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**A REVIEW
OF THE *ANTHOPHORA*-SPECIES OF EGYPT**

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INTRODUCTION

Owing to the difficulties I encountered in trying to identify the Egyptian material of *Anthophora* in the collections of the Cairo and Ain Shams Universities, I had to penetrate more deeply into this matter, especially when I found that quite a number of species of the local collections were no doubt incorrectly named.

With the progress of science, in our particular case with the improvements achieved by finding new distinctive characters and especially in the better relative evaluation of those already known, gained by experience and eye training, there lies upon us the bitter task to criticise and correct our late authorities on this subject who actually did all the spade work that enabled us to start on a considerable higher level of knowledge than that having been at their disposal.

Apart from the relatively excellent work of KLUG (1845) and a number of species described by SPINOLA and — much later — GRIBODO, most of the taxonomic work on *Anthophora* of this country was done by H. FRIESE and A. ALFKEN, their work having been mainly based upon the Apid collections of our late A. ANDRES, while my late friend ALFKEN had also examined specimens he received from the Ministry of Agriculture, Mr. A. ALFIERI and the author. ALFKEN had, obviously with the intention of avoiding the creation of synonyms, identified a number of Egyptian species with such of Asiatic origin. In most of the cases they proved to be different from them.

Although further research may reveal that some of the forms treated as species in this paper, may finally turn out to be races of foreign species of wider distribution, I am convinced that only a few of them will come into this category. Moreover, I consider it better to treat forms, as e.g. *A. speciosa*, *A. niveiventris*, *A. pretiosa*, a.o., which were varieties by FRIESE, as species than to put them as varieties to such species where they do not belong.

As on previous occasions I am much indebted to Prof. Dr. TAHER SAYED (Ain Shams University), Prof. Dr. MAHMOUD HAFEZ (Cairo University), Mr. ABDEL HAMID IBRAHIM (Ministry of Agriculture) and Mr. A. ALFIERI (General Secretary of the Entomological Society of Egypt) who put the material of the collections in their charge at my disposal for study. To Dr. M. BEIER (Museum Vienna) I owe the permission of examining the large *Anthophora* collection of the Vienna Museum, and I am also much obliged to Dr. G. STEINBACH (Museum Berlin) for the opportunity of studying some types of KLUG and FRIESE, deposited in the Museum Berlin.

GENERAL REMARKS TO THE MORPHOLOGY

The importance of the pubescence or pilosity (length, shape, position and colour) for the differentiation of the species requires careful treatment of the specimens: they should not get wet in the killing bottles and should not be relaxed in the usual relaxing jars. The best method of killing them I consider the use of cyanide; ether should be avoided. After the insects had remained for some hours in the cyanide tube, I used to take them out and put them, i.e. about a score of specimens together, in an empty tube (e.g. 10 by 3.5 cm.) where I left them over night. By this method the specimens get slightly relaxed without getting wet, and the legs can be easily arranged on the setting board, while the pile remains intact. It gave me great satisfaction at the time when ALFKEN (i.l.) stressed the perfect condition of the specimens collected by myself which were treated in the above manner. Apidae the hairs of which are stuck together or discoloured by the killing agent or by intestinal juices of the insects, or which are rubbed, can often not be identified accurately.

The extending of the wings is not absolutely necessary, although the venation can more easily be examined when the wings are expanded. Specimens that are left in the the cyanide bottle too long change the light face colours, the white colour becoming more or less crimson, the yellow becoming orange or brownish.

Pollen of the flowers visited by the bees often adheres in quantities to the tibial scopa. The pollen grains should be carefully taken off the scopa by means of a needle. This procedure prevents the beginner from a faulty judgement of the colour of the tibial pubescence, characteristic to the species.

The shape of the hairs may be much differing. Somewhat roughened or slightly plumose are nearly all hairs of the head, thorax and abdomen, however, in some cases the plumosity of the vertically raised hairs is more conspicuous than usually, well visible already at a 20-fold magnification, as e.g. on tergite II of *A. aegyptiaca*, *A. senescens*, *A. scopipes*, a.o. Also the decumbent hairs of the abdominal fasciae (e.g. in the *quadrifasciata*-group) are thick hairs that appear plumose under *higher* magnification; but these hairs are flattened, and plumose at their sides only, not all around so, as it is the case in the first mentioned species.

The peculiar tufts of hairs of the males of many species, especially the brush on the 5th joint of the middle tarsi, and also the fan-shaped tuft of metatarsus II,

are well known. These tufts may get rubbed off in older specimens; but also in such examples some single black hairs may yet be noticed so that we are rarely in doubt whether a male is "brush-bearer" or not.

The pubescence of the wing cells has hardly been noticed hitherto, but can also be made use of for the characterisation of the species. In most forms at least the anterior parts of the cells situated at the fore margin of the fore wing are set with very short fine microsetae, viz. cells m 1, r 1 and sc. In some species (e.g. *A. savignyi*) the discal cells too show this kind of pubescence. The most extensive pubescence we find in *A. inclyta* and *A. crocea*. Nearly bare is the wing of *A. andresi*. In old specimens these microsetae may be missing (rubbed off), but in this case the fine points of insertion can be seen under the microscope.

Of great importance, particularly for the differentiation of the small uniformly grey species, is the wing venation. Although it is in general as generic character naturally quite uniform, certain details of it are very important for the distinction of species or species-groups. Thus the species of the *quadrifasciata*-group have always a distinctly prefurcal nervulus (vein Cut 1) so that the basal vein and the 2nd abscissa of Cu form a very shortly pedicelled fork. In the species of the other groups the nervulus is mostly interstitial or even slightly postfurcal so that no pedicel is visible. In the older descriptions of palaerctic species I found this character mentioned occasionally by DUSMET only.

With regard to the characterization of the legs in the descriptions of this paper I distinguish between interior and exterior side (face), anterior (inferior) and posterior (upper) side. The exterior side is naturally the one that lies outside when the leg is attached to the body; in many cases this side bears paler and stronger pilosity than the inside. The anterior (inferior) side is in the species having distinctly triangular cross-section of the tibia mostly smooth, flattened or grooved, and limited by two sharp edges. The upper or posterior side (edge) of the tibia is usually sharp-edged or rounded.

The sculpture of the tergites and sternites, also often given in the descriptions, is not a very practical means for the distinction of the species, first of all because just in fresh, well preserved specimens it is often wholly covered by the pubescence; the same applies to the thorax and often the head too. Furthermore, it is very difficult to comparatively describe the puncturation, since it is either dense and fine, or less dense and fine in most cases, and there are no really *striking* differences. Also the foveae on the apical sternites, present in most of the males do not show such apparent peculiarities as e.g. in *Halictus*; moreover, the segments vary as to their state of contraction, and the apical sternites are often not visible in otherwise perfect specimens.

Although even the *shape* of the abdomen could be included as character in the descriptions of a species (e.g. *A. humilis* Spin., or *A. alfkenella* sp. n. which have decidedly a more flattened abdomen than allied species) this character may be misleading, as can be seen from a large series of specimens of one species, and this

again owing to the varying state of contraction of the segments. One should think this point not worth mentioning, but just experienced authors have erred in this respect, and thus I have to draw the attention of the student of this genus to not to mistake species having black-haired basal portions of the tergites with such in which the tergites are wholly covered with pale hairs, but have the segments distended (cf. *A. mucorea* as against *A. byssina*).

The colour shade of the face of species having wholly or partly pale frons, clypeus and labrum is very important as specific character, thus one has to distinguish white, ivory yellow and yellow. That these shades are constant in the species is common knowledge. However, also the dark clypeal spots are important with regard to their shape and extension, and should be described in detail; I found only one species in which a certain variation seems to occur in this respect, provided that I am not mistaken and am still mixing up some very closely allied species (cf. *A. lutulenta*).

As to the terminology of the parts of the head, I should like to remark that the often pale coloured part of the frons joining the base of the clypeus I named: "frontal area"; it is the "Stirnfeld" ALFKEN's or "supraclypeal area" of other authors. What ALFKEN termed "Wangen" (-genae) should not bear this name but may better be called "sides of frons" or "facial triangles"; this part is situated between the lateral margins of the clypeus and the inner orbits, and is usually triangular, more or less attaining the fore angles of the clypeus. The part called "genae" in the descriptions of this paper is identical with FRIESE's "Wangen" and ALFKEN's "Wangenanhang" (= genal appendix), i.e. the space between the eyes and the base of the mandibles, which is either rudimentary or linear in many species (e.g. groups V, VII) or distinctly developed, representing a small smooth and shining area (cf. groups I and II). In FRIESE's monograph we find the species even combined to subgenera on the base of the development of these "Genae"; COCKERELL's "intermalar space" is the same, if I am not mistaken, because the literal meaning of this term suggests something else. In judging the greater or lesser degree of development of this space between apex of eyes and base of mandibles the student can easily be misled, and it was for this reason that in the keys I gave more importance to other characters, though I remain well aware of the systematic importance of this character. The keys should not be a copy of the system but a taxonomic help for identification.

With the new species it was sometimes difficult to determine which male belonged to which female, and this owing to the rather marked sexual dimorphism combined with the great similarity of many species. This dimorphism manifests itself mainly in the shape and markings of the face, the antennae, the form, sculpture, pubescence (and colour of it) of the legs and also the body. However, in many cases just the equality or similarity of the hairs of the tergites (II-IV) proved to be an indication of the specific identity of certain specimens of different sex. Details of the wing venation (nervulus !) and the cell pubescence are equal in both sexes. On the other hand, there seem to exist a few cases in which the dimorphism is parti-

cularly strongly marked; thus I am convinced that the nearly wholly black *A. vidua* Kl. and the pale *A. boops* are the sexes of one single species. *A. maculigera* sp. n. might also be the male of a black female, but this remains a guess for the present.

SYSTEMATIC AFFINITIES OF THE SPECIES

In FRIESE's work "Bienen Europas" (pp. 18-22) we find the genus *Anthophora* (*Podalirius*) divided in four subgenera and the larger ones of these again in groups. Apart from the subgenus *Habropoda* Sm. the subgenera (*Paramegilla*, *Amegilla* and *Anthophora*) are connected by various transitional species so that it looks to me more correct to arrange the bulk of *Anthophora* in a series of groups of equal value. The final system in this respect has to be made on a world wide base, it is not the task of this paper. However, on comparing the Egyptian species with one another and with a great number of those of Eurasia I could see that there appear quite a number of natural groups which, as it seems to me, show much better the natural affinities of the species than the former grouping that took into account, apart from the length of the genae, only or mainly the colour and pattern of the pubescence.

It is obviously better to give more importance to the wing venation and the male characters (without disregarding the pile of the body), and group the species according to these characters *in combination* with the development of the genae and the pattern of the hair-covering.

Thus, the Egyptian species can be tentatively grouped as follows :

GROUP I (*fulvitaris*) : Larger species with raised pilosity and distinctly plumose hairs of tergite II. Genae developed. Nervulus interstitial. Male : Metatarsus II with fan, joint 5 of tarsi II with brush. Tergite VII with 2 fine comparatively long teeth which are separated by an arched excavation. — Species : *aegyptiaca* DT. and Fr., *senescens* Lep.

GROUP II (*mucida*) : Mainly large species with raised pilosity at least on tergites I and II. Genae developed. Nervulus almost always interstitial, never distinctly prefurcal. Fan of metatarsus II sometimes, brush of tarsal joint 5 almost always, developed. Tergite VII of male with more or less slender terminal plate, not with separated teeth. — Species (in subgroups) : (a) *albosignata* Fr., *arabica* sp. n., *atriceps* Pér., *atricilla* Ev., *cinereiceps* Alfken, *desertorum* sp. n., *dispar* Lep., *facialis* sp. n., *lanata* Kl., *mucida* Grib., *niveiventris* Fr., *pretiosa* Fr., *speciosa* Fr.; (b) *flabella* a sp. n., *scopipes* Spin., *spinolana* sp. n.; (c) *alfierii* Alfken, *hispanica* F.

GROUP III (*ambigua*) : Moderately large species (ca. 10 mm.), with raised pilosity of the abdomen, narrower genae and interstitial nervulus. Males with two small teeth of segment VII separated by a roundish or straight emargination. Hind legs enlarged in some cases and armed with teeth. Mid tarsi with joint 5 slender and

without brush. — Species : *extricata* sp. n., *moricei* Fr., *priesneri* Alfken, *wegelini* Fr., *zanoni* Grib.

GROUP IV (*blanda*) : Genae not developed. Pilosity of abdomen short. Nervulus interstitial. Posterior legs of male strongly enlarged, tibiae and metatarsi armed. Tergite VII with two median carinae, 2 short teeth and a lateral excavation forming two more teeth, i.e. quadridentate. — Species: *blanda* Per.

GROUP V (*lutulenta*) : Small species without distinct genae, with decumbent (or very scarce raised) abdominal pilosity. Male usually with brush on segment 5 of tarsi II, the latter being often enlarged. Tergite VII with 2 *triangular* teeth that are separated by a triangular excision, seldom with 1 or 2 small tubercles in addition; tergite VII with median longitudinal carina. Nervulus almost always interstitial.— Species : *alfkenella* sp. n., *concinna* (Kl.), *albana* sp., n., *fallaciosa* sp. n., *fayoumensis* sp. n., *galalensis* sp. n., *helouanensis* sp. n., *humilis* Spin. (?), *lutulenta* (Kl.), *mellina* sp. n., *perlustrata* sp. n., *selecta* sp. n., *shagrensis* sp. n., *tenella* (Kl.), *tridentella* sp. n.

GROUP VI (*inclyta*) : Genae not developed. Pilosity of the abdomen mainly decumbent, short. Nervulus interstitial. Male with tergite VII *tridentate* or trilobed, median tooth broader, blunt or rounded, and more protruding than the two lateral smaller teeth. Metatarsus III with a hump or tooth at its inferior edge. — Species : *alternans* (Kl.), *armata* Fr., *boops* Alfken, *concolor* Alfken, *fumipennis* Alfken, *inclyta* Wik., *maculigera* sp. n., *oraniensis* Lep. (?), *semirufa* Fr., *valga* (Kl.), *vidua* (Kl.).

GROUP VII (*quadrifasciata*) : Pilosity of the abdomen short and mainly decumbent, either unicolorous (white or greyish) or with marginal decumbent fasciae of paler colour. Genae absent. Orbits convergent anteriorly. Male always without brush on joint 5 of tarsus II, and with slender ultimate joint. Nervulus distinctly prefurcal. Tergite VII of male with two small teeth. — Species : *albigena* Lep., *andresi* Fr., *byssina* (Kl.), *candidella* sp. n., *carnea* Grib., *crocea* (Kl.), *deceptrix* sp. n., *klugi* n. n., *latizona* Spin., *litorana* sp. n., *magnilabris* Fedt., *montivaga* Fedt., *mucorea* (Kl.), *nivosella* sp. n., *omissa* sp. n., *pipiens* Mocs., *punctifrons* Wik., *quadrifasciata* Vill., *savignyi* Lep., *torensis* sp. n.

GROUP VIII (*gracilipes*) : Female about as in group VII, male with unusually elongated hind legs in which the tarsi are longer than the tibiae. Nervulus prefurcal. — Species : *tarsalis* sp. n.

KEY TO THE SPECIES

Males

- 1 (4) Ultimate joint of fore and middle tarsi with black hairs on both sides forming a fan or brush.

- 2 (3) White fasciae on tergites II and III almost decumbent. Pilosity of thorax and tergites I and II yellow-grey or grey. Middle and hind tibiae at the posterior margin clothed with decumbent or semi-erect whitish hairs. Clypeus with fine shallow but more distinct puncturation than in *pretiosa*. Width of thorax about 6 mm. . . . **atricilla** Ev. ssp. **aegyptorum** nov.
- 3 (2) White fasciae on tergites II-IV composed of thin, somewhat raised hairs. Thorax and tergites I-(II) with ferruginous hairs. Pilosity towards apex of middle and hind tibiae long and raised. Width of thorax about 7.5 mm....
..... **pretiosa** Fr.
- 4 (1) Ultimate joint of fore tarsi without a brush of dark hairs.
- 5-(55) Ultimate joint of middle tarsi with conspicuous brush of blackish hairs, or at the sides with slightly raised black hairs.
- 6 (54) Apical joint of hind tarsi shorter than the metatarsus.
- 7 (36) Larger species, surpassing a length of 11 mm.
- 8 (29) Mandibles dark, without yellow or whitish spot at base.
- 9 (12) Ground colour of face black. Body length 11-12 mm.
- 10 (11) Face and under side of body with black pilosity. Tergites I-III with more or less pale raised hairs, without fasciae **facialis** sp. n.
- 11 (10) Face at least on labrum with whitish hairs. Tergites I and II of abdomen with white-grey, the rest with black raised hairs. Metatarsus II with dark fan. Brush on joint 5 of tarsi II weak. Thorax with grey pilosity
..... **atriceps** Pér.
- 12 (9) At least the clypeus in the middle more or less broadly yellow or whitish.
- 13 (16) Sides of frons dark on the ground. Face with white, at the orbits with black, pilosity. Metatarsus II without fan.
- 14 (15) Labrum almost or wholly black. Tergites from III onwards with almost only black hairs. Hind tibiae and metatarsus III with with many black hairs among the pale ones, also at the margins. Body length 13.5 - 14.5 mm... **cinereiceps** Alfken
- 15 (14) Labrum yellow with dark sides. The whole body clothed with long raised grey-white hairs which are on tergites from III onwards mixed with black hairs. Hind tibiae and metatarsus III at the upper margin with long, at the apex with short, whitish hairs. Length 14.5 - 16 mm.....
..... **lanata** (Kl).
- 16 (13) Sides of frons yellow or whitish, or the orbits with pale line.
- 17 (20) Metatarsus III exteriorly strongly convex, like swollen, shining.
- 18 (19) Vertex, thorax and tergite I with ferruginous pilosity, the remaining tergites evenly clothed with grey-white hairs, only on tergite V with black hairs between the others **disparilis** Fr.
- 19 (18) Tergites III and IV wholly or for the major part clothed with black hairs.

- a (b) Thorax and tergite I clothed with testaceous hairs, profusely mixed with black hairs; tergite II with grey hairs in basal portion, tergites III and IV with black, or only few white, hairs **dispar** Lep.
- b (a) Thorax and tergite I with ferruginous pilosity, sparingly mixed with black hairs; tergite II with pale hairs only, III and IV with black, at the hind margin with long white, hairs **speciosa** Fr.
- 20 (17) Metatarsus III normal, not swollen exteriorly.
- 21 (22) Metatarsus II with conspicuous black fan, otherwise with long, pilosity. Thorax clothed with grey-white to grey-yellow hairs. Brush on joint 5 of mid tarsi conspicuous. Tergite VII with 2 small teeth **senescens** Lep.
- 22 (21) Metatarsus II without fan, only with scattered long hairs. Tergite VII of different structure.
- 23 (24) Thorax mainly with grey-white pilosity. Tergite VII with slight triangular excision at apex. Brush on joint 5 of tarsi II weak. Orbits with fine yellow line only. Length 11 - 11.5 mm. **desertorum** sp. n.
- 24 (23) Thorax in fresh specimens with reddish-brown or ferruginous pilosity. Broader species of at least 12 mm. length.
- 25 (26) Genae linear **cf. tenuiciliata** Alfken
- 26 (25) Genae well developed.
- 27 (28) Ground of face whitish, sides of frons distinctly triangularly whitish. Antennal joint 3 longer than the three following joints together. Tergite VII truncate at apex, and somewhat emarginated, angles slightly protruding **albosignata** Fr.
- 28 (27) Ground of face yellow, sides of frons only narrowly yellow. Antennal 3 as long as the three following joints together. Tergite VII truncate at the apex, apical margin slightly reflexed **mucida** Grib.
- 29 (8) Mandibles yellow at base, or with yellow spot.
- 30 (35) Ground of metatarsi II and III brown-red and clothed with such or ferruginous hairs, often also the tibiae reddish-brown instead of black, and with such hairs. Abdominal fasciae wanting or very fine. Brush of joint 5 of tarsi II large, circular. Length 14-15 mm.
- 31 (34) Face white on the ground.
- 32 (33) Hind margins of tergites not transparent. Pilosity of thorax and tergites I and II white-grey. Fasciae practically absent. Metatarsus II somewhat less slender. Nervulus interstitial. Tergite VII dark, the produced portion broader, with distinct lateral apical angles **spinolana** sp. n.
- 33 (32) Hind margins of tergites transparent, yellow-grey to ferruginous. Pilosity of thorax and tergites I and II grey-yellow. Tergite II mostly with fine white fascia. Nervulus very slightly prefurcal. Tergite VII narrower, angles rounded **scopipes** Spin.

- 34 (31) Face yellow. Tergites II-III (-IV) at the sides with very fine white fasciae, the hind margins yellowish transparent. Tergite VII reddish, narrowly produced, slightly emarginated at middle of apical margin. Nervulus slightly prefurcal **flabellata** sp. n.
- 35 (30) Legs blackish on the ground, only the tarsi paler. Plate of tergite VII with 2 acute ferruginous teeth. Metatarsus II exteriorly in apical half with fan of black hairs. At least tergites II and III in fresh specimens with a narrow white fascia. Face yellow, clypeus strongly protruding. Length 15-17 mm **aegyptiaca** D. and Fr.
- 36 (7) Small species of 6-10 mm. length.
- 37 (42) Hind tibiae triangular in cross-section, with a tooth-or lobe-like projection inferiorly at the apex. Tergite VII without longitudinal carina.
- 38 (39) Length 8-10 mm. Hind tibiae with apical spine. Metatarsus of hind leg exteriorly with black hairs, that of mid leg exteriorly at base with few white hairs. Fasciae of abdomen narrow, whitish or pale yellowish. Clypeus densely punctured **fulvodimidiata** Dours
- 39 (38) Length 6-8 mm. Apex of hind tibiae with small lobiform tooth, interior face of tibia smooth, bare, shining. Pilosity brown-red to ferruginous. Clypeus with flat median convexity, but without lateral foveae, shining. Nervulus indistinctly prefurcal. In front of the abdominal fasciae there are no pale hairs on tergites II and III.
- 40 (41) Calcaria of tibiae II dark, of tibiae III margined with black. Metatarsus III exteriorly clothed with black or dark brown hairs .. **concinna** (Kl.)
- 41 (40) Calcaria of middle and hind legs yellow. Metatarsus III exteriorly at base with some reddish hairs. (Hedjas) **concinna hegasica** nov.
- 42 (37) Hind tibiae rounded at the apex or the inferior angle pointed but without distinct tooth-or lobe-like production. Interior face of tibiae punctured and pilose, not wholly smooth. Tergite VII with fine longitudinal carina. Nervulus interstitial or slightly postfurcal. Body above with grey or grey-yellow pilosity.
- 43 (46) Fore margin of yellow clypeus with a brace-shaped transverse keel and, connected with it, a median carina towards base, forming two large lateral foveae.
- 44 (45) Tergites of the abdomen also in front of the yellowish fasciae with some decumbent yellowish pilosity. Metatarsus III interiorly with ferruginous hairs **fayoumensis** sp. n.
- 45 (44) Tergites in front of the fasciae only with black short raised or semidetached hairs. Metatarsus III with brown pilosity within. Joint 5 of tarsi II without visible brush of hairs cf. **mellina** sp. n.
- 46 (43) Clypeus pale yellow or white, at most with broad median convexity, without carinae or lateral impressions behind fore margin.

- 47 (48) Metatarsus III interiorly with yellowish or testaceous hairs. Whitish or yellow pilosity present in front of fasciae. Width of head at least 3.5 mm. (1) Pilosity of body grey to slightly yellow grey **lutulenta** (Kl.)
- 48 (47) Metatarsus III with reddish-brown or blackish hairs within. Fasciae narrower. Pale pubescence in front of fasciae scarcer. Flagellum below scarcely paler or only brown, not ferruginous.
- 49 (50) Face white. Excision on tergite VII triangular. Nervulus slightly postfurcal. Vertex, thorax and tergite I in fresh specimens with yellow pilosity **alfkenella** sp. n.
- 50 (49) Face yellow.
- 51(52,53) Marginal excavation of tergite VII broad, but not deep, about brace-shaped. Antennal 3 scarcely longer than broad **elbana** sp. n.
- 52(51,53) Apical excavation of the dark tergite VII almost straight or forming a shallow arch, at the sides with 2 small dark teeth; in the middle of the apical margin there are 2 small tubercles. Antennal 3 little longer than broad **perlustrata** sp. n.
- 53(52,51) Tergite VII testaceous, with 2 triangular teeth separated by a triangular excision. Antennal 3 about 1.5 times as long as broad. Fasciae of tergites very narrow **fallaciosa** sp. n.
- 54 (6) Middle and particularly hind *tarsi* very long, joint 5 longer than the metatarsus. Tibiae and metatarsi with teeth. Margins of tergites pale transparent. Nervulus slightly prefurcal. Body length 9 mm., length of hind tarsi about 7 mm. **tarsalis** sp. n.
- 55 (5) Ultimate joint of middle tarsi without brush, only sometimes with a few adpressed black hairs, but in this case joint 5 much widened towards apex.
- 56 (75) Hind legs with certain special characters : either metatarsus with apical or inferior tooth or dilatation near middle or inferior edge, or femora very strongly enlarged, with or without teeth, or the tibiae armed with a tooth.
- 57 (66) At least tergites II and III without long raised hairs. Metatarsus III at the inferior edge with a hump or a pointed or blunt tooth.
- 58 (59) Hind tibiae and tarsi interiorly and exteriorly with black pilosity. Thorax and abdominal tergite I with red or ferruginous pilosity. Metatarsus III at the inferior edge with blunt tooth **semirufa** Fr.
- 59 (58) Hind tibiae exteriorly with pale pilosity or otherwise different.
- 60 (61) Thorax and tergite I clothed with grey or yellow-grey hairs, tergites II-III (-IV) at the sides of the hind margins with partial fasciae or wedge-shaped hair-spots. Metatarsus III with about rectangular tooth behind middle. Length 16 mm **maculigera** sp. n.

(1) If head less than 3.5 mm. broad, and black hairs on joint 5 of middle tarsi scarce cf. *A. tenella* (Kl.)

- 61 (60) Tergites II and III not with cuneiform lateral hair-spots, but with full fasciae or without any.
- 62 (63) Pilosity of thorax whitish, fasciae on tergite V and VI interrupted in the middle. Tooth of metatarsus III obtusely angled. Tergite VII sinuated laterally, the sinuations separated each by a small tooth.
..... **boops Alfken**
- 63 (62) Thorax above and base of tergite I with yellowish or reddish hairs, or the whole abdomen with ferruginous or yellow hairs.
- 64 (65) Metatarsus III broad, tooth large, blunt. Tergite VII medially at the apical margin rounded, at each side with a tooth. Hind tibiae at the interior face with black hairs. Wings infumated **inclitya Walker**
- 65 (64) Metatarsus III with somewhat pointed tooth. Tergite VII emarginated at apex. Hind tibiae interiorly with black hairs only at base. Wings almost hyaline..... **cf. valga (Kl.)**
- 66 (57) Tergites from II onwards, besides the decumbent fasciae, with raised pilosity.
- 67 (68) Hind femora strongly enlarged; trochanters dentate; hind tibiae club shaped, their interior face carinated, with blunt angle; metatarsus III with large pointed tooth, below. The white fasciae narrow, well defined. Thorax clothed with yellow to ferruginous hairs. Clypeus with black central spot **blanda Pér.**
- 68 (67) Metatarsus III without tooth. Thorax more greyish. Fasciae less well defined.
- 69 (70) Hind legs enlarged, without conspicuous teeth. Tergite VII with 2 small pointed teeth. Sides of frons broadly V-shaped white. Labrum pale **extricata v. clavatipes nov.**
- 70 (69) Hind femora and (or) tibiae with blunt or pointed teeth.
- 71 (74) Hind tibiae at the inferior apex with long pointed tooth.
- 72 (73) Hind femora sulcate at hind margin, at base with a short blunt tooth. Grey pilosity of thorax with slight yellowish tinge. White spot on sides of frons triangular **priesneri Alfken**
- 73 (72) Hind tibiae at base with pointed tooth. Pilosity grey. The yellow portion the interior orbits is a more or less narrow stripe
..... **zanoni var. borgensis nov.**
- 74 (71) Hind tibiae at the apex without long lower tooth. Hind femora in the middle with pointed tooth **cf. crassipes Lep.**
- 75 (56) Hind legs without remarkable tooth-like structures, at most the apex of the hind tibiae exteriorly slightly pointed or reflexed.
- 76 (77) Ground colour of abdomen ferruginous with dark posterior tergites or dark spots on them. Tergites I - V with broad white fasciae. Length 13-15 mm. **carnea Grib.**

- 77 (76) Tergites of abdomen dark on the ground, at most the margins pale transparent, or only tergite I partly reddish; seldom in immature specimens the basal segments somewhat brown-red.
- 78 (87) Ground colour of head black.
- 79 (84) Very large species of 17-21 mm. length.
- 80 (81) Metatarsus II with triangular fan of black hairs which are curled at the tips. Pilosity of body ferruginous (or red) and black **hispanica F.**
- 81 (80) Metatarsus of mid leg without large fan of hairs. Head almost wholly with black hairs.
- 82 (83) Thorax and tergites I and II with raised reddish or yellow hairs, the remaining tergites with short raised black hairs **alfierii Alfken**
- 83 (82) Thorax and tergite I with yellow to white-yellow hairs, II and following tergites with black hairs **armata tetra Fr.**
- 84 (79) Smaller species, having a length of 11-12 mm. and almost vertically raised pilosity on the whole body.
- 85 (86) The whole face and under side of body covered with black hairs, only vertex, thorax and abdominal tergites I-III with grey hairs
 **cf. facialis sp. n.**
- 86 (85) Face with grey or whitish hairs too, particularly at the lower portion. Metatarsus II with distinct brush of black hairs **cf. atriceps Pér.**
- 87 (78) Clypeus wholly or partly yellow or white, sometimes only at the fore margin.
- 88 (91) Large species of 16-18 mm. length.
- 89 (90) Thorax and tergites I and II with grey pilosity. Fascia on III and IV very narrow, disks wholly dark. Clypeus, sides of frons and frontal area yellow, clypeus with 2 small black dots **cf. vetula (Kl.)**
- 90 (89) Tergite IV wholly, tergites V and VI laterally with raised white pilosity, basal tergites wholly dark **nubica (Kl.)**
- 91 (88) Smaller species of other coloration.
- 92 (95) Species of 14-16 mm. length in which thorax and tergites I or II (or only I) are clothed with reddish or yellow hairs, the rest of the abdomen with black hairs. White fasciae very fine. Genae linear.
- 93 (94) Thorax and tergites I and II with ferruginous to reddish-brown, the remaining tergites with black, pilosity. Fine fasciae present on tergites I and II **cf. tenuiciliata Alfken**
- 94 (93) Colour similar, but fasciae developed on tergites II-IV (-V)
 **oraniensis Lep.**
- 95 (92) Either the thorax not with reddish pilosity, at most yellowish-grey, or, if ferruginous, then smaller species; or abdomen with broader white fasciae.

- 96 (147) At least tergites II and III without distinctly raised pilosity, or with only quite short, black, semi-erect hairs; or with scattered white or black hairs only.
- 97 (136) Antennal joint 1 white or yellow in front (beneath) or with such longitudinal spot.
- 98 (101) Apical margin of tergite VII with *three* short teeth, a median blunt tooth and two lateral short triangular, or three very small, teeth.
- 99 (100) Length 12-15 mm. Hind tibiae slightly curved. Abdominal fasciae broad, illdefined in front, widened laterally. Fore tarsi short **alternans (Kl.)**
- 100 (99) Length 7.5-8 mm. Hind tibiae straight. Tergites in front of the scarcely marked fasciae with grey pilosity. Antennae dark. Joint 5 of mid tarsi somewhat thickened, with dark hairs, but without brush. Clypeus transverse. Tergite VII with three very small teeth **tridentella sp. n.**
- 101 (98) Apical margin of tergite VII with two spiniform or triangular teeth, rarely with slender conical reddish apical plate, bearing indistinct teeth.
- 102 (107) The pale pilosity of body and legs ferruginous or reddish. Fasciae testaceous to ferruginous. Clypeus and labrum yellow. Flagellum more or less ferruginous below.
- 103 (104) Broadly built species of 9-10 mm. length. Clypeus without carinae. Tergites in front of the fasciae too with decumbent pale hairs. Wings slightly infumated, cells pubescent. Scutellum smooth, shining in front. Nervulus slightly prefurcal **crocea (Kl.)**
- 104 (103) Slenderer, smaller species in which the clypeus shows a raised fore margin and median keel, and two shallow foveae. Scutellum densely punctured. Tarsal joint 5 of mid legs thickened, with a few black hairs but without brush. Nervulus interstitial or slightly postfurcal.
- 105 (106) Tergites II-IV in front of fasciae with black pilosity only. Antennal joint 4 not twice as broad as long. Metatarsus III slightly bent at base, interiorly with brown hairs. Labrum in the middle of the fore margin slightly produced **mellina sp. n.**
- 106 (105) Tergites II-IV not only at the hind margin, but also in front of the densely haired fasciae, with not very dense decumbent ferruginous hairs. Antennal 4 twice as broad as long. Metatarsus straight, with golden-yellow hairs within and without **cf. fayoumensis sp. n.**
- 107 (102) The pale pilosity white or grey, at most on head and thorax yellowish; the fasciae never testaceous or ferruginous, in any case the posterior fasciae white. Nervulus slightly prefurcal.
- 108 (125) Metatarsus III exteriorly with black hairs only, at most the extreme base or upper margin with single white hairs.

- 109 (116) White fascia of tergite V interrupted in the middle, or tergite V wholly black.
- 110 (111) Flagellum ferruginous below. Labrum large, as long as broad or appearing even elongate. Clypeus strongly protruding. **magnilabris Fedt.**
- 111 (110) Flagellum dark.
- 112 (113) Vertex and thorax with ferruginous pilosity. Anterior fasciae with yellowish tinge. Excision between teeth of tergite VII arched **quadrifasciata Vill.**
- 113 (112) Vertex and thorax with yellow-grey to white-grey pilosity. Fasciae white. Excision between teeth of tergite VII straight for some distance.
- 114 (115) Fasciae of abdomen narrower. Posterior tarsi slenderer. Face with slight yellow tinge **litorana sp. n.**
- 115 (114) Fasciae broader. Posterior tarsi broader. Face white **klugi n. n.**
- 116 (109) Fascia on tergite V not interrupted in the middle.
- 117 (122) Colour of face pale yellow.
- 118 (119) Head, thorax and tergite I without black hairs, at most in front of the scutellum with single black hairs. Antennae somewhat stouter, flagellum ferruginous below. (Arabia) **farinosa (Kl.)**
- 119 (118) At least hairs of thorax and tergite I mixed with a great number of black hairs.
- 120 (121) Flagellum dark brown to black, length of antennae 4-4.5 mm. Joint 3 nearly or wholly twice as long as broad, joint 5 distinctly longer than broad. Metatarsus III mostly with distinct spot of white hairs exteriorly at base **cf. savignyi Lep.**
- 121 (120) Flagellum ferruginous below, length of antennae less than 4 mm., joint 3 scarcely to 1.5 times longer than broad, joint 5 not or very slightly longer than broad. Metatarsus III black exteriorly or with only single white hairs at base. Smaller species **punctifrons Wlk.**
- 122 (117) Face white to ivory-white. Flagellum dark brown to black, or only joints 3-4 testaceous.
- 123 (124) Tergites of abdomen almost evenly clothed with white-grey hairs. Nervures of wing at least basally yellow. Joint 1 of antennae at most with pale dot. Metatarsus III black **cf. byssina (Kl.)**
- 124 (123) Tergites of abdomen in front of the fasciae clothed with black hairs. Veins dark. Joint 1 of antennae whitish beneath. Metatarsus III for about 1/3 of its length with white hairs exteriorly **albigena Lep. ssp. afra nov.**
- 125 (108) Metatarsus III exteriorly with white hairs either all along or at least for half of its length; these hairs may be sometimes slightly raised.
- 126 (131) Species with dense white or greyish pilosity in which the whole tergites are white or grey pubescent in front of the fasciae, the ground being not or scarcely visible; in the latter case, no black hairs present.
- 127 (130) Smaller species of 6.5-8 mm. length. Flagellum mostly ferruginous below.

- 128 (129) Antennae longer and slenderer, joints 5-13 distinctly longer than broad. The whole face pale yellow **tenella** (Kl.)
- 129 (128) Antennae stouter. Labrum, mandibles and clypeus, the latter distally, white **nivosella** sp. n.
- 130 (127) Larger species of 8.5-9.5 mm. length. Clypeus, labrum, mandibles and frontal area yellow. Antennae long, flagellum below at most brown. Similar to *byssina* **deceptrix** sp. n.
- 131 (126) Tergites in front of the fasciae partly with black pilosity.
- 132 (135) Clypeus and sides of frons white or yellow-white. Flagellum dark.
- 133 (134) Sternites dark, without white fringe of hairs at the sides. Joint 5 of middle tarsi slender. Nervulus prefurcal cf. **albigena** Lep.
- 134 (133) Sternites with white hairs at the sides and testaceous hairs in the middle. Joint 5 of middle tarsi thickened towards apex, but without brush. Metatarsus II with yellow hairs within. Nervulus interstitial cf. **helouanensis** sp. n.
- 135 (132) Clypeus pale in front only, two basal spots and sides of frons beneath the white pile black. Face with very dense but short white hairs. Nervulus prefurcal **latizona** Spin.
- 136 (97) Antenna¹ joint I wholly black, or brown beneath, sometimes with a set of white hairs.
- 137 (142) Tergites II-III (-IV) also in front of the fasciae with more or less dense pale pilosity, the fasciae only somewhat more densely pubescent than the disks.
- 138 (141) Metatarsus III exteriorly clothed with black hairs, only at base with single white hairs. Sides of face dark, clypeus yellow or white.
- 139 (140) Margin of tergite VII between the two teeth nearly straight, teeth pointed. Sternite VI somewhat shining, densely punctured. Face white, with very dense white pile **byssina** (Kl.)
- 140 (139) Margin of tergite VII between the less acute teeth arched (concave). Face yellow, with less dense and shorter white pilosity. Sternite VI smooth towards apex, polished, scarcely punctured **mucorea** (Kl.)
- 141 (138) Metatarsus III exteriorly wholly clothed with white hairs, all joints of middle tarsi exteriorly with white hairs. Face with dense white pilosity. Antennae dark. Thorax without black hairs. Clypeus more strongly protruding than in *byssina* cf. **deceptrix** sp. n.
- 142 (137) Tergites in front of the fasciae more or less clothed with black hairs.
- 143 (144) Pale band of tergite V interrupted in the middle, or the tergite nearly wholly black, with a few white hairs at the sides.
- a (b) Metatarsus II with white hairs at the extreme base, metatarsus III with black hairs only. Tergite V with a few white hairs at the sides. **andresi** Fr.

- b (a) Metatarsi II and III exteriorly all along with white hairs. Tergite V with white fascia broadly interrupted in the middle **montivaga Fedt.**
- 144 (143) Tergite V all across clothed with white hairs, or with a complete white fascia apically.
- 145 (146) The whole metatarsus III and also joints 2-3 (-4) of hind tarsi exteriorly with white hairs. Clypeus yellow, with large square black basal spots. Thorax with many black hairs intermixed **pipiens MocS.**
- 146 (145) Metatarsus III only at base with single white hairs. Clypeus pale yellow. Sternite VI strongly shining **cf. mucorea (Kl.)**
- 147 (96) Tergites from II onwards, besides the fasciae which may be present or absent, with distinctly raised pilosity. Nervulus almost always (except in *nivosella*, 7.5-8.5 mm.) interstitial or slightly postfurcal.
- 148 (151) Labrum black.
- 149 (150) Slenderer species. Joint 5 of middle tarsi without raised black hairs. Tergites I-IV with marginal fasciae of semi-erect white hairs. Antennal 3 thin, abruptly conically widened at apex, longer than the three following joints together. Metatarsus III slender, slightly curved, upper edge slightly convex. Venter with grey pilosity **arabica sp. n.**
- 150 (149) Broader species. Joint 5 of middle tarsi with some raised black hairs. Tergites without white fasciae, only some white raised hairs at the sides of tergites III and IV. Antennal 3 less abruptly thickened. Metatarsus III slender, parallel-sided. Venter with black pilosity **cf. cinereiceps Alfk.**
- 151 (148) Labrum for the major part or wholly yellow or white.
- 152 (153) Larger species, length 14-16 mm. The whole body uniformly clothed with long white-grey hairs, without fasciae. Antennal 3 less slender than in *arabica*, scarcely as long as the three following joints together **cf. lanata (Kl.)**
- 153 (152) Smaller species.
- 154 (155) Clypeus elevated in front and medially, with two lateral foveae, yellow. Tergite VII with median carina **cf. fayoumensis sp. n.**
- 155 (154) Clypeus without distinct impressions.
- 156 (157) Tarsal joint 5 of mid leg thickened, but without black hairs laterally. Length 9 mm. **helouanensis sp. n.**
- 157 (156) Joint 5 of middle tarsi slender or, if slightly thickened, then pilosity of face very dense, white.
- 158 (167) Mandibles black or with small yellow line or dot at the broad base. Sides of face with pale, mostly V-shaped, distal spot.
- 159 (162) Antennal joint 3 only twice as long as broad, shorter than 4 and 5 combined. Somewhat smaller, 8-9 mm. Cells near for margin of wing more or less distinctly pubescent (microsetae). Mandibles mostly black.

- 160 (161) Thorax with a few black hairs between the whitish hairs. Tergites of the abdomen without black hairs. Mandibles black *moricei* Fr.
- 161 (160) Thorax with many dark hairs intermixed. Tergites with a few black hairs. Mandibles with small yellow dot *moricei* var. *nigripilis* nov.
- 162 (159) Antennal joint 3 as long as or longer than 4 and 5 combined. Somewhat larger species. Mandibles mostly with pale dot.
- 163 (164) Thorax and abdominal tergites with whitish hairs only. Antennal 3 as long as 4 and 5 together *wegelini* Fr.
- 164 (163) Thorax with some black hairs between the pale ones. Tergites (II-) III - V with many raised black hairs mixed with the white hairs. Antennal joint 3 thinner, somewhat longer than 4 and 5 combined. Pilosity of thorax with very slight yellowish tinge.
- 165 (166) Hind legs normal *extricata* sp. n.
- 166 (165) Hind legs somewhat incrassate *extricata* var. *clavatipes* nov.
- 167 (158) Mandibles for the major part yellow or whitish. Flagellum often ferruginous below. Veins often yellowish cf. 126 ff., 143-146.

Females

- 1 (116) At least the tergites II and III of the abdomen with decumbent pilosity; if it is somewhat raised the hairs are either very short or only semi-erect.
- 2 (9) Head, thorax and abdomen covered with black hairs, seldom the propodeum or only tergites I or II, or IV or V conspicuously white-haired. Length of body 14-19 mm.
- 3 (6) Abdomen without white pilosity. Ground of face and clypeus dark.
- 4 (5) Wings strongly infuscated, blackish-brown with violet lustre. 19 mm *fumipennis* Alfken
- 5 (4) Wings only slightly shaded. 14-17 mm. *concolor* Alfken
- 6 (3) At least one of the abdominal tergites with a white transverse fascia.
- 7 (8) White fasciae on tergite I or also II. Legs black and clothed with black hairs. 16-18 mm. *vidua* (Kl.)
- 8 (7) Tergite IV wholly with decumbent white, V laterally and propodeum with raised white, pilosity. Clypeus yellow, with two large black spots. Length 17-18 mm. *nubica* Lep.
- 9 (2) Head, thorax and abdomen showing a pilosity different from that of the species sub : 3-8.
- 10 (35) Large species, having a length of 16-20 mm.
- 11 (14) The whole body covered with ferruginous pilosity.
- 12 (13) Tergites II-IV almost bare. Clypeus and legs ferruginous, thorax and at least tergite I of the abdomen ferruginous on the ground. Abdomen with pale postero-marginal fasciae *carnea* Grib.

- 13 (12) The whole abdomen with fine, adpressed, ferruginous pilosity. Abdomen without fasciae. Wings infumated. 16 mm. *inclyta* Walker
- 14 (11) Not the whole body with ferruginous pilosity.
- 15 (18) Posterior margins of tergites rather broadly yellowish transparent. At least tibiae partly and tarsi with ferruginous or pale brown ground-colour.
- 16 (17) Tergites from III onwards with black pilosity. Tergite III without fine pale marginal line of white hairs *scopipes* Spin.
- 17 (16) Tergite III with fine pale marginal fascia; tergite V with ferruginous pilosity at middle *flabellata* sp. n.
- 18 (15) The posterior margins of the tergites not pale and transparent but black brown or black like the rest of the tergites. Legs darker.
- 19 (20) Clypeus yellow, with two black spots fused with black sides of frons. Tergites (I-) II-III with white postero-marginal fascia, tergites IV and V with white pilosity at the sides only. Metatarsus III white-haired at base only, rest with black hairs. Genae present *atricilla* ssp. *aegyptorum* nov.
- 20 (19) Integument of head quite dark.
- 21 (24) Head for the major part covered with black hairs.
- 22 (23) Thorax and tergites I and II with yellow or ferruginous, the following tergites with black, pilosity. Hairs on tergite II plumose. Tibiae and tarsi predominantly with black pilosity. Wings not infuscated *cf. alfierii* Alfken
- 23 (22) Thorax and tergite I with yellow pilosity. Wings strongly darkened. 20 mm. *armata* v. *tetra* Fr.
- 24 (21) Pilosity of head pale or partly brown, without or with few black hairs.
- 25 (30) Tergites without white fasciae.
- 26 (27) Head and tergite I with yellowish or ferruginous, the remaining tergites with black, pilosity. 15-17 mm. *semirufa* Fr.
- 27 (26) Tergites I and II with pale pilosity, the remaining tergites with black pilosity.
- 28 (29) Thorax and tergites I and II with yellow or ferruginous pile. 19-20 mm. *cf. hispanica* F.
- 29 (28) Thorax and tergites I and II with grey pilosity 14-16.5 mm. *cf. spinolana* sp. n.
- 30 (25) Tergites I-II (-III) with very fine margins of white hairs. Frons clothed with whitish-yellow hairs.
- 31 (32) Genae linear. Margins of sternites almost only with black pilosity. Tergites III and following with black hairs *cf. tenuiciliata* Alfken
- 32 (31) Genae well developed
- 33 (34) Tibiae III with white scopa *mucida* Grib.
- 34 (33) Tibiae III with black or ferruginous scopa *cf. albosignata* Fr.

- 35 (10) Smaller species.
- 36 (71) Posterior margins of the tergites with more or less sharply defined white or yellow fasciae, the disk in front of the fasciae with decumbent black pilosity; there are therefore no pale hairs in front of the fasciae.
- 37 (52) Metatarsus III exteriorly with black pilosity, or with only single white hairs at the base, above.
- 38 (39) Tibiae III exteriorly with black pilosity or only with a short stripe of white hairs at the base, above. Tergite II in fresh specimens with greyish-yellow tomentum across the base too so that the tergite appears to have a dark transverse band or line. **fulvodimidiata** Dours
- 39 (38) Tibiae III not clothed with black hairs. No dark transverse fasciae across middle of any tergite.
- 40 (41) Tergite V clothed with black hairs only, without white hairs at the sides. Venter with dark hairs only. Antennae dark. Clypeus at fore margin, and a conical median line, pale yellow. Metatarsus II only at the base and the exterior margin with a few white hairs **omissa** sp. n.
- 41 (40) Tergite V either wholly or at the extreme sides with whitish pilosity.
- 42 (49) Tergite V only at the sides with white hairs.
- 43 (44) Smaller species, measuring 8.5-12.5 mm. Wing cells nearly without any pubescence. Very similar to *omissa*, but apart from the different pilosity of tergite V, differing in that the pale colour of the clypeus is more whitish than pale yellow, and the frontal area is dark **andresi** Fr.
- 44 (43) Larger species, measuring 12-15 mm., with distinctly pubescent wing cells, at least near the fore margin of the fore wing.
- 45 (46) Flagellum of antennae ferruginous below. Head, thorax and tergite I of abdomen without noticeable black hairs among the pale ones.
..... **cf. farinosa** (Kl.)
- 46 (45) Antennae dark. Hairs on head, thorax and tergite I of abdomen pale, mixed with black ones.
- 47 (48) The yellow median stripe of the clypeus conical, narrowed towards base, the yellow fore margin more than one-third as long as the black base. Pilosity of the thorax grey to yellowish grey. Fasciae of the abdomen white. Size larger, on an average **klugi** nom. nov.
- 48 (47) The yellow median line narrower, parallel-sided; the yellow fore margin at the narrowest space less than one-third as thick as the length of the dark base. Thorax with ferruginous pilosity; the anterior fasciae of the abdomen have a yellowish tinge **quadrifasciata** Vill.
- 49 (42) Tergite V with white pilosity for all its width, only in the middle of the hind margin with black velvety spot.

- 50 (51) Fasciae of the tergites very broad. Thorax with yellow-grey pilosity. Clypeus shining in the middle, comparatively sparingly and coarsely punctured. Frontal area only narrowly yellow. Joint 1 of antennae in front (beneath) black or brown, with white pilosity but without white ground-spot **mucorea** (Kl.)
- 51 (50) Fasciae normal. Thorax with numerous black hairs mixed with the pale hairs. Antennal 1 yellow beneath, flagellum ferruginous beneath. Sides of frons yellow so that the spots of the clypeus are isolated on three sides. Frontal area forming a yellow triangle **punctifrons** Walker
- 52 (37) Metatarsus III with white pilosity at least in basal half, or with a large white patch at base, or white-haired for all its length; these hairs decumbent or sometimes semi-erect.
- 53 (56) Face black, or only the labrum reddish.
- 54 (55) Length 11-12 mm. Face black. Tergites II-IV with white fasciae
..... **blanda** Pér.
- 55 (54) Length 8.5 mm. Labrum red with black anterior angles
..... **kneuckeri** Alfken
- 56 (53) Clypeus and labrum at least partly yellow or whitish.
- 57 (58) The whole tergite V with black pilosity.
- a (b) Larger, 13-15 mm. Fasciae of abdomen broad. Black spots of clypeus broadly rounded interiorly, not angular. Antennal 3 as long as the three following joints together **alternans** (Kl.)
- b (a) Smaller, 12-13 mm. Fasciae normal. Anterior margin of clypeus only very narrowly pale. Antennal 3 somewhat shorter than the three following joints combined **montivaga** Fedt.
- 58 (57) Tergite V at least at the sides with white hairs. Smaller species of at most 12 mm. length.
- 59 (60) Antennal joint 3 long, longer than the three following joints together, more than three times as long as broad. The dark spots of the clypeus angular exteriorly, about their middle. Venter often brownish. Wings also in the discal cells with microsetae. Antennal joint 1 dark
..... **savignyi** Lep.
- 60 (59) Antennal joint 3 less elongate.
- 61 (68) Clypeus in front and the median line *broadly* yellow or white. Flagellum usually ferruginous below. Tergite II with adpressed pilosity only.
- 62 (63) Sides of frons and frontal area yellow, clypeus with two dark spots that are surrounded by yellow. Antennal 1 yellow beneath
..... **cf. punctifrons** Wlk.
- 63 (62) Sides of frons dark, spots of clypeus fused with the former.
- 64 (67) Fasciae of the abdomen broad. Antennal 1 sometimes ferruginous below, but not lined with yellow. Flagellum ferruginous below.

- 65 (66) Metatarsus III exteriorly with large whitish spot of hairs. Fasciae very broad, their fore margin somewhat convex, i.e. broader in the middle. Clypeus and labrum whitish-yellow, the pale median stripe of the former conical. Thorax somewhat narrower, the yellow-grey pilosity mostly mixed with brown or black hairs **latizona** Spin.
- 66 (65) Metatarsus III black or with only few basal white hairs, exteriorly. Fasciae broad but evenly wide. Clypeus and labrum similar, but yellow, less pale. Thorax with uniformly yellowish-grey pilosity
..... **cf. mucorea** (Kl.)
- 67 (64) Fasciae of abdomen very narrow, whitish. Tergites II-IV also in front of the fasciae with not very dense grey tomentum. Antennae hardly paler beneath. Length 9-9.5 mm..... **cf. alfenella** sp. n.
- 68 (61) Clypeus along middle and anteriorly only very narrowly white or yellow (2).
- 69 (70) Frontal area narrowly pale yellow; the pale median line of the clypeus always reaching base. Metatarsus III with white hairs exteriorly for about half its length **albigena** Lep. **ssp. afra** nov.
- 70 (69) Frontal area black; the pale median line of the clypeus does mostly not reach base or is absent; yellow fore margin fine. Metatarsus III clothed with white or greyish hairs exteriorly for the whole length **pipiens** Mocs.
- 71 (36) Abdomen more or less *evenly* clothed with decumbent grey, yellow-grey or testaceous hairs; the fasciae usually less contrasting from the disks or not contrasting at all. In some cases the tergites (I-) II-III have a narrow transverse black line or band across middle. Scattered raised pale hairs are sometimes visible in profile.
- 72 (73) Hind tibiae and tarsi exteriorly and interiorly clothed with black hairs, the former exteriorly at base with single white hairs. Clypeus with two dark spots, each being pointed anteriorly within. Thorax with ferruginous pilosity. Middle of tergites I-III with dark transverse line between the pale pilosity of fore and hind margin. Length 10-11 mm
..... **fulvodimidiata** Dours
- 73 (72) Hind tibiae exteriorly with white, grey or yellow to rubiginose pilosity.
- 74 (81) Metatarsus III exteriorly clothed with black hairs or only up to basal half with white hairs.
- 75 (78) Metatarsus III with large spot of white hairs at base, its apical half or third with black hairs.
- 76 (77) Hairs of thorax of two colours, white and blackish. Fasciae very broad, on tergite II broader at middle than laterally. Clypeus and labrum whitish-yellow **cf. latizona** Spin.

(2) cf. *A. montivaga* Fedt.

- 77 (76) Thorax without black hairs. Tergites densely and evenly clothed with grey hairs, up to the base. Labrum and clypeus, the latter in front and middle, yellow **toensis sp. n.**
- 78 (75) Metatarsus III exteriorly with black hairs or single white hairs only at base.
- 79 (80) Tergites fairly evenly clothed with white-grey hairs, on each tergite up to the basal ridge. Veins for the major part dark. Pale parts of ground of face whitish. Legs black on the ground **byssina (Kl.)**
- 80 (79) Intermediate tergites narrowly black at fore margin of disk. Veins for the major part testaceous. Clypeus in the middle not very densely punctured. Pale parts of ground of face yellowish. Legs brown
..... **cf. mucorea (Kl.)**
- 81 (74) Metatarsus III exteriorly with pale pilosity for all its length.
- 82 (83) Broadly built species, 10-12 mm. long. Pilosity ferruginous, with intermixed black hairs on vertex, thorax and tergite I. Wings slightly shaded, cells distinctly pubescent. Antennae wholly ferruginous below. Legs brownish on the ground. Scutellum shining in front, sparingly punctured. Clypeus with two large angular black spots **crocea (Kl.)**
- 83 (82) Smaller species; if 10-11 mm. long, then the pilosity not ferruginous.
- 84 (85) Length 11 mm., width of head 4.4 mm. Abdomen evenly densely clothed with decumbent grey hairs. Antennal joint 3 about 3 times as long as broad. Clypeus with very dense white pile. Nervulus interstitial
..... **galalensis sp. n.**
- 85 (84) Smaller species of lesser width of head.
- 86 (109) Dark spot of clypeus large, occupying basal half or more; pale median line narrow or cuneiform or wanting.
- 87 (98) Nervulus interstitial or very slightly postfurcal.
- 88 (93) Clypeus with angularly limited black basal spots occupying about basal half. Frontal area narrowly pale. Head at least 3 mm. broad.
- 89 (90) Abdomen with distinct narrow white fasciae; in perfect specimens also base of tergites with some greyish pilosity, though disks chiefly black. Metatarsus III interiorly with black-brown or black hairs. Flagellum dark or at most brownish below. Face white in front
..... **alfkenella sp. n.**
- 90 (89) Abdomen more extensively clothed with grey hairs, at most tergite II with a narrow blackish fascia across middle. Flagellum ferruginous below. Margins of tergites yellowish transparent. Metatarsus III interiorly with ferruginous to brown hairs.
- 91 (92) Vertex, thorax and abdomen with uniformly grey to yellowish-grey pilosity. Tergite V medially at hind margin with ferruginous hairs. Metatarsus III interiorly with dark brown hairs. Labrum and fore margin of clypeus yellow **mellina sp. n.**

- 92 (91) Vertex and thorax with grey and black mixed pilosity. Tergite II with more or less conspicuous dark transverse line. Tergite V with black postero-median cushion of hairs. Metatarsus III interiorly with reddish hairs. Labrum and fore margin of clypeus pale yellow. Somewhat larger species **shagrensis** sp. n.
- 93 (88) Clypeus with only narrowly pale fore margin, and sometimes fine raised median line. Frontal area mostly dark.
- 94 (97) Pale hairs of thorax mixed with many black hairs. Pilosity of face less dense. Labrum less strongly transverse.
- 95 (96) Antennae dark. Labrum, base of mandibles, clypeus in front and a fine median line, whitish-yellow. Pilosity of body uniformly grey. Wing veins dark. Metatarsus III interiorly with black-brown hairs **humilis** Spin., Pr.
- 96 (95) Flagellum slightly reddish towards tip. Labrum, base of mandibles and fore margin of clypeus yellow. Pilosity of thorax grey with slight yellowish tinge. Wing veins testaceous, in basal half. Metatarsus III interiorly with brown hairs **selecta** sp. n.
- 97 (94) Thorax without, or with single black hairs only. Pilosity of face very densely white. Labrum strongly transverse cf. **tridentella** sp. n.
- 98 (87) Nervulus distinctly or slightly prefurcal.
- 99 (100) Antennal joint 3 more than three times as long as broad. Labrum not transverse. Clypeus in the middle triangularly, labrum longitudinally, white, sides brown. Tergites II-V between the decumbent grey pilosity with single raised brown hairs. Metatarsus III interiorly covered with rubiginose hairs. Length 10 mm. **tarsalis** sp. n.
- 100 (99) Antennal 3 less elongate.
- 101 (102) Head distinctly more than 3.5 mm. broad. Pilosity of tergite I moderately long, and raised at base only. Tergites evenly clothed with decumbent grey hairs. White facial pilosity not very dense **deceptrix** sp. n.
- 102 (101) Head narrower, width at most 3.5 mm. Very small species.
- 103 (104) Antennae almost wholly dark or only tip brownish below. Clypeus without pale median line, fore margin only narrowly whitish, frontal area dark. Tergite II with a few raised pale hairs besides the decumbent hairs. Fasciae of tergites indicated **tridentella** sp. n.
- 104 (103) Flagellum ferruginous below. Clypeus with more or less narrow pale median line connected with pale fore margin which is broader. Frontal area sometimes pale. Fasciae not pronounced.

- 105 (106) Sternites IV and V with slightly raised *black* pilosity, only the hind margins with very poor white fringe. Antennals 1-4 dark. Metatarsus III interiorly with brown hairs. Tergite II with few pale raised hairs between the dense decumbent white pilosity **candidella sp. n.**
- 106 (105) Sternites on the disks without black, but with slightly raised ferruginous or brown, pilosity; margins with a few white fringe hairs.
- 107 (108) Metatarsus III interiorly clothed with dark brown or black hairs. Abdomen with very dense white-grey pilosity, tergite II without any raised hairs. Antennal joints 1, 2 and base of 3 black, 3 abruptly ferruginous at the distal widening, rest of flagellum ferruginous below. Face with dense white pile. Nervulus distinctly prefurcal **nivosella sp. n.**
- 108 (107) Metatarsus III interiorly with ferruginous or rubiginose hairs. Pilosity of the tergites grey. Face less densely pilose so that the dark ground of the clypeus becomes visible. Tergites II-III with a few raised pale hairs, visible in profile. Antennal joints 1-3 dark, 4-12 ferruginous below. Nervulus only very slightly prefurcal. **tenella (Kl.)**
- 109 (86) Dark spots of clypeus *small*, occupying less than half of the length of the clypeus which is medially broadly pale yellow or yellow to base, or almost wholly yellow.
- 110 (111) Head somewhat more than 3.5 mm. broad. Nervulus interstitial. Tergites II (-III) with or without dark transverse median line. Length 9 mm.
. **lutulenta (Kl.)**
- 111 (110) Width of head less than 3.5 mm.
- 112 (115) Nervulus very slightly prefurcal. Pale hairs of thorax mostly mixed with black hairs. Metatarsus III interiorly clothed with black-brown to black hairs. Calcaria yellow with dark margins or dark.
- 113 (114) Tergite V with dark brown or black cushion of hairs in the middle of hind margin. Dark central transverse fascia on tergites I-III usually conspicuous **concinna (Kl.)**
- 114 (113) Tergite V with ferruginous hairs in the middle of the hind margin. Dark transverse lines inconspicuous, only indicated on tergites I and II.
. **concinna hegasica nov.**
- 115 (112) Nervulus interstitial. Metatarsus III interiorly with pale brown ferruginous or brown pilosity. Calcaria of tibiae II and III pale yellow. Thorax without intermixed black hairs. Tergite V in the middle of its hind margin with testaceous to brown hairs **fayoumensis sp. n.**
- 116 (1) Abdomen either with fasciae of pale, more or less decumbent hairs, but the tergites on the disks with distinctly, mostly vertically, *raised* hairs; or tergites with raised hairs and without fasciae. The raised hairs may be plumose or almost simple.
- 117 (158) Larger species of at least 13.5 mm. in length; if smaller, then thorax with ferruginous pilosity.

- 118 (119) At least middle and hind tibiae and tarsi reddish brown or ferruginous on the ground cf. 15
- 119 (118) Legs black on the ground.
- 120 (131) Pilosity of thorax yellow, ferruginous or rubiginose, without black hairs.
- 121 (128) At least tergite II with a fine white fascia at its apical margin.
- 122 (125) Genae linear or practically wanting.
- 123 (124) Tergites II-IV with conspicuous snow-white fascia. Hind tibiae exteriorly with black or dark brown hairs, and a longish triangular spot of white hairs. Metatarsus III with black hairs *oraniensis* Lep.
- 124 (123) Tergites (I-) II with very narrow margin of white hairs. Legs with black pilosity cf. *tenuiciliata* Alfken
- 125 (122) Genae well developed.
- 126 (127) Hind tibiae clothed with black hairs, or only tips of tibiae and metatarsi with a few white hairs or with reddish hairs towards lower margin. Tergites I-II (-III) with very fine fascia of white hairs .. *albosignata* Fr.
- 127 (126) Hind tibiae exteriorly clothed with white hairs. Tergites II-III with very fine fascia of white hairs *mucida* Grib.
- 128 (121) Tergites without white marginal fasciae or only at the sides with some white hairs. Large species : 17-20 mm.
- 129 (130) Pilosity of head predominantly black or brownish .. *alfierii* Alfken
- 130 (129) Pilosity of head for the major part pale. Hairs of tibiae more distinctly raised..... *hispanica* F.
- 131 (120) Thorax above clothed with white-grey or yellow-grey to brown-grey hairs, in the latter case often mixed with black hairs.
- 132 (139) The white fasciae of the tergites broadly interrupted in the middle.
- 133 (134) Large species (16-17 mm.) with distinctly plumose hairs on tergite II, pale transparent margins of the tergites and with brownish or testaceous markings on the clypeus cf. *aegyptiaca* DT. & Fr.
- 134 (133) Not the above characters combined.
- 135 (136) Pilosity of head and hind tibiae entirely black. Slenderer species, length 12.4-14 mm..... cf. *facialis* sp. n.
- 136 (135) Head predominantly with pale pilosity.
- 137 (138) Hind tibiae exteriorly clothed with white hairs. Fasciae conspicuous, white, but always interrupted in the middle. Length 11-13 mm. *atriceps* Pér.
- 138 (137) Hind tibiae with black pilosity. Broad species cf. *albosignata* Fr.
- 139 (132) Fasciae of the abdomen not interrupted, or entirely absent.
- 140 (141) Pilosity of hind tibiae and head black *facialis* sp. n.

- 141 (140) Pilosity of hind tibiae wholly whitish, grey, yellow or ferruginous.
- 142 (155) Pilosity of hind tibiae golden-yellow, ferruginous or rubiginose.
- 143 (146) Tergites II-IV without black hairs between the long raised white-grey pilosity.
- 144 (145) White fasciae on tergites (I-) II-IV conspicuous. Nervulus interstitial or indistinctly postfurcal **speciosa Fr.**
- 145 (144) Abdomen without noticeable fasciae, with greyish villosity. Nervulus indistinctly prefurcal **lanata (Kl.)**
- 146 (143) At least the tergites III-IV either wholly clothed with black hairs, or with grey hairs which are mixed with some black hairs.
- 147 (148) Smaller species of 13-14 mm. length, and transparent pale margins of the tergites. Pilosity grey, on tergites III and IV not predominantly black, the grey hairs plumose. Interior face of tibiae and metatarsus III with black pilosity **senescens Lep.**
- 148 (147) Tergites III and IV with predominantly or wholly black pilosity. Length 14.5-18 mm.
- 149 (152) At least the tergites II and III with conspicuous fasciae of almost decumbent or slightly raised white hairs.
- 150 (151) Clypeus and labrum mostly with brown or yellow markings. Raised hairs of tergite II distinctly plumose. Legs with rubiginose hairs. Length 16-17 mm. **aegyptiaca DT. & Fr.**
- 151 (150) Head black on the ground. Raised hairs on tergite II not distinctly plumose. Hind tibiae and metatarsi III interiorly clothed with black, exteriorly with ferruginous hairs.
- a (b) Tergites with slight bronze lustre, puncturation denser. Sternites with fringes of ferruginous hairs. Tergites clothed with long grey hairs, mixed with black hairs. Length 17-18 mm. **disparilis Fr.**
- b (a) Tergites black on the ground, puncturation less dense, II-III clothed with black hairs, towards the hind margin with white hairs. Fasciae more conspicuous. Length 15.5-16.5 mm. **dispar Lep.**
- 152 (149) Conspicuous fasciae absent. Tergites I and II clothed with grey, the following tergites almost only with black hairs, some pale hairs at most at the sides of the tergites.
- 153 (154) Mesosternum for the major part, fore and mid legs, hind tibiae within and both sides of metatarsus III clothed with black hairs; hind tibiae exteriorly with rubiginose hairs **cinereiceps Alfken**
- 154 (153) Mesosternum clothed with grey, or in the middle somewhat with yellowish, hairs. At least the hind legs everywhere with ferruginous hairs. Pilosity of thorax and tergites short **spinolana sp. n.**

- 155 (142) Hind tibiae exteriorly and metatarsus III predominantly with white or grey hairs (3).
- 156 (157) Ground of face partly pale yellow. Tergites I-III with white fasciae, and in addition with whitish or greyish decumbent and semi-erect pilosity to base. Tergites IV and V with black, only at the sides with white, raised hairs **atricilla ssp. aegyptorum nov.**
- 157 (156) Face wholly dark. Tergites with raised grey, but without decumbent white-grey, pilosity. Fasciae present on tergites I-IV. Tergite V at the sides with some longer white hairs **niveiventris Fr.**
- 158 (117) Smaller species not exceeding a length of 13 mm.
- 159 (160) Clypeus yellow or white with two black spots, and with median line or at least fore margin pale **cf. 86-115**
- 160 (159) Clypeus black.
- 161 (162) The pure-white fasciae of the abdomen broadly interrupted. Hind tibiae exteriorly with white, metatarsus with black, hairs. General colour black **cf. atriceps Pér.**
- 162 (161) Fasciae not interrupted, or absent. General colour grey.
- 163 (166) Antennal joint 3 about three times as long as 4, or at most as long as the three following joints combined. Fasciae narrow. Cells of wing close to fore margin of it distinctly pubescent. Length 8-9.5 mm. (4).
- 164 (165) Tergites I-IV of abdomen clothed with grey hairs only, V with some black hairs too **moricei Fr.**
- 165 (164) Tergites II-V of abdomen with some black hairs mixed with the pale ones **moricei nigripilis nov.**
- 166 (163) Antennal 3 longer and slenderer, distinctly more than three times as long as 4, and at least above longer than the three following joints together; larger, on an average.
- 167 (168) Sternites II-IV with white or greyish hairs only, without brown or black hairs between them. Wing cells practically bare, only in cell r 1 with some microsetae **wegelini Fr.**
- 168 (167) Sternites at least in the middle of the disks with brown or black hairs between the pale hairs. Thorax and tergites III-IV with white and dark hairs mixed, V with black hairs.
- 169 (172) Tergites III-V in front of the fasciae mainly with black hairs. At least the sternites IV-V with many black hairs.
- 170 (171) Clypeus densely and somewhat rugosely punctured, without median

(3) A grey scopa stuffed with yellow or brownish pollen should not be mistaken with a yellow or brown scopa.

(4) *Anthophora guigliae* Dusmet (*Ann. Mus. Genova*, LIII, p. 314; 1933) may also belong in this section. The rich ferruginous pilosity of tergites V and VI would, as to my opinion, distinguish this species from all those of the *ambigua*-group, if it actually belongs in this group. (Jarabub).

- carina. Abdominal fasciae composed of somewhat raised hairs
 **zanoni var. borgensis nov.**
- 171 (170) Clypeus like above, but in front with narrow median carina. Fasciae of
 abdomen snow-white, denser, more decumbent **desertorum sp. n.**
- 172 (169) Tergites in front of the fasciae predominantly with white or grey hairs.
 Sternites with yellowish or medially with brown hairs.
- 173 (176) Mesonotum with few black hairs between the pale hairs. Hairs of tergites
 raised and mixed with less black hairs. Pilosity with a slight yellowish
 tinge.
- 174 (175) Clypeus coarsely punctured, and at least in front with a small carina.
 Antennal 3 as long as the three following joints together.....
 **priesneri Alfken**
- 175 (174) Clypeus finely and densely punctured, shining. Antennal 3 somewhat
 longer than the three following joints together **extricata sp. n.**
- 176 (173) Mesonotum with many black hairs among the grey hairs. Grey pilosity
 of the tergites less raised and mixed with many black hairs, without yellow
 tinge..... **cf. crassipes Lep.**

DESCRIPTIONS OF THE EGYPTIAN SPECIES

Group I (fulvitaris)

Anthophora aegyptiaca Dalla Torre et Friese

1812. Unnamed, Savigny, Descr. d'Egypte, pl. I, fig. 3 (male).
 1845. *Megilla scopipes* Klug., Symb. phys., pl. 49, fig. 1 (nec *scopipes* Spin.).
 1871. *Anthophora senilis* Walker, List Hym. Egypt, p. 55.
 1895. *Anthophora aegyptiaca* Dalla Torre et Friese, *Entom. Nachrichten*, XXI, p. 60.
 1897. *Podalirius aegyptiacus* Friese, *Bienen Europas* III, p. 174.
 1916. *Anthophora fulvitaris* Storey, Min. Agric., Tech. Bull. 5, p. 18; Cairo.
 1926. *Anthophora aegyptiaca* Alfken, *Senckenbergiana*, VIII, p. 101, 122.

MALE : Length 15-17 mm. Colour of the ground black, the whole face including frontal area, base of mandibles, and 1st antennal joint beneath, yellow. Pilosity appearing for the major part grey, with yellowish tinge like being shortly cut, and being longer and darker only at the posterior tergites; posterior margins of tergites only narrowly pale transparent. Frons clothed with white, vertex profusely covered with black hairs. Thorax and tergites I and II with raised, the latter two with raised and distinctly plumose, hairs, tergites III to VII with raised black hairs. Whitish posteromarginal bands are conspicuous on tergites (I-) II-IV, but mostly interrupted on IV in the middle. Mid legs with anterior black fan of the metatarsus and longer, scarcer, posterior pilosity; joint 5 of tarsi II with distinct hair-brush. Hind tibiae at the margins with dirtily brownish or yellowish pilosity. Posterior metatarsus somewhat *curved*, convex interiorly, concave exteriorly. Calcaria yellow,

narrowly margined with black. Head below with white, chest with yellowish pilosity. Tegulae yellowish-brown.

Genae well developed. Clypeus strongly protruding, shining, very finely punctured. Antennal joint 3 about 3.5 times as long as broad, somewhat longer than the three following joints combined. Wings slightly shaded with grey, with cell r 1 distinctly pubescent. Nervulus (vein Cut1) interstitial. Tergite VII with two comparatively long, ferruginous teeth that are comparatively narrowly separated from each other.

FEMALE : Length 16-17 mm. Black, face too, but clypeus mostly with yellowish spots, or wholly dark brown with yellowish-brown median stripe, or small paler spots or with anchor-shaped design. Labrum dark, mostly yellowish at the basal margin. Pilosity about as in the male. Tibiae and tarsi clothed with rubiginose hairs, margins of the sternites laterally with whitish, medially with ferruginous hairs. Tegulae ferruginous.

HABITAT : A common hibernal species that may be collected, though, from August to April in Middle and Upper Egypt.

A. aegyptiaca can hardly be confused with any other Egyptian species, systematically coming closest to *A. fulvitaris* Brullé. It is heavier than the species of the *scopipes*-group, and differs further from *flabellana*, the only one of the latter having yellow clypeus, by the conspicuous teeth of tergite VII of the male, the curved metatarsi III and the longer antennal joint 3; the females differ from those of the *scopipes*-subsection by the larger size, the dark-haired tergite V, the dark ground-colour of the tibiae and metatarsi and by the pilosity of the thorax which is more strongly mixed with black hairs, in *aegyptiaca*. The specimens in the collection of the Ministry of Agriculture were originally identified with *A. nasuta* Lep., but already in 1926 corrected by ALFKEN in *aegyptiaca*.

Anthophora senescens Lep.

1841. *Anthophora senescens* Lepeletier, Hist. nat. Ins. Hym., II, p. 71 (male and female).

1897. *Podalirius senescens* Friese, Bienen Europas, III, p. 179.

1916. *Anthophora retusa* Storey (nec L.), Min. Agric., Techn. Bull. 5, p. 18; Cairo.

1926. *Anthophora senescens* Alfken, *Senckenbergiana*, VIII, p. 101.

MALE : Length 11-13 mm. Ground colour black, apical margins of the abdominal segments pale, transparent. Antennal joint 1 beneath, clypeus, sides of frons, frontal area transversely and labrum ivory yellow. Mandibles and flagellum black. Pilosity appearing, as a whole, grey, since black and white hairs are mixed almost everywhere. Hairs of frontal sides surpassing clypeus. Head and thorax beneath with long white hairs. Pilosity of the abdominal tergites long and raised, the paler hairs of the tergites are distinctly plumose; at the little conspicuous fasciae the hairs are whitish. Metatarsus II exteriorly with chiefly black pilosity, and with fan at the anterior edge. Tarsal joints 2-4 yellowish, joint 5 dark, possessing a distinct

