

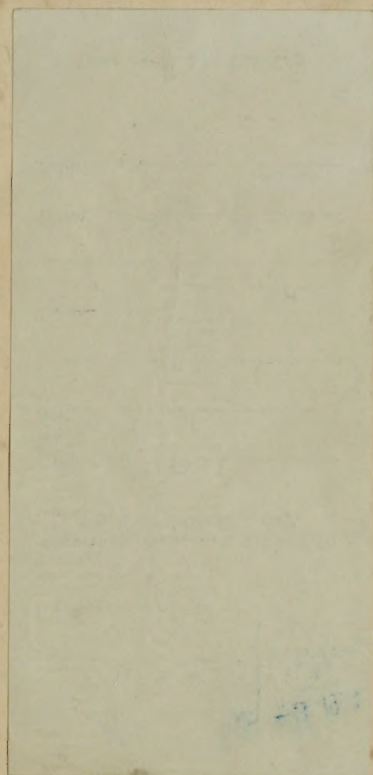


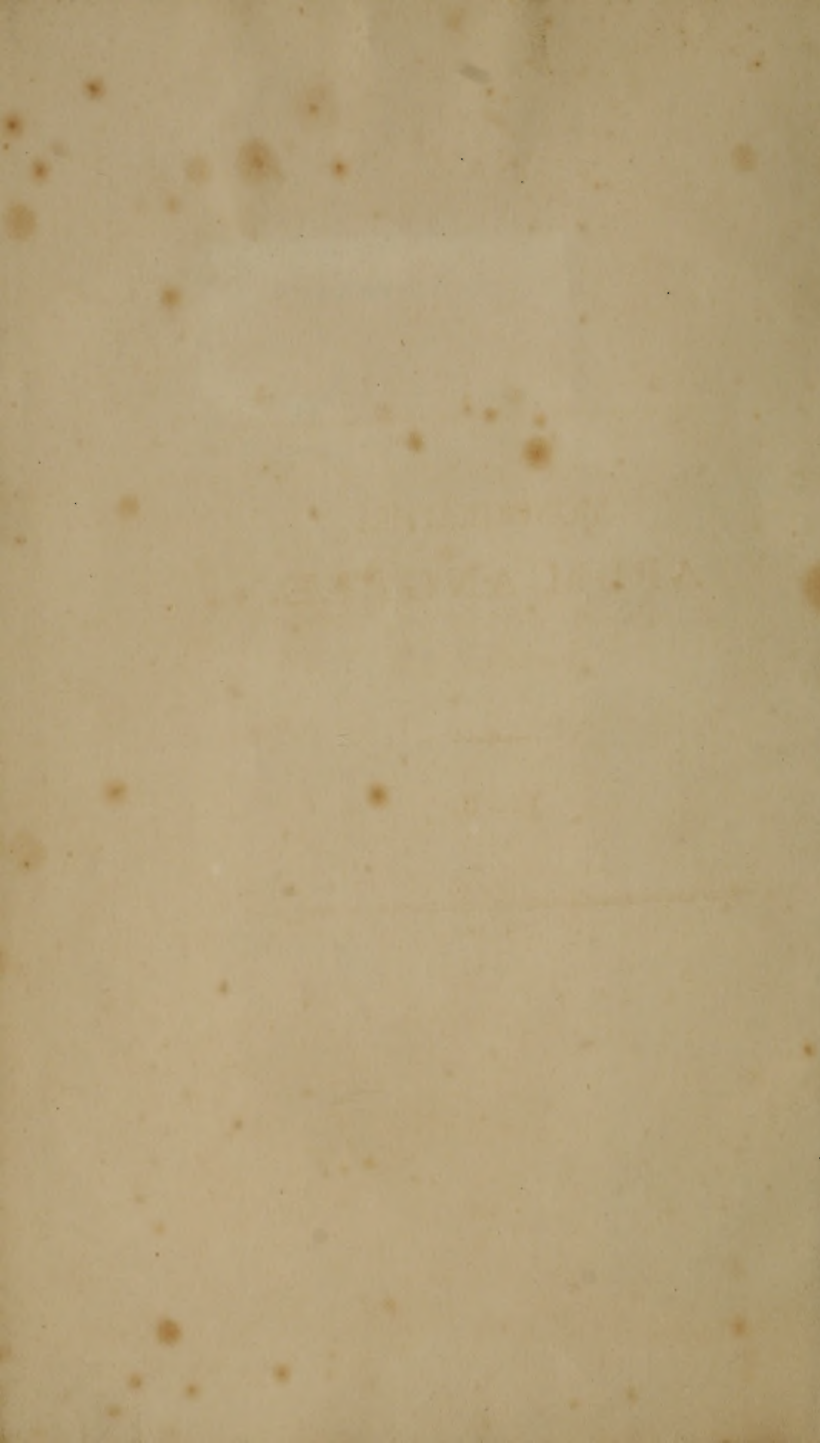
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MONOGRAPHIA  
APUM ANGLIÆ.

IN TWO VOLUMES.

—◆—  
VOL. II.

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MONOGRAPHIA  
ALBUM ANGELICAE.

IN TWO VOLUMES.

VOL. II.

MONOGRAPHIA  
APUM ANGLIÆ;

OR,  
AN ATTEMPT TO DIVIDE INTO THEIR  
NATURAL GENERA AND FAMILIES,  
SUCH  
SPECIES OF THE LINNEAN GENUS  
*APIS*  
AS HAVE BEEN DISCOVERED IN ENGLAND:

WITH  
*Descriptions and Observations.*

To which are prefixed  
SOME INTRODUCTORY REMARKS UPON THE CLASS  
*Hymenoptera,*  
AND  
A Synoptical TABLE of the Nomenclature of the external Parts of  
these Insects.

WITH PLATES.

VOL. II.

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By WILLIAM KIRBY, B. A. F. L. S.  
*Rector of Barham in Suffolk.*

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Μικρα εν πετεινοις μελισσα, και αρχη γλυκυσμοιτων ο καρπος αυτης.

Ecclūs. xi. 3.

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IPSWICH:

*Printed for the Author by J. Raw,*

AND SOLD BY J. WHITE, FLEET-STREET, LONDON.

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1802.

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APUM ANGLIÆ

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AS HAVE BEEN DISCOVERED IN ENGLAND,  
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A Synoptical Table of the Genera and Species of the Genus Apis

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NEWCASTLE

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MONOGRAPHIA  
**APUM ANGLIÆ.**

PARS TERTIA.

SPECIERUM *f.* NOMINUM SPECIFICORUM SY-  
NOPSIS EXHIBENS.

---

Multa fecisti tu JEHOVA DEUS meus, mirabilia tua: et cogitationes tuas erga nos, nemo est qui ordinare possit tibi: si enuntiare et eloqui velim, plura sunt quàm ut narrentur.

Ps. xl. 5.

---

Reddere personæ scit convenientia cuique. Hor:

VOL. II.

A

301696

SYNOPSIS SPECIERUM.

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MELITTA. (a)

*Os* proboscide subcylindricâ, porrectâ, linguam brevem, planiusculam, exerente.

*Antennæ* mediæ, aculeatis subclavatæ articulis 13; maribus filiformes articulis 14.

*Oculi* laterales, subovales, integri.

*Alæ* planæ.

*Aculeus* punctorius, reconditus.

---

\*. a.

*Os* linguâ apice bilobâ; valvulis plicatis.

*Labium* anticè obtusangulum.

*Corpus* villosum.

✓ *succincta*. 1. *M.* nigra, albido-villosa; thorace fulvo; abdomine ovato; segmentis margine albis. (1)

✓ *fodiens*. 2. *M.* nigra, albido-villosa; thorace fulvescenti; abdomine conico, basi subretuso; segmentis margine pallidis. (2)

\*. b.

*Os* linguâ subtruncatâ, auriculatâ.

*Labium* anticè obtusangulum.

(a) Tab. 1—4.

*Abdomen*

*Abdomen* conicum, supra gibbum.

*Corpus* glabrum.

Obs. *Antennæ* femineæ apice recurvæ.

3. *M. atra*; fronte maculatâ; tibiis posticis albido annulata, annulatis. (1)

4. *M. atra*; fronte maculatâ; tibiis omnibus flavo annularis, annulatis. (2)

5. *M. atra*; tibiis flavis, nigro annulatis; antennis dilatata, scapo patelliformi. (3)

6. *M. atra*; fronte maculatâ; abdomine segmento signata, primo margine utrinque albo. (4)

\*\*\*. a.

*Os* linguâ acutâ, auriculatâ,

*Labium* inflexum, anticè emarginatum.

*Abdomen* ovatum, glabrum, supra gibbum.

*Corpus* subpilosum.

Obs. *Antennæ* femineæ apice recurvæ. *Abdomen* masculinum lineare; *antennæ* submoniliformes.

7. *M. atra*; abdomine ferrugineo, apice nigro. (1) *gibba*,

8. *M. atra*; abdomine rufo, apice, pedibusque, *Geoffieldi*, nigro-piceis; maxillis, tarsis, tibiisque, anticis, *la.* rufescentibus. (2)

9. *M. aterrima*; abdomine ferrugineo, basi apice-*Sphecoides*, que nigro; alis nigricantibus. (2)

10. *M. atra*; antennis piceis, thorace longioribus; *monilicornis*, abdomine cingulo rufo. (3)

11. *M. atra*, glabriuscula; abdomine piceo, nitido; *picea*.

segmentis intermediis basi et utrinque ferrugineis. (5)

- divisa*. 12. *M. atra*; abdomine subovali, nitidissimo, cingulo ferrugineo; antennis thorace brevioribus. (6).

\*\* b.

*Os* linguâ acutâ, auriculatâ; valvularum loris elongatis.

*Labium* pectinatum, appendiculatum.

*Abdomen* subovale, ano rimâ perpendiculari.

*Corpus* subvillosum.

Obs. *Antennæ* femineæ apice recurvæ. *Labium* masculum pectinatum, absque appendice; corpus elongatum; anus rimâ nullâ. *not aff*

- quadri-cincta*. 13. *M. atra*, cinereo-subpubescens; abdomine convexo, segmentis margine albis; pedibus, anoque, villosopallidis. (1)

- rubicunda*. 14. *M. atra*, rufescente-pubescens; abdomine segmentis margine albis; tarsis, tibiisque posticis, fulvis. (2)

- flavipes*. 15. *M. nigro-ænea*, nitida; pedibus flavis. (3)

- seladonia*. 16. *M. nigro-ænea*, pallido-subpubescens; abdomine segmentis margine pallidis. (4)

- ærata*. 17. *M. viridi-ænea*, nitida; abdomine nigro-æneo. (5)

- leucopus*. 18. *M. ænea*; abdomine nigro; antennis subtus fulvis; tarsis albidis. (6)

- Morio*. 19. *M. ænea*; metathorace cærulescenti; abdomine nigro. (7)

20. *M.*

20. *M. nigra*, nitens; antennis subtus fulvescentibus. (8) *minuta.*
21. *M. atra*, albido-villosula; abdomine subovato; *villosula.* antennis subtus, tarsisque, rufescentibus. (9)
22. *M. atra*, glabriuscula; abdomine nitidissimo. (10) *minutissima.*
23. *M. nigra*, glabriuscula; antennis subtus flavis; *nitidiuscula.* maxillis, labio, tarsisque, albidis. (11)
24. *M. atra*, pallido-villosula; abdomine nigro, *lævis.* lævi, nitidissimo. (12)
25. *M. atra*, pallido-villosula; abdomine subpubescenti, punctulato, segmento primo lævi, *punctulata.* nitidissimo. (13)
26. *M. nigra*, griseo-subpubescens; abdomine sub-tomentoso. (14) *malachura.*
27. *M. nigra*; antennis thorace longioribus, fulvescentibus; abdomine nitido, segmentis intermediis basi albis. (15) *fulvicornis.*
28. *M. nigra*, rufescente-pubescens; abdomine sub-tomentoso, segmentis margine fulvis, intermediis basi utrinque pallidis. (16) *fulvocincta.*
29. *M. atra*, albido-subvillosa; abdomine segmentis intermediis rufis, fasciâ, punctisque lateralibus, nigris; labio flavo. (17) *albipes.*
30. *M. atra*, cinereo-subvillosa; abdomine segmentis anticis rufis, maculâ mediâ, punctisque lateralibus, nigris. (18) *abdominalis.*
31. *M. atra*, glabriuscula; abdomine nitidissimo, obovato, obovato, segmentis basi albis. (19) *obovata.*
32. *M. atra*, rufo-subpubescens; thorace ferrugineo; *lævigata.*

- rugineo; abdomine nitidissimo, segmentis intermediis basi pallescentibus. (20)
- leucozo-* 33. *M. atra*, cinereo-pubescentis; abdomine seg-  
*nia.* mentis intermediis basi albis. (21)
- xantho-* 34. *M. nigra*, rufo-pubescentis; thorace ferrugineo;  
*pus.* abdomine segmentis utrinque basi pallidis;  
pedibus posticis testaceis. (22)
- quadrino-* 35. *M. atra*, cinereo-subpubescentis; abdomine sub-  
*tata.* incano, segmentis duobus intermediis basi  
utrinque albis. (23)
- lugubris.* 36. *M. atra*, albido-subpubescentis; abdomine seg-  
mentis intermediis basi utrinque, plantisque,  
albis; antennis thorace longioribus. (24)
- sexnotata.* 37. *M. aterrima*, pube incanâ; abdomine segmen-  
tis tribus intermediis basi utrinque albis; alis  
apicè nigris. (25)

\*\*\*. c.

*Os* linguâ acutiusculâ, auriculatâ, sæpius hastatâ, apice reflexâ.

*Labium* anticè obtusangulum, supra tuberculo munitum.

*Femora* postica flocculo instructa.

*Anus* fimbriatus.

*Corpus* villosum.

Obs. *Mas absque flocculo atque fimbriâ.*

- Lathamia-* 38. *M. atra*, glabriuscula; abdomine nigro, cin-  
*na.* gulo antico, ano, scopâque, rufis. (1)
- Rosæ.* 39. *M. atra*, cinereo-subvillosa; abdomine cingulo  
antico rufo; scopâ versicolori. (2)

40. *M.*

40. *M. atra*, cinereo-villosa; abdomine nigro, cin-  
gulo rufo; pedibus posticis piceis. (3) *zonalis*.
41. *M. nigra*, cinereo-subpubescens; abdomine  
glabriusculo, cingulo ferrugineo utrinque  
puncto nigro. (4) *cingulata*.
42. *M. nigra*, cinereo-subvillosa; thorace rufescen-  
ti; abdomine cingulo rufo, segmentis pos-  
ticis flavo-ciliatis. (5) *Schrank-  
ella*.
43. *M. nigra*, cinereo-subvillosa; thorace rufescen-  
ti; abdomine subtomentoso, segmentis pos-  
ticis flavo-ciliatis. (6) *affinis*.
44. *M. nigra*, griseo-villosa; thorace pube rufâ; *fulvago*.  
abdomine punctulato, nitido; pedibus pos-  
ticis, anoque, fulvis. (7)
45. *M. nigra*, albicante-subvillosa; thorace, ano-  
que, ferrugineis; tibiis plantisque posticis  
fulvis. (8) *albicans*.
46. *M. aterrima*, subvillosa; abdomine nitido; *pilipes*  
tibiis posticis scopâ albidâ. (9)
47. *M. atra*, albido-pubescens; thorace hirsuto  
fasciâ atrâ; abdomine atro-cærulescenti. (10) *cineraria*.
48. *M. atra*, villosa; trunco hirsuto-albicanti. (11) *pratensis*.
49. *M. atra*, villosa; trunco supra hirsuto-rufo. (12) *thoracica*.
50. *M. atra*, subvillosa; thorace hirsuto-flave-  
scenti; abdomine ovato, nigro. (13) *melanoce-  
phala*.
51. *M. nigra*, pallido-subvillosa; thoracé hirsuto-  
fulvo; abdomine nitido; tibiis posticis sco-  
pâ versicolori. (14) *nitida*.
52. *M. nigra*, albido-pubescens; thorace rufescenti; *tibialis*.  
tibiis posticis fulvis, scopâ fulvo-aureâ. (15)
53. *M.*

- Mouffet-ella*. 53. *M. nigra*, pallido-pubescentis; abdomine piloso, nigro-æneo; thorace, digitis, tibiisque posticis, rufis. (16)
- nigro-ænea*. 54. *M. nigra*, fulvo-pubescentis; capite anoque atris; abdomine subhirsuto, nigro-æneo. (17)
- atriceps*. 55. *M. nigra*, rufescente-villosa; capite atro; tarsi rufis. (18)
- limaculata*. 56. *M. nigra*, rufescente-villosa; capite atro; ventre basi utrinque maculâ rufâ. (19)
- Trimmerana*. 57. *M. nigra*, grisescente-pubescentis; abdomine hirsutulo; tibiis posticis scopâ versicolori. (20)
- varians*. 58. *M. atra*; thorace, abdominisque basi, hirsuto-fulvis; tibiis posticis scopâ versicolori. (21)
- helvola*. 59. *M. nigra*, albido-villosa; thorace, abdominisque basi, hirsuto-ferrugineis; tibiis posticis scopâ flavescenti. (22)
- Gwynana* 60. *M. atra*, villosa; thorace, abdomine anticè, tibiisque posticis scopâ, ferrugineis. (23)
- angustior*. 61. *M. nigra*, rufo-subvillosa; thorace, pubescenti; femoribus, pedibusque quatuor anticis, piceis; posticis ferrugineis. (24)
- pivicornis*. 62. *M. nigra*, grisescente-subvillosa; capite atro; antennis piceis; abdomine fusco. (25)
- spinigera*. 63. *M. nigra*, hirsuto-cinerascentis; maxillis longitudine capitis atri, basi spinâ filiformi armatis. (26)
- armata*. 64. *M. nigra*, cinerascente-villosa; maxillis longitudine capitis, basi dente armatis. (27)
- subdentata*. 65. *M. nigra*, cinerascente-villosa; facie anticè barbâ



- barbâ albâ; maxillis longitudine capitis, basi obtusangulis. (28)
66. *M. nigra*, pallido-villosa; thorace fulvescenti; *picipes*. abdomine fusco; pedibus rufo-piceis. (29)
67. *M. nigra*, pallido-villosa; thorace hirsuto-fer-*angulosa*. rugineo; capite posticè utrinque rectangulo. (30)
68. *M. atra*; thorace, abdomineque supra, hirsutis, *fulva*. fulvo-aureis. (31)
69. *M. atra*, hirsuta; thorace, pedibusque posticis, *Clarkella*. fulvis. (32)
70. *M. nigra*, grisescente-subhirsuta; thorace ab-*Smithella*. domineque hirsutis, fulvescentibus, segmentis margine albidioribus. (33)
71. *M. nigra*, fulvo-subhirsuta; labio tridentato; *tridentata*. digitis testaceis. (34)
72. *M. atra*, albido villosa; maxillis basi denticulo *denticulata*. armatis; labio tridentato; abdomine strigis tribus albis. (35)
73. *M. atra*, thorace fulvo; abdomine fasciis tri-*nigricaps*. bus villosa-rufescentibus. (36)
74. *M. nigra*, cinerascete-villosa; thorace flave-*rufitarsis*. scentis; abdomine segmentis margine albidis; antennis subtus, digitisque, rufis. (37)
75. *M. nigra*, pallido-subvillosa; thorace fulvo; *fuscipes*. abdomine segmentis margine albidis; tibiis posticis scopâ fuscâ. (38)
76. *M. atra*, pallido-subvillosa; abdomine segmen-*Listerella*. tis margine albidis; thoracis disco subpiloso, nigro. (39)

- fulvicornis*. 77. *M. nigra*, grisescente-villosa; abdomine fasciis tribus pallidis; tibiis posticis scopâ fulvâ. (40)
- trifrons*. 78. *M. nigra*, supra fulvo-pubescens; abdomine ovato, basi fulvo-villoso; segmentis apice pallidioribus. (41)
- contigua*. 79. *M. atra*, cinereo-villosa; abdomine segmentis margine villosa-albis. (42)
- pubescens*. 80. *M. nigra*, cinereo-villosa; abdomine ovali; labio subcornuto. (43)
- hæmorrhoidalis*. 81. *M. atra*, cinereo-subpubescens; abdomine segmentis posticis utrinque margine albis; ano ferrugineo. (44)
- chrysoceles*. 82. *M. nigra*, cinereo-subpubescens; abdomine nitido, fasciis interruptis albidis; ano, tarsis, tibiisque posticis, testaceis. (45)
- dorsata*. 83. *M. nigra*, cinereo-subvillosa; thorace fulvo; abdomine fasciis tribus albis, anticâ interruptâ; tarsis rufis. (46)
- Wilckella*. 84. *M. atra*, cinereo-subvillosa; abdomine segmentis intermediis utrinque margine albis; plantis, tibiisque posticis, rufis. (47)
- proxima*. 85. *M. atra*, cinereo-subpubescens; thorace grisescenti; abdomine utrinque strigis tribus albis; scopâ pallidâ nitenti. (48)
- Coitana*. 86. *M. atra*, nitida, albido-subvillosa; frontis angulis, nasoque, albis. (49)
- lutealis*. 87. *M. nigra*, pallido-villosa; thorace fulvescenti; facie anticè albidâ; abdomine segmentis margine utrinque pallidis. (50)
- Leuimela*. 88. *M. nigra*, pallido-villosa; thorace, tarsisque rufescen-

- rufescentibus; abdomine segmentis intermediis utrinque strigâ albidâ. (51)
89. *M. atra*, cinereo-villosa; abdomine ovato; segmentis margine albidis. *ovatulata*. (52)
90. *M. nigra*, lutescenti-villosa; abdomine sub-*barbulata*. ovato; segmentis margine membranaceis, albido ciliatis. (53)
91. *M. atra*, hirsuto-canescens; abdomine lævi *barbilanceolato*; facie anticè barbâ densâ *arbrisa*. genteâ. (54)
92. *M. atra*, albido villosa; abdomine subovali, *barbulatopunctulato*; segmentis intermediis margine *la*. utrinque albis. (55)
93. *M. atra*, cinereo-villosa; abdomine subovato, *Collinsonnitido*; segmentis posticis margine albi-*ana*. dis. (56)
94. *M. cinereo-subpubescens*; thorace rufo; *metathorace* utrinque fimbriâ pallidâ; abdomine *combinata*. fasciis tribus, interruptis, albidis. (57)
95. *M. atra*, supra nudiuscula; metathorace utrin-*nudiuscule*, tibiisque posticis, pallido-*lanatis*. (58) *la*.
96. *M. atra*, cinereo-villosa; thorace fulvo; abdomine ovato, pilosulo, strigis tribus albis; *albicus*. scopâ versicolori. (59)
97. *M. atra*, supra nudiuscula; abdomine convexo, *connecnitido*; tarsis omnibus, tibiisque posticis, *tens*. rufis. (60)
98. *M. nigra*, albido-subvillosa; abdomine punctulato; digitis omnibus, plantisque posticis, *subincanata*. rufis. (61)

- digitalis*. 99. *M. atra*, cinereo-subvillosa; tibiis posticis scopâ argenteâ; digitis ferrugineis. (62)
- Shawella*. 100. *M. atra*, glabriuscula; abdomine nitidissimo, subcuneiformi, segmentis intermediis utrinque albo-ciliatis; scopâ versicolori. (63)
- minutula*. 101. *M. atra*, glabriuscula; antennis subtus fulvescentibus; abdomine nitido; tibiis posticis scopâ argenteâ. (64)
- nana*. 102. *M. atra*, albido-villosula; abdomine nitido, segmentis basi punctulatissimis; tibiis posticis scopâ argenteâ. (65)
- parvula*. 103. *M. atra*, cinereo-subvillosa; abdomine subrotundo. (66)
- pilosula*. 104. *M. nigra*, cinereo-subpilosa; capite atro; abdomine subovali, segmentis margine membranaceis; digitis ferrugineis. (67)
- xanthura*. 105. *M. atra*, cinereo-subpubescens; ano, tibiis plantisque posticis, rufescentibus; abdomine fasciis subinterruptis, albidis. (68)
- convexiuscula*. 106. *M. nigra*, griseo-subpubescens; abdomine ovato, convexo, segmentis margine pallidis; tibiis plantisque posticis rufis. (69)
- fuscata*. 107. *M. nigra*, grisescente-subpubescens; thorace fusco; abdomine ovato, convexiusculo, segmentis margine pallidis. (70)
- Afseliella*. 108. *M. atra*, fulvo-villosa; thorace ferrugineo; abdomine subcordato, fasciis tribus, interruptis, pallidis. (71)
- trivincta*. 109. *M. nigra*, cinereo-subpubescens; thorace flavescenti; abdomine ovato, basi subretuso, fasciis tribus, angustis, pallidis. (72)

110. *M. atra*, grisescente-subpubescens; thoracis *chrysuræ*.  
limbo fulvescenti; abdomine ovato, basi re-  
tuso; ano fulvo-aureo. (73)
111. *M. atra*, pallido-villosa; abdomine fasciis tri- *Swam-*  
bus albidis; pedibus posticis fulvo longis- *merdam-*  
simè lanatis. (74) *ella.*

APIS. (*b*)

*Os* proboscide fractâ, inflexâ, linguam cylindri-  
cam, elongatam, exerente.

*Antennæ* mediæ, aculeatis articulis 13; maribus  
articulis 14.

*Oculi* laterales, subovales, integri.

*Alæ* planæ.

*Aculeus* punctorius, reconditus.

\*. a.

*Os* proboscide quinquefidâ; linguâ acutâ; pal-  
pis exterioribus sexarticulatis, interioribus  
quadriarticulatis.

*Antennæ* clavatæ in omni sexu.

*Labium* ovale.

*Corpus* subpilosum.

Obs. *Caput masculum anticè truncatum.*

1. *A. atra*, supra glabriuscula; pedibus posticis *ursina*.  
fulvo-hirsutissimis. (1)
2. *A. atra*, nitida, glabriuscula; antennis dimidiato- *Lincella*.  
rufis. (2)
3. *A. atra*, nitida, glabriuscula: digitis rufis. (3) *Bankiana*  
(*b*) Tab. 4—13.

\*. b.

\* b.

*Os* crassum, proboscide quinquefidâ; palpis exterioribus sexarticulatis, interioribus quadriarticulatis.

*Antennæ* rectiusculæ, filiformes in omni sexu.

*Labium* subovale.

*Abdomen* glaberrimum.

*Corpus* subvillosum.

- *Goodeni-ana*. 4. *A.* atra; tuberculis, squamulis, scutellique punctis, flavis; abdomine fasciis flavis, nigrisque, alternis. (1)
- *alternata*. 5. *A.* atra, griseo-subvillosa; tuberculis, squamulisque flavescens; abdomine fasciis flavis, nigrisque, alternis; scutello immaculato. (2)
- *Lathburi-ana*. 6. *A.* atra, cinerascens-subvillosa; scutelli punctis duobus, abdominisque fasciis posticis, flavis, anticâ rufâ. (3)
- *varia*. 7. *A.* atra; scutello, tarsi, tibiis extra, abdominisque fasciis posticis, flavis, anticâ rufâ. (4)
- *flava*. 8. *A.* atra, subvillosa; squamulis fulvis; abdomine fasciis flavis, ferrugineisque, alternis. (5)
- *rufiventris*. 9. *A.* atra; scutelli punctis fulvescentibus; abdominis ventre ferrugineo, tergo rufo, nigro, flavoque fasciato. (6)
- *Marsham-ella*. 10. *A.* atra; antennis, squamulisque ferrugineis; scutelli punctis, abdominisque fasciis, flavis, anticis tribus interruptis. (7)
- *cornigera*. 11. *A.* atra; labio subcornuto; abdominis ventre basi ferrugineo, tergo maculis, fasciisque flavis, variegato. (8)

12. *A.*

12. *A. atra*; labio subcornuto; abdominis ventre; *subcornuta*.  
maculisque tergi anticis, ferrugineis, pos-  
ticis sex, anoque, flavis. (9)
13. *A. atra*; labio subcornuto; abdomine maculis *Copreae*.  
anticis ferrugineis, intermediis quatuor, fas-  
ciâ, anoque, flavis. (10)
14. *A. atra*; abdomine fasciâ anticâ ferrugineâ; *lineola*.  
maculis quatuor intermediis, fasciâ, anoque,  
flavis. (11)
15. *A. atra*; scutello sulphureo; abdomine flavo; *fucata*.  
basi ferrugineo, fasciis quatuor nigris. (12)
16. *A. atra*, cinereo-villosula; abdomine piceo, *leucoph-*  
maculis septem sulphureis; antennis supra *thalma*.  
nigris. (13)
17. *A. atra*; tarsis rufis; abdomine fasciis sex *sex-cincta*  
flavis, anticis tribus interruptis. (14)
18. *A. atra*; scutelli punctis duobus, abdominisque *Schaeffer-*  
maculis sex, fasciâ, anoque, flavis. (15) *ella*.
19. *A. atra*; scutelli punctis duobus, abdominisque *connexa*.  
maculis sex, fasciis tribus, pedibusque, fla-  
vis. (16)
20. *A. atra*; pedibus ferrugineis; scutelli punctis, *Jacobee*.  
abdominisque maculis fasciisque, flavis;  
antennis supra nigris. (17)
21. *A. atra*; antennis nigricantibus; scutelli punc- *flavo-pic-*  
tis duobus contiguis, abdominisque maculis, *ta*.  
fasciisque, flavis. (18)
22. *A. atra*; antennis nigricantibus; scutello, ab- *Solidagi-*  
dominisque maculis, faciisque, flavis; seg- *nis*.  
mento primo immaculato. (19)

23. *A.*

- picta*. 23. *A. atra*; antennis nigricantibus; abdomine ferrugineo, maculis quatuor, fasciisque duabus, scutelloque, flavis. (20)
- rufo-picta*. 24. *A. atra*; antennis nigricantibus; abdomine ferrugineo, maculis sex, ano, scutelloque, flavis. (21)
- Hillana*. 25. *A. atra*; labio, squamulis, scutelloque, ferrugineis; abdomine rufo, maculis quatuor, fasciisque tribus, lutescentibus. (22)
- ochrostroma*. 26. *A. atra*; scutello sanguineo; abdomine rufo, maculis, fasciisque interruptis, flavis, variegato. (23)
- ruficornis*. 27. *A. ferrugineo*; thorace lineis tribus longitudinalibus, atris; abdomine maculis, fasciisque, flavis. (24)
- xanthosticta*. 28. *A. atra*; antennis, scutellique punctis, ferrugineis; abdomine rufo, maculis duabus flavis. (25)
- Fabriciel-la*. 29. *A. atra*; antennis rufis, nigro annulatis; abdomine ferrugineo, maculis duabus flavis. (26)
- quadri-notata*. 30. *A. atra*; abdomine ferrugineo, maculis quatuor flavis; antennis, pedibusque, nigris. (27)
- flavo-gut-tata*. 31. *A. atra*; antennis fulvis; abdomine rufo, punctis quatuor luteis. (28)
- rufo-cincta*. 32. *A. atra*; scutello ferrugineo; abdomine fusco, punctis quatuor luteis; fasciâ, ventreque, rufis. (29)
- Sheppard-ana*. 33. *A. atra*; scutello ferrugineo; abdomine fusco, immaculato. (30)
- ferruginata*. 34. *A. atra*; antennis, pedibus, abdomineque, ferrugineis; labio subcornuto. (31)



SYNOPSIS SPECIERUM. (*Apis*.)

\*\* a.

*Os* crassum, proboscide septem-fidâ, subinvolutâ; palpis exterioribus quinquearticulatis, interioribus biarticulatis.

*Antennæ* filiformes in omni sexu.

*Labium* subquadratum.

*Abdomen* breve, acutum.

*Corpus* villosum.

35. *A. aterrima*, albido-villosa; abdomine segmentis utrinque puncto albo; scutello bidentato. (1)

\*\* b.

*Os* crassiusculum, proboscide septem-fidâ, valvulis obtusis; palpis exterioribus exarticulatis, interioribus biarticulatis.

*Antennæ* rectiusculæ, filiformes.

*Labium* anticè curvum.

*Abdomen* subconicum.

*Corpus* tomentoso-maculosum.

36. *A. nigra*; trunco, abdomineque, albido varie-variegatis; pedibus ferrugineis. (1)

\*\* c. 1. a.

*Os* proboscide septemfidâ, subinvolutâ; palpis omnibus biarticulatis.

*Antennæ* filiformes in omni sexu.

*Labium* inflexum.

*Abdomen* conicum, rectum, acutissimum, ventre glabro.

*Corpus* subvillosum.

Obs. *Abdomen masculum ano spinoso, segmento septimo obsoleto.*

- conica.* 37. *A. atra*; scutello bidentato; abdomine conico, segmentis margine albidis; ano *femineo*, acutissimo, *masculo* multidentato. (1)
- inermis.* 38. *A. atra*; scutello inermi; abdomine *masculo* lineari, segmentis margine albis, ano multidentato. (2)

\* \*. c. 1.  $\beta$ .

*Os* proboscide septemfidâ, subinvolutâ; palpis omnibus biarticulatis.

*Antennæ* filiformes.

*Labium* inflexum.

*Abdomen* subcylindricum, obtusum, ano incurvo; ventre glabro.

*Corpus* subvillosum.

- punctulatis- 39. A. nigra, punctulatis-  
tissima.* scutello bidentato; abdomine segmentis margine decoloribus. (1)
- phaeoptera.* 40. *A. atra*, punctulatis-  
tissima; albido-subpubescens; ano rectangulo. (2)

\* \*. c. 2.  $\alpha$ .

*Os* proboscide septemfidâ, subinvolutâ; palpis omnibus biarticulatis.

*Antennæ* sæpius filiformes.

*Labium* inflexum.

*Abdomen* femineum horizontale, rectum, supra planiusculum; ventre hirsuto.

*Corpus* villosum.

41. *A. fulvescente-pubescentis*; abdomine brevi, ano *Willughbiella*. nigro; antennis *masculis* articulo extimo majori, manibus dilatato-ciliatis. (1)
42. *A. cinerascete-pubescentis*; abdomine *femineo centuncularis*. subcordato, segmentis margine albidis; *masculo* subgloboso. (2)
43. *A. pallido-pubescentis*; thorace fusco; maxillis *maritima*, magnis prominentibus; abdomine oblongo, segmentis margine albicantibus. (3)
44. *A. griseo-pubescentis*; abdomine *femineo sub-lignisecca*, ovali; *masculo* subgloboso, ano emarginato. (4)
45. *A. lanuginoso-flava*; capite, anoque, atris. (5) *circum-cincta*.
46. *A. aterrima, villosa*; thorace, abdominisque *xanthomelana*. basi, lanuginoso-flavescentibus. (6)

\* \*. c. 2. β.

*Os* proboscide septemfidá, subinvolutá; palpis exterioribus exarticulatis, interioribus biarticulatis.

*Antennæ* femineæ subclavatæ.

*Labium* inflexum.

*Abdomen* subglobosum, ano incurvo, ventre femineo hirsuto.

*Corpus* villosum.

Obs. *Abdomen masculum* ano inflexo, spinoso; *antennæ filiformes*.

47. *A. albido-villosa*; abdomine maculis flavis, *manicata*. lateralibus; ano *masculo* inflexo, quinque-dentato. (1)

\*\* c. 2. γ.

*Os* proboscide septemfidâ; palpis exterioribus biarticulatis, interioribus exarticulatis.

*Antennæ* subclavatæ.

*Labium* inflexum.

*Corpus* elongato-cylindricum, ventre femineo subhirsuto.

Obs. *Antennæ* masculæ filiformes.

*maxillosa* 48. *A. atra*, supra glabriuscula; maxillis prominentibus, intus barbatis; abdomine segmentis margine albis. (1)

*florisom-*  
*nts.* 49. *A. atra*, cinereo-villosa; abdomine *masculo* incurvo, ventre basi cornuto, ano obtusè bidentato. (2)

*Comp-*  
*nularum.* 50. *A. atra*, glabriuscula; ano *masculo* inflexo, acutè bidentato, ventre basi gibbo. (3)

*trunco-*  
*rum.* 51. *A. atra*; abdominis basi transversè carinato, segmentis margine albidis; ano *masculo* inflexo; inermi. (4)

\*\* c. 2. δ.

*Os* proboscide septemfidâ, subinvolutâ; palpis exterioribus quadriarticulatis, interioribus biarticulatis.

*Antennæ* subclavatæ.

*Labium* inflexum.

*Corpus* subcylindricum, villosum, interdum hirsutum, ano subincurvo, ventre femineo hirsuto.

Obs. *Antennæ* masculæ filiformes.

52. *A. aterrima*, albido subvillosa; abdomine seg-<sup>leucom-</sup>mentis margine utrinque albis, ventre lanâ<sup>lana.</sup> cinerascenti. (1)
- ✓ 53. *A. atra*, cinereo-subvillosa; scutello bidentato; <sup>spinulosa.</sup> ano *masculo* inflexo, spinuloso, ventre basi cornuto. (2)
- ✓ 54. *A. atra*, griseo-villosa; abdomine nitido, atro-<sup>Leaiana.</sup> cærulescenti, ventre lanâ ferruginâ. (3)
- ✓ 55. *A. corpore femineo* atro, albido-subpubescens; <sup>cærules-</sup> abdomine cærulescenti, segmentis margine<sup>scens.</sup> albicantibus, ventre lanâ atrâ; corpore *masculo* æneo, fulvo-pubescente; ano bidentato. (4)
- ✓ 56. *A. nigra*, rufo-villosa; abdomine segmentis <sup>Tunensis.</sup> margine pallidioribus; ano *masculo* emarginato. (5)
- ✓ 57. *A. corpore femineo* atro, hirsuto; fronte bi-<sup>bicornis.</sup> corni; abdomine æneo, hirsutie rufâ; corpore *masculo* hirsuto-cinerascenti; fronte albidâ; abdomine æneo, hirsutie rufâ, ano integro. (6)
- ✓ 58. *A. hirsuta*, aterrima; abdomine, tarsisque qua-<sup>bicolor.</sup> tuor posticis, hirsuto-ferrugineis. (7).

\* \*. d. 1.

*Os* crassum, proboscide septemfidâ, rectâ, subulato-conicâ; laciniis interioribus involutis, exteriorum longitudine; palpis exterioribus sexarticulatis, interioribus biarticulatis.

*Antennæ* femineæ subclavatæ, masculæ longitudine corporis.

*Labium* anticè emarginatum.

*Corpus* villosum.

*longicornis*. 59. *A.* nigra, pallido-villosa; thorace, abdominisque basi, hirsuto-fulvis; ano *femineo* pallido. (1)

*linguaria*. 60. *A.* hirsuto-cinereascens; abdomine nigro. (2)

*pollinaria*. 61. *A.* nigra, albido pubescens; thorace flavescenti; abdomine fusco, polline pallido. (3)

*Drucilla*. 62. *A.* nigra, hirsuto-cinereascens; antennis subtus fulvis; abdomine segmentis posticis utrinque mucronatis. (4)

\* \* . d. 2.  $\alpha$ .

*Os* crassum, proboscide septemfidâ, rectâ, subulato-conicâ; laciniis interioribus quàm exteriores brevioribus; palpis exterioribus sexarticulatis, interioribus biarticulatis.

*Antennæ* femineæ subclavatæ, masculæ thorace breviores.

*Labium* subquadratum, verticale.

*Corpus* villosum, interdum hirsutum.

*limacula*. 63. *A.* nigra, cinereo-subvillosa; facie anticè, oreque, rufescentibus; ano tomentoso-incano. (1)

*furcata*. 64. *A.* corpore *femineo* nigro, griseo-pubescenti; facie anticè, labio, anoque, villosa-ferrugineis:

corpore *masculo* atro, cinereo-pubescenti; facie anticè, labioque, flavis; abdomine apice furcato. (2)

65. *A.*

65. *A. atra*, villosopallescens; thorace flavescen- *vulpina*.  
ti; abdomine segmentis margine pallidis;  
femoribus intermediis magnis, clavatis. (3)
66. *A. atra*, cinereo-subvillosa; thorace flavescen- *rotundata*  
ti; facie anticè fulvâ; abdomine subgloboso,  
segmentis margine albis. (4)
67. *A. nigra*, fulvo-pubescens; abdomine segmen- *pallincin-*  
tis margine pallidis. (5) *ta.*
68. *A. atra*, albido-subvillosa; abdomine subglo- *subglobo-*  
boso. (6) *sa.*
69. *A. corpore femineo* atro, hirsuto; tibiis posticis *retusa*.  
scopâ fulvo-aureâ:  
corpore *masculo* nigro, hirsuto-fulvo; ano  
nigricanti; pedibus intermediis elongatis,  
crinito-pectinatis. (7)
70. *A. hirsuto-fulva*; ano nigro; plantis interme- *Haworthi-*  
diis extrorsum barbatis. (8) *ana.*
71. *A. cæruleo-virens*, glabriuscula, cylindrica; ab- *cyanea*.  
domine cuneiformi; ore *masculo* albo. (9)

\*\* d. 2. β.

*Os*, proboscide septemfidâ, rectâ, conicâ; val-  
vulis corneis, fornicatis; laciniis interioribus  
quàm exteriores brevioribus; palpis exteriori-  
bus sexarticulatis, interioribus, biarticulatis.

*Antennæ* subclavatæ; masculæ thorace brevi-  
ores.

*Labium* tuberculo munitum, anticè emargi-  
natum.

*Corpus* subhirsutum.

72. *A. violacea*, supra glabra; alis nigricantibus. (1) *iricolor*.

## \*\* e. 1.

*Os* proboscide septemfidâ, subinvolutâ; laciniis interioribus brevibus, obtusis; palpis exterioribus exarticulatis, interioribus biarticulatis.

*Antennæ* filiformes, scapo fusiformi.

*Labium* lineare, planiusculum.

*Stemmata* in triangulo.

*Tibiæ* posticæ apice inermes.

*Corpus* villosum.

*mellifica*. 73. A. corpore *femineo* pubescenti; thorace subgriseo; abdomine elongato, conico, alis corpore dimidio brevioribus; tarsis rufescentibus:

corpore *neutro* pubescenti; thorace subgriseo; abdomine subprismatico; plantis posticis intus transversè striatis:

corpore *masculo* pubescenti; trunco tomentoso-fulvescenti; oculis posticè conniventibus; alis corpore longioribus. (1)

## \*\* e. 2.

*Os* proboscide septemfidâ, subinvolutâ; laciniis interioribus brevibus, obtusis; palpis exterioribus exarticulatis; interioribus biarticulatis.

*Antennæ* subfiliformes.

*Labium* lineare, inæquale.

*Stemmata* in lineâ curvâ.

*Corpus* hirsutissimum,



74. *A. hirsuto-flavescens*; thorace fulvo. (1) *Muscorum.*
75. *A. hirsuto-cinereascens*; thorace, abdomineque, fulvis. (2) *Francilloniana.*
76. *A. hirsuto-flavescens*; thorace fulvo; abdomine maculis, fasciisque, atris. (3) *floralis.*
77. *A. hirsuto-flavescens*; thorace, anoque, fulvis; abdomine fasciis duabus nigris. (4) *Sowerbiana.*
78. *A. hirsuto-pallida*; thorace, anoque, fulvis; abdomine fasciâ mediâ atrâ. (5) *Beckwithella.*
79. *A. hirsuto-pallida*; thorace fulvo; abdomine atro, basi rufescenti. (6) *Curtisella.*
80. *A. hirsuto-albida*; thoracis fulvescentis basi, abdominisque fasciis obscuris, nigricantibus. (7) *Forsterella.*
81. *A. atra, hirsuta*; thorace, anoque, ferrugineis. (8) *agrorum.*
82. *A. hirsuto-pallida*; thorace inter alas, abdomineque fasciis, nigris, ano rufescenti. (9) *sylvarum.*
83. *A. supra hirsuto-flava*; thoracis fasciâ atrâ. (10) *fragrans.*
84. *A. supra hirsuto-flava*; thorace inter alas, abdomineque fasciis duabus, atris. (11) *Latreillella.*
85. *A. supra hirsuto-flava*; thorace inter alas, abdominisque fasciâ, atris. (12) *Rossiella.*
86. *A. atra, hirsuta*; thorace anticè, scutello, anoque, flavis. (13) *Lecana.*
87. *A. atra, hirsuta*; ano flavescenti. (14) *Francisana.*
88. *A. atra, hirsuta*; thorace anticè, scutello, anoque inflexo utrinque, flavis; abdomine subgloboso. (15) *campetris.*
89. *A. supra hirsuto-flava*, ano albido; thorace fasciâ nigrâ. (16) *lucorum.*

90. *A.*

- Jonella*. 90. A. hirsuto-flava, ano albo; thorace abdomine-  
que fasciâ atrâ. (17)
- hortorum*. 91. A. atra, hirsuta, ano albo; thorace anticè, scu-  
tello, abdominisque basi, flavis; capite elon-  
gato. (18)
- Scrimp-  
shirana*. 92. A. atra, hirsuta, ano albo; thorace anticè,  
scutello, abdominisque basi, flavis. (19)
- Barlutel-  
la*. 93. A. atra, hirsuta, ano albo; vertice, thorace  
anticè, scutelloque, fulvis; abdomine sub-  
globoso. (20)
- Tunstall-  
ana*. 94. A. atra, hirsuta, ano albo; thorace anticè, scu-  
telloque, fulvescentibus. (21)
- vestalis*. 95. A. atra, hirsuta, ano albo, apice nigro; thorace  
basi flavo. (22)
- virginalis* 96. A. atra, hirsuta, ano albo; thoracis cingulo,  
abdominisque segmentis duobus anticis,  
flavis. (23)
- terrestris*. 97. A. atra, hirsuta, ano albo; thoracis basi, abdo-  
minisque fasciâ, flavis. (24)
- Soroensis*. 98. A. atra, hirsuta, ano albo. (25)
- subinter-  
rupta*. 99. A. atra, hirsuta, ano fulvo; thoracis basi, ab-  
dominisque fasciâ anticâ, flavis. (26)
- Donovan-  
ella*. 100. A. atra, hirsuta, ano rufo; thoracis abdomi-  
nisque basi flavâ. (27)
- Burrell-  
ana*. 101. A. hirsuto-flava, ano fulvo; thoracis abdo-  
minisque subglobosi fasciâ atrâ. (28)
- Cullum-  
ana*. 102. A. hirsuto-pallida, ano ferrugineo; thoracis  
abdominisque fasciâ atrâ. (29)
- pratorum*. 103. A. atra, hirsuta, ano fulvo; thorace anticè  
flavo. (30)

104. *A. atra*, hirsuta, ano rufo; thoracis limbo, *Allinella*.  
abdominisque lateribus, cinerascens. (31)
105. *A. hirsuta*, fusco-cinerascens, ano fulvo; tho-*Derham-*  
racis abdominisque fasciâ atrâ. (32) *ella.*
106. *A. corpore femineo* atro, hirsuto, ano rubro: *lapidaria*.  
corpore *masculo* supra atro, hirsuto, ano  
rubro; facie, thoracisque basi et apice, fla-  
vis. (33)
107. *A. atra*, hirsuta, ano fulvo; tibiis posticis cor-*Raiella*.  
biculâ rufâ. (34)
108. *A. atra*, hirsuta, ano fulvo; alis nigricanti-*rupestris*.  
bus. (35)
109. *A. atra*, hirsuta, ano fusco; capite *masculo* *subterra-*  
subgloboso; maxillis supra tomentoso-ful-  
vis. (36) *nea.*
110. *A. hirsuta*, aterrima. (37) *Harris-*  
*ella.*



MONOGRAPHIA  
APUM ANGLIÆ.

PARS QUARTA.

DESCRIPTIONES, SYNONYMA AUCTORUM,  
MUSEA in quibus species heic descriptæ asservantur, necnon  
OBSERVATIONES quasdam miscellaneas linguâ vernaculâ  
scriptas, complexa.

---

En istæ sunt partes viarum ejus. *Job.*

---

O JEHOVA,  
Omnia ista animantia in TE sperant  
ut des illis escam tempore suo;  
TE ipsis dante, illam colligunt,  
aperiente MANUM Tuam satiantur bono;  
TE recipiente spiritum eorum pereunt  
et in pulverem revertuntur;  
TE emittente SPIRITUM Tuum creantur,  
et renovas faciem terræ.  
Gloria JEHOVÆ erit in secula  
et lætatur JEHOVA operibus suis.  
Canam JEHOVÆ in diebus vitæ meæ  
reflectam SAPIENTIÆ Ejus radios, quamdiu superero.  
Benedic anima mea JEHOVÆ.  
HALLELU-JAH. *David.*

## MELITTA. (\*. a.)

*succincta*. 1. **M.** nigra, albido-villosa; thorace fulvo; abdomine ovato; segmentis margine albis.

*Apis succincta* thorace flavescente subvillosa; abdomine nigro, cingulis quatuor albis.

*Lin. Syst. Nat. ed. 12. n. 18. Fn. Suec. 1694.*

*Vill. Ent. Eur. 3. n. 15.*

*Först. Cat. Brit. Ins. n. 714. Apis, n. 7.*

*Andrena succincta* thorace hirto, fulvo; abdomine nigro; cingulis quatuor albis.

*Fab. Ent. Syst. Em. n. 31.*

*Lin. Syst. Nat. ed. Gmel. p. 2792. n. 18.*

*Grew's Rarities, § 7. c. 1. p. 154.*

FIG. *Reaum. tom. 6. mem. 5. p. 131—39. tab. 12. fig. 1—13.*

*Apis succincta. Christi Hymenopt. p. 185. tab. 15. fig. 7.*

MUS. *D. Smith Linnean, Latham, Marsham, Trimmer, Kirby, Long. Corp. Lin. 4 $\frac{3}{4}$ .*

*Hub. prope Londinum. Nidum in murorum cavitatibus secundum Reaumurium, in fistulis sambucinis auctore Grewio, cellulis e membranâ diaphanâ, tenuissimâ confectis, struit.*

DESCR. Acul.

CORPUS nigrum, pube albescenti.

CAPUT. *Facies* anticè pube, densâ admodum, albicanti, posticè fulvescenti; tecta. *Nasus* glabriusculus, ruguloso-punctulatus. *Antennæ* capitis longitudine, nigræ.

TRUNCUS supra punctatus, pube fulvâ vestitus.

*Squamulæ* nigro-piceæ. *Alæ* hyalinæ, nervis nigrican-

nigricantibus. *Pedes nigri*, albido-pilosi, femoribus posticis hirtis.

ABDOMEN fusco-nigrum, ovatum, acutum, supra valde convexum *f. gibbum*; segmento primo punctulatissimo glabro, secundo basi et apice, reliquis apice, latè tomentoso-niveis.

Maris *Antennæ* thoracis longitudinè articulis arcuatis.

The *Melitta* here described, is the genuine *Apis succincta* of Linneus, as I find upon comparing it with the authentic specimen preserved in the Linnean cabinet: the rostrum, however, or proboscis, scarcely merits the epithet of *subulatum* which he has given to it. In the same cabinet there is another insect of this family, labelled by that great naturalist *Apis marginata*; this is much smaller than *M. succincta*, but in other respects it scarcely differs from it.

I have excluded the synonym of Geoffroy, referred to by Linneus for this insect, since it appears to me to belong rather to *Apis rotundata* of Fabricius. He places it next to *Apis longicornis*, and says of it "Cette abeille a-beaucoup de rapport avec la précédente;" and again, "Le levre supérieure et le devant de la tête de l'insecte sont d'un jaune citron(a)." Both of which circumstances agree well with *A. rotundata*, but not at all with *M. succincta*. Gmelin and Villars refer to another

(a) Hist. Ins. Par. tom. 2. p. 413. n. 11.

synonym

synonym of this author for our insect, which I have likewise excluded, as to me it appears intended for the species that I shall next describe. That this species is Reaumur's Abeille "*qui fait son nid de membranes soyeuses*," appears evidently from a specimen of that insect which was sent by M. Latreille, the ingenious author of the work upon the Genera Insectorum noticed above (b); for my inspection, under the name of *Hylæus glutinosus*. This specimen was rather smaller than ours, but there was no material difference between them.

Panzer's *Andrena succincta* (c) is very different from the true one; it appertains to another family of this genus, and seems very nearly related to *Melitta Swammerdamella*.

Linneus mentions the present species as very rare in Sweden; the aculeate sex has often been taken in the neighbourhood of London, but of the male I have seen only a single specimen, which is in the cabinet of Dr. Latham.

- fodiens.* 2. *M. nigra*, albido-villosa; thorace fulvescenti; abdomine conico, basi subretuso; segmentis margine pallidis.

*Apis sylvestris* in terrâ foramen sibi fodiens, an tertia Purchasii?

*Willugh.* in *Rai. Hist. Ins.* p. 244.

*Apis nigra*; thorace hirsuto fulvo; abdomine glabro incisuris albis.

*Geoffr. Hist. Ins. Par. tom. 2. p. 411. n. 7?*

(b) Vol. 1. p. 80. (c) Fn. Ins. Germ. Init. n. 7. tab. 10.

*Apis*



*Apis fodiens*. Fourcroy. Ent. Par. n. 7?

FIG. Acul. Tab. 15. fig. 1. Mas. *ibid.* fig. 2.

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ, in floribus *Jacobeæ* femina semel atque iterum lecta; mas aggeres circum apricos volitat, sed rarus admodum. Multæ simul habitant, et foramina in terrâ fodiunt, teste Willughbio, terram egerentes ad modum vermium, ubi cellas quasdam rotundas ex albâ et tenui cute conficiunt, in quibus mel densum sordidum reponunt.

DESCR. Acul.

CORPUS nigrum, albido-pubescens.

CAPUT. *Facies* anticè pube densâ admodum albicanti, posticè fulvescenti, tecta. *Nasus* glabriusculus, ruguloso-punctatus. *Antennæ* capitis longitudine, piceo-nigræ.

TRUNCUS supra punctulatissimus, pube fulvescenti mollis. *Squamulæ* pallidæ. *Alæ* hyalinæ nervis nigricantibus. *Femora* postica densiùs barbata.

ABDOMEN elongatum, subconicum, acutum, supra tomento nigricanti, nisi a latere et sub lente vix conspicuo, vestitum, basi retusum et utrinque villosum; segmento primo punctulatissimo margine utrinque, secundo basi apiceque, reliquis apice, tomentoso-pallidis.

Maris *Corpus* magis angustum. *Facies* hirsutie densâ et longâ pallescenti. *Antennæ* capite longiores. *Squamulæ* nigræ. *Abdomen* basi hirsutulum, segmentis margine villosopallidis.

The aculeate sex of this and the preceding species are extremely similar to each other; but the abdomen of *M. fodiens* is proportionally longer, more conical, and much less convex; it is also rather retuse at its base. The males, however, are more strikingly distinguished. I am a little dubious as to the synonym I have quoted from Geoffroy, but I think it ought to be referred to this rather than to *M. succincta*, on account of its nidificating under ground. His description will suit either equally well. Concerning the identity of Willughby's *Apis sylvestris in terrâ foramen sibi fodiens*, with our insect, I have scarcely any doubt.

\*. b.

*annulata*. 3. *M. atra*; fronte maculatâ; tibiis posticis albido annulâtis.

*Apis annulata* nigra; fronte, annulisque pedum, albis.  
*Lin. Syst. Nat. ed. 12. & Gmel. p. 2779. n. 33. Fn. Suec. 1706.*

*Miill. Zool. Dan. 1909.*

*Fn. Frid. 647.*

*Vill. Ent. Eur: 3. n. 26.*

*Hylæus annulatus. Fab. Ent. Syst. Em. n. 12.*

*Vespa* nigra; fronte, flavâ.

*Geoffr. Hist. Ins. Par. 2. p. 380. n. 14. NB.*

FIG. *Tab. 15. fig. 3.*

MUS. *D. Smith* Linnean. *Marsham, Haworth, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin.  $2\frac{1}{2}$ — $3\frac{1}{2}$ .

*Hab.* Barhamiæ et alibi, in floribus *Risedarum* frequens.

DESCR. Acul.

CORPUS atrum.

CAPUT

CAPUT obscurum, punctulatissimum. *Antennæ* nigrae. *Frons* utrinque ad oculos maculâ luteâ.

TRUNCUS obscurus, punctulatissimus. *Squamulæ* puncto albo notatæ. *Alæ* subhyalinæ; nervis nigris. *Pedes* nigri, tibiis posticis basi luteo-albis.

ABDOMEN atrum, lucidum, parvâ pube parum canescens.

*Var. β* antennis subtus picëis; frontis maculis; tibiarumque annulo, flavis; tuberculis dimidiato-flavis.

$\gamma$  frontis maculis obscurè ferrugineis; tuberculis puncto flavo.

$\delta$  antennis subtus fulvis; frontis maculis triangularibus, rufis.

$\epsilon$  antennis subtus obscurè rufescentibus; frontis maculis trapeziformibus, tuberculisque, flavis.

Maris *Antennæ* capite longiores, subtus obscurè fulvæ, scapo crassiusculo. *Facies* infra antennas lutea, punctis duobus nigricantibus. *Collare* utrinque strigâ albâ. *Plantæ* posticæ, interdum et intermediæ, basi albidæ. *Tibiæ* anteriores antrorsum rufescunt. *Abdomen* punctulatissimum.

*Var. β* frontè, tuberculisque, luteo-albis.

The insect I have here described agrees with the authentic specimens of *Apis annulata*, in the Lin-

near cabinet; indeed, several distinct species are there placed together as varieties of it, which Linneus appears to have regarded merely as such. Panzer's *Hylæus annulatus* (*d*) is a very different insect, and belongs to a male of my third family of this genus. The observation of Fabricius upon his "*Moscham spirat*," proves its identity, at least with one of this family.

*annularis*. A. M. atra; fronte maculatâ; tibiis omnibus flavo annulatis.

FIG. *Sphex annulata* atra, nitida; abdomine subpetiolato; tibiis quatuor posticis flavis, nigro annulatis.

Panzer. *Fn. Ins. Germ. Init. n. 53. tab. 1.*

MUS. D. Smith Linnean. *Marsham, Haworth, Trimmer, Kirby.*

Long. Corp. Lin.  $2\frac{1}{4}$ —3.

*Hab.* Barhamiæ cum præcedente.

DESCR. Acul.

CORPUS atrum.

CAPUT subtriangulare, anticè truncatum, obscurum, punctulatissimum. *Antennæ* nigræ, subtus fulvæ. *Facies* maculis duabus flavis, antrorsum acutis, infra antennis notata.

TRUNCUS obscurus, punctulatissimus; tuberculis, punctoque squamularum, flavis. *Pedes* atri, tibiis omnibus basi flavis.

ABDOMEN speciei hujusce abdomen præcedentis exactissimè refert.

(*d*) *Fn. Ins. Germ. Init. n. 55. tab. 3.*

*Var.*

*Var. β* fronte, macularum loco, punctis duobus obscuris, pallidis, notatâ.

Maris *Caput* anticè rotundatum. *Facies* infra antennis luteo-alba. *Antennæ* subtus dilutè fulvæ, scapo brevi conico. *Truncus* albidopilosulus, tuberculorum apice, tarsisque, albidis, tibiis luteis nigro annulatis.

*Var. β* maxillis albis, apice fuscis; tibiis anticis antrorsum rufis, digitis nigricantibus.

$\gamma$  facie infra antennis pallidè rufescenti; nasi lateribus, antennisque nigris, scapo puncto flavescenti; tuberculis immaculatis; tibiis basi, anticis quatuor extrorsum, flavis; plantis flavescentibus; digitis obscurè ferrugineis.

$\delta$  facie maculis tribus distinctis, flavis; antennis subtus piceis, aliàs præcedenti similimus.

This species appears to me to be very distinct from *M. annulata*: the head of the aculeates is rounder, and truncate before. The spots of the front, instead of being close to the eyes, are separated from them, and placed just below the base of the antennæ. All the tibiæ are yellow at their base. The scapus, also, of the antennæ of the males is shorter, and more conical.

5. *M. atra*; tibiis flavis, nigro annulatis; antennis dilatata. scapo patelliformi.

FIG. Tab. 15. fig. 4.

MUS. *D. Smith* Linnean. *Kirby*.

Long. Corp, Lin. 3.

*Hab.* Barhamiæ, rarissima.

DESCR. Mas.

CORPUS atrum.

CAPUT triangulare. *Maxillæ* albæ, apice fuscæ.

*Antennæ* nigræ, subtus apiceque fulvæ; scapo dilatato, subquadrato, concavo-convexo *f.* patelliformi, dimidiato-luteo (*e*). *Facies* infra antennis alba.

TRUNCUS obscurus, punctulatissimus, cinerascenti-pilosulus; tuberculorum vertice, punctoque squamularum, flavis. *Alæ* subhyalinæ, nervis nigris. *Pedes* flavi, femoribus, tibiærum posticarum annulo, anteriorumque quatuor maculâ, nigris.

ABDOMEN parvâ pube, vix conspicuâ, respersum.

The extraordinary size and shape of the scapus of the antennæ, which much resembles a Patella, will, I think, sufficiently justify me for considering this insect as a distinct species. Were this circumstance a sexual distinction only, the other males of the family would have it as well as this, which is not the case. I observed a variety of this insect in the Linnean cabinet with the dilated joint entirely black.

(*e*) Tab. 1. \*. b. fig. 8.

6. M.

6. *M. atra*; fronte maculatâ; abdomine segmento *signata*.  
 primo margine utrinque albo.

*Vespa nigra*; fronte, thoracisque basi, flavis. }  
*Geoffr. Hist. Ins. 2. p. 379. n. 14.* } Var.  $\gamma$ .  
*Vespa pratensis. Fourcroy, Ent. Par. n. 14.* }

FIG. *Sphex signata* atra, nitida, immaculata; alis albis;  
 fronte sub antennis maculis duabus flavis.  
*Panzer, Fn. Ins. Germ. Init. n. 53. tab. 2.*

MUS. *D. Marsham, Haworth, Trimmer, Sowerby, Kirby,*  
*Long. Corp. Lin. 3 $\frac{1}{2}$ .*  
*Hab. Barhamiæ, cum præcedentibus obvia.*

DESCR. Acul.

CORPUS atrum, obscurum, punctulatissimum.

CAPUT subtriangulare. *Antennæ* subtus ob-  
 scurè fulvæ. *Facies* anticè utrinque ad ocu-  
 los maculâ fulvâ.

TRUNCUS. *Tuberculi* vertice lutei. *Squamulæ*  
 puncto flavo. *Alæ* hyalinæ, nervis nigris. *Pedes*  
 atri; tibiis anticis antrorsum obscurè rufis.

ABDOMEN lucidum, punctulis minutissimis per-  
 seminatum; tergo valde convexo, segmento  
 primo margine utrinque pilis brevibus, de-  
 cumbentibus, niveis, ciliato.

*Var.  $\beta$*  antennis subtus piceis, collare utrinque  
 albo.

$\gamma$  antennis subtus piceis, collare tuber-  
 culisque luteis.

Maris *Corpus* pilis brevissimis, albidis, subinca-  
 num. *Facies* infra antennis albida. *Anten-  
 næ* scapo crassiusculo.

This *Melitta* is larger than any of the preceding species of this family. It is entirely black, excepting only the underside of its antennæ, the spots on its front, a white fringe of short hairs on each side of the margin of the first dorsal segment of the abdomen, and its anterior tibiæ. Variety  $\gamma$ , appears to be *Vespa nigra, fronte thoracisque basi flavis* of Geoffroy, I am not certain that this may not be more than a variety. The aculeate sex of *M. annulata*, *annularis*, and *signata* have each a male agreeing with them in their peculiarities, a circumstance which furnishes a very strong proof that they are distinct species. On the other hand they all emit the same strong scent of balm, and are to be found usually on the same plants, viz. the different species of *Reseda*, to which they appear to confine themselves; this seems to indicate that they are only varieties. But when we consider that the same circumstances attach to *M. dilatata*, so remarkably distinguished from the other males by the shape of the scapus of its antennæ, I think we are warranted in concluding that they point out the habit of a family, rather than of a species.

\* \* . a.

*gibba.* 7. *M. atra*; abdomine ferrugineo, apice nigro.

*Nomada gibba* nigra; abdomine rufo, apice nigro.

*Fab. Ent. Syst. Em. n. 12.*

*Lin. Syst. Nat. ed. Gmel. p. 2794. n. 202.*

*Vill. Ent. Eur. 3. Apis, n. 68.*

*Ross. Fn. Etrusc. Mantiss. n. 325.*

*Apis*



*Apis nigra*; abdomine rufo, nitido, apice nigro,

*Geoff. Hist. Ins. Par. 2. p. 415. n. 17.*

*Apis rufescens. Fourcroy. Ent. Par. n. 17.*

*Nomada succincta* abdomen ellipticum basi rufum.

*Scop. Ann. Hist. Nat. 4. p. 45. n. 2?*

FIG *Proabeille* noire à ailes brunes, à antennes en massue,  
dont le ventre est roux à extrémité noire.

*De Geer. 2. ptie. 2. Mem. 12. p. 755. tab. 32. fig. 6.*

*Reaumur. 6. Mem. 4. p. 96. tab. 9. fig. 4—7.*

*Apis gibba. Christii Hymenopt. p. 183. tab. 15. fig. 3.*

MUS. *D. Banks, Marsham, Latham, Haworth, M<sup>c</sup>Leay,  
Sowerby, Trimmer, Kirby.*

Long. Corp. Lin.  $3\frac{1}{4}$ —4.

*Hab.* Barhamiæ in floribus et aggeribus apricis, ubi profundè nidificat, passim et frequens obyia.

DESCR. Acul.

CORPUS atrum, cinereo-subpubescens.

CAPUT punctulatissimum. *Maxillæ* nigræ, fasciâ ferrugineâ. *Antennæ* subtus piceæ.

TRUNCUS punctulatissimus. *Squamulæ* piceæ. *Alæ* paululùm infuscatae, nervis nigris. *Pedes* nigri, cinerascens-pilosuli; tibiis anticis antrorsum ferrugineis; digitis apice rufescentibus.

ABDOMEN ovatum, nitidum, supra convexum, acutiusculum, ferrugineum, segmentis duobus ultimis nigris.

*Var. β* minor; abdomine rufo, apice nigro; tibiis anticis rufis.

*γ* tibiis anticis totis nigris.

Maris *Facies* anticè tomentoso-alba. *Antennæ* submoni-

submoniliformes, thorace breviorès, fusco-nigræ. *Abdomen* subovale, segmentis tribus ultimis nigris.

That this is the genuine *Nomada gibba* of Fabricius appears from the specimens labelled by him in the cabinet of Sir Joseph Banks, with which I formerly compared it. He observes, "*variat sexu abdomine toto rufo.*" I believe I possess the three sexes of this insect, but in all mine the anus is black. Amongst my exotic *Apes*, I have one which agrees with this description, but it is not at all related to *M. gibba*, though, at first sight, it somewhat resembles it. It is a genuine *Apis*, and seems to come near to *A. variegata*, but it has a singular labium, elongate, and I suppose, in its natural situation, inflected; gibbous at its base and shaped like an isosceles triangle, with the angle at the vertex somewhat rounded. Of how many joints its exterior palpi consist, I have not yet discovered. It may possibly be a connecting link between *Apis variegata*, and the family with an inflected lip. Scopoli says of his *Nomada succincta*, which is quoted, as synonymous with *M. gibba*, by Fabricius, and after him by Villars and Gmelin. "*Ceriferâ vix minor, abdominis segmenta tria nigra sunt, margine tamen pallidè rufo. Nervi alarum majores pariter rufi.*" Circumstances which do not altogether agree with our insect. On this account I have added a mark of interrogation to  
 this

this synonym. This species, in common with many others of the different families of this genus, is frequent in bare sunny banks. Reaumur found pupæ of three sizes in its cells (*f*) whence we may conjecture that it has three sexes. I take  $\alpha$  to be the female, and the smaller variety  $\beta$  to be the neuter. From an examination of the proboscis of this species, this illustrious naturalist, as I observed above, and the Baron De Geer, were led to separate the genus, which they have called *Proabeille*, from *Apis*.

♂. *M. atra*; abdomine rufo, apice, pedibusque, *Geoffrel-*  
nigro-piceis; maxillis, tarsis, tibiisque anticis,<sup>*la.*</sup>  
rufescentibus.

*Geoffr. Hist. Ins. Par. 2. p. 416. n. 17. NB.*

FIG. *Tab. 1. fig. 5.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Sowerby,*  
*Trimmer, Kirby.*

Long. Corp. Lin.  $2\frac{1}{2}$ .

*Hab. Barhamiæ cum præcedente frequentissima.*

DESCR. Acul.

CORPUS atrum. glabriusculum.

CAPUT. *Maxillæ* itemque *Labiū* rufæ. *Antennæ* piceæ, subtus obscurè rufescentes.

TRUNCUS nitidus, punctulatus. *Squamulæ* piceæ. *Alæ* paululū infuscatæ, splendide iricolores, nervis ferrugineis. *Pedes* picei,

(*f*) Reaum. tom. 6. Mem. 4. p. 96, 97.

pallido-

pallido-pilosi; tarsi omnibus, tibiisque anticis  
antrorsum, rufis.

ABDOMEN ovatum, nitidum, rufum, segmentis  
duobus ultimis nigro-piceis. *Anus* pallido-  
pilosus.

Geoffroy supposes this insect to be merely a  
variety of the preceding species, but the difference  
of size so far exceeds the limits which separate the  
sexes in this genus, that I cannot help regarding it  
as distinct. It differs likewise in the colour of its  
maxillæ, lip, antennæ, legs, and abdomen.

*Sphēcoides.*

9. *M. aterrima*; abdomine ferrugineo, basi apice-  
que nigro; alis nigricantibus.

*Sphex gilba* nigra; abdomine ferrugineo apice fusco;  
alis primoribus apice nigricantibus.

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2732. n. 33. Fn.*  
*Suec. 1658.*

*Vill. Ent. Eur. 3. n. 40.*

*Fab. Ent. Syst. Em. n. 59.*

FIG. *Apis rufa. Christii Hymenopt. p. 201. tab. 17. fig. 12.*

MUS. *D. Smith Linnæan. Kirby.*

Long. Corp. Lin. 4.

*Hab. Barhamiæ cum præcædentibus, sed rarior.*

DESCR. Acul.

CORPUS aterrimum, punctulatum, cinereo ra-  
riùs pilosulum.

CAPUT. *Vertex* pilositate parvâ, atrâ. *Labium*  
triangulare. *Maxillæ* fasciâ fuscâ. *Antennæ*  
nigræ.

TRUNCUS

TRUNCUS. *Thorax* nitidus, glaber. *Squamulæ* nigrae. *Alæ* infuscatæ, apice, nervisque, nigris; anastomosi ferrugineâ. *Pedes* atrî, subpilosi, digitis rufescentibus.

ABDOMEN subovale, nitidum, segmento primo basi nigro, margine, duobus intermediis totis, antepenultimique basi, ferrugineis, reliquis nigris.

The species I have now described, very strongly resembles *M. gibba*; but the base, as well as the apex of the abdomen, is black. This part is also more oval, the lip is longer and triangular, and the wings have a black cloud at their tip. It is the genuine *Sphex gibba* of Linneus, as appears from the remains of the authentic specimen in the Linnean cabinet. I have excluded the synonym of Scopoli (g), since it is evidently intended for a different insect, nearly related to *Sphex viatica* and belonging to the Fabrician genus *Pompilus*. *M. sphecoïdes* appears to be the insect figured by Christianus under the name of *Apis rufa*.

10. *M. atra*; antennis piceis, thorace longioribus; monilicornis.  
abdomine cingulo rufo.

FIG. *Var. β. Tab. 1. fig. 6*

MUS., *Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ .

Hab. *Barhamiæ*, bis capta.

(g) Ent. Car. n. 786.

DESCR.

DESCR. Mas.

CORPUS atrum, albido-pilosulum.

CAPUT pube incanâ. *Maxillæ* apice ferruginææ.

*Facies* infra antennas tomentososo-argentea.

*Antennæ* piceæ, thoracis longitudine, articulis arcuatis; certo situ tamen submoniliformes sunt (*h*).

TRUNCUS pilis rarioribus subincanus. *Thorax* nitidus, punctatus. *Squamulæ* piceæ. *Alæ* subhyalinæ, iricolores; nervis, excepto costali interiori fusco, testaceis. *Pedes* nigri, pallido subpilosi, tibiis piceis, anticis antrorsum rufopulvis; tarsis rufescentibus.

ABDOMEN lineare, segmentis duobus intermediis, primique margine, rufis.

*Var. β* abdomine segmentis intermediis ferrugineis, nebulâ obscurâ, piceâ.

This may possibly be the male of the preceding species, but the differences between them are too considerable to take this for granted without further proof. The antennæ of this and other males in this family, seen under a strong magnifier, appear to consist, like those of the male of *A. longicornis*, &c. (*i*), of minute lenses, and probably of the same hexagonal form.

*picea.* 11. *M. atra*, glabriuscula; abdomine piceo, nitido, segmentis intermediis basi et utrinquè ferrugineis.

(*h*) Tab. 2. \*\*. a. fig. 9. (*i*) Tab. 10. \*\*. d. 1. fig. 8.

MUS.

MUS. Kirby.

Long. Corp. Lin. 4.

*Hab.* Barhamiæ in floribus semel lecta, anno 1799.

DESCR. Mas.

CORPUS atrum, glabriusculum, punctulatum.

CAPUT. *Facies* infra antennis tomentoso-argentea. *Antennæ* nigræ, thoracis longitudine, articulis arcuatis.TRUNCUS. *Thorax* nitidus. *Squamulæ* nigræ. *Alæ* hyalinæ, iricolores, apice, nervoque costali interiori, nigris; venis anastomosique flavescensibus. *Pedes* nigri, pallido-pilosuli.ABDOMEN lineare, nitidissimum, punctulatissimum, nigro-piceum, segmentis duobus intermediis ferrugineis, nebulâ piceâ. *Venter* basi ferrugineus.12. M. atra; abdomine subovali, nitidissimo, *cin-divisa*.  
gulo ferrugineo; antennis thorace brevioribus.

MUS. D. Marsham, Latham, Trimmer, Lathbury, Kirby.

Long. Corp. Lin. 2—3.

*Hab.* Barhamiæ e rarioribus una.

DESCR. Mas.

CORPUS atrum, piloso-subincanum.

CAPUT punctulatum. *Os* rufescens. *Antennæ* nigræ, thorace breviores, submoniliformes. *Facies* infra antennis tomentoso-argentea.TRUNCUS. *Thorax* punctulatissimus. *Squamulæ* nigræ. *Alæ* hyalinæ, iricolores, nervis nigricantibus.

## MELITTA: (\*\*. a.)

cantibus. *Pedes nigri, pallido-pilosuli; tarsis omnibus, tibiisque anticis, rufescentibus.*

ABDOMEN breve, subovale, nitidissimum, nigrum; segmentis duobus intermediis, primique margine, ferrugineis.

*Var. β* abdomine segmentis intermediis nebula nigricanti.

*γ* abdomine piceo, segmentis intermediis margine et utrinque ferrugineis.

*δ* tertiâ ferè parte minor, alarum nervis, excepto costali interiori nigro, testaceis; abdomine segmentis intermediis fasciâ nigricanti. An eadem?

*ε* tertiâ parte minor, abdomine nigro, cingulo angusto rufo.

Its black antennæ not so long as the thorax, and its short abdomen nearly oval, sufficiently distinguish this *Melitta* from the one just described, which it somewhat resembles. Its head and thorax likewise are not shining, which occasions a striking contrast between them and its lucid abdomen, on which account I have named it *divisa*. I am not clear that variety *γ* is not a distinct species, but as the only specimen I ever possessed of it was accidentally destroyed, unless I could have given it a more thorough examination, I thought it most advisable to consider it as a variety. Varieties *δ* and *ε*, which are little more than half as big as *α*, may also be distinct, and are perhaps males of *M. Geoffrella*.

\*\*. b.



\*\* b.

13. *M. atra*, cinereo-subpubescens; abdomine <sup>quadri-</sup>convexo; segmentis margine albis; pedibus, <sup>cincta.</sup> anoque, villosopallidis.

MAS:

*Hylæus quadricinctus* niger, abdomine cylindrico, fasciis quatuor albis.

*Fab. Syst. Ent. Em. n. 3.*

*Lin. Syst. Nat. ed. Gmel. p. 2779. Apis, n. 96.*

*Vill. Ent. Eur. 3. Apis, n. 64.*

*Apis hirsuta*; pedibus croceis; abdomine nigro, incisuris albis.

*Geoffr. Hist. Ins. Par. 2. p. 414. n. 13.*

*Apis hortensis. Fourcroy. Ent. Par. n. 13.*

*Vill. Ent. Eur. 3. n. 84.*

MUS. *D. Latham* acul. *Kirby* acul. mas.

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* prope Londinum rarissima a *D. Latham* et *Marsham* lecta.

DESCR. Acul:

CORPUS atrum, pube cinerascenti.

CAPUT. *Antennæ* nigrae, subtus piceae. *Oscilla* barbata flavescenti.

TRUNCUS. *Thorax* punctulatissimus. *Metathorax* posticè rotundatus. *Squamulae* piceae. *Alae* hyalinae, apice paulò obscuriores; nervis, excepto costali interiore nigro, flavescentibus. *Pedes* nigri; tibiis tarsisque pilis pallidè luteis hirti; digitis omnibus, plantisque posticis, rufescentibus.

ABDOMEN breve, valde convexum, ovale, punctulis minutissimis, creberrimis, irroratum;

segmentis margine latè tomentoso-albis, antennis interruptè. *Anus* et *Venter* pallido-hirti. *Maris Corpus* atrum, pube albidâ canescens. *Facies* infra antennis villosa-nivea. *Nasi* apex flavus. *Maxillæ* basi valde dilatatae (k). *Genæ* subtus concavae. *Antennæ* thoracis longitudine, submoniliformes, fulvæ, supra basi fuscae, scapo toto nigro, articulis extimis pellucidis. *Pedes* flavi, femoribus nigris, anterioribus quatuor antrorsum fulvo-flavis; tibiis posticis liturâ fusca. *Abdomen* lineare, ano obtuso. *Venter* anum versus depressus f. concavus.

The male insect now described, appears evidently to be the *Hylæus quadricinctus* of Fabricius, and, I think, also *Apis*, n. 13. of Geoffroy, named by Fourcroy *A. hortensis*, although Villars has introduced them both into his work as distinct insects. The remarkably dilated maxillæ, and concave genæ, distinguish this sex of *M. quadricincta*, from the male of the following species, which it otherwise much resembles. I have never met with either sex of this insect in this part of England; but it has been taken, the aculcate sex twice by Dr. Latham, and the male once by Mr. Marsham, in the neighbourhood of London. I will not take upon me to assert positively, that these are the two sexes of the same individual species; but as they agree together as much as males and females in this family usually do, I thought it better to consider them as such,

(k) Tab. 2. \*\*, b. fig. 10. bb. and fig. 11.

than

MELITTA. (\*\*. b.)

than to multiply the species without necessity by making two of them.

14. *M. atra*, rufescente-pubescentis; abdomine seg-<sup>rubicun-</sup>mentis margine albis; tarsis, tibiisque posticis,<sup>da.</sup> fulvis.

FIG. *Apis rubicunda*. *Christii Hymenopt.* p. 190. tab. 16. fig. 10.

*Apis flavipes* pubescens, atra; thorace, tibiis tarsisque, flavo-villosis; abdomine subcompresso, segmentis margine albido pubescentibus.

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 17?*

MUS. *D. Smith, Marsham, Latham, McLeay, Lathbury, Haworth, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ: Sexus aculeatus tempore æstivo et autumnali flores frequentat, pungens acriter. Mas tempore autumnali proveniens, in *Carduis* et *Centaureis* præcipuè quærendus.

DESCR. Acul.

CORPUS atrum, pube rufescenti.

CAPUT. *Antennæ* nigræ. *Os* barbâ flavescenti-aureâ.

TRUNCUS. *Thorax* ferrugineâ pube, sed haud densâ, tectus. *Metathorax* posticè rotundatus. *Squamulæ* ferrugineæ. *Alæ* hyalinæ, apice obscuriores; nervis, excepto costali interiore nigro, testaceis. *Pedes* nigri, rufescente-pilosi; tarsis, tibiisque posticis, fulvis, pilis fulvo-aureis hirtis. *Plantæ* posteriores liturâ nigricanti.

MELITTA. (\*\*. b.)

ABDOMEN subovale, basi pallido-villosulum, tergo minùs convexo, pilis atris, nisi a latere vix conspicuis, scatenti; segmentis margine tomentoso-niveis, anticis interruptè. *Venter pallido-hirtus.*

*Var. β* minor, abdomine subcuneiformi; aliàs, ut ovum ovo,  $\alpha$  simillima.

Maris *Nasi* apex *Labiumque* lutei. *Antennæ* thorace breviores. *Squamulæ* nigræ. *Pedes* sulphurei, femoribus, tibiærumque maculâ subannulari, nigris. *Abdomen* lineare, segmentis quatuor anticis margine utrinque tomentoso-albis. *Venter* anum versus depressus.

*Var. β* cinereo-subpubescens; tibiis utrinque liturâ nigricanti.

$\gamma$  cinereo-subpubescens; antennis subtus fulvescentibus: abdomine segmentis tribus anticis margine utrinque tomentoso-albis.

An eadem?

The aculeate sex of this species appears to be the *Apis rubicunda* of Christius, but I am not so certain that it is the *Apis flavipes* of Panzer; his figure agrees with it very well, but his description differs from it in some respects. Though very similar to the preceding species, it is certainly distinct; for its tarsi, the first pair excepted, and its posterior tibiæ, are not only covered with tawny hair, but their substance is likewise of the same colour; the down of the body also is rufescent, while

while that of the thorax is ferruginous. In the male, the differences are still more striking. The lip is yellow instead of black, the maxillæ are not dilated at their base (*l*), the genæ are convex below. The antennæ and thighs are black. Variety  $\beta$  of the aculeate sex in nothing differs from  $\alpha$ , except size, and the form of its abdomen, the base of which is narrower than the apex. It may be the neuter.

15. *M. nigro-ænea*, nitida; pedibus flavis, *flavipes*.

*Hylæus flavipes*. *Fab. Ent. Syst., Em. n. 11.*

*Lin. Syst. ed. Gmel. p. 2773. Apis, n. 73.*

*Vill. Ent. Eur. 3. Apis, n. 80.*

*Apis nigra*, pedibus croceis; abdomine leviter cupreo.

*Geoff. Hist. Ins. Par. 2. p. 414. n. 14?*

*Apis crocipes*. *Fourcroy. Ent. Par. n. 14?*

MUS. *D. Marsham, Lathbury, Trimmer, Haworth, Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* Barhamiæ. In floribus passim, sed rara admodum,

DESCR. Mas.

CORPUS nigro-æneum, levissimè punctulatum, parvâ pube pallidâ subpubescens.

CAPUT. *Nasi* apex, *Maxillæ*, itemque *Labium*, flavi. *Antennæ* thoracè ferè longiores, articulis subarcuatis, fuscæ, subtus, exceptis tribus extimis articulis, fulvæ, scapo nigro.

TRUNCUS paululùm virens. *Thorax* lineâ longitudinali intermediâ exaratus. *Squamulæ* piceæ. *Alæ* hyalinæ, iricolores, nervis fuscis. *Pedès*

(*l*) Tab. 2. \*\*. b. fig. 12. *bb.*

sulphurei, femoribus posticis basi, anterioribus subtus, piceis. *Apophyses* primi paris articulo secundo subtus flavo.

ABDOMEN lineare, nitidissimum, ano obtuso, segmentis intermediis basi depressiusculis.

*Var. β* tibiis quatuor posticis strigâ nigricanti, digitorum etiam articulus extimus nigrescit.

I have added a mark of interrogation to the synonym of Geoffroy, because he describes his specimen as having, the abdomen excepted, a black body; in other respects they appear to have been exactly similar to our insect. *M. flavipes* is not very unlike the *Apis tumulorum* of Linneus. Since the latter insect has been universally mistaken by entomologists for one of the *Eucera* of Scopoli and Fabricius, (as I shall have occasion to observe more at large when I come to that family) it will not, I think, be unacceptable if I give a fuller description of it below, taken from the authentic specimens in the Linnean cabinet; thus future errors concerning it may be prevented (*m*).

16. M.

(*m*) *tu-* M. atra, glabriuscula; antennis corpore brevioribus, subtus  
*mulorum.* fulvis; pedibus, maxillisque, flavescentibus.

*Apis tumulorum* antennis filiformibus longitudine corporis nigri; pedibus maxillisque flavescentibus.

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2770. n. 2. Fn. Succ. 1685. It. Gotl. 336.*

MUS. *D. Smith* Linnean.

Long. Corp, Lin. 3.

*Hab.* In Wisingsøæ Succæ tumulis sepulchralibus. Lin.

DESCR,

16. *M. nigro-ænea*, pallido-subpubescens; abdo-*seladonia*.  
mine segmentis margine pallidis.

*Apis seladonia* hirta, virescens; abdomine segmentis  
margine albis.

*Fab. Suppl. Ent. Syst. Em. p. 276. n. 120.*

*Apis subaurata* pubescens; tibiis tarsisque ferrugineo-  
flavis.

*Ross. Fn. Etrusc. Mant. p. 144. n. 321.*

FIG. *Apis subaurata*. *Panzer. Fn. Ins. Germ. Init. n. 56. tab. 4.*

MUS. *D. Marsham, Haworth, Lathbury, Trimmer, Sowerby,*  
*Kirby.*

Long. Corp. Lin. 3.

*Hab.* Barhamiæ in floribus tempore vernali, in *Belle*  
frequentior.

DESCR. Acul.

CORPUS nigro-æneum, pallido-pubescens.

CAPUT. *Maxillæ*, itemque *Antennæ*, nigræ.

DESCR. Mas.

CORPUS atrum, glabriusculum, staturâ fere *Melittæ flavi-*  
*pedis*.

CAPUT pube pallidâ. *Maxillæ*, *Labium*, et *Nasi* apex lutei.  
*Antennæ* thorace longiores, nigræ, subtus fulvæ, articulis  
tribus extimis fuscis.

TRUNCUS. *Squamulæ* pallidæ. *Alæ* fuscæscentes. *Pedes*  
flavi, femoribus anticis basi liturâ fuscâ.

ABDOMEN lineare, immaculatum.

*M. tumulorum* should be placed in this family, next before  
*M. flavipes*. I have altered the Linnean *nomen specificum*, be-  
cause the terms "*antennæ longitudine corporis*," have led all  
authors to mistake it for a *Eucera*. The antennæ, in fact, are  
only a little longer than the thorax. I have also excluded all  
the synonyms usually given under this insect, because they be-  
long to another.

**TRUNCUS.** *Thorax* virescens levissimè punctulatus, lineolis tribus longitudinalibus exaratus. *Metathorax* postice truncatus. *Squamulæ* piceæ. *Alæ* hyalinæ, iricolores; nervis, costali interiore excepto, rufescentibus. *Pedes* nigri, pilis lutescentibus hirti. *Scopulæ* flavescunt.

**ABDOMEN** breve, subovale, tergo pube subincano; segmentis margine, anoque, tomentoso-pallidis. *Venter* nigricat.

*Var. β* minor, maxillis basi rufis, antennis subtus, tarsisque, rufescentibus. An Sex. neut.?  
 ♂ antennis subtus fuscis, abdomine segmentis margine utrinque albicantibus.

With the male of this insect I am not acquainted, without it be *M. flavipes*. Panzer has given a tolerable figure of it, but it has more green than our English specimens.

*ærata.* 17. *M. viridi-ænea*, nitida; abdomine nigro-æneo.

**MUS.** *D. Marsham, Haworth, Trimmer, Kirby.*

Long. Corp. Lin.  $2\frac{1}{4}$ —3.

*Hab.* Barhamiæ et prope Londinum rara admodum.

**DESCR.** Acul.

**CORPUS** punctulis levissimè impressis irroratum; parvâ pube pallidâ subincanum.

**CAPUT** viridi-æneum. *Antennæ* nigræ basi valde approximatae.

**TRUNCUS** viridi-æneus. *Thorax* glabriusculus.

*Metathorax* viridis posticè truncatus, *Squamulæ*



*mulæ* piceæ. *Alæ* subhyalinæ splendidissimè iricolores; nervis fuscescentibus, anastomosi pallidâ. *Pedes* nigri, pallido-hirti.

ABDOMEN nigro-æneum, nitidum, læve, pallido-pubescens, maximè anum versus et ad latera.

Maris *Corpus* atro-virens, albido-pilosulum. *Antennæ* thorace vix breviores, fuscæ, subtus pallidiores. *Nasi* apex pallidus. *Abdomen* lineare, segmentis duobus intermediis basi depressiusculis, tomentoso-subincanis. *Tarsi* obscurè rufescunt.

18. M. ænea; abdomine nigro; antennis subtus *leucopus*. fulvis; tarsi albidis.

MUS. Kirby.

Long. Corp. Lin.  $2\frac{1}{4}$ .

*Hab.* In floribus rarissima.

DESCR. Mas.

CORPUS æneum, subpilosum.

CAPUT puþe parvâ canescens. *Nasus* apice pallidus. *Antennæ* nigræ, apice subtus fulvo.

TRUNCUS nigro-æneus. *Thorax* cupreus, punctulatissimus. *Metathorax* posticè rotundatus. *Squamulæ* piceæ. *Alæ* hyalinæ, coloribus prismaticis splendidè micantes, nervis nigricantibus. *Pedes* nigri, glabriusculi, tarsi luteo-albis, articulo extimo rufescenti.

ABDOMEN ovale, pilosulum, segmentis duobus intermediis basi depressiusculis.

This

This little insect is somewhat similar to the male of the preceding species, but its antennæ are shorter and paler underneath; its abdomen is black and of a different figure, being proportionally wider, and oval. The tarsi are yellowish white. I do not find either noticed by any author.

*Morio.* 19. *M. ænea*; metathorace cærulescenti; abdomine nigro.

MAS.

*Hylæus Morio* niger; thorace cærulescente; abdomine atro nitido.

*Fab. Ent. Syst. Em. n. 16.*

FIG. *Coquebert. Ill. Ic. Ins. 25. tab. 6. fig. 5. A. E.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury, Sowerby, Trimmer, Kirby.*

Long. Corp. Lin.  $2\frac{3}{4}$ .

*Hab.* Barhamiæ, in floribus et terris verticaliter sectis frequens.

DESCR. Acul.

CORPUS pilositate parvâ pallidâ.

CAPUT obscurè viridi-æneum. *Antennæ* basi valdè approximatae, nigrae, apice subtus fuscae.

TRUNCUS nigro-æneus. *Thorax* cupreus, glaber, punctulatissimus. *Metathorax* atro-cærulescens, posticè rotundatus. *Squamulae* piceae. *Alae* paululùm nigricantes, coloribus prismaticis sub lente pulcherrimae, nervis nigris, anastomosi testaceâ. *Pedes* nigri albido-hirti.

ABDOMEN

MELITTA. (\* \*. b.)

ABDOMEN ovale, nigrum, nitidissimum, pube parvâ pallidâ, anum versus præcipuè, subin-canum.

Maris *Corpus* atro-virens, interdum cæruleo etiam paululùm tinctum. *Nasus* apice albidus. *Antennæ* thoracis longitudine, apicem versus paulò crassiores, subtus fulvæ. *Anastomosis* nigra. *Digiti* obscurè rufescunt. *Abdomen* lineare, atrum, segmentis duobus intermediis reliquis convexioribus.

The male of this species agrees so well with Fabricius's description of his *Hylæus Morio*, that I have little doubt of their identity; more especially as the figure given by Coquebert in his elegant *Illustratio Iconographica Insectorum*, which was taken from the authentic specimen of this insect, agrees very well with ours. The aculeate sex approaches very near to *M. ærata*, but the abdomen is black, and the metathorax atro-cærulescent.

20. *M. nigra*, nitens; antennis subtus fulvescen-minuta-tibus.

*Apis minuta*. Schrank. *Enum. Ins. Aust.* n. 829.

*Lin. Syst. Nat. ed. Gmel.* p. 2788, n. 150.

*Vill. Ent. Eur.* 3. n. 45.

FIG. *Reaum. tom. 6. Mem. 4. p. 95. tab. 9. fig. 1.*

MUS, *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin.  $2\frac{2}{3}$ —3.

*Hab.*

*Hab.* Barhamiæ. Apud nos, itemque in Galliâ, teste ill. Reaumurio, sub terrâ nidificat hæc species; in Austriâ tamen secundum Schrankium “in foraminibus palorum antiquorum apricorum.” In floribus frequens obvia.

DESCR. Acul.

CORPUS nigrum, parcè pilosulum.

CAPUT. *Antennæ* basi approximatae, nigrae, subtus fulvescentes.

TRUNCUS. *Thorax* glaber, nitidus, punctulatus. *Metathorax* posticè rotundatus. *Alæ* subhyalinae, iricolores; nervis nigris, anastomosi pallidâ strigâ nigricanti. *Pedes* nigri, albido-hirti.

ABDOMEN ovale, nitidissimum, punctulatissimum punctulis levissimè impressis. *Venter* hirtus.

*Var. β* tertiâ parte minor, anastomosi nigra.

Maris *Facies* infra antennas tomentoso-alba.

*Nasus* apice albus. *Antennæ* thorace longiores. *Abdomen* segmentis intermediis basi depressiusculis.

This insect agrees well with Schrank's description of his *Apis minuta*, but in this country and in France, if Reaumur's synonym be right, it nidificates under-ground; whereas the habitat of his was in old pales: this leads me to doubt, in some degree, whether they are the same.

*villosula*. 21. M. atra, albido-villosula; abdomine subovato; antennis subtus, tarsisque, rufescentibus.

MUS.

MUS. Kirby.

Long. Corp. Lin.  $2\frac{1}{2}$ .

*Hab.* Unde habui non bene memini. Hanc unicam tantum vidi.

DESCR. Mas.

CORPUS atrum, albido-villosulum.

CAPUT. *Facies* ante antennas tomentoso-alba.

*Nasus* immaculatus. *Antennæ* thorace breviores, nigræ, subtus rufo-fulvæ.

TRUNCUS lævis, villosus. *Metathorax* posticè rotundatus. *Squamulæ* piceæ. *Alæ* hyalinæ, iricolores, nervis nigricantibus, anastomosi strigâ pallidâ. *Pedes* picei, subhirti; tarsis rufescentibus.

ABDOMEN ex lineari subovatum, convexum, pilosulum.

This insect is not unlike the male of *M. minuta*, but its antennæ are shorter, the abdomen approaches nearer to the ovate form, and its intermediate segments are not depressed at their base.

22. *M. atra*, glabriuscula; abdomine nitidissimo. *minutissima.*

MUS. *D. Marsham, Latham, Trimmer, Lathbury, Kirby,*Long. Corp. Lin.  $2-2\frac{3}{4}$ .

*Hab.* Barhamiæ in floribus et aggeribus viarum, haud tamen frequens.

DESCR. Acul.

CORPUS atrum, subglabrum.

CAPUT. *Antennæ* nigræ.

TRUNCUS. *Thorax* punctulis creberrimis levis-  
simè

simè impressis, irroratus. *Metathorax* posticè rotundatus. *Squamulæ* piceæ. *Alæ* subhyalinae, iricolores, nervis nigricantibus. *Pedes* pallido-hirti.

ABDOMEN lineare, nitidissimum.

*Var.*  $\beta$  tarsi, abdominisque segmentis intermediis margine, rufescentibus. An eadem?

*Maris Corpus* albido-villosulum. *Nasus* apice pallidus. *Antennæ* thorace breviores, subtus fulvæ. *Alæ* apice nigrescentes, coloribus prismaticis splendidissimè micantes. *Tarsi* obscurè rufescentes. *Abdomen* ovale, segmentis intermediis basi depressiusculis.

This very diminutive *Melitta* is less hairy than *M. minuta*, its abdomen is more shining, and its antennæ are entirely black. The male is the smallest insect of this genus with which I am at present acquainted. It is remarkable for the uncommon splendor and brilliancy with which the prismatic colours adorn its wings,

“As the scite varies in the gazer's hand.”

*nitidiuscula.* 23. *M. nigra*, glabriuscula; antennis subtus flavis; maxillis, labio, tarsisque, albidis.

MUS. *D. Marsham, Haworth, Trimmer, Sowerby, Lathbury, Kirby.*

Long. Corp. Lin.  $2\frac{1}{3}$ —3.

*Hab.* Barhamiæ cum præcedentibus, sed frequentior.

DESCR. Mas.

CORPUS nigrum, subglabrum.

CAPUT

**CAPUT** parvâ pube albidâ incanum. *Nasi* apex, et *Labium*, itemque *Maxillæ*, albidî. *Antennæ* thoracis longitudine, subtus flavæ.

**TRUNCUS.** *Thorax* nitidus. *Metathorax* lævis, posticè rotundatus. *Alæ* subhyalinæ, iricolores, nervis nigris. *Pedes* nigri, tibiarum geniculis, tarsisque, luteo-albis. *Tibiæ* anticæ antrorsum fulvæ.

**ABDOMEN** sublineare, nitidum. *Venter* utrinque, anum versus, fimbriâ pallidâ.

*Var. β* tibiis totis nigris, tarsis rufescentibus.  
An eadem?

This species comes very near to the *Hylæus annulatus* of Panzer (*n*), but I think it is distinct. It is distinguished from all those that I have before described, not only by its white lip, maxillæ, and tarsi, but also by a singular fringe of pale hair observable upon the underside of the abdomen, near the anus, a little within the margin.

24. *M. atra*, pallido-villosula; abdomine nigro, lævis. lævi, nitidissimo.

**MUS.** *Kirby*.

Long. Corp. Lin.  $3\frac{3}{4}$ .

*Hab.* Barhamiæ semel capta, iterum in Nacton Suffolciæ.

**DESCR.** Acul.

**CORPUS** atrum, pallido-subvillosum.

**CAPUT.** *Antennæ* nigræ, vix capitis longitudine.

**TRUNCUS.** *Thorax* obscurus, punctulatus. *Me-*

(*n*) Panz. Fn. Ins. Germ. Init. n. 55. tab. 3.

*tathorax*

*iathorax* posticè truncatus, rugulosus. *Squamulæ* nigræ. *Alæ* hyalinæ, iricolores; nervis; costali interiori anastomosique fuscis, exceptis; ferrugineis. *Pedes* pallido-hirti.

ABDOMEN ovale, piceo-nigrum, glabrum, lucidum, ano pallido-villoso: *Venter* hirtus.

*punctu-  
lata.*

25. *M. atra*, pallido-villosula; abdomine subpubescenti, punctulato, segmento primo lævi, nitidissimo.

MUS. *Kirby*:

Long. Corp. Lin. 4.

*Hab.* Barhamiæ rarissima, semel tantum lecta.

DESCR. *Acul.*

CORPUS atrum, pube cinerascenti.

CAPUT. *Antennæ* nigræ, capitis longitudine.

TRUNCUS. *Thorax* nitidus, punctulatus. *Metathorax* rugulosus, posticè rotundatus. *Squamulæ* nigræ. *Alæ* subhyalinæ, iricolores, nervis nigris. *Pedes* pallido-hirti.

ABDOMEN sub-ovatum, atrum, nitidum, punctulis minutis, creberrimis, leviter impressis, persemmatum, segmento primo lævi lucido, tribus ultimis pallido-pubescentibus. *Venter* hirtus.

This species, although very similar to the preceding, is distinguished from it by several peculiarities, the most striking of which is its punctulate abdomen. These punctula are slightly impressed, and not visible without a magnifier.



26. *M. nigra*, griseo-subpubescens; abdominemalachu-  
subtomentoso. ra.

MUS. D. *Trimmer*, *Kirby*.

Long. Corp. Lin. 4.

*Hab.* Brentfordiæ prope Londinium, a D. J. Trimmer  
bis capta.

DESCR. Acul.

CORPUS nigrum, pube grisescenti.

CAPUT obscurum. *Antennæ* nigrae.

TRUNCUS: *Thorax* obscurus, punctulatus. *Me-  
tathorax* posticè rotundatus. *Squamulæ* nigrae.  
*Alæ* subhyalinæ, iricolores, apice obscuriores;  
nervis, costali interiori fusco excepto, flavis.  
*Pedes* flavescente-hirti. *Scopulæ* rufæ.

ABDOMEN ovale; pilis grisescentibus subtomen-  
tosum; sed haud ita densè ut non transluceat  
nigredo corporis. Segmentorum margines, et  
anus, pilis decumbentibus, subflavis, confertiùs  
hirti. *Venter* anum versus per fascias longiùs  
villosus.

The abdomen of this species is not so narrow;  
it is also much more downy, than the same part  
of *M. punctulata*.

7. *M. nigra*; antennis thorace longioribus, ful-fulvicor-  
vescentibus; abdomine nitido, segmentis in-<sup>nis.</sup>  
termediis basi albis.

MUS. *Kirby*.

Long. Corp. Lin. 2½.

*Hab.* in Angliâ rarissima.

PL. II.

F

DESCR.

## DESCR. Mas.

CORPUS nigrum, pube haud densâ subincanum.

CAPUT. *Facies* infra antennas tomentoso-incana.

*Nasus* apice albidus. *Antennæ* thorace longiores, rufo-fulvæ, supra saturatiores, scapo nigro.

TRUNCUS obscurus. *Metathorax* posticè truncatus. *Squamulæ* piceæ. *Alæ* subhyalinæ, iricolores, nervis nigris. *Pedes* nigri, glabriusculi, tarsis flavescentibus, articulo extimo ferrugineo. *Tibiæ* quatuor posteriores basi extrinsecus flavæ, anteriores antrorsum fulvescunt.

ABDOMEN sublineare, nigrum, nitidissimum, glabrum, segmentis intermediis basi depressiusculis et utrinque tomentoso-albis. *Venter* glaber, ano pilosulo.

The antennæ of this insect are nearly, if not altogether, as long as those of *M. tumulorum*; it is, however, extremely distinct from that and every other described insect, of which I have any knowledge.

*fulvo-*  
*cincta.*

28. *M. nigra*, rufescente-pubescent; abdomine subtomentoso; segmentis margine fulvis, intermediis basi utrinque pallidis.

## ACUL.

*Apis nitida* nigra, incisuris abdominis nitidi, pedibusque, luteo-cinereis.

*Müll. Zool. Dan.* n. 1619.

MAS.

## MAS. ε.

*Apis bicincta* nigra; ore, cingulisque duobus abdominis, albis.

*Schrank. Enum. Ins. Austr. n. 826.*

*Lin. Syst. Nat. ed. Gmel. p. 2787. n. 140.*

*Vill. Ent. Eur. 3. n. 41.*

MUS. *D. Marsham, Latham, McLeay, Lathbury, Haworth, Sowerby, Trimmer, Kirby.*

Long. Corp. Lin. 3—4 $\frac{1}{2}$ .

*Hab.* Barhamiæ et alibi frequens. In capitula *Plantaginis lanceolatae* tempore vespertino agglomerant mares, ibique dormitant.

## DESCR. Acul.

CORPUS nigrum, rufescente-pubescens.

CAPUT obscurum, hirtum satis. *Antennæ* nigræ.

TRUNCUS obscurus. *Thorax* subpubescens, punctulatissimus. *Metathorax* rugulosus, posticè truncatus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis, costali interiori nigro excepto, ferrugineis. *Pedes* nigri rufescente-hirti. *Tibiæ* posticæ scopâ flavescenti. *Scopulæ* fulvo-aurææ.

ABDOMEN ovale, nitidissimum, subpubescens, segmentis margine pallidè fulvis, pilis flavescensibus densis ciliatis, intermediis duobus basi utrinque tomentoso-pallidis. *Ani* pili fulvescunt.

*Var. β* minor, abdominis segmentis intermediis basi albidis.

$\gamma$  minor, atrâ; abdominis segmentis margine obscurè rufis, vix ciliatis. In hac varietate alæ sunt testaceæ. An eadem?

♂ tertiâ ferè parte minor, abdomine angustiori, alias  $\beta$  similis.

Maris *Corpus* pube subcinereâ. *Facies* ante antennas tomentoso-argentea. *Nasus* porrectus, apice luteus. *Labium* pallidum. *Antennæ* thorace breviores. *Thoracis* pili subrufi. *Squamulæ* extrorsum pallidæ. *Alæ* subiricolores. *Pedes* pilosuli; tibiis quatuor posticis basi et apice, anticis lineâ longitudinali, tarsisque, luteis; digitorum articulis extimis rufis. *Abdomen* lineare, ventre planiusculo.

*Var.*  $\beta$  labio nigro; alarum nervis nigricantibus, tibiis primi et secundi paris tantummodo basi albis; abdomine segmentis margine immaculatis.

$\gamma$  labio nigro; tibiis immaculatis, digitis ferrugineis.

♂ minor, corpore atro, albescente-subvillosa, labio nigro. Alias  $\alpha$  similis.

$\epsilon$  tertiâ ferè parte minor, abdominis segmentis intermediis basi albis.

Variety  $\gamma$  of the aculeate sex of this insect, and variety  $\delta$  of the male, may be distinct, but the differences appeared to me not striking enough to warrant my considering them as the sexes of a separate species. One of the varieties of the aculeates, I take to be the *Apis nitida* of the Zoologia Danica; but, since, after Fourcroy, I have given this name to another insect of this genus, I have distinguished this by another. Variety  $\epsilon$  of the male,

is,

is, I think, evidently the *Apis bicincta* of Schrank, but as his name harmonizes well with this variety only, I have not adopted it. Whether the *Hylæus similis* of Fabricius (o) may not belong to a variety of this insect, I am not certain; but as I have as yet found none that will quite agree with his definition, I have not referred to it. Twice in the year 1799, in the month of August, in the evening, I found the males of this species, in considerable quantities, taking their repose upon the heads of the Ribwort Plantain.

29. *M. atra*, albido-subvillosa; abdomine segmen-*albipes*.  
tis intermediis rufis, fasciâ, punctisque lateralibus, nigris; labio flavo.

*Hylæus albipes* fuscus; abdomine medio rufo; tibiis albis.

*Fab. Ent. Syst. Em. n. 13?*

*Lin. Syst. Nat. ed. Gmel. p. 2779. Apis, n. 98.*

*Vill. Ent. Eur. 3. n. 65.*

*Ross. Fn. Etrusc. Mantiss. n. 320.*

FIG. *Harris. Exp. tab. 39. fig. 19.*

*Panzer. Fn. Ins. Germ. Init. n. 7. tab. 15.*

MUS. *D. Marsham, Sowerby, Kirby.*

*Long. Corp. Lin. 4.*

*Hab. Barhamiæ in floribus passim sed rariùs.*

DESCR. Mas.

CORPUS atrum, pube albescenti subincanum.

CAPUT obscurum. *Nasus* porrectus apice e fulvo flavescenti. *Labium* flavum. *Maxillæ* basi

(o) *Fab. Ent. Syst. Em. n. 14.*

nigræ, dein flavæ, apice ferrugineæ. *Facies* ante antennis tomentoso-argentea. *Vertex* cinerascenti-pilosulus. *Antennæ* thoracem subæquantes, fuscæ, supra basi nigræ.

**TRUNCUS.** *Thorax* obscurus, punctulatus, pube parvâ cinerascenti. *Metathorax* posticè rotundatus. *Squamulæ*, itemque *Tuberculorum* vertex, pallidæ. *Alæ* hyalinæ, splendidè iricolores, nervis nigricantibus. *Pedes* luteo-albi, femoribus, tibiærumque liturâ subannulari, nigris.

**ABDOMEN** sublineare, anum versus latius, glabrum, nitidum, basi nigrum, dein rufum, fasciis duabus abbreviatis, dorsalibus, punctisque quatuor lateralibus, anoque nigris. *Venter* rufus ano nigricanti. Obs. *Segmenta postica* margine obscurè rufescunt.

*Var. β* antennis totis nigris.

γ maxillis nigris; tibiis tantùm basi luteis.  
 δ maxillis nigris, alarum nervis testaceis;  
 abdomine supra nigro segmentis margine late rufis, intermediis basi tomentoso-albis.  
 An eadem?

It is not without some hesitation that I give this as the *Hylæus albipes* of Fabricius; but, as he says of his, "variat interdum segmento secundo tertioque rufis, maculâ mediâ nigrâ," this variety may probably be our insect. The tibiæ, in all that I have had an opportunity of examining, have either a  
 blackish

blackish cloud, which nearly surrounds their middle, or they are black with a yellowish base, as is the case with variety  $\gamma$ . Panzer's figure exactly resembles the insect here described, except that it omits the two black dots which distinguish each side of the abdomen; and, in his description, he makes no mention of the yellow lip. Variety  $\delta$ , I suspect, may be a distinct species.

30. *M. atra*, cinereo-subvillosa; abdomine segmentis anticis rufis, maculâ mediâ, punctisque lateralibus, nigris.

FIG. *Hylæus abdominalis* abdomine segmentis primo, secundo et tertio, rufis, maculâ mediâ nigrâ, reliquis nigris.  
Panzer. *Fn. Ins. Germ. Init. n. 53. tab. 18.*

MUS. *D. Marsham, Latham, Lathbury, Haworth, Trimmer, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamiæ cum præcedente in floribus passim obvia.

DESCR. Mas.

CORPUS atrum, pube cinerascenti.

CAPUT obscurum. *Facies* infra antennis tomentoso-argentea. *Nasus* porrectus, apice flavus. *Labium* atrum, *Antennæ* nigrae, thoracem subæquantes.

TRUNCUS obscurus, punctulatus. *Metathorax* posticè subtruncatus. *Squamulae* pallidæ. *Alæ* hyalinæ, apice paulò obscuriores, iricolores; nervis, costali interiori nigro excepto, ferrugineis. *Tibiæ* posticæ basi, *Plantæque*, luteo-albæ. *Digit*i rufescunt.

ABDOMEN sublineare, apicem versus latius, nitidum, glabrum; segmento primo basi nigro, margine latè, secundoque, rufis maculâ mediâ trapeziformi nigrâ, tertio nigro lateribus rufis, ultimis nigris. Segmenta duo intermedia utrinque puncto nigro, itemque basi tomentoso-alba. *Venter* basi rufus liturâ semicirculari nigricante.

*Var. β* alarum nervis nigricantibus; tibiis immaculatis, plantis rufis basi albidis; abdomine segmentis margine rufis, secundo rufo maculâ magnâ dorsali, punctisque duobus lateralibus, nigris.

This insect is nearly related to the preceding species, but I think, with Panzer, we may venture to separate them. He, indeed, supposes that they may be different sexes of the same individual, but in this he is mistaken, as they are both certainly males, the female in this family being of a very different form. *M. abdominalis* is larger than *M. albipes*, its labium and maxillæ are black, the tibiæ also are black, the last pair only having a white ring at their base. The spots on the red segments of the abdomen are of a different form, and at the base of the three intermediate ones is a small patch of white decumbent hairs. Panzer's figure varies somewhat from our specimens, the margin of the intermediate segments of the abdomen in that being yellow, as well as the joints of the legs, which is not the case with ours.



31. *M. atra*, glabriuscula; abdomine nitidissimo, *obovata*.  
obovato, segmentis basi albis.

MUS. *Kirby*.

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, semel lecta.

DESCR. Acul.

CORPUS atrum, subglabrum.

CAPUT pilositate parvâ grisescenti respersum.

*Antennæ* nigræ, subtus piceæ.

TRUNCUS grisescente-pilosulus. *Thorax* glaber, punctulatissimus. *Metathorax* posticè truncatus. *Squamulæ* piceæ. *Alæ* testaceæ, nervo costali interiore nigro. *Pedes* griseo-hirti. *Tibiæ* posticæ scopâ, densâ admodum, grisescenti. *Digiti* ferruginei. *Scopulæ* flavæ, subauratæ.

ABDOMEN ex cuneiformi obovatum, læve, nitidissimum, segmentis tribus intermediis basi tomentoso-niveis. *Anus* griseo-pilosulus. *Venter* grisescente-hirtus.

32. *M. atra*, rufo-subpubescens; thorace ferrugi-*laevigata*.  
neo; abdomine nitidissimo, segmentis intermediis basi pallescentibus.

MUS. *D. Marsham, Latham, Trimmer, Lathbury, Kirby,*

Long. Corp, Lin. 4.

*Hab.* Barhamiæ e rarioribus una.

DESCR. Acul.

CORPUS atrum, pube rufescenti.

CAPUT. *Antennæ* nigræ.

TRUNCUS

TRUNCUS. *Thorax* nitidus, punctatus, ferrugineo pubescens. *Metathorax* posticè truncatus, utrinque denticulo armatus, *Squamulæ* piceæ. *Alæ* hyalinæ, subiricolores, apice obscuriores; nervis, costali interiore nigro excepto, ferrugineis. *Pedes* rufo-hirti: *Femora* ultimi paris lanata. *Tibiæ* posticæ scopâ flavescente-aureâ.

ABDOMEN ovatum, nitidissimè lævigatum, basi rufo-subvillosum, segmentis margine crassiusculis, intermediis tribus basi tomentoso-luteo-pallidis. *Anus* et *Venter* pallido-hirti.

This and the remaining species of this family, are distinguished from the rest by having the margin of the dorsal segments of the abdomen much thicker.

*leucoxon-*  
*nia.* 33. *M. atra*, cinereo-pubescens; abdomine segmentis intermediis basi albis.

*Apis leucoxonnia* nigra; abdominis segmentis basi albis.

*Schrank. Enum. Ins. Austr. n. 819.*

*Lin. Syst. Nat. ed. Gmel. p. 2787. n. 137.*

*Vill. Ent. Eur. 3. n. 34.*

*Ross. Fn. Etrusc. Mantiss. n. 319.*

MUS. *D. Marsham, Smith, Latham, Haworth, Lathbury, McLeay, Trimmer, Kirby.*

*Long. Corp. Lin. 4—4½.*

*Hab. Barhamicæ, flores frequentans.*

DESCR. Acul.

CORPUS atrum, cinereo-pubescens.

CAPUT.

CAPUT. *Antennæ* nigræ. *Lingua* apice acuminata.

TRUNCUS subglobosus. *Thorax* punctulatus. *Metathorax* posticè truncatus. *Squamulæ* atræ. *Alæ* hyalinæ, subiricolores; nervis, costali inferiore anastomosique nigris exceptis, ferrugineis. *Pedes* nigri, cinereo-hirti. *Scopulæ* fulvescunt. *Digit*i articulis extimis ferrugineis.

ABDOMEN, subovale, aterrimum, nitidiusculum, punctulis levissimè impressis persematum, basi cinereo-subpubescens, segmentis margine crassiusculis, intermediis tribus basi tomentoso-niveis. *Anus* et *Venter* cinereo-hirti.

Maris *Corpus* albescenti-incanum. *Antennæ* thorace breviores. *Facies* infra antennas tomentoso-argentea. *Nasus* apice albidus. *Alæ* valdè diaphanæ, iricolores. *Plantæ* quatuor posticæ albæ. *Digit*orum articulus extimus rufus, reliqui nigri. *Abdomen* sublineare, convexum, pilosulum.

This species a good deal resembles *M. lævigata*, but it is of a black still deeper. The pubescence of its whole body is cinereous. Its abdomen is punctulated, and the base of the intermediate segments are covered with decumbent hairs as white as snow. The wings of the male are beautifully transparent, not having their brightness obscured by the least shade of colour; at the same time, when the light falls upon them in a certain direction, they exhibit the hues of the rainbow. I think the  
aculeate

aculeate is beyond a doubt the *Apis leucozonia* of Schrank.

*xanthopus* 34. M. nigra, rufo-pubescentis; thorace ferrugineo; abdomine segmentis utrinque basi pallidis; pedibus posticis testaceis.

FIG. *Apis maxillosa*. *Christii Hymenopt.* p. 179. tab. 14, fig. 7?

MUS. Mas. *Marsham, Haworth, Lathbury.* Acul. et Mas. *Trimmer, Kirby.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ. Tempore autumnali mas flores frequentat, sed rarus admodum. Femina bis capta Aprile exeunti 1800; semel etiam a D. Trimmer accipi.

DESCR. Acul.

CORPUS nigrum, obscurum, pube rufâ.

CAPUT. *Maxillæ* forcipatæ. *Antennæ* nigræ, capite ferè longiores.

TRUNCUS supra pube ferrugineâ. *Thorax* punctatus, rariùs villosus. *Metathorax* posticè rotundatus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis, costali interiori nigro excepto, testaceis. *Pedes* nigri, rufo-hirti, tarsis quatuor, tibiisque, posticis, rufo-testaceis. *Scopæ*, *Scopulæque* fulvo-aureæ.

ABDOMEN ovatum, atrum, nitidum, punctulatissimum, basi rufo-villosum; segmentis margine crassiusculis, intermediis tribus basi utrinque tomentoso-pallidis. *Anus* et *Venter* pallido-hirti.

*Var.*

*Var. β* segmentis intermediis per totam basin tomentoso-pallidis; alarum nervis ferrugineis; plantis quatuor posticis nigricantibus.

Maris *Corpus* pube cinerascenti. *Antennæ* thorace breviores subtus piceæ. *Nasi* apex maculâ obscurâ albidâ notatur. *Maxillæ* haud protensæ. *Thorax* pube subrufâ. *Alæ* iricolores. *Abdomen* subovale, segmentis tribus intermediis basi tomentoso-albidis.

*Var. β* thoracis pube cinerascenti, plantis posticis quatuor albis.

This is one of the largest species of this family that we have in England, it may always be distinguished from all the rest by the colour of the posterior legs, which, the thighs excepted, are always red, and covered with reddish hair. I take this to be the insect which Christius has figured as the *Apis maxillosa* of Linneus, but it is certainly a widely different species. If I am right in my reference to him, the thorax of his specimen had lost all its ferruginous hair, an accident which not unfrequently happens to these insects. His *Apis emarginata*, likewise, very much resembles our insect (*p*), it may possibly be the male.

35. *M. atra*, cinereo-subpubescens; abdomine sub-<sup>quadrin-</sup>incano, segmentis duobus intermediis basi <sup>tata.</sup> utrinque albis.

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Trimmer, Lathbury, Haworth, Soiverby, Kirby.*

(*p*) Tab. 15. fig. 2. p. 183.

Long.

## MELITTA. (##: b.)

Long. Corp. Lin.  $2\frac{3}{4}$ — $3\frac{1}{2}$ .

*Hab.* Barhamiæ tempore vernali in floribus *Oxyacanthæ* frequens.

DESCR. Acul.

CORPUS atrum, pube parvâ cinerascenti subincanum.

CAPUT. *Antennæ* nigræ, capitis longitudine.

TRUNCUS obscurus. *Thorax* punctulatus. *Metathorax* posticè rotundatus. *Squamulæ* nigræ. *Alæ* subhyalinæ, subiricolores; nervis, costali interiori nigro excepto, testaceis. *Pedes* cinereo-hirti. *Scopulæ* fulvæ.

ABDOMEN ovale, punctulatissimum, punctulis levissimè impressis, anticè nitidum, glabrum, posticè tomentoso-incanum, sed non ita densè ut non transluceat nigredo corporis; segmentis margine crassiusculis, intermediis duobus basi utrinque tomentoso-niveis.

Obs. *In recentioribus fulvescit anus.*

Maris *Antennæ* thorace breviores. *Facies* infra antennas tomentoso-nivea. *Nasus* apice albidus. *Tarsi*, tibiæque apex, luteo-albi, digitorum articulis extimis rufescentibus. *Abdomen* lineare.

This minute species, although similar to *M. leucozonia*, must not be confounded with it. The apex of its tongue is not acuminate in either sex, a circumstance which strongly marks both the sexes of that insect. The base of two only of the intermediate segments of the abdomen are white, and the three

three last are frosted by a thin coating of decumbent down. All the tarsi of the male are whitish.

36. *M. atra*, albido-subpubescens; abdomine seg-*lugaris*.  
mentis intermediis basi utrinque, plantisque,  
albis; antennis thorace longioribus.

MUS. Kirby.

Long. Corp. Lin. 3.

Hab. Barhamiæ, semel capta.

DESCR. Mas.

CORPUS atrum, pube albicanti.

CAPUT. *Facies* infra antennis tomentoso-nivea.

*Nasus* porrectus, immaculatus. *Antennæ* nigrae, thorace longiores.

TRUNCUS. *Thorax* obscurus, punctulatissimus,

pube cinerea. *Metathorax* posticè truncatus.

*Squamulae* pallidae. *Alae* hyalinae, iricolores; nervis testaceis, costali interiore nigro. *Pedes*

atri, albido-pilosuli, tibiis posticis basi, plantisque omnibus, albis; digitis pallidè rufis.

*Palmæ* etiam rufescunt.

ABDOMEN lineare, aterrimum, nitidum, subglabrum;

segmentis margine crassiusculis, intermediis tribus basi utrinque tomentoso-niveis.

I know only the male of this species, which much resembles the same sex of the preceding. But its antennæ are proportionably longer; its nasus has no white spot, a remarkable circumstance in this family; its posterior tibiæ are white at their base; and its abdomen has six white spots, in that particular resembling the species I am next to describe.

37. M.

*saxnotata*, 37. *M. aterrima*, pube incanâ; abdomine segmentis tribus intermediis basi utrinque albis; alis apice nigris.

FIG. Acul. *Tab. 15. fig. 7.* Mas. *ibid. fig. 8.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Lathbury, Haworth, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ, in floribus tempore autumnali haud frequens.

DESCR. Acul.

CORPUS. Corpus aterrimum, pube albescenti incanum.

CAPUT obscurum. *Antennæ* nigræ, capitîs longitudine.

TRUNCUS obscurus, villosus admodum. *Metathorax* posticè rotundatus. *Squamulæ* magnæ, atræ. *Alæ* subhyalinæ, apice nervisque crassioribus, nigris; venis, nervo costali exteriori, anastomosique, rufo-piceis. *Pedes* albido-hirti. *Tibiæ* posticæ scopâ versicolori, sub luce tamen argenteâ. *Scopulæ* flavescunt.

ABDOMEN ovatum, nitidum, basi albescenti-subvillosum; segmentis margine crassiusculis, intermediis tribus basi utrinque tomentosoniveis. *Venter* albido-hirtus.

Maris *Antennæ* nigræ, thorace breviores. *Facies* piloso-albicans. *Nasi* apex obscurè pallidus. *Abdomen* sublineare, anum versus paulò latius.



\*\* . C.

38. *M. atra*, glabriuscula; abdomine nigro, cingulo *Latham-ana*,  
antico, ano, scopâque, rufis.

MUS. *D. Latham.*

Long. Corp. Lin. 8.

*Hab.* in Angliâ, a *D. Latham* ornithologo præstantissimo et jure celeberrimo, in entomologiâ etiam apprime docto, mihi transmissa; in cujus honorem nomen imposui.

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT. *Facies* infra antennas, cinereo-villosa; *Antennæ* nigrae, subtus piceae. *Maxillæ* apice dilatatae.

TRUNCUS punctulatus. *Squamulae* ferrugineae, *Alæ* testaceae, apice, nervisque, nigricantibus. *Pedes* nigri, fulvo-hirti, tibiis posticis scopâ rufâ. *Flocculus* rufescens.

ABDOMEN ovale, depressum, glabriusculum, nigrum; segmento primo margine, secundoque, rufis. Ani *Fimbria* densa, ferruginea. Segmentum antepenultimum ciliâ marginali palidâ. *Venter* ferrugineo-hirtus, segmento secundo rufo.

This is the largest English *Melitta* I have ever seen.

39. *M. atra*, cinereo-subvillosa; abdomine cingulo *Rosæ*,  
antico rufo; scopâ versicolori.

FIG. *Andrena Rosæ* thorace pubescente; abdomine nigro,  
VOL. II. G nitido,

## MELITTA. (\*\*. c.)

nitido, segmento secundo, tertioque, rufis, maculâ mediâ; nigra.

*Panzer. Fn. Ins. Germ. Init. n. 74. fig. 10.*

*Apis cingulata. Christi Hymenopt. p. 187. tab. 15. fig. 10?*

MUS. *D. Marsham, Smith, Latham Trimmer, Kirby.*

Long. Corp. Lin. 6.

*Hab.* in Angliâ, capta sæpius prope Londinum, semel in Insulâ Eliensi;  $\beta$  in Cambriâ Aprile medio a D. Goodenough.

DESCR. Acul.

CORPUS atrum, pube cinereâ.

CAPUT villosum, latum. *Antennæ* nigre. *Maxillæ* basi denticulo armatæ.

TRUNCUS. *Thorax* pube haud densâ. *Squamulæ* piceæ. *Alæ* testaceæ. *Pedes* pilis brevibus nigricantibus scatent. *Femora* lanâ pallidâ. *Tibiæ* posticæ scopâ pro situ nunc nigricanti, nunc pallescenti, revera pili superiores nigri sunt, inferiores cinerei. *Digit*i ferruginei. *Flocculus* obsoletus. *Scopulæ* fusce.

ABDOMEN subovatum, glabrum, basi nigrum nigredine trilobâ, segmento primo margine, proximisque duobus, rufis. Ani *Fimbria* sordidè pallida. *Venter* pallido-hirtus, segmento secundo rufo.

*Var.*  $\rho$  alis hyalinis, apice fusciscentibus; abdomine segmento tertio nigro, lateribus rufis; ani fimbriâ nigricanti.

$\gamma$  alis, nervo costali interiore piceo; abdomine segmento secundo rufo maculâ mediâ nigrâ, tertio nigro lateribus rufis.

$\delta$  antennis

♂ antennis subtus rufo-piceis; maxillis basi inermibus; abdomine segmento primo margine latè rufo, secundo rufo fasciâ nigricanti; alis ut in præcedente; ventre segmento primo margine rufo, reliquis nigris.

ε minor, antennis subtus rufo-piceis; maxillis basi inermibus; abdomine segmentis margine, secundique lateribus, rufis; ano fimbriâ fuscâ. Obs. *In hac varietate color rufus marginum segmentorum abdominalium interdum valde obscurus et tantum non evanidus.*

Maris *Corpus* densius villosum. *Caput* trunco majus. *Antennæ* capite longiores. *Maxillæ* forcipatæ, apice acutæ. *Pedes* cinereo-hirti. *Abdomen* piceo-nigrum, ex lanceolato ovatum, pilosulum, segmento primo margine rufo, secundo rufo fasciâ piceâ. *Venter* basi rufus.

Variety  $\alpha$  of this species, somewhat resembles *M. Lathamana*, but it is nevertheless very distinct. Not to mention the difference of their size, which is very considerable, *M. Rosæ* wants the ferruginous scopa and fimbria of the former. In the present family, the colour of the scopa affords an excellent character for the definition of species, as it is not subject to variation. I have defined it, upon the present occasion, and in several other instances, by the term *versicolor*, because, although the hairs of its upper side are of a different colour from those of

the under, yet, in certain lights, they appear wholly either of one colour or the other.

Had I known no other varieties than  $\alpha$  and  $\varepsilon$  of *M. Rosæ*, I should, most probably, have regarded them as very distinct species; but by means of the intermediate ones, which exhibit the gradual change of the abdominal colours, their identity seems pretty clearly established; although I am still not without a suspicion, from the absence of the very minute tooth at the base of the maxillæ, which distinguishes  $\alpha$ ,  $\beta$ , and  $\gamma$ , whether  $\delta$  and  $\varepsilon$  may not be more than varieties; unless we may suppose this to be a sexual distinction, and look upon  $\alpha$ ,  $\beta$ , and  $\gamma$  as females, and  $\delta$  and  $\varepsilon$  as neuters.

The abdomen of  $\alpha$  is distinguished by a red belt, which occupies the margin of the first, and the whole of the second and third segments; in  $\beta$ , the third segment is red only on the sides; in  $\gamma$ , the second also has a black spot in the middle; in  $\delta$ , this spot becomes a fascia, extending nearly from side to side; and in  $\varepsilon$ , only the margin of the segments is red, and that sometimes very faintly. Through all these varieties the colour of the scopa remains the same.

Panzer's *Apis Rosæ* is evidently one of the varieties of our insect, but his description and figure are at variance. The former says, "*abdomine——segmentis secundo, tertio, quandoque etiam primo posticè, rufis;*" whereas, in the latter, the margin only

only of the first, and the whole of the second segment, are red, the latter having an intermediate blackish spot. This figure represents our variety  $\gamma$ .

Variety  $\delta$  appears to be the insect which Christius has figured as the *Nomada cingulata* of Fabricius.

I have never met with any of the numerous varieties of this insect in my own neighbourhood, but it seems common enough,  $\alpha$  and  $\beta$  excepted, in the vicinity of London.

40. *M. atra*, cinereo-villosa; abdomine nigro, cinereo-fulvo; pedibus posticis piceis.

MUS. *D. Trimmer, Kirby.*

Long. Corp. Lin.  $4\frac{2}{3}$ .

*Hub.* In Angliâ, a D. H. Trimmer propè Londinum bis capta.

DESCR. Mas.

CORPUS atrum, cinereo-villosum.

CAPUT. *Antennæ* nigrae, thoracis longitudine articulis subarcuatis. *Maxillæ* basi dente obsoleto.

TRUNCUS. *Squamulae* piceae. *Alæ* subtestaceae, apice obscuriores, nervo costali interiore nigro. *Pedes* nigri, cinereo-hirti, posticis piceis. *Digiti* ferrugini.

ABDOMEN lanceolatum, pilosulum, nigro-piceum; segmento secundo apice, tertio basi et apice obscurè, rufis; segmenta postica ciliâ marginali, anoque, albidis. *Venter* cinereo-hirtus, segmentis anticis rufo-fulvis.

This, at first sight, resembles not a little the male of the preceding species; but its antennæ are much longer, and the abdomen is of different form. The head also is smaller, and the maxillæ not so long.

*cingulata*. 41. *M. nigra*, cinereo-subpubescens; abdomine glabriusculo, cingulo ferrugineo utrinque puncto nigro.

## ACUL.

*Nomada cingulata* cinereo-villosa; abdomine glabro nigro, segmento secundo tertioque ferrugineis.

*Fab. Ent. Syst. Em. n. 15.*

*Vill. Ent. Eur. 3. Apis, n. 70.*

*Ross. Mantiss. n. 326.*

*Apis Suecica. Lin. Syst. Nat. ed. Gmel. p. 2794. n. 200.*

FIG. *Apis sphegoides* atra, cinereo-pubescens; abdomine ovato, segmentis secundo et tertio rufis, pedibus flavis.

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 24.*

MUS. *D. Smith, Marsham, Trimmer, Lathbury, Kirby.*

## MAS.

*Andrena labiata* villosa, nigra; abdominis segmento secundo tertioque rufis; labio albo.

*Fab. Ent. Syst. Em. n. 5.*

*Lin. Syst. Nat. ed. Gmel. Apis, p. 2793. n. 192.*

*Vill. Ent. Eur. 3. n. 71.*

FIG. *Apis albilabris* atra, pubescens; labio niveo albido barbato, punctis duobus nigris; abdomine ovato, segmentis secundo et tertio rufis.

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 23.*

MUS. *D. Marsham, Trimmer, Hill, Kirby.*

Long. Corp. Lin.  $3\frac{3}{4}$ — $4\frac{1}{4}$ .

*Hab. Barhamiæ. Femina in floribus Ranunculi bulbosi Maio mense sæpius capta. Mas tempore autumnali provenit rarus admodum.*

DESCR.

DESCR. Acul.

CORPUS nigrum, pube cinereâ.

CAPUT. *Antennæ* subtus rufæ.

TRUNCUS. *Squamulæ* rufescentes. *Alæ* subhyalinæ apice nigricantes, nervis nigris. *Pedes* cinereo-hirti, scopâ cinerascenti. *Scopulæ* flavescunt. *Flocculus* pallidus.

ABDOMEN ovatum, glabriusculum, punctulatissimum, nigrum; segmentis intermediis duobus ferrugineis, secundo utrinque puncto nigro. Ani *Fimbria* cinerascens. *Venter* cinereo-hirtus, basi rufus.

Maris *Corpus* albido-villosum. *Facies* anticè alba, barbâ argenteâ. *Nasus* punctulis duobus nigris. *Labium* atrum. *Antennæ* sensim crassiores, capite longiores, subtus fulvæ. *Thorax* pube cinerascenti. *Squamulæ* piceæ. *Abdomen* sublineare, convexum, pilosulum; segmentis intermediis duobus rufis, secundo utrinque puncto nigricanti.

It is without any hesitation that I give the two sexes of this insect as the *Nomada cingulata*, and *Andrena labiata* of Fabricius, since they exactly answer his description, except only that he does not take notice of the minute blackish spot on each side of the second abdominal segment, a circumstance easily overlooked. Panzer's figure, also, and description of his *Apis Sphegoïdes* and *albibris*, accurately represent them, only he describes the hair of the legs of the former as yellow, which

is not the case with our specimens. It is remarkable that both Fabricius and Panzer, in this instance, apply the term labium, not to the tongue, which is the labium of the Fabrician system, nor yet to the Linnean labium, but to the anterior part of the face. The male agrees with the female in all such circumstances as the sexes usually possess in common, even so far as the black dot on each side of the second segment of the abdomen: a white or yellow nose is no uncommon characteristic of the male.

*Schrank-ella.* 42. *M. nigra*, cinereo-subvillosa; thorace rufescenti; abdomine cingulo rufo, segmentis posticis flavo-ciliatis.

*Apis Cetti* nigra, abdomine ferrugineo, segmentorum apicibus flavis.

*Schrank. Enum. Ins. Austr. n. 818.*

*Lin. Syst. Nat. ed. Gmel. p. 2786. n. 136.*

*Vill. Ent. Eur. 3. n. 33.*

*Andrena marginata* thorace pubescente, abdomine ferrugineo, segmentorum marginibus cinereis, segmento primo atro.

*Fab. Ent. Syst. Em. n. 10.*

*Vill. Ent. Eur. 3. Apis, n. 72.*

*Apis marginella. Lin. Syst. ed. Gmel. p. 2793. n. 191.*

FIG. *Andrena marginata. Panzer. Fn. Ins. Germ. Init. n. 72. tab. 15.*

MUS. *D. Marsham, Smith, Trimmer, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, tempore autumnali in floribus hæud frequens.

DESCR,



DESCR. Acul.

CORPUS nigrum, cinereo-villosum.

CAPUT. *Linguae* apex elongatus. *Antennæ* fuscae, scapo nigro. *Vertex* pilis flavescentibus. *Facies* ponè antennas maculâ sericeo-pallidâ, nisi a latere et sub lente, vix conspicuâ, notanda. *Nasus* valde convexus.

TRUNCUS. *Thorax* pube rufescenti tectus. *Squamulæ* nigrae. *Alæ* subhyalinae, apice nervisque nigris. *Pedes* cinereo-hirti. *Tibiæ* posticæ scopâ supra nigrâ, subtus pallidâ, certo situ versicolori. *Scopulæ* fulvæ, *Digiti* ferruginei.

ABDOMEN subovale, tomentosofulvum, tergò depressiusculo; segmento primo nitido, nigro, villosò, apice, proximisque duobus, pallide rufis, secundo utrinque puncto nigro, reliquis nigricantibus, apicibus pilis fulvo-flavis ciliatis. Ani *Fimbria* fulvo-aurea. *Venter* convexus, rufus, apice piceus, segmentis pallido longiùs ciliatis.

Obs. *Abdominis segmenta ultima e ferrugineo nigricant.*

*Var. β* antennis totis nigris; abdomine segmento secundo immaculato, tertio lineâ transversâ nigricanti.

*γ* antennis totis nigris; squamulis piceis; abdomine segmento secundo punctis tribus nigris intermedio subquadrato, tertio maculâ mediâ nigricanti.

This

This insect appears to be the *Andrena marginata* of Fabricius; when first taken I have sometimes found the whole abdomen red, but this colour in the three last segments assumes a blackish hue. The abdomen of his specimens he describes as ferruginous, in ours the two intermediate segments are of a pale red, and the whole abdomen is covered with down, which, if it be viewed from behind, gives it a reddish hue; the yellow hairs with which the margins of the last segments are fringed, in insects long disclosed will turn paler. Panzer's figure represents our insect with tolerable accuracy, only the thorax is too intensely red. Variety  $\gamma$ , I suspect, may be the *Nomada Hattorfiana* of Fabricius. As Schrank was the first describer of the species in question, under the name of *Apis Ceti*( $q$ ), I have named it after that ingenious entomologist.

*affinis.* 43. *M. nigra*, cinereo-subvillosa; thorace rufescenti; abdomine subtomentoso, segmentis posterioribus flavo-ciliatis.

MUS. *Kirby*.

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Coddendamæ, prope Needham Market in Suffolciâ, bis capta.

DESCR. Acul.

CORPUS nigrum, cinereo-villosum.

( $q$ ) From mount Ceti, now called Kallenberg, or according to some Karemberg.

CAPUT.

**CAPUT.** *Linguae* apex elongatus. *Antennae* nigrae. *Facies* maculâ sericeo-pallidâ ponè antennas, ut in præcedente (r).

**TRUNCUS.** *Thorax* villis e flavo rufescentibus subpubescens. *Squamulae* piceae. *Alae* subhyalinæ, apice nervisque nigricantibus. *Pedes* cinereo-hirti, tibiis posticis scopâ supra nigrâ, subtus pallidâ, certo situ versicolori. *Scopulae* fulvescunt.

**ABDOMEN** ovale, nigrum, tomentosoflavescens anum versus maximè. Segmentorum margines pilis pallidè flavis ciliati. Ani *Fimbria* flava. *Venter* convexus, nitidus, segmentis margine longiùs ciliatis.

This insect is distinguished from the preceding, which it greatly resembles if it be not a variety of it, by the colour of its abdomen, which is entirely black, without any red belt.

44. *M. nigra*, griseo-villosa; thorace pube rufâ; *fulvago*. abdomine punctulato, nitido; pedibus posticis, anoque, fulvis.

FIG. *Apis fulvago*. *Christii Hymenopt.* p. 189. tab. 16. fig. 7.

MUS. D. *Marsham, Lathbury, Sowerby, Kirby.*

Long. Corp. Lin. 4.

*Hab.* *Barhamiæ*, mense Junio anni 1799 locis graminosis in floribus frequens.

DESCR. Acul.

CORPUS nigrum, griseo-villosum.

(r) Tab. 4. \*\*. c. fig. 16. aa.

CAPUT.

MELITTA. (\*\*. c.)

CAPUT. *Antennæ* nigræ. *Linguæ* apex elongatus. *Maxillæ* basi obtusangulæ.

TRUNCUS. *Thorax* pube haud densâ, obscurè rufâ. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis, costali interiore nigro excepto, fuscis. *Pedes* nigri, rufescentehirti, posticis rufo-fulvis, femoribus nigris. *Scopæ*, item *Scopulæ*, aureæ. *Digiti* antici, *Tarsique* intermedii, ferruginei. *Flocculus* pallidus.

ABDOMEN subovale, supra convexum, nitidum, punctulatum, subglabrum. Ani *Fimbria*, et segmenti penultimi cilia marginalis, fulvæ. *Venter* rufescente-hirtus, anum versus præcipuè.

This insect appears to agree with the *Apis fulvago* of Christius. I have usually found it scarce, but in the year 1799 it was very plentiful.

*albicans*. 45. *M.* nigra, albicante-subvillosa; thorace, anoque, ferrugineis; tibiis plantisque posticis fulvis.

*Apis albicans* hirsuta, nigra; thorace, abdomineque apice fulvescente.

*Mill. Zool. Dan. n.* 1930.

*Apis sylvestris* thorace et pedibus exterius lanugine sordidè fulvâ vestitis, squamis imis ad margines pilis al-bentibus fimbriatis.

*Rai. Hist. Ins. p.* 242. *n.* 5.

FIG. *Apis hæmorrhoidalis. Christii Hymenopt. p.* 189. *tab.* 16. *fig.* 8.

MUS.

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Trimmer, Sowerby, Lathbury, Kirby.*

Long. Corp. Lin.  $4\frac{1}{4}$ —5.

*Hab.* Barhamiæ, mense Maio in floribus frequentissima, præsertim *Taraxaci*.

DESCR. Acul.

CORPUS nigrum, albido-villosum.

CAPUT. *Antennæ* nigræ. *Facies* utrinque pone antennas maculâ sericeo-pallidâ, nisi certo situ et sub lente vix conspicuâ.

TRUNCUS. *Thorax* pube densâ, brevi, ferrugineâ, tectus. *Squamulæ* rufæ. *Alæ* hyalinæ, apice paulò obscuriores; nervis testaceis, costali interiore nigro. *Pedes* pallido-hirti, tibiis, tarsisque posticis, scopulisque, fulvis. *Scopæ* pallidè flavæ. *Tarsi* intermedii obscurè ferruginei.

ABDOMEN ovale, piceo-nigrum, supra convexum, glabrum, punctulatissimum, lateribus albido-villosulis; segmentis tribus intermediis lineâ transversâ, arcuatâ, elevatiusculâ. Ani *Fimbria* ferruginea. *Venter* segmentis margine albido-ciliatis; anum versus fulvescunt villi.

Maris *Corpus* griseo-villosum. *Caput* hirsutum.

*Antennæ* thoracis longitudine; articulis arcuatis. *Thorax* pilis subrufis longiùs villosus.

*Abdomen* angustum, pilosulum.

*M. albicans* has usually been regarded in this country, as the *Apis helvola* of Linneus; upon this head

head I always entertained considerable doubts, and when I consulted the authentic specimen of that insect still preserved in the Linnean cabinet, I found that I was not mistaken, the true *A. helvola* being very distinct, as will appear hereafter. The definitions of the Zoologia Danica are so short, and unaccompanied by longer descriptions, that it is not always easy to say what insect is intended by them, but I think in my reference to that work upon this occasion I am not mistaken. Christius gives a figure of our insect as the *Andrena hæmorrhoidalis* of Fabricius, which, however, is very different, it will be described in the course of this work. *M. albicans* is one of our most common *Melittæ*.

*pilipes*. 46. *M. aterrima*, subvillosa; abdomine nitido; tibiis posticis scopâ albidâ.

*Andrena pilipes* glabra, atra; pedibus posticis albo ciliatis; alis fuscis.

*Fab. Ent. Syst. Em. n. 21.*

*Andrena ciliata. Fab. Spec. Ins. 1. p. 474. n. 12.*

*Lin. Syst. Nat. ed. Gmel. Apis, p. 2792. n. 190.*

*Apis atra* tota nigra, abdomine nitenti, alis fuscis.

*Schrank. Enum. Ins. Austr. n. 814.*

FIG. *Reaum. Hist. Ins. tom. 6. Mem. 4. p. 95. tab. 9. fig. 2?*  
*Schæff. Icon. tab. 224. fig. 3, 4.*

*Andrena aterrima* atra, nitida; thorace posticè nigro, pubescenti; tibiis posticis extus albo-villosis; alis apice nigris.

*Panzer. Fn. Ins. Germ. Init. n. 64. tab. 19.*

*Apis aterrima. Christii Hymenopt. p. 139. tab. 16. fig. 6?*

— *carbonaria. Ibid. p. 201. tab. 17. fig. 13?*

MUS.

MUS. *D. Marsham, Smith, Latham, Trimmer, Haworth, Sowerby, Lathbury, Kirby.*

Long. Corp. Lin. 5—7.

*Hab.* Barhamiæ, cuniculos fodiens cylindricos in terræ sabulosæ sectionibus verticalibus, inibique nidificans. In floribus haud rara. *Allium* spirat recens insectum.

**DESCR. Acul.**

**CORPUS** aterrimum, nigro-subpubescens.

**CAPUT** villosum. *Facies* inter oculos lata. *Antennæ* subtus nigro-piceæ.

**TRUNCUS.** *Squamulæ* atræ. *Alæ* paululum infuscatæ, apice nigræ; nervis, excepto costali inferiore nigro, ferrugineis. *Tibiæ* posticæ scopâ albidâ. *Femora* postica albido barbata. *Scopulæ* fuscæ. *Flocculus* obsoletus.

**ABDOMEN** ellipticum, lucidum, supra glabriusculum, segmento primo villosulo. Ani *Fimbria* nigra.

Maris *Antennæ* thorace breviores. *Thorax* pilis subnigris *f.* fuscis villosus. *Pedes* postici hirsutie nigrâ.

This Melitta has been described, under different names, by a variety of authors. It appears to be the *Apis atra* of Schrank, but not of Scopoli, the *Andrena pilipes* of Fabricius, the *Andrena aterrima* of Panzer, and the *Apis aterrima* and *carbonaria* of Christius, for I take both these latter insects to be varieties of *M. pilipes*, the one with clouded and the other with unclouded wings; he does not, however, give the white scopæ, which makes these synonyms

onyms rather doubtful, they may be designed; however, for male insects. The synonym of Reaumur is dubious, since he says of his insect "les ailes sont d'un violet foncé," which is not the case with ours. Fabricius suspects that this species may be the *Apis retusa* of Linneus, but upon the authority of the Linnean cabinet I can venture to assert that it is very different from that insect. Indeed the principal character which this great naturalist selected to denote that species (*abdominis basi retusâ*) is not to be found in this.

When this little insect has loaded the hair upon the sides of its metathorax, and its posterior legs with pollen, the contrast between the sable hue of the animal and the whiteness of the pollen is very striking.

*cineraria*. 47. M. atra, albido-pubescentis; thorace hirsuto fasciâ atrâ; abdominè atro-cærulescenti.

## ACUL.

*Apis cineraria* nigra; thorace hirsuto albicante fasciâ nigrâ; abdomine cærulescente.

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2771. n. 5. Fn. Suec. n. 1698.*

*Fab. Ent. Syst. Em. n. 67.*

*Vill. Ent. Eur. 3. n. 5.*

*Apis atra* nigerrima tota; fronte et thorace anticè et posticè albo tomentosis; abdomine subrotundo; alis semifuscis.

*Scop. Ent. Car. n. 797.*

*Ross. Fn. Etrusc. n. 917.*

FIG.



FIG. Schæff.  *Ic. tab. 22. fig. 5, 6.*

*Apis atra Christi Hymenopt. p. 174. tab. 14. fig. 1.*

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 14.*

## MAS.

*Apis nigra, hirsutie cinereâ.*

*Geoffr. Hist. Ins. Par. 2. p. 412. n. 8.*

*Apis cinerea. Fourcroy. Ent. Par. n. 8.*

MUS.  *D. Smith Linnean. Marsham, Latham, Haworth,  
 Trimmer, Kirby.*

*Long. Corp. Lin. 5—6.*

*Hab. Prope Londinum haud rara. Mas semel a D.  
 Lathbury in Suffolciâ captus.*

## DESCR. Acul.

CORPUS atrum, hirsutie cinereo-albidâ.

CAPUT.  *Facies hirsuta, vertice calvo. Antennæ  
 capite longiores, nigræ.*

TRUNCUS supra mollissimè hirsutus, fasciâ inter  
 alas atrâ.  *Squamulæ atræ. Alæ hyalinæ,  
 apice nervisque nigricantibus. Pedes atri,  
 hirti, femoribus anticis albido-lanatis. Tarsi  
 fusci, plantis pilosissimis; anteriores pallidiores.  
 Flocculus nigricans.*

ABDOMEN subrotundum, glabrum, nitidum,  
 atro-violasceus. Ani  *Fimbria nigricans. Ven-  
 ter convexus, hirtus anum versus præcipuè.*

Maris  *Antennæ thoracis ferè longitudine. Tho-  
 rax fasciâ atrâ, obsoletâ. Alæ apice obscuri-  
 ores. Femora omnia barbâ albicanti. Abdo-  
 men lanceolatum, segmentis duobus anticis  
 villosis-albicantibus.*

Scopoli has given this insect under the name of *Apis atra*, and Christius and Panzer have done the same. It is, however, the genuine *Apis cineraria* of Linneus, as appears from the authentic specimen of the Linnean cabinet. The *Apis cineraria* of Christius belongs to the species I am going next to describe.

*pratensis*. 48. *M. atra*, villosa; trunco hirsuto-albicanti.

*Apis pratensis* pubescens, nigra; fronte pilis nigris, thorace albidis hirsuto.

*Mill. Zool. Dan. n. 1912.*

*Andrena carbonaria* atra, thorace cinereo-pubescente; pedibus lævibus; alis fuscis.

*Fab. Ent. Syst. Em. n. 22.*

FIG. *Apis cineraria. Christi Hymenopt. p. 201. tab. 17. fig. 14.*

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab. Barhamiæ, in floribus capta tempore vernali, sed rara admodum.*

DESCR. Mas.

CORPUS atrum, pube nigricanti.

CAPUT. *Facies* atro-hirsuta. *Verticis* pili albidocinerei. *Antennæ* thorace vix breviores, piceo-nigræ, nitidæ, articulis subarcuatis.

TRUNCUS pilis albidocinereis subhirsutus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice fuscæ; nervis testaceis, costali interiore nigro. *Pedes* atri, nigro-hirti. *Scopulæ* obscurè ferruginæ.

ABDOMEN lanceolato-ovatum, lucidum, pilis albidocinereis

albido-cinereis parcius villosum. *Anus pilosonigricans*.

Obs. *In adultioribus thoracis pubes sordescit.*

*M. pratensis* much resembles the male of *M. cineraria*, but the hirsuties of its head is black, its abdomen is of a different form, and has no tinge of violet, and its wings are black at their tips. It has been long ago described in the *Zoologia Danica*. Fabricius gives it; if I am not mistaken in his insect, as the *A. carbonaria*, but that, as appears from the authentic specimen preserved in the Linnean cabinet, is very different, and indeed is no *Apis*, it seems to belong rather to the Fabrician genus *Scolia*.

49. *M. atra*, villosa; trunco supra hirsuto-rufo. *thoracica*.

## ACUL.

*Apis thoracica*, atra; thorace rufo; alis apice fuscis.

*Fab. Ent. Syst. Em. n. 63.*

*Lin. Syst. Nat. ed. Gmel. p. 2775. n. 77.*

*Vill. Ent. Eur. 3. n. 75.*

FIG. *Schæff. Ic. tab. 254. fig. 6, 7.*

*Harris. Exp. tab. 40. fig. 19.*

*Andrena bicolor. Christii Hymenopt. p. 177. tab. 14. fig. 5.*

## MAS.

*Andrena bicolor*, thorace villosa-ferrugineo; abdomine atro immaculato.

*Fab. Ent. Syst. Em. n. 12.*

*Lin. Syst. Nat. ed. Gmel. Apis, p. 2791. n. 179.*

*Vill. Ent. Eur. 3. Apis, n. 73.*

*Ross. Fn. Etrusc. n. 896.*

FIG. Schæff. Ic. tab. 32. fig. 2.

*Apis thoracica*. Christii Hymenopt. p. 178. tab. 14.  
fig. 6.

*Andrena bicolor*. Panzer. Fn. Ins. Germ. Init. n. 65.  
tab. 19.

MUS. D. Marsham, Latham, Trimmer, Sowerby, Lathbury,  
Kirby.

Long. Corp. Lin. 6—6 $\frac{3}{4}$ .

Hab. Barhamiæ,  $\beta$  in floribus tempore vernali frequens  
satis,  $\alpha$  semel capta a D. Marsham.

DESCR. Acul.

CORPUS atrum, pube nigricanti.

CAPUT hirsutum, vertice calvo. *Antennæ* nigræ.

TRUNCUS supra hirsutie densâ, ferrugineo-rufâ  
tectus. *Squamulæ* atræ. *Alæ* infuscatae, di-  
midio postico nigricanti maculâ mediâ albidâ;  
nervis nigris. *Pedes* nigro-hirti, tarsis anticis,  
digitisque quatuor posticis, fuscis. *Scopulæ*  
fusco-nigræ.

ABDOMEN ellipticum, glabrum, lucidum. Ani  
*Fimbria* nigricans. *Venter* convexus, nigro-  
villosus, anum versus maximè.

*Var.*  $\beta$  corporis hirsutie atrâ, thoracis ferrugineâ;  
alis subhyalinis, apice paulò obscurioribus;  
nervis, excepto costali interiore nigro, fer-  
rugineis. An eadem?

Maris *Antennæ* thorace breviores, nigro-piceæ,  
articulis subarcuatis. *Alæ* immaculatae, nervis  
ut in sexûs aculeati varietate  $\beta$ . *Abdomen*  
subovatum, pilosulum.

I observed

I observed in the introductory part of the work (s), that Fabricius had placed the two sexes of this insect in two different genera. He appears to have been led to do this by the difference of their form, the male being much more slender than the other sex; without inspecting their instrumenta cibaria, which he would have found to be exactly alike. Christius has given the male for *A. thoracica*, and the female for *A. bicolor*. Panzer's figure of the male is extremely accurate. Variety  $\beta$  of the aculeate sex is common enough with us, but I never met with more than a single specimen of  $\alpha$ , which appears to be the genuine *A. thoracica*, and that was given me by Mr. Marsham. They may be distinct species, but they are too similar to be separated, without a more striking difference than merely the colour of their wings.

50. *M. atra*, subvillosa; thorace hirsuto-flaves-melanoc-  
centi; abdomine ovato, nigro. phala.

MUS. Kirby.

Long. Corp. Lin. 6.

Hab. In Angliâ; a D. Goodenough semel lecta.

DESCR. Mas.

CORPUS atrum, pube nigricanti.

CAPUT. *Facies* atra, hirsuta. *Vertex* calvus.

*Occiput* pilis flavescens. *Antennæ* thorace breviores, nigrae, articulis subarcuatis.

TRUNCUS supra hirsuto-flavescens. *Squamulae*

(s) Vid. vol. 1. Introductory Remarks, p. 67.

picæ. *Alæ* subtestaceæ, nervis ferrugineis, costali interiore nigro. *Pedes* nigro-hirti. *Scopulæ* fuscæ. *Digiti* obscurè ferruginei.

ABDOMEN breve, ovatum, acutum, nigrum, pilosulum.

This insect much resembles the male of the preceding species, but it is larger, the down of the thorax is shorter, and rather yellow, and the abdomen is wider in proportion, and not so intensely black.

*nitida*. 51. *M. nigra*, pallido-subvillosa; thorace hirsutofulvo; abdomine nitido; tibiis posticis scopâ versicolori.

*Apis* subhirsuta; fusca; abdomine nitido; pedibus villosis.

*Geoffr. Hist. Ins. Par.* 2. p. 407. n. 2.

*Apis nitida. Fourcroy. Ent. Par. n. 2.*

*Apis cunicularia. Miller. inter notas M. S. Graianas supra citatas.*

*Apis sylvestris* corpore productiore, vulgari mellificâ paulò minor; thorace fulvo, abdomine nigro.

*Rai. Hist. Ins. p. 242. n. 4.*

MUS. *D. Marsham, Smith, Latham, Haworth, Trimmer, Lathbury, Sowerty, Kirby.*

Long. Corp. Lin. 4½—6.

*Hab.* Barhamiæ in floribus et locis apricis mensibus Aprile et Maio frequens. Mas in *Salicum* amentis masculis:

DESCR. Acul.

CORPUS nigrum, hirsutic pallidâ *f.* albicanti.

CAPUT. *Facies* fusco-villosa, anticè barbâ densâ albidâ;

albidâ; vertice calvo. *Oculorum* intervallum latissimum. *Antennæ* fusco-nigræ.

**TRUNCUS** supra pube, densâ admodum, fulvâ mollis. *Squamulæ* nigræ. *Alæ* subhyalinæ, apice nigræ; nervis testaceis, costali interiore nigro. *Pedes* fusco-pilosi. *Tibiæ* posticæ scopâ supra nigrâ, subtus albidâ, certo situ, versicolori.

**ABDOMEN** subovale, nitidum, fusco-nigrum, segmentis tribus anticis utrinque villosopallidis. Ani *Fimbria* nigræ. *Venter* convexus, segmentis margine ciliâ longâ, albicanti.

*Var. β* thoracis hirsutie flavescenti; plantis pallido-pilosis.

*γ* thoracis hirsutie cinerascenti.

**Maris Facies** barbâ longâ et densâ infra antenas tecta. *Antennæ* thorace vix breviores.

*Abdomen* lanceolatum, nitidissimum, albidopilosulum. *Pedes* pallido-hirti.

*Var. β* dimidio minor, thoracis hirsutie albicanti.

This insect is often mistaken for the *Apis cunicularia* of Linneus. As such it is described by Miller in an interleaved copy of the *Systema Naturæ*, which belonged to the late Mr. Gray (so justly celebrated as the Pindar of our age) and contains several valuable descriptions and observations of that great genius, who was an excellent naturalist as well as poet. The following are Miller's words. "*Apis cunicularia*. Mense Aprili

frequens in fossis sabulosis collium Hogmagog prope Cantabrigiam. Totâ fusco-nigra, abdomine supra glabriusculo, nitente; thorace villosulo fulvo-ferrugineo; maculâ alæ marginali subfuscâ. Simillima *A. mellificæ*." All the species of this family, at least so far as I am acquainted with them, excavate *cuniculi* for their little nests; and many of them, and among the rest *M. nitida*, have at first sight a considerable resemblance to the common hive bee; these circumstances occasion many different insects to be mistaken for *A. cunicularia*. Linneus has given no longer description of that insect, and his definition of it will agree with so many distinct species, that it is not to be wondered at, if this has generated errors. To prevent all future mistakes and confusion with respect to this insect, I shall give below a full description of it drawn from the authentic specimens preserved in the Linnean cabinet (*t*).

52. M.

(*t*) *cunicularia*. *M. atra*, grisescente-pubescentis; thorace ferrugineo; tibiis posticis undique villosis; abdomine hirsutulo, subovato, acuto.

*Apis cunicularia* pubescens; thorace ferrugineo, abdomine fusco, pedibus undique villosis.

*Lin. Syst. Nat. ed. 12. n. 23. Fn. Suec. 1698.*

MUS. *D. Smith* Linnean.

Long. Corp. Lin.  $6\frac{1}{2}$ .

*Hab.* in Europæ terrâ sabulosâ sicciorè, quam foraminibus plurimis parum remotis penetrat, et distinctæ inædificant plures. Simillima *A. mellificæ*. *Lin.*

*Obs.* *A. mellificæ* primâ facie simillimâ, revera tamen plurimum differt, et hujus generis est. *K.*

DESCR.



52. *M. nigra*, albido-pubescenti; thorace rufescenti; *tibialis*.  
tibiis posticis fulvis, scopâ fulvo-aureâ.

MUS. *D. Marsham, Sowerby, Kirby.*

Long. Corp. Lin.  $7\frac{1}{2}$ .

*Hab.* Barhamiæ, in floribus *Taraxaci* tempore vernali  
obvia, sed rariùs.

DESCR. Acul.

CORPUS nigrum, albido-pubescenti.

CAPUT villosum, vertice calvo. *Occipitis* villi  
flavescent. *Antennæ* nigræ. *Oculorum* inter-  
vallum latissimum.

DESCR. Acul.

CORPUS nigrum, pube grisescenti.

CAPUT undique hirsutum. *Oculorum* intervallum latissi-  
mum. *Antennæ* nigræ.

TRUNCUS undique hirsutie densâ mollis, subtus griseâ, supra  
ferrugineâ. *Squamulæ* nigræ. *Alæ* subtestaceæ nervis  
nigricantibus. *Pedès* griseo-hirti, tibiis posticis undique  
villosis. *Femora* postica barbâ longâ et densâ pallidâ.

ABDOMEN ex ovato subconicum, nigrum; tergo grisescente-  
hirsutulo. *Anus* vix fimbriatus, acutus.

*Var. β* trunco supra hirsutie cinerascenti.

*Obs.* *Abdomen* ex hirsutie fuscum esse, seu potius fusco-  
cinereum videtur, ast revera nigrum est.

Since the Linnean definition of this insect was intended prin-  
cipally to distinguish it from *A. mellifica*, which at first sight  
it much resembles, although when closely examined it will be  
found widely different; I have taken the liberty of altering it,  
so as to distinguish it from such of its congeners as will answer  
to that definition, and with which it is liable to be confounded.  
I have excluded all the synonyms usually referred to for it, as  
they may very probably belong to other insects. That of Chris-  
tius evidently does. (p. 164. tab. 13. fig. 4.) I cannot find  
that this *Melitta* has ever been taken in England.

TRUNCUS

TRUNCUS supra pube rufescenti tectus. *Squamulae* piceae. *Alae* subtestaceae, apice nigricantes; nervis, costali interiore nigro excepto, testaceis. *Pedes* rufescente-pilosi, femoribus albido-lanatis, posticis subtus apice rufis. *Tibiae* posticae fulvae, scopâ fulvo-aureâ undique vestitae. *Tarsi* posteriores, item *Digiti* primi et secundi paris, *Scapulaeque*, ferruginei.

ABDOMEN subovatum, nitidum, tergo convexiusculo, albido-hirsutulo, segmentis margine depressiusculis. Ani *Fimbria* nigricans. *Venter* convexus, segmentis margine albido-ciliatis, anum versus densius et longius.

*Var. β* trunco subtus pube grisescenti; tarsis intermediis totis ferrugineis; femoribus posticis apice immaculatis.

*Mouffrolella.* 53. *M. nigra*, pallido-pubescens; abdomine piloso nigro-aeneo; thorace, digitis, tibiisque posticis, rufis.

MUS. *Kirby.*

Long. Corp. Lin. 6.

*Hab.* Bahamae in floribus *Taraxaci* semel lecta.

DESCR. Acul.

CORPUS nigrum, pallido-pubescens.

CAPUT. *Facies* infra antennas hirsutiae, pro situ nunc nigricanti nunc cinerascenti, tecta. *Venter* calvus. *Occipitis* pili nigri. *Genarum* barba albida. *Oculorum* intervallum latissimum.

TRUNCUS supra hirsutiae, haud densae, rufescenti obsitus. *Squamulae* nigrae. *Alae* hyalinae, apice

apice obscuriores, nervis flavis, costale interi-  
ori nigro. *Pedes* rufescente-pilosi. *Femorum*  
barba albida. *Tibiæ* posticæ rufæ, scopâ  
fulvo-aureâ. *Tarsi* quatuor posteriores, at-  
que *Digit*i antichi, ferrugineo-rufi. *Palmæ*  
ex pilis fusco-cinereæ. *Scopulæ* fulvæ.

**ABDOMEN** subovatum, nigro-æneum, convexi-  
usculum, rufescente-hirsutulum, segmentis  
margine albidioribus. Ani *Fimbria* fusca.  
*Venter* pallido-hirtus.

**Maris Corpus** rufescente-villosum. *Antennæ*  
thoracis longitudine, articulis arcuatis. *Tibiæ*  
posticæ obscurè ferrugineæ, liturâ fuscâ. *Ab-*  
*domen* densiùs pilosum.

This species connects *M. tibialis* with that which  
I am next to describe; from the former it borrows  
the colour of its posterior tibiæ; from the latter  
the nigro-æneous tinge of its abdomen.

54. *M. nigra*, fulvo-pubescent; capite anoque nigro-  
atris; abdomine subhirsuto, nigro-æneo. *nigro-  
ænea.*

**MUS.** *D. Marsham, Smith, Drury* Apis, n. 43. *Haworth,*  
*Trimmer, Sowerby, Lathbury, Kirby.*

Long. Corp. Lin. 6—7.

*Hab.* Barhamiæ; tempore vernali frequens satis. **Mas**  
in *Saticum* amentis.

**DESCR.** Acul.

**CORPUS** nigrum, pube densâ fulvâ.

**CAPUT.** *Facies* atro-hirsuta, *Genarum* barba  
fulvescit. *Vertex* calvus. Spatium inter  
*Oculos* interjectum latum.

**TRUNCUS.**

**TRUNCUS.** *Thoracis* pubes rufa. *Squamulæ* piceæ. *Alæ* subhyalinæ, nervis testaceis, costali interiore nigro. *Anastomosis* ferruginea. *Pedes* nigri, supra ex pilis fuscis, subtus tamen pili fulvescunt. *Femorum* lana pallida. *Tibiæ* poticæ scopâ densâ fulvâ undique obsitæ, *Scopulæ* ferruginæ.

**ABDOMEN** ovale, supra nigro-æneum, fulvescente-subhirsutum; ano atro. *Venter* convexus, per fascias hirtus.

*Var. β.* minor, facie, circa basin antennarum, hirsutie sordidè fulvâ.

**Maris** *Facies* ut in varietate β. *Antennæ* thoracis longitudine. *Maxillæ* basi obtusangulæ, *Pedes* fulvo-hirti. *Abdomen* ovatum.

*Var. γ* faciei hirsutie rufescenti.

**Obs.** *Abdominis color nigro-æneus, tum hujus tum præcedentis speciei, ex pilis, qui tamen seorsim fulvescunt, exoritur; pilis enim abrais, abdomen fit nigrum.*

This insect approaches nearer to the *Apis cunicularia* of Linneus, than any other English species with which I am acquainted: but it is sufficiently distinguished from it, by its black head and anus, and the form and colour of its abdomen. It is remarkable that the black abdomen should receive, from the tawney hairs which cover it, a nigro-æneous tinge.

Upon this insect I discovered, last spring, a very singular animal, which seems appropriated to the present

present genus. I had previously more than once observed upon other species something that I took to be a kind of *Acarus*, which appeared to be immoveably fixed just at the inosculation of the dorsal segments of the abdomen: at length, finding three or four upon a specimen of *M. nigro-ænea*, I determined not to lose that opportunity of taking one off to examine and describe; but what was my astonishment when upon my attempting to disengage it with a pin, I drew forth from the body of the *Melitta* a white, fleshy larva, a quarter of an inch in length; the head of which I had mistaken for an *Acarus* (*u*). How this animal receives its nourishment seems a mystery. Upon examining the head under a strong magnifier I could not discover any mouth or proboscis with which it might perforate the corneous covering of the abdomen, and so support itself by suction (*x*), on the under side of the head at its junction with the body there was a concavity (*y*); but I could observe nothing in this but a uniform, unbroken surface. As the body of the animal is inserted in the body of the *Melitta*, does that part receive its nutriment from it by absorption? My memory does not furnish me with any instance of this kind: but have the *vermes intestinales* any mouth?

After I had examined one specimen I attempted to extract a second, and the reader may imagine how greatly my astonishment was increased, when

(*u*) Tab. 14. n. 11. fig. 7. and fig. 9. *a*.      (*x*) Ibid fig. 8.

(*y*) Ibid. fig. 7. *b*.

after

after I had drawn it out but a little way, I saw its skin burst, and a head as black as ink, with large staring eyes and antennæ consisting of two branches, break forth, and move itself briskly from side to side. It looked like a little imp of darkness just emerging from the infernal regions. My eagerness to set free from its confinement this extraordinary animal may be easily conjectured. Indeed I was impatient to become better acquainted with so singular a creature. When it was completely disengaged, and I had secured it from making its escape, I set myself to examine it as accurately as possible; and I found, after a careful inquiry, that I had not only got a non-descript, but also an insect of a new genus, whose very class seemed dubious. From its mode of life it ought to belong to the Linnean genus *Ichneumon* in the *Hymenoptera*; but it has neither stemmata, nor four wings, and its palpi are not at all similar to those of the insects of that class(z). From its elytra, (which, however, are placed in a very extraordinary situation, being fixed to the sides of the thorax) it ought to be a *Coleopterous* insect, but it seems to possess but little of the general habit and character of that class: perhaps it had better be considered as *Hemipterous*, but till an opportunity occurs of examining more specimens it would be rash to speak too positively upon this head.

After I had sufficiently examined my animal, I made a rude sketch of it, its antennæ, &c. (a): and

(z) Tab. 14. n. 11. fig. 2. a, b, and fig. 5. (a) Ibid. fig. 1—9.

it

it was well that I did, for upon leaving home for some weeks, when I returned, it was so miserably mauled by the great enemy of the entomologist, the *Acarus destructor* (*b*), that I should have been unable to give a tolerable idea of it, since both elytra and antennæ were gone: enough of it, however, still remains to shew what it was. I have not as yet met with another.

I shall attempt a description of it below (*c*)

55. M.

(*b*) Schrank. Enum. Ins. Austr. n. 1057. tab. 2. fig. H.

(*c*) STYLOPS (*a*). *Character Essentialis.*

*Antennæ* bipartitæ. *Oculi* pedunculati.

*Character Artificialis.*

*Antennæ* bipartitæ (*b*).

*Oculi* pedunculati (*c*).

*Elytra* lateribus thoracis affixa (*d*).

*Scutellum* porrectum, abdomen obtegens (*e*),

1. St. aterrima; alis corpore majoribus; pedibus fuscis. *Melittæ.*

MUS. Kirby.

Long. Corp. Lin.  $1\frac{1}{2}$ .

*Hab.* Barhamiæ, larva in *Melittarum* abdomine parasitica.

DESCR. CORPUS aterrimum, obscurum.

CAPUT anticè obsolete trilobum (*f*). *Palpi* quatuor, exteriore biarticulati, articulo primo subclavato, secundo lanceolato, acuto (*g*); interiores breviores, exarticulati, tenues, apicem versus paulò crassiores (*h*). *Antennæ* capite longiores,

(*a*) Them.  $\sigma\upsilon\lambda\omicron\varsigma$ , columnæ; and  $\omega\downarrow$ , oculus.

(*b*) Tab. 14. n. 11. fig. 2. *d*, *c*. and 3, 4. (c) Ibid. fig. 1. *f*, *f*.

(*d*) Ibid. *gg*. (e) Ibid. *b*. and fig. 6. *b*. (f) Ibid. fig. 1. *a*.

(g) Ibid. fig. 2. 5. *a*. (h) Ibid. *bb*.

*atriceps*. 55. *M. nigra*, rufescente-villosa; capite atro; tarsis rufis.

MUS. *D. Marsham*, *Trimmer*, *Kirby*.

Long. Corp. Lin.  $5\frac{1}{2}$ — $6\frac{1}{4}$ .

*Hab.* Barhamiæ, in *Salicum* amentis tempore vernali satis frequens.

### DESCR. Mas.

CORPUS nigrum, pube densâ rufescenti.

CAPUT. *Facies* atro-hirsuta. *Occipitis* villi descendunt. *Antennæ* thoracis fêrè longitudine, nigræ, articulis subarcuatis.

giores, articulô primo magno, brevi (*i*); ramos duos emittentè; intèriori breviori, latiori, exarticulato (*k*); exteriori longiori, tenuiori; triarticulato (*l*). *Oculi* magni, prominuli, conspicuè reticulati, pedunculo brevi, crasso insidentes (*m*). *Vertex* planiusculus.

TRUNCUS. *Elytra* parva, sublinearia, thioracis lateribus affixa (*n*). *Alæ* magnæ, corpore longiores, plicatæ, lacteæ, costâ, lineolâque submarginali, nigricantibus (*o*) *Scutellum* porrectum, elongatum, calceiforme, abdomen obtegens (*p*); processu corneo utrinque munitum (*q*). *Pedes* compressi, picei.

ABDOMEN sub scutelli tegmine delitescens (*r*), carnosum, ano truncato, subemarginato (*s*).

Obs. *Larvæ* corpus subcylindricum, molle, albidum; in abdomine *Melittæ* insertum; capite exerto, corneo, cordato, planiusculo, subrufo, posticè nigro, subtus posticè concavo (*t*).

- (*i*) Tab. 14. n. 11. fig. 1. *b*. fig. 3, 4. *a*.      (*k*) Ibid. fig. 2. 4. *b*. fig. 4. *b*.  
 (*l*) Ibid. fig. 2. *d*. fig. 4. *c*.      (*m*) Ibid. fig. 1. *ff*.      (*n*) Ibid. *gg*.  
 (*o*) Ibid. *ll*.      (*p*) Ibid. *b*. and fig. 6. *b*.      (*q*) Ibid. fig. 1. *j*.  
 and fig. 6. *d*.      (*r*) Ibid. fig. 1. *k*.      (*s*) Ibid. fig. 6. *c*.      (*t*) Ibid.  
 fig. 7, 8, 9. *a*.

TRUNCUS



TRUNCUS supra rufo-pubescentis. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis, costali interiore nigro excepto, testaceis. *Pedes* rufescente-hirti, tarsi omnibus, tibiisque posticis, rufis.

ABDOMEN ovato-lanceolatum, hirtum.

*Var. β* major, maxillis basi dente obsoleto; thoracis hirsutie fulvâ; plantis quatuor anterioribus nigris; tibiis posticis apice tantum rufis.

This species resembles the male of the two preceding ones; from *M. Mouffetella*, however, it seems sufficiently distinguished by its black head; and from *M. nigro-ænea* by the colour of its tarsi, and the want of the black anus. I am not certain that variety *β* is not a distinct species, although of the same sex, it is much larger than *α*, and only the digits of the four anterior legs are red. The posterior tibiæ also are red only at their tips.

56. *M. nigra*, rufescente-villosa; capite atro; *ven-bimaculata*, tre basi utrinque maculâ rufâ.

MUS. Kirby.

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* Barhamiæ bis capta.

DESCR: Mas:

CORPUS nigrum, pube pallidè rufescenti.

CAPUT atrum, hirsutum. *Maxillarum* barba tamen, et *Occipitis* pili sordescunt. *Antennæ* nigræ, thoracis vix longitudine, articulis arcuatis.

TRUNCUS pube sordidè rufescenti, *f.* subgriseá, translucente nigredine corporis, supra obsitus. *Squamulæ* nigræ. *Alæ* subhyalinæ, apice obscuriores; nervis flavis, costali interiore nigro. *Pedes* hirti. *Scopulæ* fulvæ.

ABDOMEN ovato-lanceolatum, hirtum. *Venter* basi utrinque maculâ magnâ, rufâ.

The red spot on each side of the base of the underside of the abdomen, and the black tarsi, are the principal characters which separate this species from *M. atriceps*, which, in other respects, it a good deal resembles. Indeed, the males of the different species in this genus are often so similar, that, where we are unacquainted with the other sex, it is not always easy to say which is a species and which a variety.

*Trimmer-57. M. nigra*, grisescente-pubescenti; abdomine hirsutulo; tibiis posticis scopâ versicolori.

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin. 7.

*Hab.* Barhamiæ in floribus Augusto medio 1799 semel lecta,  $\beta$  bis in floribus horti mense Maio. Capta etiam a D. Jacobo Trimmer (entomologo cordato, et horum insectorum historiæ et œconomiæ acerrimo indagatore) prope Hanwell Middlesexiæ.

DESCR. Acul.

CORPUS nigrum, grisescente-pubescenti.

CAPUT. *Facies* posticè pilis nigricantibus. *Vertex* calvus. *Maxillæ* basi obsoletè bidentatæ. *Antennæ* capite longiores, nigræ.

TRUNCUS

TRUNCUS supra pube rufescenti haud densâ tectus. *Squamulae* piceae. *Alae* hyalinæ, apice obscuriores; nervis testaceis, costali interiore nigro. *Pedes* fusco-pilosi, tibiis posticis scopâ supra nigrâ, subtus albidâ, certo situ versicolori. *Digiti* ferrugini.

ABDOMEN ovatum, grisescente-hirtum. Ani *Fimbria* atra. *Venter* segmentis basi pilis brevibus, nigricantibus obsitis; apice longioribus, pallidis ciliatis.

*Var. β* adultior alis testaceis; abdominis hirsutie cinerascenti.

Obs. *Primâ facie Api mellificæ simillima est hæc species.*

*M. Trimmerana* strongly resembles *M. cunicularia*; but it is smaller, the form of its abdomen is very different, its anal frînge is black, and its scopæ are black above and white below. The antennæ of the aculeates of this species are much longer than is usual in that sex.

58. *M. atra*; thorace, abdominisque basi, hirsuto-*varians*, fulvis; tibiis posticis scopâ versicolori.

*Apis varians* nigra; thorace, abdominisque basi superne, hirsuto-fulvis.

Ross. *Fn. Etrusc. Mantiss. n. 317.*

FIG. *Pânzer. Fn. Ins. Germ. Init. n. 56. tab. 12.*

MUS. *D. Marsham, Donovan, Kirby.*

Long. Corp. Lin. 5—6.

*Hab.* In Angliâ, capta semel in floribus *P. Mali* in horto quodam Gippovicensi.

DESCR. Acul.

CORPUS atrum, pubescens.

CAPUT pube nigricanti. *Antennæ* nigræ, capitè longiores.

TRUNCUS supra hirsuto-fulvus, subtus pube rariore pallidâ. *Squamulæ* ferrugineæ. *Alæ* subhyalinæ, apice obscuriores; nervis, excepto costali interiore nigro, testaceis. *Pedes* nigri, fusco-pilosi, femorum barbâ pallidâ. *Tibiæ* posticæ scopâ supra fusco-nigrâ, subtus argenteo-albidâ, certo situ versicolori. *Tarsi* obscurè ferrugini. *Flocculus* albidus.

ABDOMEN subellipticum, anticè hirsuto-fulvum, posticè nigro-hirtum. *Venter* pilis sordidè nigricantibus hirtus.

Maris *Corpus* cinereo-villosum. *Capitis* hirsuties item cinerea. *Maxillæ* forcipatæ, basi obtusangulæ. *Antennæ* vix thorace breviores articulis arcuatis. *Thoracis* hirsuties rufescente-pallida. *Pedes* cinereo-hirti, digitis rufis. *Scopulæ* fulvæ. *Abdomen* lanceolatum, basi hirsuto-cinerascens.

This is given by Rossi and Panzer as the *Abeille maçonne a poils roux* of Geoffroy (*d*); but that is a genuine *Apis*, and belongs to one of the branches of that family, the individuals of which are distinguished by an inflected lip. Panzer's figure very accurately represents our insect, but he is quite mistaken in asserting that it is a male.

(*d*) Hist. Ins. Par. 2. p. 409. n. 4.

59. *M. nigra*, albido-villosa; thorace abdominis-*helvola*.  
que basi, hirsuto-ferrugineis; tibiis posticis  
scopâ flavescenti.

*Apis helvola* rufa, villosa, oblonga, subtus albida.

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2791. n. 16. Fn.*

*Suec. 1693.*

*Vill. Ent. Eur. 3. n. 13.*

*Fn. Frid. n. 645.*

*Forst. Cat. Brit. Ins. 712. Apis, n. 6.*

*Andrena helvola* thorace ferrugineo; abdomine cinescente.

*Fab. Ent. Syst. Em. n. 11.*

FIG. *Tab. 15. fig. 9.*

MUS. *D. Smith* Linnæan. *Marsham, Latham, Sowerby* Mas.  
*Lathbury* Mas. *Kirby.*

*Long. Corp. Lin. 5.*

*Hab. Barhamiæ, flores Ribis nigri* frequentans, sed  
rarior.

DESCR. *Acul.*

*CORPUS* nigrum, pube albidâ incanum.

*CAPUT.* *Maxillæ* forcipatæ. *Occiput* pilis flavescentibus. *Vertex* calvus. *Antennæ* nigrae, capite longiores. *Oculorum* intervallum latissimum.

*TRUNCUS.* *Thorax* pube ferrugineâ tectus. *Metathorax* villosa-flavescentis. *Squamulæ* ferrugineæ. *Alæ* hyalinæ, apice obscuriores; nervis, costali interiore nigro excepto, testaccis. *Pedes* nigri, rufescente-pilosi, femorum barbâ, flocculoque, albidis. *Tibiæ* posticæ scopâ flavescenti. *Tarsi* quatuor posteriores, *Digitique* antiçi, ferruginei. *Scopulæ* fulvo-aureæ.

ABDOMEN subovatum, piloso-incanum, basi hirsuto-fulvum. *Venter* albido-hirtus, ano flavescenti.

*Var. β* corporis hirsutiae subflavâ; plantis nigris. *Maris Corpus* cinereo-villosum *Caput* thorace majus. *Maxillæ* basi obtusangulæ. *Antennæ* thorace breviores, articulis subarcuatis. *Squamulæ* piceæ. *Digit*i ferruginei. *Abdomen* ovato-lanceolatum, basi hirsuto-cinerascens, segmentis margine obscurè rufis.

This is the labelled *Apis helvola* of the Linnean cabinet; there are several specimens of the insect which I shall next describe placed by its side, which probably Linneus considered as nothing more than varieties of it. The description in the *Fauna Suecica* seems to have been taken from one of these; for the terms "*Abdomen nigricans minus villosum. Tibiæ posticæ lanâ ferrugineâ,*" will not agree with the genuine *A. helvola*, and vice versâ, the last term of the nomen specificum in the *Systema Naturæ*, "*subtus albida,*" does not coincide with this supposed variety, which underneath is of a deep black. At first sight, the abdomen of this insect looks as if half the tawny hairs had been rubbed off, and only a patch of them left at its base; but this circumstance constantly attends the most recent individuals.

*Guyana* 60. *M. atra*, villosa; thorace, abdomine anticè, tibiisque posticis scopâ, ferrugineis.

*Apis*

*Apis helvöla.* Ross. *Fn. Etrusc.* n. 895.

MUS. *D. Smith* Linnean. *Marsham, Latham, M<sup>c</sup>Leay, Haworth, Sowerby, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ in floribus a primo vere ad serum autumnum frequentissima allium spirans. Mas circa terras apricas arenosas tempore vernali volitat.

DESCR. Acul.

CORPUS aterrimum, pubescens.

CAPUT trunco angustius, hirsutum. *Antennæ* nigrae, capite longiores.

TRUNCUS supra ferrugineo-hirsutus. *Squamulae* piceae. *Alae* subhyalinæ, apice obscuriores; nervis ferrugineis, costali interiore nigro. *Pedes* atri, pilosi. *Tibiæ* posticæ extra scopâ ferrugineâ. *Flocculus* rufescens.

ABDOMEN subovatum, atrum, segmentis tribus anticis ferrugineo-subhirsutis.

Maris *Corpus* lineare. *Antennæ* thorace breviores, articulis subarcuatis. *Pedes* rufescentehirti, posteriores maximè. *Abdomen* rufescente-hirsutulum.

*Memoriæ botanici periti, tum et naturæ scrutatoris indefessi, mihi et omnibus Historiæ Naturalis cultoribus semper amicissimum se præbentis, Nicolai Gwyn, M.D. Gippovicensis, hoc insectum dicatum volo.*

This insect is extremely different from *M. helvöla*, although confounded with it by Rossi, and, as observed above, by Linneus himself. It is en-

tirely black, excepting only the thorax, the three first dorsal segments of the abdomen, and the scopa, the hirsuties of which is ferruginous.

*angustior*. 61. *M. nigra*; rufo-subvillosa; thorace pubescenti; femoribus, pedibusque quatuor anticis, piceis; posticis ferrugineis.

MUS. *D. Banks* Acul. *Kirby* Mas.

Long. Corp. Lin. 4—4½.

*Hab.* In Angliâ. Mas *Barhamiæ* lectus.

DESCR. Acul.

CORPUS nigrum pube rufâ.

CAPUT hirsutie fuscescenti. *Antennæ* piceæ.

TRUNCUS supra pube fulvescenti obsitus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis ferrugineis, costali interiore nigro. *Pedes* picei, rufescente-pilosi. *Tibiæ* tamen et *Tarsi* postici ferruginei. *Scopa* rufa.

ABDOMEN angustum, sublanceolatum, segmentis margine pilis rufescentibus ciliatis. *Venter* fusco-hirtus.

Maris *Corpus* lineare, cinereo-villosulum. *Caput* trunco majus. *Facies* infra antennis atro-hirsuta. *Antennæ* vix thorace breviores. *Pedes* postici rufo-picei. *Abdomen* cinerascete-pilosum.

I have had no opportunity of comparing what I take to be the male of this *Melitta* with the other sex which is in Sir Joseph Banks's cabinet; but the colour of the legs, in which they appear to agree very nearly, has induced me to consider it as such.



62. *M. nigra*, grisescente-subvillosa; capite atro; *piceicornis*.  
antennis piceis; abdōmine fusco.

MUS. *Kirby*.

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamiæ, rarissima, semel tantūm lecta.

DESCR. Acul.

CORPUS nigrum, grisescente-subvillosum.

CAPUT atrum pube brevi, et haud densā, nigrā  
obsitum. *Maxillæ* forcipatæ. *Antennæ* capite  
longiores, rufo-piceæ, scapo nigro.

TRUNCUS. *Thorax* pube, rarā admodum, flave-  
scenti. *Squamulæ* piceæ. *Alæ* subtestaceæ,  
apice obscuriores, nervo costali interiore piceo.  
*Tibiæ* posticæ scopā parvā flavescenti. *Floc-  
culus* obsoletus.

ABDOMEN ovatum, fuscum, grisescente-pilosum.

*Venter* convexus.

63. *M. nigra*, hirsuto-cinerascens; maxillis longi-*spinigera*.  
tudine capitis atri, basi spinā filiformi armatis.

FIG. *Tab. 15. fig. 10.*

MUS. *D. Banks* *Apis* *helvola*, *Marsham*, *Kirby*.

Long. Corp. Lin. 4—5.

*Hab.* Barhamiæ in *Salicum* amentis rarissima.

DESCR. Acul.

CORPUS nigrum, cinereo-hirsutum.

CAPUT magnum, trunco latius, aterrimum, hir-  
sutum. *Maxillæ* minaces, capite vix breviores,  
forcipatæ, subflexuosæ, sulco longitudinali  
supernè exaratæ, acutissimæ, apice edentulæ,  
basi

basi spinâ filiformi deorsum spectante armataë(e).  
*Genæ* posticè rectangulæ. *Antennæ* nigræ,  
 thoracis ferè longitudine, articulis arcuatis.

TRUNCUS. *Squamulæ* piceæ. *Alæ* hyalinæ, iri-  
 colores, apice obscuriores; nervis, excepto  
 costali interiore fusco, testaceis. *Pedes* gri-  
 sescente-hirti, digitis ferrugineis. *Scopulæ*  
 flavescunt.

ABDOMEN lanceolatum, nitidum, pilosum; seg-  
 mentis tribus anticis margine rufo-membra-  
 naceis.

*Var. β* minor, capite, respectu thoracis, minori;  
 maxillis brevioribus; thoracis hirsutie sordidè  
 griseâ.

This is one of the most singular insects of this  
 genus that I have ever seen. Its long, forcipate  
 maxillæ, and large black head, give it a very fero-  
 cious aspect. The spine which arms the base of  
 the maxillæ is, probably, only a sexual distinction.  
 I do not find it described by any author; or if it  
 be, the spines, its most striking characteristic,  
 are overlooked. In Sir Joseph Banks's cabinet it  
 stands as *Apis helvola*, it is the right-hand specimen.

*armata.* 64. *M. nigra*, cinerascens-villosa; maxillis longi-  
 tudine capitis, basi dente armatis.

*Apis armata* fusca; capite, thoraceque griseis; maxillâ  
 basi dente armatâ; plantis luteis.

*Mus. Lesk. p. 80. n. 514.*

*Lin. Syst. Nat. ed. Gmel. p. 2790. n. 167.*

(e) Tab. 4. \*\*. c. fig. 8. a.

MUS.

MUS. *D. Marsham, Latham, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ in *Salicum* amentis, præcedenti frequentior. In *Dauci Carotæ* umbellâ involutâ insomniantem semel prehendi.

DESCR. Mas.

CORPUS nigrum, cinereo-villosum.

CAPUT atrum, trunco majus, anticè pilis albidis, posticè nigris, longiùs barbatum. *Maxillæ* minaces, capitis ferè longitudine, forcipatæ, subflexuosæ, sulco longitudinali exaratæ, apice bidentatæ dente exteriori longiore, basi dente valido, subarcuato, deorsum spectante, armatæ (*f*). *Genæ* posticè rectangulæ. *Antennæ* nigrae, thoracis vix longitudine.

TRUNCUS hirsutus, supra hirsutie grisescenti. *Squamulæ* piceæ. *Alæ* hyalinæ, apice obscuriores, splendidè iricolores; nervis testaceis, costali interiore nigro. *Pedes* grisescente-hirti, scopulis flavescentibus.

ABDOMEN ovatum, fusco-nigrum, pilosulum, basi grisescente-hirsutum. *Venter* cinereo-hirtus, segmentis apice albedo-ciliatis.

This Melitta, which appears to be the *Apis armata* of the *Museum Leskeanum*, somewhat resembles the preceding species; but, instead of a spine, the maxillæ are armed only with a tooth at their base, and their apex is bidentate; the head also is of a different colour, and the abdomen of a different form.

(*f*) Tab. 4. \*\*. c. fig. 7, *a*.

65. M.

*subdentata.*

65. *M. nigra*, cinerascens-villosa; facie anticè barbâ albâ; maxillis longitudine capitis, basi obtusangulis.

MUS. *D. Sowerby, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ rarissima.

DESCR. Mas.

CORPUS nigrum, cinereo-villosum.

CAPUT trunco majus. *Facies* anticè barbâ longâ et densâ argenteâ ornata. *Maxillæ* minaces, capite vix breviores, forcipatæ, subflexuosæ, apice bidentatæ dente exteriori longiore, sulco longitudinali exarata, basi dente obsolete armata. *Genæ* posticè rectangulæ. *Antennæ* thoracis ferè longitudine.

TRUNCUS supra rufescente-villosus. *Squamulæ* piceæ. *Alæ* hyalinæ, apice obscuriores, splendide iricolores; nervis, costali interiore fusco excepto, testaceis. *Pedes* grisescente-hirti, scopulis flavescens.

ABDOMEN lanceolatum, pilosulum, basi cinereo-villosum, ano rufescente. *Venter* albido-hirtus.

*Var. β* maxillis basi absque dente obsolete; thorace, abdominisque basi, hirsuto-ferrugineis.

*M. subdentata* is so similar to the preceding species, that it is not without some hesitation that I venture to separate them: but since they are both of the same sex, the absence of the strong tooth at the base of the maxillæ, and the long silver beard which

which covers the anterior part of the face seem to indicate that they belong to different females. Variety  $\beta$  differs considerably from  $\alpha$ , but I think not sufficiently to make another species of it.

66. *M. nigra*, pallido-villosa; thorace fulvescenti; *picipes*.  
abdomine fusco; pedibus rufo-piceis.

MUS. *D. Drury* Apis, n. 65.

Long. Corp. Lin. 4.

*Hab.* in Angliâ. Hanc unicam tantum vidi.

DESCR. Mas.

CORPUS nigrum, pallido-pubescentis.

CAPUT thorace majus, hirsuto-grisescens. *Facies* villosa-incana. *Maxillæ* capite breviores; forcipatæ. *Antennæ* nigræ.

TRUNCUS supra fulvescenti-villosus. *Alæ* hyalinæ, nervis testaceis. *Pedes* rufo-picei, pallido-hirti

ABDOMEN fuscum, nitidum, pilosulum. *Venter* segmentis margine pallido-ciliatis.

67. *M. nigra*, pallido-villosa; thorace hirsuto-fer-angulosa.  
rugineo; capite posticè utrinque rectangulo.

MUS. *Kirby*.

Long. Corp. Lin.  $4\frac{1}{4}$ .

*Hab.* in Angliâ, a D. Trimmer prope Londinum semel lecta.

DESCR. Mas.

CORPUS nigrum, pallido-villosum.

CAPUT truncò latius. *Maxillæ* forcipatæ, capite breviores, basi obtusangulæ(h). *Genæ* posticè

(h) Tab. 4, \*\*, c. fig. 6.

rectangulæ.

rectangulæ. *Antennæ* nigræ, thoracè vix breviores.

TRUNCUS supra hirsutie, haud densâ, ferrugineâ obsitus. *Squamulæ* nigræ. *Alæ* hyalinæ, apicè obscuriores, splendidè iricolores; nervis ferrugineis, costali interiore nigro. *Pedes* pallidohirti.

ABDOMEN lanceolatum, pilosum, basi fulvo-villosulum. *Venter* segmentis margine fimbriâ densissimâ, niveâ nitidè ciliatis.

This, as well as several of the preceding species, is distinguished from the other males of this genus by the right angle in which the head terminates on its lower side behind (*i*). It very nearly resembles the male of *M. varians*, but that insect is without the thick white fringe, by which the margin of the ventral segments of the abdomen of *M. angulosa* is terminated.

*fulva.* 68. *M. atra*; thorace, abdomineque supra, hirsutis, fulvo-aureis.

*Apis fulva* hirsuta, nigra; thorace, abdomineque, fulvis.  
*Schrank. Enum. Ins. Austr. n. 805.*

*Lin. Syst. Nat. ed. Gmel. p. 2786. n. 133.*

*Vill. Ent. Eur. 3. n. 120.*

*Apis vestita* atra; thoracis abdominisque dorso, ferrugineo-hirtis.

*Fab. Ent. Syst. Em. n. 65.*

*Apis aurea* atra; thorace et abdomine supra, pilis fulvo-aureis, hirsutis.

*Marsham. M. S.*

(*i*) Tab. 4. \*\*. c. fig. 13. a.

FIG.

FIG. Schæff. Icon. tab. 32. fig. 3.

*Apis vestita*. Panzer. Fn. Ins. Germ. Init. n. 55. tab. 9.

*Apis vulpina*. Christii Hymenopt. p. 161. tab. 12. fig. 13.

MUS. D. Marsham, Haworth, M<sup>c</sup>Leay, Trimmer, Lathbury,  
Sowerby, Kirby.

Long. Corp. Lin.  $6\frac{1}{2}$ .

Hab. Barhamiæ sed rarior. In floribus hortorum Aprile  
et Maio circa Londinum frequens. D. Marsham.

DESCR. Acul.

CORPUS aterrimum, subhirsutum.

CAPUT. Vertex calvus. Antennæ capite longi-  
ores, nigrae.

TRUNCUS. Thorax hirsutiae densa, ferrugineâ  
vestitus. Squamulae ferrugineae. Alae hyalinae,  
apice obscuriores; nervis ferrugineis, interi-  
oribus duobus nigris. Pedes atri, pilosissimi.

ABDOMEN ovale, depressum, tergo pilis densis,  
fulvo-aureis, quasi per fascias hirsutissimo. Ani  
Fimbria pallidè flava. Venter convexus, seg-  
mentis margine atro-hirtis.

This is one of the most elegant of our English species of this genus, the deep orange of the thorax, and of the upper side of the abdomen, forming a most striking contrast with the intense black of the rest of the body. Led by the single circumstance of the thickness of its hirsuties, for I think there can be no doubt of this being his *Apis fulva*, Schrank has placed this amongst the *Bombinatrices*, as he has also *Apis rufa*, Lin., and *Apis pilipes*, Fab., but a very short examination would convince any

any entomologist that these are altogether distinct from that family. This is also the *A. vestita* of Fabricius and Panzer, and the latter has given a very accurate figure of it. Christius has likewise figured it under the name of *Apis vulpina*, and my friend Mr. Marsham has described it under that of *A. aurea*: his name I should have retained, as extremely apt, had not Schrank's had a prior claim.

*Clarkella*. 69. *M. atra*, hirsuta; thorace, pedibusque posticis, fulvis.

FIG. *Apis icterica*. *Christii* Hymenopt. p. 190. tab. 16. fig. 9?

MUS. D. Clark, Marsham, Trimmer, Francillon, Kirby.

Long. Corp. Lin. 6.

*Hab.* Haud infrequens apud Perry Wood, juxta Worcester, D. Bracy Clark. Capta sæpius a D. J. Trimmer prope Londinum.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT. *Vertex* calvus. *Occipitis* pili flavescunt.

*Antennæ* vix capite longiores, nigræ.

TRUNCUS supra hirsutie fulvo-flavâ vestitus.

*Squamulæ* nigræ. *Alæ* subhyalinæ, apice paulò obscuriores; nervis, exceptis crassioribus duobus nigris, ferrugineis. *Pedes* atrî, pilosi, tarsi quatuor anticis fuscis. *Tibiæ Tarsique* postici fulvi. *Scopa* fulvo-aurea. *Scopulæ* ferrugineæ.

ABDOMEN ovatum, per fascias supra et infra atro-hirsutum.

*In*



*In honorem D. Bracy Clark, Oestrorum monographi accuratissimi, nomen, dedi.*

Mr. Bracy Clark, author of a most ingenious paper upon the genus *Oestrus* in the third volume of the Transactions of the Linnean Society (*h*), sent me this *Melitta*, for the *Apis bicolor* of Fabricius. But that, as we have seen above, is only the male of *M. thoracica*; from this *M. Clarkella* is sufficiently distinguished by the hairiness of its abdomen, and the colour of its posterior legs. Christius has given us the figure of an *Apis*, which he names *A. icterica*, in colour much resembling our insect; but it is much smaller, and of a different form, I have therefore considerable doubts about its identity.

70. *M. nigra*, grisescente-subhirsuta; thorace ab-*Smithella* domineque hirsutis, fulvescentibus, segmentis margine albidioribus.

FIG. *Apis pilipes*. Panzer. *Fn. Ins. Germ. Init. n. 7. tab. 13.*

MUS. *D. Smith, Marsham, Trimmer, Francillon, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* Barhamiæ, in *Salicum* amentis masculis frequens anno 1799.

DESCR. Acul.

CORPUS nigrum, pubé grisescenti.

(*h*) I would be understood to say this with the exception of his note containing the account of *Oestrus Cuniculi*: the opinion advanced in which, as militating against a superintending Providence, I think highly objectionable.

CAPUT. *Vertex* calvus. *Facies* posticè pilis nigricantibus. *Antennæ* nigræ.

TRUNCUS supra hirsutie, haud densâ, sordidè fulvâ. *Squamulæ* nigræ. *Alæ* hyalinæ apicè paulò obscuriores; nervis ferrugineis, duobus crassioribus nigris. *Pedes* grisescente-pilosi. *Tibiæ* posticæ scopâ versicolori, sub luce pallidâ, certo situ fuscescente: *Scopulæ* ferrugineæ: *Flocculus* pallidus.

ABDOMEN subellipticum, subdepressum, hirsutum, hirsutie pro situ nunc fuscâ, nunc fulvescenti, segmentis margine pallidis. *Venter* convexus, nitidus, segmentis infra marginem hirtis, marginis ciliâ brevissimâ, densâ, pallidâ.

*In honorem D. Præsidis Societatis Linnæanæ, Botanicorum principis, tum et in Entomologiâ peritissimi, nomen dedi.*

Panzer, in an early number of his *Faunæ insectorum Germaniæ initia*, had figured the insect here described as the *Apis pilipes* of Fabricius; but afterwards he discovered that this was a mistake; and gives the real *A. pilipes*, but without substituting another name for this.

tridentata. 71. *M. nigra*, fulvo-subhirsuta; labio tridentato; digitis testaceis.

MUS. *Kirby*.

Long, Corp. Lin. 5.

*Hab.* Capta semel apud Melton juxta Woodbridge, Suffolciæ, Augusto exeunti 1799.

DESCR.

DESCR. Mas.

CORPUS nigrum, fulvo-pubescens.

CAPUT. *Facies* infra antennas hirsutie densâ, flavescenti barbata. *Maxillæ* forcipatæ. *Labium*, a ventre conspectum, dentes tres exhibit, lateralibus minoribus, acutis, intermedio *f.* tuberculo, majori obtuso, antrorsum excavato. *Antennæ* capite longiores, nigrae, subtus piceæ.

TRUNCUS. *Thorax* hirsutie rufô-fulvâ obsitus. *Squamulæ* nigrae. *Alæ* hyalinæ, apice nigricantes; nervis ferrugineis, crassioribus duobus nigris. *Pedes* pallido-hirti, digitis testaceis.

ABDOMEN subovale, hirsuto-fulvum, segmentis margine pallidioribus.

I have some suspicion that this may be the male of *M. Smithella*; but as I never saw but one specimen of it, and that taken in another district, I have not ventured to put them together.

72. *M. atra*, albido-villosa; maxillis basi denticulo <sup>denticulata.</sup> armatis; labio tridentato; abdomine strigis tribus albis.

MUS. *Kirby*.

Long. Corp. Lin.  $4\frac{2}{3}$ .

*Hab.* Barhamiæ rarissima.

DESCR. Mas.

CORPUS atrum, pube albidâ incanum.

CAPUT hirsutum, trunco latius. *Maxillæ* forcipatæ, capite breviores, basi denticulo acuto armatæ.

armatæ (l). *Labium*, a ventre visum, tridentatum, dentibus lateralibus acutis, intermedio majori, truncato, antrorsum excavato (m).

*Antennæ* capite longiores, subtus piceæ.

TRUNCUS. *Squamulæ* nigræ. *Alæ* subhyalinæ, apice nigricantes; nervis ferrugineis, costali interiore nigro. *Pedes* griseo-hirti, digitis testaceis. *Plantæ* posticæ obscurè ferrugineæ. *Scopulæ* fulvæ.

ABDOMEN lanceolatum, acutum, atro-pilosum; basi, segmentisque tribus intermediis margine, villosio-albis. *Anus* cinerco-pilosus. *Venter* grisescente-subhirtus.

*Var. β* verticis, thoracisque hirsutie nigricanti; alis apice nigris, nervis piceis; pedibus rufescente-hirtis.

This is quite distinct from the preceding species, although the lip in both is distinguished by the same peculiarity.

*nigriceps*. 73. M. atra; thorace fulvo; abdomine fasciis tribus villo-rufescentibus.

MUS. *Kirby*.

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* Barhamiæ. Mas in *Salicqum* amentis, Aprili in-  
unte, 1800.

DESCR. Acul.

CORPUS atrum, pube nigricanti.

CAPUT trunco angustius, atro-pubescens. *An-*

(l) Tab. 4. \*\*. c. fig. 5: a. (m) Ibid. fig. 18.

*tennæ*

*iennæ* nigræ, capitis longitudine. *Vertex* calvus; occipitis pilis fulvescentibus.

TRUNCUS. *Thorax* hirsutie, densâ admodum, rufo-flavâ tectus. *Metathorax* villis pallidè flavis. *Squamulæ* ferruginæ. *Alæ* hyalinæ, apice paulò obscuriores, nervis fusciscentibus. *Pedes* atrii, pilosi. *Femorum* barba sordidè pallida. *Digiti* picei.

ABDOMEN ovale, subdepressum; basi, segmentisque tribus intermediis fasciâ, villosorufescentibus. Ani *Fimbria* atra. *Venter* convexus. *Maris Corpus* grisescente-hirtum. *Caput* atrohirsutum. *Antennæ* thorace breviores. *Thorax* subgriseus, *f.* pube sordidè rufâ translucente nigredine corporis. *Alæ* nervis flavescentibus. *Abdomen* lanceolatum, pilosulum, segmentis margine densiùs villosis.

Obs. *Mas nimis affinis M. bimaculatæ, sed desunt maculæ ventrales rufæ. An hic referendus?*

The insect, which I have given as the male of this species, very much resembles it; yet not sufficiently to take away all doubt of their identity. If distinct, it ought to precede or follow *M. bimaculata*, of which, after all, it may be only a variety.

74. *M. nigra*, cinerascente-villosa; thorace flave-rufitarsis. scenti; abdomine segmentis margine albidis; antennis subtus, digitisque, rufis.

MUS. Kirby.

Long. Corp. Lin. 5.

*Hab.* Barhamiæ rarissima.

K 3

DESCR.

DESCR. Acul.

CORPUS nigrum, cinerascete-villosum.

CAPUT. *Facies* villis albidis incana. *Vertex* calvus. *Occipitis* pili flavescunt. *Antennæ* subtus rufo-fulvæ, basi nigræ.

TRUNCUS supra pube brevi, densâ, pallidè flavâ, tectus. *Squamulæ* nigræ. *Alæ* subhyalinæ, nervis piceis. *Pedes* cinereo-pilosi. *Palmae* fuscae. *Tibiæ* posticæ scopâ pallidâ. *Digiti* omnes testacei. *Scopulæ* fulvæ.

ABDOMEN subovale, cinereo-subhirsutum, segmentis margine albicantibus. Ani *Fimbria* cinerascens. *Venter* convexus, nitidus, segmentis margine hirtis.

*fuscipes*. 75. M. nigra, pallido-subvillosa; thorace fulvo; abdomine segmentis margine albidis; tibiis posticis scopâ fuscâ.

MUS. D. *Lathbury*, *Kirby*.

Long. Corp. Lin. 5.

*Hab.* Barhamiæ rarissima.

DESCR. Acul.

CORPUS nigrum, pallido-villosum.

CAPUT subvillosum. *Antennæ* nigræ, articulis extimis subtus rufo-piceis. Macula sericeo-cinerea, nisi sub lente et a latere vix conspicua, *Verticem* utrinque apud oculos signat.

TRUNCUS. *Thorax* pube fulvâ obsitus. *Metathorax* pallido utrinque villosissimus. *Squamulæ* testaceæ. *Alæ* subhyalinæ, apice obscuriores,

scuriores, nervis piceis. *Pedes* fusco-pilosi, certo tamen situ pallescunt pili. *Femorum* barba albida. *Tibiæ* posticæ scopâ fuscâ undique obsitæ.

ABDOMEN subellipticum, tergo depressiusculo, pilis brevissimis vix conspicuis, nigricantibus consito, basi pallido-villoso, segmentis tribus intermediis margine tomentoso-albis. Ani *Fimbria* fuscescens. *Venter* convexus, nitidus, segmentis albedo-ciliatis.

This insect and the preceding are liable to be confounded, since, upon a cursory view, there appears to be very little difference between them; but if they be more closely examined, they will be found very distinct. The antennæ of *M. fuscipes* are entirely black, except only the under side of the two last joints; its head is less hairy, and the hairs of the legs, and the scopa, which in the present family, in that respect, are not subject to vary, are brown. The vertex, in both these insects, is distinguished by a pale downy spot on each side adjoining to the eyes, scarcely to be discovered without the assistance of a magnifier, which seems designed to prevent the antennæ from receiving injury by friction: a circumstance which is observable in many other species.

76. *M. atra*, pallido-subvillosa; abdomine segmen- *Listerella*  
tis margine albidis; thoracis disco subpiloso,  
nigro.

MUS. *D. Marsham, Haworth, Sowerby, Trimmer, Kirby,*  
Long. Corp. Lin.  $4\frac{2}{3}$ — $5\frac{1}{2}$ .

*Hab.* Barhamiæ in floribus, maximè *Syngenesiæ*.

DESCR. Acul.

CORPUS atrum, pallido-villosulum.

CAPUT pube cinerascenti. *Vertex* calvus, *Oc-*  
*ciput* pilis atris. *Antennæ* subtus fulvæ, basi  
nigræ.

TRUNCUS supra pilis raris, atris, limbo villis den-  
sis, pallidis. *Metathorax* utrinque pallido-villo-  
sissimus. *Squamulæ* nigræ. *Alæ* subhyalinæ,  
apice nigricantes, nervis fusciscentibus. *Pedes*  
nigri, pallido-pilosi. *Scopulæ* fulvo-aureæ.  
*Digit*i rufi.

ABDOMEN subovale, tergo depressiusculo, atro,  
pilosulo, basi, apiceque cinerascenti, segmentis  
marginè latè villosulo-albidis. *Venter* convexus,  
nitidus, segmentis cinereo-ciliatis.

*Var.*  $\beta$  pedibus, ventreque, piceis.

*fulvicrus.* 77. *M.* nigra, grisescente-villosa; abdomine fasciis  
tribus pallidis; tibiis posticis scopâ fulvâ.

MUS. *D. Marsham, Smith, Latham, Haworth, McLeay,*  
*Lathbury, Sowerby, Trimmer, Francillon, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ — $5\frac{1}{4}$ .

*Hab.* Barhamiæ, in floribus *Syngenesiæ*, maximè *Jaco-*  
*bæ*, tempore autumnali haud infrequens. Mas, ine-  
unt Aprilè, declivia circum arida irrequietus volitat.  
Recens insectum allium spirat.

DESCR. Acul.

CORPUS nigrum, grisescente-villosum.

CAPUT,



**CAPUT.** *Facies* hirsutie densâ vestita. *Occipitis* pili nigri. *Antennæ* capitis longitudine, nigræ.

**TRUNCUS.** *Thorax* pube rarâ admodum. *Squamulæ* piceæ. *Alæ* hyalinæ, apice nigricantès; nervis ferrugineis, duobus crâssioribus nigris. *Pedes* rufescente-pilosi. *Tibiæ* posticæ scopâ fulvâ. *Scopulæ* fuscæ.

**ABDOMEN** ovatum, latum; tergo glabriusculo, punctulatissimo, punctulis levissimè impressis, basi villosulo, segmentis tribus intermediis margine tomentoso-pallidis. Ani *Fimbria* atra. *Venter* hirtus, anum versus potissimum.

*Var. β* corporis pube cinerascenti.

**Maris** *Facies* hirsuto-nigricans. *Antennæ* thorace breviores. *Abdomen* lanceolato-ovatum, segmentis tribus anticis griseo-hirsutulis, intermediis quatuor margine villosulo-grisescens.

*Var. β* abdominis segmentis margine villosulo-albidis.

78. *M. nigra*, supra fulvo-pubescentis; abdomine *lanifrons*. ovato, basi fulvo-villosulo; segmentis apice pallidioribus.

MUS. *D. Haworth.*

Long. Corp. Lin. 5.

*Hab.* in Angliâ. Hanc unicam vidi.

DESCR. Mas.

**CORPUS** nigrum, subtus pallido-villosulum, pube densâ fulvâ vestitum.

**CAPUT,**

**CAPUT.** *Facies* flavescens valde hirsuta. *Genarum* barba longa, densa. *Antennæ* thoracis longitudine, nigræ, subtus piceæ.

**TRUNCUS.** *Squamulæ* fulvæ. *Alæ* hyalinæ, nervis nigricantibus. *Pedes* nigri, hirti, tibiis, quàm in hac familiâ plerumque maribus mos est, majoribus. *Digiti* testacei.

**ABDOMEN** ex oblongo ovatum, nigrum, pubescens; segmentis duobus anticis pube fulvâ tectis, proximis tribus margine fulvescente-pallidis.

*contigua.* 79. *M. atra*, cinereo-villosa; abdomine segmentis margine villosulo-albis.

**MUS.** *Kirby.*

Long. Corp. Lin.  $4\frac{2}{3}$ .

*Hab.* Barhamiæ e rarioribus una.

**DESCR.** Mas.

**CORPUS** atrum, villosulo-cinerascens.

**CAPUT** trunci ferè magnitudine. *Facies* hirsutogrisescens. *Labii* tuberculum elevatiusculum, truncatum. *Antennæ* thorace breviores.

**TRUNCUS.** *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis rufo-piceis, crassioribus duobus nigris. *Pedes* hirti.

**ABDOMEN** ovatum, cinerascens-hirsutulum; segmentis ultimis margine villosulo-albis.

This species a good deal resembles variety  $\beta$  of the male of *M. fulvicrus*; but the hirsuties of its face

face is grisescent, and its abdomen is shorter and more ovate.

80. *M. nigra*, cinereo-villosa; abdomine ovali; *pubescens*.  
labio subcornuto.

*Apis pubescens* corpore cinereo-pubescente, immaculato.

*Fab. Ent. Syst. Em. n. 95.*

*Lin. Syst. Nat. ed. Gmel. p. 2773. n. 69.*

*Vill. Ent. Eur. 3. n. 61.*

MUS. *Kirby.*

Long. Corp. Lin. 3.

*Hab.* In Suffolciâ, semel tantummodo lecta.

DESCR. Mas.

CORPUS nigrum, cinereo-villosum.

CAPUT trunco majus. *Antennæ* thorace breviores, subtus piceæ. *Labii* tuberculum elevatiusculum.

TRUNCUS. *Squamulæ* nigrae. *Alæ* hyalinæ, apice paulò obscuriores, nervis nigricantibus. *Pedes* cinereo-hirti.

ABDOMEN ovale, cinereo-hirsutulium, segmentis margine albidioribus. *Venter* convexus, hirtus, segmentis ciliâ brevi, albidâ marginatis.

This little *Melitta* agrees so well with Fabricius's description of his *Apis pubescens*, that I have no doubt of its being that insect. It is extremely rare, and much smaller than any of the preceding males.

81. *M. atra*, cinereo-subpubescens; abdomine segmentis posticis utrinque margine albis; ano ferrugineo.

*Andrena*

*Andrena hæmorrhoidalis* nigra, ano ferrugineo.

*Fab. Ent. Syst. Em. n. 25.*

*Vill. Ent. Eur. 3. Apis, n. 74.*

*Apis dichroa. Lin. Syst. Nat. ed. Gmel. p. 2792. n. 188,*

MUS. *D. Latham, Francillon, Kirby.*

Long. Corp. Lin. 7—8.

*Hab.* in Angliâ, a D. Latham bis capta.

DESCR. Acul.

CORPUS atrum, pube cinerascenti.

CAPUT densius barbatum. *Vertex* utrinque ad oculos maculâ sericeo-flavescente, nisi a tergo et sub lente vix conspicuâ, ornatus. *Antennæ* capitis longitudine, nigræ, subtus rufo-piceæ.

TRUNCUS supra glabriusculus. *Thorax* nitidus, punctulatus, anticè lineis tribus obsoletis notatus. *Squamulæ* ferrugineæ. *Alæ* testaceæ, apice obscuriores, nervo costali interiore nigro. *Pedes* nigri, rufo-pilosi. *Femorum* lana pallida. *Tibiæ* posticæ scopâ rufâ, *Digiti* testacei. *Scopulæ* ferrugineo-auratæ.

ABDOMEN ex oblongo subellipticum, glabrum, lucidum, piceo-nigrum; segmento tertio et quarto margine utrinque albo-ciliato. Ani *Fimbria* densa, ferruginea.

*Var. β* scopâ supra flavescenti, subtus albidâ.

Maris *Nasus* luteo-albidus, punctulis duobus nigris. *Truncus* supra grisescente-villosus. Abdomen grisescente-villosulum.

This fine insect, which has been taken in England, the aculeate by Dr. Latham, and both sexes by Mr. Francillon, is one of the largest of the genus.

nus: It is, I think, beyond a doubt, the *Andræna hæmorrhoidalis* of Fabricius. The synonym of Panzer belongs to a *Melitta*, I shall describe hereafter. Christius has figured two insects as synonymous with this: the one a *Bombinatrix*, the *Apis arbustorum*, Fab., and the other *M. albicans*, described above (*n*)

82. *M. nigra*, cinereo-subpubescens; abdomine <sup>chryso-</sup>nitido, fasciis interruptis albidis; ano, tarsis, <sup>celes.</sup>tibiisque posticis, testaceis.

MUS. *D. Marsham, Haworth, Lathbury, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin. 4—4½.

*Hab.* Barhamiæ, in floribus haud rara, tempore vernali copulans.

DESCR. Acul.

CORPUS nigrum; cinereo-subpubescens.

CAPUT. *Antennæ* nigræ, subtus rufo-fulvæ.

TRUNCUS. *Thorax* utrinque lineolâ abbreviatâ exaratus. *Squamulæ* testaceæ. *Alæ* testaceæ, iricolores, apice nigricantes. *Pedes* piceo-nigri, pallido-pilosi; femorum posticorum barbâ et flocculo albidis. *Tarsi* omnes, *Tibiæque* posticæ, testacei. *Scopa* argenteo-albida. *Scopulæ* fulvo-aureæ.

ABDOMEN subovale, fusco-nigrum, tergo depressiusculo, lucido, glabro, segmentis tribus intermediis margine albo-ciliatis, anticis duobus interruptè. Ani *Fimbria* pallidè aurea. *Venter* convexus.

(*u*) Hymenopt. p. 132. tab. 9. fig. 2. & p. 190. tab. 16. fig. 8.

Maris

*Maris Corpus* angustum, albido-villosum. *Caput* trunco latius. *Facies* anticè hirsuta. *Nasus* carneus, utrinq̄ue punctulo nigro notatus. *Occipitis* pili cinerei. *Antennæ* thorace breviores, nigræ. *Thorax* cinereo-subvillosus. *Tibiæ* posticæ nigræ, apice testaceæ. *Abdomen* lineari-lanceolatum, tergo convexo, albido-pilosulo, segmentis intermediis margine utrinq̄ue obsolete ciliatis. *Venter* hirtulus; segmentis posticis fimbriâ nitidâ, pallidè aureâ, nisi a latere vix conspicuâ, ciliatis.

*Var. β* tibiis posticis testaceis, liturâ subannulari nigricanti.

Obs. *Habitus et statura præcedentis, sed multoties minor.*

*dorsata.* 83. *M.* nigra, cinereo-subvillosa; thorace fulvo; abdomine fasciis tribus albis, anticâ interruptâ; tarsis rufis.

MUS. *Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* In Suffolciâ, semel tantùm lecta.

DESCR. Acul.

CORPUS nigrum, pube cinerascenti.

CAPUT. *Antennæ* nigræ, capite longiores.

TRUNCUS supra pube, brevi admodum, fulvâ obsitus, limbo confertiùs. *Metathorax* utrinque pallido-villosus. *Squamulæ* ferrugineæ.

*Alæ* testaceæ, iricolores, apice obscuriores.

*Pedes* picei, pallido-pilosi; digitis omnibus, plantisque

plantisque posticis, rufis. *Tibiæ* posticæ apice rufæ, scopâ pallidâ. *Scopulæ* fulvæ.

ABDOMEN subovale, tergo glabro, segmentis tribus intermediis margine albo-ciliatis, antico interruptè. Ani *Fimbria* cinerea. *Venter* convexus, cinereo-hirtus, maximè anum versus.

This species is easily confounded with that which precedes it, but if they are carefully compared it will be found to be distinct. The antennæ are entirely black; the pile of the upper side of the trunk is shorter and tawney; the feet are piceous; and only the digiti and posterior plantæ are red. The anal fringe likewise is paler, the first only of the abdominal fasciæ is interrupted, and the under side of the abdomen is more hairy.

84. *M. atra*, cinereo-subvillosa; abdomine segmentis intermediis utrinque margine albis; plantis, tibiisque posticis, rufis. *Wilkella*.

MUS. *Kirby*.

Long. Corp. Lin.  $5\frac{3}{4}$ .

*Hab.* in Angliâ prope Londinum, a D. Trimmer semel capta et mihi transmissa.

DĒSCR. Acul.

CORPUS atrum, cinereo-subvillosum.

CAPUT. *Antennæ* nigræ, subtus piceæ.

TRUNCUS supra glabriusculus. *Squamulæ* ferrugineæ. *Alæ* testaceæ, nervo costali interiore nigro. *Pedes* nigri, rufescente-pilosi. *Femurum* barba pallida. *Plantæ*, *Tibiæque* posticæ, rufæ.

rufæ. *Palmae* nigræ. *Scopa* flavescens. *Scopulae* fulvæ. *Digit*i rufo-picei.

ABDOMEN ex oblongo subovatum, segmentis tribus intermediis utrinque margine albo ciliatis. Ani *Fimbria* pallida. *Venter* convexus, cinereo-pubescentis.

*In honorem* D. Wilks Angli, *Entomologi præstantis, et Lepidopterorum pictoris eximii, nomen imposui.*

*M. Wilkella* is considerably larger than either of the preceding species, its thorax is less hairy, its digits are rufo-piceous, and its abdomen is of a different form, being proportionably wider at its base; in most other respects it is very similar to them.

*proxima.* 85. *M. atra*, cinereo-subpubescens; thorace grisescenti; abdomine utrinque strigis tribus albis; scopâ pallidâ nitenti.

MUS. *D. Sowerby, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamiæ, rarior tamen.

DESCR. Acul.

CORPUS atrum, cinereo-villosum.

CAPUT. *Facies* infra antennis densè satis pubescens. *Antennæ* nigræ, capite longiores.

TRUNCUS. *Thorax* pube rariori, subgriseâ consitus. *Metathorax* confertiùs villosus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice nervisque, nigricantibus. *Pedes* pallido-pilosi; tibiis posticis



posticis scopâ pallidâ, argenteo-nitidâ. *Digiti* articulis extimis ferrugineis. *Scopulæ* nigricant.

ABDOMEN subovatum, lucidum, segmentis tribus intermediis lateribus margine albo-ciliatis.

Ani *Fimbria* sordidè pallida. *Venter* convexus, cinereo-subhirtus.

*Var. β* alarum nervis, plantis, scopulisque, rufis; abdomine segmentis intermediis margine albo-ciliatis, antico interruptè.

The hirsuties of the thorax of *M. proxima* is nearly of the same colour with that of *A. mellifica*, which Linneus has called *subgrisea*. Its wings have no testaceous hue, and its pale scopæ, in certain lights, glitter like silver: circumstances which sufficiently distinguish this insect from those which precede it. Variety *β* seems intermediate between *α* and *M. Wilhella*.

86. *M. atra*, nitida, albido-subvillosa; frontis angulis, nasoque, albis.

MUS. Kirby.

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* in Angliâ, a D. J. Coyte, entomologo Gippovicensi, mihi transmissa.

DESCR. Mas.

CORPUS atrum, nitidum, albido-subpubescens.

CAPUT. *Nasus*, atque anguli frontis, carneo-albidi, ille punctulis duobus nigris notatus.

*Antennæ* thorace breviores nigræ.

TRUNCUS. *Squamulæ* piceæ. *Alæ* subhyalinæ, nervis nigris. *Pedes* hirti, digitis ferrugineis.

**ABDOMEN** lanceolatum, convexum, albido-pilosulum, segmentis apice obscurè rufescentibus. *Venter* albido per fascias hirtus.

A coloured nasus now and then distinguishes the males in this and the following genus. This we have seen before, in the instances of *M. cingulata*, *hæmorrhoidalis*, and *chrysoceles*, as well as in the second family. I presume it is also a sexual character in the present and the following species. This has been taken only by my ingenious friend, the Rev. James Coyte of Ipswich, by whose name I have called it, and whose cabinet contains many other very rare insects.

*labialis.* 87. *M. nigra*, pallido-villosa; thorace fulvescenti; facie anticè albidâ; abdomine segmentis margine utrinque pallidis.

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* in Angliâ, capta sæpius prope Londinum, semel juxta Norvicum.

DESCR. Mas.

**CORPUS** nigrum, pallido-villosum.

**CAPUT** trunco latius. Os albido-barbatum.

*Facies* posticè cinereo-villosa, anticè carnea, naso punctulis duobus nigris. *Antennæ* nigrae, thorace breviores.

**TRUNCUS.** *Thorax* fulvescente-pubescentis. *Squamulae* testaceæ. *Alæ* testaceæ, apice, nervoque costali interiore, nigricantibus. *Pedes* pallido-hirti, digitis ferrugineis. *Scopulae* fulvo-aureæ.

**ABDOMEN**

ABDOMEN lanceolato-ovatum; tergo ex pilis densis fusco-cinereo, segmentis utrinque margine albidioribus. *Venter* basi cinereo-subhirtus, segmento penultimo fimbriâ densâ, flavescenti.

*Var. β* thorace rufo; abdominis hirsutiæ grisescenti.

*γ* facie anticè flavâ.

88. *M. nigra*, pallido-villosa; thorace, tãrsisque rufescentibus; abdomine segmentis intermediis utrinque strigâ albidâ. Lewinella.

MUS. *D. Marsham, Latham, Haworth, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin.  $3\frac{3}{4}$ .

*Hab.* Barhamiæ, in floribus tempore vernali haud rara.

DESCR. Mâs.

CORPUS nigrum, pallido-villosum.

CAPUT. *Facies* hirsuto-subrufa. *Antennæ* fere thoracis longitudine, nigræ.

TRUNCUS supra hirsuto-rufescens. *Squamulæ* nigræ. *Alæ* subhyalinæ, iricolores, apice obscuriores; nervis testaceis, costali interiøre nigro. *Pedes* grisescente-hirti, tarsis omnibus, tibiãrumque posticarum apice, testaceis.

ABDOMEN ovato-lanceolatum, fusco-nigrum, pilosulum, basi et apice grisescente-villosum; segmentis intermediis margine utrinque albociliatis. *Venter* subhirtus.

89. *M. atra*, cinereo-villosa; abdomine ovato segmentis marginibus albidis. ovatum.

MUS. *D. Marsham, Sowerby, Trimmer, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, in collibus arenosis frequens mense Maio, 1800.

DESCR. Acul.

CORPUS atrum, cinereo-villosum.

CAPUT. *Facies* infra antennis hirsuto-grisescens.

*Antennæ* thorace breviores, piceo-nigræ.

TRUNCUS. *Thorax* pube, haud densâ, subgriseâ obsitus: *Squamulæ* piceæ. *Alæ* hyalinæ, iricolores, apice obscuriores; nervis nigricantibus, anastomosi pallidâ. *Pedes* cinereo-hirti.

*Scopulæ* fulvæ.

ABDOMEN ovatum, pilosulum, segmentis margine albo-ciliatis, anticis interruptè. *Venter* cinereo-hirtus; segmentis margine fimbriâ flavescente-nitenti ciliatis.

*barbata.* 90. M. nigra, lutescenti-villosa; abdomine subovato; segmentis margine membranaceis, albidociliatis.

MUS. *D. Banks.*

Long. Corp. Lin. 4½.

*Hab.* in Angliâ.

DESCR. Mas.

CORPUS nigrum, pube lutescenti.

CAPUT villis pallidis longiùs barbaturum. *Facies* hirsuto-lutescens.

TRUNCUS. *Alæ* subhyalinæ; nervis, excepto costali interiore nigro, testaceis. *Pedes* albidohirti, digitis rufescentibus.

ABDOMEN

**ABDOMEN** fusco-nigrum, pallido-subvillosum; segmentis anticis margine membranaceis, intermediis tribus albido-ciliatis, ultimis pilosonigris.

This insect, in the form of its abdomen, somewhat resembles *M. ovatula*; its head, however, is extremely hairy, the margin of the anterior dorsal segments of the abdomen is membranaceous. The only specimen that I have ever seen of it is in the rich cabinet of Sir J. Banks.

91. *M. atra*, hirsuto-canescens; abdomine lævi, lanceolato; facie anticè barbâ densâ argenteâ.

MUS. *D. Marsham, Sowerby, Kirby.*

Long. Corp. Lin. 4½.

*Hab.* Barhamiæ in floribus mense Maio, e rarioribus una.

DESCR. Mas.

**CORPUS** atrum, hirsuto-incanum.

**CAPUT.** *Faciès* anticè barbâ densâ, longâ, argenteo-nitidâ ornata. *Maxillæ* forcipatæ. *Antennæ* thorace breviores, nigræ.

**TRUNCUS.** *Thorax* hirsutie cinerascenti. *Squamulæ* nigræ. *Alæ* hyalinæ, apice paulò obscuriores; nervis piceis, anastomosi majusculâ. *Pedes* albido-hirti. *Scopulæ* pallidæ. *Digit* ferrugini.

**ABDOMEN** lanceolatum, acutum, piloso-subincanum, læve. *Venter* pilosulus, segmentis fimbriâ brevî, densâ, argenteâ, ciliatis.

This little insect is remarkable for the silver pile which is, as it were, combed over its mouth, and for the long hoary hair with which its body, the abdomen excepted, is thickly vested on all sides. In shape it resembles the *Andrena nitida* of Panzer (o), from which, however, it is very distinct.

*Barbatu-* 92. *M. atra*, albido-villosa; abdomine subovali,  
*sa.* punctulato; segmentis intermediis margine utrinque albis.

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin.  $4\frac{1}{4}$ .

*Hab. Barhamiæ rarior.*

DESCR. Mas.

CORPUS atrum, albido-villosum.

CAPUT hirsutum. *Antennæ* thorace vix breviores, nigræ, nitidæ, articulis subarcuatis.

TRUNCUS. *Thorax* cinereo-pubescens. *Squamulæ* nigræ. *Alæ* subhyalinæ, apice nigricantes; nervis, costali interiore nigro excepto, ferrugineis, *Pedes* albido-hirti. *Scopulæ* pallidæ.

ABDOMEN ex lineari-subovale; tergo punctulis creberrimis levissimè impressis, nisi sub lente vix conspicuis, persemminatum, segmentis tribus intermediis utrinque ciliâ marginali albâ, basi anoque villosa-albidis. *Venter* grisescente subhirtus, segmentis ultimis ciliâ brevi, flavescenti, fimbriatis.

(o) Fn. Ins. Germ. Init. n. 56. tab. 2.

93. M.

93. *M. atra*, cinereo-villosa; abdomine subovato, *Collinsonana*.  
nitido; segmentis posticis margine albidis.

MUS. Kirby.

Long. Corp. Lin.  $3\frac{1}{2}$ .

Hab. In Angliâ, prope Norvicum capta Junio mense  
1799.

DESCR. Mas,

CORPUS atrum, cinereo-villosum.

CAPUT trunco latius. Oculi prominuli. Antennæ  
capite longiores, subtus fusco-nigræ.

TRUNCUS. Squamulæ nigræ. Alæ subhyalinæ;  
nervis ferrugineis, costali interiore nigro.  
Pedes albido-hirti. Scopulæ flavescent.

ABDOMEN ovato-lanceolatum, aterrimum, niti-  
dum; segmentis secundo et tertio utrinque,  
posticis margine toto, niveo-ciliatis. Anus ipse  
pallido-villosus. Venter pilosulus, segmentis  
margine pilis luteo-nitidis ciliatis.

This is not very unlike *M. barbatula*, but it is  
not much more than half its size, and its abdomen  
is of a different form.

94. *M. cinereo-subpubescens*; thorace rufo; me-combina-  
tathorace utrinque fimbriâ pallidâ; abdomine<sup>ta</sup>.  
fasciis tribus, interruptis, albidis.

FIG. *Apis combinata*. Christii Hymen. p. 187. tab. 15. fig. 9.

MUS. D. Marsham, McLeay, Haworth, Trimmer, Sowerby,  
Lathbury, Kirby.

Long. Corp. Lin.  $3\frac{3}{4}$ — $4\frac{1}{2}$ .

Hab. Barhamiæ in floribus frequentissima.

DESCR: Acul.

CORPUS nigrum, pube cinereâ.

CAPUT. *Facies* apud oculos confertiùs villosa, *Occipitis* pili albidi. *Antennæ* nigræ.

TRUNCUS. *Thorax* pube rufescenti consitus.

*Metathorax* utrinque villis densis, incurvis,

luteo-pallidis fimbriatus (*p*). *Squamulæ* piceæ.

*Alæ* subhyalinæ, apice paulò obscuriores; nervis flavis, costali interiore nigro. *Pedes* pallido-

hirti, digitis omnibus, plantisque posticis, rufis.

*Scopulæ* fulvæ.

ABDOMEN subellipticum, tergo depressiusculo,

glabro, punctulatissimo; segmentis tribus in-

termediis, margine utrinque albo-ciliatis. Ani

*Fimbria* fulvescens. *Venter* convexus seg-

mentis margine cinereo longiùs ciliatis.

*Var.*  $\beta$  abdomine fasciâ posticâ absolutâ.

$\gamma$  abdomine segmentis tantùm duobus in-

termediis utrinque margine albis.

$\delta$  tarsis quatuor, tibiisque posticis apice,

rufis; abdomine fasciâ posticâ absolutâ.

$\varepsilon$  corporis pube grisescenti, thoracis ferru-

gineâ; alis apice obscurioribus nervis testa-

ceis; abdomine ovato, fasciis tribus tomen-

toso-pallidis, anticis duobus interruptis;

digitis quatuor anticis fusco-nigris. An

eadem?

Maris *Corpus* angustum, pube grisescenti; *An-*

*tennæ* thoracis fere longitudine. *Alæ* apice

(*p*) Tab. 4. \*\*: c. fig. 9. *aa*.

nigricantes.



nigricantes. *Abdomen* ovato-lanceolatum, nitidum, basi rufescente villosulum; segmentorum ciliâ pallidâ.

*Var. β* plantis omnibus nigris, corporis pube cinereâ.

This species varies much, but all the varieties here given are distinguished by a thick incurved fringe on each side of the metathorax, which these little creatures load with pollen. I am not clear, however, that  $\epsilon$  is not distinct. *Apis combinata* of Christius appears to be a variety of our insect; if so, he has omitted the fringe of the metathorax. The male much resembles *M. Lewinella*, but in that all the tarsi are red.

95. *M. atra*, supra nudiuscula; metathorace utrinque, tibiisque posticis, pallido-lanatis. *nudiuscula.*

MUS. Kirby.

Long. Corp. Lin. 5.

*Hab.* In Suffolciâ, semel tantum lecta.

DESCR. Acul.

CORPUS atrum, subtus cinereo-villosum.

CAPUT subvillosum. *Oculorum* intervallum latissimum. *Antennæ* nigræ.

TRUNCUS. *Thorax* glabriusculus. *Metathorax* utrinque pallido-lanatus. *Squamulæ* piceæ.

*Alæ* testaceæ, nervo costali interiore nigro.

*Pedes* pallido-pilosi. *Scopulæ* fuscæ.

ABDOMEN subovale, basi et lateribus pilis longis admodum albidis subvillosum. Ani *Fimbria* rufescens. *Venter* per fascias cinereo-hirtus.

This

This species, in common with the preceding, possesses the fringe of the metathorax, although not so conspicuously. It wants, however, the dorsal fasciæ which invariably distinguish the abdomen of all the varieties of *M. combinata*, the place of which is supplied by a few long whitish hairs scattered over the base and sides of the abdomen of the insect before us. Its tarsi also are all black, and its thorax bare. This latter circumstance may be only accidental, for this part is very apt to have its hair rubbed off.

*albicus*. 96. *M. atra*, cinereo-villosa; thorace fulvo; abdomine ovato, pilosulo, strigis tribus albis; scopâ versicolori.

MUS. *D. Marsham, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 5—5½.

*Hab.* Barhamiæ, capta etiam prope Norvicum, et a D. J. Trimmer prope Londinum.

DESCR. Acul.

CORPUS atrum, cinereo-villosum.

CAPUT. *Maxillæ* forcipatæ. *Facies* posticè grisescente-villosa. *Antennæ* nigræ.

TRUNCUS supra hirsuto-fulvescens. *Squamulæ* piceæ. *Alæ* subhyalinæ apice paulò obscuriores, nervis nigricantibus. *Pedes* albido-pilosi. *Tibiæ* posticæ scopâ supra nigricanti, subtus argenteo-albidâ, certo situ versicolori, undique obsitæ.

ABDOMEN ovatum, nitidum, albido-pilosum, segmentis tribus intermediis margine albo ciliatis,

atis, anticis duobus interruptè. Ani *Fimbria* fusca. *Venter* segmentis margine ciliâ densâ, brevi, albâ ciliatis, pilis longioribus insuper consitis.

*Var. β* thoracis pube ferrugineâ.

Maris *Corpus* totum hirsuto-incanum. *Antennæ* thorace breviores. *Pedes* hirti. *Abdomen* segmentis ventralibus haud ciliatis.

*Var. β* adultior, hirsuto-cinereus.

This insect may possibly be the *Apis sericea* of Christius (9), but in his figure the legs are painted yellow.

97. *M. atra*, cinereo-subpubescens; abdomine con-<sup>connec-</sup>  
vexo, nitido; tarsis omnibus, tibiisque posticis,<sup>tens.</sup>  
rufis.

MUS. Kirby.

Long. Corp. Lin. 5.

*Hab.* Barhamiæ semel capta, iterum a D. Trimmer prope Londinum.

DESCR. Acul.

CORPUS atrum, cinereo-subpubescens.

CAPUT apud basin antennarum longiùs et densiùs villosum. *Antennæ* piceæ, scapo nigro. Macula sericeo-pallida, nisi sub lente et a tergo vix conspicua, *Verticem* utrinque signat.

TRUNCUS. *Thorax* leviter pubescens. *Metathorax* utrinque pallido-villosus. *Squamulæ* testaceæ. *Alæ* subhyalinæ, apice obscuriores,

(9) Hymenopt. p. 190, tab. 16. fig. 11.

nervis

nervis testaceis. *Pedes* nigri, pallido-pilosi, tibiis posticis, tarsisque omnibus, rufo-testaceis. *Scopulae* fulvescunt. *Scopae* argenteo-pallidae.

ABDOMEN lanceolato-ovatum, nigrum; tergo convexo, nitido, subtilissimè punctulato; segmentis apice obscurè pallidis, duobus intermediis utrinque ciliâ parvâ, marginali, albâ, ultimis tribus pilis brevibus, decumbentibus, nisi a latere et sub lente vix conspicuis, flavescens. Ani *Fimbria* fulvescit. *Venter* cinereo-subhirtus, segmentis fimbriâ brevi, densâ, flavescenti, ciliatis,

subinca- 98. *M. atra*, albido-subvillosa; abdomine punctulato; digitis omnibus, plantisque posticis, rufis.

MUS. *Kirby*.

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* In Suffolciâ, semel lecta.

DESCR. Mas.

CORPUS atrum, villosa-canescens.

CAPUT truncato latius. *Antennae* thorace breviores, nigrae.

TRUNCUS. *Squamulae* obscurae, piceae. *Alae* subhyalinae, nervis ferrugineis, costali interiore nigro. *Pedes* albido-pilosi, digitis omnibus, plantisque posticis, rufis; plantae item intermediae intus subrufae. Tibiarum *Spinulae* albae.

ABDOMEN ovato-lanceolatum, sub lente punctulatissimum, pilis brevissimis, decumbentibus, pallidis,

pallidis, unde fuscum nudis oculis videtur, irroratum; segmentis margine submembranaceis. *Anus* acuminatus.

It is possible that this may be the male of the preceding species, but it differs too much from it to take this for granted without further proof.

99. *M. atra*, supra nudiuscula; tibiis posticis scopâ *digitalis*.  
argentea; digitis ferrugineis.

MUS. *Kirby*.

Long. Corp. Lin. 5.

*Hab.* Barhamiæ rarissima.

DESCR. Acul.

CORPUS atrum albido-subvillosum.

CAPUT villosum satis, occipitis pilis cinerascens. *Antennæ* supra nigræ, subtus piceæ, articulis distinctis.

TRUNCUS. *Thorax* nudiusculus, nitidus, punctatus. *Metathorax* utrinque albido-villosus. *Squamulæ* nigro-piceæ. *Alæ* subhyalinæ, apice, nervisque, nigricantibus. *Pedes* albido-pilosi. *Tibiæ* posticæ scopâ argenteo-nitidâ. *Scopulæ* albidæ, dimidiato-nigræ. *Digiti* ferruginei.

ABDOMEN aterrimum, subovale, segmentis duobus intermediis utrinque ciliâ marginali albâ. Ani *Fimbria* haud densa, pallida. *Venter*, anum versus potissimum, hirtus.

Obs. In adultioribus cilia marginalis segmentorum dorsalium abdominis interdum abrasa.

The

The articulations of the antennæ are much more distinct in the present species, than they usually are in this sex. Those hairs of the scopula on the inside of the posterior planta, which are next the tibia, are white; while those of the lower half of it, next the digitus, are black.

*Shawella*. 100. *M. atra*, glabriuscula; abdomine nitidissimo, subcuneiformi, segmentis intermediis utrinque albo-ciliatis; scopâ versicolori.

MUS. Kirby.

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, lecta semel Septembre ineunti 1799.

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT pilis pauculis, cinereis respersum. *Antennæ* nigræ.

TRUNCUS. *Squamulæ* nigro-piceæ. *Alæ* infuscatae, nervis nigris. *Pedes* nigri, pallido-pilosi. *Tibiæ* posticæ scopâ supra nigrâ, subtus argenteâ, certo situ versicolori. *Scopulæ* fulvescunt. *Digitus* picei.

ABDOMEN subcuneiforme (r), piceo-nigrum, nitidissimum, lateribus quasi crenatis; segmentis tribus intermediis utrinque ciliâ brevi, haud densâ, marginali, albâ. Ani *Fimbria* cinerascit. *Venter* hirtulus.

*In honorem D. G. Shaw, M. D. in Zoologiâ haud ulli secundi, nomen dedi.*

(r) Tab. 4. \*\*: c; fig. 15.

101: M.

101. *M. atra*, glabriuscula; antennis subtus ful-minutula, vescentibus; abdomine nitido; tibiis posticis scopâ argenteâ.

MUS. *Marsham, Trimmer, Haworth, Lathbury, Kirby.*

Long. Corp. Lin.  $2\frac{1}{2}$ — $3\frac{1}{2}$ .

*Hab.* Barhamiæ, in floribus et aggeribus nudis frequens, in puteo cylindrico nidificans.

DESCR. Acul.

CORPUS atrum, pilositate parvâ subincanum.

CAPUT. *Facies* utrinque ad oculos villosa. *Vertex* maculis duabus sericeo-pallidis, sine lente vix conspicuis, notandus. *Antennæ* nigrae, apice subtus fulvo.

TRUNCUS. *Squamulae* piceæ. *Alæ* paulò infuscatae; nervis ferrugineis, costali interiore nigro. *Pedes* albido-pilosi. *Tibiæ* posticæ scopâ cinerascenti, certo situ argentèò splendore micanti. *Digit*i rufi. *Scopulae* fulvæ.

ABDOMEN subovale, atrum, nitidum, segmentis pilis pauculis, albis, infra marginem ciliatis. Ani *Fimbria* cinerea.

*Var. β* antennis subtus piceis.

Maris *Corpus* albido-villosulum. *Antennæ* thorace breviores. *Alæ* subhyalinæ, iricolores, apice obscuriores. *Abdomen* valde convexum; pilis albidis incanum. *Plantæ* posticæ rufæ.

*Var. β* antennis totis nigris.

102. *M. atra*, albido-villosula; abdomine nitido, *nana*, segmentis basi punctulatissimis; tibiis posticis scopâ argenteâ.

MUS.

MUS. Kirby.

Long. Corp. Lin. 3—3½.

*Hab.* Barhamiæ, bis capta.

DESCR. Acul.

CORPUS atrum, albido-subvillosum.

CAPUT. *Vertex* immaculatus. *Antennæ* nigræ, capite longiores.TRUNCUS. *Squamulæ* nigræ. *Alæ* hyalinæ, splendide iricolores, nervis nigris. *Pedes* albido-pilosi. *Tibiæ* posticæ scopâ albidâ, certo situ argenteo-micanti. *Scopulæ* fulvescunt, *Digiti* picei.ABDOMEN subovale, atrum, glabrum, nitidissimum; segmentis, basi potissimum, subtilissimè punctulatis, intermediis tribus, ciliâ haud densâ, marginali, albâ, anticis interruptâ. Ani *Fimbria* alba. *Venter* segmentis margine albo-ciliatis.Maris *Antennæ* nigræ, thoracis ferè longitudine. *Facies* anticè longiùs et densiùs barbata. *Alæ* apice obscuriores. *Abdomen* albido-pilosulum.*parvula.* 103. M. atra, cinereo-subvillosa; abdomine subrotundo.MUS. D. Marsham, Latham, Haworth, Lathlury, Trimmer, Sowerby, M<sup>c</sup>Leay, Kirby.

Long. Corp. Lin. 3.

*Hab.* Barhamiæ, cum præcedentibus frequens. Detecta Aprile ineunti 1799, in floribus copulans. Moscham spirat.

DESCR.



DESCR. Acul.

CORPUS atrum, cinereo-subvillosum.

CAPUT villosum admodum. *Vertex* maculâ sericeâ utrinque ad oculos, obscurâ tamen, notandus. *Antennæ* nigræ.

TRUNCUS. *Squamulæ* piceæ. *Alæ* paululum infuscatae, splendidè iricolores, nervis nigricantibus. *Pedes* cinereo-pilosi. *Tibiæ* posticæ scopâ cinereâ.

ABDOMEN breve, latum, pilosulum, maximè latera versus et anum. *Venter* cinereo-hirtus.

Maris *Facies* atro-hirsuta. *Antennæ* thorace breviores. *Squamulæ* nigræ. *Alæ* coloribus prismaticis splendidissimè micantès. *Abdomen* subovatum, convexum.

*M. minutula*, *nana*, and *parvula* are very similar to each other, and extremely liable to be confounded; they are however distinct species, having each a peculiar male. *M. minutula* is less hairy than either of the others, the underside of its antennæ is more or less red, as are also its digiti. From *M. nana* it is sufficiently distinguished, by having the surface of its abdomen impunctulate, and by its brown wings. The antennæ also of its male are proportionably shorter, than those of the same sex of that insect. Its silver scopa, and differently formed abdomen, evince its distinction from *M. parvula*. The innumerable punctula which, under a common magnifier, are visible upon the abdomen of *M. nana*, furnish a characteristic which well dis-

tinguishes it from the other two. And *M. parvula* may always be known by its short abdomen, and the cinereous hairs which cover its head and trunk. The hair upon the face of its male is black.

*pilosula*. 104. *M. nigra*, cinereo-subpilosa; capite atro; abdomine subovali, segmentis margine membranaceis; digitis ferrugineis.

MUS. *Kirby*.

Long. Corp. Lin.  $3\frac{3}{4}$ .

*Hab.* in Angliâ, ubi lecta haud bene memini.

DESCR. Mas.

CORPUS nigrum, pilositate cinerascenti.

CAPUT. *Facies* atro-villosa. *Antennæ* thoracis ferè longitudine, nigræ.

TRUNCUS. *Squamulæ* piceæ. *Alæ* subhyalinæ, nervis ferrugineis, costali interiore nigro. *Pedes* cinereo-hirti, digitis omnibus, plantisque posticis, obscurè ferrugineis. *Scopulæ* flavescunt.

ABDOMEN ex lineari ovale, cinereo-pilosulum, segmentis margine rufescente-membranaceis.

This insect is considerably larger than the male of the preceding species, which it somewhat resembles; its abdomen is longer and more oval, and its digiti are ferruginous.

*xanthura*. 105. *M. atra*, cinereo-subpubescens; ano, tibiis plantisque posticis, rufescentibus; abdomine fasciis subinterruptis, albidis.

MUS. *D. Marsham, Lathbury, Sowerby, Haworth* Mas  $\beta$ , *Kirby*.

Long.

Long. Corp. Lin. 5—6.

*Hab.* Barhamiæ, capta etiam a D. Trimmer prope Londinum.

DESCR. Acul.

CORPUS atrum, cinereo-subpubescens.

CAPUT. *Antennæ* nigræ, apice subtus piceo.TRUNCUS. *Thorax* pube brevissimâ, rarâ, conspersus. *Metathorax* utrinque et posticè villosulo-flavescens. *Squamulæ* rufo-piceæ. *Alæ* subtescaceæ apice obscuriores; nervis, costali interiore nigro excepto, ferrugineis. *Pedes* flavescente-pilosi, tibiis plantisque posticis rufo-testaceis. *Scopæ* subflavæ. *Scopulæ* fulvo-aureæ. *Digit*i picei.ABDOMEN oblongum, nigrum, obscurum, segmentis tribus intermediis margine albo-ciliatis, anticis duobus interruptè. Ani *Fimbria* fulvescens. *Venter* segmentis pilosulis, marginalibus longiùs ciliatis.*Var.*  $\beta$  antennis totis nigris; metathoracis villis, scopâque albidis. $\gamma$  abdomine subovato, convexo, alias  $\beta$  similima. An eadem?*Maris Corpus* atrum, cinereo-villosum. *Nasus* porrectus. *Antennæ* thoracis ferè longitudine. *Pedes* nigri, toti cinereo-hirti. *Scopulæ* pallidæ. *Abdomen* ovatum, breve, convexum, atrum, pilosulum; segmentis tribus anticis margine utrinque villosulo-albis. *Venter* anum versus  
M 2 hirtus,

hirtus, segmentis margine fimbriâ densâ, brevi, pallidè aureâ ciliatis.

*Var. β* abdomine angustiori, segmento solummodo secundo margine utrinque villosulo-albo.

*conversus* 100. *M.* nigra, griseo-subpubescens; abdomine ovato, convexo, segmentis margine pallidis; tibiis plantisque posticis rufis.

MUS. *Kirby.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ, semel lecta, iterum prope Norvicum,

DESCR. Acul.

CORPUS nigrum, grisescente-pubescens.

CAPUT. *Facies* fulvescente-villosa. *Antennæ* nigrae.

TRUNCUS supra pube haud densâ sordidè fulvâ tectus. *Squamulae* piceae. *Alae* subhyalinæ, apice obscuriores; nervis testaceis, costali interiore nigro. *Pedes* grisescente-pilosi. *Tibiae Plantæque* posticæ rufæ, illæ nebulâ nigricanti. *Scopa* pallida. *Scopulae* fulvo-aureæ. *Digiti* picei.

ABDOMEN ex conico subovatum, convexum, fusco-nigrum, punctulatissimum punctulis levissimè impressis, pilis decumbentibus, brevissimis, rufescentibus, unde nudis oculis fuscum esse videtur, conspersum, segmentis margine pilis brevibus luteo-pallidis, anticis duobus interruptè, ciliatis. Ani *Fimbria* densa, luteo-pallida. *Venter* convexus, anum versus hirtus.

The

The abdomen of this species is more convex, both above and below, than is usual in the present family; a circumstance which sufficiently distinguishes it from any other.

107. *M. nigra*, grisescente-subpubescens; thorace *fuscata*. fusco; abdomine ovato, convexiusculo, segmentis margine pallidis.

MUS. Kirby.

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamlæ, Maio medio 1800, in floribus lecta.

DESCR. Acul.

CORPUS nigrum, pube grisescenti.

CAPUT. *Facies* anticè fulvescente-villosa. *Occipitis* pili fusci. *Antennæ* subtus piceo-nigræ.

TRUNCUS. *Thorax* nitidus, pube, haud densâ fusco-nigricanti. *Squamulæ* nigræ. *Alæ* hyalinæ, apice paulò obscuriores; nervis, crasioribus nigris exceptis, anastomosique, ferrugineis. *Pedes* nigri, pallido pilosi. *Tibiæ* posticæ scopâ fulvâ.

ABDOMEN ex cordato subovatum, convexiusculum, glabrum; segmentis margine pallido ciliatis, anticis interruptè. Ani *Fimbria* rufescens.

*M. fuscata*, at first sight, might be mistaken for *M. convexiuscula*; but the down of the thorax is of a much darker hue, the posterior tibiæ and tarsi are black, the scopæ are tawny, and the abdomen is not so convex either above or below. Upon this

insect I found a *Pediculus*, nearly related to the *P. Apis* of Fabricius, but I think distinct, which I shall describe in the margin (*s*). The *P. Apis* is not uncommon upon the insects of this genus, I have found fourteen or fifteen upon the same individual; I have likewise frequently met with it upon genuine *Apes*. From Reaumur and De Geer we learn, that it also infests some individuals of the genus *Musca* (*t*); for it appears evident, that the hexapod, of which the latter author gives a long account as the larva of *Meloe Proscarabæus*, strange as it may seem, is no other than this insect. His description and figure tally with it exactly, not varying from the specimens I have examined in the slightest degree. This illustrious author, upon whose accuracy the greatest reliance may generally be placed, assures us, that from a mass of the eggs of this *Meloe* these larvæ proceeded; that he compared them with some he discovered upon *Musca*

(*s*) *Melitta*, *P. linearis*, niger; ore, tibiisque testaceis.

Long. Corp. Lin.  $\frac{3}{4}$ .

*Hab.* in *Melittis* semel lectus.

Major *P. Apum* et distinctus, *Corpus* angustum, lineare, nigrum. *Antennæ* biarticulatæ setâ terminali. *Thorax* trium segmentorum. *Tibiæ Tarsique* pallidè testacei; hi ferè lanceiformes, exarticulati, utrinque setâ armati. *Anus* setis quatuor instructus exterioribus brevibus. Vid. Tab. 14. n. 11. fig. 10, 11, 12.

(*t*) Reaum. tom. 4. Mem. 11. p. 490. tab. 31. fig. 17.

De Geer. tom. 5. p. 8—12. tab. 1. fig. 5—8.

*intricaria*,

*intricaria*, Lin. and found them exactly the same; that he put a large fly or two amongst them, to which they attached themselves with the greatest avidity. Similar animals are mentioned to be hatched from these eggs both by Frisch and Goedart. Here seems to be an accumulation of evidence in confirmation of this extraordinary fact; and yet, to use De Geer's words, "Qui se seroit jamais imaginé, qu'on trouveroit les petits ou les larves des Cantharides de cette espece sur le corps des Mouches? Jamais on ne se seroit avisé de les y chercher(u)." Nothing seems more improbable than that a bee or a fly should afford nutriment to the larva of so large an animal as *Meloe Proscarabæus*, and that it should feed in the same manner as an *Acarus* or *Pediculus*. Its dimensions, one would think, if it was only a larva, would be found different in different individuals, according to their age; but this is not the case, for the animal in question varies scarcely at all in size. Can we suppose, that when it has attained to a certain size, it quits this kind of food for some other? All circumstances considered, I cannot help suspecting that there is some illusion in the case, which perhaps future observation will clear up.

108. *M. atra*, fulvo-villosa; thorace ferrugineo; *Afzelii*-  
abdomine subcordato, fasciis tribus, inter-  
ruptis, pallidis.

(u) De Geer. tom. 5. p. 12.

MUS. *D. Marsham, Latham, Haworth, Lathbury, Trimmer, Sowerby, Kirby.*

Long. Corp. Lin. 4—4½.

*Hab.* Barhamiæ, in floribus et sylvis tempore vernali haud rara. Recens insectum suavem spargit odorem.

DESCR. Acul.

CORPUS atrum, fulvo-villosum.

CAPUT villosogrisescens. *Vertex* calvus. *Antennæ* nigræ.

TRUNCUS. *Thorax* nitidus, punctatus, ferrugineo-subpubescens. *Metathorax* utrinque fimbriâ rufescenti. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores; nervis, costali interiore nigricanti excepto, rufis. *Pedes* pallido-pilosi. *Tibiæ* posticæ scopâ fulvâ. *Flocculus Scopulæque* fulvi.

ABDOMEN subcordatum, atrum, punctulatissimum, basi, anoque, fulvo-villosum; segmentis duobus intermediis utrinque, quarto margine toto, tomentoso-albidis. *Venter* convexus, per fascias hirtus.

*Var.* β plantis posticis, digitisque omnibus, rufis. γ minor, corpore griseo-subvillosa, abdomine segmentis duobus anticis margine utrinque, proximis duobus margine toto, anoque, tomentoso-pallidis.

Obs. *Hujus varietatis abdomen ad figuram rotundam proximè accedit. An eadem?*

δ corporis pube, imò etiam thoracis, cinerascens;



rascenti; antennis apice subtus piceo;  
tarsis ferrugineis. An eadem?

*In honorem D. Adam Afzelii, M. D. Sueci, Botan. Demonstr. Upsal. viri celeberrimi et meâ tenui laude majoris, hoc insectum nominavi.*

I suspect that varieties  $\gamma$  and  $\delta$  of this species may be distinct, they agree, however, with  $\alpha$  and  $\beta$  in so many respects, that I have not ventured to separate them.

109. *M. nigra*, cinereo-subpubescens; thorace flava-tricincta. vescenti; abdomine ovato, basi subretuso, fasciis tribus, angustis, pallidis.

MUS. Kirby.

Long. Corp. Lin. 5.

*Hab.* in Angliâ, semel lecta.

DESCR. Acul.

CORPUS nigrum, cinereo-subpubescens.

CAPUT albicante-villosum. *Linguae* apex longior quàm in præcedentibus. *Auriculæ* minutæ. *Palpi* interiores vix fracti. *Valvulae* apice cultriformi. *Antennæ* apice subtus rufopiceo. *Stemmata* in lineâ curvâ.

TRUNCUS. *Thorax* pube flavescenti tectus. *Squamulae* piceæ. *Alæ* hyalinæ, apice obscuriores, nervis nigricantibus. *Pedes* nigri, pallido-pilosi. *Tibiæ* posticæ scopâ certo situ argenteâ. *Scopulae* fulvescunt. *Digit*i posteriores infra apicem plantæ inserti. *Flocculus* obsoletus.

ABDOMEN

ABDOMEN ovatum, basi villosum et subretusum, segmentis tribus intermediis margine tomentoso-pallidis. Ani *Fimbria* medio atra, utrinque pallida. *Venter*, anum versus potissimum, cinereo-hirtus.

This and the following species vary from the characters of the insects of this genus, and approach to those of genuine *Apes*. Their tongue is longer with very minute auricles, and the tops of the valvulæ are cultriform (*x*). They still, however, retain so much of the character of *Melitta*, as to be properly placed in that genus, and they will rank very well with the insects that compose the present family, with which they agree in habit. If considered as forming a distinct subdivision, it may be regarded as a connecting link between the genera which partakes of the characters of both.

*chrysuræ*. 110. *M. atra*, grisescente-subpubescens; thoracis limbo fulvescenti; abdomine ovato, basi retuso, ano fulvo-aureo.

FIG. *Andrena hæmorrhoidalis*. *Panzer. Fn. Ins. Germ. Init. n. 65. tab. 20.*

MUS. *D. Marsham, Trimmer, Haworth, Sowerby, Kirby.*  
Long. Corp. Lin. 6.

*Hab.* Barhamiæ, in floribus *Campanulæ rotundifoliæ* et *Trachelii* femina haud rara. Mas circa aggeres apricos tempore vernali obvius, feminae etiam sæpe comes.

DESCR. Acul.

CORPUS atrum, pube griseâ.

(*r*) Tab. 3. \*\*. c. fig. 8, 9.

CAPUT

**CAPUT** admodum villosum. *Oris* barba fulvo-aurea. *Occipitis* pili atrii. *Labium* tuberculo nullo. *Antennæ* apice subtus piceo.

**TRUNCUS.** *Thorax* anticè et utrinque pube fulvescenti, disco atro rariùs piloso. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice obscuriores, nervis nigris. *Pedes* fulvo-pilosi. *Tibiæ* posticæ scopâ fulvo-aureâ. *Scopulæ* ferrugineæ. *Digiti* obscurè rufi, postici infra apicem plantæ inserti. *Flocculus* obsoletus.

**ABDOMEN** ex oblongo ovatum, basi retusum, segmento primo villosogriscenti, tribus proximis ciliâ brevi, marginali, albâ. Ani *Fimbria* fulvo-aurea. *Venter* subhirtus, ano pube densâ, fulvâ tecto.

Obs. *In adultioribus corporis pubes cinerascit, et cilia marginalis segmentorum abdominis dorsalium haud rarè abraditur.*

Maris *Antennæ* thorace breviores, apice subtus dentato (*y*). *Facies* villis densis, albicantibus valde hirsuta. *Occipitis*, itemque *Thoracis* pubes, densa, subflava. *Abdomen* subhirsutum.

*Var. β* cinereo-villosus, thoracis disco atro, piloso.

The insect now described appears evidently to be the *Andrena hæmorrhoidalis* of Panzer, but I think not of Fabricius. His description, however, is so very short, that I do not feel quite assured that it belongs to the insect I have given for it above, ra-

(*y*) Tab. 4. \*\*. c. fig. 17.

ther

ther than this. This *Melitta* is not uncommon in the flowers of *Campanula rotundifolia* and *Trachelium*, but it seldom, with us, frequents any other plant. The male, not unfrequently, attends the other sex in her flights.

*Swammerdamella.*

111. *M. atra*, pallido-villosa; abdomine fasciis tribus albidis; pedibus posticis fulvo longissimè lanatis.

ACUL.

FIG. *Swammerdam. Bib. Nat. tab. 26. fig. 7.*

*Schæff. Icon. tab. 32. fig. 5.*

*Andrena plumipes* flavo hirsuta; abdomine nigro fasciis tribus albis interruptis; pedibus posticis flavo hirsutissimis.

*Panzer. Fn. Ins. Germ. Init. n. 46. tab. 16.*

MAS.

*Apis farfarisequa. Panzer. Fn. Ins. Germ. Init. n. 55. tab. 14.*

MUS. *D. Marsham, Smith, Latham, Lathbury, Haworth, Trimmer, McLeay, Kirby.*

*Long. Corp. Lin. 7.*

*Hab.* Barhamiæ, declivia graminosa frequentans, et ibi puteos cylindricos sibi fodiens, ubi nidificat, et in quibus femina diebus apricis circa horam meridianam tempore autumnali insidet, capite versus orificium putei, dum mas eam circumvolitat difficillimus apprehendi. In floribus etiam *Jacobææ* uterque sexus haud infrequens.

DESCR. Acul.

CORPUS atrum, pallido-villosum.

CAPUT. *Linguae* apex elongatus, attenuatus.

*Vertex* atro-pilosus. *Antennæ* nigræ.

TRUNCUS

TRUNCUS supra fulvo-pubescentis, thoracis disco pilis sparsis, atris consperso. *Squamulæ* nigrae. *Alæ* hyalinæ, apice nigricantes, nervis piceis. *Femora* pallido-barbata. *Tibiæ* rufo-pilosi. *Plantæ* extra pilis atris hirtæ, intus scopulis fulvis. *Tibiæ Plantæque* posticæ lanâ densâ, longissimâ, fulvâ, undique barbata(z). *Digiti* articulo extimo rufo.

ABDOMEN subovale, atro-pubescentis, segmento primo villosopallido, proximis tribus margine tomentosoniveis, anticis interruptè. Ani *Fimbria* densa, nigricans. *Venter* per fascias nigricante-pubescentis.

Maris *Corpus* supra pube densâ pallidè rufescenti, subtus albescenti, tectum. *Antennæ* vix thorace breviores, nigrae. *Pedes* hirti, postici elongati, plantis longiùs, sed haud densè, villosis. *Abdomen* ex lanceolato-ovatum, per fascias rufescente-hirsutum, segmentis margine albidioribus.

This elegant insect has been long known, for it was in the collection of the celebrated Swammerdam, one of the fathers of Entomology, and has been tolerably figured by him. I have therefore decorated it with his name. Panzer has an admirable figure of it, under the name of *Andrena plumipes*, but in his description of it he says, "Caput

(z) Tab. 4. \*\*. c. fig. 14.

*nigro hirsutum*—*pedes flavo hirsuti*—*alæ hyalinae, flavescentes.*” These circumstances do not agree with our specimens, which renders his synonym rather doubtful. He has figured the male as the *Apis farfarisequa* of Scopoli, in this I think he is mistaken.

No person at first sight would take the male and female of *M. Swammerdamella* for the same species, so widely do they differ in most particulars; nor should I have suspected that there was any connexion between them, had I not discovered their retreats. In the month of August, 1797, I saw a female take her flight from a grassy declivity of a southern aspect, which was much entangled with roots and shrubs. Upon examining this spot more narrowly, I discovered a number of small burrows, each of which had a little heap of sand, which had been excavated from it, lying before it. In some of these burrows I saw our *Melitta* sitting, with her head at the mouth, enjoying the sunshine; at the same time I observed many other insects flying about the spot. Upon my attempting to take them they disappeared, but they soon returned to their amusement. With some difficulty, I at length succeeded in taking one, and it proved to be the male just described. I have since frequently visited the same spot, and at the proper season have always found these insects there, both males and females, employed in the manner I have mentioned.

These

These circumstances convince me, that, though they differ so much in form and hirsuties, they are only the two sexes of the same species; especially since they agree in the shape of the tongue, which approaches very near to that of a genuine *Apis*.

APIS. (\*. a.)

*ursina.* 1. **A.** atra, supra glabriuscula; pedibus posticis fulvo-hirsutissimis.

*Apis ursina* atra, pedibus posterioribus fulvo-hirsutissimis.

*Musk. Lesk.* p. 80. n. 520.

*Lin. Syst. Nat. ed. Gmel.* p. 2790. n. 173.

FIG. *Tab. 16. fig. 1 Var. β.*

MUS. α *D. Drury* Apis, n. 71. β *Kirby.*

*Long. Corp. Lin.* 3½—5.

*Hab.* In Suffolciâ, a nobis semel lecta, Septembre in-  
eunti 1797, in ericeto dicto Martlesham heath; prope  
Woodbridge.

DESCR. Acul.

CORPUS atrum, pube, rarâ admodum, nigricanti.

CAPUT subrotundatum, nigro hirsutulum. *Labii* apex subreflexus. *Maxillæ* forcipatæ, apice piceæ. *Antennæ* capite breviores, piceo-nigræ.

TRUNCUS. *Squamulæ* castaneæ. *Alæ* infuscatæ; nervis, excepto costali interiore nigro puncto pallido, ferrugineis. *Pedes* rufo-pilosi, femorum barbâ nigrâ. *Tibiæ Plantæque* posticæ fulvo longissimè lanatæ. *Digit*i ferruginei.

ABDOMEN ovale, supra pilosulum, segmentis margine membranaceis. Ani *Fimbria* nigricans. *Venter* convexus, per fascias nigricante-pubescenti;

*Var.*



*Var. β* triplo minor, alis subhyalinis. An eadem?

This insect appears evidently to be the *Apis ursina* of the Museum Leskeanum. It is extremely rare, as indeed are all the species of the present family. I have not seen a single exotic specimen belonging to it.

2. *A. atra*, nitida, glabriuscula; antennis dimidiato-*Linnæi-*  
rufis. *la.*

FIG. *Tab. 16. fig. 2.*

MU. *D. Marsham, Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* In Suffolciâ, semel a nobis cum præcedente capta, semel etiam a D. Goodenough.

DESCR. *Mas.*

CORPUS atrum, nitidissimum, parum pubescens.

CAPUT. *Maxillæ* forcipatæ. *Oculi* parvi. *Antennæ* rufæ, basi nigræ.

TRUNCUS. *Squamulæ* piceæ. *Alæ* hyalinæ, nervis ferrugineis. *Pedes* piceo-nigri, cinerascente-pilosuli. *Tibiæ* posticæ clavatæ, subdolabriformes (a). *Scöpulæ* fulvæ.

ABDOMEN ovatum, segmentis margine depressiusculis et submembranaceis. *Venter* nigropiceus.

3. *A. atra*, nitida, glabriuscula; digitis rufis. *Banksi-*

MUS. *D. Banks, Marsham, Drury* Sphex, n. 15. *Latham,*  
*Kirby.*

Long. Corp. Lin. 5.

*Hab.* Prope Londinum. A me nunquam lecta.

(a) *Tab. 4. Apis. \*. a. fig. 14.*

## DESCR. Mas.

CORPUS atrum, lucidum, parum pubescens.

CAPUT subhirsutum. *Antennæ* subtus piceæ.*Oculi* parvi.TRUNCUS. *Squamulæ* piceæ. *Alæ* paululùm infuscatae; nervis, excepto costali interiore anastomosique nigris, ferrugineis. *Pedes* rufescente-villosuli, digitis ferrugineis.ABDOMEN ovatum, segmentis margine depressiusculis. *Venter* villosulus.

This insect is extremely similar to the preceding species; but, although of the same sex, it is as large again. Its antennæ are black, and its digits ferruginous.

\*. b.

*Goodeni-ana.* 4. A. atra; tuberculis, squamulis, scutellique punctis, flavis; abdomine fasciis flavis, nigrisque, alternis.

MUS. D. *Marsham, Latham, McLeay, Haworth, Lathbury, Sowerby, Francillon.*

Long. Corp. Lin.  $5\frac{1}{4}$ —6.

*Hab.* Barhamiæ et alibi, in aggeribus viarum apricis mense Maio frequens, odore *Melissæ* flagrantissima. Mas in floribus *Grossulariæ*.

## DESCR. Acul.

CORPUS atrum, pube grisescenti.

CAPUT. *Maxillæ* rufæ, apice fuscæ. *Antennæ, Labium, Nasus* apice, rufi. *Facies* utrinque ad oculos flava.

TRUNCUS. *Collare, Tubercula, Squamulæ, Metathoracis*

*metathoracis* maculæ duæ, *Scutelli* puncta totidem lineolaque transversa, flava omnia. *Alæ* testaceæ, apice nigricantes lunulâ albâ. *Pedes* ferruginei, femoribus basi subtus, apophysibusque nigris:

ABDOMEN ovatum, atrum, fasciis quinque flavis, quarum antica subintegra, intermediæ duæ medio attenuatæ. *Venter* niger, fasciis quatuor subrepandis, flavis.

*Var. β* labio fusco; abdominis fasciâ anticâ interruptâ.

*γ* scutello lineolâ transversâ nullâ, alias *β* similis.

*δ* metathorace immaculato, alias *α* similis.

*ε* metathorace immaculato; abdominis fasciâ anticâ interruptâ; ventre fasciis binis intermediis, strigâ anticâ, punctisque duobus posticis, flavis.

*Maris Corpus* albido satis villosum. *Caput* anticè flavum, flavedinè oculos semiambiente, versus antennas trifurcâ, dente intermedio breviori. *Antennæ* scapo nigro, subtus flavo, apice articulis quinque primis supra maculâ nigricanti. *Scutellum* punctis duobus flavis. *Metathorax* immaculatus. *Pleuræ* anticè lunulâ flavâ pictæ. *Pedes* rufo, nigro, flavoque variegati. *Apophyses* quatuor anteriores flavo maculatæ. *Abdomen* nigrum, supra et infra fasciis quinque, anoque, flavis; segmentum ultimum dorsale emarginatum, *f. bidentatum*.

*Var. β* capitis flavedine versus antennis bifurcâ ;  
abdominis tergi fasciâ anticâ interruptâ.

*γ* capitis flavedine versus antennis bifurcâ ;  
abdominis tergi et ventris fasciâ anticâ in-  
terruptâ.

Obs. *Infinitâ ferè varietate gaudet hæc species  
in utroque sexu. Præcipuæ supra dantur, aliæ  
minùs insignes.*

*A viro Reverendo S. Goodenough, LL. D. Ca-  
nonico Windsoriensi, Botanico summo tum et  
in Entomologiâ lynceo, nomen suum hæc Apis  
mutuatur.*

*A. Goodeniana* resembles a good deal *Nomada  
succincta*, figured by Panzer (*b*) ; but I think it  
very distinct. It differs in the colour of the lip,  
of the anterior part of the face, the antennæ, and  
especially of the legs, which in his are described as  
entirely yellow with black thighs, and a black spot  
on the posterior tibiæ ; these, in our males, for his  
figure represents a male, are red, variegated with  
yellow only on the anterior side, with red primary  
and secondary thighs, marked with a black line  
underneath ; the third pair being black on the pos-  
terior side, and red only before and at their tips.

*alternata*. 5. *A. atra*, giseo-subvillosa ; tuberculis, squamu-  
lisque flavescentibus ; abdomine fasciis flavis,  
nigrisque, alternis ; scutello immaculato.

MUS. *D. Marsham, Kirly.*

Long. Corp. Lin.  $5\frac{1}{2}$ .

(*b*) Fn. Ins. Germ. Init. n. 55. tab. 21.

*Hab.*

*Hab.* Barhamiæ. Tempore vernali in floribus *Grossulariæ* bis capta.

DESCR. Mas.

CORPUS atrum, pube grisescenti.

CAPUT anticè flavum flavedine versus antennis bifurcâ. *Maxillæ* apice fuscæ. *Antennæ* rufæ, supra basi nigræ, scapo antrorsum lineolâ rufâ.

TRUNCUS. *Collare* utrinque, *Tubercula*, *Squamulæ* item extrorsum, sulphureæ. *Scutellum* immaculatum. *Pleuræ* antrorsum maculâ parvâ, sublunatâ, flava. *Alæ* subtestaceæ, apice fuscescentes. *Pedes* rufi, femoribus subtus nigris, primariis antrorsum fulvescentibus. *Apophyses* nigræ.

ABDOMEN atrum, supra et infra viridi-flavo fasciatum fasciâ anticâ interruptâ. *Anus* apice bidentatus.

This species possesses most of the characters which distinguish the same sex of the preceding, and I should have assigned it only a station amongst the varieties of this sex of that insect, had it not wanted those characters which seem constantly to attend them: namely, the two yellow dots upon the scutellum, the yellow markings of the legs, and the yellow spots which are observable on the four first pair of apophyses; not to mention slighter differences.

♂. *A. atra*, cinerascens-subvillosa; scutelli punctis *Lathu-*  
duobus, abdominisque fasciis posticis, flavis; *riana.*  
anticâ rufâ.

MUS. D. Marsham, Kirby.

Long. Corp. Lin. 4 $\frac{3}{4}$ .

Hab. Prope Woodbridge in Suffolciâ, a D. Lathbury  
semel capta, semel etiam a D. Marsham.

DESCR. Mas.

CORPUS atrum, cinerascente-villosum.

CAPUT anticè flavum, flavedine oculos semiam-  
biente, versus antennas trifurcâ dentibus sub-  
æqualibus. *Maxillæ* apice fuscæ. *Antennæ*  
rufæ, basi supra piceæ, scapo antrorsum flavo.

TRUNCUS. *Tubercula*, *Scutellum* punctis duobus,  
*Pectus* anticè utrinque maculâ lunatâ, flava.  
*Squamulæ* extrorsum fulvæ. *Alæ* testaceæ.  
*Pedes* antichi flavi, posteriores quatuor rufi  
geniculis sulphureis. *Femora* postica nigra,  
antrorsum ferruginea. *Apophyses* nigræ, an-  
ticis antrorsum macula flava, apex rufescens.

ABDOMEN ovato-lanceolatum, segmento primo  
basi nigro, apice latè rufo, proximis tribus  
flavis, margine rufo-piceis. *Anus* flavus, seg-  
mento ultimo integro, rufescenti. *Venter* fas-  
ciis nigris, flavis, rufisque variegatus.

*Var.*  $\beta$  oculorum ambitu ferè toto, collare utrin-  
que, squamulisque flavis.

*Pueritiæ comiti ferè ab incunabulis, adolescentiæ  
meæ et maturiorum annorum amico jucundo,  
entomologo præstanti, et rerum naturalium  
observatori, item pictori, accuratissimo, Viro  
Reverendo Petro Lathbury, Woodbridgensi,  
hoc insectum sacrum esse volui.*

7. A.

7. *A. atra*; scutello, tarsi, tibiis extra, abdominis-*varia*.  
que fasciis posticis, flavis, anticâ rufâ.

FIG. *Nomada varia* antennis pedibusque ferrugineis, abdomine flavo, anticè rufo, fasciis tribus nigris.

*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 20.*

MUS. *Kirby.*

Long, Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamiæ, semel capta Septembre ineunti 1799, semel etiam a D. Lathbury,

DESCR. Mas.

CORPUS atrum, pube cinerascenti.

CAPUT, et oculorum ambitus anticè, flavi, flavedine versus antennis trifurcâ. *Maxillæ* apice fuscæ. *Oculi*, in vivo, chrystallino-virentes. *Antennæ* rufæ, supra liturâ mediâ nigrâ, scapo nigro antrorsum flavo.

TRUNCUS. *Collare, Tubercula, Squamulæ, Scutellum* maculâ subquadratâ, *Pleuræ* lunulâ anticâ, sulphureæ. *Alæ* testaceæ, paululùm fusciscentes. *Pedes* rufi, tarsi, et tibiis extra, sulphureis. *Femora* ferruginea, subtus basi nigra. *Apophyses* nigræ, intermediis articulo secundo lineolâ flavâ inscripto, primariis articulo extimo antrorsum sulphureo.

ABDOMEN subovatum, basi nigrum, fasciâ ferrugineâ, dein fasciis, flavis, nigrisque alternis variegatum, segmento ultimo bidentato. *Venter* flavus, nigro fasciatus.

*Var. β* collare, apophysibusque totis, nigris.

Panzer's *Nomada varia* is evidently synonymous with the insect here described; though, in his description,

scription, the legs are denominated ferruginous: the figure, however, represents them variegated with yellow.

*flava.* 8. *A. atra*, subvillosa; squamulis fulvis; abdomine fasciis flavis, ferrugineisque, alternis.

FIG. *Nemava flava* thorace atro, immaculato, abdomine flavo, fasciis quinque rufis, pedibus ferrugineis.

*Panzer. Fn. Ins. Germ. Init. n. 53. tab. 21.*

MUS. *D. Marsham, Drury* Sphex, n. 66. *Trimmer, Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ — $4\frac{1}{2}$ .

*Hab.* Barhamiæ et alibi, haud frequens.

DESCR. Mas.

CORPUS atrum, cinereo-subvillosum.

CAPUT anticè sulphureum. *Maxillæ* apice fusca. *Nasus* pube decumbenti, argenteo-pallidâ, barbatus. *Antennæ* ferrugineæ, supra basi dimidiato-nigræ, scapo antrorsum pallidè luteo.

TRUNCUS. *Tubercula*, sic et *Squamulæ*, ferrugineæ. *Scutellum* immaculatum. *Alæ* subhyalinæ, apice nigræ lunulâ albâ; nervis, excepto costali interiore fusco, testaceis. *Pedes* ferruginei, primarii antrorsum flavi femoribus ultimis posticè, reliquis subtus, nigris.

ABDOMEN subovatum, segmento primo atro fasciâ ferrugineâ, reliquis flavis margine ferrugineis, ultimo bidentato. *Venter* rufus, fasciis nigris, sulphureisque abbreviatis, variegatus.

*Var. β* minor, corpore albido-villosulo; antennis supra lineâ nigrâ, per totam longitudinem ductâ, notandis, scapo antrorsum lineolâ rufescenti



rufescenti inscripto; tuberculis atris; abdominis fasciâ ferrugineâ anticâ utrinque punctulo nigro notatâ; pedibus primariis flavedine nullâ; tibiis omnibus posticè nebulâ nigricanti.

γ antennis supra, scapo toto, tuberculis, femoribus, tibiisque posticis extrorsum, nigris; abdomine segmento antico fasciâ angustâ, repandâ, ferrugineâ, utrinque punctulo nigro notatâ; fasciis flavis duabus intermediis subinterruptis; ventre nigricanti, fasciis tribus, punctoque, flavis.

δ abdomine lineari-lanceolato, segmentis intermediis fasciâ flavâ, interruptâ. Aliàs β similis.

This varying species may always be distinguished by the silver pile that is, as it were, combed over its nasus, by its yellow mouth and ferruginous abdomen variegated above and below with yellow bands. Variety δ may possibly be a distinct species. Panzer's figure is a very accurate representation of our insect.

9. A. atra; scutelli punctis fulvescentibus; abdominis ventre ferrugineo, tergo rufo, nigro, flavoque fasciato.

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* In Suffolciâ, a me bis lecta, semel etiam a D. Marsham.

DESCR.

DESCR. Acul.

CORPUS atrum, rufo-subvillosum.

CAPUT anticè, et oculorum ambitus, ferruginei.

*Maxillæ* apice fuscæ. *Antennæ* ferrugineæ, scapo supra nigro.

TRUNCUS. *Collare*, *Squamulæ*, item *Pleuræ* macula antica, ferrugineæ. *Tubercula*, *Scutellique* puncta bina, fulvo-flava. *Alæ* testaceæ, apice obscuriores lunulâ albâ. *Pedes* ferruginei, femoribus posticis hinc nigris. *Apophyses* articulis apice rufis.

ABDOMEN subovatum, rufum, fasciis nigricantibus flavisque variegatum. *Venter* ferrugineus, immaculatus.

This may probably be the other sex of one of the preceding species, for a ferruginous or red mouth is, in the present family, generally a characteristic of the aculeates, as a yellow one is of the males; but as the sexes usually agree as well in the ventral as in the dorsal markings of the abdomen, and in this respect *A. rufiventris* differs from them, I thought it best to consider it as distinct.

*Marsham-ella*. 10. *A. atra*; antennis, squamulisque ferrugineis; scutelli punctis, abdominisque fasciis, flavis, anticis tribus interruptis.

MUS. *D. Marsham, McLeay, Sowerby, Trimmer, Francillon, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ —6.

*Hab.*

*Hab.* Barhamiæ. In floribus *Ranunculi bulbosi* lecta  
exeunte Maio. Prope Londinum sæpiùs a D. Mar-  
sham et J. Trimmer capta.

DESCR. Acul.

CORPUS atrum, pube parvâ cinerascenti.

CAPUT. *Maxillæ, Labium, Nasus* apice, *Antennæ*, ferruginei omnes.

TRUNCUS. *Collare, Tubercula, Scutellum* punctis duobus, flava. *Squamulæ* ferruginæ. *Alæ* testaceæ, apice obscuriores lunulâ albâ. *Pedes* ferruginei, apophysibus, femoribus posticis, et anticis quatuor basi subtus, nigris.

ABDOMEN lanceolato-ovatum, nigrum, fasciis quatuor, anticis tribus interruptis, anoque, flavis. *Venter* convexus, niger, segmento secundo utrinque maculâ obliquâ, proximis duobus fasciâ, quinto utrinque punctis duobus, flavis.

Obs. *Abdominis fascia antica interrupta e maculis duabus repandis, extrorsum attenuatis, constat.*

*Var. β* abdominis tergi segmento primo, et ventris ultimo, punctis tantummodo duobus flavis.

*γ* tuberculis, scutellique punctis rufis; abdomine segmento primo punctis duobus flavis, tertii fasciâ subinterruptâ; ventre basi apiceque immaculato.

*δ* abdomine segmento primo immaculato; ventre segmento secundo utrinque punctulis

tulis duobus contiguis, tertio fasciâ interruptâ, quarto fasciâ, luteo-flavis, ultimo immaculato. Alias & similis.

Obs. *In hâc varietate abdominis segmentum primum punctorum flavorum vestigia, obscurissima tamen et evanescentia, exhibet. Punctula ventralia interdum desunt.*

Thomæ Marsham Armigeri nomine, Ærarii Societatis Linnæanæ Præfecti; insularum harum nostrarum Entomologiæ illustrationem pridem feliciter aggressi, et Coleoptera Britannica jam jam publici juris facturi; mihi, in itineribus Naturæ investigationem propter susceptis, sæpe comitis jucundi, et semper amici benevoli, hoc insectum condecoravi.

*cornigera*. 11. A. atra; labio subcornuto; abdominis ventre basi ferrugineo, tergo maculis, fasciisque flavis, variegato.

MUS. D. Marsham, Drury SpheX, n. 16. Trimmer, Kirby.

Long. Corp. Lin. 5—5½.

*Hab.* Barhamiæ, æggeribus arenosis, apicis frequens; recens insectum moscham redolet.

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT anticè rufum, rubore versus antennas trifurco, dente intermedio brevior. *Maxillæ* apice fuscæ. *Labium* cornu brevi acuto armatum.

matum (c). *Oculi*, in vivo, chrystallino-brunnei. *Antennæ rufæ*.

**TRUNCUS.** *Collare, Tubercula, Squamulæ, Scutellum* punctis duobus contiguis, *Metathorax* maculis totidem distantibus ferè parallelogrammicis, flava hæc omnia. *Pleuræ* maculâ anticâ, obscurâ, ferrugineâ. *Alæ* paululùm infuscatæ, apice obscuriores; nervis, costali inferiore fusco excepto, testaceis. *Pedes* ferruginei; femoribus ternariis posticè et subtus, reliquis basi subtus, nigris. *Tibiæ* ultimi paris basi annulo flavo. *Apophyses rufæ*, articulo primo basi nigro.

**ABDOMEN** ovatum, nigrum, segmento primo fasciâ mediâ rufâ fasciam aliam subrependam, flavam, medio interruptam includente, intermediis duobus utrinque maculâ introrsum acutâ, ultimis fasciâ, flavis. *Venter* anticè rufus, fasciis posticis flavescentibus tribus.

*Var. β* pleuræ maculâ flavâ ferrugineo marginatâ; puncto sub alis obscurè ferrugineo pleuræ notantur.

*γ* metathorace immaculato; abdominis segmenti primi fasciâ ferrugineâ strigas tantùm duas flavas includente; ventre fasciis flavis solummodo duabus. Alias *α* referens.

*δ* metathorace immaculato; labii cornu longiori; pleuræ maculâ ut in *β*; tibiis posticis

(c) Tab. 5. \*. b. fig. 18. b.

liturâ

liturâ flavâ; ventre basi punctis insuper tribus flavis in triangulum dispositis.

ε faciei rubore tantùm bifurco; metathorace, tibiisque posticis, immaculatis.

ζ præcedenti similis, ventre ferrugineo, fasciis duabus, obscuris, flavis.

The following characters are constant through all the varieties of this *Proteus* species, namely the short horn upon the lip, which is easily seen under a common magnifier, if the head be viewed from one side, its ferruginous mouth and antennæ, its yellow collar, tubercles, squamulæ, and contiguous spots on the scutellum; and the ferruginous fascia of the first dorsal segment of the abdomen, which includes, and as it were insulates, two irregular yellow spots. When this insect is first taken it emits a very agreeable scent.

*subcornuta.* 12. A. atra; labio subcornuto; abdominis ventre, maculisque tergi anticis, ferrugineis, posticis sex, anoque, flavis.

MUS. *Kirby.*

Long. Corp. Lin. 4—4½.

*Hab.* Barhamiæ, lecta in horto Maio exeunti 1800, in floribus *Geranii reflexi*.

DESCR. Acul.

CORPUS atrum, albido-subpilosum.

CAPUT anticè ferrugineum. *Labium* tuberculo, *f.* corniculo brevissimo, nisi a latere et sub lente,

lentè, vix conspicuo, instructum. *Oculi*, in vivo, pallidè rufescentes. *Antennæ* rufæ.

**TRUNCUS.** *Collare*, *Tubercula*, *Scutellum* punctis duobus, flava. *Alæ* subhyalinæ, apice nigræ lunulâ albâ, nervis testaceis. *Pedes* rufi, femoribus ultimi paris subtus et posticè, reliquis basi subtus, - nigris. *Apophyses* nigræ, articulis apice rufis.

**ABDOMEN** subovatum, nigrum, segmento primo maculis duabus repandis rufis, proximis tribus utrinque maculâ introrsum acutâ, anoque flavis. *Venter* ferrugineus, segmentis margine piceis.

The horn upon the lip of this species is nearly obsolete, and not easy to be discovered. The insect itself is smaller than *A. cornigera*; its squamulæ are ferruginous, and it wants the yellow spots which are inclosed in the red fascia of the first dorsal segment of the abdomen of that *Apis*. Its venter likewise has no yellow fasciæ.

13. *A. atra*; labio subcornuto; abdomine maculis *Capreæ*. anticis ferrugineis, intermediis quatuor, fasciâ, anoque, flavis.

**MUS.** *Kirby*.

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* Barhamiæ, capta semel Maio ineunti 1799, in *Salicis Capreæ* amentis.

**DESCR.** Acul.

**CORPUS** atrum, griseo-subvillosum.

**CAPUT.**

**CAPUT.** *Maxillæ* ferrugineæ, apice fuscæ. *Labium* ferrugineum, corniculo obsoleto, nisi a latere et sub lente inconspicuo, instructum. *Oculi*, in vivo, chrystallino-fusci. *Antennæ* rufæ, scapo supra nigro.

**TRUNCUS.** *Tubercula* vertice fulvo-flava. *Squamulæ* rufæ. *Scutellum* immaculatum. *Alæ* hyalinæ, apice nigræ lunulâ albâ, nervis fuscis, anastomosi testaceâ. *Pedes* ferruginei, femoribus posticis, quatuor anticorum basi subtus, apophysibusque, nigris; hæ articulis apice rufis.

**ABDOMEN** subovatum, nigrum, segmento primo maculis duabus, parvis, ferrugineis, proximis duobus utrinque maculâ introrsum acutâ, ultimis fasciâ continuâ, viridi-flavis. *Venter* piceus.

*lineola.* 14. *Â. atra*; abdomine fasciâ anticâ ferrugineâ; maculis quatuor intermediis, fasciâ, anoque, flavis.

**FIG.** *Nomada lineola* antennis, pedibus, abdominisque segmenti primi lineolâ, rufis; abdomine maculis utrinque fasciisque duabus flavis.

*Panzer. Fn. Ins. Germ. Init. n. 53. tab. 23.*

**MU.** *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* Barhamiæ, capta sæpius tempore autumnali in floribus *Umbellatarum*.

**DESCR.** Acul:

**CORPUS** atrum, pube parvâ cinerascenti.

**CAPUT**



CAPUT anticè ferrugineum. *Maxillæ* apice fus-  
cæ. *Antennæ* ferrugineæ.

TRUNCUS. *Collare*, *Tubercula*, *Squamulæ*, *Scu-*  
*tellum*, et *Metathorax*. punctis binis, flava.  
*Pleuræ* anticè maculâ ferrugineâ. *Alæ* pau-  
lulùm infuscatae, apice nigræ lunulâ albâ.  
*Pedes* rufi, femoribus posticis nigris antror-  
sum ferrugineis. *Apophyses* apice, intermediæ  
totæ, rufæ.

ABDOMEN subovatum, nigrum segmento primo  
fasciâ interruptâ, ferrugineâ, proximis duobus  
utrinque maculâ introrsum acutâ, quarto fas-  
ciâ subinterruptâ, quinto toto, sulphureis.  
*Venter* ferrugineus segmentorum marginibus  
nigris.

*Var. β* metathorace immaculato; pleuris maculâ  
valde obscurâ.

This insect, although of the same sex with the  
preceding, is more than twice as big; it has not  
the rudiment of the horn upon its lip, its collar,  
squamulæ, and two spots of the scutellum are yel-  
low, the anterior margin also of the face is ferru-  
ginous; in other respects it a good deal resembles  
*A. Capræ*. Panzer's *Nomada lineola* is evidently  
nothing more than a variety of it.

15. *A. atra*; scutello sulphureo; abdomine flavo, *fucata*.  
basi ferrugineo, fasciis quatuor nigris.

FIG. *Nomada fucata* antennis, pedibus, abdominisque basi  
VOL. II. O ferrugineis,

## APIS. (\*. b.)

ferrugineis, abdomine flavo fasciis quatuor nigris.  
*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 19.*

MUS. *D. Trimmer, Kirby.*

Long. Corp. Lin.  $4\frac{3}{4}$ .

*Hab. Barhamiæ rarior. Etiam a D. Trimmer lecta.*

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT, et oculorum ambitus, anticè rufa, rubore versus antennas trifurco. *Labium fulvum. Maxillæ apice fuscæ. Antennæ sensim paulo crassiores, rufæ.*

TRUNCUS. *Collare utrinque, Tubercula, Squamulæ, Scutellum totum, sulphurea. Alæ testaceæ, apice obscuriores. Pedes rufi, apophysis, femorumque quatuor posticorum basi subtus, atris.*

ABDOMEN subovatum, segmento antico ferrugineo, punctis duobus, apiceque, nigris, secundo utrinque flavo, medio ferrugineo, margine nigro, proximis duobus nigris fasciâ, anterioris interruptâ, anoque flavis. *Venter segmentis anticis ferrugineis apice nigris, extimis flavescens.*

Obs. *Interdum collare omnino nigrum est.*

This insect is well figured by Panzer; but his specimens appear to have had no black dots upon the first dorsal segment of the abdomen, and he describes the underside as black with obscure yellow bands.

16. *A. atra*, cinereo-villosula; abdomine piceo maculis septem sulphureis; antennis supra nigris. *leucophthalma.*

MUS. *Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, semel in *Salicis Capreæ* amentis lecta.

DESCR. Mas.

CORPUS atrum, albido-villosulum.

CAPUT. *Maxillæ* basi sulphureæ, dein ferrugineæ, apice fuscæ. *Labium*, *Frons* angulis, et *Nasus* apice, flava. *Oculi*, in vivo, chrySTALLINO-ALBI. *Facies* anticè villis decumbentibus, argenteis, barbata. *Antennæ* rufæ, supra, scapoque toto, nigræ.

TRUNCUS immaculatus. *Squamulæ* picæ. *Alæ* hyalinæ, apice fuscescentes, nervis testaceis. *Pedes* nigri, albido-pilosi, anterioribus quatuor antrorsum rufis. *Tarsi* omnes ferruginei.

ABDOMEN lanceolato-ovatum, pilis sparsis, ad latera præcipuè et anum, villosulum; segmento primo piceo, apice ferrugineo, reliquis rufopiceis, intermediis duobus utrinque maculâ introrsum acutâ, proximis tribus fasciâ abreviatâ, sulphureis. Segmentum ultimum rufum, apice bidentatum. *Venter* obscure ferrugineus.

This species, in habit and stature, very much resembles the *Nomada furva* of Panzer (*d*); but in colour and markings it is very different, as will appear upon a comparison of his description with mine.

(*d*) Fn. Ins. Germ. Init. n. 55. tab. 23.

*sex-cincta* 17. *A. atra*; tarsi rufis; abdomine fasciis sex flavis, anticis tribus interruptis.

MUS. *Kirby*.

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, semel capta.

DESCR. Mas.

CORPUS atrum, pube grisescenti.

CAPUT. *Maxillæ* basi flavæ, dein rufæ, apice fuscæ. *Labium* rufum. *Antennæ* rufæ, supra piceo-nigræ, scapo antrorsum maculâ flavâ. *Facies* immaculata, solummodo lineolâ flavâ inter basin maxillarum et oculos inclusâ.

TRUNCUS. *Tubercula* vertice flava. *Squamulæ* extrorsum obscurè fulvescentes. *Alæ* hyalinæ, apice fuscæ, nervis testaceis. *Pedes* nigri, tibiis quatuor anticis rufis, nebulâ subannulari nigrâ. *Femora* primi et secundi paribus antrorsum apice rufa. *Tarsi* omnes rufi.

ABDOMEN sublanceolatum, atrum, maculis sex, per paria dispositis, anticis minutis oblongis, intermediis magnis ovatis introrsum acutis, ultimis sublinearibus, fasciisque tribus posticis, flavis. Segmentum ultimum apice bidentatum, rufum, maculâ flavâ. *Venter* niger, fasciis tribus subrepandis, anoque, flavis.

This is very similar, at first sight, to *A. leucophthalma*; but it seems sufficiently distinguished, not to recapitulate its various slighter dissonances, by the different colour and yellow bands of the under side

side of its abdomen; a circumstance in which insects of the same sex do not usually vary.

18. *A. atra*; scutelli punctis duobus, abominisque *Schæfferella*.  
maculis sex, fasciâ, anoque, flavis.

FIG. *Schæffer. Icon. I. tab. 81. fig. 7.*

MUS. *D. Marsham, J. Coyte, Kirby.*

Long: Corp. Lin.  $5\frac{1}{2}$ .

*Hab.* In Angliâ, a D. J. Coyte bis, a D. Marsham semel lecta.

DESCR. Acul.

CORPUS atrum, rufescenti-subvillosum.

CAPUT anticè, et *Oculorum* ambitus a parte interiori, fulvo-flava. *Maxillæ* apice fuscae. *Antennæ* ferrugineæ, scapo supra nigro.

TRUNCUS. *Tubercula, Squamulæ, Scutellum* punctis duobus elevatis, fulvo-flava. *Alæ* infuscatae, apice obscuriores, nervis nigricantibus. *Pedes* rufi, tibiis flavo obscurè lituratis. *Femora* ferruginea, basi subtus atra. *Apophyses* atræ.

ABDOMEN ovatum, atrum, maculis anticis subæqualibus sex, fasciisque duabus posticis, fulvo-flavis. *Venter* ater, segmento tertio fasciâ subrependâ, quarto maculis duabus obliquis, quinto puncto medio, flavis.

Obs. *Interdum corporis hirsuties pallescit.*

19. *A. atra*; scutelli punctis duobus, abdominisque *connexa*.  
maculis sex, fasciis tribus, pedibusque, flavis.

## APIS. (\*. a. b.)

FIG. *Nomada sexfasciata* nigra, scutello punctis duobus, abdomine gibbo, fasciis sex flavis, primis tribus interruptis; antennis rufis, pedibus flavis.

*Panzer. Fn. Ins. Germ. Init. n. 68. tab. 18?*

MUS. Kirby.

Long. Corp. Lin. 6.

*Hab.* Prope Londinum, a D. Marsham lecta, et mihi transmissa.

DESCR. Mas.

CORPUS atrum, villosa-canescens.

CAPUT anticè sulphureum. *Maxillæ* apice fusca.

*Facies* infra antennis villosa-argentea. *Antennæ* ferrugineæ, supra basi dimidiato-nigræ, scapo antrorsum maculâ flavâ.

TRUNCUS. *Squamulæ* extrorsum pallidæ. *Scutellum* punctis duobus minutis, distantibus, flavis. *Alæ* subfusca, nervis nigris. *Pedes* ochracei femoribus rufis, subtus, apophysibusque, atris.

ABDOMEN subovatum, supra convexum, atrum, maculis sex per paria dispositis, anticis duabus minoribus, fasciisque tribus, flavis. Segmentum ultimum integrum. *Venter* anticè niger, posticè flavus et hirtus.

This species may possibly be the other sex of *A. Schæfferella*; I am induced to consider it as distinct by the following circumstances, in which it differs from that insect, and which seem more than sexual characters. The down of its head and trunk is white and thick for this family; its antennæ, on their upper side, are black from the base  
more

more than half way upwards; its tubercula are black, and the exterior margin of the squamulæ is of a pale colour; the dots upon its scutellum are minute and distant; its tibiæ and tarsi are yellow; the first pair of yellow spots upon the abdomen are smaller than the other two, and the last ventral segments are more hairy than is usual in the present family. Panzer's *Nomada sexfasciata* may, perhaps, be a variety of it; but, as I have doubts on that head, I have given it another trivial name.

20. *A. atra*; pedibus ferrugineis; scutelli punctis, *Jacobææ*.  
abdominisque maculis fasciisque, flavis; antennis supra nigris.

FIG. *Nomada Jacobææ* nigra; abdomine fasciis sex flavis, primis tribus interruptis, antennis pedibusque flavis.  
*Panzer. Fn. Ins. Germ. Init. n. 72. tab. 20.*

MUS. *D. Marsham, Drury* Sphex, n. 68. *Kirby.*

Long. Corp. Lin. 5—5½.

*Hab.* Barhamiæ, lecta tempore vernali in floribus *Grossulariæ*.

DESCR. Mas.

CORPUS atrum, pube albescenti.

CAPUT anticè et lineola ante oculos, flava.

*Nasus* barbâ albâ. *Maxillæ* apice fuscæ. *Antennæ* rufæ, supra piceo-nigræ, scapo antrorsum flavo.

TRUNCUS. *Collare, Tubercula, Squamulæ, Scutellum* punctis duobus, flava. *Alæ* hyalinæ, apice nigricantes; nervis, costali interiore nigro excepto, testaceis. *Pedes* ferruginei, fe-

moribus posticis ferè totis, reliquis subtus, apophysibusque, nigris. *Tibiæ* anticæ antrorsum liturâ flavâ.

**ABDOMEN** subovatum, atrum, segmento antico, maculis duabus subrepandis, vel potiùs fasciâ interruptâ, secundo maculis duabus, magnis, ovatis, tertio totidem lanceolatis, proximis duobus fasciâ, anoque, flavis. Segmentum ultimum emarginatum. *Venter* fasciis quinque subrepandis, flavis

*Var. β* pleuris anticè maculâ rotundâ, flavâ; abdomine segmento primo fasciâ obscurâ, interruptâ, ferrugineâ, maculas duas contiguas subtriangulares flavas includente.

Panzer's *N. Jacobææ* appears to me merely a variety of our insect, which is sufficiently distinguished from the preceding species, by its antennæ blackish on the upper side, its yellow tubercles and squamulæ, hyaline wings, red legs, and emarginate anus.

*Paraopic-21.* *A. atra*; antennis nigricantibus; scutelli punctis duobus contiguis, abdominisque maculis, fasciisque, flavis.

**MUS.** *Kirly.*

Long. Corp. Lin. 5.

*Hab.* Barhamiæ, in floribus *Jacobææ* lecta Septembre ineunti 1799.

**DESCR.** Acul.

**CORPUS** atrum, glaberrimum,

**CAPUT**



CAPUT anticè flavum, flavedine antennas versus subtrilobâ, lobo intermedio lato, obtusangulo, lateralibus parvis, obliquis. *Labium* fulvum. *Maxillæ* apice fuscæ. Punctulum flavum, obscurum, *Faciem* ad oculos sub antennis utrinque signat. *Antennæ* nigræ, basi subtus rufæ.

TRUNCUS. *Collare*, *Tubercula*, *Squamulæ*, *Scutellum* punctis duobus contiguis, valde elevatis, *Metathorax* totidem parallelogrammicis, distantibus, *Pleuræ* maculâ subtriangulari, sulphurea hæc omnia. *Alæ* subhyalinæ, apice nigricantes lunulâ albâ. *Pedes* rufo flavoque varii. *Apophyses* primariæ articulo primo atro, secundo rufo, secundariæ totæ rufæ articulo primo utrinque puncto flavo, ternariæ articulo primo nigro antrorsum flavo, secundo rufo.

ABDOMEN ovatum, atrum, segmento primo fasciâ subinterruptâ, proximis duobus utrinque maculâ introrsum acutâ, anticis majoribus, reliquis fasciâ, flavis. *Venter* gibbus, posticè flavus, fasciâ nigrâ.

This insect is extremely distinct from all that we have hitherto described; its body is quite naked, and its antennæ entirely black, except only the underside of two or three of the joints next the head. Peculiarities which likewise attend several of the following species.

*Solidagi-22. A. atra*; antennis nigricantibus; scutello, abdominisque maculis, fasciisque, flavis; segmento primo immaculato.

FIG. *Nomada Solidaginis* nigra, abdomine fasciis quinque flavis, primis tribus interruptis, segmento primo immaculato.

*Panzer. Fn. Ins. Germ. Init. n. 72. tab. 21.*

MUS. *D. Marsham, Lathbury. Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ —5.

*Hab.* Barhamiæ, æ nempe. Varietates  $\beta$ ,  $\gamma$ ,  $\delta$  prope Eri-  
cetum dictum Martlesham heath juxta Woodbridge  
lectæ in floribus *Jacobææ*.

#### DESCR. Acul.

CORPUS atrum, glabrum.

CAPUT anticè flavum, flavedine, versus antennis, trilobâ, lobo intermedio obsoletiusculo, obtusangulo, lateralibus apice latioribus, emarginatis. *Maxillæ* apice fuscæ. *Labium* fulvum. *Oculi*, in vivo, chrystallino-albidi. *Antennæ* nigræ, basi rufæ.

TRUNCUS. *Collare, Tubercula, Squamulæ, Scutellum* planiusculum, item *Pleuræ* maculâ lunatâ, flava. *Pedes* rufi, flavo variegati, femoribus tertii paris posticè basi nigris. *Apo-physes* primariæ articulo primo nigro, antrorsum apice flavo, secundo rufo, intermediæ totæ rufæ, ternariæ articulo primo posticè nigro anticè rufo extrorsum flavo, secundo toto rufo. *Puncta* bina, et lineolæ totidem flavæ, regionem pedum quatuor posteriorum ornant.

#### ABDOMEN

ABDOMEN ovatum, atrum, segmento primo immaculato, secundo et tertio, utrinque maculâ magnâ introrsum acutâ, proximis duobus fasciâ, flavis. *Venter* fasciis quatuor repandis, flavis, anticâ interruptâ.

*Var. β* faciei flavedinis lobis lateralibus apice rotundatis; pedibus rufis, geniculis flavis; punctis lineolisque flavis nullis inter pedes posticos; apophysibus primariis articulo primo immaculato.

*Maris Corpus* albido-subvillosum. *Labium* flavum. *Antennæ* scapo antrorsum flavo. *Faciei* flavedinis lobi laterales apice elongati, attenuati. *Alæ* superiores basi puncto flavo notatæ. *Apophyses* posticæ articulo primo antrorsum flavo. *Abdomen* tergo fasciis tribus posticis flavis, ventre fasciâ anticâ integrâ. *Anus* integer.

*Var. β* minor faciei flavedine lobis lateralibus apice furcatis; abdomine maculis sex introrsum acutis, fasciisque duabus, flavis; ventre fasciâ primâ interruptâ; apophysibus posticis ut in feminâ.

*γ* minor, tibiis posticis nebulâ, femoribus basi subtus, apophysibusque, nigris, his articulo primo extrorsum maculâ flavâ; alis superioribus basi puncto flavo nullo; ventre ut in *β*.

*δ* abdomine segmento tergi antico punctis quatuor

quatuor transversè positis flavis notato,  
aliàs  $\alpha$  similis.

This gay insect varies greatly in the males, both as to size and markings,  $\alpha$  is as big again as the rest. I have some suspicion that  $\delta$  may be distinct, as the first dorsal segment of the abdomen in the other varieties is constantly without spots. Panzer's *N. Solidaginis* is evidently a male variety of ours.

*picta.* 23. A. atra; antennis nigricantibus; abdomine ferrugineo, maculis quatuor, fasciisque duabus, scutelloque, flavis.

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Barhamiæ, sæpius capta in floribus Septembre ineunti 1799.

DESCR. Acul.

CORPUS atrum, glabrum.

CAPUT. Os rufum. *Facies* anticè flava flavedine trilobâ, lobo intermedio obsoletiusculo, obtusangulo, lateralibus apice latioribus, furcatis. *Genæ* margine apud oculos anticè flavo. *Maxillæ* apice fuscæ. *Oculi*, in vivo, chrySTALLINI, posticè albidi, anticè fuscii. *Antennæ* piceo-nigræ, basi rufæ.

TRUNCUS. *Collare, Tubercula, Squamulæ, Scutellum, Pleuræ* maculâ lunatâ, *Pectus* punctis duobus triangularibus, totidemque lineolis in pedum posticorum regione, flava omnia hæc.

*Alæ*

*Alæ* fuscæ, apice obscuriores lunulâ albâ, nervis nigris. *Pedes* ferruginei, femorum apicibus, tibiârumque liturâ externâ, flavis. *Femora* ultimi paris posticè nigra. *Apophyses* primariæ articulo primo nigro, apice flavo, secundo rufo, secundariæ rufæ, articulo primo puncto flavo, ternariæ anticè rufæ maculâ laterali sulphureâ.

ABDOMEN ferrugineum, maculis quatuor magnis anticis introrsum acutis, fasciisque duabus posticis, sulphureis; segmento ultimo et antepenultimo margine nigricantibus. *Venter* ferrugineus, fasciis tribus flavis anticâ interruptâ.

Obs. *Abdominis tergi et ventris segmentum primum immaculatum.*

24. A. atra; antennis nigricantibus; abdomine rufo-piceo-ferrugineo, maculis sex, ano, scutelloque, flavis.

MUS. Kirby.

Long. Corp. Lin.  $3\frac{1}{4}$ .

*Hab.* Barhamiæ? semel lecta.

DESCR. Acul.

CORPUS atrum glabriusculum.

CAPUT anticè ferrugineum. *Maxillæ* basi flavæ, dein rufæ, apice fuscæ. *Antennæ* piceo-nigræ, basi rufæ.

TRUNCUS. *Collare, Tubercula, Squamulæ, Scutellum, Pleuræ* puncto, flava. *Alæ* hyalinæ, apice nervisque nigricantibus. *Pedes* rufi, femoribus

moribus ultimi paris posticè nigris. *Apophyses* rufæ, primariis articulo primo nigro, ternariis articulo primo posticè nigro, maculâ laterali sulphureâ.

ABDOMEN ferrugineum, segmento primo basi nigro, proximis tribus utrinque maculâ introrsum acutâ, anoque, flavis. *Venter* gibbus, ferrugineus, fasciis quatuor angustis, flavis, anticâ interruptâ, segmento primo immaculato.

Obs. *Maculæ duæ posticæ abdominis tergi fere lineares, fasciam medio interruptam efficientes.*

This species somewhat resembles *A. picta*; but, although of the same sex, it is not more than half as big; the apex of the face is ferruginous, the pleuræ have only a round yellow dot, the legs are not variegated with yellow, and the abdomen is distinguished by six pair of yellow spots, the last forming an interrupted fascia.

*Hillana.* 25. *A. atra*; labio, squamulis, scutelloque, ferrugineis; abdomine rufo, maculis quatuor, fasciisque tribus, lutescentibus.

MUS. *D. Hill.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* In Angliâ, a D. Hill Londinensi, collectori assiduò, lecta.

DESCR. Mas.

CORPUS atrum, villosò-canescens.

CAPUT antice, *Frontis* anguli, *Genæque* antrorsum, luteæ. *Labium* rufum. *Maxillæ* basi flavæ,

flavæ, dein rufæ, apice fuscæ. *Facies* antè  
antennas pilis argenteo-nitidis barbata. *Antennæ*  
ferrugineæ, scapo nigro.

TRUNCUS. *Collare* utrinque, *Tubercula*, *Squamulæ*,  
*Scutellum*, ferruginea. *Alæ* subtesta-  
cæ, apice fuscæ lunulâ albâ; nervis, costali  
interiore fusco excepto, ferrugineis. *Pedes* rufi,  
femoribus posticis, anterioribus quatuor sub-  
tus, apophysibusque, nigris.

ABDOMEN lanceolatum, pilosulum, rufum, ma-  
culis quatuor lateralibus, duæ utrinque, fas-  
ciisque tribus, (anticâ medio, intermediâ late-  
ribus et medio, interruptis, ultimâ continuâ)  
luteis. *Anus* bidentatus. *Venter* rufus, basi  
niger, maculis, fasciisque, luteis variegatus.

26. A. atra; scutello sanguineo; abdomine rufo, ochrostoma-  
maculis fasciisque interruptis, flavis, variegato.<sup>ma.</sup>

MUS. *D. Drury* Sphex, n. 55. *Kirby*.

Long. Corp. Lin.  $4\frac{2}{3}$ .

*Hab.* In Angliâ, a D. Drury lecta.

DESCR. Mas.

CORPUS atrum, pube albidâ subincanum.

CAPUT. *Facies* anticè, *Labium*, *Genarum* apex,  
sulphurea. *Maxillæ* basi flavæ, dein rufæ, apice  
fuscæ. *Nasus* argenteo barbatus. *Antennæ*  
rufæ, supra basi dimidiato-nigræ.

TRUNCUS. *Collare*, *Tubercula*, *Squamulæ* rufa.  
*Scutellum* sanguineum. *Alæ* testacæ, apice  
fuscæ lunulâ albâ; nervis, costali interiore ni-  
gro

gro excepto; rufis. *Pedes* rufi, femoribus posticis totis, anterioribus quatuor basi subtus nigris. *Apophyses* rufo nigroque variæ.

**ABDOMEN** lanceolatum, rufum, segmento primo basi nigro, secundo maculis binis rotundatis, tertio totidem ovalibus, proximis duobus fasciâ interruptâ, sexto fasciâ continuâ, sulphureis. *Anus* apice bidentatus. *Venter* rufus, posticè punctis sulphureis quatuor, quadratim positus.

This approaches very near to the preceding species; but, as they are of the same sex, and differ in many respects not a little, I think they are distinct. I have, as yet, had no opportunity of comparing the specimens themselves.

*ruficornis*. 27. A. ferruginea; thorace lineis tribus longitudinalibus atris; abdomine maculis, fasciisque, flavis.

*Apis ruficornis* antennis, pedibusque duobus, punctisque thoracis ferrugineis, abdomine luteo variegato.

*Lin. Syst. Nat. ed. 12. n. 34. Fn. Suec. 1707.*

*Vill. Ent. Eur. 3. n. 27.*

*Nomada ruficornis* antennis, pedibus, scutellique punctis quatuor ferrugineis, abdomine luteo variegato.

*Fab. Ent. Syst. Em. n. 7.*

*Lin. Syst. Nat. ed. Gmel. p. 2795. Apis, n. 34.*

*Vespa rubra*, thorace lineolis longitudinalibus nigris, abdomine maculis flavis.

*Geoffr. Hist. Ins. Par. tom. 2. p. 381. n. 18.*

*Vespa rubra. Fourcroy. Ent. Par. n. 18.*

**FIG.** *Nomada ruficornis. Panzer. Fn. Ins. Germ. Init. n. 55. tab. 18.*



MUS. D. Smith Linnean. Marsham, Latham, M<sup>c</sup>Leay,  
Sowerby, Lathbury, Trimmer, Kirby.

Long. Corp. Lin. 4—5½.

Hab. Barhamiæ, sed rara, prope Londinum frequentior.

DESCR. Acul.

CORPUS nigro, ferrugineoque varium, albido-subvillosum.

CAPUT. *Antennæ* ferruginæ. *Maxillæ* apice fuscæ.

TRUNCUS. *Thorax* ferrugineus, lineis tribus longitudinalibus atris, anticè et posticè concurrentibus, inscriptus. *Metathorax* utrinque maculâ villosa-albâ. *Alæ* fuscæ, apice obscuriores lunulâ albâ. *Pedes* ferruginei, femoribus posticis ferè totis, anterioribusque quatuor subtus, nigris.

ABDOMEN ovato-lanceolatum, ferrugineum, segmento primo basi apiceque nigro, proximis duobus utrinque maculâ introrsum acutâ, anteriori majori, quarto fasciâ abbreviatâ, quinto in maculâ magnâ quadratâ, flavis. *Venter* gibbus, ferrugineus, segmentis margine medio nigricantibus

*Var. β* ventre punctis duobus flavis notato.

*γ* metathorace nigro; abdomine segmento secundo utrinque maculâ rotundatâ, flavâ. Aliàs *α* similis.

*δ* minor, antennis supra nigricantibus; metathorace atro; alis subhyalinis; apophysibus nigricantibus; abdomine ovato, seg-

mento secundo punctis duobus, tertio totidem utrinque, penultimo maculis binis dorsalibus, luteis. An eadem?

Linneus regarded almost all the species that compose this family merely as varieties of his *A. ruficornis*; the one I have just described is particularly noticed by him as such in his *Fauna Suecica*, "*Thorax niger*, says he, "*aliis lineæ ferruginæ quatuor longitudinales.*" Terms which will exactly suit our insect; as in fact the thorax exhibits four ferruginous lines separated by three black ones, but as the ferruginous colour is predominant, I have reversed the characters. This insect stands with others in the Linnean cabinet under the above name. Induced by these circumstances, after Fabricius, I have selected this, from the rest, to give as *A. ruficornis*.

Panzer's figure of this insect is tolerably accurate, but in my copy the red parts are made too pale and glaring. It is a varying species, but may always be distinguished by its body variegated with black and red, in nearly equal proportions, and by the three black parallel lines inscribed upon the thorax. Variety  $\delta$  differs considerably from the rest both in the form and markings of its abdomen, but as it agrees with them in these particulars, I have not considered it as distinct.

*xantho-*  
*sticta.*

28. *A. atra*; antennis, scutellique punctis, ferrugineis; abdomine rufo, maculis duabus flavis.

MUS.

MUS. *D. Latham.*

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* In Angliâ, a D. Latham capta.

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT. *Maxillæ Labiumque*, ferrugineâ. *Antennæ* ferrugineæ, supra basi, scapoque toto, nigrae

TRUNCUS. *Tubercula* flava. *Squamulae* rufæ. *Scutellum* punctis duobus, elevatis, obscure ferrugineis. *Alæ* subhyalinæ, apice obscuriores, nervis nigricantibus. *Pedes* picei, tibiis antrorsum, digitisque, rufescentibus.

ABDOMEN subovatum, ferrugineo-rufum, segmento primo basi nigro, secundo utrinque maculâ rotundâ flavâ. *Venter* rufus, immaculatus.

29. *A. atra*; antennis rufis, nigro annulatis; abdomine ferrugineo maculis duabus flavis. *Fabriciana*.

*Apis Fabriciana* nigra, abdomine glabro, ferrugineo, maculis duabus flavis.

*Lin. Syst. Nat. ed. 12. § Gmel. p. 2794. n. 17.*

*Vill. Ent. Eur. 3. n. 14.*

*Ross. Fn. Etrusc. Mantiss. n. 324.*

*Nomada Fabriciana. Fab. Ent. Syst. Em. n. 10.*

FIG. *Tab. 16. fig. 3.*

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin. 3—4.

*Hab.* Barhamiæ, sed rarissima, prope Londinum satis frequens.

DESCR. Acul.

CORPUS atrum, albido-subvillosum.

CAPUT immaculatum. *Facies* anticè pilis sparsis, atris consita. *Genæ* albido densiùs barbatae. *Antennæ* rufæ, basi, annuloque apicem versus, nigris. *Oculi*, in vivo, chrystallino-fusci.

TRUNCUS immaculatus. *Squamulæ* ferrugineæ. *Alæ* infuscatae, apice nigræ-lunulâ albâ. *Pedes* nigri, tibiis antrorsum, femoribus anticis apice, digitisque, ferrugineis.

ABDOMEN ferrugineum, basi nigrum, segmento secundo utrinque maculâ rotundâ, tertio puncto obscuro, flavis. *Venter* ferrugineus, immaculatus.

*Var.*  $\beta$  antennis supra nigricantibus, articulo extremo fulvo; squamulis nigris, tibiis tantùm anticis antrorsum rufescentibus.

$\gamma$  minor; maculis punctisque flavis abdominalibus ferè obsoletis.

I have very little doubt as to the claim of this insect to be considered as the *A. Fabriciana* of Linneus: I have changed this name to *Fabriciella*, in pursuance of the plan mentioned in the preface to this work. As I do not recollect ever seeing a figure of our Apis, I have caused one to be engraved.

*quadri-notata.*

30. *A. atra*; abdomine ferrugineo, maculis quatuor flavis; antennis, pedibusque, nigris.

MUS. *D. Marsham, Kirty.*

Long.

Long. Corp. Lin. 4.

*Hab.* Barhamiæ semel lecta. Capta etiam a D. Marsham, Julio ineunti, 1801, in Sylvâ dictâ Combe Wood, prope Kingston Surriens.

DESCR. Mas.

CORPUS atrum, albido-villosulum.

CAPUT immaculatum, villosum. *Antennæ* nigrae, subtus obscurè fulvescentes, scapo toto nigro.

TRUNCUS immaculatus. *Alæ* subhyalinæ, apice, nervisque nigricantibus. *Pedes* nigri, tibiis quatuor anticis antrorsum, digitisque, rufescentibus. *Anus* bidentatus.

ABDOMEN ovatum, pilosulum, segmento primo nigro fasciâ ferrugineâ, reliquis ferrugineis, secundo et tertio apice nigricantibus utrinque maculâ rotundâ flavâ notatis. *Venter* ferrugineus, immaculatus.

Obs. *Annon A. Fabriciellæ mas?*

31. A. atra; antennis fulvis; abdomine rufo, punctis quatuor luteis. *flavo-guttata.*

MUS. D. Marsham, Kirby.

Long. Corp. Lin.  $2\frac{1}{2}$ .

*Hab.* Barhamiæ rarissima.

DESCR. Mas.

CORPUS atrum, albido-subvillosulum.

CAPUT anticè flavidum. *Maxillæ* apice rufæ.

*Labium* nigricans. *Facies* ante antennis piloso-argentea. *Antennæ* thoracis longitudine, fulvo-rufæ, basi supra, scapoque toto, nigris.

P 3

TRUNCUS

**TRUNCUS** immaculatus. *Squamulæ* piceæ. *Alæ* hyalinæ, apice, nervisque, nigris. *Pedes* fulvofulvi, femoribus quatuor posticis ferè totis, anticis subtus, tibiisque hinc, nigro-piceis.

**ABDOMEN** subovatum, rufum, segmento primo basi nigro, proximis duobus utrinque maculâ parvâ lutescenti. *Anus* apice bidentatus. *Venter* rufus fasciis obsoleteiusculis, pallidioribus.

*rufo-cincta*. 32. **A.** atra; scutello ferrugineo; abdomine fusco, punctis quatuor luteis; fasciâ, ventreque, rufis.

**MUS.** *D. Marsham, Kirby.*

Long. Corp. Lin.  $2\frac{1}{2}$ .

*Hab.* Barhamiæ, in aggere aprico capta.

**DESCR.** Acul.

**CORPUS** atrum, glabriusculum.

**CAPUT** anticè, et oculorum ambitus, ferruginea, *Labium* nigricans. *Antennæ* ferrugineæ, subtus pallidiores, scapo supra nigro.

**TRUNCUS.** *Collare, Tubercula, Squamulæ*, strigâ utrinque ante alas, *Pleuræ, Pectus* inter pedes quatuor posticos, *Scutelli* puncta duo, et lineola transversa elevatiuscula, ferruginea hæc omnia. *Metathorax* utrinque maculâ villosoneivâ. *Alæ* subhyalinæ, apice nervisque nigris, lunulâ albâ. *Pedes* picei, tibiis tarsisque quatuor anticis antrorsum fulvo-flavis.

**ABDOMEN** subglobosum, fusco-piceum, fasciâ anticâ rufâ utrinque puncto nigro notato, segmento secundo utrinque maculâ parvâ, tertio puncto

puncto, luteis. *Venter* ferrugineus, immaculatus.

33. *A. atra*; scutello ferrugineo; abdomine fusco, *Sheppard-ana*.  
immaculato.

MUS. *D. Marsham, Trimmer, Kirby.*

Long. Corp. Lin.  $2\frac{1}{2}$ .

*Hab.* Barhamiæ, in aggeribus apricis obvia.

DESCR. Acul.

CORPUS atrum, glabriusculum.

CAPUT anticè, et oculorum ambitus, ferruginea.

*Labium* ferrugineum. *Antennæ* rufo-fulvæ, supra, articulo extimo fulvo excepto, picææ.

TRUNCUS. *Collare* obscurè, *Tubercula, Squamulæ, Pleuræ, Pectus* inter pedes posticos, *Scutelli* puncta duo, et lineola transversa, elevatiuscula, ferruginea omnia. *Metathorax* utrinque maculâ villosò-niveâ. *Alæ* infuscatæ, apice nervisque nigris, lunulâ albâ. *Pedes* picei tibiis, tarsisque quatuor anterioribus, illæ tantùm antrorsum, rufis. *Apophyses* rufo variæ. *Femora* antica etiam antrosum rufa.

ABDOMEN subglobosum, supra et infra fuscum, infra tamen dilutiùs, immaculatum.

Revetti Sheppard, A.B. *juvenis ingenui, olim discipuli mei dilecti, insectorum collectoris indefessi, oculatissimi, hæc Apis nomen gerit.*

This is the smallest species of this family with which I am, at present, acquainted; it is extremely similar in most respects to the preceding, and may,

possibly, be only a variety of it; but as its abdomen is only of one colour, without either red fascia, or yellow spots, besides slighter differences, I thought it most adviseable to give it as distinct.

*ferruginata.* 34. *A. atra*; antennis, pedibus, abdomineque, ferrugineis; labio subcornuto.

*Apis ferruginata* nigra, glabra, abdomine, antennis, ore, pedibusque ferrugineis.

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2779. n. 35.*

*Vill. Ent. Eur. 3. n. 28.*

*Forst. Cat. Brit. Ins. n. 723. Apis, n. 18.*

FIG. *Tab. 16. fig. 4.*

*Nomada Germanica atra*, abdomine rufo, basi nigro; pedibus nigris, rufo annulatis.

*Panzer. Fn. Ins. Germ. Init. n. 72. tab. 17.*

MUS. *D. Smith, Kirby.*

Long. Corp. Lin. 4.

*Hab.* Prope Londinum, a D. Marsham semel lecta.

DESCR. Mas.

CORPUS atrum, albido-subvillosum.

CAPUT. *Os* fulvum. *Labium* pilosum, nigrum, mucrone brevi, acuto, sine lente et nisi a latere vix conspicuo, armatum. *Antennæ* breviusculæ, ferrugineæ, scapo nigro.

TRUNCUS. *Tubercula* et *Squamulæ* ferruginea. *Scutellum* tubercula duo valde elevata gerit. *Alæ* subhyalinæ, apice nervisque nigricantibus, lunulâ albâ. *Pedes* ferruginei, apophysibus, femoribusque posticis ferè totis, anterioribus quatuor subtus, tibiisque ultimi paris apice, nigris.

ABDOMEN



ABDOMEN subovatum, ferrugineum, basi, maculisque duabus anticis lateralibus, nigris. Ani extremitas truncata. Venter ferrugineus, segmentis omnibus basi fasciâ abbreviatâ nigrâ.

There is no authentic specimen of this species in the Linnean cabinet; what is now there as such was labelled by the present worthy possessor, but it answers the description of Linneus very well. The tubercula of this and the Linnean insect are yellow; in our specimen, which I owe to the liberality of Mr. Marsham, these are ferruginous. In other respects they agree together. Fabricius has omitted this species, perhaps he took it for a variety of *A. Fabriciella*, from which it is, however, extremely distinct. Forster introduces it into his catalogue of British insects. Panzer's *Nomada Germanica* comes very near to it, if it be not the same.

The horn upon the lip of this species seems to indicate that it ought to be placed near to *A. cornigera*, &c. but in habit and other respects, it appears to be more nearly related to those last described.

\* \* a.

35. *A. aterrima*, albido-villosa; abdomine segmentis utrinque puncto albo; scutello bidentato.

*Apis punctata* nigra, cinereo-villosa; abdomine atro segmentis utrinque puncto albo.

*Fab.*

## APIS. (\*\*. a.)

*Fab. Ent. Syst. Em. n. 99.*

*Lin. Syst. Nat. ed. Gmel. p. 2771. n. 59.*

*Vill. Ent. Eur. 3. n. 62.*

*Apis allifrons* pubescens, fronte, thorace, tibiis punctisque abdominis, albis.

*Forst. Cent. Insect. n. 94.*

——— *Cat. Brit. Ins. n. 721. Apis, n. 15.*

*Lin. Syst. Nat. ed. Gmel. p. 2787. n. 144.*

*Apis nigra*; thorace hirsuto canescente; abdomine glabriusculo, punctis utrinque quatuor albis.

*Mill. int. Not. M. S. Graian. supr. citat.*

*Apis sylvestris*, minor, corpore oblongo, maculis ad latera et in cruribus, albis.

*Rai. Hist. Ins. p. 243.*

FIG. *Schæff. Icon. tab. 22. fig. 14.*

*Harris. Exp. tab. 40. fig. 11.*

*Panzer. Fn. Ins. Germ. Init. n. 35. tab. 23.*

*Mas. Tab. 16. fig. 5.*

MUS. *D. Marsham, Latham, Haworth, Trimmer, Lathbury, Francillon, Sowerby, Coyte & Kirby.*

*Long. Corp. Lin. 6—7.*

*Hab.* Barhamiæ, in floribus, ripis apricis induratis, murisque e luto confectis, obvia. Ova deponit, uti suspicor, in cellulis *Apis retusæ*, *Cuculus Apum*.

DESCR. Acul.

CORPUS aterrimum, supra pube albidâ variegatum.

CAPUT subtus atro, supra albido barbatum, *Labium* posticè punctis duobus fenestratis insigne. *Antennæ* nigræ articulis subar-  
cuatis.

TRUNCUS. *Thorax* anticè, item *Pleuræ*, hirsutie densâ albâ. *Scutellum* bidentatum, dentibus  
sub

sub hirsutie atrâ delitescens, sine tactu vix agnoscendis (e). *Metathorax* utrinque albidovillosus. *Squamulæ* atræ. *Alæ* subhyalinæ, fusco nebulosæ, apice nigricantes; nervis nigris, crassiusculis. *Pedes* atri, tibiis anticis totis, posterioribus quatuor basi, extrorsum tomentoso-albis; intermediæ liturâ tomentoso-flavescente apicem versus insuper notantur. *Digiti* picei, pilis albidis incani. *Scopulæ* fuscæ, obscuræ.

**ABDOMEN** breve, ex cordato ovatum, acutum, aterrimum, nitens, punctulatissimum, pilis sparsis, rigidiusculis, atris conspersum, segmentis margine crassiusculis, duobus anticis utrinque maculâ villosâ, proximis duobus puncto tomentoso, albis.

**Obs.** *Puncta labialia fenestrata vix detegenda, nisi in labio seorsum inspecto.*

**Var.  $\beta$**  faciei et trunci hirsutie atrâ; thorace literâ T albidâ inscripto.

$\gamma$  corporis hirsutie totâ atrâ, abdomine utrinque punctis tantum tribus albis. An eadem?

**Maris Corpus** hirsutie cinereâ, scutelli tantum atrâ. *Tibiæ* intermediæ extrorsum totæ tomentoso-albidæ. *Plantæ* etiam pilis decumbentibus incanæ. *Abdomen* segmento primo cinereo-villoso. *Anus* submarginatus.

(e) Tab. 6. \*\*, a. fig. 2. aa.

\*\* b

\* \*. b.

*variegata*. 36. A. nigra; trunco, abdomineque, albido variegatis; pedibus ferrugineis.

*Apis variegata* thorace abdomineque albo variegatis, pedibus ferrugineis,

*Lin. Syst. Nat. ed. 12. & Gmel. p. 2794. n. 24. Fn. Suec. n. 1699.*

*Vill. Ent. Eur. 3. n. 20.*

*Forst. Cat. Brit. Ins. n. 1033. Apis, n. 26.*

*Nomada variegata. Fab. Ent. Syst. Em. n. 5.*

FIG. *Nomada crucifera* atra cinereo-pubescentis, abdomine atro, segmento primo fasciis duabus, secundo unicâ, interruptis, reliquis maculis quaternis albis, pedibus ferrugineis.

*Panzer. Fn. Ins. Germ. Init. n. 61. tab. 20.*

*Apis muscaria, Christii Hymenopt. p. 195. tab. 17. fig. 5.*

*Tab. 16. fig. 6.*

MUS. D. Smith Linnean, Marsham, Latham, Drury Apis 56, Sowerby, Trimmer, Lathbury, Kirby.

Long, Corp. Lin. 4.

*Hab.* Barhamiæ, in viarum aggeribus apricis Augusto incunty 1797, 1798, capta, sed minùs frequens. Pernoctat in *Geranii phæi* rostris mordicùs apprehensis. *Linn.*

DESCR. Acul.

CORPUS nigrum, obscurum.

CAPUT albido-pilosulum. *Maxillæ* ferrugineæ.

*Oculi*, in vivo, incarnato-chrySTALLINI. *Antennæ* piceo-nigræ. *Facies* circa basin antennarum tomentoso-argentea.

TRUNCUS glabriusculus. *Collare* utrinque tomentoso-lutescens. *Thorax* anticè lineolis duabus

duabus tomentoso-lutescentibus inſcriptus, poſticè dentibus duobus ferrugineis, vix conſpicuis, ſcutellum utrinque amplectentibus; armatus (*f*). *Tubercula*, *Scutellum*, *Squamulæ* ferruginea. *Metathorax* verticalis, utrinque maculâ tomentoso-niveâ ornatus. *Pectus* circa pedum baſin, item *Pleuræ* ſub alis, tomentoso-alba. *Alæ* ſubhyalinæ apice nervisque nigris, lunulâ albâ. *Pedes* ferruginei, pilis breviffimis albidis ſubincani.

**ABDOMEN** baſi ſubretuſum, ſupra gibbum, ſegmento primo faſciis duabus interruptis, intermediis tribus maculis quatuor tranſverſè poſitis, tomentoso-lacteis. *Venter* piceus.

*Var. β* femoribus poſticis totis, intermediis ſubtus, piceis; abdomine ſegmenti ſecundi maculis in faſciam medio interruptam coalescentibus.

$\gamma$  labio obſcurè ferrugineo; thoracis dentibus atris; abdomine ſegmenti primi faſciis utrinque coalescentibus.

Our English ſpecimens of this ſingularly pretty inſect vary ſomewhat from the authentic *A. variegata* of the Linnean cabinet; for the ſcutellum of the latter is black, and it has more white hairs upon the anterior part of its thorax; it is, likewise, conſiderably ſmaller. In other reſpects they agree very well together. Panzer's *Nomada crucifera* is evidently nothing more than a casual variety of this

(*f*) Tab. 6. \* \*. b. fig. 8. *ll*;

Apis.

Apis. His figure does not give the teeth upon the posterior part of the thorax on each side of the scutellum, but these are easily overlooked. Christius's figure, of what he calls *A. variegata major*, belongs to an insect resembling *A. luctuosa*; but which is very different from the genuine *A. variegata*: his *A. muscaria* is a tolerable representation of it.

I first saw this bee in the cabinet of Mr. Drury, and afterwards found it, but by no means common, in the autumn of two succeeding years, 1797 and 1798, flying about sunny banks; since then I have not met with it.

## \*\* . c. 1. α.

- conica.* 37. *A. atra*; scutello bidentato; abdomine conico segmentis margine albidis; ano *femineo* acutissimo, *masculo* multidentato.

## ACUL.

*Apis conica* fusca, abdomine conico acutissimo, segmentorum marginibus albis.

*Lin. Syst. Nat. Ed. 12. n. 32. Fn. Suec. 1705.*

*Vill. Ent. Eur. 3. n. 25.*

*Müll. Zool. Dan. n. 1908.*

*Schrank. Enum. Ins. Austr. n. 809.*

*Forst. Cat. Brit. Ins. n. 719. Apis, n. 13.*

*Berkenhout. Synops. 1. p. 159. n. 5.*

FIG. *Apis bidentata atra*, nitida, abdomine conico acutissimo, segmentorum marginibus albis scutello bidentato.

*Panzer. Fn. Ins. Germ. Init. n. 59. tab. 7.*

*Harris. Exp. Eng. Ins. tab. 49. fig. 8.*

Christii

*Christii Hymenopt. tab. 17. fig. 11?*

*β. Tab. 16. fig. 7.*

MUS. *D. Smith* Linnean, *Marsham*, *Trimmer*, *Latham*, *Francillon*; *M<sup>c</sup>Leay*, *Kirby*.

MAS.

*Apis quadridentata* fusca, abdomine cingulis quinque albidis, ano quadridentato intermediis bifidis.

*Lin. Syst. Nat. Ed. 12. ♂ Gmel. p. 2778. n. 29. Fn. Suec. 1703.*

*Fab. Ent. Syst. Em. n. 112.*

*Vill. Ent. Eur. 3. n. 24.*

*Ross. Fn. Etrusc. n. 928.*

*Forst. Cat. Brit. Ins. n. 718. Apis, n. 12.*

FIG. *Schæff. Icon. tab. 32. fig. 8. Opuscula tab. 40. fig. 6.*

*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 13.*

MUS. *D. Smith* Linnean, *Marsham*, *M<sup>c</sup>Leay*; *Haworth*, *Trimmer*, *Kirby*.

Long. Corp. Lin.  $4\frac{1}{2}$ — $6\frac{1}{2}$ .

*Hab.* Barhamiæ. Uterque sexus flores frequentat, sed rarius.

DESCR. Acul.

CORPUS atrum, albido-subvillosum, totum punctis excavatis quasi granulatum.

CAPUT. *Maxillæ* apice tridentatæ (g). *Facies* pube, densâ admodum, grisescenti. *Antennæ* nigrae, thorace breviores.

TRUNCUS supra pube haud densâ grisescenti. *Squamulae* atræ. *Scutellum* utrinque dente incurvo armatum. (h). *Alæ* subhyalinæ, fusco nebulosæ, apice nervisque nigricantibus. *Pedes* pilosuli, femoribus anticis densè barbatis. *Scopulae* fulvæ. *Tibiæ* spinulis atris.

(g) Tab. 7. \*\*. c. 1. α. fig. 6.

(h) Ibid. fig. 10.

ABDOMEN

ABDOMEN conicum, nitidum, segmento primo utrinque maculâ, reliquis margine, tomentoso-albidis. Segmentum ultimum lineâ longitudinali elevatiusculâ. *Anus* acutissimus. *Venter* segmento primo maculâ mediâ; reliquis margine, tomentoso albidis, ultimo elongato segmento anali dorsali longiore.

*Var.  $\beta$*  minor; corpore aterrimo; scutelli dentibus subobsoletis; alis vix nebulosis, nervis piceis anastomosi testaceâ; tibiârum spinulis testaceis; abdomine segmentis margine utrinque tomentoso-niveis.

*Maris Facies* pube densiore flavescenti, anticè pallidiori, tecta. *Alæ* nervis piceis. *Tibiæ* spinulis ferrugineis. *Apophyses* anticæ articulo primo mucrone caput spectante instructo. *Abdomen* segmento primo utrinque, proximis tribus margine, tomentoso-pallidis, ultimo quadridentato dentibus intermediis furcatis (i). *Venter* segmentis margine tomentoso-albidis.

*Var.  $\beta$*  minor, abdomine segmentis utrinque margine tomentoso-albis; ano sexdentato.

$\gamma$  minor; corporis pube albâ; abdomine segmentis tam ventralibus quam dorsalibus utrinque margine tomentoso-niveis; ano sexdentato.

Obs. *In his varietatibus abdominis segmentum penultimum utrinque dente minuto instructum.*

(i) Tab. 7. fig. 13, 14.



I observed above (*h*), that *A. conica* and *quadridentata* were male and female, it will perhaps be expected that I should here assign the reasons which induced me to adopt this opinion.

Any one who compares these two insects together, will immediately perceive between them the most striking resemblance, and that the only difference arises from the anal spines or teeth, and more thickly coated face of *A. quadridentata*. Now as these circumstances are common distinctions of the male sex in all the subdivisions of this family, they will not furnish a sufficient reason for separating insects which are so very similar in other respects, without specimens of each sex can be produced, distinguished in one instance by an acute anus, and in the other armed with anal spines; but as those which exhibit the former character are invariably aculeates, and those that possess the latter as invariably males, I think this alone will sufficiently justify me for putting them together. Róssi, although apparently not aware of the difference of sex of these two insects, seems to think *A. quadridentata* a variety of *A. conica*. "Alia," says he, under *A. conica*, "præterea specimina habemus, staturâ et habitu omnino prioribus simillima, quæ cum habeant abdomen conicum, atrum, marginibus incisurarum quinque albis, anum quadridentatum dentibus intermediis bifidis, *A. quadridentatæ* nomine determinari possent.

(*h*) Vol. 1. p. 153.

In confirmation of the above opinion, I have been informed by Mr. James Trimmer, so frequently mentioned in these pages, that he has often observed *A. quadridentata* attendant upon *A. conica*.

The authentic specimen of *A. conica* preserved in the Linnean cabinet has teeth upon its scutellum, and, therefore, that which Fabricius has given as such, "scutello inermi," is another insect, and probably the aculeate of that which I shall next describe. To this I have referred also the synonyms of Gmelin and Rossi for the same reason. Panzer's *A. bidentata* is the Linnean *A. conica*. Linneus has described *A. quadridentata* "cingulis quinque albidis," all my specimens have only four white bands, the first of which is interrupted: Panzer's figure however answers the Linnean character in this respect, and Rossi notices the same circumstance. Probably the down upon the margin of the last segment but one is liable to be rubbed off.

There are three synonyms to which reference is usually made for the sexes of *A. conica*, which have no relation to that species. The first is that of Ray (*l*), which belongs either to a *Sphex*, or a male of my family of *Apis*. \*. b. perhaps to *A. Goodeniana*. The next is that of Reaumur (*m*); (which, as I observed above, is the male of one of the leaf

(*l*) Rai. Hist. Ins. p. 252. n. ult.

(*m*) Tom. 6. tab. 11. fig. 2, 3, 4.

cutters,

cutters, with a quadridentate anus), to which Linneus referred as synonymous with *A. conica*, it is probable, from a hasty view of the figure which somewhat resembles that insect. The last is that of Swammerdam (*n*), whose figure is quoted by Linneus and others after him both as *A. quadridentata* and *A. manicata*; but the figure, although a bad one, evidently belongs to the latter insect.

Variety  $\beta$  of the aculeate sex, and  $\gamma$  of the male, may be the sexes of a distinct species, but they so nearly resemble the others that, without fuller evidence, I was unwilling to separate them.

38. *A. atra*; scutello inerimi; abdomine *masculo inermis*.  
lineari, segmentis margine albis, ano multi-  
dentato.

ACUL.

*Apis conica* fusca, abdomine conico acutissimo; segmentorum marginibus albis scutello inerimi.

*Fab. Ent. Syst. Em. n. 116.*

*Lin. Syst. Nat. ed. Gmel. p. 2779. n. 32.*

*Ross. Fn. Etrusc. n. 928.*

FIG. *Apis centuncularis acuminata*. *Christii Hymenopt.*  
*p. 192. tab. 17. fig. 2.*

MAS.

*Apis quadridentata*. *Miller int. Not. M. S. Graian.*  
*supr. citat.*

FIG. *Tab. 16. fig. 8.*

MUS. *Kirby.*

*Long. Corp. Lin. 4.*

*Hab. Brentfordiæ, a D. J. Trimmer semel captâ.*

(*n*) *Swamm. Bib. Nat. tab. 26. fig. 4.*

DESCR. Mas.

CORPUS atrum, pube albidâ canescens, punctulis excavatis quasi granulatum.

CAPUT. *Facies* ante antennis pube cinerascenti tecta. *Oculi* pilosi.

TRUNCUS. *Scutellum* inerme. *Squamulæ* atræ. *Alæ* fuscæ, nebulosæ, apice obscuriores, nervis nigris anastomosi ferrugineâ. *Pedes* pilosuli, tibiarum spinulis testaceis. *Apophyses* anticæ articulo primo antrorsum mucronato.

ABDOMEN lineare, subcylindricum (*n*), cingulis quatuor tomentoso-niveis, supra interruptis infra continuis, ano quadridentato dentibus intermediis furcatis, segmento penultimo dente marginali utrinque instructo.

I have not yet met with the aculeate sex of this species, but I do not hesitate to give it as the *A. æonica* of Fabricius, Gmelin, and Rossi, although not of Linneus. The circumstance which principally distinguishes it from the preceding species, is the absence of the tooth on each side of the scutellum, which constantly attends all the varieties of that insect. The abdomen of the male is likewise of a different form, and its dorsal white fasciæ are interrupted. Miller, in Mr. Gray's interleaved edition of the *Systema Naturæ*, has described an insect as *A. quadridentata*, very similar to the male of our *A. inermis*, if it be not the same, in these

(*n*) Tab. 7. \*\*. c. 1. α. fig. 15.

words.

words. "Caput et thorax nigri supra, punctisque excavatis confertis quasi granulati, pilis lateralibus subcinereis. Frons hirsuta, alba. Oculi ovati, pallidi. Abdomen nigrum, glabrum, granulatum, conicum, cingulis tomentoso-albis, supra interruptis, infra continuis. Anus dentibus duobus bifurcatis terminatur, segmentum penultimum etiam dente utrinque gemino, ita ut abdomen apice octo-dentato appareat. Antennæ pedesque nigri tarsis glaucis."

\*\* . c. 1. β.

39. A nigra, punctulatissima; scutello bidentato; *punctulatissima.*  
abdomine segmentis margine decoloribus.

FIG. Tab. 16. fig. 9.

MUS. D. Marsham, Trimmer, Francillon, Kirby.

Long. Corp, Lin.  $3\frac{1}{2}$ — $4\frac{1}{4}$ .

Hab. Barhamiæ, tempore autumnali bis capta.

DESCR. Acul.

CORPUS piceo-nigrum, totum excavato-punctulatissimum, subtus pube haud densâ cinerascenti.

CAPUT cinereo-villosum. Proboscis thoracis longitudine. Antennæ capite longiores, nitidæ, piceo-nigræ.

TRUNCUS. Thorax subpilosus, lineâ intermediâ longitudinali obsoletiusculâ exaratus, apud scutellum utrinque dente obsoleto instructus. Scutellum prominens, submarginatum, punctis majoribus notatum. Squamulæ nigræ, nitidissimæ.

tidissimæ. *Alæ* infuscatæ, latere exteriori atro-violascentes, apice nervisque nigris. *Pedes* cinereo-pilosuli,

**ABDOMEN** arcuatum, supra valde convexum, basi subretusum, pilis brevissimis sparsis consitum, segmentis quatuor anticis margine glabris, exalbidis, *f.* decoloribus. *Venter* planiusculus, glaber.

*phaopte-* 40. A. atra, punctulatissima; albido-subpubescens; *ra.* ano rectangulo.

**MUS.** *D. Marsham, Trimmer, Françillon, Hill, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* Barhamiæ, Augusto exeunti 1799 lecta, sæpius etiam prope Londinum.

**DESCR.** Acul.

**CORPUS** atrum, excavato-punctulatissimum, pube albidâ subinæcanum.

**CAPUT.** *Maxillæ* apice tridentatæ. *Antennæ* nitidæ, nigræ, capite longiores.

**TRUNCUS.** *Thorax* inermis. *Scutellum* rotundatum. *Squamulæ* magnæ, atræ, nitidissimæ. *Alæ* fuscæ, latere exteriori nigræ. *Pedes* pilosuli, digitis articulis extimis obscurè ferrugineis. *Scopulæ* fulvæ.

**ABDOMEN** arcuatum, subcylindricum, aterrimum, nitidum, albido-pilosulum, supra convexum, ano incurvo, rectangulo (o). *Venter* planiusculus.

(o) Tab. 7. \*\*. c. 1. β. fig. 6.

\*\* C.

\* \*. c. 2. α.

41. A. fulvescente-pubescentis; abdomine brevi, *Willughbiella*.  
 ano nigro; antennis masculis articulo extimo  
 majori, manibus dilatato-ciliatis.

*Apis sylvestris* in arboribus putrescentibus cuniculos  
 fodiens, ibidemque thecas cylindraceas recondens.

*Rai. Hist. Ins.* p. 245.

*The Willow Bee. Lowth. abridg. of Phil. Trans.*  
*Vol. 2. c. 6. §. 17. n. 1—4.*

*Ray's Letters*, p. 72—74.

*Grew's Rarities*, P. 1. §. 7. c. 1. p. 154.

FIG. *Schæff. Fund. Ent. tab. 20. fig. 1.*

MUS. *D. Marsham, Trimmer, Haworth, Sowerby, Fran-*  
*cillon, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ — $7\frac{1}{2}$ .

*Hab.* Barhamiæ. In Salicum putrescentium truncis  
 centunculos e foliis convolutis struit.

DESCR. Acul.

CORPUS nigrum, pube fulvescenti.

CAPUT. *Maxillæ* validæ, forcipatæ, apice qua-  
 dridentatæ, dentibus exterioribus duobus lon-  
 gioribus, acutis, interioribus truncatis (*p*). *Fa-*  
*cies* ponè antennis pube fusco-nigricanti.  
*Antennæ* nigræ, vix capite longiores.

TRUNCUS supra pube e fulvo rufescente mollis,  
 translucente nigritudine corporis. *Squamulæ*  
 nigræ, pilosæ. *Alæ* subhyalinæ, apice ob-  
 scuriores, nervis crassioribus nigris, reliquis  
 ferrugineis. *Pedes* fulvo-hirti, scopulis fus-  
 cis. *Tibiarum Spinulæ* ferrugineæ.

(*p*) Tab. 8. fig. 9.

Q 4

ABDOMEN

**ABDOMEN** breve, subcordatum (*q*), anticè lanuginoso-fulvum; posticè pilis atris hirtum, segmento penultimo et antepenultimo margine obscurè tomentoso-albidis. *Venter* anticè lanâ fulvo-aureâ, posticè atrâ, vestitus.

*Var.*  $\beta$  dimidio minor.

*Maris Corpus* subtus villosio-incanum. *Maxillæ* apice acutè quadridentatæ, dentibus intermediis minoribus (*r*). *Antennæ* capite longiores, articulo extimo compresso, ancipiti, reliquis majori (*s*). *Facies* ante antennis barbâ densâ pallidè flavâ, verticis villis fulvescentibus. *Alæ* nervis nigris. *Pedes* pallido-hirti, scopulis fulvis. *Femora* antica flava, supra nigra, antrorsum lineolis duabus, longitudinalibus, nigris inscripta, lanâ densâ fulvescenti subtus barbata. *Tibiæ* trigonæ, posticæ clavatæ, anticæ intus apicequè luteæ. *Manus* dilatatæ, albidæ, intus nigro reticulatæ, extrorsum pilis longis admodum et densis, incurvisque ciliatæ (*t*). *Apophyses* nigræ, primariæ articulo primo antrorsum mucronato (*u*), secundo vittâ pallidâ picto. *Abdomen* ex quadrato oblongum, ano inflexo emarginato, lobis subser-ratis (*x*). *Venter* planiusculus, segmento ultimo basi tridentato dentibus, nisi sub lente, vix conspicuis.

(*q*) Tab. 8. fig. 20. (*r*) Ibid. fig. 10. (*s*) Ibid. fig. 8. *a*.

(*t*) Ibid. fig. 28. *e, f, g*. (*u*) Ibid. *c.* & fig. 27. *aa*.

(*x*) Ibid. fig. 24.

*Var.*



*Var. β* corporis hirsutie cinerascenti.

*γ* maxillis dente interiore truncato; femoribus anticis nigris, disco antrorsum pallido, immaculato; manibus intus tantum puncto nigro notatis; tibiis anticis extrorsum apice pallidis.

Obs. *In hac varietate dentes ani ventrales conspicui magis quam in α et β.*

I am led to give *A. Willughbiella* as the Willow Bee, whose history and economy so attracted the attention of the English Naturalists of the last century, by the circumstance of its having been most commonly taken in places abounding with willow trees. I find it in Barham in some low meadows which are surrounded with them; it is also frequently met with at Brentford, and other places near the Thames

I have not hitherto been successful enough to meet with its nidus, so as to ascertain whether what I have given as the sexes come from the same, but they agree together in such particulars as the sexes usually do, and are found in the same situations, and therefore I feel no great doubt concerning their identity. Sir John Hill, in his translation of Swammerdam's Book of Nature, in a note, says, that he has seen thousands of the nests of these bees in Lincolnshire (*y*); it is probable that where they so abound, they must do considerable injury to the trees in question.

(*y*) Hill's Swammerdam, P. 1. p. 227. Note \*.

The

The male of *A. Willughbiella* is very like *A. Lagopoda* of Linneus, and is often mistaken for it; but it is extremely distinct from the authentic specimen still preserved in the Linnean cabinet; the singular conformation of the tarsus of the fore feet, which is given as the most prominent characteristic of *A. Lagopoda*, is common, as I observed before (z) to many distinct species, and is only a sexual character. This sex of our insect exhibits a peculiarity, which none of those that are related to it in the form of the anterior tarsus, possess, the last joint of its antennæ is larger than any of the rest, which gives them some resemblance to those of a *Papilio* (a), in *A. Lagopoda*, *bidentata*, and its other affinities, they are filiform. That this class of males may no longer be confounded with *A. Lagopoda* I shall insert in the margin a new description of that insect, taken from the authentic specimen (b).

42. A.

(z) Vol. 1. p. 161.

(a) Tab. 8. fig. 8.

(b) *lago-* A. grisescente-pubescentis; antennis *masculis* filiformibus; *poda.* tibiis posticis magnis clavatis, manibus dilatato-ciliatis.

*Apis lagopoda* grisescens; pedibus anticis dilatato-ciliatis; tibiis posticis clavatis; ano emarginato.

*Lin. Syst. Nat. Ed. 12. n. 27. Fn. Suec. 1702.*

*Vill. Ent. Eur. 3. n. 22.*

*Fab. Ent. Syst. Em. n. 48.*

*Apis lagopus. Lin. Syst. Nat. Ed. Gmel. p. 2776. n. 27.*

MUS. D. Smith, Linnean.

Long.

42. *A. cinerascens*-pubescens; abdomine *femineo* <sup>centuncu-</sup> *subcordato*, segmentis *marginibus* <sup>laris.</sup> *albibus*; *mas-*  
*culo* *subgloboso*.

*Apis*

Long. Corp. Lin.  $6\frac{1}{2}$ .

*Hab.* In Sueciâ.

DESCR. Mas.

CORPUS nigrum pube pallidè grisescenti.

CAPUT magnum. *Antennæ* filiformes. *Facies* barbâ densâ, pallidâ, tectâ.

TRUNCUS supra pube griseâ mollis. *Squamulæ* rufæ. *Alæ* subhyalinæ, apice paulo obscuriores, nervis nigris. *Pedes* hirti. *Femora* antica testacea. *Manus* dilatatæ, albæ, extrosum pilis densis, albis, incurvis, ciliatæ. *Tibiæ* ultimi paris magnæ, incrassatæ.

ABDOMEN subrotundum, basi depressum, griseo-subhirsutum. *Anus* emarginatus lobis denticulatis.

I am not certain whether the mucro observable on the first joint of the anterior apophyses of the male of *A. Willughbiella*, exists in *A. lagopoda* or not; when the above description was drawn out, I had not observed it in the former, therefore it is very probable I might overlook it in the latter.

The insect which Schrank (a) and Panzer (b) have given as *A. lagopoda* is different from it, and likewise from *A. Willughbiella*, but it appears to agree with an unlabelled specimen in the Linnean cabinet, which is placed with the former as a variety, but which is much smaller, not so hairy, with posterior tibiæ proportionably less. The figures of Sulzer (c) and Christius (d) have no relation whatever to any of these males. I possess a foreign specimen of one, given me by the ingenious Mr. Sowerby, which exhibits the same peculiar structure of the anterior tarsus, and is extremely distinct from all the

(a) Enum. Ins. Austr. n. 810.

(b) Fn. Ins. Germ. Init. n. 55.

tab. 7. (c) Tab. 27. fig. 17.

(d) Tab. 9. fig. 3.

others,

*Apis centuncularis* nigra, ventre lanâ fulvâ.

*Lin. Syst. Nat. Ed. 12. § Gmel. p. 2771. n. 4. Fn. Succ. n. 1687.*

*Fab. Ent. Syst. Em. n. 98.*

*Vill. Ent. Eur. 3. n. 4.*

*Schrank. Enum. Ins. Austr. n. 815.*

*Fn. Frid. n. 844.*

*Mill. Zool. Dan. n. 1897.*

*Rossi. Fn Etrusc. 927*

*Apis* nigra, abdomine supra lineis albis, subtus lanâ fulvâ.

*Geoffr. Hist. Ins. Par. 2. p. 410. n. 5.*

*Apis centuncularis. Fourcroy. Ent. Par. n. 5.*

*Forst. Cat. Brit. Ins. n. 708. Apis, n. 2.*

others, as well as from the *Andrena bidentata* (e) of Fabricius, with which it has some affinity, this I shall now describe.

*palmata*. A. supra flavo-villosa; abdomine segmentis margine fulvescentibus, pedibus rufis, manibus masculis dilatato-ciliatis.

MUS. *Kirby.*

Long. Corp. Lin.  $4\frac{2}{3}$ .

Ubi habitat, nondum innotuit.

DESCR. Mas.

CORPUS nigrum, subtus villosa-canescens.

CAPUT. *Antennæ* filiformes, thoracis ferè longitudine, nigræ, subtus ferrugineæ. *Oculi* magni, in mortuo, brunnei.

*Facies* pube densâ fulvo-flavâ tecta.

TRUNCUS supra villosa-fulvus. *Squamulæ* nigræ. *Alæ* subhyalinae, apice obscuriores, nervis piceis. *Pedes* ferrugineo-rufi. *Tibiæ* anticæ crassæ, breves. *Manus* albæ, extrosus pilis densis, albis, incurvis, ciliatæ. *Apophyses* anticæ articulo primo antrorsum mucronato.

ABDOMEN oblongum, segmentis margine tomentoso-fulvescentibus. *Anus* emarginatus. *Venter* subhirtus.

(e) Ent. Syst. Em. n. 27.

FIG,

- FIG. *Schæffer. Icon. tab. 262. fig. 6, 7.*  
*Reaum. Hist. Ins. 6. Mem. 4. tab. 10. fig. 2, 3, 4. &c.*  
*Bazin. Abregé. tab. 4. fig. 2. B.*  
*Frisch. Ins. 2. p. 1. tab. 2.*  
*Christii Hymenopt. p. 165. tab. 13. fig. 5.*  
*Harris. Exp. tab. 49. fig. 2.*  
*Barbut. Gen. Ins. tab. 15. Apis, fig. 9.*

MUS. *D. Marsham, M<sup>c</sup>Leay, Haworth, Sowerby, Trimmer,*  
*Francillon, Donovan, Lathbury, Kirby.*

Long. Corp. Lin. 5—6.

*Hab.* Barhamiæ, tempore autumnali in *Carduis* obvia.  
 In murorum cavitatibus et ligno putrescenti nidificat;  
 centunculos ex rosarum et *Mercurialis annuæ* foliis  
 struens. *D. J. Trimmer.*

DESCR. Acul.

CORPUS nigrum, pube cinerascenti.

CAPUT. *Maxillæ* subforcipatæ, apice quadri-  
 dentatæ, dentibus duobus exterioribus acutis,  
 intermedio truncato, intimo emarginato (*a*).  
*Antennæ* capite vix longiores, nigræ.

TRUNCUS. *Thorax* pube rarâ admodum. *Squa-*  
*mulæ* nigræ. *Alæ* subhyalinæ, apice obscu-  
 riores, nervis nigricantibus. *Pedes* hirti,  
 tibiarum spinulis testaceis. *Scopulæ* fulvo-  
 aureæ.

ABDOMEN cordatum (*b*), villosulum, segmentis  
 basi depressiusculis, utrinque piloso-albidis.  
*Anus* acutus. *Venter* lanâ densâ fulvo-aureâ  
 vestitus.

Obs. *Abdominis segmentum penultimum*  
*marginè toto piloso-albido.*

(*a*) Tab. 8. fig. 11.      (*b*) Ibid. fig. 19.

*Var.*

*Var. β* corporis pube pallidè flavescenti.

*Maris Corpus* flavescente densius villosum. *Antennæ* capite longiores, nitidiusculæ. *Maxillæ* apice bidentatæ, dente exteriori longiore, acuto, interiore magno, truncato (c). *Facies* antè, antennis barbâ densâ flavicanti tecta. *Femora* antica antrorsum apice sordidè flava. *Abdomen* ex oblongo subglobosum. *Anus* inflexus, subinteger, obsoletè denticulatus (d). *Venter* planiusculus, segmentis margine pilis albidis ciliatis.

This *Apis* is considerably smaller than the preceding, the abdomen of the aculeates is proportionally longer and narrower, and the margin of its dorsal segments is fringed on each side with white or yellowish hairs; the anus also has no black hairs. The male is still more strikingly distinguished from the same sex of *A. Willughbiella*, for it wants the dilated anterior tarsus, its antennæ are filiform, its maxillæ are armed at the apex with two teeth only, of which the interior is truncate and very short, its primary apophyses have no mucro upon their first joint, and its anus is entire.

The specimens labelled as *A. centuncularis* in the Linnean cabinet, do not agree with the description of that insect given in the *Fauna Suecica*. "Abdomen ovatum, nigrum, acutum, incisuratum marginibus albis." In those specimens the

(c) *Tab. 8, fig. 12.*

(d) *Ibid. fig. 26.*

margin

margin of the abdominal segments has no white hairs, nor is the anus particularly acute, they appear to me to be the other sex of the genuine *A. lagopoda*. It is probable that Linneus, looking upon all the leaf cutter Bees as varieties only of the same species, was not particular in the selection of the specimens he preserved. Reaumur's figure and description agree with our insect, but those that he was acquainted with made their nests underground. Geoffroy represents his as nidificating in old wood, and the trunks of decayed trees. Mr. James Trimmer found the nest of ours in a decaying window-sill, and likewise in the cavity of a brick wall. He observed that this little bee made use of the leaves of *Mercurialis annua*, as well as those of the rose. Perhaps it is indifferent to this animal where she constructs her centunculi, provided it be in a place sufficiently sheltered from the weather. The insect which Scopoli took for *A. centuncularis* appears to me to be very distinct from it, he describes it as much smaller, and the thorax as covered with thick red hair (*e*); a circumstance which will not at all agree with ours. The synonym of Ray (*f*), which I have likewise excluded, evidently belongs to another insect, the terms "parva, corpore longo angusto," cannot well be looked upon as descriptive of *A. centuncularis*:

(*e*) Ent. Car. n. 799. Ann. Hist. Nat. 4. n. 15.

(*f*) Hist. Ins. p. 242. n. 6.

Panzer's figure (g) has an oval obtuse abdomen; and I think belongs to an insect which I shall shortly describe.

*maritima*. 43. A pallido-pubescens; thorace fusco; maxillis magnis prominentibus; abdomine oblongo, segmentis margine albicantibus.

MUS. *Kirby*.

Long. Corp. Lin. 8.

*Hab.* In maritimis, prope Landguard fort in Suffolciâ semel lecta.

DESCR. *Acul.*

CORPUS nigrum, pube pallidâ.

CAPUT. *Maxillæ* prominentes, validissimæ, ferè conniventes, apice valde dilatatæ quadri-dentatæ, dente intimo truncato reliquis rotundatis (*h*). *Antennæ* nigræ, capitis longitudine. *Oculi* magni. *Facies* ante antennis barbâ sordidè fulvâ tecta, pone antennis fuscant villi

TRUNCUS supra fusco rariùs villosus, translucente nigritudine corporis. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice paulò obscuriores, nervis piceis. *Pedes* hirti, tibiæ spinulis testaceis. *Femora* antica pallido barbata. *Scopulæ* fulvo-aureæ.

ABDOMEN ex ovato oblongum (*i*), segmentis anticis cinereo-subvillosis, basi depressis, posticis tribus margine piloso-pallidis. *Anus* ob-

(g) Fn. Ins. Germ. Init. n. 55. tab. 12.

(h) Tab. 8. fig. 13.

(i) Ibid. fig. 19.

tusiusculus.



tusiūsculus. *Venter* anticè lanâ fulvâ, posticè fuscâ, tectus.

This insect is distinguished, from those that precede it, by the size of its maxillæ, which are unusually large and prominent, and scarcely, if at all, forcipate; the teeth at their tips are most of them rounded, none being acute, as in the others; the abdomen, also, is of a different shape. Panzer has figured a maxilla as belonging to the other sex of his *A. centuncularis* (*h*), which represents well the same part of *A. maritima*. It is certainly not the maxilla of a male, and his figure is that of an aculeate, whence it follows that it belongs to another species.

44. *A. griseo-pubescens*; abdomine *femineo sub-ligniseca*. ovali; *mâsculo* subgloboso, ano emarginato.

ACUL.

FIG.

*Apis centuncularis*. Panzer. *Fn. Ins. Germ. Init. n. 55, tab. 12.*

*Donovan. Eng. Ins. 4. tab. 120,*

MAS.

*Tab. 16. fig. 11.*

MUS. *D. Marsham; Donovan, Kirby.*

*Long. Corp. Lin. 7—8.*

*Hab. Barhamiæ. Centunculos ex ulmorum et rosarum foliis convolvit, in arborum putrescentium truncis nidificans.*

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(*h*) *Fn. Ins. Germ. Init. n. 55. tab. 12. fig. a.*

DESCR. Acul.

CORPUS nigrum, pube grisescenti.

CAPUT. *Maxillæ* prominentes, validæ, forcipatæ, apice quadridentatæ, dentibus exterioribus duobus acutis, intermedio truncato, intimo emarginato(l). *Antennæ* capitis ferè longitudine, nigræ.

TRUNCUS supra villis sordidè fulvis tecta, disci pube rariore nigricanti, *Squamulæ* nigræ. *Alæ* subhyalinæ, apice obscuriores, nervis nigris. *Pedes* hirti, tibiarum spinulis ferrugineis. *Scopulæ* fulvo-aureæ.

ABDOMEN ex oblongo ovale(m), anticè cinereo-subvillosum, posticè pilis nigris consitum. *Anus* obtusiusculus. *Venter* lanâ fulvâ vestitus.

*Var. β* ventris lanâ, anum versus, nigrâ.

Maris *Corpus* longiùs et densiùs villosum. *Facies* ante antennas barbâ densâ flavescenti. *Antennæ* thorace breviores. *Thorax* pube fulvescenti. *Abdomen* ex oblongo globosum, flavescenti vellere lanuginosum, ano inflexo, emarginato(n).

*Var. β* corporis hirsutie cinerascenti; digitis articulo extimo ferrugineo.

This insect has been figured as *A. centuncularis* by Panzer and the ingenious Mr. Donovan, it is, however, very distinct from it; for it is not only

(l) Tab. 8. fig. 14. (m) Ibid. fig. 21. (n) Ibid. fig. 25.  
considerably

considerably larger, but the abdomen of the aculeates instead of being cordate is oval, and its dorsal segments have no white marginal fringe. The anus also of the males is emarginate. The last mentioned author informs us that *A. ligniseca* commits great ravages in oak plantations; trees of that kind, apparently healthy, at Birdbrook in Essex, being completely perforated by it, and filled with its centunculi: but it does not confine itself solely to the oak, for upon the tenth of September, 1799, upon observing a bee belonging to the present subdivision enter the trunk of a putrescent elm, I obtained leave to take the tree down; upon opening it, I discovered, in the center, the nest, and also one of the bees, which proved to be the one now before us. The nest was made of elm leaves, each cell was about an inch and a quarter in length, and not quite half an inch in diameter; a circumstance which furnishes an additional proof that this insect is distinct from *A. centuncularis*, for the cells of the latter are not an inch in length, and scarcely the fourth of an inch in diameter. The tree which *A. ligniseca* had selected to contain her nest, was beginning to decay at the heart, here she had bored a channel whose diameter was adapted to that necessary for her cells, the direction of which was according to the state of the wood at the center, following the putrescent vein. Plot, in his history of Staffordshire, makes mention of one of these bees as constructing its nest in a decaying crab tree.

*circum-* 45. *A. lanuginoso-flava*; capite, anoque, atris.  
*cincta.*

FIG. *Tab. 16. fig. 10.*

MUS. *Kirby.*

Long. Corp. Lin.  $6\frac{1}{2}$ .

*Hab.* In Cantio, apud Dartfordiam in aggere aprico a  
D. Goodenough semel lecta.

DESCR. Acul.

CORPUS atrum, lanugine densâ, fulvo-flava,  
vestitum.

CAPUT. *Maxillæ* prominentes, validæ, apice  
quadridentatæ, dentibus æqualibus, rotunda-  
tis, intimo truncato (o). *Facies* atro-villosa.  
*Antennæ* capitis longitudine, subclavatæ.

TRUNCUS supra lanugine fulvo-flavâ tectus,  
translucente nigritudine disci. *Squamulæ* ni-  
græ. *Alæ* hyalinæ, nervis nigris. *Pedes* fla-  
vescente-pilosi. *Spinulæ* ferrugineæ. *Plantæ*  
intermediæ extus hirtæ. *Scopulæ* densæ,  
fulvæ.

ABDOMEN subglobosum, dimidio antico lanu-  
gine fulvo hirsuto, postico atro piloso. *Venter*  
lanâ fulvâ tectus, ano atro.

*xantho-* 46. *A. aterrima*, villosa; thorace, abdominisque  
*melana.* basi, lanuginoso-flavescentibus.

*Apis* nigra, thorace, abdominisque basi supernè lanâ  
rufâ.

*Geoffr. Hist. Ins. Par. 2. p. 409. n. 4?*

*Apis parietina. Fourcroy. Ent. Par. n. 4?*

MUS. *Kirby.*

(o) *Tab. 8. fig. 15.*

Longi

Long. Corp. Lin. 6.

*Hab.* In Suffolciâ. Apud Somersham prope Ipswich, in aggere aprico argillaceo, Julio ineunti 1798, semel capta.

**DESCR.** Acul.

**CORPUS** aterrimum, villosum.

**CAPUT.** *Maxillæ* validæ, subforcipatæ, apice quadridentatæ dentibus rotundatis extimo acutiusculo (*p*). *Antennæ* capitis longitudine, subclavatæ.

**TRUNCUS** supra lanugine flavescenti vestitus. *Squamulæ* nigræ. *Alæ* fusco-ncbulosæ, nervis piceis. *Pedes* hirti. *Digiti* articulo extimo picco.

**ABDOMEN** subglobosum, supra convexum, basi lanuginoso-flavescens, ano piloso atro. *Venter* lanâ atrâ.

This insect departs somewhat from the general habit of this subdivision, the upper side of the abdomen being convex, instead of flat; it seems to approach very near to Geoffroy's "Abeille maçonne à poils roux;" but as he describes his as having tawny hairs upon its head and legs, which is not the case with ours, I have added a mark of interrogation to his synonym. My specimen, the only one I ever saw, I took creeping upon a clay bank of a southern aspect, not in the neighbourhood of any wall.

(*p*) Tab. 8. fig. 16.

- manicata*. 47. A. albido-villosa; abdomine maculis flavis lateralibus; ano *masculo* inflexo, quinque-dentato.

*Apis manicata* nigra, pedibus anticis hirsutissimis, abdomine maculis flavis lateralibus, ano tridentato.

*Lin. Syst. Nat. Ed. 12. n. 28. Fn. Suec. 1701.*

*Vill. Ent. Eur. 3. n. 23.*

*Ross. Fn. Etrusc. n. 914.*

*Forst. Cat. Brit. Ins. n. 717. Apis, n. 11.*

*Berkenhout. Synops. 1. p. 159. n. 4.*

*Apis manicata* cinerea, abdomine nigro, maculis flavis lateralibus, ano quinque-dentato.

*Fab. Ent. Syst. Em. n. 73.*

*Lin. Syst. Nat. Ed. Gmel. p. 2777. n. 28.*

*Apis* abdomine fasciis flavis interruptis, apice spinâ quintuplici flavâ armato.

*Geoffr. Hist. Ins. Par. 2. p. 408. n. 3.*

*Apis manicata. Fourcroy. Ent. Par. n. 3.*

*Apis sylvestris*, abdomine lato nigricanti; ad pronæ et supinæ partis commissuram lanugine rufâ vel albicante donata.

*Rai. Hist. Ins. p. 242. n. 1.*

FIG. *Swammerdam. Bibl. Nat. tab. 26. fig. 4.*

*Schæffer. Icon. tab. 32. fig. 11, 12. Opuscula, tab. 40. fig. 66.*

*Christii Hymenopt. p. 133. tab. 9. fig. 5. mal.*

*Harris. Exp. Eng. Ins. tab. 49. fig. 3.*

*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 11.*

*Tab. 16. fig. 12. Acul. fig. 13. Mas.*

MUS. *D. Marsham, Latham, Haworth, Francillon, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ — $8\frac{1}{2}$ .

*Hab.* In hortis oppidanis in Suffolciâ frequens, tomentum e foliis, præcipuè *Stachyos lanatæ*, et *Agrostemmatiis*

*temmatis coronariæ*, (quocum cellulas et nidum suum obvolvitur) maxillis abradens.

DESCR. Acul.

CORPUS nigrum, subtus villoso-albescens.

CAPUT. *Maxillæ* flavæ, apice nigræ, multidentatæ (q) dentibus intermediis minoribus, *Facies* cinerascente-pubescentis, anticè utrinque flava. *Nasus* apice denticulatus. *Occiput* utrinque puncto flavo notatum.

TRUNCUS supra pube griseâ mollis, translucente nigritudine corporis. *Squamulæ* nigræ, anticè villosæ, puncto flavo notatæ. *Metathorax* utrinque villoso-albus. *Alæ* fuscæ nervis nigris. *Pedes* flavescente-pilosi, femoribus quatuor posticis dimidiato-rufis. *Tibiæ* basi maculâ flavâ, anticæ insuper lineâ flavâ longitudinali inscriptæ, posticæ intus certo situ tomentoso-pallidæ. *Plantæ* extrorsum tomento densissimo albido molles, intermediis majoribus. *Scopulæ* ferruginæ.

ABDOMEN supra subvillosum, punctulatum, segmentis utrinque puncto flavo notatis. Segmentum antepenultimum punctis flavis quatuor. Abdominis latera flavo-ciliata. *Anus* obsolete trilobus, incurvus. *Venter* lanâ pallidâ tectus.

*Var. β* occipite punctis flavis nullis; tibiis anticis basi apiceque flavis; abdomine seg-

(q) Tab. 9. 2. β. fig. 6.

mento antepenultimo maculis tantum duabus mediis flavis.

Maris *Moxillæ* apice tridentatæ (r). *Facies* ante antennas flava maculâ posticâ mediâ nigrâ. *Pedes* albidó-hirti. *Femora* nigra, apice subtus dente obtuso utrinque instructa. *Tibiæ* quatuor anteriores apice flavæ, cunctæ subtus barbâ densâ albâ. *Plantæ* albo hirsutissimæ. *Palmæ* flavæ. *Apophyses* posticæ articulo secundo intus obtusangulo (s). *Abdomen* ciliâ densâ, incurvâ, pallidâ utrinque ornatum, segmento penultimo maculis duabus sublunatis flavis picto, utrinque spinâ incurvâ armato (t), ultimo spinis tribus incurvis instructo, intermedio recto breviori, lateralibus divaricatis (u). *Anus* sæpe valde inflexus.

Obs. *Abdominis segmenta intermedia in angulum f. dentem obtusum protensa* (x). *Plantæ interdum flavæ*,

Linneus in his definition of this insect seems to have overlooked the spines which arm the last segment but one of the abdomen of the male; for instead of being tridentate the anus is in fact quinque-dentate. This error has been rectified by Fabricius. The synonym of Swammerdam evidently belongs to *A. manicata*, and not to *A. quadridentata*, for the dorsal spots of the abdomen, and five

(r) Tab. 9. 2. β. fig. 7.

(s) Ibid. fig. 12. l.

(t) Ibid. fig. 11. bb.

(u) Ibid. c.

(x) Ibid. a.

spines



spines of the anus, are plainly represented in his figure. Geoffroy has mistaken the male for the female, and Panzer has fallen into the same error, that which he has given as the male is a distinct species. Anal spines or teeth in this family are invariably a sexual distinction, and point out the males.

\* \*. c. 2. γ.

48. *A. atra*, supra glabriuscula; maxillis promi-maxillosa, nentibus, intus barbatis; abdomine segmentis margine albis.

*Apis maxillosa* nigra, maxillis prominentibus, antennis thorace brevioribus, abdomine cylindrico subtus luteo hirsuto.

*Lin. Syst. Nat. Ed. 12. ♂ Gmel. p. 2773. n. 11.*

*Vill. Ent. Eur. 3. n. 10.*

*Hylæus maxillosus, Fab. Ent. Syst. Em. n. 4.*

FIG. *Panzer. Fn. Ins. Germ. Init. n. 53. tab. 17.*

MUS. *D. Marsham, Latham, Haworth, Trimmer, Lathbury, Francillon, Kirby,*

*Long. Corp. Lin. 4—5½.*

*Hab. Barhamiæ, in floribus haud rara. In paxillis nidificat et lignis siccis Ichneumonibus manifestatori jaculatori et femoratori K, obnoxia.*

DESCR. Acul.

CORPUS atrum, pube, rarâ admodum, albidâ consitum.

CAPUT. *Maxillæ* arcuatæ, prominentes, forcipatæ, ferè capitis longitudine, apice bidentatæ dente exteriori longiore, intus fulvescente barbatae,

barbatæ (y). *Labium* valde elongatum, rostrum ferè totum obtegens (z). *Nasus* apice squamâ a capite extante instructus. *Antennæ* clavatæ capitis longitudine (a). *Vertex* calvus. *Oculi* posticè attenuati.

TRUNCUS obovatus. *Squamulæ* nigræ. *Alæ* paululùm infuscatæ, apice nervisque nigris. *Pedes* pallido-hirti. *Scopulæ* fulvæ.

ABDOMEN cylindricum, nitidum, punctulatum, segmentis margine piloso-albis. *Venter* lanâ densâ, pallidè luteâ tectus.

This singular insect may always be known by its prominent maxillæ, which when closed leave a space between themselves and the mouth, which space is filled by the hairs with which their inner side is bearded; its lip is also remarkably elongate. Panzer has given an admirable figure of it; that of Christius belongs to some other insect. We learn from Mr. Marsham that *A. maxillosa* is the prey of *Ichneumon manifestator*, and from Bergman that *I. jaculator* pierces this as well as *A. florisonis*, which indeed I strongly suspect to be its male. Nor are these the only insects of that genus to the attacks of which our *Apis* is exposed, for Mr. J. Trimmer has taken another out of its foramina, which, as it appears to be a non-descript, and

(y) Tab. 9. 2. γ. fig. 6.

(z) Ibid. fig. 2. b.

(a) Ibid. fig. 7.

may easily be confounded with *I. comitator*, I shall describe below (a).

49. *A. atra*, cinereo-villosa; abdomine *masculo in-florisomnis* .  
curvo, ventre basi cornuto, ano obtusè bidentato.

*Apis florisonnis* nigra, abdomine subcylindrico incurvo,  
ano bidentato, tibiis posticis apice spinosis.

*Lin. Syst. Nat. Ed. 12. n. 13. Fn. Suec. 1704.*

*Vill. Ent. Eur. 3. n. 12,*

*Scop. Ent. Car. n. 796.*

*Miill. Zool. Dan. n. 1903.*

*Forst. Cat. Brit. Ins. n. 711. Apis, n. 5.*

*Hylæus florisonnis* abdomine subcylindrico incurvo  
ano bidentato.

*Fab. Ent. Syst. Em. n. 5.*

*Lin. Syst. Nat. ed. Gmel. p. 2773. Apis, n. 13.*

FIG. *Harris. Exp. Eng. Ins. tab. 50. fig. 11.*

*Hylæus florisonnis, Panzer, Fn. Ins. Germ. Init n. 46.*  
*tab. 13.*

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Ichneumon. \*\*\*.

(a) *I. ater*; antennis thoracis longitudine fasciâ albâ; femoribus femora-  
piceis. tor.

Totus ater exceptis femoribus posticis piceis. Antennæ hinc  
tantùm fasciâ mediâ albidâ.

Obs. *I. comitatore triplo minor, cui simillimus. Differt tamen non solùm antennis vix thorace longioribus, et femoribus piceis, verùm etiam alis hyalinis nervis nigricantibus, cum in illo obscuræ f. subtestaceæ sint alæ, nervis ferrugineis. Femora item crassiora et breviora in hoc quam in illo. Unde character I. comitatoris meliùs sic exprimitur.*

*I. ater*, antennis corporis longitudine fasciâ albâ.

*comitator.*

MUS,

MUS. *D. Smith* Linnean, *Marsham, Latham, Francillon, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 4—5.

*Hab.* Barhamiæ, in floribus tempore vernali haud rara,  
In floribus pernoctat, *Lin.*

DESCR. Mas.

CORPUS atrum, cinereo-villosum.

CAPUT. *Maxillæ* apice bidentatæ dentibus acutis. *Genæ* apud basin maxillarum in dentem obtusum protensæ. *Facies* ante antennis densius barbata. *Antennæ* filiformes, capite longiores, hinc subdentatæ *f.* articulis subtus medio obtusangulis (*b*).

TRUNCUS subovatus, villosus. *Squamulæ* nigrae. *Alæ* infuscatæ, apice nervisque nigris. *Pedes* hirti, spinulis testaceis. *Scopulæ* fulvæ.

ABDOMEN semicylindricum, punctulatissimum, segmento ultimo bidentato, dentibus obliquè truncatis (*c*). *Venter* anticè cornu brevi, crasso, supra concavo, apice rotundato armatus (*d*); cui e regione opponitur cavitas tomentoso-pallida (*e*), segmento ultimo recurvo, apice bidentato (*f*).

No insect, in this genus, that I am at present acquainted with, exhibits so many singularities of form as *A. florissoris*. The tooth in which its genæ terminate, the intermediate joints of its an-

(*b*) Tab. 9. 2. γ. fig. 9.

(*c*) Ibid. fig. 12. *aa*.

(*d*) Ibid. fig. 11. *a*.

(*e*) Ibid. *d*.

(*f*) Ibid. *c*. & fig. 12. *bb*.

tennæ

tennæ jutting out on their under side into an obtuse angle, the remarkable horn or protuberance which arms the base of the venter, the cavity which answers to it, and into which, when the insect reposes in its flowery bed, it is probably inserted, and the teeth which terminate its anus on the underside, are peculiarities, which I do not recollect that any preceding author has noticed, but which strikingly distinguish this insect. All of these however I take to be sexual distinctions, for this insect is always male and the preceding is as invariably of the other sex, a circumstance, which, combined with general traits of resemblance, makes me suspect that they are only the sexes of the same species. The spines at the apex of the tibiæ, which Linneus has introduced into his definition, are not more conspicuous in this, than in the other species of the genus; Fabricius has therefore very properly omitted them in his character.

Schæffer has written a monograph in German upon an *Apis*, which he calls *A. florissomnis* (g), but which is, in fact, a very different species. He describes it as distinguished by a very particular circumstance, namely, antennæ involute or turned in at their tips. His figure represents an insect quite distinct from ours, it may possibly, be the

(g) Abhandl. von Insecten. 3. Band. p. 125—30, tab. 1—5.  
Icon. tab. 32, fig. 9, 10.

*Eucera*

*Eucera curvicornis* of Scopoli(h), of which that author says, "Antennarum apices adeo intorti ut capitulum referant." Schæffer seems to have been led into this mistake by finding his insect in the bell of a flower. Christius has given a figure for *A. florisomnis* which has no relation whatever to it (i); Panzer's is excellent.

*Campanularum.* 50. *A. atra*, glabriuscula; ano *masculo* inflexo, acutè bidentato, ventre basi gibbo.

FIG. *Apis florisomnis minima*. Christii *Hymenopt.* p. 197. tab. 17. fig. 8.

Tab. 16. fig. 14. Acul. fig. 15. Mas.

MUS. *D. Marsham, Haworth, Latham, McLeay, Trimmer, Sowerby, Lathbury, Kirby.*

Long. Corp. Lin. 2—2½.

*Hab.* Barhamiæ. In floribus *Campanularum* frequens, in quibus mas sæpe pernoctat.

DESCR. Acul.

CORPUS atrum, glabriusculum, punctulatissimum.

CAPUT. *Nasus* gibbus. *Antennæ* nigræ, capitulis vix longitudine.

TRUNCUS. *Squamulæ* piceo-nigræ. *Alæ* paulò infuscatæ, subiricolores, nervis nigris. *Pedes* cinereo-pilosuli, scopulis fulvescentibus. *Spiriculæ* testacæ.

ABDOMEN cylindricum, ano obtusiusculo. *Venter* lanâ haud densâ lutescenti.

(h) *Ann. Hist. Nat.* 4. p. 9. n. 3.

(i) *Hymenopt.* p. 172. tab. 13. fig. 11.

Maris

Maris *Corpus* cinereo-villosulum. *Antennæ* filiformes, capite longiores (*k*). *Facies* ante antennis niveo-villosula. *Abdomen* inflexum ano acutè bidentato (*l*). *Venter* segmento secundo tuberculo elevatiusculo munito (*m*), cui ex adverso opponitur apud anum cavitas rotunda, tomentoso-pallida.

This little *Apis*, by far the most minute species of this genus, that I have yet seen, is common, during the summer and autumnal months, in the blossoms of *Campanula Trachelium*, *rotundifolia*, and *hybrida*, and, what deserves to be remarked, I never found it in the flowers of any other genus of plants. The males are often taken asleep in these flowers, their abdomen is then doubled, so that the tubercle, with which its base is armed, fits into the cavity near the anus. The aculeates partake of the habit of *A. maxillosa*, and the males in the same degree resemble *A. florisonnis*, a further proof of the identity of those insects. I have never met with this insect in any other situation than the above, and therefore I can say nothing further with respect to their mode of nidification, than that it is most probable that, with the other species of this subdivision, they make their cells in posts, rails, and the like. The male of *A. campanularum* is, I think beyond a doubt, the *A. florisonnis minima* of Christius.

(*k*) Tab. 9. 2. γ. fig. 8.

(*l*) Ibid. fig. 14.

(*m*) Ibid. fig. 13. a.

- truncorum.* 51. A. atra; abdominis basi transversè carinato; segmentis margine albidis; ano *masculo* inflexo, inermi.

*Apis truncorum* nigra, glabra, fronte albidâ, pubescente; abdomine segmentis margine albidis, subtus flavicante.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2773. n. 12. Fn. Suec. n. 1692.*

*Vill. Ent. Eur. 3. n. 11.*

*Mill. Zool. Dan. n. 1900.*

*Hylæus truncorum* niger, abdomine cylindrico, segmentis margine albis, subtus cinereo hirsuto.

*Fab. Ent. Syst. Em. n. 9?*

FIG. *Hylæus truncorum.* *Panzer. Fn. Ins: Germ. Init. n. 64. tab. 15.*

MUS. *Reginæ* Acul(n), *D. Smith* Linnean Acul, *Haworth* Mas, *Kirby* Acul, Mas.

Long. Corp. Lin.  $2\frac{1}{2}$ —4.

*Hab.* Brentfordiæ, et alibi prope Londinum, sed rarissima, femina semel lecta a D. J. Trimmer, mas bis a D. Haworth.

DESCR. Acul.

CORPUS atrum, punctulatissimum, albido-subvillosum.

CAPUT. *Maxillæ* forcipatæ, apice bidentatæ dentibus acutis, supra subcarinataæ, *f. lineâ* longitudinali elevatiusculâ notandæ. *Antennæ* nigræ, subfiliformes, capite longiores. *Facies* ante antennas albido densius barbata. *Genæ*

(n) I saw this in her Majesties collection, in the Observatory in Richmond gardens; it was the ninth specimen from the left hand, in the first row, at the end of the drawer.

subtus



subtus utrinque mucrone, *f.* dente brevi, postico, armatae.

**TRUNCUS.** *Squamulae* atrae. *Alae* fusciscentes, apice obscuriores, nervis nigris. *Pedes* pilosuli, spinulis scopulisque fulvis.

**ABDOMEN** cylindricum, basi retusum, segmento primo supra transversè carinato, *f.* lineâ arcuatâ, transversâ, elevatiusculâ notato. Segmenta omnia margine pilis densis, brevibus, niveis ciliata. *Anus* subincurvus, pilis decumbentibus, pallidis canescens. *Venter* lanâ, densâ admodum, flavescenti vestitus.

**Maris** *Corpus* minus. *Genae* inermes. *Maxillae* supra haud carinatae. *Abdomen* segmentis anticis margine albicantibus. *Anus* inflexus, segmento ultimo integro, subcompresso, utrinque foveolâ transversâ excavato. *Venter* basi niveo-villosus, convexus, apice cavitate satis profundâ insignis.

Two or three distinct insects are placed together, in the Linnean cabinet, as *A. truncorum*, the one I have just described is the same with the labelled specimen. Linneus says, in his *Fauna Suecica*, “*Antennae* longitudine thoracis. *Abdominis* segmenta vix margine albâ, sed potius versus latera.” But in the above specimen, and our English one, the antennæ are only a little longer than the head, and the whole margin of the abdominal segments is fringed with white hairs; this description was probably made from one, part of whose hairs had

been rubbed off, an accident to which these animals are very subject. Christius has given an *A. truncorum*, but it is a very different insect. Panzer's figure is tolerably accurate, he has made the tip of the wings rather too dark. The synonym of Fabricius seems to me rather dubious, for he says of his "abdomine—subtus cinereo-hirsuto," which is not the case with *A. truncorum*; in a specimen long disclosed, however, the hairs on the underside of the abdomen might turn to cinereous; and Panzer observes upon this species "variat abdominis lanâ subtus cinereâ et flavâ."

\*\* . c. 2. ♂.

*leucomelana.* 52. *A. aterrima*, albido-subvillosa; abdomine segmentis margine utrinque albis, ventre lanâ cinerascenti.

MUS. *Kirby.*

Long. Corp. Lin.  $3\frac{3}{4}$ .

*Hab.* Coddenshamiæ prope Needham Market in Suffolciâ, a me in pineto quodam tempore autumnali in floribus *Leontodontis* semel lecta.

DESCR. Acul.

CORPUS aterrimum, nitidum, levissimè punctulatum, pube albescenti subincanum.

CAPUT. *Maxillæ* apice tridentatæ. *Antennæ* subclavatæ, capitis longitudine, nigræ, apice subtus nigro-piceo.

TRUNCUS posticè satis villosus. *Squamulæ* aterrimæ, nitidæ. *Alæ* infuscatæ, nervis nigris.

*Pedes*

*Pedes hirti*, tibiærum spinulis nigris. *Scopulæ cinereæ*.

ABDOMEN ex ovali sublineare, supra glabriusculum, segmentis anticis quatuor margine utrinque pilis niveis ciliatis, primo et secundo apice auctis. *Venter* lanâ haud densâ cinereâ mollis.

This species, although very distinct from it, is very liable, at first sight, to be confounded with *A. truncorum*. If its proboscis be not unfolded, so that the palpi can be examined, it may always be known by the absence of the elevated curved line, which is observable upon the first segment of the abdomen of both sexes of the latter insect. It may possibly be the *Hylæus truncorum* of Fabricius. I look upon this insect as forming the connecting link which unites the present with the preceding subdivision.

53. *A. atra*, cinereo-subvillosa; scutello bidentato; *probosc.*  
ano *masculo* inflexo, spinuloso, ventre basi  
cornuto.

FIG. *Tab. 17. fig. 1. Acul. fig. 2. Mas.*

MUS. *D. Marsham, Trimmer, Lathbury, Sowerby, Kirby.*

Long. Corp. Lin. 3—4.

*Hab.* Apud Winesham et Blakenham Parvam prope  
Gippovicum in Suffolciâ, in arenariis et cretariis tem-  
pore autumnali haud rara.

DESCR. Acul.

CORPUS atrum, punctulatissimum, cinereo-  
villosum.

**CAPUT.** *Maxillæ* apice tridentatæ, dentibus acutis. *Antennæ* nigræ, subclavatæ, capitis longitudine. *Oculi*, in vivo, chrystallino-cæsi, fundo favoso. *Facies* inter antennas hirsutie flavescenti.

**TRUNCUS** supra pube grisescenti. *Scutellum* dente parvo, acuto, sub hirsutie occultato et vix sine tactu dignoscendo, utrinque armatum. *Squamulæ* atræ. *Alæ* paulò infuscatæ, apice obscuriores, nervis nigris. *Pedes* grisescentehirti. *Tibiæ* posticæ apice tomentoso-fulvescentes. *Scopulæ* fulvæ. *Spinulæ* testaceæ. *Digiti* picei.

**ABDOMEN** subglobosum, nitidum, punctulatissimum, supra glabrum, segmentis anticis margine interruptè, posticis continuè, piloso-albicantibus. *Anus* subdeclivis. *Venter* lanâ densâ, ferrugineâ tectus.

**Maris** *Maxillæ* apice bidentatæ. *Facies* ante antennas vellere denso flavescenti tecta. *Antennæ* filiformes capite longiores. *Alæ* dilutiores. *Anus* dentato-spinulosus(o). *Venter* cinereo-subvillosus, apud basin et apicem cornu erecto, acuto, armatus.

This little *Apis*, the male especially, exhibits many peculiar characters; the anus fringed, as it were, with minute spines, and the remarkable horn, which, if it be closely examined, will be discovered

(o) Tab. 10. \*\*, c. 2. ♂, fig. 18.

upon

upon the first and last ventral segment of the abdomen, sufficiently distinguish it from every other species with which I am, at present, acquainted. In the autumn of the year 1797 I found it, in tolerable plenty, in sand and chalk pits; since which time I do not recollect to have observed it.

54. *A. atra*, griseo-villosa; abdomine nitido, atro-*Leaiana*.  
cærulescenti, ventre lanâ ferrugineâ.

*Apis* nigra, hirsutie flavâ, abdomine supra glabro, nitente, cupreo.

*Geoffr. Hist. Ins. Par. 2. p. 411. n. 6.*

*Apis hirta. Fourcroy. Ent. Par. n. 6.*

MUS. *D. M<sup>c</sup>Leay, Marsham, Latham, Sowerby, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 3½—5.

*Hab.* Barhamiæ, in *Carduis* tempore autumnali haud rara.

DESCR. Acul.

CORPUS atrum, punctulatissimum, pube grisescenti.

CAPUT magnum. *Maxillæ* vix forcipatæ, apice tridentatæ, dente interiori truncato, exterioribus duobus acutis, disco supra tomento aureo tecto. *Antennæ* nigræ, capitis longitudine. *Facies* satis hirta.

TRUNCUS. *Squamulæ* nigræ. *Alæ* fuscæ, albedo subnebulosæ, nervis nigris. *Pedes* rufescente-pilosi. *Scopulæ* ferrugineæ. *Spinulæ* nigræ.

ABDOMEN ex oblongo cordatum, atro-cærulescens, basi subretusum, supra subglabrum,

nitidissimum. Pili rufi, haud densi, segmentorum margines, anticorum interruptè, fimbriant. *Anus* incurvus, rufo-subtomentosus, *Venter* lanâ densâ ferrugineâ tectus.

*Var.*  $\beta$  dimidio minor; abdomine nigro-æneo.  
 $\gamma$  corporis hirsutiae cinereâ; abdomine aterrimo, segmentis margine derasis. An eadem?

In honorem D. A. Mac Leay, Soc. Linnæan. a Secretis, viri amicissimi, *Naturæ regna, et imprimis Entomologiam, summo judicio et acumine perlustrantis, hoc insectum nominavi.*

This insect agrees tolerably well with Geoffroy's description of his "Abeille fauve à ventre cuivreux," except that the hair of the body can scarcely be called red. Since both Fabricius and Schrank have an *Apis hirta*, I have altered Fourcroy's trivial name. Variety  $\gamma$  may, perhaps, be a distinct species; but upon the whole it so strongly resembles  $\alpha$ ; that I have not ventured to separate them.

*cærules-* 55. A. corpore *femineo* atro, albido-subpubescens; *cens.* abdomine cærulescenti, segmentis margine albicantibus, ventre lanâ atrâ:  
 corpore *masculo* æneo, fulva-pubescente; ano bidentato.

## ACUL.

*Apis cærulescens* fusca, subvillosa; abdomine cærulescente, incisurarum marginibus albicantibus.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2793. n. 21. Fn, Suec. n. 1696.*

*Vill. Ent. Eur. 3. n. 17.*

*Miill. Zool. Dan. n. 1902.*

Ross;

Ross. *Fn. Etrusc.* n. 893.

Forst. *Cat. Brit. Ins.* n. 714. *Apis*, n. 8.

*Andrena cærulescens.* *Fab. Ent. Syst. Em.* n. 1.

FIG. *Harris. Exp. Eng. Ins. tab.* 49. *fig.* 10.

*Andrena cærulescens.* *Panzer. Fn. Ins. Germ. Init.*  
n. 65. *tab.* 18.

*Abeille maçonne*, dont la femelle est d'un bleu violet à  
poils cendrés, et le mâle d'un verd bronzé luisant  
à poils roux.

*De Geer. 2. ptie. 2. p.* 751—4. *tab.* 30. *fig.* 23.

MUS. *D. Smith* Linnean, *Marsham*, *Haworth*, *Trimmer*,  
*M<sup>c</sup>Leay*, *Lathbury*, *Sowerby*, *Kirby*.

MAS.

*Apis ænea ænea*, grisescente-pubescons.

*Lin. Syst. Nat. Ed.* 12. & *Gmel. p.* 2793. n. 20. *Fn.*  
*Succ.* n. 1695.

*Vill. Ent. Eur.* 3. n. 16.

*Scop. Ent. Car.* n. 809.

*Ross. Fn. Etrusc.* n. 894.

*Andrena ænea.* *Fab. Ent. Syst. Em.* n. 8.

FIG. *Panzer. Fn. Ins. Germ. Init.* n. 56. *tab.* 3.

*De Geer. ubi supra, et tab.* 32. *fig.* 1.

MUS. *D. Smith* Linnean, *Marsham*, *M<sup>c</sup>Leay*, *Haworth*, *La-*  
*tham*, *Sowerby*, *Francillon*, *Trimmer*, *Lathbury*, *Kirby*.

*Long. Corp. Lin.* 3 $\frac{3}{4}$ —4 $\frac{1}{2}$ .

*Hab.* *Barhamiæ* et alibi. In murorum cavitatibus et  
angulis nidificat, cellulas ex arenâ et argillâ conficiens.  
Larvæ in pupam conversuræ folliculum nent seri-  
ceum. *De Geer.* Mas feminâ frequentior, circa  
muros et palos antiquos tempore æstivo volitans:  
serior femina provenit, in cretariis interdum obvia.

DESCR. Acul.

CORPUS atrum, obscurum, punctulatissimum,  
pube albicanti incanum.

**CAPUT** trunco majus. *Maxillæ* validæ; apice obtusè tridentatæ, dente interiori obsoletiusculo, supra pilosæ, lineis duabus elevatis notatæ. *Antennæ* vix capitis longitudine, filiformes, piceo-nigræ.

**TRUNCUS.** *Squamulæ* piceæ. *Alæ* infuscatæ, albido nebulosæ, nervis nigris. *Pedes* albido-hirti. *Scopulæ* fuscæ.

**ABDOMEN** subglobosum, cærulescens, nitidiusculum, segmentis, posticis præcipuè, pilis albis ciliatis. *Venter* lanâ atrâ, haud densâ, tectus.

*Var.* β minor, corpore toto violaceo; alis hyalinis, apice nigris.

**Maris** *Corpus* æneum, grisescente-pubescens. *Maxillæ* apice bidentatæ. *Antennæ* tenues, vix thorace breviores. *Truncus* supra hirsutofulvus. *Alæ* subhyalinæ, apice fuscæ, nervis piceis. *Pedes* fulvo-hirti, scopulis fulvis. *Abdomen* fulvo-subvillosum, segmentis margine fulvo ciliatis. *Anus* incurvus, emarginatus. *Venter* segmento ultimo bidentato(p).

*Var.* β major, viridi-æneus; corporis toti hirsutie cinerascenti; alis infuscatis, albido-nebulosis.

γ minor, cupreo-nitens; corporis hirsutie pallidâ,

It will be expected that I assign my reasons for regarding as sexual varieties of the same individual,

(p) Tab. 10. c. 2. ♂. fig. 19. aa,

two



two insects, which, at first sight, appear so extremely unlike each other, as *A. cærulescens* and *A. anea*. The authority of the Baron de Geer will have great weight with every entomologist, and he informs us that he took both these insects out of the same nidus. These are his words, “ Les abeilles, que je tirai de ces coques et qui n'étoient gueres plus grandes que des mouches domestiques, étoient de deux couleurs ; les unes d'un bleu violet foncé et comme noirâtre, mais luisant, ayant les yeux noirs, et la tête et le corps couverts de poils cendrés et blanchâtres. Les autres abeilles avoient le fond de la tête, de tout le corps et des pattes d'un verd foncé, bronzé et luisant ; mais toutes ces parties, en particulier le corcelet, étoient couvertes de beaucoup de poils roux, qui sur le ventre n'étoient cependant placés que de chaque côté et le long de bord postérieur de chaque anneau, et ces poils formoient sur le ventre du mâle comme des rayes transversales rousses, tandis qu'en dessous il étoit tout ras. Les antennes étoient noires et les yeux à réseau d'un verd clair. J'ai lieu de croire, que les abeilles bleues étoient les femelles, et les vertes les mâles, puisque ces derniers étoient un peu plus petits que les autres (q)”

This account sufficiently proves his insects to be only different sexes of the same species, and that ours are synonymous with his will appear evidently

(q) Tom. 2. ptie. 2. p. 752.

if they are compared with the description it gives of them. The colour of the head and trunk of the female varies, in some it is black, in others violet, the wings are sometimes transparent with a brown cloud at their tips, and sometimes they are brown, clouded with white; in his specimens, these were, as he informs us afterwards, "transparentes et sans couleur," but as he extracted them, before their time, from the cocoons in which they were inclosed, they were probably not come to their proper colour. My opinion, derived from this illustrious author, of the identity of *A. cærulescens* and *A. ænea*, is still further confirmed by this circumstance, that the former is always a female, and the latter, as invariably, a male insect.

Linneus to his *A. cærulescens* applies the term "fusca," which will not agree with our specimens, nor indeed with that preserved in the Linnean cabinet, but in his description in the *Fauna Suecica*, he says, "Corpus totum atrum, cærulescens, immaculatum."

Many authors have looked upon Geoffroy's *Apis tota viridi-cuprea* (r) as synonymous with the male of our insect, but his description appears to me at variance with it, for he says of his "Elle est médiocrement velue. Les poils du bord des anneaux du ventre sont blancs." Whereas *A. ænea* is very

(r) Hist. Ins. Par. 2. p. 415. n. 15. *Apis cuprea*. Fourcroy. Ent. Par. n. 15.

hairy,

hairy, and the fringe of the segments of the abdomen is rufo-fulvous, and not white.

De Geer informs us that the larvæ of this *Apis* are exposed to the attacks of more than one *Ichneumon* (s). Panzer has figured both sexes very accurately.

56. *A. nigra*, rufo-villosa; abdomine segmentis *Tunensis*.  
margine pallidioribus; ano *masculo* emarginato.

*Apis Tunensis* nigra, thorace hirsuto rufo, abdominis segmentis margine rufo-ciliatis.

*Fab. Ent. Syst. Em. n. 87.*

*Apis Tunetana. Lin. Syst. Nat. Ed. Gmel. p. 2773. n. 71.*

FIG. *Apis aurulenta* hirsuta, fulva, capite nigro, abdomine atro, nitido, segmentis margine postico fulvo hirsutis, subtus lanâ fulvâ.

*Panzer. Fn. Ins. Germ. Init. n. 63. tab. 22?*

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin. 4 $\frac{3}{4}$ .

*Hab.* In Suffolciâ, a me apud Henley prope Gippovicum, in aggere argillaceo tempore autumnali lecta.

DESCR. Acul.

CORPUS fusco-nigrum, punctulatissimum, rufo-villosum.

CAPUT magnum. *Maxillæ* validæ, prominentes, supra tomentoso-fulvæscentes, apice tridentatæ, dente exteriori acuto. *Antennæ* vix capitæ longitudine, tenues, subfiliformes.

(s) Tom. 2. ptie. 2. p. 753, 887, 888. Amongst others to *Ichneumon Apum*. Vill. Ent. Eur. 3. n. 249.

TRUNCUS

TRUNCUS supra rufo-subhirsutus, subtus pube pallidiori. *Squamulæ* ferrugineæ. *Alæ* fuscescentes, albido subnebulosæ, nervis nigricantibus. *Pedes* rufescente-hirti, scopulis ferrugineis. *Tibiarum Spinulæ* testaceæ.

ABDOMEN subglobosum, pube ferrugineâ, nisi a latere vix conspicuâ, molle; segmentis marginate villosopallidioribus. *Venter* lanâ densâ, ferrugineâ vestitus.

Maris *Corpus* subtus villosopallidum, supra ferrugineo-hirsutum. *Maxillæ* forcipatæ, supra glabræ, apice bidentatæ dente exteriori prælongo, interiori obsoletiusculo, truncato. *Facies* antè antennis vellere denso cinerascenti tecta. *Antennæ* thorace breviores. *Alæ* hyalinæ, apice obscuriores. *Pedes* pallido-hirti. *Spinulæ* nigreæ. *Abdomen* obscurè nigroæneum, per fascias hirsutum. *Anus* incurvus, emarginatus. *Venter* apice bidentatus.

Obs. *In maribus segmentorum abdominalium fibrilla marginalis haud albescit.*

This insect answers the description which Fabricius has given of his *A. Tunensis* so well, that I think there can be little doubt of its being synonymous with it. I am not so certain that it is the *A. aurulenta* of Panzer, as his figure and description, although they come very near, do not quite coincide with my specimens of it. I do not know that it has been taken in England by any one besides Dr. Goodenough and myself.

57. A. corpore *femineo* atro, hirsuto; fronte *bi-bicornis*.  
corni; abdomine æneo, hirsutie rufâ:  
corpore *masculo* hirsuto-cinerascenti; fronte  
albidâ; abdomine æneo, hirsutie rufâ, ano  
integro.

ACUL.

*Apis bicornis* fronte bicorni, capite nigro, abdomine  
hirsuto rufo.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2773. n. 10. Fn.*  
*Suec. 1691.*

*Fab. Ent. Syst. Em. n. 86.*

*Ross. Fn. Etrusc. Mantiss. n. 310.*

*Forst. Cat. Brit. Ins. n. 710. Apis, n. 4.*

FIG. *Vill. Ent. Eur. 3. n. 9. tab. 8. fig. 23.*

*Reaum. tom. 6. Mem. 3. p. 86. tab. 8. fig. 11.*

*Harris. Exp. Eng. Ins. tab. 49. fig. 4.*

*Christii Hymenopt. p. 159. tab. 12. fig. 9.*

*Apis fronticornis* fronte bicorni, capite nigro, abdomine  
æneo, hirsuto-cinereo, subtus lanâ flavâ.

*Panzer. Fn. Ins. Germ. Init. n. 63. tab. 20.*

MUS. *D. Smith Linnean, Marsham, Latham, Haworth,*  
*McLeay, Trimmer, Sowerby, Lathbury, Kirby.*

MAS.

*Apis rufa, fusca, abdomine rufescente fronte albâ.*

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2772. n. 9. Fn.*  
*Suec. 1690.*

*Fab. Ent. Syst. Em. n. 88.*

*Miüll. Zool. Dan. n. 1899.*

*Ross. Fn. Etrusc. n. 913.*

*Vill. Ent. Eur. 3. n. 8?*

*Berkenhout. Synops. 1. p. 158. n. 2.*

*Forst. Cat. Brit. Ins. n. 709. Apis, n. 3.*

*Apis vernalis. Ibid. n. 720. Apis, n. 14.*

*Apis*

*Apis sylvestris* parva, abdomine breviorè, toto supinâ parte lanugine rufâ vestito; thorace lanuginè albicante.

*Rai. Hist. Ins. p. 242. n. 7.*

FIG. *Subz. Hist. Ins. tab. 27. fig. 15.*

*Harris. Exp. Eng. Ins. tab. 49. fig. 7.*

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 10.*

*Apis frontalis* hirsuta, fronte hirsutissimâ, antennâ longis, abdomine pilis rufis vestito.

*Vill. Ent. Eur. 3. n. 127. tab. 8. fig. 28.*

MUS. *D. Smith* Linnean, *Marsham*, *Latham*, *Haworth*, *McLeay*, *Lathbury*, *Sowerby*, *Francillon*, *Trimmer*, *Drury*, *Kirby*.

Long. Corp. Lin. 4—5 $\frac{3}{4}$ .

*Hab.* Barhamiæ. In Lapidum cavitatibus cellulas ex terrâ humectatâ conficit. *Reaumur.* Vere novô mas obvius, æstatè florenti provenit femina, flores hortorum frequentans.

DESCR. Acul.

CORPUS atrum, subtus cinereo-hirsutum.

CAPUT atro-hirsutum, trunci ferè magnitudine.

*Maxillæ* forcipatæ, validæ, apice tridentatæ, dente intermedio minuto, intimo truncato, obsoleto (*t*). “Ad basin maxillarum duo cornicula incurva, rigida nec mobilia, hirsutie vix longiora, nigra, infra apicem a parte exteriori denticulo notatæ,” faciem armant (*u*). *Antennæ* capite longiores, nigrae.

TRUNCUS supra anticè atro-hirsutus, posticè cinereo. *Squamulæ* atræ. *Alæ* subhyalinæ,

(*t*) Tab. 10. \*\*. c. 2. ♂. fig. 9.

(*u*) Ibid. fig. 6. aa. & fig. 7.

apice

apice paulò obscuriores; nervis; strigâque marginali prope apicem, nigris. *Pedes* rufescente-hirti. *Femora* barbâ densâ cinerascenti. *Plantæ* posticæ dilatatæ. *Scopulæ* fulvo-aureæ. *Digiti* articulo extimo ferrugineo. *Spinulæ* testaceæ.

**ABDOMEN** ex oblongo subglobosum, nigro-æneum, hirsutie densa rufâ vestitum. *Venter* lanâ fulvo-aureâ tectus.

**Obs.** *In adultioribus trunci et abdominis tergi hirsuties cinerascit, et ventris pallidior.*

*Var. β* frontis cornibus rectis, acutis (*x*).

**Maris** *Corpus* hirsuto-albicans. *Caput* cinereo-villosum, inerme. *Facies* anticè et inter antennis barbâ densâ albicanti. *Verticis* pili atri. *Maxillæ* apice bidentatæ (*y*). *Antennæ* filiformes, trunci ferè longitudine. *Trunci* hirsuties longissima, anticè rarior. *Squamulæ* piceæ. *Abdomen* per fascias rufo-hirsutum. *Anus* subinflexus, integer (*z*). *Venter* glabriusculus.

*Var. β* dimidio minor.

It is observed by Linneus, under *A. bicornis*, that Forskæhl saw that insect and *A. rufa* "copulâ connexas;" and whoever compares them both together will find that they differ only in such circumstances as are usually distinctions of sex,

(*x*) Tab. 10. \*\*. c. 2. ♂. fig. 8.      (*y*) Ibid. fig. 10.

(*z*) Ibid. fig. 20.

and

and that the former is constantly furnished with an aculeus, while the latter has no such instrument, but only the male organs: these reasons have induced me to consider them as different sexes of the same species.

Panzer's *A. fronticornis* is evidently nothing more than the aculeate of our *A. bicornis*, which agrees with the authentic specimen in the Linnean cabinet. His description appears to have been drawn from an insect that had been long disclosed, for in such the hair that covers the upper side of the abdomen fades to cinereous, and that upon the venter becomes paler than in more recent specimens. Linneus has described the abdomen by the term "rufum," which, in fact, belongs only to the hirsuties that covers it, as the abdomen itself is nigro-æneous in both sexes; this circumstance probably might lead Panzer, whose specimen, as I have just observed, was probably an old one, to look upon his insect as distinct from *A. bicornis*. The figure which Christius has given of the aculeate is far from a good representation of it, and his fig. 10. which he calls the other sex, appears to be a distinct species; it is certainly not *A. rufa*. That which he afterwards figures for *A. rufa* is a very different insect (*a*): his *A. pusilla* (*b*) comes very near to it, and I should refer to it as such if the antennæ were not so short in

(*a*) Vid. supra, p. 47.  
12. fig. 14.

(*b*) Hymenopt. p. 161. tab.



his figure; whereas, in *A. rufa* they are strikingly long. Forster, in his catalogue of English Insects, has made two species out of the male; our  $\alpha$  he calls *A. vernalis*, under which name he sent it to Linneus, and it is still in the cabinet. That illustrious naturalist very properly considered it as merely a variety of his *A. rufa*, as appears from a M.S. observation in his interleaved copy of the *Systema Naturæ*, which Dr. Smith very kindly allowed me to consult. Indeed it differs from  $\beta$ , which I take to be the common *A. rufa*, in nothing but size, being more than twice as big. Villars seems also to have fallen into the same error, as his *A. frontalis* exactly resembles our larger insect; his *A. rufa* is probably intended for our  $\beta$ : he has placed the former amongst his *Bombinatrices*; but where hirsuties is taken for the only diagnostic of that family, this is no proof of its being another insect, since *A. rufa* is as hairy as many genuine *Bombinatrices*. That which Scopoli (c), and after him Schrank (d), have given for *A. rufa*, appears to be a different insect; for the terms by which they define theirs, viz. "nigra; thorace abdominisque apice rufo," will scarcely agree with the true one; I have therefore made no reference to them. I think there is little doubt that Reaumur intended this insect by his "Mouche maçonne dont la maçonnerie n'est que de pure terre (e);"

(c) Ent. Carniol. n. 816.

(d) Enum. Ins. Austr. n. 803.

(e) Tom. 6. Mem. 3. p. 92.

of which he says, "J'hésite presque à donner le nom d'antennes à *deux cornes* qui s'élevent en devant de sa tête, car elles ne sont pas flexibles (*f*):" words which clearly allude to the remarkable horns which the female carries upon its forehead. It is rather singular that no Entomologist should have before discovered this insect to be synonymous with *A. bicornis*. This great naturalist is the only author that has given any account of the mode of nidification of this species (*g*). It is not easy to ascertain what is the use of the horns with which the head of the females is armed, but it is probable that they assist her in the construction of her cells. Rossi has described another species distinguished by the same peculiarity (*h*), of which Panzer has given a figure (*i*). I am not sure that my variety  $\beta$  may not be a distinct species; but as it differs in nothing from  $\alpha$  but the shape of the horns, I have not ventured to separate them. The larger males (*A. vernalis*, Forster) appear early in the spring; one of these, upon a very windy day in March, once amused me much by flying round me for some time, and at length alighting upon me. Upon variety  $\beta$  I found, in great numbers, a very small *Acarus*, the same which Reaumur informs us he took upon *A. violacea*. It was a hexaped with two long hairs in its tail, which seem-

(*f*) Tom. 6. Mem. 3. p. 86.    (*g*) Vol. 1. p. 181. Reaum. 6. Mem. 3. p. 85, 86.    (*h*) *A. cornigera*. Fn. Etrusc. n. 925.  
 (*i*) Fn. Ins. Germ. Init. n. 55, tab. 15.

ed to perform the office of feet: since it has not hitherto been noticed by any other author, I shall describe it in the margin (*k*).

58. A. hirsuta, aterrima; abdomine, tarsisque qua-*bicolor*.  
tuor posticis, hirsuto-ferrugineis.

*Apis bicolor* nigra, hirsuta; abdomine fulvo.

*Schränk. Enum. Ins. Austr. n. 806.*

*Apis rufescens* nigra; abdomine tibiis plantisque rufis.

*Mus. Lesk. p. 80. n. 516.*

*Lin. Syst. Nat. ed. Gmel. p. 2790. n. 169.*

*Apis nigra*; abdomine fulvo.

*Geoffr. Hist. Ins. 2. p. 419. n. 27.*

*Apis rustica. Fourcroy. Ent. Par. n. 27.*

FIG. *Apis bicolor. Vill. Ent. Eur. 3. n. 121. tab. 8. fig. 27.*

*Apis fusca Ökristii Hymenopt. p. 182. tab. 14. fig. 10.*

*Apis fusca atra pubescens, abdomine subtus, marginibus segmentorum, tarsisque, fulvo-villosis.*

*Panzer. Fh. Ins. Germ. Init. n. 56. tab. 11.*

MUS. D. *Marshall, Latham, Francillon, Kirby:*

*Long. Corp. Lin. 5 $\frac{3}{4}$ .*

*Hab.* Barhamiæ in floribus semel capta. Bis apud Blakenham Magnam in aggero aprico. Recens in sectum moscham spirat.

DESCR. Acul.

CORPUS aterrimum, hirsutum.

(*k*) A. rufescens; margine, lineaque transversâ, pallidis; ano *Apum*, utrinque setâ longissimâ instructo.

*Reaum. Hist. Ins. tom. 6. Mem. 2. p. 52, 53. tab. 5.*

*fig. 8, 9:*

DESCR. Arenulâ minor, hexapus. *Anus* fuscus setis duabus longissimis,

CAPUT trunco minus. *Maxillæ* validæ, subforcipatæ, apice tridentatæ, dente exteriori longiori acuto, interiori obsoletiusculo truncato.

*Antennæ* subclavatæ, capitis ferè longitudine.

TRUNCUS. *Squamulæ* atræ, nitidæ. *Alæ* subhyalinæ, apice fuscæ, nervis nigris. *Pedes* atro-hirti, tibiis posticis, tarsisque omnibus, undique hirsuto-ferrugineis.

ABDOMEN subglobosum, nigrum, supra et infra hirsuto-ferrugineum; segmentorum dorsalium margine densiùs villosus.

Obs. *In adultioribus abdominis hirsuties rufa.*

*A. bicolor*, on account of its hairiness, is placed amongst the *Bombinatrices* by Schrank, Villars, and Geoffroy; but its inflected lip, and the hairy brush which covers the underside of its abdomen, prove that it belongs to the present family. Panzer's figure is not quite so accurate as his usually are, for the base of the dorsal segments of the abdomen, of this insect, is covered with ferruginous hair as well as the margin, although that which fringes the margin is the thickest.

\* \*. d. 1.

- longicor-* 59. *A. nigra*, pallido-villosa; thorace, abdominisque  
*nis.* basi, hirsuto-fulvis; ano *femineo* pallido.

ACUL.

*Apis Bryorum* nigra; thorace abdominisque basi hirsuto-fulvis.

Schrank. *Enum. Ins. Austr. n. 812.*

Lin.

*Lin. Syst. Nat. Ed. Gmel. p. 2786. n. 134.*

*Vill. Ent. Eur. 3. n. 30.*

*Apis longicornis. Miller, int. not. Graian. supr. citat.*

FIG. *Andrena strigosa* thorace rufo-villoso, abdomine nigro subnudo, margine laterali segmentoque penultimo albis, basi apiceque rufis.

*Panzer. Fn. Ins. Germ. Init. n. 64. tab. 16.*

MUS. *D. Marsham, Haworth, McLeay, Sowerby, Trimmer, Kirby.*

MAS.

*Apis longicornis* antennis longitudine corporis hirsuti, fulvique.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2770. n. 1. Fn.*

*Suéc. 1684.*

*Vill. Ent. Eur. 3. n. 1.*

*Fn. Frid. n. 643.*

*Müll. Zool. Dan. n. 1895.*

*Pod. Mus. Græc. p. 109.*

*Scop. Ent. Car. n. 794.*

*Ross. Fn. Etrusc. n. 922.*

*Apis hirsutie flavescens*, fronte flavâ, antennis articulatim compressis, corpus æquantibus.

*Geoffr. Hist. Ins, 2. p. 413. n. 10.*

*Apis longicornis. Fourcroy. Ent. Par. n. 10.*

*Apis sylvestris domesticæ* similis, antennis nigris longissimis retro reflexis.

*Rai. Hist. Ins. p. 243.*

*Eucera longicornis. Scop. Ann. Hist. Nat, 4. p. 8. n. 1.*

*Fab. Ent. Syst. Em. n. 1.*

FIG. *Swammerdam. Bibl. Nat. tab. 26. fig. 6.*

*Schæffer. Icon. tab. 44. fig. 3.*

*Christii Hymenopt. p. 142. tab. 11. fig. 9.*

*Harris. Exp. Eng. Ins. tab. 49. fig. 5.*

*Barbut. Gen. Insect. tab. 15. Apis, fig. 7.*

*Eucera longicornis. Panzer. Fn. Ins. Germ. Init. n. 64. tab. 21.*

MUS. *D. Smith* Linnean, *Marsham*, *Latham*, *Haworth*,  
*McLeay*, *Donovan*, *Lathbury*, *Sowerby*, *Trimmer*,  
*Kirby*.

Long. Corp. Lin.  $6\frac{3}{4}$ — $7\frac{1}{2}$ .

*Hab.* Barhamiæ. In floribus haud rara. Mense Julio medio copulantur prope terram volitantes in gramine detonso. In puteo cylindrico terræ ova deponit femina.

DESCR. Acul.

CORPUS nigrum, subtus pallido-villosum.

CAPUT. *Maxillæ* apice fulvæ. *Labium* hirsuto-rufescens. *Antennæ* capite longiores, fusco-nigræ. *Facies* hirsuto-cinêrascens.

TRUNCUS supra pube densâ, mollissimâ, fulvo-flavâ tectus. *Squamulæ* obscurè rufæ. *Alæ* hyalinæ, apice nigricantes; nervis ferrugineis, longitudinalibus duobus interioribus nigris. *Pedes* hirsuto-fulvescentes. *Femora* pallido-barbata. *Tibiæ* anticæ extrorsum tomentoso-pallidæ. *Spinulæ* testaceæ. *Scopulæ* ferrugineæ. *Digiti* articulo extimo rufo.

ABDOMEN latum, fusco-nigrum, basi flavescente-pubescens, segmentis duobus intermediis utrinque, antepenultimo etiam margine, tomentoso-albicantibus. *Anus* ipse tomentoso-pallidus. *Venter* convexus, fuscus, anum versus pubescens.

Maris *Corpus* subtus villosulo-albicans. *Maxillæ* fusco-nigræ, interdum apice fulvæ. *Labium* et *Nasus* flava. *Genæ* barbâ longâ densâ albicanti. *Antennæ* corporis ferè longitudine.

*Truncus*

*Truncus* supra fulvo-pubescentis. *Pedes* minùs hirsuti. *Tibiæ* anticæ tomento nullo. *Scopulæ* pallidiores. *Abdomen* magis angustum, lateribus albido-villosis, segmentis duobus anticis fulvo-pubescentibus, reliquis nigro, sed vix conspicuè, pilosis. Segmentum antepenultimum pallido-ciliatum. *Ani* fulvescit fimbria. *Venter* planiusculus, villosulus.

*Var. β* abdomine subrotundo.

Obs. *Interdum abdominis segmenti antepenultimi fimbria nigricat. In adultioribus thoracis et abdominis pubes fulva cinerascit.*

I do not claim the sole merit of discovering the other sex of this species, and that the long antennæ, which form the distinction of the *Eucera* of Scopoli and Fabricius, are merely the character of the males; for Miller, in Mr. Gray's interleaved copy of the *Systema Naturæ*, before quoted, has described the female of *A. longicornis* in the following terms: "Fæmina antennis thorace brevioribus, abdomine latiore segmentis tribus ultimis margine et lateribus pilosis, albicantibus." M. Latreille, also, appears to have made the same observation; for in a letter to Mr. Mac Leay, dated April 26, 1801, he says, "Demandez un peu a votrè ami s'il a trouvé la femelle de l'*Eucera longicornis*: car toutes ces abeilles à longues antennes ne sont que des mâles." The female has been described both by Schrank and Panzer; the latter has given a very accurate figure of it, under the name of *Anarena*

*strigosa*. Variety  $\beta$ , at first sight, looks like a distinct species, but the difference in the shape of the abdomen, seems to arise from the accidental circumstance of the anal segments being more drawn in than in  $\alpha$ , so that the base, of each of the three last, is quite covered by the apex of that which precedes it: whereas, in  $\alpha$  the whole segment is exerted.

*linguaria*. 60. A. *hirsuto-cinereus*, abdomine nigro.

*Eucera linguaria* antennis nigris longitudine corporis, thorace cinereo, abdomine nigro.

*Fab. Ent. Syst. Em. n. 5.*

*Lin. Syst. Nat. ed. Gmel. p. 2770. Apis, n. 25.*

*Vill. Ent. Eur. 3. n. 66.*

*Apis tumulorum. Forst. Cat. Brit. Ins. n. 707. Apis, n. 1?*

*Apis longicornis Var. Ross. Fn. Etrusc. n. 922?*

FIG. *Schæff. Icon. tab. 22. fig. 16.*

*Panzer. Fn. Ins. Germ. Init. n. 64. tab. 22.*

*Apis tumulorum. Ræmer. Gen. Ins. p. 61. tab. 27. fig. 14.*

*Christii Hymenopt. p. 198. tab. 17. fig. 9.*

*Donovan. Nat. Hist. Brit. Ins. 5. tab. 151. fig. 2.*

MUS. *D. Donovan, Kirby.*

Long. Corp. Lin. 6.

*Hab. Prope Londinum. A. D. J. Trimmer accepi.*

DESCR. Mas.

CORPUS nigrum, villosocinereum.

CAPUT. *Maxillæ* nigræ. *Labium* et *Nasus* flava.

*Genæ* barbâ densâ, albicanti. *Antennæ* nigræ, corporis ferè longitudine.

TRUNCUS



TRUNCUS supra hirsuto-cinereus. *Squamulæ* piceæ. *Alæ* hyalinæ, nervis ferrugineis. *Pedes* pilis albicantibus hirti. *Spinulæ* flavæ. *Scopulæ* fulvescentes. *Digiti* articulis extremis testaceis.

ABDOMEN subglobosum, nigrum, basi cinereo, sed rariùs, villosum; segmento penultimo fimbrià rufescenti. *Venter* villosulus.

This species resembles not a little the male of the preceding, variety  $\beta$ , but it is much smaller, the hirsuties of the body is cinereous, and the base of the abdomen is not so thickly covered with it. It has been mistaken, by many authors, for *A. tumulorum* of Linneus, but this, as we have shewn above (*l*), belongs to the genus *Melitta*, and exhibits no other mark of relation to the *Eucera*, than its antennæ, which are longer than the thorax; a circumstance which it possesses in common with many other males of the family to which it belongs. Linneus having placed it next to *A. longicornis*, and employing terms in the definition of it, which imply that it is related to that insect, succeeding Entomologists took this for granted, and thus have erred universally concerning this *Apis*, not one author, that I have had an opportunity of consulting, being acquainted with the true *A. tumulorum*, and the majority of them mistaking the insect now before us for it. Yet had the definition which

(*l*) Vid. supr. p. 56, 57.

Linneus has given of it been attended to, this mistake would have been avoided, for the terms "Pedibus, maxillisque flavescentibus" will not by any means agree with *A. linguaria*. In the *Fauna Suecica* other characters are added to the above, which, if they had not been overlooked, would have furnished a further proof, that this insect was not the insect of Linneus. "Magnitudine dimidiæ *Muscæ domesticæ*; toto corpore nigra, exceptis pedibus et maxillis pallidè luteis. Antennæ filiformes, corporis ferè longitudine, subtus pallidiores." Fabricius finding that the definition of Linneus would not suit the insect which he mistook for *A. tumulorum*, has altered it, omitting "pedes flavi," the most striking distinction of the true one, and adding hirsuties, a circumstance which does not belong to it (*m*). I am not, at present, acquainted with his *Eucera tumulorum*.

*pollinaris*. 61. *A. nigra*, albido-pubescenti; thorace flavescenti; abdomine fusco, polline pallido.

FIG. *Tab. 17. fig. 3.*

MUS. *D. Banks.*

Long. Corp. Lin.  $7\frac{1}{3}$ .

*Hab.* In Angliâ.

DESCR. Acul.

CORPUS nigrum, pube albidâ.

CAPUT. Oculi magni, prominuli. *Labium* pallido-barbatum. *Antennæ* nigræ.

(*m*) Antennis longitudine corporis hirsuti nigrique, mandibulis flavis.

TRUNCUS,

**TRUNCUS.** *Thorax* pube flavescenti mollis. *Squamulæ* fulvæ. *Alæ* subhyalinæ; nervis, excepto costali fusco, ferrugineis. *Pedes* nigri, albido undique pilosissimi, postici potissimum.

**ABDOMEN** fuscum, basi albido-pubescenti, squamulis *f.* pilis brevissimis pallidis, anum versus præcipuè, incanum. *Venter* segmentis marginè pilis pallidè aureis ciliatis.

This insect is somewhat similar to the aculeate of *A. longicornis*, but it is much larger, and its abdomen is nearly covered with minute scales. Part of the thorax of the specimen in Sir J. Banks's cabinet, has evidently had the hair rubbed off; this defect is attempted to be remedied in the figure I have given of it. I have never seen this insect in any other cabinet; its male, I have very little doubt, is one of the *Eucera*, or long horned bees.

62. *A. nigra*, hirsuto cinerascens; antennis subtus *Druriella*, fulvis; abdomine segmentis posticis utrinque mucronatis.

FIG. *Tab. 17. fig. 4.*

MUS. *Reginæ* (n), *D. Drury* Apis, n. 40, *Kirby*.

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.* In Angliâ, rarissima.

DESCR. Mas.

**CORPUS** atrum, hirsuto-cinerascens.

(n) In the Observatory at Richmond, the left hand specimen in the last row of *Apis*.

CAPUT,

**CAPUT.** *Proboscis* brevis. *Maxillæ* apice rufæ, *Labium* luteum limbo nigricanti. *Nasus* flavescens. *Antennæ* corporis vix longitudine, piceæ, subtus fulvæ, scapo pedicelloque nigris.

**TRUNCUS.** *Squamulæ* nigræ, villosulæ. *Alæ* hyalinæ, nervis ferrugineis. *Pedes* cinereo-hirti, tarsis articulo extimo rufo.

**ABDOMEN** villosum, segmentis fasciâ mediâ villoso-albidâ, penultimo et antepenultimo utrinque dente acuto armatis.

*In honorem D. Drury, operis entomologici splendidissimi auctoris, cujus museum insectorum rarissimorum undique conquisitorum gazophylacium ditissimum, hanc Apem ab illo acceptam, nominavi.*

This rare insect is extremely distinct from any of the preceding ones, and appears to have been hitherto unnoticed; the teeth which arm the last segments of the abdomen, furnish an excellent characteristic.

\*\* . d. 2. α.

*bimacula*-63. A. nigra, cinereo-subvillosa; facie anticè, oreque, flavescens; ano tomentoso-incano.

**FIG.** *Apis bimaculata* atra griseo pubescens, fronte flavâ maculis duabus atris, abdomine apice bifido, fasciis apiceque griseis.

*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 17.*

**MUS.** *D. Marsham, Haworth, Drury, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ .

*Hab.*

*Hab.* In Suffolciâ. Circa aggerem apricum prope Woodbridge volitantem feminam bis cepi.

DESCR. Acul.

CORPUS nigrum, cinereo-villosum.

CAPUT latum, hirtum. *Maxillæ* flavæ, apice fuscæ. *Labium* pallidè flavum posticè utrinque puncto nigricanti. *Facies* anticè pallidè flava, flavedine in lineam attenuatam, elongatam, apice paulò dilatatam truncatam, antennis versus medio excurrente. *Oculi*, in vivo, chrySTALLINO-cæsii, fundo favoso. *Antennæ* capitis ferè longitudine, nigræ, subtus rufo-piceæ. *Vertex* atro-pilosus.

TRUNCUS supra pube nigricanti rariùs consitus, pilis cinereis immistis. *Squamulæ* subtestaceæ. *Alæ* hyalinæ, nervis nigricantibus, apice aveniæ. *Pedes* picei, pallido-hirsuti, præsertim tibiæ posticæ. *Scopulæ* obscurè ferrugineæ, ast certo situ sub-nigræ.

ABDOMEN ex rotundo ovatum, pilis nigris rigidiusculis anticè rariùs consitum, basi intimâ cinereo-villosâ; segmentis tribus anticis margine, proximis duobus totis, tomentoso-canescens. Segmentum ultimum minutissimum, acuminatum, fasciculo pilorum, rigidorum et quasi conglutinatorum, utrinque munitum, unde mucronatus mucrone bifido anus videtur. *Venter* convexiusculus, villosulus, segmentis margine pallidis.

*Var.* β ore facieque anticè ex flavo rufescentibus, pedibus nigris.

Panzer's

Panzer's figure of this insect is extremely accurate, except that the tibiæ and tarsi are more yellow than in any specimens I have met with; the posterior tibiæ, from the pollen, of which they usually retain some quantity, appear yellower than the others, but this not the real hue of the hairs, which are pale with little or no tinge of that colour. The eyes, in his specimen, when the insect was living, he informs us were of a fine green, "læte virides," in those that I took they were blue-grey. The bifid mucro, which he mentions as terminating the anus, is merely a little tuft of rigid hairs which guard, on each side, the minute segment that terminates the abdomen; under a common lens these have exactly the appearance he describes. What he calls spots of the front, are rather lobes, for they are not entirely, but only in part, insulated from the blackness of the posterior part of the face, by the intervention of the yellow, which is the colour of the anterior.

- furcata*. 64. A. corpore *femineo* nigro, griséo-pubescenti; facie anticè, labio, anoque, villosò-ferrugineis; corpore *masculo* atro, cinereo-pubescenti; facie anticè, labioque, flavis; abdomine apice furcato.

FIG. *Apis furcata* cinereo pubescens, antennarum articulo primo fronte labioque flavis, abdomine apice furcato tarsis ferrugineis.

Panzer. *Fu. Ins. Germ. Init. n. 56. tab. 8. Mas.*

*Tab. 17. fig. 5. Acul. fig. 6. mas.*

MUS,

MUS. Acul. *D. Smith* Linnean. n. 1009. Acul. et Mas. *D. Marsham, Trimmer, Kirby.* Mas. *D. M<sup>c</sup>Leay.*  
 Long. Corp. Lin.  $5\frac{1}{2}$ — $6\frac{1}{2}$ .

*Hab.* In Suffolciâ, sed rarior. Prope Londinum frequentior. In lignis exsiccatis nidificat.

DESCR. Acul.

CORPUS nigrum, pube subgriseâ.

CAPUT. *Labium* pilis ferrugineo-aureis tectum. *Vertex* atro-pilosus. *Facies* ante antennas ferrugineo-subhirsuta. *Antennæ* capitis longitudine, nigrae.

TRUNCUS supra pube fulvescenti, sed disco rariùs, vestitus. *Squamulae* atræ. *Alae* paulò infuscatæ, apice obscuriores *aveniæ*, nervis nigris. *Pedes* grisescente rariùs villosi. *Tibiæ* posticæ scopâ densâ admodum. *Plantæ* ultimi paris fasciculo pilorum rigidiusculorum ferrugineo coronatæ. *Scopulae* nigricantes.

ABDOMEN oblongum, fusco-nigrum, basi grisescente-pubescens. *Anus* mucronatus, tomentoso-ferrugineus. *Venter* nitidiusculus, segmentis margine fulvescente-villosis.

Maris *Corpus* cinereo-villosum. *Labium* flavum, punctis duobus posticis, margineque, nigris. *Facies* anticè fulva, vel fulvo-flava. *Antennæ* scapo antrorsum lineolâ flavâ interruptâ inscripto. *Truncus* supra villosogrisescens. *Pedes* hirsutiae subcinereæ. *Tibiæ* posticæ fasciculo pilorum nullo. *Digiti* articulis extimis, *Scopulae*que ferruginea. *Abdomen* ex globoso cordatum,

cordatum, cinereo-hirtum; segmentis ultimis atro-pilosis. *Antus furcatus* dentibus patulis (o).  
*Venter* posticè depressus concavus tomentoso-fulvescens.

*Var. β* corporis hirsutiae griseâ; antennis scapo immaculato.

As the sexes of *A. furcata* are so unlike each other, that no common character would include them both, I have, therefore, been under the necessity, as in some former instances, of making a separate one for each. I do not give these individuals as male and female upon my own authority, but Mr. James Trimmer, upon whose accuracy I can rely, has taken both out of the same nest. Upon their mode of nidification I have enlarged before (p). Panzer's figure and description, which belong to the male, vary a little from our specimens, but I think there can be no doubt of his intending the same insect.

*vulpina.* 65. *A. atra*, villosopalescens; thorace flavescenti; abdomine segmentis margine pallidis; femoribus intermediis magnis, clavatis.

FIG. *Apis vulpina* ferrugineo villosa, antennarum articulo primo fronte labioque flavis, abdomine nigro, segmentis posticè ferrugineo villosifasciatis.

*Panzer. Fn. Ins. Germ. Init. n. 56. tab. 6?*

MUS. *D. Haworth.*

Long. Corp. Lin. 5.

*Hab.* In Angliâ rarissima.

(o) Tab. 11. fig. 15. a.

(p) Vol. 1. p. 188, 189.

DESCR.



DESCR. Mas.

CORPUS atrum, pube pallescenti.

CAPUT hirsutum. *Genæ* barbâ densâ, longâ.  
*Maxillæ* nigræ, maculâ flavâ. *Labium* flavum, margine antico, punctisque duobus posticis, nigris. *Facies* ante antennas subrufa, maculis duabus quadratis atris. *Antennæ* nigræ, basi antrorsum flavæ.

TRUNCUS supra pube densâ fulvo-flavâ mollis. *Squamulæ* nigræ. *Alæ* hyalinæ, nervis nigris. *Pedes* albido-hirti. *Femora* clavata, intermedii majoribus. *Digit*i obscure rufescentes.

ABDOMEN ovatum, atro-subpilosum, segmento primo villis flavescentibus pubescente, reliquorum marginibus pilis rufo-pallidis latè tectis. *Venter* hirtus.

I take this insect to be a variety of Panzer's *A. vulpina*. In Mr. Haworth's specimen, the only one that I have seen, the black spots on the anterior part of the face are larger than in the figure given by that author, and the abdominal fasciæ have a very slight tinge of red: the very large intermediate thighs are the most striking characteristic; I have, therefore, introduced them into my definition.

66. *A. grisescente-villosa*; ore flavo; abdomine *rotundata*.  
 segmentis margine subrufis; thorace *femineo*  
 nigricanti, *masculo* fulvo.

## APIS. (\*\*. d. 2. a.)

## MAS. β.

*Apis rotundata* nigra, cinereo hirta, abdomine subglobo-  
boso segmentorum marginibus albis.

*Fab. Ent. Syst. Em. n. 80?*

*Lin. Syst. Nat. Ed. Gmel. p. 2778. n. 88?*

*Vill. Ent. Eur. 3. n. 76?*

*Apis subhirsuta* cinerea, abdomine nigro, segmentis al-  
bidis; fronte flavescente.

*Geoffr. Hist. Ins. Par. 2. p. 413. n. 11.*

*Apis terrestris. Fourcroy. Ent. Par. n. 11.*

FIG. *Panzer. Fn. Ins. Germ. Init. n. 56. tab. 9.*

MUS. *D. Marsham, McLeay, Haworth, Drury Apis, n. 53,*  
*Trimmer, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ — $5\frac{1}{2}$ .

*Hab.* Prope Londinum. Flores *Ericæ* in arenario quo-  
dam juxta Combe Wood supra dict. uterque sexus  
frequentabat, Julio ineunti, 1801.

## DESCR. Acul.

CORPUS atrum, pube grisescenti.

CAPUT. *Maxillæ* nigræ, basi flavæ. *Labium* fla-  
vum, posticè utrinque puncto nigricanti. *Fa-*  
*cies* anticè pallidè flava, flavedine in lineam at-  
tenuatam, elongatam, apice pauld dilatam,  
antennas versus medio excurrente; fulvo-pu-  
bescens. *Vertex* atro-pilosus. *Genæ* barbâ  
albidâ. *Oculi*, in vivo, chrySTALLINO-virentes,  
fundo favoso. *Antennæ* capitis vix longitu-  
dine, nigræ.

TRUNCUS supra nigricanti rariùs pilosus, limbo  
fulvescenti. *Squamulæ* subtestaceæ. *Alæ*  
hyalinæ, apice pauld obscuriores aveniæ, ner-  
vis nigris. *Pedes* grisescente-hirti. *Femora*  
postica

APIS. (\*\*. d. 2. a.)

postica apice fulvo-pubescentia, antica barbata. *Tibiæ* posteriores scopâ densâ. *Scopulæ* nigricantes.

ABDOMEN subglobosum, pilis atris adpersum, segmentis quatuor anticis margine tomentoso-subrufis *f.* fulvescentibus. *Anus* tomentoso-incanus. Segmentum primum utrinque fulvescente-villosum. *Venter* convexus, nigropiceus.

Maris *Facies* tota ante antennas lutea. *Antennæ* capite longiores, scapo antrorsum flavo, apice articulo primo breviusculo. *Vertex* fulvovillosus. *Truncus* supra pube, densâ admodum, fulvo-aureâ tectus. *Squamulæ* piceæ. *Digiti* articulo extimo apice dilatato. *Abdomen* segmento primo toto villosa-fulvescenti, antepenultimo margine pilis non fulvescentibus sed albidis tomentoso, ultimo supra carinato. *Venter* hirtus.

*Var. β* corpore cinereo-villoso; trunco supra pube flavescenti; abdomine segmentis margine tomentoso-albis.

When my *Synopsis Specierum* went to the press, I had seen only variety  $\beta$  of the male of this insect; but since that, in July last, I took recent specimens of both sexes frequenting the flowers of *Erica*, in a sunny sand-pit near Combe Wood, a spot well known to the Entomologists of the Metropolis, and producing many very rare insects. As all that I was then able to examine agreed to-

gether, I thought it most advisable to correct my *Nomen Specificum* and description by them: the specimen from which I originally described being, probably, one that had been disclosed so long from the pupa, as to change the colour of its hirsuties. Panzer's figure, which evidently belongs to the male of our insect, was taken from one in the same predicament; and if I am right in my reference to Fabricius, concerning which, however, I have my doubts, his description was drawn from one of this sort too. Geoffroy for his, "Abeille à levre jaune et anneaux du ventre blanchâtres," which appears synonymous with this variety, refers to one described in the first edition of the *Fauna Succica*, but which afterwards seems to have been omitted by Linneus. This, however, although it belongs, I think, to the present family, I suspect to be a different species, perhaps *A. bimaculata*; for Linneus says of it: "Abdomen nigrum segmentis villosis canis 5 vel 6," which implies that not the margins only, but the whole of these segments was covered with hoary hairs. Geoffroy says of this *Apis*: "Cette espèce forme dans la terre des trous horizontaux qui sont fort longs et divisés au bout en plusieurs cellules. On voit ces trous dans les terrains coupés perpendiculairement en forme de murs (q)." From an inspection of the female, of which I had seen no specimen, when I made the arrangement adopted in my synopsis, I find that *A. rotundata*

(q) Tom. 2. p. 413, 414.

ought to follow *A. bimaculata*, which it resembles in many respects.

A. PALLICINCTA. 67.

Since the printing of my synopsis, I have again seen the insect which I had described under this name, and find it to be *M. fodiens* before noticed (r). I drew my description of it long ago, before I was acquainted with the characters which distinguish my first family of *Melitta*, from a specimen, the only one I had then seen, in Mr. Drury's cabinet (s), the structure of whose proboscis I could not ascertain. As it seemed to have a general resemblance to some of the individuals of this family, particularly *A. rotundata*, I placed it next to that insect; although I observed even then that it wanted one of the most prominent characters of the subdivision, the *os crassum*. A year or two after this I took it myself, and finding its instrumenta cibaria to be those of a *Melitta* possessing peculiar characters, I did not recollect that it was the same insect I had described before as an *Apis*.

68. *A. atra*, albido-subvillosa; abdomine subglo-<sup>subglobo-</sup>  
boso.<sub>sa.</sub>

MUS. *D. Haworth.*

Long. Corp. Lin. 4 $\frac{2}{3}$ .

*Hab.* In Angliâ. Hanc unicam vidi.

DESCR. Acul.

CORPUS atrum, pube cinereâ.

(r) Supr. p. 34, 35.

(s) *Apis*, n. 35.

CAPUT atrum, immaculatum, pube albidâ. *Vcrux* atro-pilosus.

TRUNCUS supra hirsutie e pilis atris cinereisque mixtis constante notandus. *Thorax* posticè glabriusculus, punctatus. *Squamulæ* piceæ, *Alæ* subhyalinæ, nervis nigris. *Pedes* cinereo-hirti.

ABDOMEN subglobosum, glabriusculum.

Obs. *In hoc specimine margo segmentorum abdominalium forsan derasus.*

I have seen a single specimen only of this insect; in which I suspect that the hair is rubbed off the margin of the dorsal segments of the abdomen; but supposing this to be the case, still it is sufficiently distinguished from *A. rotundata*, which it resembles, by its black nose and lip.

*retusa.* 69. *A.* corpore *femineo* atro, hirsuto; tibiis posticis scopâ fulvo-aureâ :

corpore *masculo* nigro, hirsuto-fulvo; ano nigricanti, pedibus intermediis elongatis, crinito-pectinatis,

#### ACUL,

*Apis retusa* nigra, subhirta, abdominis basi retusâ, tibiis posticis extus lanatis.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2772. n. 8. Fn. Succ. 1690.*

*Vill. Ent. Eur. 3. n. 6.*

*Miill. Zool. Dan. n. 1898.*

*Ross. Fn. Etrusc. n. 907.*

*Apis accrvorum* hirsuta atra, tibiis posticis ferrugineis,

*Fab.*

*Fab. Ent. Syst. Em. n. 36.*

*Lin. Syst. Nat. ed. Gmel. p. 2783. n. 50.*

*Apis rufipes* hirsuta, atra, pedibus posticis rufis.

*Miller. int. not. Graian. supr. citat.*

*Bombylius* medius totus niger, lanugine duntaxat longâ flavâ anteriori f. inferiori superficiei primi crurum posteriorum internodii adnascente.

*Rai. Hist. Ins. p. 247. n. 4.*

*Apis sylvestris* muraria nigra.

*Rai. Hist. Ins. p. 243 ?*

**FIG.** *Schæff. Icon. tab. 77. fig. 5.*

*Harris. Exp. tab. 38. fig. 7.*

*Apis acervorum. Pauzer. Fn. Ins. Germ. Init. n. 78. tab. 18.*

*Donovan. Eng. Ins. tom. 3. tab. 108. fig. 2.*

*Apis rufipes. Christii Hymenopt. p. 132. tab. 9. fig. 1.*

**MUS.** *D. Smith Linnean, Marsham, Latham, Drury, Harworth, M<sup>c</sup>Leay, Sowerby, Trimmer, Lathbury, Kirby.*

**MAS.**

*Apis pennipes* pubescens subgrisea; pedibus secundariis elongatis crinito-pectinatis.

*Lin. Not. MS. in Syst. Nat.*

*Forst. Cat. Brit. Ins. n. 731. Apis, n. 25.*

*Apis pilipes* grisea, pedibus intermediis fasciculato-pilosis.

*Fab. Ent. Syst. Em. n. 54.*

*Lin. Syst. Nat. Ed. Gmel. p. 2776. n. 80.*

*Vill. Ent. Eur. 3. n. 54.*

*Ross. Fn. Etrusc. 910. Mantiss. 311.*

*Apis plumipes* hirsuta, pedum mediorum metatarsis scopâ atrâ, posticè pilis raris longis barbatis.

*Schrank. Enum. Ins. Austr. n. 804.*

*Apis Hispanica* hirsuta flavescens, abomine apice nigro, pedibus intermediis fasciculato-pilosis.

*Fab. Ent. Syst. Em. n. 10 ?*

*Lin. Syst. Nat. Ed. Gmel. p. 2784. n. 1 ?*

*Apis sylvestris* corpore oblongo, supinâ thoracis, et anteriori abdominis parte pulchrè flavâ, caudâ nigrâ.  
*Rai. Hist. Ins. p. 243.*

FIG. *Harris. Exp. tab. 40. fig. 14.*

*Apis pilipes. Christi Hymenopt. p. 131. tab. 8. fig. 9. mal.*

*Panzer. Fn. Ins. Germ. Init. n. 55. tab. 8.*

*Apis Hispanica. Ibid. tab. 6.*

*Apis plumipès. Pallas. Spicil. Zool. 9. p. 24. tab. 1. fig. 14.*

MUS. *D. Marsham, Latham, Drury, McLeay, Haworth, Trimmer, Sowerby, Lathbury, Kirby.*

*Long. Corp. Lin. 7—8.*

*Hab. Barhamiæ. In floribus tempore vernali frequens, mas feminae assiduus comes, quam, dum nectar florum sugit, lætus circumvolat. Terris induratis, glareosis aut argillaceis, sectis verticaliter, nobiscum nidificant; interdum et in muris antiquis. "In muris et aggeribus unaquæque foramen sibi soli excavat ellipticum fœtui excipiendo, in quibus pabulum eidem nutriendo reponit." Raius. "Sub vesperum quærit apta parietum foramina ibique pernoctat." Rossius.*

DESCR. Acul.

CORPUS totum atrum, hirsutum.

CAPUT subtriangulare. *Labium* pilis rufis barbato. *Antennæ* capitis longitudine, nigræ.

TRUNCUS. *Squamulæ* piceæ. *Alæ* fuscæ, nervis nigris. *Pedes* hirti, tibiis posticis extrorsum scopâ fulvâ. *Plantæ* item posticæ basi fulvo-aureo extus hirsutæ. *Scopulæ* ferrugineæ. *Femora* cum digitis picea.

ABDOMEN ex ovato oblongum, hirsutum. *Venter* convexus, piceus.

Obs.



Obs. *Scopa tibiæ posterioris in adultioribus flavescit.*

*Maris Corpus* subtus albido-villosum. *Maxillæ* apud basin maculâ obliquâ flavâ notatæ. *Labium* flavum margine omni, punctoque utrinque postico, atris. *Nasus* cum frontis angulis rufus, suturis nigris. *Antennæ* nigræ, scapo antrorsum pallidè carneo. *Genæ* barbâ longâ densâque albâ. *Facies* anticè pallido, posticè fulvo villosa, spatio inter antennas interjecto glabro, lineâ mediâ elevatiusculâ notato. *Truncus* supra et utrinque hirsutie fulvâ molliissimâ vestitus. *Squamulæ* nigræ. *Alæ* subhyalinæ. *Pedes primarij* cinereo-pilosuli, tibiæ arum apicibus extrorsum tomentoso-pallidis; *secundarij* reliquis longiores, femoribus subtus nigricante-barbatis, tibiis hinc cinereociliatis, plantis elongatis, cinereo-pilosulis, antrorsum versus apicem penicillo denso pilorum nigrorum instructis (*t*), posticè unâ cum digitis, pilis longissimis, rarioribus crinitis (*u*); digitorum articulo extimo utrinque densiùs barbato (*x*); *ternarij* femoribus subtus nigro barbatis, tibiis nigro-villosis, posticè cinereofimbriatis, plantis brevibus, latis, posticè nigro longiùs pilosis. *Scopulæ* nigræ, lineâ intermediâ pallidâ. *Abdomen* subglobosum, su-

(*t*) Tab. 11. d. 2. α. β. fig. 18. a.      (*u*) Ibid. b.

(*x*) Ibid. cc.

pra hirsuto-fulvum, ano nigro-villoso. *Ani* nigrigudo " non abruptè incipit, sed ipsa baseos flavedo quibusdam veluti umbris, penumbrisque in eam degenerat (*y*). *Venter* apud anum depressus, lateribus villososalbicantibus.

*Var.*  $\beta$  adultior, corpore supra hirsutie subgriseâ, vel cinerascenti vestito; naso flavo punctulis duobus nigris; antennis scapo antrorsum flavo; alias  $\alpha$ , ut ovum ovo, simillimus.

From an inspection of the authentic specimen preserved in the Linnean cabinet, I do not hesitate to give the aculeate of the present *Apis* as the genuine *A. retusa* of Linneus. That specimen is, indeed, smaller than our English ones usually are, not quite so hairy, nor is its hair of so deep a black; but these circumstances appear to be entirely accidental: insects of different climates, and sometimes those of the same, vary much in size; and the hair of an *Apis* newly disclosed from the pupa, as to colour and density, is often very different from that of the same individual when it has been long exposed to wind and weather. In other respects the Linnean specimen is the very counterpart of ours, and agrees exactly with the description in the *Fauna Suecica*. "Magnitudine *A. melificæ*. *Corpus* totum nigrum pubescens. *Tibiæ* posticæ dilatatæ, extus vellere brevi, denso, flavo."

(*y*) Schrank, Enum. Ins. Austr. p. 399.

This

This insect, however, has been mistaken by Fabricius and many other Entomologists, and confounded with another. As it is usually very hairy, this author regarded it as a *Bombinatrix*, and took it for granted that it could be no other than the *A. acervorum*, Linn. Possessed with this idea, he added to "hirsuta, atra," the Linnean definition, the terms "tibiis posticis ferrugineis," in which he has been followed by Gmelin and others. But had he paid due attention to the description of the Fauna Suecica, he would have been convinced that, by *A. acervorum*, Linneus intended a very different insect. "Præcedenti (z) similis," says he, "sed minor; toto corpore nigro, immaculato exceptis setulis quibusdam circa collum sulphureis." These terms plainly exclude the tibiæ ferrugineæ of *A. retusa*, of which I never saw a specimen, and I have seen many, that had any sulphureous hairs about its neck. I suspect that the specimen preserved in the Linnean cabinet, as *A. acervorum*, is not the original one, although its label is an autograph of Linneus. When an insect with such a label answers to the description of Linneus, no doubt can remain of its authenticity; but when it varies from it, its claim to be considered as the original specimen is a good deal invalidated. In the present instance, the specimen differs from the description in several respects; its wings are violet, it has no sulphureous hairs about its neck, and

(z) Nempe *A. lucorum*, Linn,

the

the disk of the scopa, or brush, which covers the underside of its abdomen, is tawny; it belongs to the same family with the *Abeille maçonne* of Reaumur (a), and I strongly suspect it to be the female of that very insect, which that author describes in terms which agree well with it. "Les uns doivent devenir des abeilles très-noires, aussi noires, mais plus veluës que les perce-bois; elles ont seulement un peu de jaunâtre en-dessous à leur partie postérieure (b)." I shall give a fuller description of it in the margin (c), Concluding that *A. retusa* was *A. acervorum*, and unacquainted with any insect that would agree with the Linnean character of the latter, Fabricius has excluded it from his last work, *Entomologia Systematica Emendata et Aucta*, as a nonentity; expressing only a suspicion that it may possibly be his *Andrena pilipes* (d). With respect to other synonyms of the aculeate, the insect Christius has figured for *A. retusa* (e)

(a) Tom. 6. tab. 7. fig. 1, 2, 3. It belongs to the fourth subdivision, of the second section, of my family *labio inflexo*. (\*\*. c. 2. 8).

(b) Reaum. ubi supr. Mem. 3. p. 60.

(c) DESCR. Acul. *Corpus* atrum, hirsutum. *Maxillæ* validæ, dilatatæ, apice extus bidentatæ, dente exteriori acuto. *Alæ* corpore longiores atro-violascentes. *Pedes* atri, tarsis rufis. *Abdomen* subglobosum, atrum, undique hirsutum, ventris scopâ disco fulvo.

Long. Corp. Lin. 7.

(d) *Melitta pilipes* of this work, vid. supr. p. 97, 98.

(e) Hymenopt. p. 119. tab. 9. fig. 4.

appears

appears to be a *Bombinatrix*, and I think represents one that I shall hereafter describe: his *A. rufipes* is the true *A. retusa*. Under the same name Miller, in the MSS. so often quoted by me, has noticed our *Apis*; to his definition, inserted amongst the synonyms, he adds this short description. "Tibiæ tarsique postici rufo vellere extus hirsuti." Ray appears to have described this bee twice, but as this may seem too bold an assertion to hazard with respect to a writer of his acknowledged accuracy, I shall assign my reasons at large for being of that opinion. The description he gives of his *Bombylius*, n. 4. so exactly suits our insect, that I think no one will deny them to be synonymous; the doubt will be attached to the other which I have quoted, viz. his *A. sylvestris muraria nigra*. His description of this, "Tota nigra est, corpore breviusculo, cruribus duntaxat postremis obscuro aurantii colore rubentibus," will suit our insect very well; but it is not so much upon this that I ground my opinion, as the following circumstance. This illustrious author informs us, that it makes its nest in walls and banks, and that it abounds at Kilby, near Hill Morton, in Northamptonshire (*f*). Now, in the beginning of July, 1797, in company with Mr. Marsham, at Wandsford and Ufford, in the northern part of the same county, I discovered *A. retusa* in the greatest abundance, frequenting the walls made of the

(*f*) Hist. Ins. p. 243.

stone

stone of that country (*g*): a strong proof, as his description agrees with ours, that we both mean the same insect. It is probable, that, in his travels, seeing this bee so plentiful about the walls, at the place above-mentioned, he took it for a different species from the one he had seen less frequent in other parts, and in a different situation. As some doubts, however, must still remain, without I could visit the very spot, where he found it, I have placed a query after this synonym.

The male of this *Apis* is so totally unlike the female, that it has been regarded by all authors, not excepting even Linneus himself, as a distinct species. In an interleaved edition of the *Systema Naturæ*, containing MS. notes of that great Naturalist, and now in the possession of the President of the Linnean Society, (who, with his accustomed liberality, has permitted me to copy such of them as relate to the present genus), I find it described under the name of *A. pennipes*, and placed next to *Melitta cunicularia*: upon the authority of Forster, it is said to be a native of North America: it is inserted, under the same name, in Forster's Catalogue of British Insects, published in 1770. Professor Pallas and Schrank, denominate it *A. plumipes*. Fabricius, and after him Panzer, call variety  $\alpha$ , *A. Hispanica* (*h*); and variety  $\beta$ , *A. pilipes*.

(*g*) Kettering stone.

(*h*) I am not quite certain that the *A. Hispanica* of Fabricius is synonymous with this; his description agrees: but ours in  
size

*lipis*. When the insect first makes its appearance in the spring, the down of the upper side of the body, the anus excepted, is of a reddish yellow, answering to the description and figure of the former; later in the year, when it has been long disclosed, this becomes cinereous, or greyish, and then it agrees with those of the latter. I suspect *A. cochlearipes* of Christius to be a different species, for there are several that are distinguished by similar pedes secundarii, although Panzer has referred to it as synonymous with *A. pilipes*. It is singular that an insect should be described under so many different names, and prove at last to be entitled to none of them. This point I shall now endeavour to prove as briefly as possible. When I first set out in my entomological career, I began to notice the motions of this *Apis*, and have continued to do so occasionally ever since. Early in the spring the male may generally be seen attendant upon his swarthy bride, fluttering round her, or hovering over her, while she, with great coolness, collects the honey from flower to flower, without bestowing any attention upon him: if she departs, he departs; and if she returns, he returns likewise. During the season of courtship, his whole employ-

size is greatly smaller than *A. virginica*. Panzer's certainly belongs to ours. Linneus, in the MS. notes mentioned above, has described another *Apis* under this name, which he received from Forster, in these terms: *Hispanica* A. nigra, abdomine testaceo apice nigro, segmentis duobus penultimis albis.

ment

ment seems to be to attend upon her; but when the halcyon days of love are over, like many other husbands, he goes about his business, and leaves her to take her flights in solitude. I was often entertained with this scene, before I was aware of any connection between these little creatures; but at length I could not help suspecting, in spite of the total want of resemblance between them, that they were different sexes of the same species: to ascertain this point, I examined anatomically a number of each; and found that the black ones were always aculeates, and the others as constantly males. I found both afterwards in the same nest, which has likewise been done, more than once, by my friends the Rev. Peter Lathbury, and Mr. James Trimmer. These circumstances furnish as strong presumptive evidence, in support of the fact I assert, short of seeing the sexes copulâ connexos, as can be desired. Ray, indeed, makes an observation with respect to the male, which seems, at first sight, to militate very strongly against the opinion here advanced: after describing it in terms which leave no doubt as to its being the same insect, he says: “In muris et aggeribus terrenis nidum pro fœtu constituit prioris nido (viz. A. sylvestris muraria nigra) similem, in quem substantiam quandam dulcem melle crassiorem ei nutriendo recondit (i).” This, however, is easily accounted for; he would certainly never dream of any connection

(i) P. 243.

between



between two insects so entirely unlike each other, without he had noticed some circumstances that might excite such suspicion; and therefore, of course, if he observed the male go into a nest, he would immediately conclude that it was peculiar to it, and so, vice versâ, with respect to the female. What he says with regard to the two nests being similar to each other in form, and built in the same situation, is a further proof of this.

70. A. hirsuto-fulva; ano nigro; plantis interme-<sup>Haworthi</sup>  
diis extrorsum barbatis. <sup>ana.</sup>

MUS. *D. Haworth, Davies.*

Long. Corp. Lin. 7.

*Hab.* In Angliâ, rarissima.

DESCR. Mas.

CORPUS atrum, supra hirsuto-fulvum.

CAPUT hirsuto-pallidum. *Maxillæ* nigræ, immaculatæ. *Labium* luteum, posticè utrinque puncto nigro. *Nasus* anticè pallidus, margine extimo nigro. *Antennæ* nigræ, scapo antorsum pallido.

TRUNCUS. *Thorax* disco piloso-nigricanti. *Pectus* hirsutie pallidâ. *Squamulæ* nigræ. *Alæ* hyalinæ, nervis nigris. *Pedes* atri. *Femora* antica cinereo-barbata, posteriora quatuor nigro. *Tibiæ* secundi et tertii parîs fulvo extus ciliatæ. *Pedes secundarii* posticis breviores, plantis pilis densis atris extrorsum fimbriatis.

*Digiti omnes rufescentes, articulo extimo apice dilatato, piceo.*

ABDOMEN atrum, pubescens, basi hirsuto-fulvum.

*In honorem D. Haworth, Generis Narcissus Monographi, Entomologiæ etiam studiosi, hanc Apem nominavi.*

This species, at first sight, strongly resembles the male of the preceding; but upon a close inspection, we find that its intermediate legs, instead of being longer, are shorter than the posterior; their plantæ, also, have only a dense beard of black hairs on one side, without any of those very long ones, along the whole of the tarsus on the other, which form a remarkable character of the male sex of that insect. Its maxillæ, likewise, have no yellow spot; and the anterior part of the nose alone is pale yellow, and not the whole face below the antennæ. The specimen from which I drew my description, is in the Museum of Mr. Haworth; I have since seen it amongst the English insects of Major Gen. Davies at Blackheath. I have by me two or three other exotic males, whose intermediate legs resemble those of *A. retusa* and *A. Haworthana*, in being, what Fabricius terms, fasciculato-pilosi.

*cyanea.* 71. *A. cæruleo-virens, glabriuscula, cylindrica; abdomine cuneiformi: ore masculo albo.*

FIG. *Acul. tab. 17. fig. 7. Mas. Ibid. fig. 8.*

*Apis cærulea cærulea, alis violaceo-fuscis.*

*Vill. Ent. Eur. 3. n. 89. tab. 8. fig. 25?*

MUS;

MUS. *Reginæ* (k), *D. Marsham; Kirby.*

Long. Corp. Lin. 3—2 $\frac{3}{4}$ .

*Hab.* Barhamiæ. In floribus *Jacobææ* tempore autumnali anni 1799 a me semel lecta.

DESCR. Acul.

CORPUS lineare, punctulatissimum, ex viridi cærulescens, glabriusculum, sub lente parvâ pube pallidâ pilosulum.

CAPUT. *Proboscis* valvulis incurvis (l), laciniis interioribus linearibus (m). *Labium* et *Maxillæ* nigra. *Antennæ* capite breviores, clavatæ, piceo-nigræ, apice articulo primo brevi, conico (n).

TRUNCUS supra disco læviusculo, nitidissimo. *Thorax* lineolis quinque longitudinalibus levissimè impressis notatus. *Squamulæ* atræ. *Alæ* fuscescentes, certo situ, apicem versus præcipuè, violascentes; nervis nigris. *Pedes* nigri, tibiis posticis scopâ parvâ pallidâ.

ABDOMEN cuneiforme (o), segmentis anticis margine auctis, depressiusculis. *Anus* obtusus, mucrone parvo instructus. *Venter* reliquo corpore longiùs pilosus.

Maris *Corpus* violaceum. *Labium* et *Nasus* alba. *Antennæ* desunt. *Squamulæ* piceæ. *Abdomen* segmento penultimo supra carinato apice mucronato, ultimo inflexo.

(k) The last row but one, the fourteenth specimen from the left hand.

(l) Tab. 11. d. 2. α. fig. 9. a. (m) Ibid. fig. 10. aa.

(n) Ibid. fig. 13. a. (o) Ibid. fig. 16.

This little insect varies somewhat from the characters of the present family, for the valvulæ, instead of being strait, are incurved; and the interior lacinix are not pointed at their tips; in general habit, also, it is unlike the rest of the individuals that compose this section. It is, however, more nearly related to this, than any other family; for it exhibits the following characters, which combined are peculiar to it: its exterior palpi, namely, consist of six articulations, and its interior of two; not to mention that the nose and lip, of the male, are of a different colour from those of the other sex, a circumstance which usually distinguishes the insects of this section. *A. cyanea* approaches so near to *A. cærulea* of Villers, that I strongly suspect it to be merely a variety of that insect; in that case it ought to be denominated by the name he has given it.

\*\* . d. 2.  $\beta$ .

*iricolor.* 72. *A. violacea*, supra glabra; alis nigricantibus.

FIG. *Drury. Ins. vol. 1. p. 108. tab. 45. fig. 3.*  
*Tab. 17. fig. 9.*

MUS. *D. Latham; Drury Spec. exot. Kirby Spec. exot.*  
Long. Corp. Lin. 8.

*Hab.* In Angliâ? *D. Latham.* Ex insulâ Jamaicensi  
allatam accepit *D. Drury.*

DESCR. Acul.

CORPUS violaceum, supra glabrum.

CAPUT

**CAPUT** punctatum, atro-pilosum. *Genæ* barbatae. *Antennæ* capitis ferè longitudine, nigrae, subtus pallidæ.

**TRUNCUS.** *Thorax* glaber, nitidissimus, iricolor, lineâ longitudinali intermediâ impressus, punctatus disco lævissimo. *Metathorax* et *Pectus* atro-pubescentia. *Squamulæ* violaceæ. *Alæ* fusco-nigræ. *Pedes* violacei, atro-hirti. *Plantæ* atræ, undique hirsutissimæ. *Digitî* piceî.

**ABDOMEN** subiricolor, latum, supra glabrum, punctulatum. *Anus* fimbriâ atrâ. *Venter* anum versus atro-hirtus.

This most beautiful insect is in Dr. Latham's cabinet, amongst his English *Apes*, but he does not recollect where it was taken, or upon what authority he considers it as English(o). It has been received from Jamaica by Mr. Drury, who has given an excellent figure of it, of which I was not aware when I caused it to be engraved for this work. I have also received it from Mr. Marsham. Its place ought to be next to *A. violacea*, Linn. which it a good deal resembles, except that, instead of black, its body is violet; and, on the contrary, the wings, instead of violet, are black. The prismatic hues upon the thorax are very brilliant; upon the abdomen they are much fainter. Since I wrote the natural character of this section, I find that the interior lacinia, of the insects that belong to it, are lineari-lanceolate, and shorter than the exterior.

(o) Vid. supr. vol. 1. p. 191.

*mellifica*. 73. A. corpore *femineo* pubescenti; thorace subgriseo; abdomine elongato, conico; alis corpore dimidio brevioribus; tarsis rufescentibus:

corpore *neutro* pubescenti; thorace subgriseo; abdomine subprismatico; plantis posticis intus transversè striatis:

corpore *masculo* pubescenti; trunco tomentoso-fulvescenti; oculis posticè conniventibus; alis corpore longioribus.

*Apis mellifica* pubescens, thorace subgriseo, abdomine fusco, tibiis posticis ciliatis, intus transversè striatis, *Lin. Syst. Nat. Ed. 12. & Gmel. p. 2774. n. 22. Fn. Suec. 1697.*

*Fab. Ent. Syst. Em. n. 58,*

*Vill. Ent. Eur. 3. n. 18.*

*Scop. Ent. Car. n. 811.*

*Schrank. Enum. Ins. Austr. n. 813,*

*Miüll. Zool. Dan. n. 1907.*

*Bergman, Act. Upsal. 1779. p. 310.*

*Ross. Fn. Etrusc. n. 912.*

*Forst. Cat. Brit. Ins. n. 719. Apis, n. 9.*

*Apis cerifera. Scop. Ann. Hist. Nat. 4. p. 16. n. 16.*

*Apis gregaria. Geoffr. Hist. Ins. 2. p. 407. n. 1.*

*Apis mellifera. Fourcroy, Ent. Par. n. 1.*

*Aldrovand. Ins. n. 20.*

*Apis domestica seu vulgaris alvearium, Rai. Hist. Ins. p. 240.*

FIG. *Mouffet, Ins. p. 1.*

*Jonst. Ins. 1. tab. 2,*

*Swanmerdam. Bib. Nat. tab. 17. fig. 1, 2. Operaria, 3, Femina. 4, Mas.*

*Reaum. tom. 5. tab. 22. fig. 1, Operaria, 2, Mas. 4, Femina,*

Femina. *tab. 25. fig. 1*, Operaria. 10, Mas. 16, 17,  
Femina.

*Christii Hymenopt. tab. 1. fig. 1*, Operaria. *tab. 2. fig.*  
1, Mas. 5, Femina.

*Harris. Exp. Eng. Ins. tab. 39. fig. 9*, Operaria. 10,  
Mas.

*Sulz. Ins. tab. 19. fig. 123.*

*Tab. 17. fig. 10*, Femina. 11, Mas. 12, Operaria.

MUS. Femina, *Kirby*. Operaria *museis ferè omnibus hospita-*  
*tatur*, Mas, *D. Marsham, McLeay, Kirby, &c.*

*Long. Corp. Fem. Lin. 8½. Operar. Lin. 6. Mas Lin. 7.*

*Hab.* In Angliâ. Inculta in arboribus cavis nidificat,  
sed rarissimè obvia, a D. Sowerby semel detecta;  
frequentius culta hospitatur. REGINA (Femina) uni-  
ca. FUCI (Mares) ad 1600. OPERARIÆ (Spadones)  
ad 20,000. Respublica Alvearii gynæocratica est,  
dum Femina imperans semper inclusa, operariorum  
custodum satellitio assiduè stipata, antennis obvium  
marem salutatur, insiliendoque comprimit cum illius  
vitâ dispendio; parit dein ova ad 40,000 sæpe quot-  
annis, in adaptatis favi cellis; his exclusis gradu se-  
cundo supra calorem æstatis consuetum adolescent  
Larvæ sextiduo, nent ad parietes cellas, operiuntur  
usque dum adultæ evolvant, alteroque die mellificant.  
Harum femina junior, per triduum omni horæ qua-  
drante, stridorem edit, eoque admonet emigraturum  
in examina gregem. Mares ignavum pecus, incurii  
apricantur serenis diebus, gulæ dediti. Spadones  
operarii, neutri, indefessi, mel e nectare, ceram e pol-  
line florum (*p*) sedulò legunt  $\frac{1}{4}$  milliaris spatio, quo-  
ties per cælum licet, reducant, favos cereos struunt  
sexangulâri-prismaticos, eosque melle replent, femi-  
nam mares pullosque nutriunt, cellas inhabitatas re-  
purgant, mirâ munditiâ impura auferunt, vigiliis et

(*p*) Hoc tamen negatur a D. Huber.

stationes ad portas instituunt, hostes arcent aculei ic-  
tu, maresque demum transactis nuptiis occidunt, ex-  
pellunt. Examinant emittendo colonias feminâ duce  
ad novas quærendas sedes superato solstitio æstivo.  
Hostes imprimis sunt *Myrmecophagæ*, *Mures*, *Ursus*  
*Arctos*, *Viverra Ratel*, *Motacilla alba*, *Merops Api-*  
*aster*, *Cuculus indicator*, *Picus viridis*, *Falco apivo-*  
*rus*, *Pavones*, *Hirundines*, *Bufones*, *Phalænæ mello-*  
*nella*, *cereana*, &c. *Apes fures*, *Vespæ*, *Pediculi*,  
*Aranea calycina*, fumus, frigus intempestivum, &c.  
*Tulipæ* flores captivant. Flores melliferi non omnes,  
præcipui sunt *Tetradynamia*, *Echii*, *Boraginis*, *Ver-*  
*basci*, *Serpylli*, (*Fabæ*, *Salicis*, *Aceris*, *Rubi*), &c.  
imprimis *Erica* Suecis et *Lunebergensibus*, *Fago-*  
*pyrum* Scanis, *Tilia* Polonis, *Rosmarinus* Narbonen-  
sibus, *Thymus* Atticis, *Arbutus* Corsis, *Absinthium*  
Sardis, *Aconitum* Ponticis, (*Rubus* Anglis), &c. hinc  
pretium varium mellis. Pan *Apum* vestitur a D.D.  
J. O. Hagstrom; historiam apum aut culturam dede-  
runt *Reaumur*, *Aubenton*, *de la Pluche*, *Albrecht*,  
*Riem*, *Huber*, *Wildman* aliique

—————ipsæ Regem parvosque Quirites

Sufficiunt, aulasque et cerea regna refigunt,

*Lin. Syst. Nat. Ed. Gmel.*

DESCR. Fem,

CORPUS fusco-nigrum, grisescente-pubescens.

CAPUT depressum. *Maxillæ* sordidè rufæ, api-  
ce bidentatæ, dente exteriori longiore acuto  
intus concavo, interiori truncato segmento cir-  
culi dempto (*q*), *Labium* rufescens. *Oculorum*  
pili, certo situ, aurei. *Antennæ* piceæ, pellu-  
cidæ, subtus pallidiores. *Facies* inæqualis,  
*Vertex* nigricanti-villosus.

(*q*) Tab. 12. e. 1. fem. fig. 4, 5.

TRUNCUS



**TRUNCUS** supra subvillosus, pube insuper parvâ pallidè aureâ, certo situ, micans. *Thorax* lineolâ intermediâ longitudinali posticè abbreviatâ exaratus. *Scutellum* prominens. *Squamulæ* piceæ. *Alæ* abdomine dimidio breviores, subtestaceæ; nervis rufis, costâ piceâ. *Pedes* piceo-nigri, griseo-villosi, geniculis tarsisque rufis. *Plantæ* posteriores apice segmento circuli dempto. *Scopulæ* auratæ, pilis brevissimis,

**ABDOMEN** glabrum, a latere conspectum pilis brevissimis decumbentibus pallidè aureis sericeum, segmento primo brevi, pubescente, omnibus apice rufescentibus. *Venter* sordidè rufus, subpubescens, segmento ultimo nigro.

**Neutri** *Maxillæ* nigrae, intus lineis duabus elevatis notatae (r). *Antennæ* nigrae, opacæ. *Thorax* densius pubescens. *Metathorax* villosiflavescens. *Squamulæ* nigrae. *Alæ* subhyalinae. *Pedes* nigri. *Tibiæ* posticæ supra inæquales longitudinaliter hinc concavæ, subtus tomentosæ. *Plantæ* posteriores supra lineâ longitudinali elevatiusculâ, extus pilis flavescens ciliatæ. *Scopulæ* auratæ, fulvæ. *Digiti* rufo-picei. *Abdomen* ex oblongo cordatum, segmentis duobus anticis pubescentibus, tribus proximis basi fasciâ tomentoso-pallidâ. *Anus* pube nigricanti subvillosus. *Venter* pubescens, basi sordide fulvus.

(r) Tab. 12. e. 1. neut. fig. 10, 11.

Maris

Maris *Corpus* densè tomentosogrisescens. *O*s  
 hirsutissimum. *Maxillæ* valdè barbatae apice  
 bidentatae, dente exteriori acuto, interiori  
 truncato(s), sub hirsutiae oris penitus occul-  
 tatae. *Labium* rufum. *Oculi* maximi, ovati,  
 pilosissimi, locum occipitis occupantes, ubi  
 confluent(t). *Stemmata* in angulum frontis,  
 paulò infra concursum oculorum, sita(u). *Antennæ*  
 nigro-piceae, opacae, nitidae. *Truncus*  
 supra tomento sordidè fulvescenti, brevi mol-  
 lis. *Scutellum* et *Metathorax* longiùs villosa.  
*Squamulae* nigrae. *Alae* magnae, corpore lon-  
 giores, hyalinae; nervis testaceis costà ferru-  
 gineâ. *Femora* quatuor anteriora hirsutissi-  
 ma. *Pedes* posteriores clavati, elongati(x),  
 supra glabri. *Tibiae Plantæque* posticae com-  
 presso-trigona, subtus hinc tomentosopallida.  
*Scopularum* pili breves, ferruginei. *Abdomen*  
 basi hirsutulum, segmentis margine decolori-  
 bus. *Anus* subinflexus, pubescens. *Venter*  
 pallidus, hirsutus.

My *Synopsis Specierum* was printed before I was  
 aware that there were other species, besides *A. mel-  
 lifica*, belonging to this section, and all distinguished  
 by "Plantæ posticae intus transversè striatae;" other-  
 wise I should have excluded this character from  
 my definition of the neuter.

(s) Tab. 11. \*\*. c. 1. fig. 3.

(t) Ibid. fig. 2. aa.

(u) Ibid. b.

(x) Ibid. fig. 8.

\*\* . c. 2.

74. A. hirsuto-flavescens; thorace fulvo,

Musco-  
rum.

*Apis Muscorum* hirsuta, fulva; abdomine flavo.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2782. n. 46. Fn.*

*Suec. 1714.*

*Fab. Ent. Syst. Em. n. 31.*

*Vill. Ent. Eur. 3. n. 100.*

*Schrank. Enum. Ins. Austr. n. 801.*

*Fn. Frid. n. 652.*

*Müll. Zool. Dan. n. 1924.*

*Ross. Fn. Etrusc. 2. n. 904.*

*Forst. Cat. Brit. Ins. n. 728. Apis, n. 22.*

*Bombylius* medius, dorso longis et densis pilis rufis vestito, mellificus vulgatissimus, in gramine nidum construens.

*Rai. Hist. Ins. p. 246. n. 3.*

*Apis senilis* hirsuta cinerea.

*Fab. Ent. Syst. Em. n. 44.*

*Lin. Syst. Nat. Ed. Gmel. p. 2784. n. 117.*

*Vill. Ent. Eur. 3. n. 113.*

FIG. *Reaum, tom. 6. Mem. 1. p. 32. tab. 2. fig. 1—3.*

*Bazin. Abregé, tab. 6. fig. 1—3.*

*Frisch. Ins. 9. tab. 26. fig. 8.*

*Schæffer. Icon. tab. 69. fig. 8.*

*Christii Hymenopt. Femina, p. 130. tab. 8. fig. 3. Operaria, p. 142. tab. 11. fig. 8.*

*Harris. Exp. Eng. Ins. tab. 38. fig. 6. tab. 40. fig. 17, 18.*

MUS. *D. Smith Linnean, Banks Mas var. γ, Marsham, Latham, Haworth, Trimmer, Lathbury, McLeay, Sowerby, Kirby.*

*Long. Corp. Lin. 5—10.*

*Hab. Barhamiæ, In pratis et graminosis frequentissima, In terræ cavitatibus e musco nidum struit.*

DESCR.

DESCR. Acul.

CORPUS hirsutie pallidè flavâ.

CAPUT. Os ferrugineo-barbatum. *Proboscis* trunci longitudine, palpis exterioribus acutis,

TRUNCUS. *Thorax* hirsutie rufo-fulva, *f.* aurantiacâ, tectus. *Squamulæ* rufo-piceæ. *Alæ* subcoloratæ, apice nervisque nigris. *Pedes* nigri, hirti. *Femora* densè flavido-barbata. *Corbicula* flavescens. *Scopulæ* ferrugineæ. *Spinulæ* castaneæ. *Digit*i picei.

ABDOMEN triangulare, supra hirsuto-fulvo-flavum.

*Var.* β minor; thoracis hirsutie dilutiori; alis coloratis, apice immaculatis; abdomine brevi, subgloboso. An eadem?

γ præcedenti similis, sed minor; abdomine triangulari.

δ thoracis hirsutie fuscâ, qui color ex pilis nigris fulvisque mixtis exoritur; magnitudine præcedentem æquiparat.

ε præcedentibus dimidio minor.

Maris *Maxillæ* supra pallidæ, barbâ nigricanti.

*Antennæ* thoracis ferè longitudine, articulis subarcuatis. *Scopulæ* fusco-nigræ. *Abdomen* angustius, ani extremitate nigro-villosâ.

*Var.* β tertiâ parte minor; spinulis atris; scopulis pallidioribus, vix auratis.

γ adultior, corpore toto hirsuto-cinerascenti.

Obs. In hâc varietate thorax paululim flavescit.

Of

Of these varieties I take  $\alpha$  to be the female;  $\gamma$  and  $\delta$  to be the neuters of the largest size ( $\gamma$ ); and  $\varepsilon$  the small neuter;  $\beta$  I suspect may be a distinct species, in size it is intermediate between  $\alpha$  and  $\gamma$ . Variety  $\beta$ , of the male, is considerably less than  $\alpha$ , but it differs from it very slightly in other respects; it may be the male of variety  $\beta$  of the other sex, but both are too similar to the rest to be separated, without a nest could be found, which contained them alone. Variety  $\gamma$ , of the male, is *A. senilis* of Fabricius, as appears by the specimen in Sir J. Banks's cabinet, which he labelled. The cinereous hue of its hirsuties is merely occasioned by age; the thorax, even in this, retains a tinge, very faint indeed, of its original colour.

75. *A. hirsuto-cinereus*; thorace, abdomineque, *Francil-*  
*lonella.*  
 fulvis.

*Bombylius* mediæ magnitudinis, toto corpore, tam tho-  
 race quam abdomine, sordidè rufo.

*Rai. Hist. Ins. p. 248. n. 13.*

FIG. *Tab. 17. fig. 13.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Trimmer,*  
*Lathbury, Kirby.*

Long. Corp. Lin. 4—5.

*Hab. Barhamiæ, præcedenti rarior.*

DESCR. Acul.

CORPUS hirsuto-cinereum.

CAPUT atro-subhirsutum. Os barbâ rufâ. *Pro-*

( $\gamma$ ) *Reaum. tom. 6. Pref. p. 5.*

*loscis*

*lascis* capite longior. *Facies* circa basin antennarum cinereo-villosa.

TRUNCUS supra hirsuto-fulvus. *Squamulæ* testaceæ. *Alæ* subcoloratæ, apice obscuriores, nervis ferrugineis costâ nigrâ. *Pedes* atrohirti. *Femora* barbâ cinerascenti. *Tibiæ* posticæ corbiculâ atrâ. *Scopulæ* fusco-nigræ. *Spinulæ* nigræ. *Digit*i rufo-picei.

ABDOMEN subglobosum, supra hirsuto-fulvum, basi penicillo pilorum cinerascentium utrinque ornatum.

*Var. β* minor; scopulis vix auratis; abdomine fasciâ obscurâ nigricanti.

D. Francillon, *cujus museum ditissimum stupendos insectorum thesauros, item quamplurimorum dilineationes accuratissimas exhibet, hoc insectum nomine insignitur.*

This insect would by many be placed aside as a variety merely of the preceding, which indeed, at first sight, it resembles much; a close inspection will, however, convince the skilful entomologist that it is distinct. The hair of its head, except what grows round the base of the antennæ, is black, as is also the corbicula of the posterior tibia; the abdomen is of a different form, and its hair is of the same colour with that of the thorax, not to mention slighter differences; besides, which I think is a strong argument, its smallest neuter is less than that of *A. muscorum*; so that were this admitted to belong to that species, it would have neuters of three different magnitudes.

76. A. hirsuto-flavescens; thorace fulvo; abdo-*floralis*.  
mine maculis, fasciisque atris.

*Apis fasciata* tota rufa, abdominis fasciis quatuor vel  
quinque nigris.

*Scop. Ann. Hist. Nat.* 4. p. 12. n. 7.

*Apis floralis*. *Lin. Syst. Nat. ed. Gmel.* p. 2785. n. 125.

FIG. *Harris. Exp. Eng. Ins tab. 40. fig. 13.* Acul.  
*Tab. 17. fig. 14.* Mas.

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury,*  
*Trimmer, Kirby.*

Long. Corp. Lin. 6—8.

*Hab.* Barhamiæ, in floribus frequens.

DESCR. Acul.

CORPUS hirsuto-flavescens.

CAPUT atro-subhirsutum, sed circa basin anten-  
narum pili succrescunt cinerei. *Proboscis* vix  
thoracis longitudine, palpis exterioribus acutis.  
*Os* rufo-barbatum.

TRUNCUS supra hirsutie rufo-fulvâ tectus. *Squa-*  
*mulæ* ferrugineæ. *Alæ* subhyalinæ, apice ob-  
scuriores; nervis nigricantibus. *Pedes* atri,  
hirti. *Femora* barbâ pallidâ. *Spinulæ* cas-  
taneæ. *Corbicula* atra. *Scopulæ* ferrugineæ.  
*Digit*i rufo-picei.

ABDOMEN subtriangulare, supra hirsutie e fulvo-  
flavescenti, segmento primo utrinque penicillo  
villorum flavidorum ornato, secundo maculis  
duabus lateralibus, proximis tribus fasciâ, atro-  
hirsutis.

*Var. ♀* abdomine hirsuto-fulvo, segmentis qua-  
tuor

tuor intermediis utrinque maculâ hirsutâ atrâ.

Maris *Caput* hirsuto-flavescens pilis sparsis, atris.

*Antennæ* thoracis longitudine, articulis subar-  
cuatis. *Abdomen* fasciis quatuor atris.

*Sowerbi-ana.* 77. A. hirsuto-flavescens; thorace, anoque, fulvis; abdomine fasciis duabus nigris.

MUS. *Kirby.*

Long. Corp. Lin. 6.

*Hab.* Barhamiæ, semel lecta.

DESCR. Mas.

CORPUS hirsuto-flavescens.

CAPUT pilis atris inter hirsutiem subflavam spar-  
sis. *Maxillæ* supra pallidæ, barbâ nigricanti.  
*Proboscis* vix thoracis longitudine.

TRUNCUS supra hirsuto-fulvus. *Squamulæ* tes-  
taceæ. *Alæ* subhyalinæ, apice obscuriores,  
nervis nigris. *Pedes* atro-hirti, femorum bar-  
bâ flavescenti. *Spinulæ* castaneæ. *Scopulæ*  
ferrugineæ. *Digit*i rufo-picei.

ABDOMEN subtriangulare, supra hirsutie sub-  
flavâ, segmento tertio quartoque fasciâ mediâ,  
angustâ, hirsutâ, atrâ. *Anus* hirsuto-rufus  
extremitate nigro-villosâ.

D. Sowerby, *Botanici periti, insectorum, atque  
rerum omnium naturalium, imprimis M. Bri-  
tanniæ indigenarum, collectoris indefessi, item  
pictoris eximii, hoc insectum nomen gerit.*

Its



Its red anus sufficiently distinguishes this from the male of the preceding species, which in many respects it resembles a good deal.

78. A. hirsuto-pallida; thorace anoque fulvis; abdomine fasciâ mediâ atrâ. Beckwithella.

MUS. D. Marsham, Latham, Haworth, McLeay, Lathbury, Trimmer, Kirby.

Long. Corp. Lin.  $4\frac{1}{2}$ —8.

Hab. Barhamiæ, in floribus satis frequens.

DESCR. Acul.

CORPUS hirsuto-pallidum, f. pallidè flavum.

CAPUT atro-subhirsutum, ast circa basin antennarum villi pallidi innascuntur. Os barbâ ferrugineâ. Proboscis capite longior.

TRUNCUS supra hirsutie rufo-fulvâ tectus. Squamulæ ferrugineæ. Alæ coloratæ, apice nervisque nigricantibus. Pedes atro-hirti, femorum barbâ pallidè flavâ. Spinulæ castaneæ. Scopulæ ferrugineæ. Digi rufo-picei.

ABDOMEN triangulare, segmento primo utrinque penicillo villorum flavescens notando, secundo basi hirsuto-rufo, margine tertioque atro-hirsutis. Ani hirsuties rufo-fulva.

Var. β dimidio minor.

Maris Caput hirsuto-flavescens, pilis atris sparsis succrescentibus. Maxillæ supra pallidæ. Antennæ thorace breviores, articulis subarcuatis. Alæ apice immaculatæ. Scopulæ fusconigræ. Anus extremitate nigro-villosus.

*Var. β duplo minor; digitis ferrugineis.*

*Obs. In utriusque sexus adultioribus thoracis et ani hirsuties cinerascit.*

*Memoriæ D. Beckwith Angli, Entomologi peritissimi, hoc insectum consecratur.*

This insect very much resembles *A. floralis*, but instead of four narrow ones, the abdomen is distinguished by one broad black band only; as each of these has, likewise, a male agreeing with it, I think I am justified in considering them as distinct species. Variety  $\beta$  of this sex is not half the size of  $\alpha$ . I have observed not seldom a variation in the size of individuals of this sex, which leads me to suspect that, in each nest, there may be two descriptions of males as well as of neuters.

*Curtis-  
ella.*

79. *A. hirsuto-pallida*; thorace fulvo; abdomine atro, basi rufescenti.

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin.  $4\frac{1}{2}$ — $5\frac{1}{2}$ .

*Hab.* Barhamiæ, cum præcedentibus, sed rarior.

DESCR. Mas.

CORPUS hirsuto-pallidum.

CAPUT hirsuto-flavescens, immistis pilis sparsis atris. *Maxillæ* supra pallidæ. *Antennæ* thoracis ferè longitudine, articulis subarcuatis.

TRUNCUS supra hirsuto-fulvus. *Squamulæ* ferruginæ. *Alæ* subcoloratæ, apice obscuriores; nervis ferrugineis, costâ piceâ. *Pedes* atro-hirti, femorum barbâ pallidâ. *Tibiæ* apice obscure

obscurè tomentosopallidæ. *Scopulæ* fusconigræ, vix auratæ. *Spinulæ* castaneæ. *Digiti* picei.

ABDOMEN hirsutum, atrum, basis hirsutie obscurè rufâ.

*Var.* β dimidio minor.

*Memoriæ Floræ Londinensis celeberrimi auctoris, D. Curtis, Botanici summi, et inter entomologos haud ulli secundi, sit hæc Apis sacra.*

80. A. hirsuto-albida; thoracis fulvescentis basi, *Forsterella.* abdominisque fasciis obscuris, nigricantibus.

MUS. *D. Marsham, Kirby.*

Long. Corp. Lin.  $4\frac{3}{4}$ .

*Hab.* Barhamiæ, cum præcedentibus in floribus obvia.

DESCR. Acul.

CORPUS hirsuto-albidum.

CAPUT atro-subhirsutum. Os barbâ ferrugineâ.

TRUNCUS supra hirsuto-fulvescens. *Thorax* anticè hirsutie nigricanti. *Squamulæ* ferrugineæ.

*Alæ* coloratæ, apice obscuriores; nervis ferrugineis, costâ piceâ. *Pedes* atro-hirti. *Spinulæ* castaneæ. *Scopulæ* fusco-nigræ. *Digit* ferruginei.

ABDOMEN subglobosum, hirsuto-cinerascens, fasciis tribus, obscuris, nigricantibus.

*Sit hoc insectum sacrum memoriæ D. J. R. Forster, qui inter alia studia plurimùm Entomologiæ se dedit, et lumine novo eam illustravit.*

*agrorum*. 81. *A. atra*, hirsuta; thorace, anoque, ferrugineis.

*Apis agrorum* hirsuta, atra, thorace toto anoque ferrugineis.

*Fab. Ent. Syst. Em. n. 29.*

*Lin. Syst. Nat. ed. Gmel. p. 2782. n. 109.*

*Vill. Ent. Eur. 3. n. 117.*

MUS. *D. Banks.*

Long. Corp. Lin. 7.

*Hab.* In Angliâ, rarissima.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT immaculatum.

TRUNCUS supra hirsutie ferrugineo-rufâ tectus.

*Alæ* coloratæ, apice obscuriores, nervis nigricantibus. *Pedes* atro-hirti.

ABDOMEN hirsutum, atrum, hirsutie basis obscurè rufâ. *Anus* ferrugineo-rufus.

This insect agrees very well with the description of Fabricius in every respect, except that it will not answer the epithet "magna." It may be a neuter.

*sylvarum*. 82. *A. hirsuto-pallida*; thorace inter alas, abdomineque fasciis, nigris, ano rufescenti.

*Apis sylvarum* hirsuta, pallida, thoracis fasciâ nigrâ, ano rubro.

*Lin. Syst. Nat. Ed. 12. n. 45. Fx. Suec. 1713.*

*Scop. Ent. Car. n. 822.*

*Vill. Ent. Eur. 3. n. 99.*

*Apis sylvarum*, hirsuta pallida, thoracis fasciâ, abdomineque posticè nigris, ano rufo.

*Fab. Ent. Syst. Em. n. 27.*

*Lin.*

*Lin. Syst. Nat. Ed. Gmel. p. 2782. n. 45.*

*Bombylius minor*, lanugine albicante vestitus, caudâ rufescente.

*Rai. Hist. Ins. p. 247. n. 9?*

**FIG.** *Apis scylla. Christii Hymenopt. p. 129. tab. 8. fig. 1.*

*Barbut. Gen. Insect. tab. 15. Apis, fig. 4, 5?*

*Tab. 17. fig. 15, fem. ibid. fig. 16, mas.*

**MUS.** *D. Smith Linnean, Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury, Trimmer, Sowerby, Kirby.*

*Long. Corp. Lin. 4½—7½.*

*Hab.* Barhamiæ, in floribus tempore autumnali frequentissima.

**DESCR.** Acul.

**CORPUS** hirsuto-pallidum.

**CAPUT** flavescente-subhirsutum. *Os* barbâ ferrugineâ. *Proboscis* vix thoracis longitudine, *palpis* exterioribus acutis. *Vertex* atro-pilosus.

**TRUNCUS** supra limbo hirsuto-flavescenti, disco nigro. *Squamulæ* piceæ. *Alæ* subcoloratæ, apice nervisque nigris. *Pedey* pallido-hirti. *Apophyses* secundariæ articulo extimo subtus insuper pube obscure ferrugineâ mollis. *Spinulæ* castaneæ. *Corbicula* pallida. *Scopulæ* ferrugineæ. *Digit*i rufo-picei.

**ABDOMEN** triangulare, segmento primo villorum pallido-flavescentium penicillo magno utrinque insignito; secundo hirsuto, pallido, utrinque maculâ atrâ, tertio atro margine pallido. *Anus* fasciis hirsutis, pallidis rufisque alternis, variegatus. Segmentum ultimum ferrugineo subtomentosum.

*Var. β* dimidio minor; spinulis nigricantibus; abdomine segmento secundo maculis nigris lateralibus obsoletis.

*γ* præcedenti dimidio minor; abdomine segmento secundo immaculato, hirsutie obscurè fulvâ tecto, proximis duobus basi hirsutis, atris.

*δ* abdomine fasciâ unicâ hirsutâ atrâ, alias *γ* simillima, et ejusdem magnitudinis.

*ε* præcedenti minor, aliàs simillima.

*Obs.* *In hac saltem varietate, si non in reliquis, in adultioribus, corporis toti hirsuties fit cinerea, etiam ani; trunci disco, abdominisque fasciâ mediâ, hirsutis, atris. In omnibus apophyses secundariæ articulo secundo subtus, vel potius antrorsum, tomentoso-ferrugineo, sed hoc tomentum sub hirsutie longiori pallidâ plerumque delitescit.*

*Maris Maxillæ* barbâ rufescenti. *Antennæ* thoracis ferè longitudine, articulis subarcuatis. *Spinulæ* nigræ. *Scopulæ* dilutiores. *Abdomen* segmento secundo quartoque fasciâ atrâ.

*Var. β* abdomine fasciâ atrâ-unicâ.

The insect I have just described is the genuine *A. sylvarum* of Linneus, as appears from the authentic specimen, but it is not the *A. sylvarum* of Schrank and Rossi, which we shall shortly notice; *A. Scylla* of Christius seems intended for it, although his figure, if so, is very inaccurately coloured. It is rather doubtful whether this be the insect

insect Ray meant by his *Bombylius*, n. 9, although I think that most probably it is; his description is too short to enable me to determine with certainty. Linneus has expressed the colour of the anus of this bee by the term *ruber*, and Fabricius by *rufus*, but it really exhibits alternate fasciæ of rufous and pallid, a mixture of colours which Linneus, upon some occasions, denominates *griseus*(z). The reader will observe that  $\beta$ ,  $\gamma$ , and  $\epsilon$ , varieties of the neuter, differ from each other in size, which will give three dimensions of that sex; may not  $\delta$  and  $\epsilon$ , which, except in that respect, are exactly similar, belong to a distinct species?

83. A. supra hirsuto-flava; thoracis fasciâ atrâ. *fragrans*.

*Apis fragrans* hirsutâ flava, thorace fasciâ nigrâ.

*Pallas. It. 1. p. 474. n. 75.*

*Lin. Syst. Nat. Ed. Gmel. p. 2783. n. 111.*

*Apis pratorum. Fab. Ent. Syst. Em. n. 34.*

*Vill. Ent. Eur. 3. n. 111.*

MUS. D. *Marsham, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 8.

*Hab.* Barhamiæ, in floribus tempore autumnali, sed rara. Recens insectum odore rosarum flagrans.

DESCR. Mas.

CORPUS supra hirsutie densâ flavâ, subtus rariore pallidâ tectum.

CAPUT hirsuto-nigricans. *Proboscis* vix thorace longior, palpis exterioribus acutis. *Maxille* barbâ nigrâ. *Frontem* penicillus villorum

(z) For instance in the description of *Silpha grisea*.

flavescentium ante antennas signat. *Occiput* hirsutie flavâ. *Antennæ* thoracis longitudine, articulis subarcuatis.

TRUNCUS. *Thorax* fasciâ hirsutâ inter alas atrâ. *Pleuræ* flavo-hirsutæ. *Squamulæ* nigræ. *Alæ* subhyalinæ, apice paulò obscuriores, nervis ferrugineis, crassioribus nigris. *Pedes* atri, hirti. *Femora* hirsuto-cinerea. *Spinulæ* castaneæ. *Scopulæ* ferrugineæ. *Digit*i rufi.

ABDOMEN oblongum, hirsutie densâ viridi-flavâ vestitum.

This insect is beyond a doubt *A. fragrans* of Professor Pallas, which Fabricius, for what reason I cannot conjecture, has called *A. pratorum*, giving the name of *A. arbustorum* to that which he mistook for the Linnean *A. pratorum*. Pallas says, "fæminæ odore roseo. flagrantissimæ." I have never met with a female or neuter; but the male, which with us is now and then to be met with in the autumn, has the same agreeable scent.

*Latreille*  
*ella.*

§4. *A.* supra hirsuto-flava; thorace inter alas, abdomineque fasciis duabus, atris.

FIG. *Apis Maura. Christi Hymenopt. p. 131. tab. 8. fig. 8?*

MUS. *D. Marsham, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin.  $7\frac{1}{2}$ .

*Hab.* Barhamiæ. In *Carduis*, præcedente frequentior, roseum odorem spargens.

DESCR. Mas.

CORPUS supra hirsutie subflavâ, subtus cinereâ, tectum,

CAPUT



**CAPUT** atrum, subhirsutum. *Maxillæ* barbâ nigricanti. *Frons* ante antennas fasciculo vil-  
lorum pallido insignita. *Antennæ* thorace  
breviores, articulis subarcuatis.

**TRUNCUS.** *Thorax* anticè pilis fulvo-flavis den-  
siùs hirsutus, posticè atris rariùs. *Scutellum*  
flavescenti-subhirsutum. *Squamulæ* piceæ.  
*Alæ* subhyalinæ, apice paulò obscuriores, ner-  
vis nigricantibus. *Pedes* atri, hirti, femorum  
barbâ pallidâ. *Spinulæ* nigræ. *Scopulæ* et  
*Digit*i ferruginea.

**ABDOMEN** triangulare, supra hirsuto-flavescens,  
segmento secundo tertioque fasciâ atrâ.

*In honorem D. Latreille Galli, in entomologiâ  
doctissimi, operis ingeniosissimi, quod charac-  
teres insectorum novos tradit, auctoris.*

*A. Latreillella* is not unlike the preceding in-  
sect, and has the same remarkable scent of roses ;  
but it is also a male, is smaller, its abdomen is of a  
different form, and is distinguished by two narrow  
black bands, which are scarcely separated by a few  
pale yellow hairs; these circumstances furnish a  
sufficient warrant for my considering it as distinct.  
*A. maura* of Christius comes very near to this, if  
it be not altogether the same.

§5. *A.* supra hirsuto-flava; thorace inter alas, ab-*Rossiella.*  
dominisque fasciâ, atris.

*Apis sylvarum* hirsuta pallida, thoracis fasciâ nigra; ab-  
domine basi nigro,

*Schrank.*

*Schrank. Enum. Ins. Austr. n. 807.*

*Ross. Fn. Etrusc. n. 906.*

FIG. *Schæff. Icon. tab. 241. fig. 7, 8.*

*Tab. 18. fig. 1.*

MUS. *D. Marsham, M<sup>c</sup>Leay, Haworth, Trimmer, Lathbury,  
Sowerby, Kirby.*

Long. Corp. Lin.  $6\frac{1}{2}$ .

*Hab. Barhamiæ. In floribus haud rara.*

DESCR. Mas.

CORPUS supra hirsutie flavâ, subtus atrâ, tectum.

CAPUT subglobosum, hirsuto-aterimum. *Vertex* et *Occiput* flavo-villosa. *Antennæ* vix thoracis longitudine, articulis subarcuatis.

TRUNCUS supra cingulo hirsuto-aureo, quod etiam pleuras pertingit, anticè insignis, dein fasciâ latâ atrâ, scutello flavescenti. *Squamulæ* piceo-nigræ. *Alæ* coloratæ, apice nigricantes; nervis ferrugineis, costâ piceâ. *Pedes* atri, hirti. *Spinulæ* castaneæ. *Scopulæ* ferrugineæ. *Digit*i rufo-picei.

ABDOMEN triangulare segmento primo utrinque penicillo pilorum flavescentium instructo, secundo pilis atris, sed rariùs, hirsuto, reliquis hirsutie, densâ satis, lætè flavâ vestitis. *Ani* extremitas nigro-villosa.

Obs. *In adultioribus hirsutiei jucunda flavedo valde obscuratur, et ad cinereum vergit.*

Faunæ Etruscæ docti auctoris hæc Apis condecoratur nomine.

Age,

Age, as I have before observed, makes a great alteration in the colour of the hirsuties of the *Bombinatrices*. The bright and beautiful yellow, which adorns the insect before us when recently disclosed, fades, in such as are old, to a pale, dirty yellow. From a specimen in this state, Schrank probably drew his description, for I have no doubt of this being his *A. sylvarum*. A specimen of this insect in my cabinet, has one leg covered with cinereous hairs, while those of the other five are black.

86. *A. atra*, hirsuta; thorace anticè, scutello, ano-*Leeana*.  
que, flavis.

MUS. *Kirby*.

Long. Corp. Lin.  $6\frac{1}{2}$ .

*Hab.* Barhamiæ; semel capta.

DESCR. Mas.

CORPUS atrum, hirsutum.

CAPUT subglobosum, totum atrum. *Antennæ*  
vix thoracis longitudine, articulis subarcuatis.

TRUNCUS supra anticè hirsuto-sulphureus, qui  
color in pleuras incurrit, dein ater, scutello  
obscurè flavo. *Squamulæ* picææ. *Alæ* sub-  
coloratæ, apice obscuriores; nervis ferrugi-  
neis, costâ picæâ. *Pedes* atri, hirti, *Spinulæ*  
castaneæ. *Scopulæ* ferrugineæ. *Digit*i rufo-  
picei.

ABDOMEN triangulare, hirsutum, segmentis du-  
obus anticis atris, reliquis sulphureis. *Ani* ex-  
tremitas atra.

*Memoriæ*

*Memoriæ D. Lee de Hammersmith, et Filiæ, qui insecta quamplurima rarissima, tam exotica quam indigena, colligebant, hæc Apis inscribitur.*

*A. Leeana* is extremely similar to the preceding species but the hair of its vertex, and of the anterior half of its abdomen, is black. Both are of the same sex. Of the two, this is much the most rare.

Francis 87. *A. atra*, hirsuta: ano flavescenti.  
ana.

MUS. D. Marsham, Early.

Long. Corp. Lin.  $5\frac{1}{2}$ — $6\frac{1}{2}$ .

Hab. Barhamiæ, bis capta.

DESCR. Mas.

CORPUS atrum, hirsutum.

CAPUT subglobosum, immaculatum. *Antennæ* thoracis vix longitudine, articulis subarcuatis.

TRUNCUS supra hirsuto-nigricans. *Squamulæ* piceæ. *Alæ* subcoloratæ, nervis, excepto costali piceo, ferrugineis. *Pedes* atri, hirti. *Spiriculæ* nigræ. *Scopulæ* ferrugineæ. *Digiti* picei

ABDOMEN subtriangulare, segmento penultimo et antepenultimo subinterruptè hirsuto-flavescens.

*In honorem Rev. D. Francis Jungermanniarum Angliæ futuri elucidatoris, qui et in Entomologiâ multùm necfrustra sudavit.*

The whole hirsuties of this bee is black, except a subinterrupted yellowish band at the tail. I suspect

pect one of the three species that I have described last, to be the male of that which I am next to notice, but as I know not which to fix upon, I must leave that point undecided till I can meet with the nidus. These three exactly resemble each other in form and habit, differing only in the colour of their hirsuties, whence a suspicion arises in my mind, that after all they may turn out to be varieties only of the same species.

88. *A. atra*; hirsuta; thorace anticè, scutello, <sup>campes-</sup>  
anoque inflexo utrinque, flavis; abdomine <sup>tris.</sup>  
subgloboso.

FIG. *Apis campestris* hirsuta nigra: thorace flavo fasciâ atrâ:  
abdomine nudo nitido, apice elongato acuminato,  
alis nigricantibus.

*Panzer. Fn. Ins. Germ. Init. n. 74. tab. 11.*

*Tab. 18. fig. 2.*

MÛS. *D. Marsham, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 8.

*Hab. Barhamiæ. In floribus tempore vernali et æstivo, e rarioribus una.*

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPT subtriangulare, immaculatum. *Maxillæ*  
forcipatæ.

TRUNCUS supra hirsuto-flavescens, fasciâ inter  
alas atrâ. *Squamulæ* nigræ. *Alæ* fusces-  
centes, apice nervisque nigris. *Pedes* atrî,  
hirti. *Tibiæ* posticæ supra pilosæ, nec cor-  
biculâ nec pectine instructæ. *Spinulæ* nigræ.

*Plantæ*

*Plantæ* posteriores absque auriculâ. *Scopulæ* ferrugineæ, subauratæ. *Digiti* rufo-picei.

ABDOMEN, in mortuo saltem, subglobosum, nitidum; segmentis tribus anticis atro-subhirsutis. *Anus* incurvus, flavo subinterruptè hirsutus, segmento ultimo glabro, inflexo, subacuminato.

This insect, although it does not entirely agree with Panzer's description, is most accurately represented by his figure of his *A. campestris*, so as to leave no doubt of their identity: if my figure of it had not been taken when I received the number which contains his, I should have omitted it as unnecessary. The aculeate of this bee, as well as of two or three others of the present section, has no corbicula, nor is the apex of its posterior tibiæ furnished with a pecten, or its plantæ with an auricle at their base, like the other *Bombinatrices*.

*lucorum*. 89. *A.* supra hirsuto-flava; ano albido; thorace fasciâ nigrâ.

*Apis lucorum* hirsuta flava, ano albido.

*Lin. Syst. Nat. Ed. 12. ♂ Gmel. p. 2783. n. 48. Fn.*

*Suec. n. 1716.*

*Fab. Ent. Syst. Em. n. 35.*

*Vill. Ent. Eur. 3. n. 102.*

*Miill. Zool. Dan. n. 1926.*

*Schrank. Enum. Ins. Austr. n. 808.*

*Apis Hypnorum. Ross. Fn. Etrusc. 2. n. 905. Var. β.*

FIG. *Apis cæspitum* hirsuta atra: thorace citrino medio nigro: abdomine albo anticè citrino.

*Panzer. Fn. Ins. Germ. Init. n. 81. tab. 19. Var. β.*

MUS.

MUS.  $\alpha$  D. Smith Linnean, Kirby.  $\beta$  D. Marsham, Latham, Haworth, Trimmer, Lathbury, Kirby.

Long. Corp. Lin. 7.

Hab. Barhamiæ,  $\alpha$  rarissima a me semel lecta;  $\beta$  copiosissimè flores adit hortorum tempore autumnali.

DESCR. Mas.

CORPUS supra hirsutie flavâ, subtus flavescenti, tectum.

CAPUT subtriangulare, hirsutum. *Maxillæ* barbâ rufescenti. *Antennæ* capite longiores, articulis rectis.

TRUNCUS supra *Pleuræque* hirsutie densâ fulvo-flavâ tecta, fasciâ inter alas nigricanti. *Squamulæ* piceæ. *Alæ* subhyalinæ, apicè paulò obscuriores; nervis ferrugineis, costâ piceâ. *Pedes* hirti, pilis pro situ, nunc pallescentibus, nunc sordidè subnigris. *Femora* barbâ flavescenti. *Tibiæ* posticæ supra glabriusculæ, spinulis castaneis. *Scopulæ* ferrugineæ. *Digiti* picei.

ABDOMEN oblongum, hirsuto-flavum, segmentis duobus intermediis fasciâ angustâ obscurâ nigrâ. *Anus* albido-hirsutus.

*Var.  $\beta$*  corpore supra hirsuto-citrino; abdomine segmentis duobus anticis citrinis, proximis duobus nigris, ano albo.

Obs. *In hâc varietate segmenta duo intermedia a latere conspecta interdum albescunt.*

This is the true *A. lucorum* of Linneus, as appears upon a comparison of it with the authentic specimen

specimen in the cabinet.  $\beta$ , although at first sight it appears distinct, upon a close inspection will be found to be merely a variety of  $\alpha$ . The former of these has been mistaken by Rossi for *A. Hypporum*, Linn. (which is a very different insect ( $\alpha$ ), and approaches nearer to *A. Muscorum* and *Beckwithella*), it is extremely well figured by Panzer under the name of *A. cæspitum*. Of the latter, I have seen only the single specimen, except the Linnean, which I have in my own cabinet. The black band of the thorax, in the authentic specimen, is nearly obsolete.

*Jonella.* 90. *A. hirsuto-flava*, ano albo; thorace abdomine-  
que fasciâ atrâ.

MUS. *Kirby*.

Long. Corp. Lin:  $6\frac{1}{2}$ .

*Hab.* Prope Londinum, a D. Trimmer semel lecta, et  
mihi transmissa.

DESCR. Mas.

CORPUS hirsuto-citrinum.

CAPUT. *Maxillæ* barbâ rufâ. *Vertex*, item  
*Genæ* posticè, atro-villosus. *Antennæ* capite  
longiores, articulis supra rectiusculis, subtus  
convexis.

TRUNCUS supra hirsuto-citrinus, fasciâ inter alas  
atrâ. *Squamulæ* piceæ. *Alæ* subcoloratæ,  
nervis piceis. *Pedes* atri, hirti, femorum barbâ

( $\alpha$ ) See Christii Hymenopt. tab. 9. fig. 7. which is one of the  
best figures of that author.

citrinâ.



citrinâ. *Spinulæ nigricantes*. *Scopulæ ferrugineæ*. *Digiti picei*.

ABDOMEN triangulare, breve, segmento primo utrinque penicillo pilorum citrinorum ornato, proximis tribus hirsutis atris, ano albido. *Venter* basi rariùs nigro hirsutus, apice sordidè albus.

*In honorem D. Jones, Entomologi periti, et Lepidopterorum pictoris exquisiti, qui Papilionum ordines solerter et subtiliter illustravit (b).*

91. A. atra, hirsuta, ano albo; thoracè anticè, *hortorum*, scutello, abdominisque basi, flavis; capite elongato.

*Apis hortorum* hirsuta, nigra, thoracè abdomineque anticè flavo, ano albo.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2781. n. 42. Fn. Suec. 1710.*

*Vill. Ent. Eur. 3. n. 96.*

*Schrank. Enum. Ins. Austr. n. 797.*

*Fn. Frid. n. 649.*

*Röss. Fn. Etrusc. n. 903.*

*Forst. Cat. Brit. Ins. n. 725; Apis, n. 19.*

*Apis ruderata* hirsuta atra, thoracè flavo fasciâ atrâ, abdomine anticè flavo, ano albo.

*Fab. Ent. Syst. Em. n. 10.*

*Lin. Syst. Nat. ed. Gmel. p. 2781. n. 105.*

*Vill. Ent. Eur. 3. n. 107.*

*Apis paludosa* hirsuta nigra, thoracè anticè posticèque, abdomine anticè, flavis: ano albo.

*Müll. Zool. Dan. n. 1919.*

(b) Linn. Trans. vol. 2. p. 63—9.

*Apis nigra*, thoracis basi et apice, abdominisque basi flavis, ano albo.

*Geoffr. Hist. Ins. 2. p. 418. n. 25.*

*Apis Hypnorum. Fourcroy. Ent. Par. n. 26.*

*Bombylius major*, niger, ano albo, cum triplici transversâ areolâ luteâ, linguam in 5 filamenta longa nigra divisam fulvam ex ore exerens.

*Rai. Hist. Ins. p. 248. n. 11.*

*Mouffet. Theatr. p. 53. fig. dextr. infim.*

FIG. *Schæff. Icon. tab. 9. fig. 7.*

*Apis ruderata. Christii Hymenopt. p. 128. tab. 7. fig. 4.*

MUS. *D. Smith Linnean, Marsham, McLeay, Latham, Haworth, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 6—10.

*Hab. Barhamiæ. In floribus hortorum, vulgatissima ferè omnium.*

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT anticè productum (c). Os ferrugineo-barbatum. *Lingua involuta*, corporis ferè longitudine.

TRUNCUS. *Thorax anticè cingulo denso, hirsuto-flavo, quod pleuras attingit. Scutellum hirsutie flavâ. Squamulæ rufo-piceæ. Alæ subhyalinæ, apice obscuriores, nervis piceis costâ nigrâ. Pedes atri, hirti. Tibiæ posticæ nigro-piceæ. Spinulæ castaneæ. Scopulæ ferrugineæ. Digiiti picei, articulo extimo rubello.*

ABDOMEN triangulare, segmento primo penicillis duobus villorum citrinorum tecto, prox-

(c) Tab. 13. fig. 9.

imis,

imis duobus hirsutis, atris, *Anis* hirsutó-  
 albus, apice subacuminatus.

*Var. β* major; abdominis basi utrinque maculá  
 citriná; villi flavéscentes etiam albedini ani  
 incumbunt.

*γ* dimidio minor; thoracis cingulo scutel-  
 loque citrino.

*δ* præcedente dimidio minor, aliàs simillima.

Maris *Maxillæ* pallidæ, barbâ nigrâ. *Antenna*  
 thoracis ferè longitudine, articulis subarcuatis.  
*Thorax* cingulo scutelloque citrinis. *Tibiæ*  
 posticæ nigræ. *Scopulæ* fuscæ. *Anus* apice  
 extremó atro-villosus.

*Var. β* thoracis cinguli, scutelli, abdominisque  
 flavediné valde obscurâ et ferè evanidâ.

Linneus, in his description of this insect, takes  
 no notice of the yellow hairs which cover its scu-  
 tellum. This circumstance induced Fabricius to  
 consider another as *A. hortorum*, and to give this  
 as a new species under the name of *A. ruderata*.  
 It is, however, the genuine *A. hortorum*, as appears  
 upon a comparison of it with the authentic speci-  
 men of the Linnean cabinet. The Fabrician *A.*  
*hortorum* stands by it, but without a label. The  
 synonymis of Scopoli seem to belong to a variety of  
*A. terrestris*, for he describes it in these terms:  
 “Thorace anticè flavo; abdomine fasciâ flavâ:  
 apice albo (*d*).” To suit the insect before us, or

(*d*) Ent. Car. n. 817. Ann. Hist. Nat. 4. p. 10. n. 2.

that which has been mistaken for it, it ought to be "abdomine basi flavo." Miiller, in his *Zoologia Danica*, has described this *Apis* under the name of *A. paludosa*: of course his *A. hortorum* is another, most probably synonymous with that of Fabricius. The *A. hortorum* of Christius (e), as far as I can judge from his figure, is no *Bombinatrix*.

The head of this species is much longer, in proportion to its width, than is usual in this family, in shape it bears no faint resemblance to the head of a dog, while others, with very little stretch of the imagination, may, in this respect, be regarded as similar to the cat.

Ray seems at a loss to conceive what can be the use of the complex machinery of the proboscis; we, who know the admirable art and contrivance manifested in the construction of this organ, need not wonder, but we shall be inexcusable if we do not adore.

rim-  
shirana.

92. *A. atra*, hirsuta, ano albo; thorace anticè, scutello, abdominisque basi, flavis.

MUS. *D. Marsham, Haworth, Trimmer, Kirby.*

Long. Corp. Lin. 4—5.

*Hab.* Barhamiæ in floribus, sed rara.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT triangulare (f). Os barbâ rufâ. *Lingua*

(e) *Hymenopt. p. 140. tab. 11. fig. 3.*

(f) *Tab. 13. fig. 10.*

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thoracis

thoracis longitudine. *Occiput* villorum flavorum fasciculo ornatum.

TRUNCUS. *Thorax* anticè cingulo hirsuto-citrino, quod pleuras pertingit. *Scutellum* citrinum. *Squamulæ* rufo-piceæ. *Alæ* subhyalinæ, nervis nigricantibus. *Pedes* atri, hirti. *Spinulæ* castaneæ. *Scopulæ* ferrugineæ. *Digit*i picei.

ABDOMEN triangulare, segmento primo villorum citrinorum penicillo utrinque instructo, proximis duobus atro-hirsutis, ano albo.

Maris *Maxillæ* pallidæ, barbâ nigrâ. *Antennæ* thoracis longitudine, articulis subarcuatis. *Scopulæ* fuscæ. *Anus* segmentis duobus ultimis atro-villosis.

*In honorem D. Schrimshire fratrum.* "Arcades ambo."

This little bee is very liable to be confounded with the preceding, but it may always be known by the shape of its head, which, like that of most other *Bombinatrices*, represents an equilateral triangle, with rounded angles. The last segment of the abdomen, of the aculeate, is likewise shorter.

93. A. atra, hirsuta, ano albo; vertice, thorace antice, scutelloque, fulvis; abdomine subgloboso. *Barbutella.*

*Bombylius* major niger, duplici in supinâ parte areâ, anteriore latiore e fulvo albicante, posteriore angustâ albicante.

*Rai. Hist. Ins. p. 248. n. 17. Acul. Var.?*

MAS. Var.  $\beta$ .

*Apis autumnalis* hirta, thorace cinerascente fasciâ nigra;  
abdomine atro basi cinerascente, ano albo.

*Fab. Ent. Syst. Em. n. 43.*

FIG. *Apis saltuum* hirsuta atra; thorace albo fasciâ nigra;  
abdomine anticè anoque albis.

*Panzer. Fn. Ins. Germ. Init. n. 75. tab. 21.*

*Apis monacha. Christii Hymenopt. p. 131. tab. 8. fig. 7.*

MUS. *D. Marsham, M<sup>c</sup>Leay, Haworth, Trimmer, Lath-  
bury, Kirby.*

*Long. Corp. Lin. 6--9.*

*Hab. Barhamiæ. In floribus tempore æstivo haud  
rara. Mas in Carduis frequens.*

## DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT subglobosum. Os barbâ nigricanti.

*Lingua* thoracis longitudine. *Maxillæ* forcipatæ. *Vertex* et *Occiput* fulvo-villosa.

TRUNCUS. *Thorax* anticè hirsuto-fulvus. *Scutellum* hirsutie sordidè fulvescenti. *Squamulæ* nigrae. *Alæ* fuscæ, apice nigrae; nervis nigricantibus. *Pedes* atri, hirti. *Tibiæ* posticæ supra pilosæ, neque corbiculâ neque pectine instructæ. *Plantæ* posteriores absque auriculâ. *Spinulæ* castaneæ. *Scopulæ* fuscae. *Digiti* piceï.

ABDOMEN subglobosum, incurvum, rariùs hirsutum, segmento primo villis certo situ flavescens utrinque instructo. *Anus* hirsuto-albidus, segmento ultimo glabro, inflexo, subacuminato.

Maris

Maris *Maxillæ* pallidæ, barbâ nigrâ. *Antennæ* capite longiores, articulis rectiusculis. *Vertex* villis citrinis. *Thorax* anticè fasciâ citrinâ. *Squamulæ* piceæ. *Alæ* dilutiores, venis tenuioribus testaceis. *Spinulæ* nigræ. *Scopulæ* ferrugineæ, vix auratæ. *Abdomen* triangulare, subacuminatum, segmento primo villorum flavidorum, penicillo utrinque ornato. *Anus* albus, extremitate nigro-villosus, haud inflexus.

*Var. β* adultior; thoracis fasciâ, scutello, abdominisque basi hirsuto-cinerascentibus.

*γ* thoracis basi et apice obscurè flavescens; abdominis basi immaculatâ.

Obs. *In quibusdam scutellum nigricat.*

*In honorem D. Barbut, qui Insectorum et Vermium Genera figuris illustravit.*

This insect exhibits the same peculiar characters as *A. campestris*. *A. autumnalis* of Fabricius, *A. saltuum* of Panzer, and *A. monacha* of Christianus appear to me to be all intended for variety *β* of the male. This variety is common late in the year upon thistles, and is nothing more than *α* grown grey from age: its wings, when it is in this state, will always be found to be torn at their tips. The synonym of Ray, n. 15. I refer to the aculeate of this *Apis*, because he says, "Superior area lata est, et mediâ parte in angulum excurrit ad frontem," which is exactly the case with ours. His description was probably taken from a specimen in which the hair was faded.

*Tunstall-91. A. atra, hirsuta, ano albo; thorace anticè scutelloque fulvescentibus.*

## ACUL. Var. ε.

*Apis veterana hirsuta cinerea, thorace fasciâ nigrâ.*

*Fab. Ent. Syst. Em. n. 45?*

MUS. *D. Marsham, Latham, McLeay, Haworth, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ —10.

*Hab. Barhamiæ, cum præcedentibus frequens.*

## DESCR. Acul.

CORPUS atrum, densè hirsutum.

CAPUT anticè productum. Os ferrugineo barbatum. *Lingua* vix corpore brevior.

TRUNCUS. *Thorax* anticè fasciâ hirsutâ, haud latâ, fulvâ. *Scutellum* hirsuto-fulvum. *Squamulæ* piceæ. *Alæ* infuscatae, apice obscuriores. *Pedes* atri, hirti. *Spinulæ* nigræ. *Scopulæ* ferrugineæ. *Digit*i picei, articulo extimo rubello.

ABDOMEN ex oblongo triangulare, mollissimè hirsutum et quasi velutinum, ano albido.

*Var. β* ano hirsutie grisescenti.

*γ* dimidio minor; alis subhyalinis apice nigris; digitis ferrugineis; aliàs α similis.

*δ* præcedenti dimidio minor; thoracis cingulo scutelloque citrinis; alis subhyalinis; digitis ferrugineis.

*ε* adultior, præcedentis fere magnitudine; thorace antice, scutello, abdomineque, hirsuto-cinerascentibus.

Obs,



Obs. *Abdominis hirsuties in hac varietate a latere conspecta est cinerea, a dorso e cinereo nigricat.*

*Memoriæ D. Tunstall rerum naturalium collectoris assidui, hæc Apis inscribitur.*

*A. Tunstallana* possesses many characters in common with *A. hortorum*. The female, however, is larger, the hair of its scutellum, and of the anterior part of its thorax, is tawny, and not yellow, and that which covers the first abdominal segment is black; its wings are darker, and its abdomen inclines more to an oblong form. Variety  $\epsilon$ , and which is in fact merely  $\delta$  long disclosed, agrees with the description of *A. veterana* of Fabricius.

95. *A. atra*, hirsuta, ano albo, apice nigro; thorace *vestalis*. basi flavo.

*Apis nigra*, thoracis basi flavâ, ano supra flavo apice albo.

Geoffr. *Hist. Ins. Par.* 2. p. 419. n. 26.

*Apis vestalis*. Fourcroy. *Ent. Par.* n. 26.

FIG. *Tab.* 18. *fig.* 3. Acul. *Ibid.* *fig.* 4. Mas.

MUS. D. *Marsham, Latham, Drury, Haworth, Lathbury, Trimmer, Kirby.*

Long. *Corp. Lin.* 7—9.

*Hab.* *Barhamiæ, florente Farfarâ obvia, sed haud frequens. Prope terram sæpius volat.*

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT subglobosum. *Maxillæ forcipatæ.*

TRUNCUS supra cingulo antico, hirsuto, fulvo-flavo ornatus. *Squamulæ atræ. Alæ paulò infuscatæ,*

infuscatæ, apice nervisque nigricantibus, venis tenuioribus testaceis. *Pedes* atrî, hirti. *Tibiæ* posticæ neque corbiculâ, neque pectine instructæ. *Spinulæ* castaneæ. *Plantæ* absque auriculâ. *Scopulæ* vix auratæ, ferrugineæ. *Digiti* tomentoso-rufi.

ABDOMEN ex globoso oblongum, incurvum, hirsutum, segmento tertio margine utrinque flavo, quarto toto quintique lateribus albidis, ultimo glabro, nitido, inflexo, subacuminato.

*Var. β* dimidio minor.

Maris *Antennæ* thorace breviores. *Abdomen* fasciâ posticâ hirsuto-albâ. *Anus* ipse nigro-hirsutus.

This is again another of those *Bombinatrices*, which, like *A. campestris* and *Barbutella*, have no instruments for carrying or preparing masses of pollen. The posterior tibiæ, of one specimen in my cabinet, is covered from one end to the other with a thin coat of pale earth, mixed with particles of sand; they probably use this in constructing their nests or cells. This species was known to Geoffroy, who has described it with great accuracy in the following terms: "Cette grande espèce est noire. Le haut ou la base de son corcelet a une bande de poils jaunes citrons. Les deux tiers supérieurs du ventre sont noirs, ensuite il y a quelques poils jaunes, et son extrémité est blanche. Les ailes sont brunes." He has neglected, however, to notice the black extremity of the anus.

96. *A. atra*, hirsuta, ano albo; thoracis cingulo, *virginalis* abdominisque segmentis duobus anticis, flavis.

*Apis* nigra, thoracis abdominisque basi flavis; ano albo.

*Geoffr. Hist. Ins. Par. p. 418. n. 24.*

*Apis virginalis. Fourcroy. Ent. Par. n. 25.*

*Apis hortorum. Fab. Ent. Syst. Em. n. 22.*

*Mill. Zool. Dan. n. 1918.*

MUS. *D. Smith* Linnean, *Marsham*, *McLeay*, *Haworth*, *Trimmer*, *Kirby*.

Long. Corp. Lin.  $4\frac{1}{2}$ —7.

*Hab.* Barhamiæ, in floribus cum sequente obvia.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT subglobosum. Os barbâ rufescenti. *Proboscis* vix thoracis longitudine, palpis exterioribus acutis.

TRUNCUS. *Thorax* anticè densè hirsutus, fulvo-flavus. *Squamulæ* piceæ. *Alæ* subhyalinæ, apice paulò obscuriores, nervis nigris, tenuioribus testaceis. *Pedes* atri, hirti. *Spinulæ* ferrugineæ. *Scopulæ* fuscæ, sub luce argentatæ. *Digiti* obscurè ferruginei, articulo extimo dilutiori.

ABDOMEN subglobosum, hirsutum, segmento primo villorum flavescentium penicillo utrinque ornato, secundo citrino, tertio atro, ano albido.

*Var. β* minor; abdomine segmenti primi penicillis nigris, segmento quarto etiã atro.

Maris

Maris *Maxillæ* pallidæ. *Antennæ* capite longiores, articulis rectiusculis. *Truncus* supra cingulo antico-hirsuto, citrino. *Pleuræ* citrino-villosæ. *Tibiæ* posticæ supra vix pilosæ. *Scopulæ* ferruginæ. *Abdomen* segmentis duobus anticis hirsutis citrinis, proximis duobus atris, ano albo.

Obs. *Feminam* nondum vidi, *mas* neutro duplo major.

This, I take to be the insect which Fabricius looked upon as *A. hortorum* of Linneus. The tuft of yellow hairs, which is observable on each side of the first dorsal segment of the abdomen, is sometimes black, which brings this species very near to *A. terrestris*. In that, however, the whole of this segment is hairy, and not the sides only; its abdomen is also proportionably longer, and the scopulæ are of a different colour; not to mention, that in one, the exterior palpi are acute, and in the other, truncate. I have not yet met with the female of this species, but Geoffroy knew it.

*terrestris*. 97. *A. atra*, hirsuta, ano albo; thoracis basi, abdominisque fasciâ, flavis.

*Apis terrestris* hirsuta-nigra, thorace cingulo flavo, ano albo.

*Lin. Syst. Nat. Ed. 12, & Gmel. p. 2781, n. 41. Fn. Suec. 1709.*

*Fab. Ent. Syst. n. 8.*

*Vill. Ent. Eur. 3. n. 95.*

*Scop. Ent. Car. n. 815. Ann. Hist. Nat. 4, p. 10, n. 3.*

*Fn.*

*Fn. Frid. n. 648.*

*Müll. Zool. Dan. n. 1917.*

*Ross. Fn. Etrusc. 2. n. 902.*

*Forst. Cat. Brit. Ins. n. 724. Apis, n. 18.*

*Berkenhout. Synops. 1. p. 159. n. 6.*

*Apis hortorum. Scop. Ent. Car. n. 817. Ann. Hist. Nat. 4. p. 10. n. 2?*

*Bombylius magnus niger, duplici in dorso areâ transversâ fulvâ, caudâ albâ.*

*Rai. Hist. Ins. p. 248. n. 15. Acul: α.*

*Bombylius major niger, duplici transverso ductu luteo, alio supra scapulas torquis loco, alio per medium abdomen; imo abdomine f. ano albo.*

*Rai. Hist. Ins. p. 247. n. 5. Mas α.*

**FIG.** *Mouffet. Theatr. p. 53.*

*Goedart. Ins. 2. tab. 46. List. Goedart. fig. 105.*

*Bradley Nat. tab. 26. fig. 1. D.*

*Reaum. tom. 6. Mem. 1. p. 2. tab. 3. fig. 1.*

*Frisch. Ins. 9. tab. 12. fig. 1.*

*Sulz. Ins. tab. 19. fig. 124.*

*Schæff. Icon. tab. 251. fig. 7. Fund. Ent. tab. 20. fig. 6.*

*Christii Hymenopt. p. 117. tab. 7. fig. 2.*

*Barbut. Gen. Insect. tab. 15. Apes, fig. 2.*

*Panzer. Fn. Ins. Germ. Init. n. 1. tab. 16.*

**MUS.** *D. Smith Linnean, Marsham, M<sup>c</sup>Leay, Haworth, Sowerby, Lathbury, Trimmer, Kirby.*

**ACUL.** *Var. γ. ε.*

*Apis Graminum hirsuta atra, thoracis basi, abdominisque fasciâ anoque, fulvis.*

*D. Marsham. MS.*

*Bombylius maximus, niger, caudâ fulvâ, areolâ etiam fulvâ transversâ abdomen supinum dividente.*

*Rai. Hist. Ins. p. 247. n. 6. Var. ε.*

**FIG.** *Sebæ Thesaur. 4. tab. 96. fig. 7.*

*Harris. Exp. Eng. Ins. tab. 38. fig. 1—4.*

*Apis*

*Apis terrestris. Barbut. Gen. Ins. tab. 15. Apes, fig. 1.  
Donovan. Eng. Ins. tab. 88. fig. 1.*

MUS. *D. Marsham, Haworth, Trimmer, Lathbury, Kirby.*

Long. Corp. Lin. 6—10.

*Hab. Barhamiæ. Sub terrâ profundè nidum ponit.  
Circa cacumina Pseudoplatani tempore inflorescentiæ  
vesperæ volitant frequentes, sonorè bombilantes.  
Florente Salicæ feminâ prodit.*

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT ex triangulari subglobosum. Os barbâ  
rufescenti. *Proboscis* vix capite longior, pal-  
pis exterioribus attenuatis apice obliquè trun-  
catis (*g*).

TRUNCUS. *Thorax* anticè hirsutie densâ fulvo-  
flavâ. *Squamulæ* nigræ. *Alæ* coloratæ, apice  
obscuriores, nervis nigricantibus, tenuioribus  
ferrugineis. *Pedes* atri, hirti. *Spinulæ* et  
*Scopulæ* ferrugineæ. *Digit*i tomentoso-ru-  
fescentes.

ABDOMEN oblongum, densè hirsutum, basi  
atrum, dein fasciâ fulvo-flavâ, medio iterum  
atro, ano albo.

*Var. β* minor; thoracis basi flavâ; alis subhy-  
alinis apice nigricantibus.

*γ* major; thoracis basi, abdominis fasciâ  
mediâ, anoque, fulvis.

*δ* ano pallido, aliàs *γ* similis,

*ε* thorace atro, immaculato, aliàs *γ* simillima.

(*g*) Tab. 13. fig. 3. *l.* & fig. 4.

Obſ.

Obs. *Fasciæ thoracicæ rudimenta, tamen valdè obscurata et ferè evanida, retinet hæc varietas.*

Maris *Maxillæ pallidæ, barbâ rufescenti. Thorax hirsutie anticâ pallidè flavâ f. luteâ. Tibiæ posticæ supra glabriusculæ, pilis lateralibus cinerascentibus. Scopulæ fuscæ. Abdomen subglobosum, fasciâ mediâ pallidè flavâ f. luteâ.*

*Var. β thoracis basi, abdominisque fasciâ, fulvis; ano pallido.*

Obs. *Hujus Apis palpi exteriores longiores quàm vulgè obtinet in hâc familiâ.*

I had followed my friend Mr. Marsham in considering variety  $\gamma$  as a distinct species, on account of its tawny anus, at the same time still suspecting from its great similarity in other respects to *A. terrestris*, that it might be merely a variety of that insect. Reaumur's observation upon this species, gave strength to this suspicion—"Ceux (les poils) de la troisième (bande) ou du bout du corps, sont blancs ou jaunâtres (*h*)," says he; and receiving information from Mr. James Trimmer, that he had found this in the same nest with  $\alpha$ , I was convinced at last that my suspicion was well founded, and that it ought only to be considered as a sexual variety. I take it to be the female, from the circumstance of its making its appearance early in the spring. The synonym of Ray belongs to one that retains the faintest trace possible of the yellow band

(*h*) Reaum. tom. 6. Mem. 1. p. 34.

of the thorax, and which, indeed, is scarcely visible to the naked eye. I have a specimen of this in my cabinet: it furnishes an instance of the tendency of these insects to vary, even such as have been recently disclosed, (for of this description is my specimen), in the colour of their hirsuties. If the band vanishes from the thorax, it may vanish, likewise, for aught we know, from the abdomen; in that case,  $\alpha$  would become *A. soroensis*, Fab. I mention this, to shew how very liable we are to err in our determination of species in this family. Ray has given the male and common aculeate as distinct species, misled by the different hue of the anterior part of the thorax, and of the abdominal band, which in the one is pale, and in the other tawny-yellow. These, however, in variety  $\beta$  of the male, are also of the latter colour, but  $\alpha$  is the most common. I have often been amused, at the time of the sycamore's being in flower, with seeing these insects, by myriads, busily engaged upon its very summit, in collecting honey and pollen from its blossoms, and making a hum that might be heard at a considerable distance, and this even after sun set. They are as alert in the morning; I have frequently seen them at work in my garden, when the gooseberry was in blossom, before seven o'clock.

*Soroensis*. 98. *A. atra*, hirsuta, ano albo.

*Apis Soroensis hirsuta atra, ano albo.*

*Fab. Ent. Syst. Em. n. 12.*

*Lin.*



*Lin. Syst. Nat. Ed. Gmel. p. 2781. n. 107.*

*Vill. Ent. Eur. 3. n. 109.*

*Apis Cardui hirsuta nigra, ano albo.*

*Müll. Zool. Dan. n. 1929.*

FIG. *Schæff. Icon. tab. 251. fig. 6.*

*Panzer. Fn. Ins. Germ. Init. n. 7. tab. 11.*

MUS. *D. Haworth, Kirby.*

Long. Corp. Lin.  $5\frac{1}{2}$ —10.

*Hab.* Prope Londinum, a D. Haworth et Trimmer lecta.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT anticè productum. Os barbâ rufâ.  
*Proboscis* vix corporis longitudine.

TRUNCUS anticè utrinque puncto obsolete flavo.  
*Squamulæ* piceæ. *Alæ* paulò infuscatae, apice  
nervisque nigricantibus. *Pedes* atri, hirti.  
*Spinulæ* nigrae. *Scopulæ* ferrugineæ. *Digitii*  
picei.

ABDOMEN ex triangulari oblongum, hirsutum,  
aterrimum, ano albido.

*Var. β* triplo minor, tibiis posticis corbiculâ pal-  
lidâ, scopulis fuscis; digitis ferrugineis.

This insect may possibly be only a variety of *A. Tunstallana*, which it greatly resembles; but  $\alpha$  is a specimen recently disclosed, therefore the hirsuties cannot have changed its colour from age; and as that is almost the only mark in this family, short of the inspection of the nest, by which we have to steer our course, I have, with Fabricius, given it as distinct,

*subinterrupta*. 99. *A. atra*, hirsuta, ano fulvo; thoracis basi abdominisque fasciâ anticâ; flavis.

*Apis subinterrupta*. MS. D. Marsham.

*Apis nigra*, thoracis abdominisque basi flavis; ano fulvo.

Geoffr. *Hist. Ins.* 2. p. 417. n. 23. Var.  $\gamma$ .

*Apis regalis*. Fourcroy. *Ent. Par.* n. 24.

*Bombylius medius niger* ano fulvo *f. rufo*, cum duplici transversâ areâ luteâ, alterâ supra scapulas, alterâ per medium abdomen.

Rai. *Hist. Ins.* p. 247. n. 10.

FIG. Schæff. *Icon.* tab. 250. fig. 4.

*Apis bistrigata*. Christii *Hymenopt.* p. 128. tab. 7. fig. 3.

Tab. 18. fig. 5. Acul.

MUS. D. Marsham, Haworth, Lathbury, Trimmer, Kirby.

Long. Corp. Lin. 6—8½.

*Hab.* Barhamiæ. In Salicum amentis incunte Aprilis 1800, haud rara.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT. Os rufo-barbatum. *Lingua* vix corpore brevior. *Palpi* exteriores tenues.

TRUNCUS. *Thorax* anticè densè hirsutus, fulvo-flavus. *Squamulae* piceo-nigræ. *Alae* subcoloratæ, apice obscuriores, nervis nigricantibus. *Pedes* atri, hirti. *Spinulae* nigræ. *Scopulae* ferrugineæ. *Digiti* picei.

ABDOMEN oblongum, hirsutum, segmento primo atro, secundo subinterruptè flavo, proximiis duobus quintique basi atris, ano fulvo.

*Var.  $\beta$*  abdominis fasciâ flavâ ferè absolutâ.

$\gamma$  duplo minor; thoracis basi, abdominisque segmentis

segmentis duobus anticis subinterruptè, citrinis; squamulis rufo-piceis.

Obs. *In hac varietate basis intimæ abdominis pili atrii. An eadem?*

Maris *Caput* subglobosum. *Maxillæ* barbâ nigricanti. *Antennæ* capite longiores, articulis rectiusculis. *Squamulæ* nigræ. *Alæ* venis tenuioribus ferrugineis. *Tibiæ* intermediæ hinc barbâ albidâ. *Spinulæ* castaneæ. *Digiti* obscurè ferruginei.

100. A: atrâ, hirsuta, ano rufo; thoracis abdominisque basi flavâ; *Donovanella.*

FIG. *Tab. 18: fig. 6. Mas.*

MUS. *Kirby.*

Long. Corp. Lin.  $5\frac{3}{4}$ — $7\frac{1}{2}$ .

*Hab. Bahamiarum. In floribus rara.*

DESCR. *Acul.*

CORPUS atrum, hirsutum.

CAPUT. *Os* barbâ rufescenti.

TRUNCUS. *Thorax* anticè hirsuticè densâ citrinâ. *Squamulæ* nigræ. *Alæ* fuscæscentes, apicè nervisque nigricantibus. *Pedès* atrii, hirti. *Spinulæ* nigræ. *Scopulæ* ferrugineæ. *Digiti* picei.

ABDOMEN ex triangulâri subglobosum, hirsutum, basi latè citrinum, dein fasciâ atrâ, segmentis tribus ultimis rufis.

Maris *Antennæ* thoracis longitudine. *Thorax* fasciâ citrinâ anticâ obscuriori. *Digiti* ferruginei.

*In honorem D. Donovan, qui Insectorum, Avium, Conchyliorum M. Britanniae Historiam Naturalem figuris et observationibus illustravit, necnon Insecta Chinensia et Indiae Orientalis exquisitissimè figuravit.*

This insect approaches very near to *A. subinterrupta*, but the wings are darker, the abdomen is shorter and wider, its black band is much narrower, the red hairs of the anus are of a deeper colour, and occupy three segments.

*Burrell-ana.* 101. *A. hirsuto-flava*, ano fulvo; thoracis abdominisque subglobosi fasciâ atrâ.

*Apis flava*, abdominis medio nigro, ano fulvo.

*Geoffr. Hist. Ins. 2. p. 418. n. 23. NB.*

*Apis regalis* β. *Fourcroy. Ent. Par. n. 24.*

FIG. *Schæff. Icon. tab. 261. fig. 5, 6.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 6.

*Hab.* Barhamiæ. In floribus hortorum haud rara.

DESCR. Mas.

CORPUS hirsuto-citrinum.

CAPUT. *Maxillæ* barbâ fulvescenti. *Antennæ* thoracis longitudine, articulis rectiusculis.

TRUNCUS supra anticè latè hirsuto-flavus. *Thorax* inter alas ater. *Squamulæ* nigræ. *Alæ* subcoloratæ, apice obscuriores, nervis piceis. *Pedes* flavescente-hirti. *Femora* quatuor posteriora pallido barbata, anteriora citrina. *Spi-  
nulae*

*mulæ* nigræ. *Scopulæ* fuscæ, vix auratæ.  
*Digiti* picei.

ABDOMEN subglobosum, hirsutum, segmentis duobus anticis citrinis, intermediis totidem atris, ano fulvo. *Venter* hirsutie pallidâ.

Obs. *In adultioribus corporis hirsuties plûs minûs cinerascit.*

*In honorem* Rev. D. Burrell, *insectorum collectoris assidui.*

Geoffroy gives this as a variety of *A. subinterrupta*, but we know the male of that insect, which is very different, and quite distinct from this.

102. *A. hirsuto-pallida*; ano ferrugineo; thoracis *Cullum-ana.*  
abdominisque fasciâ atrâ.

MUS. Kirby.

Long. Corp. Lin.  $6\frac{1}{2}$

*Hab.* Witneshamiæ prope Gippovicum in Suffolciâ, semel capta.

DESCR. Mas.

CORPUS hirsuto-pallidum, *f.* pallidè flavum.

CAPUT. *Maxillæ* barbâ pallidâ. *Vertex*, *Occiput* utrinque, *Genæ* posticè, atro pilosa. *Facies* ante antennas fasciculo denso villosopallido insignita. *Antennæ* trunci ferè longitudine, articulis subarcuatis.

TRUNCUS. *Thorax* faciâ inter alas atrâ. *Squamulæ* piceæ. *Alæ* subhyalinæ, nervis nigricantibus. *Pedes* pilis atris cinereisque mixtis hirti. *Spinulæ* castaneæ. *Scopulæ* fuscæ, vix auratæ. *Digiti* nigro-picei.

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A 3

ABDOMEN

ABDOMEN ex ovato oblongum, hirsutum, segmentis duobus anticis flavescentibus, intermedio atro, ano ferrugineo.

*In honorem D. T. G. Cullum, Baronetti, viri amicissimi, et Naturæ indagatoris docti, indefessi.*

It is probable that in a recent specimen (that from which this description was drawn, having apparently been some time disclosed) the hirsuties of the body of this species would be of a lemon colour. It differs from the preceding in the form of its abdomen, and of the joints of its antennæ, and only one abdominal segment is black.

*pratorum*. 103. A. atra, hirsuta, ano fulvo; thorace anticè flavo.

*Apis pratorum* hirsuta nigra, thorace anticè flavo, ano rubro.

*Lin: Syst. Nat. Ed. 12. & Gmel. p. 2781. n. 43. Fn. Suec. n. 1711.*

*Vill. Ent. Eur. 3. n. 97.*

*Schrank: Enum. Ins. Austr. n. 798.*

*Fn. Frid. n. 650.*

*Müll. Zool. Dan. n. 1920.*

*Forst. Cat. Brit. Ins. n. 720. Apis, n. 20.*

*Bombylius minor* niger, transversâ areolâ e viridi luteâ supra scapulas, extremâ caudâ rufescente.

*Rai. Hist. Ins. p. 247. n. 8.*

FIG. *Harris. Exp. Eng. Ins. tab. 40. fig. 9.*

MUS. D: *Smith Linnean, Marsham, Latham, McLeay, Haworth, Lathbury, Trimmer, Kirby.*

*Long. Corp. Lin. 4—7.*

*Hab. Barhamiæ. In hortis flores Ribis, et Rubi idæi vulgatissima adit.*

DESCR.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT. *Proboscis* vix thorace longior. *Os* barbâ rufescenti.

TRUNCUS. *Thorax* basi hirsutie densâ flavâ. *Squamulæ* piceæ. *Alæ* fuscæ, apice paulò obscuriores, nervis nigris. *Pedes* atrî, hirti. *Spinulæ* nigræ. *Scopulæ* ferrugineæ. *Digiti* obscurè ferruginei.

ABDOMEN oblongum, hirsutum, atrum, ani extremitate fulvâ.

*Var.*  $\beta$  dimidio minor; scopulis fuscis.

$\gamma$  præcedenti duplo minor; alis subcoloratis nervis ferrugineis; abdomine subgloboso.

Obs. *In plerisque rudimenta, obscurissima tamen, fasciæ anticæ flavescentis abdomen exhibet.*

This is the genuine *A. pratorum* of the Linnean cabinet; *A. arbustorum* of Fabricius, which he gives as *A. pratorum*, is a different insect, as we shall see hereafter. I have a strong suspicion that the one before us is nothing more than a variety of *A. sub-interrupta*, before described, for a very faint trace of a yellow fascia is observable upon the abdomen of  $\alpha$  and  $\beta$ , but not upon  $\gamma$ ; this last is the smallest *Bombinatrix* with which I am acquainted.

104. *A. atra*, hirsuta, ano rufo; thoracis limbo, *Albinella* abdominisque lateribus, cinerascentibus.

FIG. *Apis frutetorum* hirsuta nigra, thorace cinerascente fasciâ nigrâ, abdomine basi cinerascente, ano fulvo.

Panzer. *Fn. Ins. Germ. Init. n. 75. tab. 20.*

MUS. D. Marsham, Trimmer, Lathbury, Kirby.

Long. Corp. Lin. 7.

*Hab.* Barhamiæ. In floribus tempore autumnali, rarior tamen.

DESCR. Mas.

CORPUS atrum, hirsutum.

CAPUT subglobosum. *Maxillæ* barbâ nigricanti. *Antennæ* thorace breviores, articulis rectiusculis.

TRUNCUS supra limbo cinerascenti. *Squamulæ* piceæ. *Alæ* fuscæ, nervis nigricantibus. *Pedes* fulvescente-hirti, femorum barbâ nigrâ. *Spinulæ* nigræ. *Scopulæ* obscurè ferrugineæ. *Digiti* nigri.

ABDOMEN ex globoso ovatum, hirsutum, segmento primo secundique margine utrinque cinerascens. *Anus* acutiusculus, rufus.

*Var. β* thorace atro basi obscurè flavescens; pedibus hirsutis sordidè nigricanti.

I had printed my *Synopsis Specierum* before I saw Panzer's figure of this insect, or I should have given it under the same name, I suspect it may be the male of one I shall shortly describe. Its abdomen is narrower at the base than is usual in this family. Variety *β* may possibly be the male of a different species. Its trunk, instead of being surrounded with cinereous hairs, has only an obscure yellowish band next the head, and the base of the abdomen,



abdomen, except it be viewed *a latere*, appears black, with a cinereous spot on each side. In form, however, and habit it agrees with  $\alpha$ .

105. *A. hirsuta*, fusco-cinerascens, ano fulvo; tho-<sup>Derham-</sup>  
racis abdominisque fasciâ atrâ. <sup>ella.</sup>

FIG. *Harris. Exp. Eng. Ins. tab. 38. n. 4?*

MUS. *D. Marsham, Haworth, Trimmer, Kirby.*  
Long. Corp. Lin. 6.

*Hab. Barhamiæ, haud rara.*

DESCR. Mas.

CORPUS hirsutum, hirsutiae fusco-cinereâ.

CAPUT triangulare, atro-hirsutum. *Antennæ*  
thoracis longitudine, articulis subarcuatis.  
*Facies* circa antennis pilis cinereis nigrisque  
mixtis.

TRUNCUS. *Thorax* inter alas ater, item *Pleuræ*  
posticè. *Squamulæ* piceæ. *Alæ* subhyalinæ,  
nervis piceis. *Pedes* pilis fusco-cinereis, ast  
certo situ nigris, hirti, tibiis plantisque qua-  
tuor posticis hinc rufescente-ciliatis. *Spinulæ*  
nigræ. *Scopulæ* *Digitique* fusco-ferruginea.

ABDOMEN ex globoso ovatum, hirsutum, seg-  
mentis duobus anticis fusco-cinereis, tertio  
atro, reliquis fulvis.

106. *A. corpore femineo* atro, hirsuto, ano rubro: *lapidaria.*  
*corpore masculino* supra atro, hirsuto, ano  
rubro; facie, thoracisque basi et apice,  
flavis.

ACUL;

## ACUL.

*Apis lapidaria* hirsuta, atra, ano fulvo.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2782. n. 44. Fn. Suec. n. 1712.*

*Vill. Ent. Eur. 3. n. 98.*

*Scop. Ent. Car. n. 813. Ann. Hist. Nat. 4. p. 10. n. 1.*

*Schrank. Enum. Ins. Austr. n. 799.*

*Frisch. Ins. 9. p. 25. n. 2.*

*Pod. Ins. Græc. p. 110.*

*Fn. Frid. n. 651.*

*Miill. Zool. Dan. n. 1921.*

*Geoffr. Hist. Ins. 2. p. 417, n. 21.*

*Fourcroy. Ent. Par. n. 22.*

*Forst. Cat. Brit. Ins. n. 727. Apis, n. 21.*

*Apis lapidaria* hirsuta, atra, ano fulvo, alis albo-hyalinis,  
*Fab. Ent. Syst. Em. n. 25.*

*Bombylius maximus* totus niger, exceptis duobus extremis abdominis annulis rubris.

*Rui. Hist. Ins. p. 246. n. 1.*

FIG. *Mouffet. Theatr. p. 53. fig. sinistr. infim.*

*Reaum. tom. 6. Mem. 6. p. 2, 3. tab. 1. fig. 1—4.*

*Schæff. Icon. tab. 69. fig. 9.*

*Christii Hymenopt. p. 126. tab. 7. fig. 1.*

*Barbut. Gen. Insect. tab. 15. Apes, fig. 3.*

*Harris. Exp. Eng. Ins. tab. 38. fig. 1. tab. 40. fig. 12, 15.*

*Donovan. Eng. Ins. tab. 108. fig. 1. tab. 58. fig. 2. Var. β.*

*Shaw. Natural. Miscell. n. 135. tab. 454.*

*Apis pratorum. Christii Hymenopt. p. 141. tab. 11. fig. 5. Var. β.*

MUS. *D. Smith Linnean, Marsham, Latham, McLeay, Halloworth, Lathbury, Trimmer, Kirby.*

## MAS.

*Apis arbustorum* hirsuta nigra, thorace anticè flavo, ano rubro.

*Fab. Ent. Syst. Em. n. 24.*

*Apis*

*Apis nigra*, fronte basiq̄ue thoracis flavis, ano fulvo.

*Geoffr. Hist. Ins. 2. p. 417. n. 22.*

*Apis coronata*. *Fourcroy. Ent. Par. n. 23.*

*Bombylius medius niger*, caudâ rubrâ, supra scapulas torque e viridi luteâ caput ferè cingente, cum insigni velut penicillo pilorum luteorum splendentium in mediâ facie inter oculos,

*Rai. Hist. Ins. p. 247. n. 7.*

FIG. *Harris. Exp. Eng. Ins. tab. 38. fig. 5.*

*Apis hæmorrhoidalis*. *Christii Hymenopt. p. 132. tab. 9. fig. 2.*

MUS. *D. Marsham, Latham, M<sup>c</sup>Leay, Haworth, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 5—10.

*Hab.* Barhamiæ. In floribus frequens, præsertim collium, tempore æstivo. Prædatur mel apum, plerumque infeliciter. *Scop.* Habitat in Lapidum acervis strenuè mellificans. *Linn.* Nobiscum sub terrâ nidificat.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT. Os rufo-barbatum. *Proboscis* vix thoracis longitudine, palpis exterioribus tenuioribus, elongatis.

TRUNCUS immaculatus, hirsutie densâ, aterrimâ vestitus. *Squamulæ* nigræ. *Alæ* corpore breviores, subhyalinæ, apice paulò obscuriores, nervis nigricantibus. *Pedes* atri, hirti. *Spinulæ* atque *Scopulæ* ferrugineæ. *Digit*i tomentoso-rufi.

ABDOMEN oblongum, mollissimè hirsutum, aterrimum, segmentis tribus ultimis rubris. *Venter* posticè rufo-pilosus.

*Var.*

Var.  $\beta$  triplo minor; alis albo-hyalinis.

$\gamma$  præcedenti dimidio minor.

Obs. *In hac varietate anus, in adultioribus, fulvo-aureus.*

Maris *Corpus* hirsutum, subtus flavescens. *Maxillæ* supra pallidæ, barbâ pallescenti. *Antennæ* thorace breviores, articulis rectiusculis. *Occiput* et *Vertex* medio pilis citrinis ornata. *Facies* ante antenas fasciculo denso quadrangulari villorum citrinorum insignita. *Truncus* supra basi citrinus, medio ater, apice pallidus. *Squamulæ* picææ. *Alæ* albo-hyalinæ. *Pedes* rufescente-hirti, femorum barbâ dilutiori. *Scopulæ* subauratæ. *Digit*i ferruginei. *Abdomen* subovatum, ano ferrugineo.

The difference of size between  $\beta$  and  $\gamma$ , which I take to be the two descriptions of neuters, and  $\alpha$ , which is the female, is so great, that were they not most exact counterparts of each other in every other respect, I should scarcely be able to persuade myself of their identity. *A. pratorum* of Christius, as far as I can judge from his figure, is nothing more than the largest of the two neuters of this species. The male has usually been considered as a distinct species: Fabricius mistook it for *A. pratorum*, Lin. but changed its name to *A. arbustum*. That it is not *A. pratorum*, we have shewn above; it remains that we assign our reasons for giving it as the male of the species before us. In the first place Reaumur, speaking of the variations of

of colour observable in the cloathing of the *Bombinatrices*, has these words : “—dans le même nid j’ai vû naître des Bourdons de même taille, qui différoient entr’eux par le couleurs ou les distributions de couleurs dont nous venons de parler. Par exemple dans le nid peuplé de bourdons dont le derrière seul étoit feuillemorte, j’en ai vû naître quelques-uns qui avoient sur le corps *une ou deux bandes transversales de couleur de citron* (i).” Again, I have myself seen this insect entering the nidus of *A. lapidaria*, but what appears to do away all doubt upon the subject, I saw this insect in the collection of the celebrated Peter Collinson, with a memorandum affixed to it, that he had seen it connected with *A. lapidaria*.

107. *A. atra*, hirsuta, ano fulvo; tibiis posticis cor-Raiella.  
biculâ rufâ.

*Bombylius* minor, præcedenti concolor, abdomine imo pallidius rubente *f. fulvo*.

*Rai. Hist. Ins. p. 246. n. 2.*

MUS. *D. Marsham, Latham Mas, Kirby.*

Long. Corp. Lin. 6—7.

*Hab. Barhamiæ. A nobis bis atque iterum lecta; Mas semel a D. Latham.*

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT. *Os barbâ rufâ. Probocis fere thoracis longitudine, palpis exterioribus petiolatis, apice lanceolatis?*

(i) *Ubi supr. p. 2, 3.*

TRUNCUS

TRUNCUS ater, immaculatus. *Squamulæ* nigræ:  
*Alæ* subhyalinæ, apice nervisque nigricanti-  
 bus. *Pedes* atrî, hirti. *Tibiæ* posticæ corbiculâ  
 rufâ. *Spinulæ* castaneæ: *Scopulæ* ferrugineæ:  
*Digiti* picei, articulo extimio rubello.

ABDOMEN triangulare, hirsutum, atrum, seg-  
 mentis tribus ultimis ferrugineo-rufis.

Maris *Caput* subglobosum. *Antennæ* thoracæ  
 breviores. *Alæ* apicè immaculatæ: *Pedes*  
 rufo-hirti: *Anus* e pallido fulvescens.

*Memoriæ* Johannis Ray τὸ πικρὸν, hæc *Apis* in-  
 scribitur.

This *Apis* is so similar to *A. lapidaria*, that, if known, it has probably been confounded with it, it differs, however, in the shape of its exterior palpi (*h*) and abdomen. Its corbicula is red, and its anus is paler. The accurate eye of Ray detected these differences, and he has given it as a distinct species, for his description makes it evident that he means the same insect. "Superiore" (viz. *A. lapidaria*) "duplo minor est," says he, "et insigni notâ ab eo differt, nimirum quòd superius inter-

(*h*) This is a strong character, as the exterior palpi in all the aculeates, at least, of *A. lapidaria* are elongate, very slender, and filiform. I have affixed a mark of interrogation to this character, because the envelope, in which I preserve this proboscis, is labelled *A. lapidaria second magnitude*. But as I formerly looked upon *A. Raiella* as a variety of that insect, and all the others have similar posterior palpi, I have little or no doubt that this proboscis belongs to the one before us.

nodium

nodium crurum posteriorum (quod compressum et latum est) ad margines fimbriâ pilorum rubentium cingitur, cùm in illo pili *f.* setulæ internodium istud cingentes nigri sunt, reliquæ scilicet lanugini concolores." This species differs, likewise, from *A. lapidaria* in its place and mode of nidification, as we learn from the same illustrious author. "Nidificat et mellificat in gramine eodem quo sequens (viz. *A. muscorum*) modo."

108. *A. atra*, hirsuta, ano fulvo, alis nigricantibus. *rupestris*.

*Apis rupestris*. *Fab. Ent. Syst. Em. n. 26.*

*Apis lapidaria*. *Var. Brunn. Prodr. Insectol. Sicil. p. 19. not. aa.*

*Apis subterranea*. *Geoffr. Hist. Ins. 2. p. 416. n. 20.*  
*Fourcroy. Ent. Par. n. 21 ?*

FIG. *Apis subterranea*. *Christii Hymenopt. p. 125. tab. 6. fig. 5 ?*

MUS. *D. Marsham, Latham, Lathbury, Trimmer, Kirby.*

Long. Corp. Lin. 10—12.

*Hab.* In Angliâ. Prope Londinum frequens, apud nos rarissima, nec nisi unicam legi.

DESCR. Acul.

CORPUS atrum, hirsutum.

CAPUT magnum. *Labium* anticè obtusangulum (*l.*) *Proboscis* vix thoracis longitudine, palpis exterioribus acutis. *Maxillæ* forcipatæ, intus emarginatæ.

TRUNCUS ater, immaculatus. *Squamulæ* magnæ, nigræ. *Alæ* magnæ, corpore longiores,

(*l.*) Tab. 13. fig. 12.

nigræ,

nigræ, subcoriaceæ. *Pedes* atri, hirti. *Tibiæ* posticæ supra pilosæ, nec corbiculâ neque pectine instructæ. *Spinulæ* castaneæ. *Plantæ* posteriores absque auriculâ. *Scopulæ* ferrugineæ: *Digit*i nigri, tamen, certo situ, e tomento fulvescunt.

**ABDOMEN** ex ovato oblongum, atrum, utrinque hirsutum disco glabriori, segmento antepenultimo et penultimo hirsutie longiori fulvoferrugineo. *Venter* segmento ultimo lateribus marginatis margine deflexo rectangulo. *Aculeus* vaginâ validâ.

Obs. *Omni*um ferè nostratum hæc *Apis* maxima.

This gigantic *Apis* is often confounded with the female of *A. lapidaria*, and Fabricius, who has described it under the name of *A. rupestris*, seems to doubt whether it ought to be regarded as distinct: but its black wings, longer than the body, and of a substance intermediate between corium and membrane, would sufficiently establish its claim to the rank of a species, without the aid of other characters; it possesses others, however, which establish its identity beyond all doubt, for, with *A. campestris*, *Barbutella*, and *vestalis*, before described, it is without the instruments for preparing and carrying masses of pollen upon its posterior tibiæ. I am not clear that *A. subterranea* of Christius is synonymous with it, as his figure gives a yellow band at the base of the thorax, it comes, however,  
very



very near to it. Geoffroy describes it, I think, under the same name, but neither of these is the *A. subterranea* of the Linnean cabinet.

109. *A. atra*, hirsuta, ano fusco; capite masculino <sup>subterra-</sup>subgloboso; maxillis supra tomentoso-fulvis. <sup>nea.</sup>

*Apis subterranea* hirsuta, atra, ano fusco.

*Lin. Syst. Nat. Ed. 12. & Gmel. p. 2783. n. 51. Fn.*

*Succ. n. 1718.*

*Fab. Ent. Syst. Em. n. 37.*

*Vill. Ent. Eur. 3. n. 104.*

*Ross. Fn. Etrusc. Mantiss. n. 315.*

*Miill. Zool. Dan. n. 1928.*

*Forst. Cat. Brit. Ins. n. 730. Apis, n. 24.*

FIG. *Harris. Exp. Eng. Ins. tab. 38. fig. 8. Mas.*

MUS. *D. Smith Linnean, Fem. Marsham, Kirby Mas.*

*Long. Corp. Lin. 7.*

*Hab. Barhamiæ. Feminam in Angliâ nondum vidi.*

DESCR. *Mas* (*m*).

CORPUS atrum, hirsutum.

CAPUT subglobosum. *Maxillæ* supra sericeo-flavescentes, barbâ nigricanti. *Antennæ* thoracis ferè longitudine, articulis subarcuatis.

TRUNCUS ater, immaculatus. *Squamulæ* picææ.

*Alæ* subcoloratæ, apice paulò obscuriores, ner-

(*m*) The only specimen of the other sex, that I have ever seen, is that preserved in the Linnean cabinet, I shall add the particulars in which it differs from the one I have described above as the male.

*Feminæ Caput* subtriangulare. *Alæ* coloratæ nervis nigris. *Scopulæ* fuscæ. *Abdomen* subtriangulare, hirsutum, atrum, ano minùs nigro, *f. pilis* fuliginosis sordidèque albidis tecto.

*Long. Corp. Lin. 10.*

vis piccis tenuioribus ferrugineis. *Pedes atrî,*  
*hirti. Spinulæ castaneæ. Scopulæ ferrugi-*  
*neæ, subauratæ. Digiti picci.*

ABDOMEN subtriangulare, subacuminatum, hirsutum, atrum, ano minus nigro *f. fusco*, qui color e pilis sordidè pallidis nigrisque mixtis exoritur.

Obs. *Ani pili pallidi densiores utrinque.*

This insect differs so very slightly from the specimen of the Linnean cabinet, which is an aculeate, that, I think, there can remain scarcely any doubt of its being the male of *A. subterranea*. Linneus referred to Ray n. 1. as synonymous with this, and adopted Geoffroy's reference, neither of which belong to the true *A. subterranea*. Ray evidently intending by his description *A. lapidaria*, and Geoffroy *A. rupestris*, the former expressly noticing the deep red anus that distinguishes the one, and the latter the black wings which form the characteristic of the other (*n*). Gmelin has rectified this error in some degree with respect to the synonym of Ray, by referring n. 1. to *A. lapidaria*, but then in its room he refers n. 2. to *A. subterranea*, which we have just seen belongs to another insect (*o*).

(*n*) Upon reconsidering the synonym of Geoffroy, I am not clear that it belongs to *A. rupestris*, as he says of his, " Il y a quelques poils jaunes mais peu apparens autour du col " But if it be not *A. rupestris*, it is clearly more nearly allied to it, than *A. subterranea*.

(*o*) After my *Synopsis Specierum* was printed, upon going  
 over

110. *A. hirsuta*, *aterrima*.

*Harris-  
ella*.

FIG. *Tab. 18. fig. 7. Acul. Ibid. fig. 8. Mas.*

*Apis retusa. Christi Hymenopt. p. 133. tab. 9. fig. 4.  
Mas.*

MUS. *D. Marsham, Haworth, Kirby.*

Long. Corp. Lin. 8—10.

*Hab. Barhamiæ. Mas a nobis bis atque iterum capta.  
Femina semel a D. Sowerby.*

DESCR. *Acul.*

*CORPUS atrum, hirsutum.*

*CAPUT. Os et Nasus ferrugineo-barbata.*

*TRUNCUS immaculatus. Squamulæ nigro-pi-  
ceæ. Alæ subcoloratæ, apice obscuriores, ner-  
vis nigricantibus. Pedes atrî, hirti. Scopulæ  
atque Digiti ferruginea.*

*ABDOMEN oblongum, totum atrum, hirsutum,  
ano minus nigro.*

*Obs. In nostro specimine abdomen anticè punctis  
duobus albidis insignitur. An sit hæc nota  
constans nondum compertum habeo.*

*Maris Caput triangulare. Maxillæ supra palli-  
dæ, barbâ rufescenti. Antennæ trunco bre-  
viores, articulis subarcuatis. Abdomen ex ova-  
to oblongum, ano obtuso. Venter nigricante  
hirsutulus.*

I cannot help suspecting that the male of this may be the original *A. acervorum* of Linneus.

over the male *Bombinatrices*, I found the maxillæ of all were covered with pale or tawny down, though most remarkably in this species.

It wants, indeed, the “setulæ quædam circa collum sulphurææ,” but in other respects it agrees well with his description, for it somewhat resembles *A. lucorum*, but it is narrower, and the terms “toto corpore nigro immaculato” exactly suit it. As another *Apis*, however, occupies its place in the Linnæan cabinet, and the absence of the setulæ sulphurææ renders its claim to it somewhat dubious, I have given it under another name. Christius has a tolerable figure of the male as *A. retusa*. It is a coincidence rather singular, that *A. retusa* should be mistaken for *A. acervorum*, and, vice versâ, *A. acervorum* for *A. retusa*.

## A P P E N D I X.

MELITTA. \*. b.

M. ANNULATA. p. 37. add

Mas. *Var.*  $\gamma$  antennis totis nigris; facie ante antennas flavâ nasi suturis nigris; collare et tuberculis atris, immaculatis; tarsis obscurè rufis plantis posticis basi luteis; abdomine nitidissimo vix punctulato.

\* \*. b.

111. M. viridi-ænea, nitidissima; abdomine segmentis intermediis basi utrinque tomentosomanella albis.

MUS. *D. Marsham, McLeay, Kirby.*

Long. Corp. Lin.  $3\frac{1}{2}$ .

*Hab.* Prope Londinum. In aggeribus nudis, apricis, uterque sexus frequens.

DESCR. Acul.

CORPUS viridi-æneum, nitidissimum, pilis albidis subincanum.

CAPUT. *Antennæ* nigræ, subtus fuscæ, basi approximatae.

TRUNCUS. *Squamulæ* ferruginæ. *Alæ* hyalinæ, iricolores, nervis testaceis. *Pedes* nigri, piloso-incani, digitis rufescentibus.

ABDOMEN ovale, pilosulum, segmentis apice pallidis, duobus intermediis basi utrinque tomentoso-albis. *Anus* villosopallidus.

Maris *Nasus* apice pallidus. *Antennæ* thoracis longitudine, nigræ, subtus fulvæ. *Facies* ante antennis pilis decumbentibus albicans. *Alæ* nervis nigricantibus. *Abdomen* lineare, nigro-æneum, nitidissimum, segmentis margine immaculatis, intermediis basi depressiusculis, vix tomentosus.

Locus post *M. æratam*. p. 58.

*Memoriæ* D. Smeathman Termitum docti Historici hæc Apis consecratur.

This insect much resembles *M. ærata*, but it is larger, and its abdomen is viridi-æneous. The male is half as big again as the same sex of that species, and has no white hairs at the base of the intermediate segments of the abdomen.

M. MINUTISSIMA. p. 64. add

Mas. *Var. β* major; antennis totis, tarsisque nigricantibus.

M. OBOVATA. p. 75. add

Maris *Corpus* pallido-pilosum. *Nasus* porrectus, apice maculâ luteâ. *Alæ* paulò infuscatæ nervis nigricantibus. *Tarsi* sordidè lutei. *Abdomen* e lineari cuneiforme glaberrimum, segmentis duobus intermediis basi tomentoso-albis, præcipuè utrinque. *Venter* planiusculus.

M. LEU-

M. LEUCOZONIA. p. 77. add  
Mas. *Var.*  $\beta$  tarsi nigricantibus.

\* \* c.

M. THORACICA. p. 101. after the synonym of Harris, add

*Drury. Ins. 2. p. 70. tab. 37. fig. 4.*

M. NIGRO-ÆNEA. p. 110. add

There is a specimen of this *Melitta* in Sir J. Banks's cabinet, from the island of Madeira.

M. FULVA. p. 129. after the synonym of Panzer, add

*Coquebert. Ill. Ic. Ins. tab. 6. fig. 7.*

M. CONVEXIUSCULA. p. 166. add

*Var.*  $\beta$  duplo minor; thoracis pube ferrugineâ; tibiis posticis totis pallidè rufis; tarsi secundariis ferrugineis; abdomine, segmentorum marginibus exceptis, glaberrimo.

APIS. \* \* d. 2.  $\beta$ .

A. IRICOLOR. p. 310. after the synonym of Drury, add

*Apis virens. Christii Hymenopt. p. 123. tab. 6. fig. 2.*

---

Bonus JEHOVA universis, et misericordiae ejus super omnia  
opera ejus. Celebrant te JEHOVA omnia opera tua.

Ps. cxlvi. 9.

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—— Italicæ —— nunc primùm descriptas

} indicant.

Asteriscus species denotat vel sub alio nomine ab aliis descriptas, vel incertas an sint novæ.

## ABBREVIATIONES.

<i>B. valet</i> Brunniche.	<i>Mi.</i> Miller. MS.	<i>Pal.</i> Pallas.
<i>Cb.</i> Christianus.	<i>Mii.</i> Miiller.	<i>Ro.</i> Rossi.
<i>Fa.</i> Fabricius.	<i>M. B.</i> Mus. Banksia-	<i>Ra.</i> Ray.
<i>Fo.</i> Forster.	num.	<i>Seb.</i> Schrank.
<i>G. F. Geo. Fou.</i> Geoffroy and Fourcroy.	<i>M. L.</i> Mus. Leske-	<i>Sc.</i> Scopoli.
<i>G.</i> Gmelin.	num.	<i>S. R.</i> Sulzer & Roemer
<i>La.</i> Latreille.	<i>Ma.</i> Marsham. MS.	<i>V.</i> Villers.
	<i>P.</i> Panzer.	

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SYNONYMA.

## SYNONYMA.

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	{ Fa.	— — — 297	Fabriciana.	Fa.	— — — 213
Plumipes.	Pal.	— — — 298	Flava.	P.	— — — 196
Pratensis.	Mii.	— — — 100	Fucata.	P.	— — — 195
Pratorum.	{ Fa.	— — — 329	Germanica.	P.	— — — 218
	{ Ch.	— — — 364	Gibba.	Fa.	— — — 42
Pubescens.	Fa.	— — — 141	Jacobææ.	P.	— — — 201
QUADRIDENTATA.	— — —	225	Lineola.	P.	— — — 194
Quadridentata.	Mi.	— — — 229	Ruficornis.	Fa.	— — — 210
Regalis.	G. F.	— — — 356	Sexfasciata.	P.	— — — 200
Retusa.	Ch.	— — — 373	Solidaginis.	P.	— — — 204
Rufescens.	{ G. F.	— — — 43	Succincta.	Sc.	— — — 42
	{ M. L.	— — — 277	Varia.	P.	— — — 185
Rufa.	Ch.	— — — 46	Variegata.	Fa.	— — — 222

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TAB. 15.

MELITTA.

\*. a.

FIG. 1. *M. fodiens. fem.*

2. Ditto. *mas.*

\*. b.

3. *M. annulatà. fem.*

4. *M. dilatata. mas.*

\*\* . a.

5. *M. Geoffrella. fem.*

6. *M. monilicornis. mas β.*

\*\* . b.

7. *M. sexnotata. fem.*

8. Ditto. *mas.*

\*\* . c.

9. *M. helvola. fem.*

10. *M. spinigera. mas.*

APIS.

\*. a.

FIG. 1. *A. ursina. fem.*

2. *A. Linnæella. mas.*

\*. b.

3. *A. Fabriciella. fem.*

4. *A. ferruginata. mas.*

\*\* . a.

5. *A. punctata. mas.*

\*\* . b.

6. *A. variegata. fem.*

\*\* . c. 1.  $\alpha$ .

7. *A. conica. fem.  $\beta$ .*

8. *A. inermis. mas.*

\*\* . c. 1.  $\beta$ .

9. *A. punctulatissima. fem.*

\*\* . c. 2.  $\alpha$ .

10. *A. circumcincta. fem.*

11. *A. ligniseca. mas.*

\*\* . c. 2.  $\beta$ .

12. *A. manicata. fem.*

13. Ditto. *mas.*

\*\* . c. 2.  $\gamma$ .

14. *A. Campanularum. fem.*

15. Ditto. *mas.*



TABLE

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TAB. 17.

APIS.

\*\* c. 2.  $\delta$ .

- FIG. 1. *A. spinulosa. fem.*  
2. Ditto. *mas.*

\*\* d. 1:

3. *A. pollinaris. fem.*  
4. *A. Druriella. mas.*

\*\* d. 2.  $\alpha$ .

5. *A. furcata. fem.*  
6. Ditto. *mas.*  
7. *A. cyanea. fem.*  
8. Ditto. *mas.*

\*\* d. 2.  $\beta$ .

9. *A. iricolor. fem.*

\*\* e. 1.

10. *A. mellifica. fem.*  
11. Ditto. *mas.*  
12. Ditto. *operar.*

\*\* e. 2.

13. *A. Francillonella. fem.*  
14. *A. floralis. mas.*  
15. *A. sylvarum. fem.*  
16. Ditto. *mas.*

TAB. 18.

APIS.

\*\* e. 2. cont.

- FIG. 1. *A. Rossiella. mas.*  
2. *A. campestris. fem.*  
3. *A. vestalis. fem.*  
4. Ditto. *mas.*  
5. *A. subinterrupta. fem.*  
6. *A. Donovanella. mas.*  
7. *A. Harrisella. fem.*  
8. Ditto. *mas.*

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