

HYMENOPTERA.

BY FREDERICK SMITH.

Notes on the NEW SPECIES OF BRITISH ACULEATE
HYMENOPTERA.

SINCE the publication of Mr. Kirby's *Monographia Apum Angliæ*, fifty-eight new species of Bees have been discovered in this country; several of these have long been known in different parts of Europe, and the descriptions of others lie scattered in various publications. It has been thought desirable to bring together a list of the Bees unknown at the time of publication of Kirby's Work, pointing out the place of their description, the localities known for the species, and adding, at the same time, such observations as appear to be necessary.

In 1836, Shuckard did for the British Fossorial Hymenoptera what Kirby had previously done for the British Bees, and, in his *Essay on the Indigenous Fossorial Hymenoptera*, described all the British species then known; this *Essay* enjoys a world-wide fame, and since its publication little has been added to our knowledge of the Fossorial division of the *Aculeata*; yet I have here mentioned the few new species which have occurred, with the view of bringing as it were into one focus, the full amount of united labour on the Aculeate group.

The *Formicidæ* have hitherto been much neglected in this country, and we are only beginning to acquire a knowledge of our riches in number of species. The *Stephensian Cata-*

logue indicates new genera in this family, and several species enumerated in that list prove not to be British; a revision of the list is therefore highly desirable. The difficulties attending the study of the *Formicidæ* have been removed by the publication of Dr. Nylander's Monograph; the accuracy and acumen exhibited in this work will be acknowledged and appreciated by every lover of the science, who will see, in the lucid elaboration of the species, a master-hand, whose work commands our admiration.

In Stephens's Systematic Catalogue of British Insects many new species are enumerated, which, not having been subsequently described by the author, must have excited much speculation in the minds of Hymenopterists as to which species they may possibly represent; in some genera, the number of new species exceeds the total number at present known. Having the means of clearing up, in a great degree, the difficulties presented by this list, I have added some notes in elucidation of it.

NEW BRITISH BEES DISCOVERED SINCE THE PUBLICATION OF KIRBY'S MONOGRAPHIA.

FAMILY ANDRENIDÆ.

Genus COLLETES.

1. *Colletes marginata*, Smith (Zoologist, iv. 1277). This species is found at Little Hampton, Sussex. I know of no other locality.

Genus PROSOPIS.

2. *Prosopis cornutus*, Smith (Zoologist, vi. 2204). This species was in the collection of Mr. Kirby, but without a name: I discovered the male some years ago at Hawley, Hants; it was described as a distinct species, *P. plantaris*, but having bred the sexes from dock stems, the oldest name is retained.

3. *Prosopis punctulatissimus*, Smith (Zoologist, vi. 2205). This species has not occurred near London; I have more than once taken it in Kent, near Birch Wood.

4. *Prosopis hyalinatus*, Smith (Zoologist, vi. 2206); very abundant in many localities, particularly so at Sandown Bay, Isle of Wight.

5. *Prosopis varipes*, Smith (Catalogue of Hymenopterous Insects, Part i. p. 21, 12). This species is found in Yorkshire, but I know of no other locality.

Genus SPHECODES.

6. *Sphcodes subquadratus*, Smith (Zoologist, iii. 1014); occurs in the London district, and in other localities.

Genus HALICTUS.

7. *Halictus gramineus*, Smith (Zoologist, vii. App. 58).

I took this species at Hawley, Hants; there are specimens in the British Museum from Devonshire.

8. *Halictus longulus*, Smith (Zoologist, vi. 2104); plentiful in the Isle of Wight, and also found in the London district, but rarely.

9. *Halictus interruptus*, Panzer (Smith, Zoologist, vi. 2167). This species is in the collection of British Insects in the British Museum; it is from Devonshire.

10. *Halictus prasinus*, Smith (Zoologist, vi. 2169); taken by Mr. Dale, at Bournemouth, Wales; I took it also in Yorkshire.

11. *Halictus maculatus*, Smith (Zoologist, vi. 2172); Cove Common, Hants; I have not found it elsewhere.

12. *Halictus zonatus*, Smith (Zoologist, vi. 2171); in the London district, near Bristol and also in Scotland.

Genus ANDRENA.

13. *Andrena frontalis*, Smith (Zoologist, vii. App. 59). Having had an opportunity of seeing Kirby's own interleaved copy of the Monographia, I found this insect described under the name of *Bingleyella*: from information which has lately been given to me, I suspect it to be the male of *A. Cetti*.

14. *A. analis*, Panzer (Smith, Zoologist, v. 1920); not uncommon in the north of England, but not hitherto found in the south.

15. *A. eximia*, Smith (Zoologist, v. 1930). This insect may possibly be an extremely highly-coloured variety of *Rosæ*, but the male taken with it also differs from the males of the latter species in having the mandibles toothed; taken at Hastings, and Pembury, Kent.

A. rubricata, Smith (Zoologist, v. 1666). I think this is very probably synonymous with *A. florea*, Fab., St. Fargeau; it occurs near London, and in plenty at Hawley, Hants, in June.

16. *A. decorata*, Smith (Zoologist, v. 1667); found once

near Birch Wood, Kent, both sexes; the male I have seen in other collections.

17. *A. ferox*, Smith (Zoologist, v. 1670). This proves to be the male of *A. distincta*; the sexes were discovered by Mr. Walcott, near Bristol.

18. *A. polita*, Smith (Zoologist, v. 1733); a very distinct species, found at Gravesend in June.

19. *A. vitrea*, Smith (Zoologist, v. 1737); a very distinct species, but I do not know the locality; there are several in Mr. Desvignes' Cabinet.

20. *A. longipes*, Smith (Zoologist, v. 1740); not rare in the neighbourhood of London; particularly near Highgate Archway.

21. *A. æstiva*, Smith (Zoologist, v. 1743); generally distributed, frequently mistaken for *A. Grynana*.

22. *A. fucata*, Smith (Zoologist, v. 1743). This species is found in the north of England; I have taken it in Yorkshire, and received it from Scotland. It is the *A. clypeata*, of Nylander.

23. *A. conjuncta*, Smith (Zoologist, v. 1744). I took this between Highgate and Colney Hatch some years ago; I have not since met with it.

24. *A. Lapponica*, Zett. On comparison with a specimen from Lapland, I find this identical with *A. apicata* Smith (Zoologist, v. 1748).

25. *A. lacinia*, Smith (Zoologist, v. 1751); the locality not known.

26. *A. Aprilina*, Smith (Zoologist, vi. 2211); in the collection of J. C. Dale, Esq.

27. *A. constricta*, Smith (Zoologist, vii. App. 59). A northern species has occurred at Moffat, Scotland; and near Wakefield, Yorkshire.

28. *A. articulata*, Smith (Zoologist, v. 1750). I consider

this to be only a very large specimen of the male of *A. fulvicrus*.

29. *A. similis*, Smith (Zoologist, vii. App. 60); very like the male of *A. albicans*, but distinct; found by Mr. Walcott near Bristol.

30. *A. extricata*, Smith (Zoologist, vii. App. 59); very like *A. fulvicrus*; Weymouth, and also at Southend.

31. *A. Kirbyi*, Curtis (British Entomology, fol. 129); said to be found near Norwich; the type is in the British Museum. I possess specimens from the Morea.

32. *A. argentata*, Smith (Zoologist, v. 1920); found at Weybridge, Sandhurst, and on Parley Heath by Mr. Dale; Dr. Nylander told me the male was the *A. barbatula* of Zetterstedt.

Genus MACROPIS.

33. *Macropis labiata*, Panzer (Smith, Zoologist, iv. 1279.) Three specimens of the male are all which have hitherto been captured in England; the localities are Leicester, New Forest, and Weybridge. Mr. S. Stevens captured the last in the beginning of July at the latter locality; it no doubt appears about the same time as its congener, *Dasypoda hirtipes*.

Genus MEGACHILE.

34. *Megachile versicolor*, Smith (Zoologist, ii. 697); discovered by Mr. Thwaites, near Bristol. I have taken it at Weybridge, but hitherto it has proved to be very rare; it closely approaches *M. centuncularis*, but the scopa which clothes the abdomen beneath is of two colours, black and fulvous.

35. *M. pyrina*, St. Farg. The male is the *M. rufitarsis*, the female the *M. fasciata* of the Catalogue of British Hymenoptera; it occurs at Weybridge, but rarely.

36. *M. argentata*, Fab. This is identical with *M. Leachella*, of Stephens's Catalogue, which I described in the

Zoologist, ii. 696, as *M. albiventris*; it has been met with at Southend and Weybridge, and at Little Hampton, Sussex.

37. *M. odontura*, Smith (Zoologist, vii. App. 58). I have only seen the unique specimen in the British Museum, taken at Spitchwick, Devon.

Genus OSMIA.

38. *Osmia parietina*, Curtis (British Entomology, folio 222). This rare species has been supposed to be identical with the *O. fuciformis*, Latr.; if so, the description of the male will not at all suit the present species; this synonym is therefore very doubtful.

Genus STELIS.

39. *Stelis minuta*, St. Farg. (Smith, Zoologist, iii. 1155); discovered by Mr. Thwaites, near Bristol; I am not aware of it having occurred in any other locality.

40. *S. octomaculata*, Smith (Zoologist, iii. 1155). This little bee was taken at Blackwater, Hants, some years ago; it has not been met with since.

Genus AMMOBATES.

41. *Ammobates bicolor*, St. Fargeau (Smith, Zoologist, vi. 2212). This bee is in the Museum collection, and is said to have been taken at Leicester.

Genus NOMADA.

42. *Nomada lateralis*, Panzer (Smith, Zoologist, ii. 601); found in the London district, plentifully in the neighbourhood of Highgate and Hampstead.

43. *N. baccata*, Smith (Zoologist, ii. 604). This pretty little species was first taken at Sandhurst, and subsequently at Weybridge, in plenty; but it is extremely local.

44. *N. borealis*, Zett. This is the *N. inquilina*, Smith (Zoologist, ii. 605). It is parasitic on *Andrena Clarkella*, and very local and rare: it occurs on Hampstead Heath, and was discovered at Leominster some years ago by Mr. Newman. I have received it from Lapland.

45. *N. signata*, Jurine (Smith, Zoologist, ii. 602); not uncommon some seasons around the Hampstead and Highgate districts.

46. *N. Roberjeotiana*, Panzer (Smith, Zoologist, ii. 603); a very rare species, discovered at Blackwater, Hants; Mr. Dale has also captured it, I believe in Hampshire.

47. *N. rubra*, Smith; described in the Zoologist, vol. vii. App. 41, from the unique specimen in the British Museum, taken at Kingsbridge, Devon, by Dr. Leach.

48. *N. mistura*, Smith (Zoologist, ix. App. 127); taken at Newcastle by Mr. Hewitson; I have since captured a specimen in Yorkshire, and have received it from Scotland.

49. *N. atrata*, Smith (Zoologist, iv. 1568); taken at Arundel by Mr. S. Stevens; it has not occurred elsewhere that I am aware of.

Genus CÆLIOXYs.

50. *Cælioxys rufescens*, St. Farg. (Smith, Zoologist, iii. 1152); rare in the London district, but plentiful in Hants, and the Isle of Wight in July.

51. *C. Vectis*, Curtis (British Entomology, folio 349); very plentiful along the Undercliff, Isle of Wight, in July; it has occurred in Hants, and this season at Putney, taken by Mr. Grant.

52. *C. sponsa*, Smith, n. sp. This is probably the male of the next species; both will be described in my work on the British Bees; they were taken in the London district.

53. *C. mandibularis*, Nylander; taken in the same locality as the former.

54. *C. umbrina*, Smith (Zoologist, iii. 1153). This insect occurs in profusion along the Undercliff, Isle of Wight, particularly in Sandown Bay, in July.

Genus MELECTA.

55. *Melecta luctuosa*, Scopoli. This is the true *M. punctata*, Fabr., that described in the Monographia being the

M. armata of Panzer; a reference to Panzer's figure shows this to be the case, but it is placed beyond a doubt by Dr. Nylander, who has seen the typical specimen.

Genus CERATINA.

56. *Ceratina albilabris*, Fab. (Smith, Zoologist, vii. App. 57); in the collection of the British Museum, taken in Devonshire by Dr. Leach.

Genus BOMBUS.

57. *Bombus Lapponicus*, Fab. This beautiful species (which I described in the Zoologist, vii. App. 59, as *B. monticola*), was first discovered in Wales, by Mr. Newman; it was next met with on Halifax Moor, Yorkshire, and subsequently in Herefordshire and Monmouthshire, and also in Perthshire, Scotland.

58. *B. Collinus*, Smith (Zoologist, ii. 548); only the male and worker are at present known; the male has occurred at Westow, Yorkshire; near Bristol; on the Brighton Downs, and in Cumberland.

59. *B. Smithianus*, White (Proceedings Linn. Soc. 1851, Ann. and Mag. Nat. Hist. x. New Series, p. 294); the *Bombus arcticus* of Dahlbom, but not of Kirby; this interesting addition to our *Bombi* was made by Mr. A. White, in 1850; he captured it in Shetland; it has not occurred in any other locality.

From the foregoing list, it appears that fifty-nine species of Bees have been added to the British list since 1802; and when we take into consideration that upwards of fifty of the species of the *Monographia* have been united to their partners, thereby reducing the number described as distinct from 221 to 170, it will be seen that a considerable advance has been made in this branch of Entomological science. The present number of species of British Bees will be about the same as Mr. Kirby enumerated, certainly not more than ten

above that number. It is gratifying to see amongst our younger Entomologists several able and industrious students turning their attention to this most interesting order of insects; and although we cannot reasonably expect so large a number to be added to our list of indigenous bees as has been added since Mr. Kirby described them, still many interesting additions are and will be continually made: the remotest parts of the kingdom are by degrees being brought within a day's rail, and we may confidently expect many Swedish and even Lapland species will be added to our Fauna.

The last species in the above list was a grand addition to our Fauna, made by Mr. White, who, had his visit to Shetland been an Entomological one, would no doubt have made other equally interesting additions. On a future occasion we hope to chronicle, not only species, but even genera unknown at present to the British Fauna.

NEW SPECIES OF FOSSORIAL HYMENOPTERA, described or discovered since the publication of SHUCKARD'S ESSAY.

Genus POMPILUS, Fab.

1. *Pompilus acuminatus*, Smith. This species is described in the Catalogue of British Hymenoptera, App. 119. I received it from Moffat, Scotland; there is a specimen in the British Museum, without a locality.

Genus APORUS, Spin.

2. *Aporus bicolor*, Spinola. I captured two specimens of this insect at Southend; that described in Shuckard's Essay is only a variety of *P. pectinipes*, having the second transverse cubital nervure obsolete.

Genus ASTATA, Panzer.

3. *Astata stigma*, Panzer. I captured a female of this

species at Weybridge, in 1845, and described it in the Zoologist, vol. iv. 1157, as *A. jaculata*. I supposed it to be a new species; but on obtaining the sexes of *A. stigma* from France, I find it to be the female of that species; the male has not been met with in England.

Genus TRYPOXYLON, Latr.

4. *Trypoxylon attenuatum*, Smith; described in the Catalogue of British Hymenoptera, App. 120. I received the species from Bristol, where it appears to be abundant.

Genus CERATOPHORUS, Shuckard.

5. *Ceratophorus anthracinus*, Smith; described in the Zoologist, vol. ix. App. 126; this species I received from Devonshire.

Genus CRABRO, Fab.

Crabro interstinctus, Smith; described in the same page as the former; the locality is Weybridge.

Genus VESPA, Linn.

6. *Vespa arborea*, Smith (Zoologist, vii. App. 60). I discovered this species in Yorkshire in 1836. It appears to be a northern insect; it has been taken in Cumberland and Scotland. M. Saussure has met with it near Geneva.

NOTES ON THE MYRMICIDÆ AND FORMICIDÆ.

Family MYRMICIDÆ (*Formica*, pt. Linn.)

1. *Myrmica scabrinodes*, Nylander; very abundant in all parts of England.

2. *M. ruginodis*, Nylander; equally abundant with the former species; this species I believe to be identical with the *M. rubra* of our lists.

3. *M. lævinodis*, Nylander; not so abundant as the preceding; found at Shanklin, Isle of Wight; Weybridge, &c.

4. *M. cæspitum*, Latr.; this name appears in the Sys-

tematic Catalogue, but the insect does not exist in the Stephensian Collection; there it is represented by *M. scabrinodes*, male. This species, which is the *M. fuscula* of Nylander, is very abundant on our coasts; it abounds along the Undercliff, Isle of Wight, and many large colonies exist on the shore below Southend; it is also abundant at Folkstone, &c.

5. *M. simillima*, Smith; this insect was sent to me by Mr. Dale some years ago, captured in Dorsetshire.

Family FORMICIDÆ.

6. *Tapinomia collina*, Förster (Hym. Stud. Form. p. 43, 21). This species was captured by Mr. Dale, at ———. It is a form new to our Fauna—being characterized by having the scale decumbent, the base of the abdomen being produced and overhanging the abdominal scale and peduncle; this is the most obvious point of difference from *Formica*.

NOTES IN explanation of the NEW SPECIES OF ACULEATE HYMENOPTERA IN STEPHENS'S SYSTEMATIC CATALOGUE.

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| 4865. | <i>Pompilus nervosus</i> , Steph., the ♀ of <i>P. gibbus</i> , Linn. |
| 4866. | <i>P. cognatus</i> , Steph., the ♀ of <i>P. pectinipes</i> , Linn. |
| 4867. | <i>P. basalis</i> , the ♂ of <i>P. gibbus</i> , Linn. |
| 4868. | <i>P. phæopterus</i> , Steph., the ♀ of <i>P. affinis</i> , Van der Lind. |
| 4869. | <i>P. apicalis</i> , Steph., the ♂ of <i>P. niger</i> , Fab. |
| 4870. | <i>P. aterrima</i> , Steph., the ♀ of <i>P. niger</i> (major), Fab. |
| 4873. | <i>P. argyrostoma</i> , Steph., the ♂ of <i>P. plumbeus</i> , Fab. |
| 4875. | <i>P. nigerrimus</i> , Steph., the ♀ of <i>P. petiolatus</i> , Van der Lind. |
| 4877. | <i>P. subfasciatus</i> , Steph., the ♀ of <i>P. hyalinatus</i> , Fab. |
| 4879. | <i>P. nebulosus</i> , Steph., the ♀ of <i>P. exaltatus</i> , Fab. |
| 4880. | <i>P. zonatus</i> , Steph., the ♂ of <i>P. exaltatus</i> (minor), Fab. |
| 4881. | <i>P. subnebulosus</i> , Steph., variety of the ♂ of <i>P. exaltatus</i> , Fab. |
| 4884. | <i>P. formosus</i> , Steph., the ♂ of <i>P. notatus</i> , Rossi. |

- | No. | |
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| 4885. | <i>P. notatus</i> , Steph., the ♀ of <i>P. cinctellus</i> , Spin. |
| 4888. | <i>Ceropales calcaratus</i> , Steph., the ♂ of <i>P. hyalinatus</i> , Fab. |
| 4889. | <i>C. punctum</i> , Steph., the ♂ of <i>P. petiolatus</i> , Van der Lind. |
| 4891. | <i>C. nigripes</i> , Steph., a variety of <i>C. maculata</i> , Fab. |
| 4892. | <i>C. rufipes</i> , Steph., a variety of <i>C. maculata</i> , Fab. |
| 4901. | <i>Ammophila pulvillata</i> , Sowerby, the ♂ of <i>A. sabulosa</i> , Linn. |
| 4908. | <i>Psen aterrimus</i> , Steph., the ♀ of <i>P. atratus</i> , Panz. |
| 4909. | <i>P. caliginosus</i> , Steph., the ♀ of <i>P. atratus</i> , Panz. |
| 4902. | <i>P. compressicornis</i> , Steph., the ♂ of <i>P. atratus</i> , Panz. |
| 4917. | <i>Arpactus consobrinus</i> , Steph., the ♂ of <i>A. tumidus</i> , Panz. |
| 4911*. | <i>Gorytes quinquefasciatus</i> , Steph., the ♀ of <i>G. Fargeii</i> , Panz. |
| 4912*. | <i>G. quinquecinctus</i> , Steph., the ♀ of <i>G. Fargeii</i> , Panz. |
| 4916*. | <i>Lyrops tricolor</i> , Steph., the ♂ of <i>Larra pompiliformis</i> , Panz. |
| 4917*. | <i>L. bicolor</i> , Steph., the ♀ of <i>L. pompiliformis</i> , Panz. |
| 4926. | <i>Oxybelus tridens</i> , Steph., the ♀ of <i>O. uniglumis</i> , Linn. |
| 4927. | <i>O. bispinosus</i> , Fab., the ♂ of <i>O. uniglumis</i> , Linn. |
| 4931. | <i>Crabro pterotus</i> , Steph., the ♂ of <i>C. patellatus</i> , Panz. |
| 4933. | <i>C. interruptus</i> , Steph., the ♀ of <i>C. cribrarius</i> , Linn. |
| 4934. | <i>C. palmatus</i> , Steph., the ♂ of <i>C. cribrarius</i> , Linn. |
| 4937. | <i>C. subinterruptus</i> , Steph., the ♀ of <i>C. Lindenius</i> , Shuck. |
| 4940. | <i>C. agrestis</i> , Steph., the ♀ of <i>C. vagus</i> , Fab. |
| 4941. | <i>C. divisus</i> , Steph., the ♂ of <i>C. vagus</i> , Fab. |
| 4942. | <i>C. vespiformis</i> , Steph., the ♂ of <i>C. Lindenius</i> , Shuck. |
| 4944. | <i>C. serripes</i> , Steph., the ♀ of <i>C. vagus</i> , Fab. |
| 4945. | <i>C. subterraneus</i> , Steph., the ♀ of <i>C. xylurgus</i> , Shuck. |
| 4949. | <i>C. duodecimguttatus</i> , Steph., the ♂ of <i>C. xylurgus</i> , Shuck. |
| 4951. | <i>C. tarsalis</i> , Steph., the ♀ of <i>C. leucostoma</i> , Linn. |
| 4952. | <i>C. signatus</i> , Steph., the ♀ of <i>C. dimidiatus</i> , Fab. |
| 4953. | <i>C. analis</i> , Steph., the ♂ of <i>C. subpunctatus</i> , Rossi. |
| 4954. | <i>C. consobrinus</i> , Steph., variety of the ♂ of <i>C. subpunctatus</i> , Rossi. |
| 4955. | <i>C. quadrimaculatus</i> , Fab., a variety of the ♂ of <i>C. subpunctatus</i> , Rossi. |
| 4957. | <i>C. aterrimus</i> , Steph., the ♀ of <i>C. leucostoma</i> , Linn. |
| 4959. | <i>C. spiniceps</i> , Steph., the ♂ of <i>C. leucostoma</i> , Linn. |
| 4960. | <i>C. geniculatus</i> , Steph., the ♀ of <i>C. scutellatus</i> . |
| 4962. | <i>C. stigma</i> , Steph., the ♀ of <i>C. elongatulus</i> , Van der Lind. |
| 4963. | <i>C. tibialis</i> , Steph., the ♂ of <i>C. podagricus</i> , Van der Lind. |
| 4964. | <i>C. scutellatus</i> , Steph., the ♂ of <i>C. spinipectus</i> , Shuck. |

No.

4965. *Crabro phæopterus*, Steph., the ♀ of *C. scutellatus*.
4967. *C. dimidiatus*, Steph., the ♀ of *Diodontis tristis*, Van der Lind.
4978. *Pemphredon nitida*, Steph., the ♂ of *P. lugubris*, Fab.
4981. *P. fuscipennis*, Steph., the ♀ of *P. lugubris*, Fab.
4983. *P. hyalipennis*, Steph., the *Cemonus lethifer*, Shuck.
4987. *Mellinus bifasciatus*, Steph., the ♂ of *M. arvensis*, Fab.
4988. *M. interruptus*, Steph., a variety of the ♀ of *M. arvensis*, Fab.
4990. *M. pratensis*, Steph., a variety of the ♀ of *M. arvensis*, Fab.
4991. *Cerceris aurita*, Steph., the ♀ of *C. arenaria* (major), Linn.
4992. *C. læta*, Steph., the ♀ of *C. arenaria* (major), Linn.
4994. *C. quinquecincta*, Steph., the ♀ of *C. interrupta*, Panz.
4996. *C. arenicola*, Steph., the ♂ of *C. arenaria*, Linn.
5002. *C. ferox*, Steph., the ♀ of *C. ornata* (major), Fab.
5007. *Odynerus Eumenoides*, Steph., the *O. murarius*, Linn.
5026. *O. triangulus*, Steph., the ♂ of *O. parietina*, Linn.