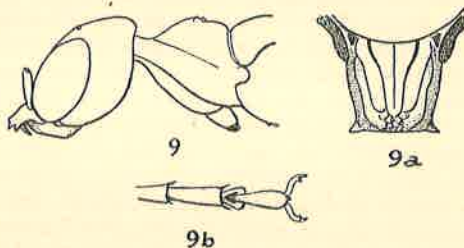


Fig. 9. *Ampulex denticollis*, ♀. a. Epinotum.  
b. Last three tarsal joints of hind leg.

Posterior ocelli separated from each other by barely more than the diameter of one ocellus, and separated from the eyes by at least three and a half times that length. The temples are large; viewed from the side they are nearly as wide across the middle as the eyes. Pronotal collar narrow, only a little more than half as wide as the head, nearly as long in the middle as wide at the base, the anterior face short and oblique. Dorsum of epinotum as wide across the middle as long, the apical teeth subacute, curved upwards and as long as they are wide at the base. Petiole as long as the posterior coxae. Second abdominal segment slightly longer than wide in the middle; the apical segments not transversely compressed. Penultimate joint of the hind tarsus less than half as long as the apical joint, the latter about as long as the third. The claws of the hind tarsi are almost bifid, having a small tooth placed obliquely near the apex.

♂. 6-7 mm. long. Legs darker, all the femora and the middle and hind tibiae black, only the apical segment of the abdomen ferruginous, otherwise coloured like the ♀. Punctuation of the pro-mesonotum somewhat stronger than in the ♀. The pronotal collar is distinctly impressed lengthwise medially in front of the two teeth, and the latter are stronger than in the ♀. Abdomen fairly shining in small examples, but dull in the larger ones. Anterior margin of the clypeus convex, merely feebly denticulated on each side of the middle, the median carina less acute than in the ♀, ending on the anterior margin in



a blunt point. Second joint of the flagellum only half as long again as the third, the latter twice as long as wide at the apex. Interocular distance on the vertex equal to the length of the second and third joints of the flagellum. Second abdominal segment half as wide again as long. Otherwise like the ♀.

Rhodesia, Transvaal, Natal and Cape Province. Fairly common, frequenting Acacia trees in search of its prey. (R.M. and T.M. colls.)

*A. honesta* Kohl. *Ann. K.K.N.H. Mus. Wien*, VIII, p. 465, ♀. 1893.

"♀. 14.5 mm. long. Forewing with only two cubital cells. Hind tibiae metallic green or blue, not red. Episternal suture visible. Collar without a conical protuberance behind.

Collar shaped like that of *A. latifrons* Kohl, almost cuboid, with an impressed median longitudinal line, and covered fairly densely with coarse punctures. Head only moderately narrowed behind; occipital margin sharp but not reflected upwards like a collar. The inner margins of the eyes converge only slightly above, their least distance on the vertex being a little less than the length of the second joint of the flagellum, or equal to the length of the third plus half of the fourth joint. The third joint is about four times as long as wide at the apex. Head very closely and almost microscopically punctured, therefore somewhat dull; it is also fairly densely and coarsely punctured all over, including the temples and occiput. Vertex without an impression behind the ocelli. The frontal carinae are short, and the median carina is faintly indicated. The clypeal carina is straight in its basal half, thence curved to the apex, where it ends in a fairly sharp tooth; on each side of, and at some distance from the latter, there is a lateral tooth. Mesonotum, scutellum, mesopleurae and pronotal collar fairly closely and coarsely punctured. The punctures on the mesopleurae are not quite so large as those on the mesonotum. In addition the mesopleurae have a microscopically fine and close puncturation, which is absent from the mesonotum and scutellum, so that the latter are more shining. Metapleurae punctured posteriorly. Epinotum fairly quadrate; the third carina does not approach the fourth, and their distance apart at about the middle of their course is not much less than the distance between the second and third. The apical teeth are well developed, and below them there is no second tooth. Second abdominal segment a little longer than wide across the middle....Penultimate tarsal joint of the four front legs a little longer than half the apical joint. Claws almost bifid, metallic blue or green. Anterior tibiae not red in front. Wings brown, in the middle and at the apical margin paler, so that they appear broadly banded with brown."

Gaboon.

*A. splendidula* Kohl. *Loc. cit.* p. 471, ♀.

"♀. Forewings with three cubital cells. Pronotal collar without a conical protuberance behind. Dorsum of epinotum a little wider across the middle than long; the third carina in the middle of its course at least as far from the fourth as from the second. Head not thick, and excepting a few small and some pairs of large punctures, impunctate (the larger ones are regularly spaced and bear macrochaetae; thus there are four arranged at regular intervals in a curve on the vertex, and there is also one on each side very near the margin of the eyes and at the level of the hind ocelli). Temples narrow, rapidly attenuated below. The back of the head is only moderately narrowed posteriorly, and the hind margin is not reflected upwards. The least distance between the eyes on the vertex is equal to about twice the length of the third joint of the flagellum, or to the length of the second plus three-fourths of the following joint. The third joint is not quite three times longer than its apical



width. The frontal carinae are nearly parallel and short, fading out well below the level of the anterior ocellus. A median frontal carina is barely indicated. The carina on the clypeus is feebly arcuate. The lateral teeth on the anterior margin of the clypeus are only moderately developed. The pronotal collar, viewed from above, appears longer than wide in the middle; it has a median longitudinal impression and a few setigerous punctures. The mesonotum also has only a few punctures bearing macrochaetae, and its longitudinal furrows are distinctly curved. The scutellum is bordered by deep pit-like punctures which in front form a clathrate groove. Mesopleurae with few punctures, which are chiefly below the wing-bases. The episternal suture is visible for a short distance. Metapleurae distinctly separated from the sides of the epinotum by a suture, without rugae, sparsely and indistinctly punctured. Dorsum of epinotum not so long as wide across the middle; the apical teeth short and prismatic, below them there is no second tooth. Second abdominal segment as long as wide. The penultimate joint of the hind tarsi is wide, and projects a little beyond the middle of the apical joint. Posterior tibiae slightly punctured behind. The shape of the insect is, on the whole, somewhat compressed. 13 mm. long."

African region.

*A. pilipes* Kohl. *Loc. cit.* p. 484, ♂.

"Forewing with three cubital cells. Pronotal collar at the very most not longer than wide across the posterior third. The dorsum of the epinotum is wider at the middle than long, or as wide. Posterior tibiae punctured. Mesopleurae without a longitudinal suture directed towards the middle coxae. Inner margins of the eyes parallel or nearly so. Pronotal collar without a conical protuberance behind. The second sternite is shining black in the middle, without metallic lustre, sparsely and coarsely punctured. Head very coarsely and densely punctured all over; the punctures are deep and separated by rugae. The clypeal carina ends in an acute tooth, and the anterior margin on each side of it is sinuate. The frontal carinae are at first divergent, then convergent above. A median carina is absent. Pronotal collar and mesonotum densely, deeply and coarsely punctured. The mesopleurae have an episternal suture, and are coarsely punctured, but not so much so as the mesonotum.

The dorsum of the epinotum is clearly shorter than wide; the third and fourth carinae are not so far apart from each other as 3 is from 2 or 4 from 5. Apical teeth short and acute. Abdomen closely, coarsely and deeply punctured above, and likewise the sides of the second sternite. The second tergite is about as long as wide in the middle, and three and a half times longer than the third. Hind tibiae and outer side of the hind femora closely and fairly coarsely punctured. Petiole fairly short, wide and flat. The whole body and the legs have an abundant and outstanding pilosity. The least distance between the eyes on the vertex is more than the length of the second joint of the flagellum plus one-third of the following joint, but less than the second plus half of the third. The third joint is two and a half times longer than wide in the middle. The distance between the posterior ocelli is about equal to the width of the second joint of the flagellum at its middle. Penultimate joint of the hind tarsi fully half as long as the apical, shorter than the third, which is nearly symmetrical, and as long as, but stouter than the apical joint. 9.5 mm. long."

Guinea.

(At the request of my friend Dr H. Brauns I include herewith on his behalf the following diagnosis of another new species belonging to this section.)



width. The frontal carinae are nearly parallel and short, fading out well below the level of the anterior ocellus. A median frontal carina is barely indicated. The carina on the clypeus is feebly arcuate. The lateral teeth on the anterior margin of the clypeus are only moderately developed. The pronotal collar, viewed from above, appears longer than wide in the middle; it has a median longitudinal impression and a few setigerous punctures. The mesonotum also has only a few punctures bearing macrochaetae, and its longitudinal furrows are distinctly curved. The scutellum is bordered by deep pit-like punctures which in front form a clathrate groove. Mesopleurae with few punctures, which are chiefly below the wing-bases. The episternal suture is visible for a short distance. Metapleurae distinctly separated from the sides of the epinotum by a suture, without rugae, sparsely and indistinctly punctured. Dorsum of epinotum not so long as wide across the middle; the apical teeth short and prismatic, below them there is no second tooth. Second abdominal segment as long as wide. The penultimate joint of the hind tarsi is wide, and projects a little beyond the middle of the apical joint. Posterior tibiae slightly punctured behind. The shape of the insect is, on the whole, somewhat compressed. 13 mm. long."

African region.

*A. pilipes* Kohl. *Loc. cit.* p. 484, ♂.

"Forewing with three cubital cells. Pronotal collar at the very most not longer than wide across the posterior third. The dorsum of the epinotum is wider at the middle than long, or as wide. Posterior tibiae punctured. Mesopleurae without a longitudinal suture directed towards the middle coxae. Inner margins of the eyes parallel or nearly so. Pronotal collar without a conical protuberance behind. The second sternite is shining black in the middle, without metallic lustre, sparsely and coarsely punctured. Head very coarsely and densely punctured all over; the punctures are deep and separated by rugae. The clypeal carina ends in an acute tooth, and the anterior margin on each side of it is sinuate. The frontal carinae are at first divergent, then convergent above. A median carina is absent. Pronotal collar and mesonotum densely, deeply and coarsely punctured. The mesopleurae have an episternal suture, and are coarsely punctured, but not so much so as the mesonotum.

The dorsum of the epinotum is clearly shorter than wide; the third and fourth carinae are not so far apart from each other as 3 is from 2 or 4 from 5. Apical teeth short and acute. Abdomen closely, coarsely and deeply punctured above, and likewise the sides of the second sternite. The second tergite is about as long as wide in the middle, and three and a half times longer than the third. Hind tibiae and outer side of the hind femora closely and fairly coarsely punctured. Petiole fairly short, wide and flat. The whole body and the legs have an abundant and outstanding pilosity. The least distance between the eyes on the vertex is more than the length of the second joint of the flagellum plus one-third of the following joint, but less than the second plus half of the third. The third joint is two and a half times longer than wide in the middle. The distance between the posterior ocelli is about equal to the width of the second joint of the flagellum at its middle. Penultimate joint of the hind tarsi fully half as long as the apical, shorter than the third, which is nearly symmetrical, and as long as, but stouter than the apical joint. 9.5 mm. long."

Guinea.

(At the request of my friend Dr H. Brauns I include herewith on his behalf the following diagnosis of another new species belonging to this section.)



*A. Arnoldi* Brauns (figs. 10 and 10 a-c; Plate VIII, fig. 7).

"♀. 8 mm. long. Bluish black, the thorax purplish black, with hardly any metallic lustre except on the abdomen, which has a little. The femora and tibiae are also bluish black, but sometimes the apices of the femora and the greater part of the tibiae are dark ferruginous. Mandibles, first five joints of the antennae, tarsi and apical segment of the abdomen, ferruginous; the apical margins of the second and following abdominal segments narrowly testaceous. Tegulae black. Fore wings fuscous, the middle and the apical margin clear hyaline like the hindwing. Clypeus, mesopleurae, coxae, middle of the metanotum, apical margins of the second and third tergites with a fine, decumbent and whitish pubescence. In addition there is a decumbent and microscopic pubescence on the head and pro-mesonotum, barely visible with a magnification of less than 40 diameters. The anterior margin of the clypeus has a row of thin whitish cilia, and there are a few macrochaetae on the pro-mesonotum and scutellum. Head and thorax, excluding the dorsum and declivity of the epinotum, dull, microscopically and closely punctate and coriaceous. On the head this sculpture is exceedingly fine and barely resolvable with a magnification of 60 diameters. On this fundamental sculpture is superimposed a sparse and irregular puncturation, which on the head is confined chiefly to the post-ocular region. The punctures are largest on the mesonotum. The scutellum is a little less dull as the fundamental sculpture on that part is not so close; its anterior margin has a transverse and strongly clathrate groove. The sides of the epinotum posteriorly are coarsely punctate and reticulate above, the declivity dull, closely reticulate-rugose. The dorsum of the epinotum is distinctly contracted behind, in front of the apical teeth; it is one-third wider across the middle than long; the first, second and third carinae are well defined but do not extend beyond the second third of the segment, the fourth carina is obsolete. The spaces between the three carinae have transverse carinulae as usual, but the space between the third carina and the lateral margin and also the posterior third of the segment are strongly reticulate-rugose. Apical teeth short and blunt. Abdomen, excluding the second sternite, dull, microscopically alutaceous. The first three tergites also have a sparse, irregular and fine puncturation, the punctures widely separated on the first two, a little closer and finer on the third. Second sternite slightly shining, very finely and closely punctured, especially at the sides. Legs very finely and closely punctured, dull.

Head very wide, the greatest width across the eyes nearly twice as great as the distance between the anterior ocellus and the anterior margin of the clypeus. The head is not much narrower behind than in front. The clypeus differs in structure from that of all our other species; the median portion is produced into a rectangular, transversely convex plate, about two-thirds wider than long in the middle and not carinate longitudinally. The lateral pieces of the clypeus are very short, almost obsolete. Frontal carinae very short, less than half the length of the scape, widely divergent. Interocular distance on the vertex equal to the length of the first three joints of the flagellum.

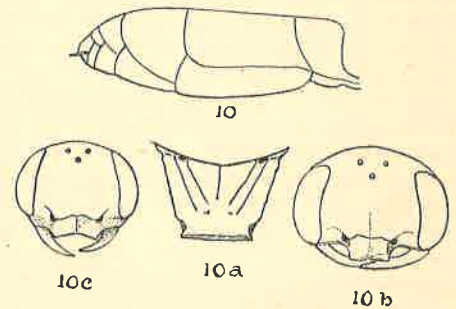


Fig. 10. *Ampulex Arnoldi*, ♀, abdomen.  
a. Epinotum. b. Head. c. ♂, head.



The posterior ocelli are half as far again from the eyes as they are from each other. Second joint of the flagellum about one-fifth longer than the third, the latter two and a half times longer than wide at the apex. Pronotal collar as long as wide across the middle, fairly flat above, slanting a little downwards in front, with a feeble median longitudinal impressed line which does not reach the posterior margin. Episternal suture present, shallow but distinct. The abdomen is narrow and long, and the dorsal surface of the first two segments is unusually flat. The first is vertically truncate in front, the brow rounded; the second tergite is a little longer than wide across the middle and twice as long as the first, the third tergite is two-thirds the length of the second. Second sternite highest at the apical margin. Femora and tibiae very thick; the penultimate joint of the hind tarsi not half as long as the apical joint, the latter longer than the third. The claws have a tooth inserted a little beyond their middle. Forewing with two cubital cells; the second (true third) transverse cubital vein meets the radius at a distance from the end of the latter which is equal to the distance on the cubitus between the recurrent vein and the first transverse cubital vein.

♂. 5-6 mm. long. Bluish or purplish black, with a slight metallic lustre which is more pronounced than in the ♀. First five joints of the flagellum ferruginous, the rest becoming gradually darker towards the apex, which is brown. Tarsi fusco-ferruginous. Clypeus finely and shallowly punctured; head coarsely reticulate-rugose, the reticulations enclosing large, round and shining pits which, in small specimens, are more or less obliterated in the middle of the face and replaced by an uneven rugulosity. On the temples and the part behind the ocelli the punctures are largest and less closely set, and the intervening spaces are flat. In some specimens the spaces between the larger punctures on the upper half of the face and on the vertex are also closely and finely punctured. Dorsal face of the pronotal collar and the mesonotum very coarsely pitted, almost cribrate, but on the middle of the mesonotum the punctures are farther apart and the spaces between are somewhat shining. Sides of the pronotum obliquely rugulose and dull. Mesopleurae with slightly smaller and less close puncturation than the mesonotum. Metapleurae and sides of the epinotum in front shining and feebly punctured; posteriorly the sides of the epinotum are obliquely rugose and have a few large punctures on the lower margin. The rest of the epinotum sculptured as in the ♀. Tergites dull, irregularly and very coarsely punctured, the spaces between the punctures very finely reticulate-punctate and here and there also rugulose. Second sternite shining, covered with large punctures which are less deep and more evenly spaced than those on the tergite. Head not quite so wide as in the ♀; the anterior margin of the median area of the clypeus is moderately concave, and the lateral angles less rectangular than in the ♀. The lateral pieces of the clypeus are also more developed than in the ♀. Second joint of the flagellum nearly one-fourth longer than the third. Second tergite widest halfway between the middle and the apical margin, a little wider than long, and three-quarters longer than first."

Windsorton, Griqualand. December (Dr H. Brauns). Type in coll. Brauns. This species has also been taken at Bulawayo by Captain Stevenson.

*A. nigrocoerulea* Saussure (figs. 11 and 11 a-d; Plate VIII, figs. 8 and 9). Distant, *A Naturalist in the Transvaal*, p. 212, ♀. 1892.

♀. 15-18 mm. long. Mandibles, anterior half of the clypeus and the scapes in front, ferruginous; the rest of the head, pro-mesonotum and scutellum black, with a trace of metallic purple here and there. Metapleurae and epinotum metallic blue and purple; the first tergite and greater part of



the second metallic blue, the rest of the abdomen black. Coxae, femora and tibiae black, the coxae with a faint purplish lustre, tarsi dark brown. Fore wing fuscous over the basal half and beyond the middle, the middle and apical margin hyaline like the hind wing. Head, pro-mesonotum and second tergite at the sides and the third tergite with a grey pruinose pubescence. Middle of the metanotum, posterior lower angles of the mesopleurae and sides of the epinotum with patches of dense, white pubescence. Temples, prosternum and declivity of the epinotum with a few long, whitish hairs.

Clypeus smooth, not quite dull. The rest of the head is dull and has a fundamental, microscopically alutaceous sculpture, on which is superimposed a sparse and irregular puncturation; the punctures are not very large and are very scanty behind the ocelli. Lower half of the temples slightly shining, smooth and with a few small punctures. Pronotum nearly smooth and moderately shining, the dorsum with a few large and shallow punctures, and

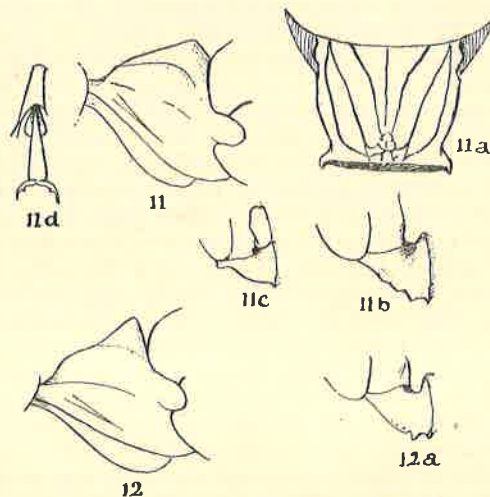


Fig. 11. *Ampulex nigrocoerulea*, ♀, pronotum. a. Epinotum. b. Half of clypeus. c. ♂, half of clypeus. d. ♀, last three tarsal joints of hind leg.

Fig. 12. *Ampulex spilopectera*, ♀, pronotum. a. Half of clypeus.

five or six transverse striae on each side at the middle. The collar is as long as wide at its posterior fourth and raised posteriorly into a blunt cone; it has a feeble impressed line in front and the anterior half of its lateral margins are somewhat tumid. Prosternum and mesothorax shining, sparsely and irregularly punctured, the punctures not large, widely separated except at the anterior angles of the mesonotum. Scutellum shining, with a few large punctures. Episternal suture distinct but shallow. Metapleurae and lower half of the sides of the epinotum smooth and shining. The upper half of the latter widely reticulate-rugose, the declivity closely so and dull. The longitudinal carinae on the dorsum of the epinotum are sharply defined, the intervening spaces closely and transversely carinulate. First two tergites shining, with a sparse, very shallow and fine puncturation. Sternites smooth and shining, the second with a few minute punctures. Clypeus long, the carina acute, sharply bent near the apex and ending in an obtuse point; on each side of the same there is a slightly sharper angle. Interocular distance on the vertex a little less than the length of the second joint of the flagellum. The latter is



very nearly half as long again as the third, which is three and three-quarter times longer than wide at the apex. Frontal carinae parallel and distinct over their anterior half, posteriorly indistinct and curved inwards. A median carina is absent. Head moderately narrowed behind. Posterior ocelli twice as far from the eyes as they are from each other. Dorsum of epinotum one-fifth wider across the middle than long; the third carina at the middle of its course is as far from the second carina as from the fourth. Apical teeth arcuate, compressed, fairly acute and longer than wide at the base. Second abdominal segment a little wider than long, nearly twice as long as the first. Penultimate joint of the hind tarsi distinctly less than half as long as the apical joint. The claws have a broad tooth at the middle. Hind tibiae sparsely and shallowly punctured. Fourth abscissa of the radius slightly shorter than the first.

♂. 12-13 mm. long. Apex of the clypeus, mandibles and front of the scapes, ferruginous. Head and pro-mesothorax dark metallic purplish black, the epinotum and first two tergites metallic blue, the third and following tergites greenish black. Sternites black, the second slightly metallic blue at the sides. Legs black. Fore wings with the fuscous patches much reduced, confined to the apical angle of the submedial cell, and a bar across the radial, second cubital and discoidal cells. The pubescence is longer and more abundant than in the ♀, especially on the third and following tergites. Temples, vertex, pro-mesothorax, sides and declivity of the epinotum, and the tergites with a fine, outstanding and whitish pilosity. Head more strongly and more closely punctured than in the ♀, the lower half strongly reticulate-rugose. The frontal carinae are distinctly defined as far as the anterior ocellus, towards which they converge from the middle onwards. There is a distinct median carina which extends back as far as the anterior ocellus. Pronotal collar sparsely and sharply punctured above and at the sides, the conical tubercle more acute than in the ♀. The puncturation of the mesothorax is more abundant but not coarser than in the ♀. Lower half of the sides of the epinotum sparsely punctured; on the dorsum, the third carina at about the middle of its course is farther from the second than from the fourth. First tergite shining, fairly strongly punctured in the middle, the punctures as large as those on the mesonotum, separated by spaces as wide as the punctures. Second tergite shining, closely and coarsely punctured, the spaces between somewhat raised but hardly rugose. Third tergite dull, finely and closely punctured. Second sternite shining, with a few large punctures. Anterior margin of the clypeus convex on each side, without lateral teeth, the median carina ending in a more distinct tooth than in the ♀. The head is much more narrowed behind than in the ♀, and the occipital margin is reflected to form a collar. Interocular distance on the vertex equal to the length of the second joint of the flagellum. The latter is a little more than one-third longer than the following joint. Second abdominal segment one-fifth wider than long.

S. Rhodesia, Transvaal and Natal. (R.M. and T.M. colls.)

*A. spilopectera* Cameron (figs. 12 and 12 a; Plate VIII, fig. 10). *Rec. Albany Mus.* 1, p. 255, ♀. 1905.

♀. 15-18 mm. long. Very closely allied to *nigrocoerulea*, of which it may be only a subspecies.

The colour differs from that of *nigrocoerulea* in having those parts purple or violaceous which in the other are metallic blue or blue-green. Some specimens from Natal are intermediate, the tergites being as blue as in *nigrocoerulea*. The clypeus is black, only the extreme anterior margin in the middle being fusco-ferruginous. Scares entirely black. Femora and tibiae black, with a violaceous lustre. The apical segment of the abdomen and the



apical margins of the two preceding segments are ferruginous. The fuscous cloud on the fore wing is somewhat darker than in *nigrocoerulea*. The structural differences between this species and *nigrocoerulea* are as follows. Head, excepting the temples and a small area at the sides of the posterior ocelli, strongly and closely punctured; the face rugose between the punctures. Pronotum more strongly punctured, the sides of the collar smooth and very shining, the dorsal face wider, with less parallel sides, the transverse striae deeper, the conical tubercle behind much higher and more acute than in *nigrocoerulea*. Mesonotum and mesopleurae more strongly and a little more closely punctured. The head is more narrowed behind than in the other species, and the apical segments of the abdomen more compressed. Anterior margin of the clypeus with a sharp tooth on each side of the median tooth. The frontal carinae are more clearly defined, and there is a trace of a median carina reaching the anterior ocellus. The interocular distance on the vertex is less than the length of the second joint of the flagellum by as much as the length of the first joint. The second joint of the flagellum is four-fifths longer than the third. Penultimate joint of the hind tarsus less than half the length of the apical joint, but nevertheless a little longer than in *nigrocoerulea*.

♂. 12 mm. long. Varying from metallic purple and blue to green. The differences between the ♂ of this species and that of *nigrocoerulea* are very much the same as in the ♀. The puncturation of the head and thorax is coarser and more abundant, but that of the second tergite is less close than in *nigrocoerulea* ♂. The third joint of the flagellum is shorter than in that species, the second joint being half as long again as the third. There is, however, some variation even in this character. The third carina of epinotal dorsum at the middle of its course is barely farther from the second than from the fourth.

Dunbrody, Willowmore, Addo Bush and Ormiston, C.P.

*A. Moebii* Kohl. *Ann. K.K.N.H. Mus. Wien*, VIII, p. 475, ♀. 1893.

♀. 12-14 mm. long. Mandibles ferruginous, the extreme apex of the clypeus, the underside of the scapes and the apical segment of the abdomen, fusco-ferruginous. Head, thorax, first three tergites and second sternite metallic blue and green, the rest of the abdominal segments excepting the last, black. Legs black, with a slight purple lustre on the femora. Sculpture and pubescence like that of *nigrocoerulea* with which this species is closely allied. The pronotal collar is shaped like that of *nigrocoerulea*, but on the other hand the back of the head is more narrowed than in that species and resembles that of *spiloptera*. The third carina of the epinotal dorsum is slightly nearer to the fourth carina than to the second. The interocular distance on the vertex is equal to the length of the second joint of the flagellum. The latter is three-fifths longer than the third. Clypeus like that of *nigrocoerulea*. The penultimate joint of the hind tarsus is a little less than half the length of the apical joint, but not so short as in *nigrocoerulea*. Otherwise like *nigrocoerulea* ♀.

♂. 11 mm. long. Metallic blue-green. Mandibles ferruginous, clypeus and scapes entirely black. Very much like *nigrocoerulea* ♂ but the puncturation of the head and thorax is much coarser and more abundant. The pronotal collar is a little shorter and transversely striato-punctate on each side in front of the conical tubercle. The lateral margins of the epinotal dorsum are more deeply excised in front of the apical teeth, and therefore appear more prominent than in *nigrocoerulea*. The second joint of the flagellum is one-third longer than the third joint. The inner margins of the eyes are parallel or very nearly so, whereas in *nigrocoerulea* they are moderately but distinctly convergent above. Second abdominal segment not so wide as in *nigrocoerulea*, being only



a trifle wider than long. Penultimate joint of hind tarsus like that of the ♀, less than half the length of the apical joint but longer than in *nigrocoerulea*. Sunday River and Algoa Bay, C.P. January.

*A. purpurea* Westwood (figs. 13, 13 a and b; Plate VIII, fig. 11). *Arcan. Ent.* II, p. 65, ♀. 1844.

♀. 14 mm. long. Of this species I have seen only one ♀ and one ♂ from Dr Brauns's collection, and one ♀ from the British Mus. coll. Apart from the colour, which is a deep metallic purple, the differences between this species and *Moebii* Kohl appear to me to be very slight. Dr Brauns informs me that this species invariably changes to a purple colour after death, whereas *Moebii* retains its blue and green colour.

Mandibles, apex of the clypeus and underside of the scapes, ferruginous. Tarsi, excepting the first joint, ferruginous below, brown above. The puncturation of the face and vertex is a little less dense than in *Moebii*. Temples sparsely but distinctly punctured. Pronotal collar at the sides and on the posterior half sparsely and not coarsely punctured. Mesothorax a little more strongly and less sparsely punctured than in *Moebii*. The first tergite has a few small and widely spaced punctures. The head is a little wider behind the eyes than in *Moebii*, and the abdomen is broader, the second tergite being only two-thirds longer than the first, whereas in *Moebii* it is twice as long. In both species the second tergite is about as long as wide across the middle. Second joint of the flagellum three-fifths longer than the third, which is a little more than three times longer than its apical width.

The apical teeth of the epinotum are slightly longer and less blunt than in *Moebii*. The penultimate joint of the hind tarsus does not extend quite as far as the middle of the apical joint. The third is longer than in *Moebii*, being nearly two-thirds longer than the fourth, whereas in that species it is only a trifle longer. Pronotal collar with a median longitudinal impression which does not extend as far back as the base of the conical tubercle. Otherwise like *Moebii*.

♂. 12 mm. long. Second joint of the flagellum half as long again as the third. As in the ♀, the apical teeth of the epinotum are more acute than in *Moebii* ♂, and thin, i.e. compressed dorso-ventrally, whereas in *Moebii* they are as thick from above to below as from side to side. Tarsal joints as in the ♀. Otherwise like the ♂ of *Moebii*.

Willowmore and Sunday River, C.P.

*A. assimilis* Kohl. *Ann. K.K.N.H. Mus. Wien*, VIII, pp. 463 and 476, ♀. 1893.

“♀. Forewing with two cubital cells, occasionally with three. Hind femora metallic blue or green. Episternal suture visible for a short distance. Pronotal collar at the most only as long as wide at the base, with transverse striae in front and a conical tubercle behind. Back of the head only moderately narrowed, the margin of the occipital foramen not reflected. Epinotal dorsum about as long as wide in the middle, the apical teeth large.”

“The penultimate joint of the hind tarsus is less than half as long as the apical, also not half as long as the third joint. Claws armed with a vertical tooth in the middle, and therefore not bifid. Posterior tibiae distinctly but not coarsely punctured. The interocular distance on the vertex is fully two-thirds the length of the second joint of the flagellum. The third joint of the flagellum is about four and a half times as long as its apical width. The

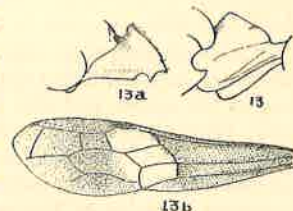


Fig. 13. *Ampulex purpurea*, ♀, pronotum. a. Half of clypeus. b. Forewing.



pronotal collar has a median impressed line which extends back as far as the apex of the conical protuberance. The third and fourth epinotal carinae are nearer to each other than they are to the second and fifth. Head closely and coarsely punctured. The frontal carinae are at first parallel, then curve outwards and further up inwards, forming an arc which closes just behind the anterior ocellus. A median carina is only faintly indicated. The anterior margin of the clypeus lacks a median tooth. The distance between the posterior ocelli is slight, being equal to the width of the antepenultimate joint of the antenna. Inner margins of the eyes moderately convergent above. The pronotal collar, in addition to the transverse rugae, has a coarse puncturation all over. Mesonotum with a moderately dense and coarse puncturation, with smooth, shining spaces between the punctures on the posterior half. Scutellum moderately closely and coarsely punctured. Apical teeth of the epinotum metallic blue and violet. Wings fuscous, without distinct transverse bands. 16-18 mm. long."

Ethiopian region, Guinea.

*A. dives* Kohl. *Loc. cit.* p. 464, ♀.

"♀. Forewing with two cubital cells. Pronotal collar with a conical protuberance behind. The penultimate joint of the hind tarsus is plainly half as long as the apical, and also more than half as long as the third. Claws nearly bifid. Hind tibiae not punctured. Third joint of the flagellum about four times as long as thick. Frontal carinae parallel, short, not reaching the level of the anterior ocellus. There is no median carina on the frons.

Inner margins of the eyes distinctly convergent above; the interocular distance on the vertex is hardly more than half the length of the second joint of the flagellum, but fully as long as the third. Face punctured, without rugae. Vertex moderately punctured. Temples and occiput almost impunctate. The transverse striae on the pronotal collar, which has a median longitudinal impression, are fairly coarse. Prosternum, mesonotum and scutellum with small, scattered punctures. Mesopleurae with a sparse, and relatively not coarse, puncturation. Metapleurae impunctate. Apical teeth of the epinotum not appreciably attenuated. Second abdominal segment a little wider than long. Wings brownish, paler in the middle and at the apical margin. Metallic blue and green. 15.5 mm. long."

Gaboon.

*A. gratiosa* Kohl. *Loc. cit.* p. 484, ♂.

"♂. Pronotal collar with a conical protuberance behind, not longer than wide across the posterior third. Epinotum wider across the middle than long, or as wide as long. Posterior tibiae punctured. Mesopleurae without a longitudinal groove directed towards the middle coxae. Inner margins of the eyes parallel, or nearly so. Forewing with two cubital cells. Median carina of the clypeus straight over its basal half, its apical half bent downwards and ending in a point, the anterior margin on each side of it without excisions. The interocular distance on the vertex is barely equal to the length of the second joint of the flagellum; the third joint is three and a half times longer than wide. Frontal carinae slightly divergent at the base, thence gradually curving inwards and meeting just behind the anterior ocellus. A median carina between them is only faintly indicated. Head closely and coarsely punctured all over, rugose between the punctures, especially on the face. Occipital margin narrow and reflected. Pronotal collar about as long as wide in the middle, rising posteriorly, with a fairly dense and coarse puncturation and a longitudinal median impression which extends back as far as the base



of the conical tubercle; the sides of the collar are also punctured; the tubercle behind is a low one, merging gradually into the surrounding area. Mesonotum and scutellum coarsely and not sparsely punctured; the mesopleurae have a fairly close puncturation which is somewhat finer than that of the mesonotum. Dorsum of epinotum about as long as wide across the middle. The third carina is nearer to the fourth than to the second. The apical teeth are fairly stout. The petiole is relatively long. Second abdominal segment somewhat wider than long, fully three times as long as the third segment, and punctured as in *A. compressiventris* Guérin (= *sibirica* Fab.); at the sides and behind there are some very small punctures intermixed with the larger ones. The second sternite is black in the middle, and its metallic coloured lateral margins are very finely punctured, with here and there a few large punctures. Third to fifth tergites rugulose and moderately coarsely punctured. Posterior tibiae finely punctured; the posterior femora also with a few punctures on the outer face. Penultimate joint of the hind tarsus about half as long as the apical joint, clearly shorter than the third joint. The claws are almost bifid. Metallic green and blue. Wings hyaline, the forewing with two transverse, faintly fuscous bands, one of which covers a part of the radial, second cubital and the end of the second discoidal cells, while the other covers the basal vein and the inner submedial transverse vein. 11.5 mm. long."

Ethiopian region. Guinea.

*A. formosa* Kohl. *Loc. cit.* p. 485, ♂.

"♂. Forewing with three cubital cells. Anterior margin of the clypeus emarginate on each side of the median tooth. The interocular distance on the vertex exceeds the length of the second joint of the flagellum by about two-thirds of the length of the third joint. (Antennae, compared with those of *A. gratiosa*, less elongate.) Third joint of the flagellum two and a half times longer than wide in the middle. Frons with few punctures, and in consequence more rugae are visible. The tubercle on the pronotal collar is fairly acute, standing well out from the surrounding area. Episternal suture present. The penultimate joint of the hind tarsus is barely half as long as the apical joint, distinctly shorter than the third."

(The paragraph above also applies to *A. Dahlbomii* Kohl.)

"Dorsum of epinotum very little wider than long, the apical teeth conical. Middle of the second sternite black. First abdominal segment more campaniform. Petiole relatively thin and fairly long. The frontal carinae in the first part of their course are straight and parallel, then feebly arcuate and meeting behind the anterior ocellus. A median carina between them is barely indicated. Temples, vertex and occiput coarsely and fairly closely punctured. The pronotal collar is coarsely punctured all over, and is only very feebly impressed lengthwise in front. The fairly close puncturation on the mesonotum is coarser than on the pronotum. Mesopleurae moderately closely, coarsely and deeply punctured. Tergites 1 and 2 punctured as in *A. compressa*. The second is somewhat wider than long, about four times as long as the third, which is finely rugose and moderately closely punctured. The sides of the second sternite have a few small punctures mixed with a microscopic puncturation. The black middle portion of the sternite is smooth, shining and sparsely punctured; the highest part of the segment lies at the end of the first third of its length. Posterior tibiae punctured on the inner and outer faces, the punctures distinct but not very large. The posterior femora also have a few punctures. Metallic blue and green. Wings tinged with brown, without transverse bands. 12 mm. long."

Ethiopian region, Senegal.



*A. Dahlbomii* Kohl. *Loc. cit.* pp. 485 and 486, ♂.

(See first paragraph of the description of *A. formosa*, which also applies to this species.)

"♂. Dorsum of epinotum considerably wider than long; the apical teeth more tuberculiform. Second sternite metallic blue all over. The second abdominal segment shaped like that of *A. compressiventris*. Petiole short and thick. Frontal carinae as in *A. formosa*; the median carina slightly indicated. Temples, vertex and occiput very closely and coarsely punctured, with rugae between the punctures. Pronotal collar coarsely punctured, impressed in front, and with a median longitudinal impressed line which extends back as far as the base of the tubercle. Mesonotum coarsely and deeply punctured, especially in front, the punctures moderately abundant. Scutellum with several punctures. Mesopleurae coarsely and fairly closely punctured. Tergites 1 and 2 and sides of second sternite with a fairly plentiful, deep and coarse puncturation. The second sternite in the middle is smooth, shining and sparsely pitted; its highest point is near the base. The second tergite is about as long as wide in the middle, more than four times longer than the fourth, which like the following segment is closely and coarsely punctured. Posterior tibiae punctured on both sides, the punctures not coarse. The posterior femora also have some punctures. Metallic green and blue. Wings strongly tinged with brown, without transverse bands. 13.5 mm. long."

Ethiopian region.

*A. conigera* Kohl. *Loc. cit.* pp. 473 and 474, ♀.

"♀. The frontal carinae are well developed, parallel at the base, thence curving inwards and meeting just behind the anterior ocellus. Episternal suture distinct. The penultimate joint of the hind tarsus extends to about the middle of the apical joint. The interocular distance on the vertex is more than the length of the second joint of the flagellum, a little less than that of the first and second combined, much more than that of the third. The third joint is about three times longer than wide. Face and vertex closely and very coarsely punctured, with rugae between the punctures. The occiput, near its posterior margin, and the temples have only a few and much smaller punctures, and are shining. Near the base of the mandibles the puncturation becomes denser and larger. Middle carina of the face sharp, although not so prominent as the lateral ones. The carina on the clypeus is for the greater part straight, falling steeply only in front, and ending in a blunt tooth. The lateral teeth are near the median one and are well developed. Pronotal collar impressed in front and with a longitudinal impressed line which does not extend over the conical tubercle behind; it is sparsely punctured all over and has transverse striae in the middle. Mesonotum coarsely but not abundantly punctured, nevertheless more densely so than in *A. compressa*. Scutellum with very few punctures. Mesopleurae coarsely and not closely punctured, the spaces between the punctures, shining. Epinotal dorsum a little wider across the middle than long, almost quadrate. The apical teeth are well developed. The third carina at the middle of its course is not so far away from the fourth as from the second, although the distance is greater than in *A. compressa*. The first abdominal segment is like that of *compressa*, the second is a little wider than long. The second sternite, as in *compressa*, is highest in the anterior third. The tooth on the claws is like that of *compressa*. Middle and hind tibiae very distinctly, and moderately closely punctured behind. Metallic blue and green. All the femora and the anterior tibiae are ferruginous. Wings brownish. 19 mm. long."

Massana.



*A. compressa* Fab. (figs. 14, 14 a and b). *Mant.* 1, p. 275, 1787. *Ent. Syst.* II, p. 206, 1793.

♀. 24 mm. long. Metallic blue and green, the abdomen purple-blue, its last two segments brown. Middle and hind femora bright brick-red, with the extreme apices black. Anterior femora red below, metallic blue above. Middle and hind coxae metallic coppery red above. Tarsi and underside of the tibiae dark brown or blackish. Flagellum black, mandibles fuscous at the base, fusco-ferruginous over the apical third. Thorax and temples with a scanty, whitish pilosity, intermixed with pubescence, but without black bristles. Upper half of the face and the vertex sparsely, finely and shallowly punctured, the space between the frontal carinae almost smooth; the occiput and temples with a few, small and scattered punctures. Pronotal collar transversely rugose above, the sides almost smooth and impunctate. Propleurae with a very fine, shallow and scattered puncturation. Mesonotum sparsely punctured over the anterior half, the punctures fairly small. Scutellum with a few large punctures near the margins. Mesopleurae with a moderately fine and not dense puncturation, the punctures not larger than those on the head. Lower half of the sides of the epinotum and the metapleurae quite smooth and impunctate. First two tergites with very scanty, small and almost obliterated punctures. Hind tibiae smooth, with a row of seven or eight small punctures. Carina of the clypeus bent near the apex, not ending in a tooth. On each side of the middle of the anterior margin there is a small tooth. Eyes convergent above; the interocular distance on the vertex is slightly less than half the length of the second joint of the flagellum. The whole flagellum is long and slender; the second joint is three-fifths longer than the third, and the latter is quite four times longer than wide at the apex. Back of the head short and not narrowed posteriorly. Pronotal collar as long as wide across the middle, the tubercle broad as in *sibirica*, conical only when viewed from the side; the median impressed line is distinct and extends back to the apex of the tubercle. Dorsum of the epinotum about one-fourth wider across the middle than long, the apical teeth triangular, short and blunt; the third carina in the middle is twice as far from the second carina as from the fourth. Second tergite a little wider in the middle than long, nearly three times longer than the first, the last four segments fairly strongly compressed. Penultimate joint of the hind tarsus about half as long as the apical joint, shorter than the third. The claws have a tooth at the middle.

♂. 14-18 mm. long. Face and vertex fairly coarsely punctured and rugose, the space between the frontal carinae obliquely rugose. Temples shallowly, finely and not closely punctured. The frontal carinae are well developed; they diverge as far as the middle, thence converge and meet behind the anterior ocellus; a median carina is not indicated. Clypeus with a sparse and fine puncturation all over. Sides of pronotal collar strongly but not closely punctured, the dorsal surface transversely rugose as in the ♀, and with a median impressed line which reaches the apex of the tubercle. Mesonotum in front, and the scutellum sparsely and moderately coarsely punctured; the sides of the former transversely rugose, the parapsidal sutures narrow and

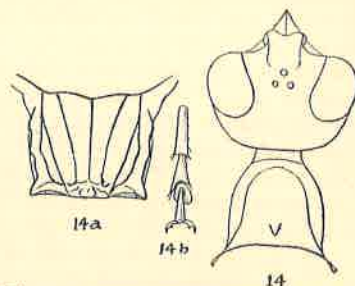


Fig. 14. *Ampulex compressa*, ♀. a. Epinotum. b. Last four tarsal joints of hind leg.



very shallow. Lower half of the sides of the epinotum and the propleurae finely punctured. Mesopleurae fairly closely punctured, the punctures smaller than those on the mesonotum. First and second tergites fairly coarsely punctured, the punctures fairly far apart and not much larger than those on the mesonotum; the remaining tergites closely punctate-rugose. Interocular distance on the vertex equal to two-thirds of the length of the second joint of the flagellum. The latter is half as long again as the third joint, which is five times longer than wide at the apex. Clypeus without lateral teeth on the anterior margin; the latter not emarginate in the middle. Second sternite highest at the first third of its length. Otherwise like the ♀. Oriental and Ethiopian regions. The only examples which I have seen come from Morogoro, Tanganyika Territory.

*A. lazulina* Kohl. *Ann. K.K.N.H. Mus. Wien*, VIII, p. 475, ♀. 1893.

"♀. Middle and hind femora metallic green and blue. The interocular distance on the vertex is equal to more than the length of the second joint of the flagellum by about two-thirds the length of the first joint. Head coarsely punctured. The frontal carinae arcuate, meeting behind the anterior ocellus. Pronotal collar with a median impressed line which extends back only as far as the base of the conical protuberance. Mesonotum and scutellum with not many large punctures. Mesopleurae with an episternal suture, coarsely and not closely punctured, shining between the punctures. Epinotal dorsum almost quadrate, a little wider in the middle than long, the apical teeth stout. The third carina in the middle of its course is nearer to the fourth carina than to the second. Second tergite as long as wide in the middle, or very nearly so. The second sternite is highest in its first third. Metallic blue and green. Forelegs partially reddish brown. Wings brownish, without transverse bands."

(The paragraph above also applies to *A. spectabilis* Kohl.)

"Collar with distinct transverse striae in the middle, here and there with a few punctures. Temples and occiput smooth, with only very sparse puncturation. Apical teeth of the epinotum acute, about as long as wide at the base. Hind tibiae fairly closely punctured. The penultimate joint of the hind tarsus almost reaches the second half of the apical joint. The median carina on the face is distinct as far as the anterior ocellus; the lateral carinae, before curving inwards, are parallel. Clypeal carina straight over the basal two-thirds, thence curved and ending in a blunt tooth. On each side of, and not far from it, there is a well-defined lateral tooth. Labrum not emarginate in the middle. 20-23 mm. long."

Guinea.

*A. spectabilis* Kohl. *Loc. cit.* p. 475, ♀.

(The first paragraph of the preceding description also applies to this species.)

"♀. Pronotal collar without transverse striae in the middle, but with a fairly coarse and sparse puncturation. Temples and occiput coarsely punctured, the punctures neither very close together nor scanty. Apical teeth of epinotum small and blunt. Posterior tibiae smooth, with a few punctures. The penultimate joint of the hind tarsus is quite short, barely extending as far as the second third of the apical joint. The median carina of the face is visible only close to the posterior margin of the clypeus, farther back it is replaced by a deepened and indistinct line. The lateral carinae diverge a little before curving inwards. Clypeal carina straight only at the base, thence curved and ending in a blunt tooth. On each side of the latter there are two teeth. Labrum feebly emarginate. 17-19 mm. long."

Guinea.



*A. psilopus* Kohl. *Loc. cit.* pp. 476 and 477, ♀.

"♀. The interocular distance on the vertex is less than the length of the second joint of the flagellum. The penultimate joint of the hind tarsus is clearly shorter than the third measured along its middle, and distinctly less than half as long as the apical joint. Hind tibiae smooth, with only a few scattered punctures. The impressed median line on the pronotum extends back as far as the base of the conical protuberance. Third joint of the flagellum four times longer than wide at the apex. Propleurae almost smooth, at the most with only a few punctures on the lower margin. The length of the eyes barely exceeds the least distance between them on the vertex. The eyes appear smaller and less convex than in *A. assimilis*. Occiput and temples very sparsely punctured and shining. The frontal carinae are fairly close together, converge slightly above and fall far short of the level of the anterior ocellus. Face and vertex coarsely and fairly closely punctured, but not so closely as in *A. assimilis*. Pronotal collar with sharp transverse striae in the middle, transversely and indistinctly rugose in front, sparsely punctured at the sides. The mesonotum more sparsely and more coarsely punctured. Scutellum shining, almost impunctate. Mesopleurae shining, sparsely punctured, the punctures under the wing bases close together. Petiole relatively long and thin, longer than in *A. compressa*. The second tergite is hardly as long as wide in the middle. The second sternite shaped like that of *assimilis*. The third joint of the hind tarsus is almost symmetrical, barely more produced behind on the inner than on the outer side. Metallic blue. 19 mm. long."

Ethiopian region, Guinea.

*A. crassicornis* Kohl. *Termés. Füzetek*, Budapest, XXI, p. 329, ♂. 1898.

"♂. Green, including the legs. Wings fuscous. Antennae thick. Pronotal collar of the same shape as in *A. compressiventris* Guérin, but the median impressed line does not extend back as far as the conical tubercle. Collar punctured and transversely strigose above. The punctures on the mesothorax and the head are coarse. Dorsum of epinotum barely longer than wide. Abdomen above shaped and punctured like that of *A. compressa*. Second sternite black and moderately flattened behind, its declivity in front convex. First transverse cubital vein sometimes obliterated. Claws armed with a stout and slightly curved tooth. The apical tarsal joint is nearly twice as long as the penultimate joint and is inserted at the base of the latter. 11 mm. long."

Tropical Africa.

*A. sibirica* Fab. (figs. 15, 15 a-d; Plate VIII, fig. 14). *Ent. Syst.* II, p. 207. 1793.

*A. compressiventris* Guérin. *Icon. Règne Anim. Ins.* p. 436, ♀. 1844. R. É.

Turner, *Ann. Mag. N.H.* vol. x, p. 369. 1912. Kohl, *loc. cit.* p. 472, ♀.

♀. 25 mm. long. Metallic blue and green. Mandibles, flagellum excepting the first joint, and last four joints of the tarsi, black. Last two abdominal segments brownish black. Wings fuscous, the veins black. Scapes, lower half of the face, pro-mesothorax, femora and coxae with a few, long, black and outstanding bristles. Clypeus with a fine, grey pubescence and some brownish bristles on the anterior margin. Head fairly smooth and moderately shining, microscopically punctured, and behind the ocelli also aciculate lengthwise. In addition, there are a few large setigerous punctures bordering the inner side of the frontal carinae and on the vertex near the eyes. The sides of the pronotum, the propleurae and mesopleurae have a microscopic fundamental puncturation similar to that on the head. Pronotal collar shining, strongly



and transversely rugose in front, the posterior half with two or three large punctures on each side of the low median tubercle. Mesonotum and scutellum smooth and shining, with a few large setigerous punctures. Mesopleurae and lower half of the sides of the epinotum very sparsely and finely punctured. Metapleurae smooth and shining. Declivity of the epinotum transversely rugose, closely and vertically so in the middle above. Abdomen shining, very sparsely punctured, the punctures small and shallow; the basal halves of the third and following segments and the sides of the second sternite dull, closely and finely punctured. Hind tibiae sparsely and fairly finely punctured. Clypeal carina acute, ending in a blunt tooth on the anterior margin, on each side of which is a large and sharp tooth. Lateral frontal carina short and divergent, the median carina indistinct except just behind the clypeus. Inner margins of the eyes moderately convergent above. Second joint of the flagellum three-fifths longer than the third, the latter about three times longer than wide at the apex. Interocular distance on the vertex equal to the length of the second joint of the flagellum. Head not narrowed behind. Pronotal collar as long as wide at the posterior third, shallowly concave in the anterior half, with a median impressed line which does not reach to the base of the tubercle. The latter is broad and not conical, forming merely the highest point of a ridge in front of the posterior margin. Dorsum of epinotum a little more than one-fourth wider across the middle than long; the third carina is a little nearer to the fourth than to the second, the apical corners are merely angular and without a distinct tooth. The second tergite is as long as wide across the middle, twice as long as the first. The fourth and following segments are strongly, transversely compressed. Second sternite feebly convex lengthwise, highest beyond the middle. Penultimate joint of the hind tarsus long, longer than the asymmetrical third joint measured along its middle, and three-fourths of the length of the apical joint. Claws with a sharp tooth in the middle. Forewing with three cubital cells; the fourth abscissa of the radius unusually long, longer than the second transverse cubital vein.

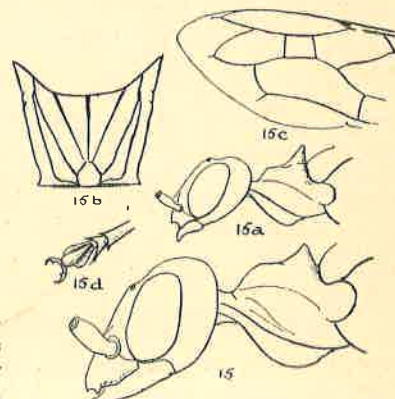


Fig. 15. *Ampulex sibirica*, ♀. a. ♂. b. ♀, epinotum. c. Apex of forewing. d. Last four tarsal joints of hind leg.

♂. 14–20 mm. long. Metallic green; mandibles, apical half of the second joint of the flagellum and all the following joints, and last three joints of the tarsi, black. Wings pale fuscous. Clypeus and lower half of the sides of the face smooth and shining. The upper part of the face, the vertex and temples longitudinally and strongly rugose, also strongly punctured between the rugae. The space between the frontal carinae is also longitudinally rugose. The lateral and median frontal carinae are well developed, the former meeting behind the anterior ocellus. Pronotal collar coarsely punctured at the sides and above, excepting the anterior slope of the tubercle; in front of the latter there are two or three strong, transverse striae. There is a deep median sulcus which does not reach the middle of the segment. The tubercle is blunt, oblique in front, vertical behind. Propleurae closely and shallowly punctured. Mesonotum and mesopleurae with large and widely spaced punctures, those on the mesonotum being separated for the greater part by spaces three times as wide as the punctures. The sides of the mesonotum in front of the tegulae



have a few transverse rugae, and the parapsidal sutures are very deep and strongly clathrate. The depressions in the posterior corners are also deeper than in most of the other species. Sides of the epinotum shallowly rugoso-punctate below. The puncturation on the first two tergites is neither coarse nor dense, and is finer than on the mesopleurae.

The third and following tergites are reticulate-punctate. Second sternite black in the middle and sparsely and very shallowly punctured; the sides are metallic green and have a sparse puncturation which becomes coarser towards the apical margin. Anterior margin of the clypeus widely and arcuately emarginate in the middle, the carina not ending in a tooth. Inner margins of the eyes only slightly convergent above. Interocular distance on the vertex equal to the length of the second joint of the flagellum. The latter is a little more than half as long again as the third joint, which is four times longer than wide at the apex. Postocular region of the head not appreciably narrowed posteriorly. Pronotal collar as long as wide in the middle. Dorsum of epinotum broad, nearly half as wide again across the middle as long; the third carina in the middle of its course is only a little nearer to the fourth than to the second; the apical corners are without distinct teeth, and, as in the ♀, are only angular. Second tergite as long as wide, two and a third times longer than the first. Otherwise like the ♀.

Tropical Africa.

There is a ♂ specimen of this species in the British Museum coll. from Caia, Zambesi (leg. Dr H. Swale), in which the fore wing has only two cubital cells. Otherwise it is identical with the normal form of this species, and provides yet another example of the tendency in the genus to lose the transverse cubital veins.

The name given to this species by Fabricius is misleading, since it does not occur in Siberia, but unfortunately owing to the rules of priority it cannot be suppressed in favour of *compressiventris* Guér.

*A. cyclostoma* Gribodo. *Mem. Accad. Sc. Bologna*, IV, p. 73, ♂. 1894.

"♂. Of moderate size but robust, slightly shining, metallic green and blue, tibiae, tarsi and antennae blue at the base, their apices and the apices of the mandibles black; the whole body covered with a short, sparse and grey pilosity; wings hyaline, the veins testaceous-fuscous, the base and costa darker; head coarsely and closely punctured; clypeus strongly carinate longitudinally in the middle, the apex widely truncate or arcuately emarginate; frontal carinae parallel at the base, thence curving inwards and meeting at the anterior ocellus; antennae fairly short, the second joint of the flagellum almost twice as long as the scape; pronotum, viewed from above, subquadrate, very irregularly punctured, deeply sulcate longitudinally in the middle in front, tumid on each side, raised into a fairly acute conical tubercle behind, the declivous portion in front of the cone shining and impunctate; the mesonotum moderately coarsely punctured. . . . scutellum punctulate; . . . the apical teeth of the epinotum small; abdomen coarsely and fairly closely and evenly punctured; the first segment as wide as the second, which is slightly shining and almost carinate in the middle; legs relatively short; wings with two cubital cells, tegulae small. 11 mm. long."

Magnarra (Italian Somaliland?).

I have omitted in this translation of the original description several remarks which refer to what are really only generic characters. As to the rest of the diagnosis, it is of so general a nature that it might apply to any one of the group with two cubital cells and a conical tubercle on the pronotum.



*A. melanocera* Cameron. Sjöstedt, *Kilimandjaro-Meru Exped.* VIII, p. 282, ♂. 1910.

"Green with brassy tints, the flagellum of antennae, except at the extreme base, black; the tibiae and basal joint of the tarsi blue, the other tarsal joints black; wings hyaline, tinged with violaceous, the nervures black; the apex of radius largely projecting beyond the posterior part of the second transverse cubital nervure, rounded; there are only two transverse cubital nervures; the recurrent nervures received shortly before the middle of the cellule; middle of front bordered by roundly curved keels which unite immediately behind the ocellus; from near the base of the area thus formed a keel runs from the outer side to shortly beyond the middle; inside this is another and similar keel, commencing shortly behind the middle. Apex of clypeus broadly rounded, not keeled. Mandibles black. Basal half of pronotum strongly transversely striated; a distinct, not very broad, furrow down the centre, the apical part sparsely, distinctly punctured. Mesonotum sparsely punctured, the parapsidal furrows wide, with clearly separated transverse keels; the basal half of the sides strongly, closely punctured. Base of scutellum weakly, the apex somewhat more strongly punctured. Postscutellum opaque, coarsely aciculated, sparsely punctured laterally. Metanotum (*epinotum*) transversely striated, more strongly and widely in the centre than elsewhere; the central keel is straight; those bordering it oblique and united at the apex, forming a triangular area; the apical small area obliquely narrowed at the base and with a keel down the centre; its apex broader and rounded; the lateral teeth broad, the part behind them roundly narrowed; the apical slope has three keels down the centre, the lateral uniting at the apex, the outer side irregularly areolated. Pleurae distinctly, sparsely, but not strongly punctured. Abdomen distinctly, but not very closely nor strongly punctured; the apex more strongly and closely than the rest. Claws with a stout, somewhat triangular tooth behind the middle; the apex of the joints spinose; the third in the centre half the length of the second. ♂. Length 13 mm.

Usambara, Mombo. June.

Occiput broadly, roundly narrowed; apex of vertex slightly depressed, irregularly striated, the striae uniting in front. The posterior tibiae are much more closely and strongly punctured than the others. Penultimate tarsal joint more than half the length of the last. Comes near to *A. assimilis* Kohl."

*A. nitidicollis* Turner. *Ann. Mag. N.H.* vol. IV (9), p. 47, ♀. 1919.

"♀. Viridis; mandibulis, flagello articulis 3-11 secundoque dimidio apicali, tarsisque, articulo basali excepto, nigris; alis fusco-hyalinis, fusco obscure bivittatis. Long. 19 mm.

Clypeus broadly rounded anteriorly, strongly longitudinally carinate in the middle, without lateral teeth. Eyes strongly convergent towards the vertex, where they are separated by a distance scarcely exceeding three-quarters of the length of the second joint of the flagellum. Head not produced behind the eyes and not much narrowed posteriorly, very minutely and closely punctured, with a few larger, but shallow scattered punctures; the two frontal carinae parallel and not nearly reaching the level of the anterior ocellus. Pronotum fully as long as its median breadth, narrowed anteriorly, without striae, with a few scattered punctures, depressed and subconcave anteriorly, raised and subtuberculate in the middle posteriorly, without a distinct median sulcus. Mesonotum and scutellum very sparsely punctured. Median segment nearly as long as its median breadth, strongly transversely striated, the striae closer and finer between the second and third lateral carinae than elsewhere,



the second carina at least half as far again from the median at the base as from the third, the three median carinae not extending to the apex and leaving a well-defined apical area; the teeth at the apical angles of the segment broad and not very long, slightly curved, and not very acute at the apex. Abdomen almost smooth; second tergite fully as long as its greatest breadth, the sides only slightly convex; segments 4-6 rather strongly compressed laterally. Fourth joint of the hind tarsi less than half as long as the fifth and much shorter than the third; hind tibiae very sparsely punctured on the outer side. Fourth abscissa of the radius scarcely half as long as the second transverse cubital nervure; first transverse cubital nervure present, but not quite as strong as the second.

*Hab.* Damba Island, Victoria Nyanza; October 8, 1918 (C. G. Gowdey).  
Type in British Museum.

In many points this resembles *A. splendidula* Kohl, but the eyes are much closer together on the vertex than described in that species, the fourth joint of the hind tarsi is shorter, and there are no lateral teeth on the clypeus. The sculpture, however, seems to be very similar."

*A. chalybea* Smith. *Cat. Hymen. Ins. Brit. Mus.* iv, p. 270, ♀. 1856.

"♀. Length 9 lines. Dark blue, variegated with bright purple tints; the mandibles, anterior tibiae in front, and the knees, ferruginous; the antennae and tarsi dark fuscous; the wings fuscous; the head coarsely punctured; the prothorax and sides of the mesothorax with large scattered punctures; the metathorax with a central longitudinal carina and three oblique ones on each side, the spaces between transversely striated; the apical angles produced into a stout sharp angular tooth; the abdomen impunctate.

*Hab.* Africa (Fantee)."

This description is entirely inadequate. The insect is figured on plate 7 of the work; the drawing is somewhat diagrammatic but shows that it is a species which has three cubital cells and a pronotal collar without a conical tubercle behind.

*A. striolata* Saussure. Grandidier, *Hist. de Madagasc.* xx, pp. 443 and 446, ♀. 1892.

"Viridi-aurea vel partim cyanescens; formis, coloribus et sculptura *A. compressae* simillima, capite tamen crassiore metanotoque inter carinas haud transverse scalari-carinulato, sed laevigato et in longitudinem arcuato-strigato. ♀. Long. 22 mm.; al. 12 mm.

Head and mesonotum in front strongly punctured. Pronotum flattened and strongly transversely rugose; the tubercle truncate as in *A. compressa*. The epinotum has the same sort of teeth and carinae as in that species, but there is no apical areola; the median carina reaches the apical margin and is very briefly pectinate on each side by rudiments of transverse carinulae. Carinae No. 2 long, but not reaching the posterior margin. The spaces between the median carina and carinae No. 2 are smooth, traversed by one longitudinal ruga which is curved at its base and joins up with the carinae No. 2; there are two or three longitudinal rugae at the end of these spaces. The space between the second and third carinae is occupied by three or four longitudinal rugae which curl round behind and join the third carinae; the former emit along their whole length some very short and curved carinulae. The space between the third and fourth carinae very narrow; that between the fourth and fifth occupied by obliquely transverse carinulae. The second ventral segment is even more convex at the base than in *compressa*. Anterior femora ferruginous in front. Wings as in *A. compressa*, but the third cubital cell has its apical angle rounded and its external margin less straight."

Zanzibar.



*A. senex* Bischoff. *Mitth. Zool. Mus. Berlin*, VII, p. 474, ♀. 1915.

"Of the species known to me this new species is most nearly related to *A. Moebii* Kohl. It also appears to have several points of relationship with *assimilis* Kohl and *melanocera* Cameron. The following description will be limited to pointing out the differences between the new species and *A. Moebii* Kohl. Greenish bronze, the metanotum somewhat blue like the legs; the first two abdominal segments more blackish green, the last two black; hind femora distinctly violaceous; the antennae including the scapes, the clypeus and the mandibles excepting their reddish apices, black. The clouding on the wings is like that of *Moebii*. . . . The head is somewhat more elongated and less widely rounded behind. The clypeus is more prominent and a little longer. The strong carina is sharply bent downwards in front and ends in a sharp point on the anterior margin. On each side of this middle tooth there is a stronger tooth which is rounded at the apex. The clypeus has a silvery grey pubescence. Face, vertex, temples and under side of the head with a white pubescence which is so dense that the underlying sculpture cannot be seen. A similar pubescence, which has a rather waxy appearance, is to be seen to a lesser extent on parts of the thorax. . . . On the lower half of the face, where the pubescence is absent, the puncturation is decidedly coarse. The frontal carinae are well developed and visible as far as the sharply-defined margin of the silvery grey pubescence. A median keel extends forwards from the anterior ocellus. The antennae are slender compared with those of *Moebii*. The shape of the pronotum is like that of *Moebii*. The tubercle behind is larger and rises more steeply, the lateral margins in front are lower. In the middle of the collar, especially at the sides of the tubercle, there is a distinct transverse striation. On the horizontal part there is a median longitudinal sulcus. On the upper posterior angles of the propleurae there is a distinct and oblique striation. The prosternum appears to have a strong sculpture under the dense pubescence. On the mesonotum, especially on the lateral areas, the puncturation is coarser, and the depressions near the hind margin are deeper and longer. The puncturation of the mesopleurae is much stronger and closer. The scutellum (postscutellum?) has a dense, decumbent and silvery pubescence in the middle, which may very well be present also in fresh specimens of *Moebii*. The shape of the epinotum is very similar, but the apical teeth are less acute though larger. The venation agrees with that of *Moebii*, but the first transverse cubital vein is obliterated. The relative lengths of the tarsal joints and the dentition of the claws is almost identical in the two species. The first and second tergites in the new species have a much more distinct puncturation. The pubescence is very much the same in both species, but in this species it is denser and longer on the coxae, especially on the front pair.

From *assimilis* Kohl and *melanocera* Cameron this species is distinguished at once by the different clouding of the wings.

22 mm. long. 1 ♀. Karissimbi, Ruanda, East Africa."

*A. toroensis* Turner (figs. 16, 16 a-c; Plate VIII, fig. 12). *Ann. Mag. N.H.* vol. IV (9), p. 45, ♀, ♂. 1919.

♀. 20-24 mm. long. Metallic blue and green, with purple reflections here and there. Mandibles, apex of the second joint of the flagellum and all the following joints, and last two joints of the tarsi, black. Both pairs of wings fuscous, the fore wings slightly paler in the middle and at the apical margin. The posterior lower corners of the mesopleurae and epinotum, the coxae and the clypeus with a very fine, whitish and sparse pubescence, the meso-



thorax with a few thin and black bristles, the declivity of the epinotum with a few outstanding, whitish hairs; otherwise glabrous. Face as far as the posterior ocelli with some fairly widely spaced and not large punctures. The vertex more closely punctured, the punctures shallow but larger than those of the face. Temples, occiput and mentum smooth, shining, very sparsely and finely punctured. Pronotal collar and propleurae impunctate, smooth and shining; the collar transversely striated in the middle, about as wide in the middle as long, and produced behind into a high and acute cone. Mesonotum sparsely, the scutellum very sparsely and more finely, punctured; the punctures on the mesonotum hardly larger than those on the vertex. Mesopleurae with very large punctures just under the wing-bases, elsewhere shining and with only a sparse and minute puncturation. Metapleurae, the greater part of the sides of the epinotum and the abdomen smooth and shining, the first two tergites with a few small and scattered punctures. Declivity of epinotum transversely rugose, somewhat reticulate in the middle. Dorsum of epinotum about one-sixth wider across the middle than long; the third carina at the middle of its course nearer to the fourth than to the second, the transverse carinulae sharply defined, the apical teeth strong, acute and subtriangular. Clypeal carina produced into a blunt tooth at the apex, on each side of which is a larger tooth. Head strongly narrowed behind the eyes, the postocular area three times wider than long in the middle. The frontal carinae do not reach the level of the anterior ocellus, from the latter a thin impressed line extends to the posterior margin of the clypeus. Second joint of the flagellum three-quarters longer than the third, the latter not quite three times longer than wide at the apex. Inner margins of the eyes strongly convergent above, the interocular distance on the vertex being equal to only three-quarters of the length of the second joint of the flagellum. Penultimate joint of the hind tarsus as long as the third measured along its middle, and half as long as the apical joint. Hind tibiae sparsely and finely punctured. The first tergite is more than half as long as the second, the latter a little wider than long. Fore wing with two cubital cells, but the base of the first transverse cubital vein is clearly defined.

♂. 13-14 mm. long. Antennae and tarsi black, the scape with a slight greenish lustre. Wings hyaline, slightly tinged with fuscous and with a faint transverse cloud across the radial cell and the cells below it. Face and vertex closely and coarsely punctured, with some rugae between the punctures; the temples and occiput less closely, but quite strongly punctured. Pronotal collar with large, scattered punctures, and strong transverse striae as far as the base of the conical tubercle; the tubercle is more acute and steeper than in the ♀. Propleurae strongly and fairly closely punctured. Mesonotum more strongly punctured than in the ♀. Mesopleurae evenly punctured all over, the punctures nearly as large as those on the mesonotum and separated by spaces which are mostly three times as wide as one of the punctures. First tergite sparsely punctured, the punctures smaller than those of the second tergite, which is more closely punctured. Third and following tergites closely and finely punctured. Second sternite black and shining in the middle, with a few shallow punctures; its sides are metallic green, very finely punctured.

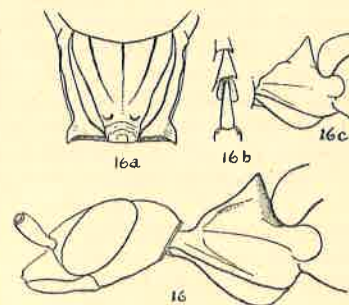


Fig. 16. *Ampulex toroensis*, ♀. a. Epinotum. b. Last three tarsal joints of hind leg. c. ♂, pronotum.



The highest point of the second sternite lies just behind the declivous basal slope. Clypeus without lateral teeth. Frontal carinae sharply defined, meeting behind the anterior ocellus. Second joint of the flagellum half as long again as the third. The interocular distance on the vertex is about equal to the length of the second joint of the flagellum. Third carina of the epinotal dorsum at the middle of its course as far from the fourth carina as from the second. Second tergite about as long as wide. Otherwise like the ♀.

Uganda and Nigeria.

The description given here is based on specimens from Nigeria in the British Museum, and determined by Turner himself. In this ♀ the second joint of the flagellum is not twice as long as the third, as stated by Turner in his description of the type from Uganda.

*A. Crawshayi* Turner (figs. 17, 17 a and b; Plate VIII, fig. 13). *Trans. Ent. Soc. London*, p. 80, ♀, 1917.

♀. 20-22 mm. long. Metallic green and blue, antennae and tarsi black. Mandibles fusco-ferruginous. Wings hyaline, the veins black; there is a fuscous cloud over the radial, second cubital and discoidal cells, and the medial, submedial and anal cells are also dark. Fore wing with three cubital cells. There is a sparse whitish pilosity on the temples, sides of pronotum, mesothorax, declivity of the epinotum and the coxae. Clypeus and lower half of the sides of the face smooth and shining. The upper half of the face and the vertex coarsely punctured and somewhat rugose between the punctures, the space between the frontal carinae with similar but weaker sculpture. Occiput and temples shining, sparsely and shallowly punctured. Pronotal collar sparsely punctured on the anterior slope, with a few large and scattered punctures elsewhere, the sides and propleurae almost impunctate; the collar has a median sulcus, transversely striated in front, which extends almost as far as the apex of the conical tubercle. Mesonotum and scutellum with only a few small and shallow punctures; the mesopleurae have a coarser and sparse puncturation. Metapleurae and lower half of the sides of the epinotum smooth and shining. Dorsum of epinotum nearly one-fourth wider across the middle than long; the third carina in the middle of its course is twice as far from the second carina as from the fourth, the apical teeth acute and triangular. Abdomen smooth and shining. The second tergite has a few small and shallow punctures at the sides and near the base, and is two and a half times longer than the first tergite and a little longer than wide in the middle. The fourth and following segments are very distinctly compressed. Clypeal carina sharply bent downwards near the apex, ending in a blunt tooth, on each side of which is a larger and sharper tooth. Beyond the lateral teeth the anterior margin has a row of large punctures. Second joint of the flagellum barely one-fourth longer than the third, which is nearly four times longer than wide at the apex. Interocular distance on the vertex a little less than the length of the second joint of the flagellum. Pronotal collar as long as wide in the middle. Hind tibiae with a few small punctures. Penultimate joint of hind tarsus less than half as long as the apical joint, and only a trifle more than half as long as the third joint.

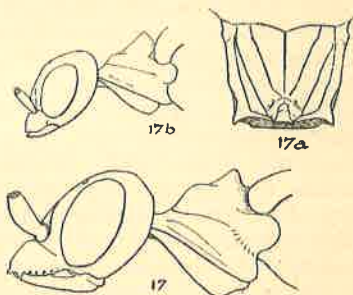


Fig. 17. *Ampulex Crawshayi*, ♀. a. ♀, epinotum. b. ♂.

(This description is based on a specimen from Lulunguru, East Africa,



in the British Museum coll. (det. Turner), and differs from that author's description in two important particulars. Turner gives the length of the second joint of the flagellum as being about equal to that of the third and fourth combined, and the length of the second tergite as at least one-fourth longer than wide.)

♂. 13 mm. long. Mandibles, labrum, apex of the clypeus and the under side of the scapes, ferruginous. The rugose and punctured sculpture of the face and vertex is relatively stronger than in the ♀. The temples are fairly finely and closely punctured. Pronotal collar sparsely punctured at the sides, more abundantly punctured above than in the ♀. Mesopleurae more strongly punctured than in the ♀. The lower half of the sides of the epinotum finely and sparsely punctured. First two tergites as strongly punctured as the mesopleurae, the sides of the second and following tergites with a whitish and decumbent pubescence. The head behind the eyes is longer and narrower than in the ♀. Clypeal carina not bent near the apex, ending in a sharp point on the anterior margin, which is without lateral teeth. Interocular distance on the vertex equal to the length of the first two joints of the flagellum. The second joint of the flagellum is about one-fourth longer than the third. The conical tubercle on the pronotal collar is more acute than in the ♀, and the area on each side of, and behind it has a fairly dense white and adpressed pubescence. Dorsum of epinotum one-third wider across the middle than long, the third carina almost as far from the fourth carina as from the second. The apical teeth are curved. Second tergite one-fourth wider than long, more than twice as long as the first tergite; second sternite black in the middle, sparsely and coarsely punctured, highest near the base.

Kondowi, Nyasaland; Lulanguru, East Africa; Bulawayo (R. H. Stevenson).

*A. Kristenseni* Turner (figs. 18, 18 a). *Trans. Ent. Soc. London*, p. 81, ♀. 1917.

“♀. Viridi-cyanea; clypeo antennisque nigris; tarsis fuscis; mandibulis, tibiis anticis, femoribusque ferrugineis; alis hyalinis, venis nigris; cellula radiali leviter infuscata. Long. 16 mm.”

“♀. Clypeus strongly convex, porrect, the carina not produced into a tooth at the apex. Second joint of the flagellum as long as the third and fourth combined; eyes separated on the vertex by a distance scarcely exceeding the length of the second joint of the flagellum. Head rugosely punctured, the median frontal carina very short, not nearly reaching the anterior ocellus, the lateral frontal carinae well developed. Pronotum shining, feebly and irregularly transversely striated, with a median sulcus on the anterior portion, raised into a tubercle at the apex (base?). Mesonotum in the middle and the scutellum with a few scattered punctures, the sides of the mesonotum more closely punctured. Median segment as in *conigera* Kohl, but with the tubercles at the apical angles much smaller and less curved. Second dorsal segment much broader than long, shorter than in *conigera*; second ventral segment convex at the base as in *conigera*. Fifth joint of the tarsi inserted close to the base of the fourth joint. Three cubital cells, the length of the radius beyond the junction of the third transverse cubital nervure equal to the length of the second transverse cubital nervure.”

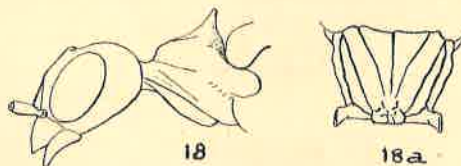


Fig. 18. *Ampulex Kristenseni*, ♂. a. Epinotum.

♂. 12 mm. long. Clypeus metallic green, otherwise coloured like the ♀. Lower half of the sides of the face and the clypeus smooth and shining. The



rest of the face strongly punctured and rugose. The space between the frontal carinae rugose. Temples distinctly rugose longitudinally. The frontal carinae parallel over the basal half, thence curving inwards and meeting behind the anterior ocellus. A median carina extends from the latter to the posterior margin of the clypeus. Pronotal collar deeply and closely, transversely striated across the middle third and on each side of the acutely conical tubercle. Sides of the epinotum obliquely and finely rugose, except near the anterior margin. Puncturation of the tergites similar to that of *A. Crawshayi* ♂. Clypeal carina ending in a sharp tooth on the anterior margin, the latter without lateral teeth. Interocular distance on the vertex equal to the length of the first two joints of the flagellum. The second joint of the flagellum is half as long again as the third. The ocellar area is distinctly raised, so that the space just behind it appears a little excavated. The median sulcus on the pronotal collar does not extend as far as the middle of the segment. Dorsum of epinotum one-fourth wider across the middle than long; the third carina in the middle is nearer to the fourth than to the second; the apical teeth are distinctly large, rostriform and curved upwards. Second tergite a little wider than long, twice as long as the first. Hind tibiae closely punctured. Wings hyaline, faintly tinged with brown, without dark transverse bands. Otherwise like the ♀.

Harar, Abyssinia. Types in British Mus. coll.