HYMENOPTERA SPHECOIDEA FABRICIANA

by

J. VAN DER VECHT
Rijksmuseum van Natuurlijke Historie, Leiden
With one text-figure

INTRODUCTION

In the early years of systematic entomology Johann Christian Fabricius (1745-1808) described an enormous number of insects, including several hundreds of Hymenoptera, from various parts of the world. His descriptions are generally short and incomplete, the classification of the species is often unsatisfactory, and the author himself frequently misidentified species which he had described in previous works.

His work has thus raised a considerable number of problems, which in most cases can be solved only by a study of the typical specimens. Workers in some insect groups have realised this at an early date, and by a detailed study of the Fabrician collections they have made important contributions to our knowledge of many doubtful species. A good example is C. Stål's excellent work "Hemiptera Fabriciana", published in 1868 and 1869.

The Hymenoptera, however, have received only relatively little attention, and even European monographers have generally neglected to clarify the position of the Fabrician species by the study of authentic material. A notable exception is A. G. Dahlbom, who identified, aided by Prof. Behn in Kiel, the types of several Sphecoidea and Pompilidae on behalf of his "Hymenoptera Europaea" (1843-5). In 1912 W. A. Schulz examined a number of doubtful species, and in later years certain types have been studied in connection with investigations made by Turner, Betrem, Richards, de Beaumont, Lieftinck, and others. Yet a considerable number of species has never been identified by competent specialists, including some species which have been a real or potential source of confusion and misunderstandings for over 150 years.

In the course of my work on the wasp fauna of the Indo-Australian area it became essential to examine the types of certain Fabrician species. The study of some of these types, received from the Copenhagen Museum in 1957 (van der Vecht, 1959a), indicated that a more extensive investigation of the Fabrician Hymenoptera was desirable. I was therefore extremely pleased when in 1959 a grant from the "Uyttenboogaart-Eliasen Stichting" enabled me to spend two weeks in Copenhagen, where the majority of these insects are now preserved. Besides the combined collections of O. R. Sehested ("de

Sehestedt" in Fabricius's works) and N. Tønder Lund, which contain the types of many Fabrician species, the Zoological Museum of the University temporarily harbours Fabricius's own collection, which is the property of the University of Kiel. In 1960 I had the opportunity to study some additional types in the Bosc collection in the Natural History Museum at Paris, and in the Banks collection in the British Museum (Natural History), London. It has thus become possible to prepare a fairly complete revision of the Fabrician Sphecoidea, which is now published as a first result of my investigations; I hope to discuss the Pompilidae and the Vespidae (s. l.) in a similar way in the near future.

I am very much indebted to Dr. S. L. Tuxen and Dr. Børge Petersen of the Copenhagen Museum, to Miss S. Kelner-Pillault of the Paris Museum, and to Dr. I. H. H. Yarrow of the British Museum, for the kind permission to study the valuable collections under their care, and also for advice and assistance in many respects. Furthermore I have received valuable cooperation from Mr. K. V. Krombein, U. S. National Museum, Washington, who sent me material of certain American species for comparison with Fabrician types, and from Prof. J. de Beaumont, Musée Zoologique, Lausanne, who read the manuscript notes on all palaearctic species, supplied important information on various problems, and took the trouble to examine the types of some doubtful species. Prof. R. M. Bohart, University of California, Davis (Cal.), kindly helped me with the identification of certain North American species. To all these scientists I wish to express my sincere appreciation.

GENERAL NOTES

PUBLICATIONS. — The series of Fabricius's papers begins with the "Systema Entomologiae", published in 1775. Besides references to some Sphecoidea previously described by Linnaeus, this work contains the descriptions of 17 new species of Sphecoidea in the genera *Sphex* (8), *Vespa* (3), *Crabro* (5), and *Bembix* or *Bembyx* (1). In subsequent years many more new species were added (see table 1), and when in 1804 Fabricius summarized his knowledge of the Hymenoptera in his "Systema Piezatorum", he had described 182 new species of Sphecoidea. Most of these species were placed in genera which are at present recognized as Sphecoidea, but several species were assigned to genera belonging to other groups of Hymenoptera. One species was described in the genus *Dryinus,* 1 in *Tiphia,* 1 in *Scolia,* 2 in *Ceropales,* 19 in *Pepsis,* 8 in *Pompilus,* 1 in *Zethus,* 3 in *Vespa,* and 1 in *Prosopis.* No less than one third of the names created by Fabricius are invalid homonyms or synonyms. Further details may be found in the list on pp. 74-79.

Table 1. Numbers of Hymenoptera Sphecoidea described by Fabricius.

	1775	1781	1787	1790	1793	1794	1798	1804	Total
Palaearctic	6	6	15	2	25	2	11	20	87
Ethiopian	—	3	2	—	7	—	1	5	18
Oriental	3	3	12	—	5	—	4	3	30
Australian	1	—	—	—	—	—	—	—	1
Nearctic	2	3	—	—	2	—	1	3	11
C. Am. Is.	4	—	—	—	3	1	1	3	12
Neotropical	1	—	—	—	2	—	1	17	21
Unknown loc.	—	—	—	—	2	—	—	—	2
Total	17	15	29	2	44	3	19	51	182

In most cases an extract of the original description of a species was incorporated in each of the later publications. The series "Entomologia Systematica", published from 1793-1798, contains the complete descriptions of all species known to Fabricius at that time. It should be noted, however, that some of these descriptions differ in details from those published previously, and it is therefore always necessary to consult the original description.

A few species described in an earlier paper are not mentioned again in later publications. Among the Sphecoidea such an exception is *Sphex aurulenta* F., 1787, described from China, which is lacking in the publications of 1793 and 1804 (*Sphex aurulenta* F., 1793, from India is a different species!).

Sometimes a name has been replaced by a new one in a later paper. Thus *Bembex fasciata* F., 1781, from Italy, was described as *Bembex integra* in 1793 (see p. 50 of this paper). *Larra cingulata* F., 1798, from "India orientalis", is evidently the same as *Tiphia ruficornis* F., 1787, from Tranquebar, but may have been based on a different specimen.

DESCRIPTIONS. — The descriptions refer mainly to colour and pubescence. Especially when the body of the insects is not marked with red or yellow, the diagnosis may be very short. Thus *Sphex nigra* (1775) was described in one line: "S(phex) nigra, abdomine sessili, segmentorum marginibus lucidis." Richly marked species are usually described in greater detail, although their descriptions rarely exceed eight lines.

In the species descriptions only some very striking morphological characters are mentioned. A few examples may be given. Fabricius noted the unusual shape of the labrum in *Bembix* ("labio superiori conico"), the tridentate apical sternite of *Bembecinus* ("ano tridentato"), the petiolate gaster in several species, the spines of the propodeum in *Nysson* ("thorax postice utrinque dente valido armatus"), the peculiar shape of the scutella in *Oxybelus* ("scutellum bidentatum et sub scutello dens porrectus, incurvus, acutus"), etc. However, he overlooked many other characters of importance, particularly those of the wing venation and of the surface sculpture.

Later additions to the original descriptions are generally of little value, for they have mostly proved to be based on incorrectly identified specimens. In some cases such additional specimens were acquired when the type was no longer available to the author, but not unfrequently Fabricius misidentified species of which he had the type in his own collection.

CLASSIFICATION. — It is remarkable that Fabricius was so obsessed by the idea of the importance of mouth parts and antennae as a basis for generic distinctions, that he took no notice of the striking differences in the wing venation of the Hymenoptera. Morover, he studied the mouth parts of only a small number of specimens, and arranged the others in genera on the basis of their general appearance. The resulting classification of the Sphecoidea known to him thus demonstrates a very inadequate understanding of the natural relationships of these wasps. The confusion is apparent from the table on pp. 74-79.

LOCALITIES. — In most cases the localities given by Fabricius have proved to be correct. Some notable exceptions are: *Sphex violacea* (1775), described from the Cape of Good Hope, and *Sphex lobata* (1775) from Africa, are both Oriental species; *Bembex labiata* (1798) from France appears not to be a palaearctic species; the African *Sphex ciliata* (1787) and *Sphex sibirica* (1793) were described from India and Siberia, respectively, and *Pepsis sericea* (1804), described from "maris Pacifici Insuli", probably originates from Java. The habitats of *Bembex striata* (1793) and of *Sphex cincta* (1793) were unknown to Fabricius; the first has been recognized as a South American species, but the second has remained unidentified. The species described from "India orientalis" are mostly at home in India, not in Indonesia. The numerous species described from "America meridionalis, Dom. Smidt" appear to have been collected by Smidt or Schmidt at the Essequibo river in British Guiana (see Stål, 1868, and Henriksen, 1924, p. 127).

COLLECTORS AND COLLECTIONS. — The Sphecoidea described by Fabricius were received from a considerable number of collectors, whose names are usually mentioned in the original descriptions. For detailed information on these people I may refer to Henriksen's interesting review of the history of entomology in Denmark (1921-1927).

Most of the original material (nearly 90 %) is still in existence, partly in the collections of Sir Joseph Banks (British Museum, London), L. A. G. Bosc d'Antic (coll. Bosc, Museum Paris), O. R. Sehested and N. Tønder Lund (coll. S. & T. L., Museum Copenhagen), partly in Fabricius's own collection ("coll. F.", Mus. Kiel, temporarily in Mus. Copenhagen). The collection S. & T. L. contains specimens collected by the former owners and by Schmidt or Smidt (South America), Schousboe (North Africa) and Vahl

(Spain and North Africa). The material of this collection is generally in excellent condition. The collection F. contains the species obtained from Abildgaard (Tranquebar), Allioni (Italy), Daldorff (Denmark and India), Hybner or Hübner (Germany, Hungary), Koenig (India), Panzer (Germany), Pflug (China, India), von Rohr (West Indian Islands), and some others. Many specimens in this collection have been more or less damaged by pests, and probably some specimens have been destroyed completely. The types of the species described from the collections of the British Museum, the collections Desfontaines and the collection Cuvier appear to be lost.

LABELS. — The specimens in collection F. have no locality labels. As a rule only one specimen of each species bears a label with the specific name in Fabricius's handwriting (see W. Horn & I. Kahle, 1935-7, pl. XIX fig. 1, pl. XXX fig. 3).

The first specimen of each species in the collection S. & T. L. has a fairly large, rectangular label with the first letter of the generic name, the specific name, the locality and often also the collector in a rather regular handwriting. At first it was thought that these labels were written after the collection had become the property of the Zoological Museum of the University, but this appears to be incorrect. An important clue to the age of the labels is presented by the type of *Bembex americana* F., 1793, which bears a typical "S. & T. L. label": with "B : n : sp: repanda affinis" in the characteristic regular handwriting on one side, whereas on the other side it has the name "americana" in Fabricius's handwriting. This suggests that Fabricius named this species after it had been provisionally identified either by Sehested or by Tønder Lund at some time between 1787 (when *B. repanda* was described) and 1793. Several specimens of the collection S. & T. L. have been incorporated in the general collection of the Copenhagen Museum, and they bear square labels in a different, more modern, handwriting.

TYPES. — As the series of syntypes of Fabricius's species are often far from homogeneous, it is of importance in many cases to select one of the specimens as the lectotype. I have made lectotype designations wherever the typical material was found to consist of more than one species, and in some other cases where this seemed desirable. Great care has been taken to compare the specimens with the original descriptions. As a general rule I have accepted that the Fabrician collection does not contain the types of the species described from the collections Banks, Bosc, Lund and Sehested, but a few exceptions had to be made (see *Podium luteipenne* (F.), p. 43, and compare also *Sphex flavipennis* F., p. 30).

NOMENCLATORIAL CHANGES. — It may be useful to give here a summary of the new synonymy and some other nomenclatorial changes resulting from

the study of the Fabrician Sphecoidea. In the following list the original names are arranged in alphabetical order; the last name of each of the species is the one which is considered to be correct according to the Rules of Zoological Nomenclature. In a few cases strict application of the Rules would lead to the change of well known names (*Sphex maxillosus* F. and *Philanthus triangulum* F.); the discovery that *Sphex nigra* F., 1775 = *Pompilus niger* F., 1793 is a species of the Sphecoid genus *Liris* endangers the present status of the genus *Anoplius* Dufour, 1834 (see p. 20 of this paper). These cases have been brought to the attention of the International Commission on Zoological Nomenclature. In order to avoid confusion, authors are kindly requested not to change the names under consideration until this Commission has published its decisions on these cases.

Bembex americana F., 1793 = *Bembex muscicapa* Handlirsch, 1893 = *Bembix americana* F.

Bembex ciliata F., 1804 = *Microbembex ciliata* (F.).

Bembex glauca F., 1787 = *Bembex indica* Handlirsch, 1893 = *Bembix glauca* F.

Bembex interrupta F., 1787 = *Crabro interruptus* F., 1787 = *Palarus orientalis* Kohl, 1884 = *Palarus interruptus* (F.).

Bembex lineata F., 1793 = *Stizus lineatus* (F.).

Bembex repanda F., 1787 = *Bembex trepanda* Dahlbom, 1843 = *Bembix repanda* F.

Ceropales spinosa F., 1804 = *Mellinus interruptus* F., 1798 = *Nysson interruptus* (F.).

Chlorion mandibulare F., 1804 = *Chlorion ciliatum mandibulare* (F.).

Crabro bicinctus F., 1793 = *Sphex mystacea* L., 1761 = *Argogorytes mystaceus* (L.).

Crabro bipunctatus F., 1787 = *Vespa arvensis* L., 1758 = *Mellinus arvensis* (L.).

Crabro crassipes F., 1798 = *Sphex coarctata* Scopoli, 1763 = *Rhopalum* (*Corynopus*) *coarctatum* (Scopoli).

Crabro interruptus F., 1787, see *Bembex interrupta* F., 1787.

Crabro labiatus F., 1793 (preocc.) = *Philanthus interruptus* Panzer, 1799 = *Cerceris interrupta* (Panzer).

Crabro mediatus F., 1798 = *Sphex peltaria* Schreber, 1784 = *Crabro* (*Crabro*) *peltarius* (Schreber).

Crabro peltatus F., 1793 = *Crabro rhaeticus* Aichinger & Kriechbaumer, 1870 = *Crabro* (*Crabro*) *peltatus* F.

Crabro quadricinctus F., 1787 (nec auctt.!) = *Crabro sexcinctus* F., 1775 = *Ectemnius* (*Clytochrysus*) *sexcinctus* (F.).

Crabro quadripunctatus F., 1793 = *Crabro quadrimaculatus* F., 1793 = *Crossocerus* (*Hoplocrabro*) *quadrimaculatus* (F.).

Crabro sexcinctus F., 1775 = *Crabro zonatus* Panzer, 1797 (et auctt.) = *Ectemnius* (*Clytochrysus*) *sexcinctus* (F.).

Crabro sinuatus F., 1804 = *Crabro lapidarius* Panzer, 1804 = *Crabro chrysostomus Lepeletier,* 1834 = *Ectemnius lapidarius* (Panzer).

Crabro tricinctus F., 1775 = *Gorytes* (*Psammaecius*) *tricinctus* (F.).

Hylaeus flavilabris F., 1793 = *Prosopis flavilabris* F., 1804 = *Cerceris ferreri* Lind., 1829 = *Cerceris flavilabris* (F.).

Larra aurulenta F., 1804 = *Tachytes mandibularis* Patton, 1880 = *Tachytes aurulentus* (F.).

Larra bicolor F., 1804 = *Larra americana* Saussure, 1867 = *Larra bicolor* F.

Liris rufipes F., 1804 = *Stizus grandis* Lepeletier, 1845 = *Stizus rufipes* (F.).

Liris tricincta F. 1804 = *Tachytes cubensis* Cresson, 1865 = *Tachytes tricinctus* (F.).

Mellinus quadricinctus F., 1804 = *Philanthus ruficornis* F., 1793 = *Cerceris ruficornis* (F.).

Mellinus scaber F., 1798 = *Prosopis scabra* F., 1804 = *Crabro fimbriatus Rossi,* 1790 = *Cerceris fimbriata* (Rossi).

Mellinus tristrigatus F., 1798 = *Crabro tricinctus F.,* 1775 = *Gorytes* (*Psammaecius*) *tricinctus* (F.).

Pepsis fuscipennis F., 1804 = *Sphex costipennis* Spinola, 1853 = *Isodontia fuscipennis* (F.).

Pepsis johannis F., 1804 = *Sphex fervens* L., 1758 = *Priononyx fervens* (L.).

Pepsis luteipennis F., 1804 = *Podium flavipenne* Latreille, 1809 = *Podium luteipenne* (F.).

Pepsis macula F., 1804 = ?*Sphex* (*Harpactopus*) *eatoni* Saunders, 1910 = *Priononyx* (*Harpactopus*) *macula* (F.).

Pepsis obscura F., 1804 = *Sphex cinerascens* Dahlbom, 1843 = *Sphex obscurus* (F.).

Philanthus quinquemaculatus F., 1793 = *Vespa arvensis* L., 1758 = *Mellinus arvensis* (L.).

Philanthus ruficornis F., 1793 = *Crabro cunicularius* Schrank, 1802 = *Cerceris ruficornis* (F.).

Philanthus sexpunctatus F., 1793 = *Crabro fimbriatus* Rossi, 1790 = *Cerceris fimbriata* (Rossi).

Philanthus trifidus F., 1804 = *Philanthus ruficornis* F., 1793 = *Cerceris ruficornis* (F.).

Podium rufiventre F., 1804 = *Trigonopsis abdominalis* Perty, 1833 = *Trigonopsis rufiventris* (F.).

Sphex ciliata F., 1787 = *Chlorion ciliatum ciliatum* (F.).

Sphex cyanipennis F., 1793 = *Sphex nigrocoerulea* Taschenberg, 1869 = *Isodontia cyanipennis* (F.).

Sphex labiata F., 1793 = *Liris labiata* (F.).

Sphex lutaria F., 1787 = *Mimesa* (*Aporia*) *shuckardi* Wesmael, 1852 = *Psen* (*Mimesa*) *lutaria* (F.).

Sphex maxillosa F., 1793, is preoccupied by *Sphex maxillosa,* Poiret, 1787, an overlooked species. As Fabricius's name has been in general use for a very long time, the International Commission on Zoological Nomenclature has been requested to suppress Poiret's name.

Sphex nigra F., 1775 = *Pompilus niger* F., 1793 = *Larra pompiliformis* Panzer, 1808 = *Tachytes nigra* Lind., 1829 = *Liris nigra* (F.). [See in this connection the discussion on the type of the genus *Anoplius* Dufour, 1834, on p. 20].

Sphex rufipennis F., 1793 (preocc.) = *Harpactopus crudelis* Smith, 1856 = *Prionony*x (*Harpactopus*) *crudelis* Smith.

Sphex tomentosa F., 1787 = *Sphex tuberculata* Smith, 1873 = *Sphex tomentosus* (F.).

Sphex violacea F., 1775 (preocc.) = *Pelopoeus* (*Chalybion*) *bengalensis* Dahlbom, 1845 = *Sceliphron* (*Chalybion*) *bengalense* (Dahlbom).

Tiphia ruficornis F., 1787 = *Stizus ruficornis* (F.) (secondary homonym of *Stizus ruficornis* (Forster), 1771) = *Vespa biclipeata* Christ, 1791 = *Stizus biclipeatus* (Christ).

Trypoxylon albitarse F., 1804 = *Trypoxylon palliditarse* Saussure, sensu Richards, 1934 = *Trypoxylon albitarse* F.

Vespa triangulum F., 1775 = *Sphex xanthocephala* Forster, 1771 = *Philanthus xanthocephalus* (Forster). — As Fabricius's name of this well known wasp has been in general use for nearly two centuries, the International Commission on Zoological Nomenclature has been requested to suppress Forster's name.

SPECIFIC NOTES

In the following pages the Fabrician Sphecoidea are discussed under the names which are at present considered to be valid under the Rules of Nomenclature. A few exceptions are noted in the text and in the preceding

chapter. The genera are arranged in accordance with the classification used in the Catalog of the Hymenoptera of America (Muesebeck c.s., 1951). Abbreviations: MA = Museum Amsterdam; ML = Museum Leiden; BM = British Museum (Natural History); USNM = U. S. National Museum.

Genus **Ampulex** Jurine, 1807

Ampulex aenea (F.).

Dryinus aeneus F., 1804, p. 200 — Guinea, leg. Mejer, coll. Lund.
Ampulex dahlbomii Kohl, 1893, pp. 486, 493.

The type is a ♂ in the collection S. & T. L. and is identical with *Ampulex dahlbomii* Kohl, 1893, as already stated by Schulz (1912, p. 80). *Ampulex aenea* Spinola, 1841, described from Malabar, is an invalid homonym, but as this species has not yet been identified with certainty, I refrain from renaming it.

Ampulex compressa (F.)

Sphex compressa F., 1781, p. 445 — Malabar, coll. Banks; 1787, p. 275; 1793, p. 206.
Chlorion compressum F., 1804, p. 219.
Ampulex compressa Kohl, 1893, p. 491; Arnold, 1928, p. 221.

The type is a female in the Banks collection. This specimen, and also a female (without wings) and a male in the collection F., agree with the current interpretation.

Ampulex sibirica (F.)

Sphex sibirica F., 1793, p. 207 — Siberia, coll. Banks.
Chlorion sibiricum F., 1804, p. 218.
Ampulex compressiventris (Guérin), Kohl, 1893, p. 473.
Ampulex sibirica (Fab.), Arnold, 1928, p. 223-225.

The type is a male in the Banks collection; it has been recognized as belonging to an African species (see Arnold, 1928). The species is not represented in the Copenhagen collections.

Genus **Tachytes** Panzer, 1806

Tachytes aurulentus (F.)

Larra aurulenta F., 1804, p. 220 — Carolina, coll. Bosc.

The type in the Paris Museum is a female with label "Carolina"; it has sericeous bands on the gastral tergites 1-4, and the legs are mainly reddish (coxae, trochanters and part of the femora are dark).

Mr. Krombein sent me some North American specimens of a species currently regarded as *T. aurulentus* Fabr., and of *T. elongatus* Cresson, for comparison. Neither of these proved to agree with the Fabrician type. The first has only two sericeous bands in the female and *T. elongatus* only three; the

latter differs moreover in the shape of the clypeus and in the narrow impression on the posterior surface of the propodeum.

Subsequently the type has been examined by Prof. R. M. Bohart, who informed me (25 Oct. 1960) that it is the same as *Tachytes mandibularis* Patton, a common species in the eastern United States.

The collection F. contains one male of a *Tachytes* with sericeous bands on gastral tergites 1-4; it may be conspecific with the type.

Tachytes nitidulus (F.)

Crabro nitidulus F., 1793, p. 294 — „in India orientali Prof. Abildgard"; 1804, p. 309.

The type in the collection F. is a male *Tachytes* with sericeous bands on gastral tergites 1-4; legs all black.

In Williams's key to the Philippine *Tachytes* (1928, p. 87) this species runs to *silvicola* or *bakeri*; the genitalia and apical sternite are similar to those of *T. bakeri* (compare the accompanying figures 1, a, b, and c with Williams, l.c., p. 110, fig. 160), and the two species are evidently closely allied.

Depressed anterior margin of clypeus arcuate and entire anteriorly, almost straight posteriorly but here not distinctly defined.

The interocular distance on the vertex is much less than half of that at the clypeus (11 : 28), and it is longer than the third antennal segment (11 : 8), which is about equal to the fourth. Mesoscutum finely punctate, the interspaces with microscopically fine, reticulate sculpture, on the disk mostly at least as large as the punctures. Relative widths of second and third submarginal cells anteriorly and posteriorly = 5.5 : 8.5 and 20 : 16, respectively. Fovea of propodeum subtriangular, dull, not carinate. Gastral tergites 1-4 with silvery, sericeous bands, which are slightly narrowed laterally; apical tergite with appressed silvery hairs; sternites with rather long, somewhat shaggy, erect pubescence.

Legs, including the tarsi, black, with pale, translucent, spines, and brown to yellowish spurs; wings subhyaline with yellow tinge.

Length (♂): 12-14 mm.

A male from Coimbatore, Madras State, Aug. 1959, leg. P. S. Nathan (ML), agrees in all respects with the type.

A closely allied, but slightly smaller, species occurring in Southern India has the mesoscutum more densely punctate, the tarsi partly ferruginous, and the genitalia different.

Tachytes repandus (F.)

Crabro repandus F., 1787, p. 294 — India, leg. Pflug; 1793, p. 294.
Liris repanda F., 1804, p. 231.

This species was correctly placed in the genus *Tachytes* by Dahlbom

(1845), who however made the error to synonymize it with the American *Tachytes tricinctus* (Fabr.). Dalla Torre (1897, p. 623) lists it under *Crabro*!

The type is a female in collection F. with sericeous, silvery, bands on tergites 1-4; pubescence of head and thorax golden; legs ferruginous (coxae and trochanters dark, but only femora I and II slightly infuscated at base); wings yellowish-hyaline; anterior margin of clypeus resembling fig. 70 on p. 104 of Williams, 1928, but the median portion slightly less produced and more distinctly notched in the middle; shortest interocular distance on vertex equal to length of third antennal segment; antennal segments 3 : 4 = 28 : 31; propodeal fovea dull, not carinate. Length 16-17 mm.

The Leiden Museum possesses a female from Southern India, which agrees in all details with the type; it was recently collected by Mr. P. S. Nathan in the Walayar Forest, Karala State, 700 ft., Oct. 1959.

There occurs in Southern India a closely allied species which can be distinguished as follows:

Anterior margin of clypeus more superficially notched, more similar to fig. 70 of Williams, 1928 (p. 104); interocular distance on vertex distinctly longer than the third antennal segment (10 : 8). The third submarginal cell slightly shorter (its base 2/3 of that of the second); the second abscissa of the base of the second submarginal cell as long as the first or slightly shorter; sericeous bands of tergites 1-4 with pale golden reflections; apical segment with the bristles a little less dark, distinctly reddish. Length 14-15 mm.

One of these species may prove to be identical with *T. modestus* Smith.

A male from "Tranquebaria, Mus. S. & T. L." in the general collection of the Copenhagen Museum may represent the other sex of *T. repandus* (F.). The interocular distance on the vertex is slightly shorter than the third antennal segment (9 : 10); the femora are brownish, the tibiae and tarsi ferruginous, but the mid and hind tibiae are brownish on outer side.

Tachytes tricinctus (F.)

Liris tricincta F., 1804, p. 229 — "in Insula St. Thomae", coll. Sehestedt.
Tachytes cubensis Cresson, 1865, Proc. Entom. Soc. Philad., vol. 4, p. 139, ♀ ♂ — Cuba [new synonymy].

This species was recognized as a *Tachytes* by Dahlbom (1843, p. 125), but erroneously placed in the synonymy of *T. repanda* Fabr. in 1845.

The collection S. & T.L. contains two identical males, with square label: "Ins. St. Thoma, Mus. S. & T.L., Tricincta Fabr." A ♂ in the collection F. appears to belong to the same species. Description of the lectotype (present designation):

Pubescence of head and thorax greyish yellow; legs ferruginous (coxae

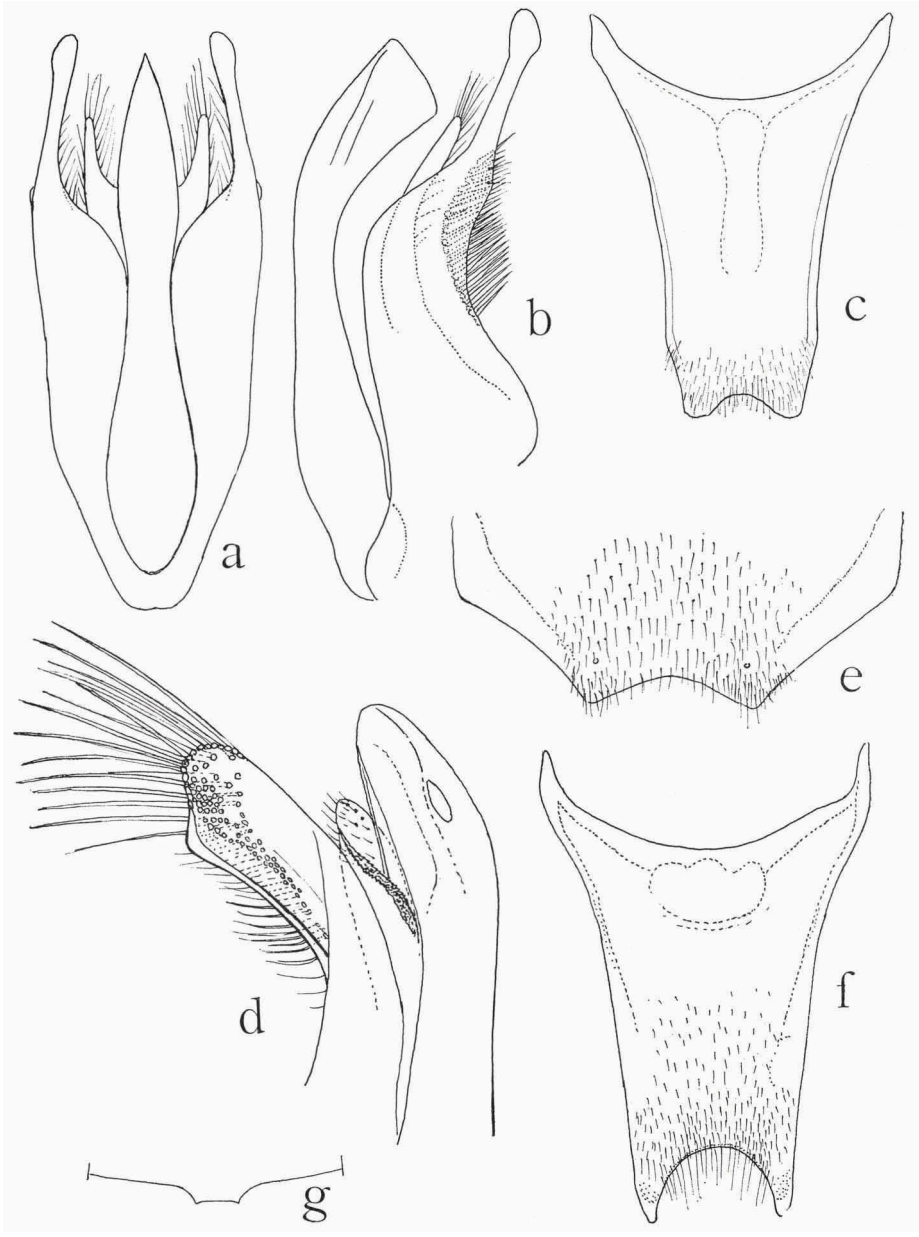

Fig. 1. *Tachytes nitidulus* (F.): a = dorsal view of male genitalia (South India, coll. ML); b = do., lateral view (type); c = apical sternite of male (type). *Tachytes tricinctus* (F.), lectotype: d = lateral view of apex of male genitalia; e = preapical sternite, f = apical sternite. *Liris labiata* (F.), ♂ (coll. Mus. Copenhagen): g = apical margin of third gastral sternite.

and trochanters blackish; fore femora fuscous at the base); tergites 1-3 with sericeous, pale golden, bands; mesoscutum finely and not very densely punctate, at least in the middle the punctures smaller than the interspaces; produced median portion of clypeus almost truncate, no median notch or lateral teeth; smallest interocular distance on vertex larger than third antennal segment (12 :9), antennal segments 3 :4 = 9 :8 (at under side 8 :8), propodeal fovea shallow, not distinctly defined, only slightly less dull than the finely granulate dorsal surface of the propodeum.

Apical margin of the seventh gastral sternite emarginate (fig. 1e); eighth sternite bidentate and semi-circularly emarginate at apex (fig. 1f); parameres of genitalia with an apical fringe of long hairs and with a shorter lateral fringe, the aedeagus rounded, and the volsellar digitus densely covered with short hairs (fig. 1d).

This species appears to be identical with two males from Cuba (USNM, ML), sent to me by Mr. Krombein under the name *Tachytes cubensis* Cresson; the pubescence of these specimens has a more pronounced golden tinge, but evidently the type has lost much of its original brilliance.

Tachytes tricoloratus (Turton)

Sphex tricolor F., 1793, p. 215 — "in Barbaria", coll. Desfontaines. [Invalid homonym of *Sphex tricolor* Schrank, 1781].
Pompilus tricolor F., 1798, p. 251.
Larra tricolor F., 1804, p. 221.
Sphex tricolorata Turton, 1802, p. 492.
Tachytes tricolorata (Turton), van der Vecht, 1960, p. 6.

The collection F. contains two different females, a *Tachytes* and a *Tachysphex*. Neither of these agrees with the original description.

The *Tachytes* has the two basal gastral segments red (Fabricius wrote: "Abdomen sessile anterioribus tribus segmentis rufis...") and is apparently not the species which is usually called "*tingitanus* Pate = *tricolor* F. nec Schrank."

The *Tachysphex* belongs to the group of *T. panzeri* Lind. and is perhaps identical with *T. cheops* de Beaumont.

There is no specimen in the Paris Museum.

Tachytes varians (F.)

Liris varians F., 1804, p. 229 — S. America, leg. Smidt, coll. Lund.

The collection S. & T.L. contains two different males, one with red legs and one with dark legs. The description is evidently based on the former specimen ("Pedes omni rufi"), which I have therefore labelled as lectotype.

The collection F. contains under this name a female with silvery-grey facial pubescence and with the three basal gastral segments with sericeous bands; it appears to be specifically different from the lectotype which has four sericeous bands, and which may be recognized by the following characters.

♂-Pubescence of head and thorax pale golden; gastral tergites 1-4 with silvery, sericeous, apical band, apical tergite with appressed, short, silvery pubescence. Mandibles dark at base, outer half brownish; legs ferruginous, but coxae, trochanters, basal three fourths of femora I, and basal half of femora II, dark (all tarsal segments ferruginous!).

Anterior margin of clypeus produced in the middle; the produced part narrower than the interocular distance on the vertex (22: 29), distinctly depressed and almost impunctate, slightly arcuate anteriorly, without any trace of a median incision, and without distinct lateral teeth. Relative lengths of antennal segments 3 : 4 = 18 : 17.

Propodeal fovea well defined, rather deep, longitudinally triangular, and at least anteriorly with some distinct transverse rugae. Apical gastral tergite very shallowly emarginate, the apical sternite with an approximately semicircular emargination.

Gastral sternites 1 and 2 with long and erect hairs, 3 and 4 with appressed hairs, 5-7 with semi-erect pubescence, which is shorter, darker, denser and more regular than that on the second sternite.

Length 12 mm.

A male from Surinam, Zanderij, 24 Nov. 1950, D. Piet leg. (MA), agrees well with the type; the femora are slightly less extensively ferruginous.

This species appears to be closely allied to another *Tachytes* from Surinam, which differs as follows (♂):

Basal half of mandibles pale yellow, translucent; apical half brown. Apical tarsal segment of hind legs brown.

Propodeum more finely granulate, slightly shiny, the fovea shallow, nowhere distinctly margined, a little more shiny than the surrounding areas.

First to fifth gastral sternites without erect pubescence, only with a few scattered bristles; pubescence of sternites 6 and 7 sparser, shorter and less erect.

Apical gastral sternite narrower, the emargination deeper (depth equal to more than half the width), the tooth on each side of the emargination sharper.

Third submarginal cell of fore wing less strongly produced outwardly.

This species, as yet unidentified, is represented in the Leiden Museum by a single male; some females from Surinam agree in the structure of the propodeal fovea and will probably prove to be conspecific.

Genus **Larra** Fabricius, 1793

Larra analis F.

Larra analis F., 1804, p. 220 — Carolina, coll. Bosc.
Larra analis F., in Muesebeck c. s., 1951, p. 953.

The type is a female in the Paris Museum; it bears a label "Carolina" and agrees with the current interpretation. A female (head lacking) in the collection F. belongs to the same species.

Larra bicolor F.

Larra bicolor F., 1804, p. 221 — S. America, leg. Smidt, coll. de Sehestedt.
Larra americana Saussure, 1867, p. 74, ♀ ♂ — Caracas, Venezuela (3 ♀, 1 ♂); Brazil (1 ♀) (? types Museum Vienna); Williams, 1928, pp. 45, 59 [new synonym].

This species is represented in the collection S. & T.L. by two females, one of which I have labelled as lectotype. I am not certain that the other specimen belongs to the same species.

This is apparently Dahlbom's "*Pompilus bicolor* F." (l.c., p. XX) which he considered identical with his *Tachytes pagana* (l.c., p. 471), for the true *Pompilus bicolor* F. is an entirely different, Australian, Pompilid.

Some notes on the lectotype: A 17-19 mm long *Larra,* black with shiny red abdomen; wings with faint yellow tinge, weakly infuscated, the outer half slightly darker.

Vertex polished, finely and sparsely punctate. Interocular distance on vertex almost equal to the length of antennal segments 3 + 4 (18 : 19); third antennal segment longer than the fourth (11.5 : 7.5). Mesoscutum densely punctate; dorsum of propodeum dull, with median carina which is most distinct in the anterior half and which disappears in the posterior third.

Spines of tibiae and tarsi translucent whitish with more or less distinct reddish tinge, darkest at the base (the spines are more reddish in Surinam specimens).

Length 16 mm.

In the key to some South American *Larra,* published by Williams (1928, p. 59), this species runs to *L. americana* Saussure. The original description of this *Larra,* based on some specimens from Venezuela, leaves indeed little doubt that is identical with *L. bicolor,* and I have therefore listed *L. americana* as a synonym of *L. bicolor.* The following specimens from Paramaribo, Surinam, agree well with the type: 1 ♀ Cultuurtuin, 2 June 1950, leg. D. C. Geijskes (ML), 1 ♀ same locality, 16 Jan. 1951, leg. D. Piet (MA), 1 ♀ 26 Oct. 1957, leg. P. H. van Doesburg (coll. Verhoeff).

A female from Kartabo, Bartica District, British Guiana, 11 Oct. 1920

(USNM), differs from typical *bicolor* only in having the wings slightly darker.

Two females from Pernambuco, Brazil (USNM, ML), are very similar, but they have the interocular distance distinctly longer than the antennal segments 3 + 4 (22 : 19).

Some further South American *Larra* with this colour pattern (black with red gaster) differ in having much darker spines on the legs, darker wings, a differently sculptured propodeum, etc.

Larra anathema (Rossi)

Larra ichneumoniformis F., 1793, p. 221 — Hungary, leg. Hübner; 1804 : 220.
Larra anathema (Rossi), Dalla Torre, 1897, p. 662.

The type in collection F. is a female (not a male as stated by Kohl, 1884, p. 238) of the well known *L. anathema* (Rossi); this synonymy has been established long ago. The first antennal segment is distinctly red anteriorly.

Larra maura (F.)

Sphex maura F., 1787, p. 276 — Tranquebar, leg. Hübner; 1793, p. 212.
Pompilus maurus F., 1798, p. 247.
Liris maura F., 1804, p. 230.

The type is a male in the collection F.; it is black with red hind femora; propodeum distinctly transversely rugose, between the rugae superficially punctate, with median carina which becomes obsolete before the apex. It is not identical with similarly coloured specimens from Sumatra and Java. Topotypical material is much desired!

Larra nigripes (F.)

Sphex nigripes F., 1793, p. 216 — Cape of Good Hope, coll. Lund.
Pompilus nigripes F., 1798, p. 252.
Liris nigripes F., 1804, p. 230.

The type is a female *Larra* with square label: "Cap. bon. Sp. Mus. S. & T.L. *Nigripes* Fabr." in collection S. & T.L.

Black, gaster red, segment 5 somewhat blackish, 6 black. Wings not very dark, pale brownish with yellowish tinge. Gaster impunctate. Interocular distance on vertex = 14.5, at base of clypeus = 23.5, total width of head = 41, antennal segments 3-5 = 8.5, 5.5, 6.

Apparently this wasp is not identical with any of the species mentioned in Arnold's monograph. Perhaps the specimen is incorrectly labelled? I have not yet seen any matching specimens.

Larra teutona (F.)

Pompilus teutonus F., 1804, p. 194 — Germany, leg. Smidt.

This species was regarded as identical with *Larra anathema* Rossi by Dahlbom (1843, pp. XIX and 136). Schulz (1912, p. 79) confirmed this synonymy.

The type in the collection F. is a female which differs in some respects from a *Larra anathema* ♀ with which I could compare it: in the type the third gastral sternite is red, as well as the posterior margin of the third tergite; furthermore the wings are lighter, the third submarginal cell is somewhat shorter (anteriorly 9, posteriorly 21.5), and the sides of the propodeum are not striate anteriorly.

Genus **Liris** Fabricius, 1804

Liris aurulenta (F.)

Sphex aurulenta F., 1787, p. 274 — China, coll. de Sehestedt. [Not *Sphex aurulenta* F., 1793, p. 201].

Sphex aurata F., 1787, p. 276 — "in India orientali", leg. de Schlanbusch; 1793, p. 213 (*Sphex aurulenta* 1787: 274 in synonymy) [invalid homonym of *Sphex aurata* L., 1758].

Pompilus auratus F., 1798, p. 250.

Liris aurata F., 1804, p. 228; Williams, 1928, p. 82.

Liris aurulenta (F.) van der Vecht and Krombein, 1955, p. 34.

The type of *Sphex aurata* F., 1787, is a female with label "*Pompilus auratus*" in the collection F.; it agrees with the current interpretation of this wasp, which is widely distributed in South East Asia and the Malay Archipelago. The type of *aurulenta* could not be found in the Copenhagen collections.

Liris haemorrhoidalis (F.)

Pompilus haemorrhoidalis F., 1804, p. 198 — Guinea, leg. Mejer, coll. Lund.

The type of this common African wasp (see Arnold, 1923, p. 251) is a remarkably well preserved female with square label: "Guinea, Meier, Mus. S. & T.L., *haemorrhoidalis* F." (collection S. & T.L.).

Liris nigra (F.)

Sphex nigra F., 1775, p. 350 — "in Europa"; 1781, p. 448 ("in Europae sabulosis"); 1787, p. 276.

Pompilus niger F., 1793, p. 211 ("in Europae floribus"); 1798, p. 247 ("in Europae sabuletis"); 1804, p. 191 ("in Europae floribus").

This species has generally been regarded as a Pompilid, but the specimen bearing the original label is a female of the Sphecoid wasp which has been recorded as *Notogonia pompiliformis* Panzer (Schmiedeknecht, 1930, p. 695),

more recently as *Liris nigra* Lind. (various papers by de Beaumont). As regards the generic name of this and the next three species, I have followed de Beaumont (1954), who includes in *Liris* all the species formerly placed in *Notogonia*. The name *nigra* Lind. appears to be a valid name, as explained by Pate (1937, p. 94), who criticized Richards (1935, p. 164) on this point. The problem is now found to be of little importance, because *nigra* Lind. is a homonym as well as a synonym of *nigra* F.

The original description, although consisting of a single line, leaves no doubt that it is based on a Larrid, not on a Pompilid wasp. It reads: "Sphex nigra, abdomine sessili, segmentorum marginibus lucidis". Unfortunately, Fabricius himself confused this species with some black Pompilidae in which the base, not the margin, of some of the gastral segments is sericeous ("lucidis"). This appears from the sentence "Parva. Statura omnino S. viaticae at tota nigra", which was added to the original diagnosis in 1793, and also from the additional specimens under "*Pompilus niger*" in Fabricius's collection. These include one *Cryptocheilus* species, two females of *Auplopus carbonarius* (Scopoli), and a badly damaged black Pompiline wasp with triangular third submarginal cell. None of these is acceptable as lectotype.

The discovery of the true identity of *Sphex nigra* F. is of importance in connection with the status of the name of the Pompilid genus *Anoplius* Dufour, 1834. According to Pate (1946), the type species of this genus is "*Pompilus niger* Fabricius [i.e. *Sphex nigra* Fabricius, 1775 = *Sphex nigerrima* Scopoli, 1763 = *Anoplius nigerrimus* Scopoli]", by designation of Fox, 1901. This latter author, however, stated that "*Anoplius* Dufour (1833)... may be ... used ... with *Anoplius nigerrimus* (Scopoli) [*Pompilus niger* Fabricius] as the type". Fox noted that Dufour became authority for *Anoplius* inadvertently, by writing "Le genre *Anoplius* a été fondé, je crois, par M. le Peletier de Saint-Fargeau; du moins j'ai reçu de lui, sous cette dénomination générique, l'*Anoplius Niger* et d'autres espèces". The species received by Dufour from Lepeletier under the name "*Anoplius Niger* (*Pompilus Niger*, Fabr.)" was undoubtedly a black Pompilid, whereas the new species described by Dufour in the paper quoted above, *Anoplius uniocellatus*, is remarkably enough none other than the true *Liris nigra* (F.)!

Dufour did not mention Scopoli's species, and evidently Fox's designation can only mean that *Pompilus niger* F. is to be accepted as the type species of *Anoplius* Dufour. If we now regard as such the nominal species *Pompilus niger*, which is a synonym of *Sphex nigra* F., 1775, the conclusion must be that the generic name *Anoplius*, used for over a hundred years in the family Pompilidae, must be transferred to the Sphecoidea. This would be most unfortunate, and in order to avoid the confusion which would result from

such a view, it seems desirable to look for some means to conserve the name *Anoplius* for the Pompilid genus for which it is now in general use [1]).

In this connection it may be noted that *Anoplius niger* F., as described by Lepeletier in 1845, p. 451, is generally regarded as identical with *Sphex nigerrima* Scopoli, 1763. However, there are reasons to doubt the correctness of this view. Rogenhofer and Dalla Torre (1882), who first established this synonymy, state that Scopoli's figure is "ganz gut", but in my opinion it may as well represent an Ichneumonid as a Pompilid. Scopoli's description (in which it is said: "Antennae abdomine longiores") as well as a note on the origin of his material ("Ex oblongo, cinerascente, antice dilatato folliculo nata mihi, e quo probabiliter *Musca* aliqua prodiisset") seem to suggest that his *Sphex nigerrima* is a parasitic wasp. Evidently the validity of the name of the species usually recorded as "*Anoplius nigerrimus* (Scopoli)" deserves further attention.

Liris (?) **fulvipes** (F.)

Liris fulvipes F., 1804, p. 227 — S. America, leg. Smidt, coll. Lund.
Larra fulvipes (F.) Kohl!, in Dalla Torre, 1897, p. 667.

The type is a slender and very striking species of "*Notogonidea*" (♀) with square label: "Amer. merid. Mus. S. & T.L., *fulvipes* Fabr."

Black; metapleura, propodeum and legs red; coxae I dark (II and III red). Anterior half of fore wings infuscated.

Body dull; head and thorax extremely finely and densely granulo-punctate, sculpture of gaster even finer, all tergites and the sternites 1 and 2 dull, 3-6 shiny.

Body partly covered with shiny golden tomentum, especially on posterior margin of mesoscutum, on scutellum, postscutellum and propodeum; gastral tergites 1-3 with very narrow (almost linear) silvery bands at apex.

Clypeus rounded anteriorly, very slightly produced in the middle; interocular distance on vertex = 16, at clypeus = 36, antennal segments 3-5 = 10 : 9.5 : 9.5. Pygidium elongate, very slightly convex, finely punctate and with short and sparse pubescence, the surface distinctly visible.

Length 13-14 mm.

This species appears to be related to *L. antica* (Smith), described in 1856 as *Larrada antica* from Brazil, and to *L. rufogeniculata* (Cameron), described in 1912 (Jl. Roy. Agric. Soc. Demerara, vol. 2, p. 435) as *Tachysphex*

---

1) I shall be grateful for suggestions concerning this point, for it is intended to submit the problem to the International Commission on Zoological Nomenclature about a year after the publication of this paper.

rufogeniculata from British Guyana. Both these species, however, have been based on males, and the material I have seen is not sufficiently complete to decide whether they are identical with *L. fulvipes* (F.).

Liris labiata (F.)

Sphex labiata F., 1793, p. 211 — South American Islands, Dr. Pflug.
Pompilus labiatus F., 1798, p. 247; 1804, p. 191.
Tachytes labiatus (F.) Smith!, in Dalla Torre, 1897, p. 691.

The collection F. contains a specimen without antennae and without abdomen; it has the basal half of the wings conspicuously tinged with yellow. This specimen, apparently a female, agrees well with the description and has been labelled by me as lectotype. A second specimen under this name differs by the subhyaline (not yellowish) wings and the more coarsely striate propodeum; its head is lacking.

The following description is based on two females and one male in the Copenhagen Museum (originally collection S. & T.L., now in the general collection).

♀ — Black; head, thorax, gastral sternites 1 and 2, and apical margins of tergites 1-3 with fine greyish tomentum, slightly silvery in certain lights; wings with distinct yellow tinge, moderately infuscated at apex, beyond the first submarginal cell.

Anterior margin of clypeus shiny, slightly bent downwards, almost imperceptibly emarginate in the middle anteriorly.

Interocular distance on the vertex slightly longer than the third antennal segment (11 : 10), which is hardly longer than the fourth (10 : 9.5).

Second submarginal cell at base as wide as the third (15 : 15), at top slightly narrower (4.5 : 6).

Dorsum of propodeum dull, the finely granulate sculpture slightly coarser than that of the mesoscutum; in certain lights a fine transverse striation is visible; there are some short transverse ridges on the sides of the dorsum, near its apex, and on the upper part of the declivity, but the only continuous ridge is the one which marks the transition from dorsum to declivity; the latter has a rather deeply impressed median line; the sides of the propodeum have the same finely granulate sculpture as the thoracic segments; they are smooth except for the ridges at upper and posterior margins and some fine and indistinct ridges behind the spiracles.

Pygidium rather narrow, the carinate margins distinctly arcuate, the base with a triangular, smooth and shiny, slightly convex area, the remainder area somewhat depressed, densely punctate and covered with short appressed bristles, the apex truncate with a row of about six short bristles.

Apical two thirds of hind tibiae with a dorsal carina bearing 4-5 spines (including one at the apex).

♂ — A male belonging to the typical series is smaller ("labiatus var. minor" on label); anterior margin of clypeus with a median arcuately produced area; antennal segments 4-13 with two continuous, fine, carinate lines, one on the dorsal and one on the ventral side, apparently bordering the large sensory areas of these segments. Apical margin of third sternite produced in the middle into a short slightly raised, lamella (fig. 1 g).

Length: ♀ 13-13.5 mm, ♂ 8.5 mm.

This form is so closely allied to *Liris ignipennis* (Smith), originally described from S. Domingo, that it cannot be regarded as a separate species. Mr. Krombein sent me 2 ♀ 2 ♂ of *L. ignipennis* from Haiti and Puerto Rico (now 1 ♀ 1 ♂ in ML) and I saw another female from Puerto Rico, 800 m, leg. V. H. van der Bergh, Dec. 1929, from the collection of the Amsterdam Museum. These specimens are slightly larger (♀ 15-16 mm, ♂ 11 mm), the yellow colour of the basal two thirds of the wings is more pronounced, and the apical margins are slightly darker. I cannot find any other differences, however, and I have therefore decided to treat *L. ignipennis* (Sm.) as a subspecies of *L. labiata* (F.).

A female *Liris* from Martinique, leg. N. L. H. Krauss, Nov. 1950 (USNM), is smaller (length 11 mm); the transverse ridges on the propodeum are lacking, except for the one ridge marking the transition from dorsum to declivity, and the smooth area of the pygidium is slightly larger. Perhaps a study of the male of this form will indicate that it is no more than a subspecies of *L. labiata* (F.).

Dahlbom identified this species with his *Tachytes murina,* but since he called the wings of *murina* "albo-hyalinis", this synonymy is certainly incorrect.

Liris rufipennis F.

Liris rufipennis F., 1804, p. 228 — South America, leg. Smidt, coll. de Sehestedt.
Larra rufipennis (F.) Kohl! i.l., Dalla Torre, 1897, p. 673.

This species is represented in the collection S. & T.L. by two identical males of a *Liris* with golden pubescence and yellowish wings with dark outer margin; basal four gastral tergites with pale golden sericeous apical band.

Median portion of clypeus truncate, with distinct lateral angles, its anterior margin shiny; dorsum and declivity of propodeum with conspicuous, short, golden pubescence; sixth gastral sternite with an apical band of appressed hairs, the band interrupted in the middle; seventh sternite on each side with a semi-erect tuft of longer hairs, decreasing in length towards the sides; apical

sternite densely covered with short pubescence, semicircularly emarginate.

Length 13 mm.

The following males agree well with these types: 2 ♂ Belem, Para, Brasil, Jan. 1938, G. N. Wolcott and L. F. Martorell (USNM, ML), 1 ♂ St. Vincent, West Indies, Windward side, no. 274, H. H. Smith (USNM); furthermore I have examined 2 females from Belem, Para, 1936, G. N. Wolcott, on flowers of Hyptis suaveolens (ML), and 1938, G. N. Wolcott and L. F. Martorell (USNM).

Genus **Palarus** Latreille, 1802

Palarus variegatus (F.)

Tiphia variegata F., 1781, p. 451 — in Siberia, leg. Pallas, coll. Banks; 1787, p. 279; 1793, p. 225; 1804, p. 233.

Crabro flavipes F., 1781, p. 470 — Italy, leg. Allioni; 1787, p. 295.

Philanthus flavipes F., 1790, p. 225 [erroneously: "in Daniae floribus"]; 1793, p. 290; 1804, p. 304.

The type of *T. variegata* is a female in the Banks collection and was correctly recognized as identical with *Palarus flavipes* (F.) by Turner (1909, p. 484), who placed the name *flavipes* in the synonymy of *variegatus*. Since he acted in this respect as the first reviser, his decision must be accepted.

The type of *Crabro flavipes* F. is a female of this well known European species (see de Beaumont, 1949b, p. 637) in the collection F.

Palarus interruptus (F.)

Bembex interrupta F., 1787, p. 286 — "in India orientali", coll Lund; 1793, p. 252.

Crabro interruptus F., 1787, p. 295 — "in India orientali", leg. Pflug; 1793, p. 295.

Liris interrupta F., 1804, p. 230 — "in India orientali", coll. Lund (both *Bembex interrupta* F. and *Crabro interruptus* F. in synonymy).

Palarus orientalis Kohl, 1884, p. 422; Turner, 1911, p. 483 [new synonym].

The types of *Bembex interrupta* F. in the collection S. & T.L. are two identical females of a *Palarus*; one of these is labelled: "*L. interrupta* ex Ind. or."

The collection F. contains under the name *Liris interrupta* two females of the same species of *Palarus* and one female of a Bembicine wasp. The latter specimen agrees neither with the original description of *Bembex interrupta*, nor with that of *Crabro interruptus* and may therefore be ignored. We may thus conclude that the synonymy as given by Fabricius in 1804 is to be regarded as correct.

Bembex interrupta F. has erroneously been recorded by Handlirsch (1892, p. 181) and by Dalla Torre (1897, p. 526) as an unidentified species of *Stizus*.

Liris interrupta F. (1804, p. 230) was recognized as a species of *Palarus* by Dahlbom (1845, p. XXIII), but this has been overlooked by Kohl (1884, pp. 422, 425, 428), who cited Dahlbom (1845, p. 468) as the author of the name *Palarus interruptus*.

Kohl (1884, p. 422) regarded his *Palarus orientalis*, described from a male collected in Ceylon, as probably identical with "*P. interruptus* Dahlbom". In my opinion there can be little doubt that these two are indeed conspecific. *Palarus orientalis* Kohl was hitherto the only known Oriental species of the *latifrons* group (see de Beaumont, 1949b, p. 629, and Turner, 1911, p. 479), and apart from the sexual characters, Kohl's description applies well to the Fabrician species.

The same can be said of Turner's note on the structure of the female pygidium (Turner, 1911, p. 483).

Genus **Dinetus** Panzer, 1806

Dinetus pictus (F.)

Sphex guttata F., 1793, p. 215 — Italy, leg. Allioni [invalid homonym of *Sphex guttata* Gmelin, 1790].
Pompilus guttatus F., 1798, p. 252; 1804, p. 196.
Crabro pictus F., 1793, p. 299 — Halle, leg. Hübner.
Pompilus pictus F., 1804, p. 196.

The lectotype of *Sphex guttata* F. in the collection F. is a female of *Dinetus pictus*, consisting only of part of the thorax and the wings. A second specimen under this name belongs to a species of the genus *Nysson*. The type of *Crabro pictus* F. is a well preserved male in the same collection; it agrees with the usual interpretation.

Genus **Trypoxylon** Latreille, 1796

Trypoxylon albitarse F.

Trypoxylon albitarse F., 1804, p. 180 — S. America, leg. Smidt, coll. Lund.

Two identical females in the collection S. & T.L. run to *T. palliditarse* Saussure in Richards's key (1934); the mandibles are ferruginous with dark apex and *T. albitarse* is therefore certainly not identical with the female mentioned in the last paragraph of this author's discussion on p. 215. Apparently the name *albitarse* must be used for *T. palliditarse* sensu Richards, or at least for part of the agglomerate treated under this name.

The following specimens agree with the lectotype: 1 ♀ N. E. Surinam, Mungatapu — Wia wia, 13 Oct. 1948, D. C. Geijskes (ML) and 1♀ Paramaribo, Cultuurtuin, 11 June 1938, D. C. Geijskes (Mus. Paramaribo). Furthermore I saw from Surinam: 1 ♂ Coronie, Burnside, 10 Sept. 1945 (ML), and

1 ♀ Tibiti savanne, 18 Jan. 1949, D.C. Geijskes (ML); the latter specimen differing from the other females in having dark mandibles.

The specimen under this name in the collection F. is a different species, and this has caused an error in the paper of Richards, who regarded this as the type and used the name *albitarse* F. for a North American species, *T. politum* Say. I agree entirely with Sandhouse (1940), who refused to accept the specimen(s) of *albitarse* at Kiel as type(s) [1]).

Trypoxylon fugax F.

Trypoxylon fugax F., 1804, p. 182 — South America, leg. Smidt, coll. Lund; Richards, 1934, p. 254.

The collection S. & T.L. contains two females of this species, which has correctly been identified by Richards (1934).

Trypoxylon fuscipenne F.

Trypoxylon fuscipennis F., 1804, p. 181 — South America, leg. Smidt, coll. de Sehestedt.

According to Richards (1934, p. 224) "the type is a female in the Sehestedt collection", but actually the collection S. & T.L. contains under this name two specimens, a male and a female. I have decided to designate the male as the lectotype.

Detailed comparison of this male with a specimen from Surinam, recently identified by Richards as *fuscipenne,* gave the following results.

	Type ♂	♂ from Surinam
Mandibles	dark brown	ferruginous
Puncturation of mesocutum and mesepisternum	very fine	slightly more distinct
Interocular distance vertex : clypeus	34 : 29	44 : 34
Line through hind ocelli	5 : 9 : 6 : 9 : 5	10 : 8 : 9 : 8 : 10
First segment of hind tarsi	basal 1/3 brown	basal 1/2 brown
Fifth segment of do.	"white" (as segm. 4)	pale brown
First gastral segment, length : smallest width	7.2 : 1	6 : 1
Third gastral sternite	hardly impressed at base	distinctly impressed at base, posterior half more convex.

1) Sandhouse referred to "Fabricius' type in the Museum at Lund", apparently not knowing that "Mus. Dom. Lund" indicated the collection of N. Tønder Lund at Copenhagen!

Genus **Psenulus** Kohl, 1896 (= *Diodontus* of American authors)

Psenulus atratus (F.)

Trypoxylon atratum F., 1804, p. 182 — Germany, leg. Panzer.

The collection F. contains a ♂ bearing a label: "ist ♂ von *Psenulus pallipes* Panz. (= *atratum* F. = *rubicola* Harttig)"; a female under this name in the same collection is different and has been identified as *Psenulus schencki* Tourn. by de Beaumont.

The identity of this species has been established by Richards (1935, p. 166); according to de Beaumont (1937, p. 86) the older *Sphex pallipes* Panz. (1798) is likely to be the same species.

Genus **Psen** Latreille, 1796

Psen ater (F.)

Sphex atra F., 1794, p. 457 — Italy, leg. Dr. Allioni; 1798, p. 244.
Pelopoeus unicolor (Panzer) F., 1804, p. 204.
Pelopoeus compressicornis F., 1804, p. 204 — "in Germania Pinetis Dom. Schott".

The lectotype of *Sphex atra* is a female in the collection F.; it agrees with the current interpretation (see de Beaumont, 1937, p. 42). A second female is headless.

I have not found any specimens of *P. compressicornis,* but there can be no doubt that the description refers to a male of *Psen ater* (F.).

Psen (Mimesa) equestris (F.)

Trypoxylon equestre F., 1804, p. 182 — Germania, Dr. Panzer.

The type is a male in the collection F. The species has been misidentified until 1935, when its identity was established by Richards, l.c., p. 166. See also de Beaumont, 1937, p. 93.

Psen (Mimesa) lutaria (F.)

Sphex lutaria F., 1787, p. 273 — Kiel, leg. Daldorff; 1793, p. 199.
Pepsis lutaria F., 1804, p. 208.
Psen (Mimesa) shuckardi (Wesmael, 1852), de Beaumont, 1937, p. 63 [new synonymy].

The collection F. contains a female bearing a label "*lutaria*" in Fabricius's handwriting; this specimen (lectotype by present selection) agrees in all respects with the species known as *Psen (Mimesa) shuckardi* (Wesmael). A second specimen, in poor condition, may belong to the same species, a third which has lost most of its abdomen (petiole and part of first tergite present) is apparently a female of *Psen (Mimesa) bicolor* Jurine.

This species was misidentified by Dahlbom (1845, p. XX) as *Psammophila*

affinis Kirby, 1798 (now called *Podalonia affinis*), apparently because Fabricius compared the insect with his *Sphex arenaria* (= *Podalonia hirsuta* (Scop.)). However, the indication "triplo minor" does not apply to *P. affinis*, whereas the lectotype agrees well with the description, as far as it goes.

Other authors, such as Turner (1918, p. 88), have followed Dahlbom's example, but Richards (1935, p. 165) wrote "The type is lost, and even the genus is uncertain". This shows how successfully Fabricius put his successors off the track by treating this wasp in his "Systema Piezatorum" as a species of *Pepsis*!

Genus **Pemphredon** Latreille, 1796
Pemphredon lugubris (F.)

Crabro lugubris F., 1793, p. 302 — Halle, leg. Hübner.
Pemphredon lugubris F., 1804, p. 315.

The type is a labelled female (lectotype) in the collection F.; according to Mr. K. Faester it agrees with the usual interpretation. A specimen without label is smaller and may be different.

Genus **Diodontus** Curtis, 1834
(= *Xylocelia* Rohwer of American authors)
Diodontus minutus (F.)

Crabro minutus F., 1793, p. 302 — Copenhagen, coll. Lund.
Pemphredon minutus F., 1804, p. 316 (*Sphex pallipes* Panzer in synonymy).

The lectotype (present selection), the first of two females in the collection S. & T.L., agrees with the usual interpretation of this species.

Genus **Sphex** Linné, 1758
(=*Ammobia* Billberg of some American authors)
Sphex argentatus F.

Sphex argentata F., 1787, p. 274 — Coromandel, leg. Vahl; 1793, p. 200.
Pepsis argentata F., 1804, p. 209 (*Sphex argentea* (sic!) F., 1793, and *S. unicolor* F., 1793, in synonymy).

The lectotype (present selection) is a female with a label "*argentata*" in Fabricius's handwriting in collection F.; a second female agrees with this type; a third specimen (head lacking) is a male of a different species (apparently *metallicus* Taschenberg).

Sphex argentatus F. is the commonest *Sphex* in the Oriental region; it had already been correctly identified by Dahlbom (1843, p. 25), but unfortunately Kohl did not dare to accept Fabricius's name and called this wasp *Sphex umbrosus* Christ (1890, p. 406).

The identity of Christ's species, however, is much less certain than that of *S. argentata* Fabricius; it was described from an unknown locality, the description is very poor, the type is lost, and Christ's figure applies much better to the African *Sphex metallicus* Taschenberg than to *S. argentatus* F.

It should be noted that the name *Sphex argentatus* F. is to be restricted to the first of Kohl's eight "varieties" (l.c., p. 408); the others, with the possible exception of *fumosa* Mocs., are certainly specifically different.

Sphex metallicus Taschenberg

Sphex albifrons F., 1793, p. 207 — Guinea, leg. Isert [invalid homonym of *Sphex albifrons* Villers, 1789].
Pepsis albifrons F., 1804, p. 212.

The type in the collection F. is a female of the African *Sphex metallicus* Taschenberg, but Fabricius's name is preoccupied and cannot be used for this species.

Sphex unicolor F.

Sphex unicolor F., 1787, p. 275 — "in Hispania gregatim in umbellatis dormitans", leg. Vahl; 1793, p. 208.

This species was placed in the synonymy of "*Pepsis argentata*" by Fabricius in 1804 (p. 210), and I suspect, therefore, that the type was a mislabelled specimen of *Sphex argentatus* F. or a similarly looking species.

It seems very well possible that the male of "*argentata*" in collection F., mentioned above, is actually the type of this species, in which case the name *unicolor* would perhaps be the oldest available name for *Sphex metallicus* Taschenberg. Fabricius's original description, however, is very short and unsatisfactory and also because the habitat is so uncertain, it seems better to leave this point undecided for the moment.

Sphex tomentosus (F.)

Sphex tomentosa F., 1787, p. 274 — Sierra Leone, leg. Pflug; 1793, p. 202.
Pepsis tomentosa F., 1804, p. 211.
Pepsis tomentosa F., Dalla Torre, 1897, p. 264.

The type is a male from "Sierra Leone, Pflug" in the collection S. & T.L.; it agrees well with the description. The species is not represented in the collection F.

Together with other characters, the remarkable structure of the seventh gastral tergite (Kohl, 1895, pl. IV fig. 9) shows with certainty that Fabricius's type belongs to the species hitherto called *Sphex tuberculatus* Smith, 1873. It should be noted that the hairs on this tergite are longer than they are

shown in Arnold's figure (1928, p. 362, fig. 10a); they project over a distance of somewhat less than half their length over the apical margin of the tergite. The antennal segments 7 and 8 have a median, flattened, sensory area. The aedeagus is strongly dilated at end and forms here an approximately heart-shaped lamella.

Sphex sericeus (F.)

Pepsis sericea F., 1804, p. 211 — "in maris pacifici Insulis", leg. Billardiere.
Sphex aurulentus var. *sericea* F., Kohl, 1890, p. 393.
Sphex sericeus sericeus (F.), van der Vecht and Krombein, 1955, p. 41.

The type (lectotype by present selection), a female in the collection F., agrees in all respects with the modern interpretation of *Sphex sericeus sericeus* F.; it seems practically certain that it originates from Java.

Sphex sericeus fabricii Dahlbom

Sphex aurulenta F., 1793, p. 201. — Tranquebar, coll. Lund [not *Sphex aurulenta* F., 1787]; 1804, p. 219 [incorrectly placed in synonymy of *Chlorion ichneumoneum* (L.)].
Sphex fabricii Dahlbom, 1843, p. 27, ♀ — Tranquebar.
Sphex sericeus fabricii Dahlbom, van der Vecht and Krombein, 1955, p. 36.

The location of the type is uncertain.

Sphex maxillosus F.

Sphex maxillosa F., 1793, p. 208 — "Barbaria", coll. Desfontaines.
Pepsis maxillosa F., 1804, p. 213.
Sphex maxillosus F., Kohl, 1890, p. 432.

The collection F. contains two identical females of this well known species (one of these is lectotype by present selection).

It has generally been overlooked, that Fabricius's name for this species is invalid, since it is preoccupied by *Sphex maxillosus* Poiret, 1787 (see van der Vecht, 1959, p. 214). In order to maintain Fabricius's name, which has been in general use for over a century, the name *maxillosus* Poiret would have to be suppressed by a decision of the International Commission on Zoological Nomenclature. There is no typical specimen in the Paris Museum.

Sphex flavipennis F.

Sphex flavipennis F., 1793, p. 201 — Italy, leg. de Schlanbusch.
Pepsis flavipennis F., 1804, p. 210.
Sphex flavipennis F., Kohl, 1890, p. 434.

Fabricius's description is fortunately extensive enough to show that it does not apply to the "type" in his collection, which is a female of *Palmodes occitanicus* Lep.! Apparently the true types are two females in the collection

S. & T.L., with square label: "Italia, Schlanbusch, Mus. S. & T.L. *Pepsis flavipennis* Fabr.", the largest of which I have chosen as lectotype. It agrees with the original description as well as with the usual interpretation of this species.

Sphex haemorrhoidalis F.

Sphex haemorrhoidalis F., 1781, p. 443. — Tropical Africa, coll. Banks; 1787, p. 274; 1793, p. 200.
Pepsis haemorrhoidalis F., 1804, p. 209.

The type is a female in the Banks collection; it has been regarded as identical with *Sphex nigripes* var. *volubilis* Kohl, 1895, p. 64, by Turner (1912, p. 369), but Arnold (1928, pp. 344, 365) treated the red-legged *volubilis* as a variety of *S. haemorrhoidalis,* which he described as having the legs black.

In the original description, however, the legs are said to be "ferruginei femoribus basi nigris", and in the type the tibiae and tarsi, and the apical half or third of the femora are indeed dull red. Evidently Turner's interpretation of the species was correct, and the name *umtalicus* Strand must now be used for the dark legged form of *S. haemorrhoidalis.*

The coloration of the specimens of *S. haemorrhoidalis* in the British Museum suggests that Fabricius's type originates from West Africa; some specimens from Gold Coast resemble the type very much. Some females from Sierra Leone have the femora darker than in the type, whereas in a series from Uganda the femora are more extensively red, and the red parts are generally more brightly coloured.

Sphex obscurus (F.)

Pepsis obscura F., 1804, p. 213 — "in India orientali", coll. Lund.
Sphex cinerascens Dahlbom, in Dalla Torre, 1897, p. 419 ("?*Pepsis obscura* F." in synonymy) [doubtful synonymy now confirmed].

Neither Dahlbom nor Schulz mention this species, which is represented by two males and one female in the collection S. & T. L., and by one badly damaged specimen (head, and gaster beyond petiole, lacking!) in the collection F. These types agree in all respects with some specimens of *S. cinerascens* Dahlb. from Ceylon (ML), with which I could compare them. One of the males is now labelled as lectotype; it has the antennal segments 7 and 8 with a narrow median sensory area which does not quite cover the basal two thirds of the segment.

Doubtful species of *Sphex* L.

Sphex hirtipes F.

Sphex hirtipes F., 1793, p. 207 — in Guinea, leg. Isert.
Pepsis hirtipes F., 1804, p. 212.
Sphex hirtipes F., Kohl, 1890, p. 445 [original description].

Original description: "S.(phex) hirta obscura abdomine atro nitidulo, alis testaceis. — Habitat in Guinea Dr. Isert. — Statura et magnitudo praecedentis [*S. ichneumoneus* (Linné)]. Caput & thorax hirta, obscura, immaculata. Abdomen petiolatum, atrum, nitidum. Alae testaceae, apice pallescentes. Pedes hirti, nigri."

This species is not represented in the Copenhagen collections.

It may be identical with *Sphex obscurus* (F.) 1804, but Kohl (1890, p. 351) listed it as a doubtful synonym of *Harpactopus crudelis* Smith ("*Sphex aegyptius* Lep.").

Sphex cincta F.

Sphex cincta F., 1793, p. 205 — Guinea, leg. Isert [invalid homonym of *Sphex cincta* Scopoli, 1763].
Pepsis cincta F., 1804, p. 212.
Pepsis cincta (F.), Dalla Torre, 1897, p. 249.

Original description: "S. (phex) nigra argenteo tomentosa abdominis segmentis margine albis. — Habitat in Guinea Dr. Isert. — Parva. Antennae nigrae. Caput & thorax tomento argenteo tecta. Abdominis petiolus laevis, ater, nitidus. Segmenta omnia margine alba. Pedes nigri. Alae albae."

This species was very probably based on a Sphecid wasp, but the genus is uncertain. *Sphex cincta F.* must remain unrecognized, for I have not found it in the Copenhagen collections. Fortunately this is of little importance, as the name is preoccupied.

Genus **Isodontia** Patton, 1880

Isodontia cyanipennis (F.)

Sphex cyanipennis F., 1793, p. 200 — Cajenne, coll. Bosc.
Pepsis cyanipennis F., 1804, p. 209.
Sphex (Chlorion) cyanipennis F., Kohl, 1890, p. 192 [original description].
Sphex cyaneipennis [!] F., Dalla Torre, 1897, p. 420.

This hitherto unidentified species is not represented in the Copenhagen collections, but in my opinion the original description leaves practically no doubt that it was based on a female of the widely distributed South-American *Isodontia nigrocoerulea* (Taschenberg). The expression "Thorax ... lobo antico cinerascente" evidently refers to the mesoscutum with its conspicuous greyish pubescence; in contrast the scutelli do not have this pubescence and

are black ("fasciaque inter alas atra"). The short yellowish pubescence on the black legs appears to be indicated in the sentence "Pedes nigri geniculis flavescentibus".

Isodontia nigrocoerulea (Taschenberg) has been described in detail by Kohl (1890, p. 383) and later authors (see Willink, 1951, p. 82).

After having written the above notes, I examined a female *Sphex* in the Paris Museum, which is considered to be the type of *S. cyanipennis*. This specimen, however, belongs to *S. melanopa* Dahlbom, and differs so conspicuously from the original description, that I cannot regard it as the type. This supposed type has head and abdomen black, whereas Fabricius wrote: "Caput cyaneum....." and "Abdomen..... cinerascens, cyaneo micans petiolo atro"; moreover there is no conspicuous yellowish tomentum on the hind legs.

Isodontia fuscipennis (F.)

Pepsis fuscipennis F., 1804, p. 210 — South America, leg. Smidt, coll. Lund.

Although this species was recognized as a *Sphex* by Dahlbom (1845, p. XXI, "= *Sphex sericea* Piez. 211 : 19, at varietas minor"), it is listed in Dalla Torre's catalogue as an unidentified species of *Pepsis*.

The lectotype is the first of two well preserved females (collection S. & T.L.) of the species which has hitherto been called *Sphex* (*Isodontia*) *costipennis* Spinola (Kohl, 1890, p. 382; Willink, 1951, p. 79). It has the gastral petiole black; the first tergite dull reddish, darker in the middle, tergites 2-4 blackish with reddish lateral and posterior margins; tergites 5 and 6 mainly reddish. The gastral petiole is slightly longer than the hind metatarsus (32 : 28) and also longer than the antennal segments 3-5 together (32 : 11 + 8 + 8).

Some specimens from Surinam in the Leiden Museum agree in all details with the type.

Genus **Prionyx** van der Linden, 1827
(= *Parasphex* Smith, 1856)

Prionyx viduatus (Christ)

Sphex pubescens F., 1793, p. 205 — "in Guinea in spicis graminum frequens pernoctans", leg. Isert.

Pepsis pubescens F., 1804, p. 212.

The Fabrician species has usually been regarded as a doubtful synonym of *Sphex* (*Prionyx*) *viduatus* Christ (Kohl, 1890, p. 332; Leclercq, 1955, p. 36). This synonymy can now be confirmed. The collection F. contains three specimens, all without abdomen; a male bearing Fabricius's label has one complete antenna and has been chosen as lectotype. Christ's name has priority.

Genus **Priononyx** Dahlbom, 1845

Priononyx (Harpactopus) crudelis (Smith)

Sphex rufipennis F., 1793, p. 200 — Tranquebar, coll. Lund [invalid homonym of *Sphex rufipennis* De Geer, 1778, a Pompilid].
Pepsis rufipennis F., 1804, p. 210.

Sphex rufipennis F. was misidentified by Kohl (1890, p. 408), who applied the name to a yellow-winged Oriental *Sphex,* which he regarded as a variety of *S. argentatus* F. Actually this "variety" is a good species which must bear the name *diabolicus* Smith.

Sphex rufipennis is represented in the collection S. & T.L. by four well preserved females of the large *Harpactopus,* which was discussed by Kohl (1890, p. 351) under the name *Sphex aegyptius* Lep., but which must bear the specific name *crudelis* Smith, since both the earlier names are invalid (*Sphex aegyptia* Lep. is an invalid homonym of *Sphex aegyptia* L., 1758).

Priononyx (Harpactopus) macula (F.)

Pepsis macula F., 1804, p. 210 — in Arabia, coll. Bosc.
Sphex macula (F.) Kohl i.l., Dalla Torre, 1897, p. 430.
Sphex (Harpactopus) macula F., Berland, 1926, p. 201.

This species has remained unknown to Kohl. Berland redescribed the type, which is in the Paris Museum, but which could not be found there during my stay in 1960. Berland regarded *Sphex macula* as probably synonymous with *Sphex (Harpactopus) lugens* Kohl (1890, p. 348), described from the Araxes Valley in Armenia. The same conclusion had been reached previously by Schulz (1911, p. 164), who examined a female and a male "*Pepsis macula* F.", without locality label, in the collection Jurine (Mus. Geneva).

Another species of this same group is the North African *Sphex (Harpactopus) eatoni* Saunders, 1910, originally described from Algeria and later recorded from Egypt (A. M. Honoré, 1944). In my opinion it seems very probable that *macula* will prove to be an older name for *eatoni,* which according to Saunders (1910, p. 518) differs from *lugens* mainly in having the mesoscutum less coarsely sculptured.

Prof. de Beaumont remarked to these notes in a letter dated March 1st, 1960: "J'ai vu ce type [the type of *S. macula* in Paris], qui m'a paru = *eatoni* Saund. (et probablement *lugens* Kohl), mais c'est un très petit exemplaire".

The species is not represented in the Copenhagen collections.

Priononyx fervens (Linné)

Pepsis johannis F., 1804, p. 208 — South American Islands, leg. Smidt, coll. de Sehestedt.
Priononyx fervens (L.) (= *Sphex (Priononyx) striatus* Smith), van der Vecht, 1959b, p. 132.

Kohl (1890, p. 356) listed *Pepsis johannis* F. as a doubtful synonym of *Sphex (Harpactopus) striatus* Smith. Examination of the type, a well preserved female in the collection S. & T. L., has shown that the two are indeed identical. As I have recently demonstrated, however, this species was already known to Linné, who described it in 1758, and more extensively in 1764, under the name *Sphex fervens.*

Priononyx thomae (F.)

Sphex thomae F., 1775, p. 346 — "in insula Thomae Americae"; 1781, p. 443; 1787, p. 274; 1793, p. 199.
Pepsis thomae F., 1804, p. 209.
Pepsis crucis F., 1804, p. 209. — South American Islands, leg. Smidt, coll. Lund.
Sphex (Priononyx) thomae F., Kohl, 1890, p. 358.

Sphex thomae is represented in the collection F. by four damaged males; one of these has a complete right antenna and is therefore selected as the lectotype. In this specimen the antennal segments 5-8 are large and flattened, with wide and flat sensory area; the segments 9-13 relatively small; the relative lengths of the antennal segments 1-5 are 11 : 4 : 7 : 7 : 22; the fifth segment is about three times as long as wide (22 : 6.5).

The typical specimens are somewhat larger than some males from Curaçao with which I could compare them; the latter may perhaps prove to be subspecifically different.

Pepsis crucis F. had already been recognized by Dahlbom (1845, p. XXI) as the female to *Sphex thomae* F.; two females in the collection S. & T.L. and one female in the collection F. belong indeed to this species. Also these females are distinctly larger than some specimens of the same sex from Curaçao (24 mm and 19 mm, resp.).

Genus **Chlorion** Latreille, 1802

Chlorion ciliatum (F.)

Sphex ciliata F., 1787, p. 275 — "India", leg. Daldorff; 1793, p. 206.
Chlorion ciliatum F., 1804, p. 218.
Pronoeus ciliatum (F.), Dahlbom, 1845, p. XXII.
Sphex ciliatus F.!, Dalla Torre, 1897, p. 418.

This species was overlooked by Kohl and has remained a problem until the the present day, probably because it was erroneously recorded from India. The type is a somewhat damaged female with orginal label "*ciliata*" in the collection F., it has some holes in the thorax, and the tip of the abdomen and the greater part of the hind legs are lacking. The antennae, except for the

segments 1 and 2 of the right antenna, were already absent in Fabricius's time ("Antennae desunt").

The specimen appears to belong to the variable African species *Chlorion xanthocerum* Illiger, 1802, and agrees in many respects with a female of the subsp. or var. *instabilis* Smith from "Congo, 43-56" (coll. British Museum), with which I could compare it. The sculpture of the propodeum, however, was found to be somewhat different.

In the type the first transverse ridge behind the finely striate dorsal area of the propodeum is strongly raised, especially in the middle, thus separating the declivity rather sharply from the horizontal surface. The declivity is irregularly and rather superficially rugose, dull, and nowhere distinctly transversely striate; the furrows which separate the declivity from the lateral areas and which are actually the continuation of two furrows running from the stigmata along the sides of the dorsal area, are more distinctly pronounced and are bordered on their inner side by a fairly distinct, somewhat irregular ridge.

In the specimen from Congo, the dorsal area and the declivity are not separated by a transverse ridge, and on the junction of the declivity and the lateral areas there are no distinct furrows.

The coloration of the type is a follows:

Head dull red; occiput and temples dark; a dark band on the upper part of the face between the eyes, enclosing the ocelli, anteriorly extending on each side into the concavity above the antennal bases, posteriorly on each side with an extension, curved inwards, between ocellus and eye, ending about one mm behind the posterior ocelli.

Thorax dark fuscous to black, with faint metallic greenish and purplish reflections; the following parts dull red: pronotum (neck and a blotch on the lower part of the sides fuscous), mesoscutum, scutellum, postscutellum, and the tegulae.

Gaster black with blue metallic shine; posterior margin of tergites 2-5 brownish (tergite 5 damaged, 6 lacking).

Legs ferruginous, mid and hind coxae and trochanters partly fuscous.

Wings dark brown with violaceous reflections.

Head and thorax are partly covered with fine brownish tomentum.

Some measurements: head 7 mm wide, 5 mm high (without mandibles); thorax 14 mm long, 6.5 mm wide (tegulae included); fore wing 25 mm long.

The gastral petiole, measured from the end of the basal muscle, is almost as long as the second tarsal segment of the mid legs.

In the Congo specimen the dark blotch on the front is slightly smaller

(inner orbits red), the mesoscutum is blackish anteriorly, the postscutellum is black, and the gastral tergites 2-4 are ferruginous at their posterior margins.

Chlorion ciliatum mandibulare F.

Chlorion mandibulare F., 1804, p. 218 — Guinea, leg. Hesse, coll. de Sehestedt.

The collection S. & T.L. contains two well preserved females of this form, which appears to have been overlooked since Kohl (1890, p. 183) placed it in the synonymy of *Sphex* (*Chlorion*) *xanthocerus* Ill. without indicating that it did not agree in coloration with that species. In any case I have not found the name *mandibulare* in Arnold's revision of African *Chlorion* (1928, p. 347).

The types resemble the var. *instabilis* Smith; they have the head ferruginous, with an H-like dark mark on the front enclosing the ocelli (anteriorly on each side with an extension towards the antennal sockets, the posterior arms slightly curved inwards), and a dark area at the base of the clypeus on each side of the central part; thorax black, the dorsum of the prothorax, a vaguely defined area in the middle of the mesoscutum, the tegulae and the legs (excluding the coxae) ferruginous; abdomen black with bluish shine, tergites 3 and 4 reddish at apex laterally, 5 reddish with dark blotch in the middle, 6 reddish, also the sternites 3-6 more or less distinctly reddish.

Chlorion lobatum (F.)

Sphex lobata F., 1775, p. 348 — Africa, coll. Banks; 1781, p. 445; 1787, p. 275; 1793, p. 206 (smaller form ex India).
Chlorion lobatum F., 1804, p. 217.

The Banks collection contains two females, both somewhat bluish green with slight bronzy reflections; I have selected one of these as the lectotype. The type locality is probably India or China, for the species does not occur in Africa (see Kohl, 1890, p. 178).

The collection F. contains one female with rather pronounced bronzy reflections, one female which is more bluish green, and two males which resemble the latter female in colour.

None of the Fabrician specimens belongs to the Sumatran subspecies *rugosum* Smith which differs in having the mesoscutum more distinctly sculptured.

Chlorion splendidum F.

Chlorion splendidum F., 1804: 218 — "in India orientali", coll. Lund.

The type of *Chlorion splendidum* F., a well preserved male in the collection S. & T.L., agrees well with Kohl's diagnosis (1895, p. 45). Since this

species is sometimes misidentified (a male under this name in the British Museum proved to belong to a related species, perhaps *magnificum* Morawitz), it may be useful to give some additional notes on the structural characters as observed in the type specimen.

♂ — Interocular distance on the vertex equal to that at the clypeus, slightly shorter than the greatest distance on the frons (31 : 37). Third antennal segment hardly longer than the fourth (19 : 18). Metatarsus of hind legs $^2/_3$ of length of hind tibia (52 : 78), nearly three times the length of the gastral petiole (52 : 18).

Mesepisternum shiny, finely punctate, especially posteriorly; lower part of metapleura transversely striate, but the striation somewhat finer than on the adjoining areas of the propodeum, above the mid coxae the striae partly obliterated and the shiny and punctate surface distinctly visible.

Basal fourth of dorsal area of propodeum not with continuous transverse ridges, but the ridges curved and converging from the sides towards the posterior margin of the postscutellum; posterior three fourths with about 40 fine and regular ridges. Sculpture of this area fine and very regular, the interspaces between the ridges smooth.

Genus **Ammophila** Kirby, 1798
(= *Sphex* of some American authors)
Ammophila abbreviata (F.)

Pelopoeus abbreviatus F., 1804, p. 204 — South America, leg. Smidt, coll. de Sehestedt.

The typical material comprises two males in the collection S. & T.L. and two males in the collection F.; in both collections two different species, hereafter indicated as "A" and "B", are represented.

The lectotype by present selection is a male in the collection S. & T.L. (species A), which agrees better with the description than the other species, for the latter has the gaster not distinctly metallic ("abdomine..... cyaneo").

These species differ as follows:

Front with rather deeply impressed median line between anterior ocellus and antennae. Second gastral sternite normal; seventh sternite with sharp, slightly curved, spine . . . . . A

Front without impressed median line; second gastral sternite strongly angular as seen in profile; seventh sternite without spine . . . . . B

Whereas species A appears to agree with the usual interpretation of *Ammophila abbreviata* (F.), I am not sure about the identity of species B. An old specimen from Brasil in the Museum Leiden has been identified as *melanaria* Dahlbom.

Fernald (1931, p. 445), who saw only the specimens in the collection F. (in 1913 at Kiel), did not mark this species in his paper as one of which he had studied the type, but on the other hand he writes that he "decided to consider the specimen standing second after the label as Fabricius' type, thus avoiding the synonymy which would otherwise be involved".

I only saw this note after I had studied the Copenhagen collections, which do not show any signs of Fernald's decision. If Fernald's statement is to be accepted as a lectotype selection, the specimen of species A in the Fabrician collection should be labelled as such.

However, since the species was described from the coll. de Sehestedt and since this collection contains a well preserved specimen bearing a locality label, it seems preferable to choose the lectotype from Sehestedt's specimens.

Ammophila binodis (F.)

Sphex binodis F., 1798, p. 243 — Cajenne, coll. Bosc; 1804, p. 206.

This species is not represented in the Copenhagen collections. The type (♀) in the Paris Museum has been examined in 1913 by Fernald (1931, p. 446), who noted that Kohl's identification of this specimen as *abbreviata* is probably correct.

During my visit to the Paris Museum in 1960 the type could not be found.

Ammophila clavus (F.)

Sphex clavus F., 1775, p. 348 — Australia, coll. Banks; 1781, p. 445; 1787, p. 275; 1793, p. 205; 1804, p. 206.

The type is a female in the Banks collection; it differs slightly from the description given by Turner (1908, p. 463) in having a black line on the dorsum of the posterior part of the gastral petiole; furthermore the basal third of the third tergite, and the basal half of the corresponding sternite are red.

In most of the females of a series of *A. clavus* from Queensland in the British Museum the line on the petiole is reduced to a dark spot at the base of the posterior portion; the third gastral segment varies from black to almost entirely red.

A. clavus appears to be closely allied to *A. atripes* Smith from India and *A. taschenbergi* Cameron from Java, but I cannot agree with Maidl (1925, p. 381), who regarded *clavus* and *atripes* as identical, perhaps because Kohl (1906, p. 328) stated that the differences between these species are only slight. I noted that in *A. clavus* the fringe of long erect hairs on the temples (?psammophore) is much more distinct than in *atripes*.

The collection F. contains three specimens, belonging to two different species, here indicated as A and B.

In A the lower half of the mesepisternum is red, and there is a red spot on the lower half of the metapleura; fore and mid legs red, including the coxae, hind legs dark, but tarsi and outer side of tibiae red. Mesoscutum punctate, a transverse striation is visible only in the anterior angles.

In B the thorax is black, the mesoscutum very distinctly transversely rugose, the fore and mid legs red (coxae black), but the hind legs black; the sides of the thorax with silvery tomentum on tubercles, mesopleura, and at apex of metapleura and propodeum.

In both species the gastral segments 2 and 3 are red; in A the petiole is red, with the basal half infuscated, in B the basal half and a streak on the apical half are black.

None of these species appears to be identical with the true *Ammophila clavus* (F.).

Ammophila holoserica (F.)

Sphex holosericea F., 1793, p. 205 — "Barbaria", coll. Desfontaines; 1804, p. 207.

The collection F. contains one female (gaster lacking except for basal part of petiole), which I found to be different from Kohl's interpretation (1906, p. 360). Prof. de Beaumont recognized it as a female of *A. heydeni* Dahlbom, and pointed out that this specimen does not agree with the original description, in which the apex of the abdomen is said to be bluish ("ano cyaneo"); *A. heydeni* has the apex of the abdomen black without metallic shine. This specimen is therefore not to be regarded as the type, and does not provide evidence to consider Kohl's interpretation incorrect. The true type appears to be lost.

Ammophila (Parapsammophila) erythrocephala (F.)

Sphex erythrocephala F., 1781, p. 445 — Malabar, coll. Banks; 1787, p. 275; 1793, p. 204.

Pelopoeus erithrocephalus [!] F., 1804, p. 203.

The type is a female in the Banks collection; the species is not represented in the Copenhagen collections. *A. erythrocephala* has been doubtfully recorded from Madagascar by de Saussure (1892, p. 437, pl. 11 fig. 1), but evidently its area of distribution is restricted to India, where it was found by Bingham (1897, p. 235) and by Nurse (1903, p. 10). Kohl (1906) erroneously dated the species from 1793, and listed it as a doubtful synonym of the African *A. cyanipennis* Lepeletier. It appears to be indeed related to that species, but *A. cyanipennis* is a smaller and more slender insect with a dark gastral petiole and is certainly a different species.

In the British Museum *A. erythrocephala* is represented by 1 ♀ 1 ♂ from Punjaub (BM, 54-74), 1 ♀ 1 ♂ from Deesa and 1 ♀ from Abu (ex coll. Nurse), and 5 ♀ 1 ♂ from Coimbatore, 1925, leg. Fraser.

Ammophila fuscipennis Smith, based on a male from "India, 69-86" (BM, type no. 21.750) is correctly regarded as a synonym of *A. erythrocephala* (F.).

Genus **Podalonia** Spinola, 1851
(= *Psammophila* Dahlbom, 1842, preocc.)

Podalonia hirsuta (Scopoli)

Sphex arenaria F., 1787, p. 273 — Kiel, leg. Daldorff; 1793, p. 199 [invalid homonym of *Sphex arenaria* L.].
Pepsis arenaria F., 1804, p. 207 (*Ammophila hirsuta* Kirby in synonymy).

The lectotype (present selection) is a specimen of the well known *Podalonia hirsuta* (Scop.) in collection F.; there are another female and male of this species under the same label, and an apparently misplaced male of a species of *Larra*.

Genus **Sceliphron** Klug, 1801
Subgenus **Chalybion** Dahlbom, 1843

Sceliphron (Chalybion) bengalense (Dahlbom)

Sphex violacea F., 1775, p. 346 — Cape of Good Hope; 1781, p. 443; 1787, p. 274; 1793, p. 201 [invalid homonym of *Sphex violacea* Scopoli, 1763].
Pepsis violacea F., 1804, p. 211.

According to Kohl (1918, p. 56), Fabricius's species had never been satisfactorily identified. Whereas certain authors had considered it identical with the Oriental *Sceliphron (Chalybion) bengalense* (Dahlbom), Dahlbom himself recorded it as an Egyptian species different from *bengalense*.

The typical material in the collection F. consists of two females, one male, and one very badly damaged specimen. I have chosen the female bearing the original label as the lectotype.

All these specimens belong without any doubt to the species generally known as *Sceliphron (Chalybion) bengalense* (Dahlbom). This name is not to be replaced by *violaceum* Fabricius, because the latter is an invalid homonym (see above).

In the lectotype the interocular distance on the vertex is the same as at the clypeus (25 : 25), it is about 1½ times the length of the third antennal segment (25 : 16); relative lengths of antennal segments 3-5 = 16 : 18 : 17.

Sceliphron (Chalybion) tibiale (F.)

Sphex tibialis F., 1781, p. 444 — Cape of Good Hope, coll. Banks; 1787, p. 274; 1793, p. 202.
Pepsis tibialis F., 1804, p. 212.

The type of this well known wasp (see Kohl, 1918, p. 70) is a female in the Banks collection; the species is not represented in the Copenhagen collections.

Subgenus **Hemichalybion** Kohl, 1918

Sceliphron (Hemichalybion) femoratum (F.)

Sphex femorata F., 1781, p. 443 — Italy, leg. Allioni; 1787, p. 274; 1793, p. 202.
Pepsis femorata F., 1804, p. 212.

The type (lectotype by present designation) is a female in the collection F.; it agrees with the original description and with the usual interpretation. In my opinion this species has incorrectly been regarded as a member of the subgenus *Chalybion* (see Kohl, 1918, p. 50).

Subgenus **Sceliphron** Klug, 1801

Sceliphron (Sceliphron) caementarium (Drury)

Sphex lunata F., 1775, p. 347 — Island Antigua, leg. Drury (?syn. = *Sphex asiatica* L.); 1781, p. 444; 1787, p. 274; 1793, p. 203.
Pelopoeus lunatus F., 1804, p. 203.

A series of three females and two males (1 ♀ 1 ♂ with original label) in the collection F. agrees with the description and with the usual interpretation; the labelled female has been chosen as lectotype.

Sceliphron (Sceliphron) caementarium (Drury), subsp. or var. **affinis** (F.)

Sphex affinis F., 1793, p. 203 — "in Americae Insulis", leg. von Rohr.
Pelopoeus affinis F., 1804, p. 204.

Two females in the collection F. agree with *lunatus* F. (see above), but have the first gastral tergite entirely black. This appears to be the form called *nigriventre* Costa by Kohl (1918, p. 117).

Sceliphron (Sceliphron) caementarium (Drury), subsp. or var. **flavipes** (F.)

Sphex flavipes F., 1781, p. 444 — America, leg. Blackburn; 1787, p. 274; 1793, p. 202.
Pelopoeus flavipes F., 1804, p. 204.

The lectotype by present selection is a female without head in the collection F.; it agrees with the description and with the usual interpretation. A second specimen under this name in the same collection has the pronotum and scutella marked with yellow and appears to belong to the typical form of *caementarium* (Drury).

Sceliphron (Sceliphron) hemipterum (F.)

Sphex hemiptera F., 1798, p. 244 — Isle de France, coll. Bosc.
Pelopoeus hemipterus F., 1804, p. 204.

A male in the Paris Museum (type, in general collection) and a female and a male in the collection F. agree with the description and with the usual interpretation of this species (see Kohl, 1918, p. 108).

Sceliphron (Sceliphron) jamaicense (F.)

Sphex jamaicensis F., 1775, p. 347 — Jamaica; 1793, p. 203.
Sphex iamaicensis [!] F., 1781, p. 444; 1787, p. 275.
Pelopoeus jamaicensis F., 1804, p. 204.

This species is not represented in the Copenhagen collections, but it has been recognized from the original description (Kohl, 1918, p. 114).

Sceliphron (Sceliphron) madraspatanum (F.)

Sphex madraspatana F., 1781, p. 445 — Malabar, coll. Banks; 1787, p. 275; 1793, p. 204.
Pelopoeus madraspatanus F., 1804, p. 203.

The type is a male in the Banks collection; it agrees with the usual interpretation (see Kohl, 1918, p. 109), and has the following parts yellow: a spot on the under side of the antennal scape, two almost coalescent, transverse, spots on the pronotum, a spot on each tegula, a line on the postcutellum, the apical third of femora I and II, tibiae I and II entirely, trochanters III and basal third of femora III, slightly more than the basal half of tibiae III, two vague spots on metatarsus II, metatarsus III except at base and at apex, and the entire gastral petiole.

Length 15 mm.

The collection F. contains three poorly preserved specimens of the same species (one male with original label, two unlabelled females).

Genus **Podium** Fabricius, 1804

Podium luteipenne (F.)

Pepsis luteipennis F., 1804, p. 210 — South America, leg. Smidt, coll. de Sehestedt.

The typical material consists of two females of *Podium goryanum* (Lep.) in the collection S. & T.L., and 1 ♀ *P. flavipenne* Latr. in the collection F.

The original description is so short and superficial, that it applies to both these species; only the remark that the wings are hardly infuscated at apex ("Alae flavescentes, vix apice obscuriores") might be regarded as a point in favour of the *flavipenne* specimen. Since *P. luteipenne* (F.) has been regarded by recent authors as either probably (Kohl, 1902, p. 84) or certainly

(Richards, 1937, p. 106) identical with *P. flavipenne* Latr., whereas the name has not been used for *P. goryanum* since Smith (1856), I have preferred to indicate the specimen in the collection F. as the lectotype.

Podium rufipes F.

Podium rufipes F., 1804, p. 183 — South America, leg. Smidt, coll. de Sehestedt.

P. rufipes F. is represented by two females in the collection S. & T.L.; they bear a square label "Essequibo, Smidt, Mus. de Sehestedt, *Podium rufipes* Fabr." and have been recognized as identical with *P. biguttatum* Taschenberg (see Kohl, 1902, p. 45) by Schulz (1912, p. 78).

This species shows some variation in the size of the dark cloud in the second submarginal cell. In some specimens from Surinam (Mus. Leiden) the cloud is practically restricted to this cell, but in the types it is distinctly larger than the cell, extending a little beyond the veins in all directions. Furthermore the dark band along the basal vein is more distinct than in the Surinam specimens. A female from Para (Mus. Leiden) agrees in these points with the types, but it has the basal third of the hind femora black exactly as in the Surinam specimens, whereas the types have the basal five eights of the hind femora black.

Genus **Trigonopsis** Perty, 1833

Trigonopsis rufiventris (F.)

Podium rufiventre F., 1804, p. 184 — South America, leg. Smidt, coll. Lund.

This species has not been recognized by Kohl (1902, p. 95), but Richards (1937) listed it as a probable synonym of *T. abdominalis* Perty, 1833. The type is a female in the collection S. & T.L. and is indeed identical with Perty's species, which in the Leiden Museum is represented by some females from Surinam collected by Dr. D. C. Geijskes.

Genus **Mellinus** Fabricius, 1790

Mellinus arvensis (Linné)

Crabro bipunctatus F., 1787, p. 296 — Copenhagen, de Sehestedt.
Vespa (Crabro) melanosticta Gmelin, 1790, p. 2764, no. 119 (new name).
Mellinus bipunctatus F., 1790, p. 227; 1793, p. 286; 1804, p. 298.
Philanthus quinquemaculatus F., 1793, p. 292 — Denmark, coll. Lund; 1804, p. 306.

In Dalla Torre's catalogue *Crabro bipunctatus* is listed as a doubtful synonym of *Mellinus arvensis* (L.).

The type is a female in the collection S. & T.L.; it is a specimen of *M. arvensis* (L.) with two yellow spots on the clypeus, and with broad yellow

bands on the gastral tergites 2, 3, and 5; the first of these bands encloses two small black spots anteriorly near the middle; the fourth tergite has lateral spots.

This species should not be confused with *Mellinus bipunctatus* F., 1798, p. 265, which is a bee of the genus *Prosopis*.

Philanthus quinquemaculatus F. has been regarded as a doubtful senior synonym of "*Crabro* (*Crossocerus Blepharipus*) *vagabundus* Panzer, 1798" (Kohl 1915, p. 215), but fortunately the type, a ♂ in the collection S. & T.L., shows that it belongs to the genus *Mellinus*, where it does not appear to endanger any names in general use.

It is identical with *M. arvensis*, but I have been unable to find a completely similarly coloured specimen in the collection of Danish wasps in the Copenhagen Museum. Some notes may therefore be useful. All antennal segments are brown above. The gastral spots are darker yellow than in Danish specimens of *M. sabulosus*, but the legs are abnormally dark: femora I black, with only a small yellow spot on inner side at apex, femora II with yellow mark on distal two fifths anteriorly, three fifths posteriorly, femora III with yellow mark on outer two fifths, produced on under side into a yellow line which ends at about one fourth from the base; tibiae and tarsi yellow with ferruginous tinge. Gastral tergite 2 with very small spots, 3 with large spots, tergites 4 and 5 rather distinctly discoloured at their posterior margins, 6 with transverse spot. Length only about 8 mm.

The Danish males of this species in the general collection of the Copenhagen Museum have either the fore femora more extensively yellow or the gastral markings are more or less different.

Prof. de Beaumont examined the type and confirmed my identification; he wrote me that he had a similarly coloured specimen from Sweden, where the legs of this species are sometimes even darker than in Fabricius's type.

Mellinus sabulosus (F.)

Crabro sabulosus F., 1787, p. 296 — Copenhagen, de Sehestedt.
Mellinus sabulosus F., 1790, p. 226; 1793, p. 286; 1804, p. 297.
Mellinus ruficornis F., 1793, p. 286 — Germany, leg. Smidt; 1804, p. 298.
Mellinus fulvicornis F., 1804, p. 300 — Germany, leg. Panzer.

The lectotype of *Crabro sabulosus* F. (present selection) is a female in the collection S. & T.L.; it agrees with the description and with the usual interpretation. A second specimen has lost the gaster beyond the first segment.

M. ruficornis F. has been placed correctly in the synonymy of *M. sabulosus*. The collection F. contains three females and one male; one of the

females has been labelled by me as lectotype. The coloration of this specimen is hardly different from that of the lectotype of *sabulosus*; in both specimens the clypeus is black with small lateral spots; in the *sabulosus* type the spots on the third gastral tergite are slightly farther apart than in the *ruficornis* type.

M. fulvicornis is regarded correctly as a synonym of *M. sabulosus*; it is based on a male (collection F.) with very small spots on the second gastral tergite. The head of this specimen (lectotype) is lacking.

Genus **Didineis** Wesmael, 1852

Didineis lunicornis (F.)

Pompilus lunicornis F., 1798, p. 249 — France, leg. Cuvier; 1804, p. 194.

This species has been recognized from the description, which must have been based on a male ("antennarum ultimo articulo lunato"), or from one or more specimens in the Paris Museum. It is not represented in the Copenhagen collections, and at present there is no type in Paris.

Note: According to Fabricius the second and third gastral segments are red ("abdominis segmento secundo tertioque rufis"), but Handlirsch (1887 b, p. 259) states that the red colour never extends beyond the second segment.

Genus **Nysson** Latreille, 1802

Fabricius's treatment of the species now regarded as belonging to this genus was strongly criticized by Handlirsch (1887, p. 290) in approximately the following words: the first major confusion was created by this author, who succeeded in placing three species in five genera (*Ceropales, Pompilus, Crabro, Mellinus* and *Oxybelus*).

The following notes show that Handlirsch's interpretation of the Fabrician species was mainly correct, the only error being that *Ceropales spinosa* F. was regarded as identical with *Nysson spinosus* (Forster).

Nysson interruptus (F.)

Mellinus interruptus F., 1798, p. 266 — Halle, leg. Hybner.
Oxybelus interruptus F., 1804, p. 316.
Ceropales spinosa F., 1804, p. 186 — Denmark, coll. de Sehestedt [in the genus *Nysson* an invalid homonym of *Nysson spinosus* (Forster)] [new synomymy].

Mellinus interruptus F. is not represented as such in the Copenhagen collections. It was identified as a species of *Nysson* long ago (see Handlirsch, 1887, p. 340), and correctly recorded under the name *Nysson interruptus* by Dalla Torre (1897, p. 570); at the same time, however, this author erroneously listed it as unidentified species of *Oxybelus* (1897, p. 641).

Ceropales spinosa is represented in the collection S. & T.L. by two males and two females; the lectotype by present selection is a male which agrees well with the description. This species has generally been regarded as a synonym of *Nysson spinosus* (Forster), but examination of the types has shown it to be identical with *Nysson interruptus* (F.).

Fabricius (1804, p. 186) gave *Crabro bicinctus* F., 1793, as a synonym of *Ceropales spinosa,* but the descriptions clearly refer to different insects (scutellum yellow in *C. bicinctus,* black in *spinosa*). The type of *Crabro bicinctus* has proved to be a female of *Argogorytes mystaceus* (L.) (see p. 48).

Nysson maculatus (F.)

Sphex maculata F., 1787, p. 277 — Kiel, leg. Daldorff; 1793, p. 215.
Pompilus maculatus F., 1798, p. 251; 1804, p. 196 (= *Crabro trimaculatus* Rossi).

The collection F. contains one female and two males of this well known species (see Handlirsch, 1887, p. 376); the female is the lectotype.

Nysson spinosus (Forster)

Sphex spinosa Forster, 1771, p. 87 — England.
Crabro spinosus F., 1775, p. 373 — Southern Europe; 1781, p. 469; 1787, p. 294; 1793, p. 293; 1804, p. 307.
Mellinus tricinctus F., 1793, p. 287 — Italy, leg. Allioni; 1804, p. 299.

The lectotype of *Crabro spinosus* F. is a male with an original label in the collection F.; it agrees with the description and with the usual interpretation (Handlirsch, 1887, p. 337). It has the tibiae black, with reddish knees. The same collection also contains a female of this species.

Mellinus tricinctus F. appears to have been based on a male of *N. spinosus* which has the knees, the dorsal side of the hind tibiae, and the hind tarsi, reddish. It is represented by one male in the collection F. (lectotype by present selection).

Genus **Sphecius** Dahlbom, 1843

Sphecius speciosus (Drury)

Vespa tricincta F., 1775, p. 363 — America, coll. Banks; 1781, p. 459; 1787, p. 287; 1793, p. 254; 1804, p. 254.

The type of this well known wasp (see Handlirsch, 1889, p. 19) is a female in the Banks collection; the species is not represented in the Copenhagen collections.

Genus **Argogorytes** Ashmead, 1899

Argogorytes mystaceus (L.)

Crabro bicinctus F., 1793, p. 299 — Denmark, de Sehestedt.
Mellinus arpactus F., 1804, p. 300 — Germany, Dr. Panzer.

Crabro bicinctus F. was erroneously regarded as a synonym of "*Ceropales spinosa*" by Fabricius in 1804 (p. 186). The latter is a *Nysson,* usually listed in the synonymy of *N. spinosus* (Forster), but actually identical with *N. interruptus* (F.).

The description of *Crabro bicinctus* F., 1793, differs in certain points from that of *Ceropales spinosa* F., 1804, and applies well to a female in the collection F., recognized as the type of *C. bicinctus* by Mr. K. Faester, and correctly identified by him as *Gorytes mystaceus* (L.).

Mellinus arpactus F. was listed by Handlirsch (1888, p. 368, see also p. 372) as a doubtful synonym of *Gorytes mystaceus* (L.); Dalla Torre (1897, p. 547) appears to have regarded this synonymy as certain.

The type of *M. arpactus* F. in the collection F. belongs indeed to this species; it is a rather small male with a well developed fourth band on the gaster. The clypeus has a transverse yellow spot; the femora are dark, the tibiae partly black, partly yellow.

Genus **Gorytes** Latreille, 1804

Gorytes (Dienoplus) laevis (Latreille)

Evania ruficollis F., 1798, p. 241 — Halle.
Ceropales ruficollis F., 1804, p. 186.
Sphex cruenta F., 1798, p. 244 — France, leg. Bosc.
Pompilus cruentus F., 1804, p. 192.

The type of *Evania ruficollis* is a male in the collection F.; it was already recognized as identical with *Gorytes laevis* by Dahlbom (1845, p. XVIII).

Sphex cruenta F., usually regarded as a synonym of *Gorytes laevis* (Latr.), is not represented in the Copenhagen collections and is also lacking in the Paris Museum.

Gorytes (Gorytes) quadrifasciatus (F.)

Mellinus quadrifasciatus F., 1804, p. 298 — Germany, Dr. Panzer.

The type is a male in the collection F.; it agrees with the usual interpretation (see de Beaumont, 1953, p. 171).

Gorytes (Gorytes) quinquecinctus (F.)

Mellinus quinquecinctus F., 1793, p. 287 [no locality nor collector]; 1804, p. 299 — Northern Europe.

The lectotype is a female in the collection F.; it was selected from a series of four specimens, belonging to three different species, by Mr. K. Faester (see de Beaumont, 1953, p. 178).

Gorytes (Psammaecius) tricinctus (F.)

Crabro tricinctus F., 1775, p. 375 — America, leg. von Rohr; 1781, p. 472 (South America); 1787, p. 297; 1793, p. 299; 1804, p. 313 (American Islands).

Mellinus tristrigatus F., 1798, p. 266 — American Islands, leg. von Rohr; 1804, p. 299 (South American Islands).

Crabro tricinctus F. appears to have been overlooked by Handlirsch (1888, p. 392) and was therefore listed by Dalla Torre as an unidentified species. It is not mentioned under *Gorytes* in part 8 of Hedicke's Catalogus Hymenopterorum by Maidl and Klima (1939). Actually Dahlbom (1845, p. XXV) had already concluded that *tricinctus* and *tristrigatus* are based on the same species [1]).

Three specimens of *Crabro tricinctus* F. in the collection F., including a female with original label (lectotype by present selection), are undoubtedly conspecific with a female of *Mellinus tristrigatus* F. (lectotype) in the same collection.

This species has been described by Handlirsch (1888, p. 392); it is known to occur in Cuba and Portorico; see also Pate, 1947, p. 93.

Genus **Stizus** Latreille, 1802

Stizus biclipeatus (Christ)

Tiphia ruficornis F., 1787, p. 279 — Tranquebar, leg. Hübner; 1793, p. 226 (no. 13) [secondary homonym of *Stizus ruficornis* Forster, 1771].

Larra cingulata F., 1797, p. 253 — "in India orientali", leg. Daldorff; 1804, p. 221 (syn.: "*Tiphia ferruginea.* Ent. Syst. 2. 226. 13").

Stizus biclipeatus (Christ), Handlirsch, 1892, p. 137.

The synonymy of this species is somewhat complicated. Fabricius described the wasp under two specific names in different genera (see above); the descriptions differ in minor details, but both make mention of three black lines on the mesoscutum, and I have therefore accepted the synonymy given by Fabricius in 1804. Unfortunately, he made an error in the citation of *Tiphia ruficornis,* giving as the specific name the second word of the original diagnosis ("Tiphia ferruginea nigro maculata"..... etc.) instead of the name printed in the margin. This seems to have confused Handlirsch, who remarked: "*Tiphia ferruginea* Ent. Syst. wird von Fabricius in Syst. Piezat. fälschlich bei *cingulata* citirt" (l.c. p. 138). I have not found a type of *T. ruficornis* F.

The name *ruficornis* cannot be used for this species because it is a

---

1) Dahlbom (1845, p. XXV) refers to "*Hoplisus tristrigatus* H.E. 165: 97" (= Hym. Eur., p. 165, no. 97), but page 165 contains the description of *Hoplisus behni.* On p. 483 of the same work, however, *H. behni* Dahlb. p. 165, no. 97 is mentioned as a synonym of *Hoplisus tristrigatus* F.

secondary homonym of *Stizus ruficornis* (Forster), 1771. The description of *Vespa biclipeata* Christ, 1791, described from unknown locality, agrees well with a specimen with original label "*cingulata*" in collection F., and I have therefore accepted the synonymy established by Handlirsch. *Larra nubilipennis* Smith, 1856, described from India, is regarded as the same species.

The variability of *S. biclipeatus* deserves further study. Either India is inhabited by a number of closely allied species, or there are one or two species showing considerable geographic variation. The available material does not allow one to draw conclusions on this problem.

The following notes are based on a female from "India Orientalis" in the Drewsen collection; this specimen has previously been compared by me with the type of *Larra cingulata* in the collection F., and has been found to agree well.

Head much wider than high (47 : 33, height measured from vertex to anterior margin of clypeus); interocular distance at level of antennae = 18, at level of ocelli = 21 (in the type the interocular distances at vertex and at clypeus were measured at Copenhagen as 19.5 : 16.5; total width of head = 43). Antennal segments 3 : 4 = 12 : 8, ninth antennal segment slightly, but conspicuously, bent. Second submarginal cell strongly narrowed anteriorly (base : top = 15 : 5); third submarginal cell less strongly narrowed (base: top = 14 : 9); POL : OOL = 8 : 4. Vertex with black band from eye to eye, enclosing the ocelli, posteriorly almost straight and continuous with the hind margin of the eyes, anteriorly rather deeply incised in front of each posterior ocellus; front with median, dark, impressed line, running from anterior ocellus to a small spot close to the upper level of the antennal sockets; on each side of this line an ovate dark spot above each antenna. Mesoscutum with narrow black line at anterior and posterior margins, connected by three wider longitudinal lines (the outer lines gently curved outwardly, the median line widening anteriorly, and abbreviated posteriorly), the lines enclosing two large, longitudinally ovate reddish marks which anastomize posteriorly. Propodeum with black basal band, narrowing laterally. Fore wing with rather faint apical cloud, distinct in marginal cell, but much fainter in and beyond the second and third submarginal cells.

Length 18-19 mm.

Stizus fasciatus (F.)

Bembex fasciata F., 1781, p. 458 — Italy, leg. Allioni; 1787, p. 286 (additional description).

Bembex integra F., 1793, p. 251 — Italy, leg. Allioni [apparently described as a new species, but the description agrees with that of *B. fasciata*, except for the fact that "Anus tridentatus" is here omitted]; 1804, p. 226.

Stizus integer Dahlbom, 1845, p. XXIII.
Stizus fasciatus (F.), Handlirsch, 1892, p. 112.

The type of *B. integra,* which is apparently only a new name for *B. fasciata,* is a male in the collection F.; it was found to agree well with a specimen from Cyprus (Yermasoyia River, May 1957, leg. Mavromoustakis), except for the fact that in this male all the gastral bands are interrupted. In the type the band on tergite 6 is entire.

Stizus lineatus (F.)

Bembex lineata F., 1793, p. 250 — locality unknown, collection Banks; 1804, p. 225 (Cajenne).

According to Handlirsch (1890, p. 100), this species belongs to the genus *Monedula,* which at present is called *Stictia.* Handlirsch says that he could not recognize the species from the first description, but that its identity could be determined from the notes on the thoracic markings in the second description. It has now become clear, however, that these descriptions refer to different species.

A female under this name in the collection F. is indeed a *Stictia,* and agrees with Fabricius's second description; in Parker's key (1929, p. 22) it runs to *pantherina* because there are small discal lines on the mesoscutum. This specimen, however, does not agree with the original description, which is as follows: "B. (embex) labio rotundato, abdomine nigro: lineis punctorum flavorum supra quatuor subtus duobus. — Habitat — — Mus. Dom. Banks. — Magna. Antennae fuscae. Caput fuscum, cinereo villosum labio flavo macula magna media, nigra. Thorax fuscus, cinereo villosus sub scutello macula flava. Abdomen glabrum, nigrum supra lineis quatuor, subtus duabus punctorum flavorum. Punctum baseos tamen subtus in medio solitarium. Pedes ferruginei". The expression "labio rotundato" is also used for *B. integra, sexfasciata,* and *tridentata,* which are now recognized as species of *Stizus,* whereas species of *Bembix* and *Stictia* are described as having the labrum conical ("labio conico"). This indicates that *B. lineata* F. is not a *Stictia,* but a *Stizus,* a view which is supported by the fact that the legs are said to be ferruginous.

After having reached this conclusion, I examined the material in the Banks collection. Here no specimen of *B. lineata* Fabr. was labelled as such, but an unlabelled female *Stizus* with ferruginous legs proved to agree fairly well with the original description, and may perhaps regarded as the type of this species. This specimen has been investigated by Prof. de Beaumont, who found it to be different from the palaearctic species known to him.

Stizus ruficornis (Forster)

Bembex ruficornis F., 1787, p. 286 — Spain, leg. Vahl; 1793, p. 252.
Larra ruficornis F., 1804, p. 221.
Stizus ruficornis (Forster), van der Vecht, 1959, p. 68.

As I have explained elsewhere, the species described by Fabricius as *Bembex ruficornis* is probably identical with *Vespa ruficornis* Forster, 1771. The collection F. contains one male of this species, and there are one male and two females in the collection S. & T.L. The latter male is marked "lectotype, K. Faester" and appears indeed to agree best with the description; the male in collection F. is slightly less extensively yellow (no yellow line on postscutellum, no lines on propodeum, the fourth band slightly more distinctly interrupted).

According to de Beaumont (1951, p. 281) this species is identical with *S. distinguendus* Handlirsch, 1901.

Stizus rufipes (F.)

Liris rufipes F., 1804, p. 229 — "in Mogador", leg. de Schousboe, coll. de Sehestedt.
Stizus grandis Lepeletier, 1845, p. 293; Handlirsch, 1892, p. 123; de Beaumont, 1951, p. 282 [new synonymy].

This species has remained unknown to Dahlbom and later authors; it is listed as an unidentified species of *Larra* by Dalla Torre.

The type, a well preserved male in the collection S. & T.L., agrees with the original description; it has been examined by Prof. de Beaumont, who found it to be identical with *S. grandis* Lep., 1845.

Stizus sexfasciatus (F.)

Bembex sexfasciata F., 1793, p. 251 — "in India Orientali"; 1804, p. 226.
Stizus sexfasciatus Dahlbom, 1845, p. XXIII, 476; Handlirsch, 1892, p. 121.

The type, a male in the collection F., looks very much like a *Stizus fasciatus* (F.), but differs in the colour of the legs which are ferruginous, with only the coxae and trochanters black. Clypeus with small black spot at the base. Antennae black with small yellow spot on the scape (from base to slightly beyond the middle), the apical segment ferruginous-yellow on outer side. First gastral tergite with two transverse spots, their width equal to the distance between them; tergites 2-6 with slightly curved, rather narrow bands, about as far from the visible base as from the apex of the tergites; the bands on 2 and 3 narrowly interrupted, on 4 hardly, on 5 and 6 not interrupted. (The left antenna is broken off beyond the fourth segment).

It seems doubtful whether this species has been correctly identified by Handlirsch (l.c.), and as it is not recorded by Bingham, its occurrence in India appears to need confirmation.

Stizus vespiformis (F.)

Sphex vespiformis F., 1775, p. 348 — "in India orientali", leg. Koenig; 1781, p. 447 (Malabar, leg. Koenig).
Tiphia vespiformis F., 1787, p. 278.
Larra vespiformis F., 1793, p. 220; 1804, p. 219.
Stizus vespiformis F., Handlirsch, 1892, p. 147.

The lectotype is a female in collection F. with original label; there are also two females and five males (all unlabelled), partly in very poor condition. The species has been correctly identified by Handlirsch. Mesoscutum entirely black (a specimen from Ceylon, leg. F. Keiser, 1953, has a small reddish spot in each anterior angle).

The two following species of *Larra* F. have been tentatively placed in the genus *Stizus* by Handlirsch, but their position is uncertain, and it is even doubtful whether they are Sphecoidea or Scoliidae.

? **Stizus erythrocephalus** (F.)

Larra erythrocephala F., 1793, p. 221 — Cape of Good Hope, Brit. Mus.; 1804, p. 220.
Stizus erythrocephalus Handlirsch, 1892, p. 179 (unidentified species).

Original description: "L. (arra) atra capite ferrugineo, alis cyaneis. — Habitat ad Cap. Bon. spei Mus. Britann. — Statura & magnitudo praecedentis. [*Stizus vespiformis* (F.)]. Caput cum antennis ferrugineum, immaculatum. Thorax & abdomen atra, glabra, immaculata. Alae cyaneae. Pedes nigri."

The type of this species appears to be lost, and there are no specimens in the Copenhagen collections.

?**Stizus cinctus** (F.)

Larra cincta F., 1793, p. 221 — locality unknown, Brit. Mus.; 1804, p. 220.
Stizus cinctus Handlirsch, 1892, p. 178 (unidentified species).

Original description: "L.(arra) nigra abdomine piceo: segmento secundo tertioque margine flavis. — Habitat — — Mus. Britann. — Statura & magnitudo praecedentium [*Stizus vespiformis* (F.) and "*Larra erythrocephala*" F., also said to agree with "*Larra ichneumoniformis*" F. = *L. anathema* (Rossi)]. Caput & thorax nigra hirsutie cinerea imprimis marginali. Abdomen piceum marginibus segmentorum ciliatis secundo tertioque flavis, subtus nigrum."

The type of *Larra cincta* F. appears to be lost; the species is not represented in the Copenhagen collections.

Genus **Stizoides** Guérin, 1844

Stizoides assimilis (F.)

Sphex assimilis F., 1787, p. 276. — Tranquebar, leg. Hübner; 1793, p. 209.

Vespa assimilis F., 1798, p. 263.
Pompilus ssiamilis [!] F., 1804, p. 189 (in "Errata": *assimilis*).
Larra fasciata F., 1798, p. 253 — Tranquebar, leg. Daldorff, coll. de Sehestedt; 1804, p. 221 [invalid secondary homonym of *Bembex fasciata* F., 1781].
Stizus fasciatus F., Dahlbom, 1843, p. 153; do., 1845, p. XVIII (= *Pompilus assimilis* F.).
Stizus calopteryx Handlirsch, 1892, p. 110 [new name for *Larra fasciata* F., 1798].
Stizus assimilis (F.) Schulz, 1912, p. 78.

Sphex assimilis F. has remained a mystery to later authors until Schulz in 1912 noted that it is identical with *Larra fasciata* F., 1798. Apparently it has been overlooked, however, that the same conclusion had already been drawn by Dahlbom (1845, p. XVIII); Dalla Torre gives no other references than those of Fabricius.

The species is represented in the collection F. by two males, of which the labelled specimen is now designated as lectotype. It has the head ferruginous, the occiput black with red line behind the eyes; this line is wider on the upper part, but it is there interrupted by dark lines (not very distinct) which run backwards from each of the outer ocelli; there is also a dark spot behind the median ocellus; the scutellum is red, blackish at the anterior margin (in some other specimens face and scutellum are much darker).

The lectotype of *Larra fasciata* F., 1798, is a female in the collection S. & T.L.; there is another female in the collection F.; these specimens are undoubtedly conspecific with *Sphex assimilis* F. *Larra fasciata* F. is the type of the genus *Stizoides* Guérin.

Stizoides crassicornis (F.)

Tiphia crassicornis F., 1787, p. 278 — "Hispania", leg. Vahl.
Larra crassicornis F., 1793, p. 221; 1804, p. 220.
Stizus crassicornis (F.), Handlirsch, 1892, p. 104.

The lectotype is a female in the collection S. & T.L. with label: "L. crassicornis e Port. Tariae Vahl"; it agrees with the usual interpretation of this species. If this specimen was collected at Porto Farina in Tunisia (see under *Bembix olivacea*, p. 60), Fabricius's locality record must be regarded as incorrect.

Stizoides tridentatus (F.)

Crabro tridentatus F., 1775, p. 373 — "in Europa australi"; 1781, p. 469; 1787, p. 294.
Bembex tridentata F., 1793, p. 251.
Scolia tridentata F., 1804, p. 242 (*Bembex tridentata* F. and *Stizus tridentatus* Latreille in synonymy).
Larra bifasciata F., 1798, p. 252 — Tanger, leg. Schousboe, coll. Lund; 1804, p. 220.
Stizus tridentatus (F.), Handlirsch, 1892, p. 98.

The type of *Crabro tridentatus* is a male in the collection F.; it bears a label: "Holotype *C. tridentatus* Fabr. teste J. C. Bradley, 1929" and agrees

with the usual interpretation. The second submarginal cell is wider anteriorly than in a male from Cyprus with which I could compare it; the relative widths of second and third abscissae of the radius are 9 : 17 in the type, and 3 : 17 in the Cyprus specimen.

Larra bifasciata F., long ago recognized as identical with *S. tridentatus* (F.), is represented in the collection S. & T.L. by two identical males. In the type the second submarginal cell is anteriorly as narrow as in the male from Cyprus; there are indistinct spots on the fourth gastral tergite.

Genus **Bembecinus** Costa, 1859

Bembecinus tridens (F.)

Vespa tridens F., 1781, p. 464 — Italy, leg. Allioni; 1787, p. 289.
Crabro tridens F., 1793, p. 298; 1804, p. 313.
Bembecinus tridens (F.) de Beaumont, 1954b, p. 247.

The type is a male in the collection F.; it agrees with the usual interpretation.

Genus **Bicyrtes** Lepeletier, 1845

Bicyrtes spinosa (F.)

Bembex spinosa F., 1794, p. 458 — American Islands, leg. von Rohr; 1798, p. 260; 1804, p. 225 (South American Islands).

The type is a male in the collection F.; it agrees well with the descriptions of the Central American species called *Bembidula spinosa* (F.) by Handlirsch (1889, p. 488) and *Bicyrtes spinosa* (F.) by Parker (1929, p. 175).

The clypeus is yellow, with a black spot at the base; the lateral yellow lines on the mesoscutum run from a point close to the anterior margin, along the tegulae, to the posterior lateral angles; the discal marks are longitudinally oval, slightly more pointed anteriorly than posteriorly, they begin a little further backwards than the lateral lines, and just reach the middle of the mesoscutum; scutellum with an interrupted band at anterior margin, which is rather abruptly dilated laterally; the two marks about as far apart as the length of the narrow part of each; all gastral bands narrowly interrupted, on tergite 1 the interruption slightly wider than on the other segments.

Genus **Microbembex** Patton, 1879

Microbembex ciliata (F.)

Bembex ciliata F., 1804, p. 226 — South America, leg. Smidt, coll. de Sehestedt.

This species has remained unidentified; Handlirsch (1892, p. 177) did not know whether to place it in *Stizus* or in *Bembidula*.

Two females in the collection S. & T.L. are identical and belong to the

genus *Microbembex*; I was kindly allowed to borrow one of these (the lecto-paratype) for comparison with some specimens in the collection of the Leiden Museum.

In Parker's key (1929, p. 156) *Bembex ciliata* F. runs to *Microbembex sulphurea* (Spinola), a species which was originally described from Chile, but which is apparently widely distributed in South America.

The types agree in all important details with a female of *M. sulphurea* from Belem, Para (ML), and with two females of this species from Surinam, Galibi, 7 Febr. 1948, leg. D. C. Geijskes (ML). The latter specimens have been collected together with two males which show the characteristic angular dilation of the hind femora (see Parker, 1929, p. 158), a fact which helps to confirm the identification of the females.

In all females the depth of the emargination of the clypeus is approximately three fourths of its greatest width; the colour patterns are also very similar. Mid and hind tibiae are yellow with a more or less distinct short dark line on the inner side.

The following differences could be found. In the types the comb of the anterior metatarsus consists of only five spines (three on outer side, two at apex), whereas the other specimens have an additional short and thin spine at the extreme base of the metatarsus. In the types the yellow markings are slightly less extensive: mesepisternum with two separate yellow spots (these spots fused to form one large yellow mark in the other specimens); approximately the basal three fourths of the femora black, at least anteriorly (only about the basal half black in the other specimens).

As these differences appear to lie within the normal range of geographic variation, I think we may safely conclude that *M. ciliata* and *M. sulphurea* are conspecific. However, I have not seen any Chilean specimens, and I am therefore unable to judge whether it may be desirable to retain the name *sulphurea* for a form of subspecific rank.

Genus **Stictia** Illiger, 1807

Stictia carolina (F.)

Bembex carolina F., 1793, p. 249 — Carolina, coll. Bosc; 1804, p. 224.

The lectotype is a male in the general collection of the Paris Museum; it bears an original label of the Bosc collection. The species is not represented in the Copenhagen collections.

The usual interpretation is correct (see Parker, 1929, p. 28).

Stictia heros (F.)

Bembex heros F., 1804, p. 222 — South America, leg. Smidt, coll. de Sehestedt.

This species is represented in the collection S. & T.L. by a single female which agrees well with the original description.

Head and thorax almost entirely black; inner orbits with narrow line running from clypeus to the level of the anterior margin of the unpaired ocellus; median part of mandibles yellowish; two small spots in anterior angles of the scutellum; a narrow line, widely interrupted, on the postscutellum; a very small spot in front of the stigma of the propodeum, and a larger one, pear-shaped and not reaching the apex, on each lateral posterior angle; tergites 1-5 with lateral spots, decreasing in size from 1 to 5, sternites 2-4 with transverse yellow spots in the posterior lateral angles, also decreasing in size in distal direction; on tergite 2 the distance between the spots = $^5/_7$ × the total width of the segment.

The scutellum is very finely and uniformly punctate, slightly denser at the sides than in the middle; puncturation of postscutellum similar, but slightly more remote; propodeum a little more coarsely and densely punctate.

I am not certain that this species has been correctly identified by Parker (1929, p. 25).

Stictia maculata (F.)

Bembex maculata F., 1804, p. 222 — South America, leg. Smidt, coll. Lund.

The lectotype (present selection) is a female in the collection S. & T.L.; it agrees well with the description and with the usual interpretation (Handlirsch, 1890, p. 92; Parker, 1929, p. 31). There is a second female in the same collection; a female in collection F. is probably identical, but it is in very poor condition.

Stictia punctata (F.)

Bembyx punctata F., 1775, p. 361 — Brasil, coll. Banks.
Bembex punctata F., 1781, p. 458; 1787, p. 285; 1793, p. 248; 1804, p. 223 (South America, coll. Banks).

The type is a female in the Banks collection; it agrees well with the description, except for the fact that Fabricius's notes on the colour of the abdomen seem to indicate that he had a male before him, and not a female. Perhaps both sexes have been represented in the original series. The additional description, published in 1804, may have been based on specimens of a different species, for whereas the legs were originally said to be black, they are described as yellow, with the base of the femora black, in 1804.

The collection F. contains two males, which do not agree with the original description. They have two spots on gastral tergite 1, an interrupted band on tergite 2 (somewhat sinuate, rather abruptly widened laterally), 4 spots on tergite 3, 2 spots on 4, 2 very small spots on 5, none on 6 and one spot on 7 (in the second specimen tergites 4-6 entirely black).

Genus **Rubrica** Parker, 1929

Rubrica nasuta (Christ)

Bembex striata F., 1793, p. 250 — "Hab. — Mus. Britann."; 1804, p. 226 ("Cajennae").
Monedula striata F., Dahlbom, 1845, p. XXIII.
Rubrica surinamensis (De Geer), Parker, 1929, p. 55 [in part only].
Rubrica nasuta (Christ), van der Vecht, 1959b, p. 212.

The collection F. contains one female with label "*striata*", but this specimen does not agree with the original description. Its mesoscutum is black, with broad yellow lateral lines, but without discal lines; the type should have the "thorax flavescens lineis 3 longitudinalibus, abbreviatis nigris".

It seems to me that the description agrees sufficiently with that of *Vespa nasuta* Christ, 1791, to allow the conclusion that these forms are identical. As De Geer's name is not available (see van der Vecht, 1959, p. 211), *Rubrica nasuta* (Christ) appears to be the correct name for the form with yellow lines on the mesoscutum.

Rubrica nasuta continua (F.)

Bembex continua F., 1804, p. 225 — South America, leg. Smidt, coll. de Sehestedt.
Rubrica nasuta continua (F.), van der Vecht, 1959b, p. 212.

Like the preceding form, *Bembex continua* F. has usually been placed in the synonymy of *Monedula surinamensis* (De Geer), later *Rubrica surinamensis*. The species is represented in the collection S. & T.L. by two females; the specimen bearing a label "*B. continua* ex Am. mer. Schmid" is the lectotype. It agrees well with specimens from Surinam in the Leiden Museum, but the yellow bands of the gastral segments are slightly narrower, and the wings a little more infuscated. In the paratype the scutellum has a large reddish spot in each anterior angle.

Genus **Bembix** Fabricius, 1775

Bembix americana F.

Bembex americana F., 1793, p. 250 — "In Americae meridionalis Insulis", leg. Smidt; 1804, p. 225.
Bembex muscicapa Handlirsch, 1893, p. 828 [new synonymy].

According to Handlirsch (1893, p. 902) *B. americana* F. is an unknown species; it is not mentioned by Parker, 1929.

The type is a male in the collection F.; it bears a label "americana" in Fabricius's handwriting; on the other side of this label is written "B : n : sp : repanda affinis" in a handwriting agreeing with that on the labels of the collection S. & T.L. (see p. 7).

This specimen agrees in all respects with the description of *Bembex*

muscicapa Handlirsch. As in Handlirsch's specimen from Columbia the second gastral sternite bears a conspicuous recurved spine, black anteriorly and yellow posteriorly; the sixth sternite has a median tooth, longitudinally triangular in ventral view. Antennal segments 8 and 9 with a small tubercle on inner side.

The mesoscutum has four short yellow lines: two discal lines on the anterior half, and two lateral lines between tegulae and anterior margin (not touching either).

Bembix fasciata F.

Bembex fasciata F., 1804, p. 224 — Carolina, coll. Bosc [invalid primary homonym of *Bembex fasciata* F., 1781].

This species has been treated as a doubtful synonym of *B. texana* Cresson by Handlirsch, but a specimen labelled "*fasciata*" in the collection F. is not this species, for it has he clypeus entirely yellow.

The type of *B. fasciata* F., 1804, is in the Paris Museum; it has not yet been possible to identify it with certainty.

Bembix glauca F.

Bembex glauca F., 1787, p. 285 — Tranquebar, leg. Hübner; 1793, p. 249; 1804, p. 224; Dahlbom, 1845, p. XXII.

Bembex indica Handlirsch, 1893, p. 771 (*B. glauca* F. as probable synonym) [new synonymy].

The type of *Bembex glauca,* a male in the collection F., agrees in all respects with a male from the type locality Tranquebar in the Leiden Museum (leg. P. S. Nathan, received from Mr. G. R. Ferguson). The black spots are distinct on the gastral tergites 1-5, the visible part of the sixth tergite is yellow, the seventh is black with a large bilobate yellow mark. This species is identical with *B. indica* Handlirsch, but not with the species discussed by Bingham (1897) under this name.

Bembix labiata F.(?)

Bembex labiata F., 1798, p. 259 — France, coll. Bosc; 1804, p. 224; Handlirsch, 1893, p. 888 (unidentified species).

The type in the Paris Museum cannot be identified with certainty; it has been examined by Prof. de Beaumont, who wrote me that it is not a French, and perhaps not even a palaearctic, species.

Bembix lunata F.

Bembex lunata F., 1793, p. 249 — Tranquebar, coll. Lund; 1804, p. 224; Dahlbom, 1845, p. XXII; Handlirsch, 1893, p. 777; Bingham, 1897, p. 285, pl. II fig. 4.

The collection S. & T.L. contains two males and one female, labelled "*B. lunata*", without indication of locality or collector. One of the males has been chosen as the lectotype, because it agrees better than the female with the description, in which it is stated that the apical three abdominal segments are entirely yellow. The collection F. contains two more males; in all these males the mid coxae bear a distinct spine.

Bembix olivacea F.

Bembex olivacea F., 1787, p. 285 — "in Barbariae plantis", leg. Vahl; 1793, p. 248 (reference: Rossi, 1790, Fauna Etrusca, 2, p. 81. no. 858); 1804, p. 224; Dahlbom, 1845, p. XXII.
Bembex senilis F., 1804, p. 226 — Tanger, leg. Schousboe, coll. Lund.
Bembex mediterranea Handlirsch, 1893, p. 807.
Bembex olivacea Cyrillo, Berland, 1925, p. 72.
Bembex olivacea (F.), de Beaumont, 1951, p. 272.

The lectotype of *B. olivacea* is a male in the collection S. & T.L., bearing a label: "B. olivacea Porto Farino Vahl"; there are two more males in this collection and one in collection F. According to information received from Dr. Petersen, the type locality Porto Farina in Tunisia is mentioned in Vahl's diaries.

These specimens agree in all essential characters with a male from Southern France with which I could compare them, but I noted that in the type the lateral lines of the mesoscutum are reduced to small and indistinct, longitudinal, spots in front of the tegulae; the black markings on the thorax are very slightly more extensive than in the French specimens. Prof. de Beaumont wrote me that the lectotype resembles the males from Morocco in his collection more closely than those from Algeria; he has not yet seen other specimens from Tunisia.

The lectotype of *B. senilis* F., a species which had remained unknown to Handlirsch, is a female in the collection S. & T.L. It bears a label "B. senilis e Tanger, Schousbo"; a second specimen is identical. Mr. Faester's view that *senilis* is conspecific with *olivacea* has now been confirmed by Prof. de Beaumont, who studied the lectotype, and found it to be identical with *B. maroccana* Mercet. It is still doubtful whether *senilis* is subspecifically different from *B. olivacea*.

Berland (1925) regards Cyrillo, 1787, as the author of this species, but I do not know whether Cyrillo's "Entomologiae Neapolitanae" was published before or after Fabricius's Mantissa, vol. 1, and I have therefore not accepted his view.

Bembix repanda F.

Bembex repanda F., 1787, p. 286 — Tranquebar, leg. Hübner; 1793, p. 250; 1804, p. 225.
Vespa (Bembex) tranquebarica Gmelin, 1790, p. 2769.

Bembex trepanda Dahlbom, 1843, p. 181 ("*B. repanda* Collection. Com. De Bonde in Museo Entomolog. Lund"!); Handlirsch, 1893, p. 736.

This species has not been recognized by Handlirsch (1893, see p. 896), who used Dahlbom's name for it.

The collection F. contains three males; the specimen bearing the original label has been labelled as the lectotype. It agrees in all details with a male from Calcutta in the Leiden Museum. The status of the apparently closely allied *B. orientalis* Handlirsch deserves further study.

Genus **Philanthus** Fabricius, 1790

Philanthus coronatus F.

Philanthus coronatus F., 1790, p. 224 — Italia, leg. Allioni; 1793, p. 288; 1804, p. 301; Berland, 1925, p. 46.

The lectotype is a male in the collection F. and appears to agree with the usual interpretation; there are two more males (one without head).

Philanthus triangulum (F.)

Vespa triangulum F., 1775, p. 373 — Copenhagen; 1781, p. 469; 1787, p. 294.
Philanthus triangulum F., 1790, p. 224 ("in Daniae floribus"); 1793, p. 289; 1804, p. 302; Berland, 1925, p. 44, 45.

The type is a female without head in the collection F.; it agrees with the usual interpretation.

As I have demonstrated in 1959 (p. 67), *Ph. triangulum* (F.) appears to be a junior synonym of *Sphex xanthocephala* Forster, 1771. It seems desirable, however, not to replace the well known name *triangulum*.

Philanthus triangulum diadema (F.)

Crabro diadema F., 1781, p. 471 — Cape of Good Hope (coll. Banks); 1787, p. 297; 1790, p. 225 ("in Barbariae floribus", leg. Prof. Vahl).
Philanthus diadema F., 1793, p. 289 (also Italy, leg. Allioni); 1804, p. 302 (Cape of Good Hope and Italy).
Philanthus triangulum var. *diadema* Arnold, 1925, p. 144 (common throughout the Ethiopian region).

A female in the collection F. bears a label "lectotype, K. Faester", but the original description is based on a specimen in the Banks collection. The subspecies occurring in Northern Africa is *Ph. triangulum abdelkader* Lep. (see de Beaumont, 1949, p. 180).

Philanthus histrio F.

Philanthus histrio F., 1804, p. 301 — Senegal, coll. Lund; Arnold, 1925, p. 147 ("generally distributed from Harar to Natal").

A female with label: "P. histrio, Senegal, Paykul" in the collection S. &

T.L. agrees with the description given by Arnold. The reddish colour is perhaps slightly more extensive: antennae ferruginous with yellow spot on scape, the segments 5-11 somewhat brownish above; there is no median spot between the antennae as in Arnold's figure 3.

Philanthus gibbosus (F.)

Vespa gibbosa F., 1775, p. 370 — America, leg. Lewin; 1781, p. 466; 1787, p. 292; 1793, p. 275; 1804, p. 261.
Philanthus gibbosus (F.), Schulz, 1912, p. 82, 100; Burks, in Muesebeck c.s., 1951, p. 1001.

The type is a damaged, headless, male in the collection F.; I found it to agree in all respects with a male (now in Mus. Leiden) from Westfield, New Jersey, U.S.A., which I received under the name *Ph. gibbosus* from Mr. G. R. Ferguson.

Philanthus ventilabris (F.)

Philanthus ventilabris F., 1798, p. 268 — Carolina, coll. Bosc; 1804, p. 303 [*vertilabris*!]; Burks, in Muesebeck c.s., 1951, p. 1003.
Anthophilus vertilabris [!] (F.), Dahlbom, 1845, pp. XXIV, 497.

A male in collection F. agrees with a specimen which I have received under this name some years ago from Mr. R. R. Dreisbach (ML). Evidently the usual interpretation is correct. There is no type in the Paris Museum.

Genus **Trachypus** Klug, 1810

Trachypus elongatus (F.)

Zethus elongatus F. 1804, p. 283 — South America, leg. Smidt, coll. Lund.
Philanthus (*Trachypus*) *elongatus* Schulz, 1912, p. 87.

The type is a well preserved male in the collection S. & T.L. I have not seen any further material of this species.

Genus **Cerceris** Latreille, 1802

First the Palaearctic species are discussed here in the order indicated by de Beaumont (1952 a, 1952 b); they are followed by three Oriental species, one Ethiopian and one Nearctic species.

Cerceris rybyensis (L.)

Philanthus ornatus F., 1790, p. 225 — Germany, leg. Smidt; 1793, p. 290; 1804, p. 304.

This species is represented in the collection F. by six specimens; a female bearing Fabricius's original label is herewith selected as the lectotype; it is identical with *C. rybyensis* (L.).

Cerceris fimbriata (Rossi)

Philanthus sexpunctatus F., 1793, p. 291 — Italy, Dr. Allioni; 1804, p. 304 [new synonym].
Mellinus scaber F., 1798: 266 — Italy, Dr. Allioni [new synonym].
Prosopis scabra F., 1804: 295.

Philanthus sexpunctatus F. was not seen by Dahlbom (1845, p. XXIV), and is listed as an unknown species of *Philanthus* by Dalla Torre (1897, p. 490).

The type, a female without antennae and with damaged legs in collection F., appears to be a rather dark specimen of *Cerceris fimbriata* (Rossi). Thorax black, with very small spots on pronotum; tegulae with yellow spot. Gastral tergite 1 black, 2 with only the lateral spots, 3 with lateral spots, 4 with small transverse mark on each side at apical margin, 5 and 6 black.

The type of *Mellinus scaber,* a male in collection F., agrees well with de Beaumont's description (1952, a, p. 48) of *Cerceris fimbriata* (Rossi). Antennal scape with yellow spot, the flagellum ferruginous below. The yellow spots in the posterior angles of tergite 2 are slightly smaller than in fig. 70 of de Beaumont's paper (l.c., p. 45), on tergite 3 the median black mark is wider posteriorly, and tergite 6 is entirely black. The pronotum has two widely separated small spots; tegulae yellowish; sternites black. All femora black with yellow markings: femora I with spot at under side on apical two thirds, femora II yellow on apical half anteriorly, but on apical third posteriorly, femora III with spot on apical third of anterior face, posteriorly almost entirely dark.

Both determinations have been confirmed by Prof. de Beaumont, who examined the types of *Philanthus sexpunctatus* F. and *Mellinus scaber* F. in January 1960.

Cerceris circularis (F.)

Philanthus circularis F., 1804, p. 304 — Tanger, leg. Schousboe, coll. de Sehestedt.

The type in the collection S. & T.L. is a male of a species of the *rybyensis* -group; an extensive description has been published by de Beaumont (1952 a, p. 51; see also 1952 b, p. 324).

Cerceris laeta (F.)

Philanthus laetus F., 1793, p. 291 — Spain, Prof. Vahl; 1804, p. 305.

The lectotype of *Ph. laetus* is a male in the collection S. & T.L., with label "e Iowan Vahl" (the second word is not well legible!). It runs to *C. arenaria* in de Beaumont's key (1952 a, p. 35), but the yellow markings are more extensive than in fig. 168 of de Beaumont (1952a, p. 67). The first gastral

tergite has two lateral spots, and a small median spot; tergite 2 is yellow with narrow black band at base, 3 and 4 have somewhat narrower yellow bands, but those on 5 and 6 are slightly wider again. Legs yellow; coxae and trochanters I brown, coxae II brown; hind legs with dark spot on apex of femora and on apex of tibiae.

Prof. de Beaumont, who examined this type in January 1960, found it similar to the specimen which he had seen before (1957, p. 331). Its identity must remain uncertain, however, for at present the sexes of this species and some similar ones (*C. moroderi* Giner and *C. dusmeti* Giner) cannot be associated with certainty.

Cerceris arenaria (L.)

Philanthus auritus F., 1794, p. 459 — Italy, leg. Allioni; 1798, p. 268; 1804, p. 301.

The lectotype of *Ph. auritus* is a female in collection F.; it has already been correctly identified by Dahlbom (1845, p. XXIII). The yellow markings are slightly less extensive than in fig. 154 of de Beaumont (1952 a, p. 67).

Cerceris quinquecincta (F.)

Crabro quinquecinctus F., 1787, p. 295 — Kiel, leg. Daldorff (also from Spain, leg. Vahl) [the latter probably a different species!].
Philanthus quinquecinctus F., 1793, p. 291; 1804, p. 304.
Vespa (*Crabro*) *cingulata* Gmelin, 1790, p. 2762, no. 108.

This species has been regarded as a doubtful synonym of *Cerceris arenaria* (L.) (Dalla Torre, 1897, p. 451). I am not sure about the identity of the "type", a male in the collection F., which may be a specimen from Spain, and which is apparently not the true type. This specimen has the clypeus convex; propodeal area smooth with a few punctures; gastral tergites with complete bands; no brushes on tergite 6; pronotum with the yellow band narrowly interrupted in the middle; second submarginal cell very small, the third large.

Cerceris interrupta (Panzer)

Crabro labiatus F., 1793, p. 296 — Germany, leg. Smidt [invalid homonym of *Crabro labiatus* Olivier, 1791] [new synonym].
Philanthus labiatus F., 1804, p. 303.
Cerceris interrupta (Panzer, 1799), de Beaumont, 1952a, p. 64.

There are three specimens under the name *labiatus* in the collection F.; the first is a female which runs to *Cerceris interrupta* (Panzer) in de Beaumont's key (1952 a, p. 32); a second female is identical with *C. ruficornis* (F.); a third specimen is a male of an unidentified species.

Since only the first specimen agrees with the original description, I have labelled this as lectotype; this has no other consequences than that *Crabro*

labiatus F. is removed from the synonymy of *C. ruficornis* (F.) = *C. cunicularia* Schrank and placed under *C. interrupta* Panzer.

In Dalla Torre's catalogue (1897, p. 465) this species is erroneously dated from 1787.

Cerceris ruficornis (F.)

Philanthus ruficornis F., 1793, p. 292 — Italy, leg. Allioni; 1804, p. 306.
Mellinus quadricinctus F., 1804, p. 298 — Germany, Dr. Panzer [new synonym].
Philanthus trifidus F., 1804, p. 305 — Germany, leg. de Megerle [new synonym].
Cerceris cunicularia (Schrank, 1802), de Beaumont, 1952a, p. 70 [new synonym].

Philanthus ruficornis F. is not mentioned by Dahlbom; in Dalla Torre's catalogue it is listed as a doubtful synonym of *Cerceris interrupta* Panzer, 1799.

The collection F. contains two specimens of *Ph. ruficornis,* both males; the one bearing the original label (lectotype) is a brightly coloured specimen of *Cerceris cunicularia* (Schrank), 1802; it has two spots on tergite 1, the bands on tergites 2-5 are strongly narrowed towards the middle, where they are very narrowly interrupted; the band on tergite 6 is entire; legs almost entirely yellow.

This specimen agrees better with the description than the other male, which I have identified as *C. quinquefasciata* (Rossi).

The lectotype of *Mellinus quadricinctus* F. is a male *Cerceris* in the collection F., which runs to *C. cunicularia* Schrank, 1802, in the key published by the Beaumont (1952 a, p. 35).

Dahlbom (1845, p. XXIII) has not seen this species and suspected it to be identical with *Gorytes campestris*; Dalla Torre (1897, p. 561) listed it as an unidentified species.

The type of *Philanthus trifidus* F., a male in collection F., agrees with the type of *Mellinus quadricinctus* F., but the small, yellow, post-ocular spots which are present in that specimen, are lacking in *trifidus.* Pronotum with two spots, postcutellum with yellow mark, gastral tergites 1, 6, and 7 black; tergite 2 with widely interrupted band, bands on 3-5 very narrowly interrupted; hind femora with brown spot at apex.

Cerceris abdominalis (F.)

Philanthus abdominalis F., 1804, p. 306 — Tanger, leg. Schousboe, coll. de Sehestedt.

The collection S. & T.L. contains two females of this species, which agree with the description published by de Beaumont (1952 b, p. 371).

Cerceris flavilabris (F.)

Hylaeus flavilabris F., 1793, p. 304 — Italy, leg. Allioni.
Prosopis flavilabris F., 1804, p. 294.
Cerceris ferreri van der Linden, 1829, p. 114, ♀ — Turin, leg. Ferrero [new synonym].

The lectotype (collection F.) is a male which agrees with the original description. The key in de Beaumont's paper (1952 a, p. 35) leads to *Cerceris ferreri* Lind., and the description of this species applies in all respects to the type. The fourth antennal segment is exactly twice as long as wide at the apex.

Evidently Fabricius's name must be adopted for this species.

Cerceris rufipes (F.)

Crabro rufipes F., 1787, p. 297 — Spain, leg. Vahl.
Philanthus rufipes F., 1793, p. 290; 1804, p. 303.

The collection F. contains two males of this well known species (see de Beaumont, 1950, p. 318, 1952 a, p. 79).

Cerceris cornuta (F.)

Crabro cornutus F., 1787, p. 294 — "in India orientali", leg. Pflug; 1793, p. 293; 1804, p. 308.
Vespa (Crabro) cornigera Gmelin, 1790, p. 2761, no. 100 [new name].

This species has remained problematic until Schulz (1912, p. 200) studied the type, a female in the collection F., and concluded that it is identical with *Cerceris wroughtoni* Cameron, 1890. I have not yet seen a specimen agreeing with the type.

Cerceris dissecta (F.)

Philanthus dissectus F., 1798, p. 269 — India, leg. Daldorff; 1804, p. 306 ("in India orientali").

This species has not been recognized by any of the later authors.

The type is a female (collection F.) of a small *Cerceris* (7-8 mm); first gastral segment and the greater part of the second, red; second tergite with basal yellow spot, third tergite with yellow band which is narrowed towards the middle and here narrowly interrupted; fifth tergite with complete band which is broadly, angularly, incised anteriorly.

Middle portion of clypeus truncate anteriorly, slightly raised and ending at a short distance before the apical margin of the clypeus; propodeal area smooth, with median furrow, and on each side two irregularly placed punctures; second gastral sternite without platform at base.

Puncturation not very dense; posterior margins of sternites impunctate; head rather regularly, densely punctate, but here as well as on the tergites the interspaces visible.

Cerceris interstincta (F.)

Philanthus interstinctus F., 1798, p. 269 — India, leg. Daldorff; 1804, p. 306.

The lectotype (present selection) is a male in the collection F.; it appears indeed to belong to the species described by de Saussure in 1867 (p. 97) as *Cerceris humbertiana* (see Schulz, 1912, p. 90, no. 196). A second male is very probably identical.

Cerceris macula (F.)

Philanthus macula F., 1804, p. 305 — Cape of Good Hope, coll. Lund.

The lectotype (present selection) is a male *Cerceris* in the collection S. & T.L., labelled "*P. macula* e Cap. b. Sp. Paykul".

Up to the present this species has not been recognized by the authors who studied the South African species of *Cerceris*. The following additions to the original description and to the notes of Schulz (1912, p. 89) may therefore be of value.

Pronotum with two widely separated spots; tegulae yellow with dark spot; postcutellum yellow; gastral markings similar to those of *C. rybyensis* (L.): tergite 2 with basal mark, 3 with band (deeply emarginate anteriorly), 6 almost entirely yellow; tergites 1, 4, 5, and 7 black.

Propodeal area with crenulate median groove, on each side of it a small smooth space, bordered by an irregular row of 5-6 coarse punctures; the apex of the dorsal, triangular area slightly depressed. Second gastral sternite with a short, slightly raised and indistinctly defined platform at base.

Length 7-8 mm.

Cerceris serripes (F.)

Vespa serripes F., 1781, p. 464 — N. America, coll. Banks; 1787, p. 289; 1793, p. 266; 1804, p. 262.

The type of this species is a headless female *Cerceris* in the Banks collection; it was examined by Bequaert (1928, p. 62) who considered it identical with *Cerceris bicornuta* Guérin. This synonymy, however, appears to be incorrect. I have not succeeded in identifying this species.

Genus **Rhopalum** Kirby, 1829

Rhopalum (Corynopus) coarctatum (Scopoli)

Crabro crassipes F., 1798, p. 270 — Halle, leg. Hübner.
Pemphredon crassipes F., 1804, p. 315.
Crabro tibialis F., 1798, p. 271 — Halle, leg. Hübner.
Pemphredon tibialis F., 1804, p. 315.

Crabro crassipes F. has been misidentified by all authors; the type, a female

in collection F., does not belong to *Rhopalum clavipes* (L.) (Dahlbom, 1845, p. XXV), but represents the other sex of *tibialis* which was based on two males (collection F.) from the same origin. Both names go into the synonymy of *Rhopalum coarctatum* (Scopoli) (see Leclercq, 1954, p. 188).

Genus **Lindenius** Lepeletier & Brullé, 1835

Lindenius albilabris (F.)

Crabro albilabris F., 1793, p. 302 — Halle, leg. Hübner.
Pemphredon albilabris F., 1804, p. 316.

The type, a female in collection F., agrees with the description and with the usual interpretation (de Beaumont, 1956a).

Genus **Crossocerus** Lepeletier & Brullé, 1835

Crossocerus (Hoplocrabro) quadrimaculatus (F.)

Crabro quadrimaculatus F., 1793, p. 294 — Denmark, coll. Lund; 1804, p. 308.
Crabro quadripunctatus F., 1793, p. 301 — France, coll. Bosc.
Pemphredon quadripunctatus F., 1804, p. 315.

The type of *Crabro quadrimaculatus* F. is a male in the collection S. & T.L., with "Dahl" on the label after the name; it agrees with the original description and with the usual interpretation of this common species (Leclercq, 1954, p. 222).

Crabro quadripunctatus F. has never been identified; Dahlbom wrote "mihi non missus" (1845, p. XXV), Dalla Torre (1897, p. 622) and Leclercq (1954, p. 363) listed it as a doubtful species, and Kohl (1915) did not mention it. Both the male type in the Bosc collection (Mus. Paris) and a male in collection F. agree with the description and undoubtedly belong to *C. quadrimaculatus* (F.).

Crossocerus (Crossocerus) palmipes (Linné)

Crabro scutatus F., 1787, p. 296 — Copenhagen, de Sehestedt; 1793, p. 298; 1804, p. 312.

The type is a male in the collection S. & T.L.; it has been identified correctly as *palmarius* Schreber (Kohl, 1915, p. 248), which has *palmipes* L. as an earlier name (see Leclercq, 1954, p. 227).

Crossocerus (Cuphopterus) dimidiatus (F.)

Crabro dimidiatus F., 1781, p. 471 — Germany, de Hattorf; 1787, p. 297; 1793, p. 298; 1804, p. 313.

The type is a male in the collection F.; it has for many years been regarded as a doubtful synonym of *C. signatus* Panzer, but was correctly identified by Richards (1935, p. 167) as *serripes* Panzer. Fabricius's name has priority.

Genus **Crabro** Fabricius, 1775

Crabro (Agnosicrabro) occultus F.

Crabro occultus F., 1804, p. 310 — Tanger, leg. Schousboe, coll. Lund.

The type, a female in the collection S. & T.L., agrees with the description and with the usual interpretation (Leclercq, 1954, p. 244).

Crabro (Crabro) peltarius (Schreber, 1784)

Crabro mediatus F., 1798, p. 270 (16-17) — "in Europa"; 1804, p. 312 ("in Europae floribus").

Crabro mediatus F. has usually been regarded as identical with *Crabro vagabundus* Panzer, also of 1798 (at present called *Crossocerus* (*Blepharipus*) *vagabundus* (Panzer)), but the lectotype, a well preserved female in the collection F., undoubtedly belongs to the common *Crabro peltarius* (Schreber). It has the pronotum and the scutellum marked with yellow, and only the band on the fifth gastral tergite is not interrupted.

Crabro (Crabro) peltatus F.

Cabro peltatus F., 1793, p. 297 — Europe; 1804, p. 311 (Europe, Germany).
Crabro (*Crabro*) *rhaeticus* Aichinger & Kriechbaumer, 1870, Leclerq, 1954, p. 252 [new synonymy].

Crabro peltatus F. has been erroneously regarded as a synonym of *C. cribrarius* L.; the species is represented in the collection F. by two males (one of these is lectotype by present selection), which are undoubtedly identical with *C. rhaeticus* Aich. & Kriechb.

Genus **Ectemnius** Dahlbom, 1845

Ectemnius continuus (F.)

Crabro continuus F., 1804, p. 312 — Tanger, coll. de Sehestedt.

The type is a female, collected by Schousboe, in the collection S. & T.L.; it agrees with the original description and with the usual interpretation of this species. The band on the second gastral tergite is narrowed in the middle, that on the fourth tergite is narrowly interrupted, whereas the fifth tergite has an entire band.

Ectemnius lapidarius (Panzer)

Crabro sinuatus F., 1804, p. 310 — Germany, Dr. Panzer.
Ectemnius (*Clytochrysus*) *lapidarius* (Panzer), Pate, 1946a, p. 2; Leclercq, 1954, p. 285 [1]) (new synonymy).

---

1) Leclercq gives the correct reference to Panzer's publication, but erroneously dates the species as from 1799.

Crabro sinuatus F. is one of Kohl's unrecognized species (1915, p. 348); it was doubtfully identified by this author as a variety of "*Crabro quadricinctus*". Previously, Dahlbom (1845, p. XXV) had listed it as a variety of *C. cephalotes*.

The type is a female in the collection F.; it agrees with Danish specimens of *E. lapidarius* (Panzer) (= *chrysostomus* Lep.), but the first gastral tergite has a complete yellow band, which is widened in the middle and which has here two subcircular incisions anteriorly; the bands on tergites 3 and 4 are distinctly interrupted, that on tergite 2 is almost entire.

It seems fairly certain that Panzer's *lapidarius* is the older of the two competing names. According to Sherborn (Ann. Mag. Nat. Hist., ser. 9, vol. 11, p. 566), the parts 86-96 of Panzer's Fauna Germanica were published in 1804, and this would place the date of the name *lapidarius,* which appeared in part 90, rather early in 1804. The "Systema Piezatorum" was probably published at a later date in the same year (see Hedicke, 1941, Mitt. Deutsch. Ent. Ges., vol. 10, pp. 82-83).

Ectemnius (Clytochrysus) sexcinctus (F.)

Crabro sexcinctus F., 1775, p. 374 — Germany, leg. de Hattorf; 1781, p. 470; 1787, p. 295; 1793, p. 295; 1804, p. 309.
Crabro quadricinctus F., 1787, p. 295 — Copenhagen, leg. Lund; 1793, p. 296 (coll. Lund); 1804, p. 310 [new synonym].
Crabro zonatus Panzer, Kohl, 1915, p. 57, Leclerq, 1954, p. 287 [new synonym].

As the lectotype of *Crabro sexcinctus* I have selected one of two identical males under this name in the collection F.; in both specimens the characteristic hair tufts on the second tubercle of the third antennal segment are distinctly visible. A female in this collection may belong to the same species.

Although Kohl (1915, p. 6) mentions *Crabro sexcinctus* F. in his historical review as a species which certainly belongs to *Crabro* (s.l.), he seems to have overlooked this wasp in the further treatment of the group, for he placed "*Crabro sexcinctus* Panzer, 1799", which is actually based on *C. sexcinctus* F., in the synonymy of *C. zonatus* Panzer, without mentioning the Fabrician species of this name.

The type of *Crabro quadricinctus* F. is a female in the collection S. & T.L.; it agrees well with the original description, but it does not belong to the species discussed under the name "*quadricinctus* F." by Kohl (1915, p. 42). The mesoscutum is finely, granulately, punctate (not striate as in that species), and the coarsely striate sides of the propodeum, together with other characters, allow a certain identification as the species discussed by Kohl under the name *zonatus* Panzer.

Crabro quadricinctus F. therefore goes into the synonymy of *C. sexcinctus* F., and the species discussed under this name by Kohl takes the next available name, *cephalotes* Olivier, 1791, which was based on a specimen from Paris.

A specimen under the name *quadricinctus* in the collection F. has a smooth propodeal area with two large yellow spots; it does not agree with the original description and has evidently been placed in the collection after 1775.

Ectemnius maculatus (F.)

Crabro maculatus F., 1781, p. 470 — North America, coll. Banks; 1787, p. 295; 1793, p. 295; 1804, p. 309.
Vespa (Crabro) maculosa Gmelin, 1790, p. 2761 (new name).

The type is not in the Banks collection and the species is not represented in the Copenhagen collections. It is listed as a doubtful species in the Catalogue of North American Hymenoptera (Muesebeck c.s., 1951, p. 1029), and recorded as a doubtful synonym of *Ectemnius singularis* Smith by Leclercq (1954, p. 290).

Genus **Lestica** Billberg, 1820

Lestica (Lestica) subterranea (F.)

Crabro subterraneus F., 1775, p. 374 — Copenhagen; 1781, p. 470; 1787, p. 295; 1793, p. 295; 1804, p. 309.

The lectotype (present selection) is a female in the collection F.; it agrees with the original description and with the usual interpretation (see Leclercq, 1954, p. 291).

Lestica (Clypeocrabro) clypeata (Schreber)

Crabro lapidarius F., 1804, p. 309 — Kiel.

This species has been placed correctly in the synonymy of *Lestica clypeata* (Schreber). The lectotype (present selection), a female with original label in collection F., is accompanied by some specimens belonging to other species.

Genus Oxybelus Latreille, 1796

Oxybelus hastatus F.

Oxybelus hastatus F., 1804, p. 317 — Mogador, leg. Schousboe, coll. Lund; de Beaumont, 1956, p. 154 (additional description).

The type is a well preserved male in the collection S. & T.L.

Oxybelus lineatus (F.)

Nomada lineata F., 1787, p. 306 — Halle, leg. Hübner.
Crabro lineatus F., 1793, p. 300.

Oxybelus lineatus F., 1804, p. 317; Verhoeff, 1948, p. 168; Faester, 1949, p. 16, 33; Guiglia, 1953, p. 85.

The type of this well known species is a female in collection F.; the usual interpretation is evidently correct.

Oxybelus mucronatus (F.)

Crabro mucronatus F., 1793, p. 300 — Germany, leg. Smidt.
Oxybelus mucronatus F., 1804, p. 318; Guiglia, 1953, p. 124 (= *Ox. pugnax* Oliv. et auctt.).

The labelled type is a male in collection F. with five pairs of spots on the abdomen; it has been identified by Faester as *Oxybelus pugnax* Ol. et auctt. (supplemental note, 1951, to paper on *Oxybelus*, 1949). Some other specimens under this name are probably not conspecific.

Oxybelus punctatus (F.)

Nomada punctata F., 1793, p. 346 — Canada.
?*Oxybelus uniglumis quadrinotatum* Say, in Krombein, 1958, p. 204.

Original description: "N. (omada) nigra abdomine atro utrinque albo punctato, scutello unispinoso, pedibus ferrugineis. — Habitat in Canada Mus. Dom. Lund. — Duplo minor N. scutellari & alia. Antennae ferrugineae, basi nigrae. Caput nigrum labio argenteo, nitidulo. Thorax niger puncto parvo, calloso ante alas. Scutellum spina porrecta, acuta calloque parvo, albo utrinque ad basin spinae. Abdomen glabrum, atrum puncto albo transverso in singulo segmento, in postico connatis instrigam. Pedes rufi femoribus nigris."

In 1804 Fabricius listed this species as a synonym of *Oxybelus tridens* (F.), 1798, a European species which has been recognized as identical with *Oxybelus uniglumis* (L.). I have not succeeded in finding a type of "*Nomada punctata* F.", and I am unable to say whether the description is complete enough to allow us to decide whether it was really based on a specimen of *O. uniglumis* from Canada. In case *Nomada punctata* F. could be recognized with certainty as the Canadian form of *Oxybelus uniglumis* (L.), Fabricius's name would have to replace the subspecific name *quadrinotatum* Say.

Oxybelus uniglumis (L.)

Crabro tridens F., 1798, p. 270 — Halle, leg. Hübner.
Oxybelus tridens F., 1804, p. 318.

Dahlbom (1845, p. XXV) regarded this species as a synonym of *O. lineatus* (F.), but the typical female in the collection F. is undoubtedly identical with *O. uniglumis* (L.). It has been recorded as such by Verhoeff (1948, p. 181) and by Faester (1949, p. 21).

Oxybelus trispinosus (F.)

Apis trispinosa F., 1787, p. 303 — Halle, leg. Hübner.
Crabro trispinosus F., 1793, p. 301.
Oxybelus trispinosus F., 1804, p. 318.

Acording to Faester (1949), the type is a female of *O. uniglumis* in the collection F., but this statement, originating from an examination of the type by Prof. Tischler in Kiel, has proved to be incorrect. Both Verhoeff (1948) and Guiglia (1953) use the name for the species which is also known under the name of *Oxybelus nigripes* Olivier, 1811. Since the two specimens under this name in the collection F. do not agree with the original description, it seems better to accept the opinion of Blüthgen, who regards a female in the Taschenberg collection in the Zoological Institute, Halle, as the type (see Verhoeff, 1948, p. 195); this specimen originated from the Hübner collection and agrees well with the description.

SUMMARY OF FABRICIAN SPHECOIDEA

In the following list the Fabrician Sphecoidea are arranged according to the zoogeographic regions; for each region the species are listed in chronological order. The successive columns give for each species:

(1) the page no. of the original description,
(2) the original name,
(3) the type locality,
(4) the generic name under which the species is placed in the "Systema Piezatorum", 1804 (s = in synonymy), and in the Fabrician collection in the Kiel Museum (temporarily in Mus. Copenhagen),
(5) the generic name under which the species is discussed in this paper,
(6) the location of the type (C = Mus. Copenhagen, coll. Sehested and Tønder Lund; K = Mus. Kiel, coll. Fabricius; L = British Museum (Natural History), London, coll. Banks; P = Muséum National d'Histoire Naturelle, Paris, coll. Bosc),
(7) the status of the name (h = homonym, s = synonym, v = valid name of species or subspecies, d = doubtful identity, (v) = name of infrasubspecific rank).

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
	Palaearctic region					
		1775				
350	*Sphex nigra*	Europe	*Pompilus*	*Liris*	K	v
373	*Vespa triangulum*	Copenhagen	*Philanthus*	*Philanthus*	K	s
373	*Crabro tridentatus*	S. Europe	*Scolia*	*Stizoides*	K	v
373	— *spinosus*	S. Europe	*Crabro*	*Nysson*	K	s
374	— *subterraneus*	Copenhagen	*Crabro*	*Lestica*	K	v
374	— *sexcinctus*	Germany	*Crabro*	*Ectemnius*	K	v
		1781				
443	*Sphex femorata*	Italy	*Pepsis*	*Sceliphron*	K	v
451	*Tiphia variegata*	Siberia	*Tiphia*	*Palarus*	L	v
458	*Bembex fasciata*	Italy	*Bembex*	*Stizus*	K	v
464	*Vespa tridens*	Italy	*Crabro*	*Bembecinus*	K	v
470	*Crabro flavipes*	Italy	*Philanthus*	*Palarus*	K	s
471	— *dimidiatus*	Germany	*Crabro*	*Crossocerus*	K	v
		1787				
273	*Sphex arenaria*	Kiel	*Pepsis*	*Podalonia*	K	s
273	— *lutaria*	Kiel	*Pepsis*	*Psen*	K	v
275	— *unicolor*	Spain [?]	*Pepsis*	*Sphex*	?K	?
277	— *maculata*	Kiel	*Pompilus*	*Nysson*	K	v
278	*Tiphia crassicornis*	Spain	*Larra*	*Stizoides*	C	v
285	*Bembex olivacea*	N. Africa	*Bembex*	*Bembix*	C	v
286	— *ruficornis*	Spain	*Larra*	*Stizus*	C	hs
295	*Crabro quinquecinctus*	Kiel	*Philanthus*	*Cerceris*	?	?s
295	— *quadricinctus*	Copenhagen	*Crabro*	*Ectemnius*	C	s
296	— *scutatus*	Copenhagen	*Crabro*	*Crossocerus*	C	s
296	— *sabulosus*	Copenhagen	*Mellinus*	*Mellinus*	C	v
296	— *bipunctatus*	Copenhagen	*Mellinus*	*Mellinus*	C	s
297	— *rufipes*	Spain	*Philanthus*	*Cerceris*	K	v
303	*Apis trispinosa*	Halle	*Oxybelus*	*Oxybelus*	K	v
306	*Nomada lineata*	Halle	*Oxybelus*	*Oxybelus*	K	v
		1790				
224	*Philanthus coronatus*	Italy	*Philanthus*	*Philanthus*	K	v
225	— *ornatus*	Germany	*Philanthus*	*Cerceris*	K	s
		1793				
201	*Sphex flavipennis*	Italy	*Pepsis*	*Sphex*	C	v
205	— *holosericea*	N. Africa	*Sphex*	*Ammophila*	?	**v**
208	— *maxillosa*	N. Africa	*Pepsis*	*Sphex*	K	h
215	— *tricolor*	N. Africa	*Larra*	*Tachytes*	?	h
215	— *guttata*	Italy	*Pompilus*	*Dinetus*	K	h
221	*Larra ichneumoniformis*	Hungary	*Larra*	*Larra*	K	s
251	*Bembex integra*	Italy	*Bembex*	*Stizus*	K	s
286	*Mellinus ruficornis*	Germany	*Mellinus*	*Mellinus*	K	s
287	— *tricinctus*	Italy	*Mellinus*	*Nysson*	K	s
287	— *quinquecinctus*	?(N. Europe)	*Mellinus*	*Gorytes*	K	v
291	*Philanthus sexpunctatus*	Italy	*Philanthus*	*Cerceris*	K	s

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
291	*Philanthus laetus*	Spain	*Philanthus*	*Cerceris*	C	d
292	— *ruficornis*	Italy	*Philanthus*	*Cerceris*	K	v
292	— *quinquemaculatus*	Denmark	*Philanthus*	*Mellinus*	C	s
294	*Crabro quadrimaculatus*	Denmark	*Crabro*	*Crossocerus*	C	v
296	— *labiatus*	Germany	*Philanthus*	*Cerceris*	K	hs
297	— *peltatus*	Europe	*Crabro*	*Crabro*	K	v
299	— *pictus*	Halle	*Pompilus*	*Dinetus*	K	v
299	— *bicinctus*	Denmark	*Ceropales* (s)	*Argogorytes*	K	s
300	— *mucronatus*	Germany	*Oxybelus*	*Oxybelus*	K	v
301	— *quadripunctatus*	France	*Pemphredon*	*Crossocerus*	P	s
302	— *lugubris*	Halle	*Pemphredon*	*Pemphredon*	K	v
302	— *albilabris*	Halle	*Pemphredon*	*Lindenius*	K	v
302	— *minutus*	Copenhagen	*Pemphredon*	*Diodontus*	C	v
304	*Hylaeus flavilabris*	Italy	*Prosopis*	*Cerceris*	K	v
		1794				
457	*Sphex atra*	Italy	*Pelopoeus*	*Psen*	K	v
459	*Philanthus auritus*	Italy	*Philanthus*	*Cerceris*	K	s
		1798				
241	*Evania ruficollis*	Halle	*Ceropales*	*Gorytes*	K	s
244	*Sphex cruenta*	France	*Pompilus*	*Gorytes*	?	s
249	*Pompilus lunicornis*	France	*Pompilus*	*Didineis*	?	v
252	*Larra bifasciata*	Tanger	*Larra*	*Stizoides*	K	s
259	*Bembex labiata*	France[??]	*Bembex*	*?Bembix*	P	d
266	*Mellinus interruptus*	Halle	*Oxybelus*	*Nysson*	?	v
266	— *scaber*	Italy	*Prosopis*	*Cerceris*	K	s
270	*Crabro mediatus*	Europe	*Crabro*	*Crabro*	K	s
270	— *tridens*	Halle	*Oxybelus*	*Oxybelus*	K	s
270	— *crassipes*	Halle	*Pemphredon*	*Rhopalum*	K	s
271	— *tibialis*	Halle	*Pemphredon*	*Rhopalum*	K	s
		1804				
182	*Trypoxylon atratum*	Germany		*Psenulus*	K	?s
182	— *equestre*	Germany		*Psen*	K	v
186	*Ceropales spinosa*	Denmark		*Nysson*	C	hs
194	*Pompilus teutonus*	Germany		*Larra*	K	?s
204	*Pelopoeus compressicornis*	Germany		*Psen*	?	s
210	*Pepsis macula*	Araby		*Priononyx*	?P	v
226	*Bembex senilis*	Tanger		*Bembix*	C	s
229	*Liris rufipes*	Morocco		*Stizus*	C	v
298	*Mellinus quadricinctus*	Germany		*Cerceris*	K	s
298	— *quadrifasciatus*	Germany		*Gorytes*	K	v
300	— *arpactus*	Germany		*Argogorytes*	K	s
300	— *fulvicornis*	Germany		*Mellinus*	K	s
304	*Philanthus circularis*	Tanger		*Cerceris*	C	v
305	— *trifidus*	Germany		*Cerceris*	K	s
306	— *abdominalis*	Tanger		*Cerceris*	C	v
309	*Crabro lapidarius*	Kiel		*Lestica*	K	s
310	— *sinuatus*	Germany		*Ectemnius*	K	s
310	— *occultus*	Tanger		*Crabro*	C	v

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
312	*Crabro continuus*	Tanger		*Ectemnius*	C	v
317	*Oxybelus hastatus*	Morocco		*Oxybelus*	C	v
		Ethiopian region				
		1781				
443	*Sphex haemorrhoidalis*	Trop. Africa	*Pepsis*	*Sphex*	L	v
444	— *tibialis*	Cape G.H.	*Pepsis*	*Sceliphron*	L	v
471	*Crabro diadema*	Cape G.H.	*Philanthus*	*Philanthus*	?L	v
		1787				
274	*Sphex tomentosa*	Sierra Leone	*Pepsis*	*Sphex*	C	v
275	— *ciliata*	"India"[!]	*Chlorion*	*Chlorion*	K	v
		1793				
205	*Sphex pubescens*	Guinea	*Pepsis*	*Prionyx*	K	s
205	— *cincta*	Guinea	*Pepsis*	*Sphex*	?	hd
207	— *sibirica*	"Siberia"[!]	*Chlorion*	*Ampulex*	L	v
207	— *hirtipes*	Guinea	*Pepsis*	*Sphex*	?	d
207	— *albifrons*	Guinea	*Pepsis*	*Sphex*	K	h
216	— *nigripes*	Cape G.H.	*Liris*	*Larra*	C	d
221	*Larra erythrocephala*	Cape G.H.	*Larra*	?	?	d
		1798				
244	*Sphex hemiptera*	France	*Pelopoeus*	*Sceliphron*	P	v
		1804				
198	*Pompilus haemorrhoidalis*	Guinea		*Liris*	C	v
200	*Dryinus aeneus*	Guinea		*Ampulex*	C	v
218	*Chlorion mandibulare*	Guinea		*Chlorion*	C	v
301	*Philanthus histrio*	Senegal		*Philanthus*	C	v
305	— *macula*	Cape G.H.		*Cerceris*	C	v
		Oriental region				
		1775				
346	*Sphex violacea*	"Cape G.H." [!]	*Pepsis*	*Sceliphron*	K	h
348	— *lobata*	"Africa" [!]	*Chlorion*	*Chlorion*	L	v
348	— *vespiformis*	India or.	*Larra*	*Stizus*	K	v
		1781				
445	*Sphex erythrocephala*	Malabar	*Pelopoeus*	*Ammophila*	L	v
445	— *madraspatana*	Malabar	*Pelopoeus*	*Sceliphron*	L	v
445	— *compressa*	Malabar	*Chlorion*	*Ampulex*	L	v
		1787				
274	*Sphex argentata*	Coromandel	*Pepsis*	*Sphex*	K	v
274	— *aurulenta*	China		*Liris*	?	v
276	— *assimilis*	Tranquebar	*Pompilus*	*Stizoides*	K	v
276	— *maura*	Tranquebar	*Liris*	*Larra*	K	v
276	— *aurata*	India or.	*Liris*	*Liris*	K	s

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
279	*Tiphia ruficornis*	Tranquebar	*Larra*	*Stizus*	?	h
285	*Bembex glauca*	Tranquebar	*Bembex*	*Bembix*	K	v
286	— *repanda*	Tranquebar	*Bembex*	*Bembix*	K	v
286	— *interrupta*	India or.	*Liris*	*Palarus*	C	v
294	*Crabro cornutus*	India or.	*Crabro*	*Cerceris*	K	v
294	— *repandus*	India	*Liris*	*Tachytes*	K	v
295	— *interruptus*	India or.	*Liris* (s)	*Palarus*	K	s
		1793				
200	*Sphex rufipennis*	Tranquebar	*Pepsis*	*Prionony x*	C	h
201	— *aurulenta*	Tranquebar	*Chlorion* (s)	*Sphex*	?	h
249	*Bembex lunata*	Tranquebar	*Bembex*	*Bembix*	C	v
251	— *sexfasciata*	India or.[?]	*Bembex*	*Stizus*	K	v
294	*Crabro nitidulus*	India or.	*Crabro*	*Tachytes*	K	v
		1798				
253	*Larra cingulata*	India or.	*Larra*	*Stizus*	K	s
253	— *fasciata*	Tranquebar	*Larra*	*Stizoides*	K	hs
269	*Philanthus interstinctus*	India	*Philanthus*	*Cerceris*	K	v
269	— *dissectus*	India	*Philanthus*	*Cerceris*	K	v
		1804				
211	*Pepsis sericea*	"Pacific Is." [1]		*Sphex*	K	v
213	— *obscura*	India or.		*Sphex*	C	v
218	*Chlorion splendidum*	India or.		*Chlorion*	C	v
		Australian region				
		1775				
348	*Sphex clavus*	Australia	*Sphex*	*Ammophila*	L	v
		Nearctic region				
		1775				
363	*Vespa tricincta*	America	*Vespa*	*Sphecius*	L	s
370	*Vespa gibbosa*	America	*Vespa*	*Philanthus*	K	v
		1781				
444	*Sphex flavipes*	America	*Pelopoeus*	*Sceliphron*	K	(v)
464	*Vespa serripes*	N. America	*Vespa*	*Cerceris*	L	d
470	*Crabro maculatus*	N. America	*Crabro*	*Ectemnius*	?	d
		1793				
249	*Bembex carolina*	Carolina	*Bembex*	*Stictia*	P	v
346	*Nomada punctata*	Canada	*Oxybelus* (s)	*Oxybelus*	?	d
		1798				
268	*Philanthus ventilabris*	Carolina	*Philanthus*	*Philanthus*	?K	v
		1804				
220	*Larra aurulenta*	Carolina		*Tachytes*	P	v

1) Probably from Java!

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
220	*Larra analis*	Carolina		*Larra*	P	v
224	*Bembex fasciata*	Carolina		*Bembix*	P	hd
		Neotropical region				
		Central American Islands				
		1775				
346	*Sphex thomae*	S. Thomas	*Pepsis*	*Prionony x*	K	v
347	— *lunata*	Antigua	*Pelopoeus*	*Sceliphron*	K	s
347	— *jamaicensis*	Jamaica	*Pelopoeus*	*Sceliphron*	?	v
375	*Crabro tricinctus*	"America"	*Crabro*	*Gorytes*	K	v
		1793				
203	*Sphex affinis*	Amer. Is.	*Pelopoeus*	*Sceliphron*	K	(v)
211	— *labiata*	S. Amer. Is.	*Pompilus*	*Liris*	K	v
250	*Bembex americana*	S. Amer. Is.	*Bembex*	*Bembix*	K	v
		1794				
458	*Bembex spinosa*	Amer. Is.	*Bembex*	*Bicyrtes*	K	v
		1798				
266	*Mellinus tristrigatus*	Amer. Is.	*Mellinus*	*Gorytes*	K	s
		1804				
208	*Pepsis johannis*	S. Amer. Is.		*Prionony x*	C	s
209	— *crucis*	S. Amer. Is.		*Prionony x*	C	s
229	*Liris tricincta*	S. Thomas		*Tachytes*	C	v
		South America				
		1775				
361	*Bembyx punctata*	Brazil	*Bembex*	*Stictia*	L	v
		1793				
200	*Sphex cyanipennis*	Fr. Guiana	*Pepsis*	*Isodontia*	?	v
250	*Bembex striata*	loc.?	*Bembex*	*Rubrica*	?	s
		1798				
243	*Sphex binodis*	Fr. Guiana	*Sphex*	*Ammophila*	?P	d
		1804				
180	*Trypoxylon albitarse*	Br. Guiana [1]		*Trypoxylon*	C	v
181	— *fuscipennis*	do.		*Trypoxylon*	C	v
182	— *fugax*	do.		*Trypoxylon*	C	v
183	*Podium rufipes*	do.		*Podium*	C	v
184	— *rufiventre*	do.		*Trigonopsis*	C	v
204	*Pelopoeus abbreviatus*	do.		*Ammophila*	C	v
210	*Pepsis luteipennis*	do.		*Podium*	C	v
210	— *fuscipennis*	do.		*Isodontia*	C	v
221	*Larra bicolor*	do.		*Larra*	C	v

1) "In America meridionali, Dom. Smidt", see p. 6.

p.	Original name	Type loc.	Genus 1804	Genus 1961	Coll.	Status
222	*Bembex heros*	do.		*Stictia*	C	v
222	— *maculata*	do.		*Stictia*	C	v
225	— *continua*	do.		*Rubrica*	C	v
226	— *ciliata*	do.		*Microbembex*	C	v
227	*Liris fulvipes*	do.		*Liris*	C	v
228	— *rufipennis*	do.		*Liris*	C	v
229	— *varians*	do.		*Tachytes*	C	v
283	*Zethus elongatus*	do.		*Trachypus*	C	v
		Locality unknown				
		1793				
221	*Larra cincta*	?	*Larra*	?	?	d
250	*Bembex lineata*	?	*Bembex*	*Stizus*	?L	d

LITERATURE

ARNOLD, G., 1922-1931. The Sphegidae of South Africa. — Ann. Transvaal Museum, vol. 9, pp. 101-138 (1922), pp. 143-190 (1923), pp. 191-253 (1923); vol. 10, pp. 1-58 (1923); vol. 11, pp. 1-73 (1924); pp. 137-175 (1925), pp. 338-376 (1926); vol. 12, pp. 55-131 (1927), pp. 191-232 (1928), 233-279 (1928); pp. 338-375 (1928); vol. 13, pp. 217-319 (1929), pp. 320-418 (1929); vol. 14, pp. 135-220 (1931).

BEAUMONT, J. DE, 1937. Les Psenini (Hym. Sphecid.) de la région paléarctique. — Mitt. Schweiz. Ent. Ges., vol. 17, pp. 33-93.

——, 1949a. Les Philanthus et Philoponidea de l'Afrique du N.-O. — Mitt. Schweiz. Ent. Ges., vol. 22, pp. 173-216.

——, 1949b. Contribution à l'étude du genre *Palarus* Latr. — Rev. Suisse Zool., vol. 56. pp. 627-673.

——, 1950. Synonymie de quelques Cerceris. — Mitt. Schweiz. Ent. Ges., vol. 23, pp. 317-328.

——,1951. Hyménoptères récoltés par une mission suisse au Maroc (1947), Sphecidae, I — Bull. Soc. Sci. Nat. Maroc, vol. 29, pp. 259-284.

——, 1952a. Les Cerceris de la faune française. — Ann. Soc. Ent. France, vol. 119, pp. 23-80.

——, 1952b. Contribution à l'étude des Cerceris nord-africains. — Eos, vol. 27, pp. 299-408.

——, 1953. Les Gorytes s.s. (= Hoplisus) de la région paléarctique. — Mitt. Schweiz. Ent. Ges., vol. 26, pp. 161-200.

——, 1954a. Sphecidae de l'Institut d'Entomologie de l'Université de Bologne. II. Larrinae. — Boll. Ist. Ent. Univ. Bologna, vol. 20, pp. 53-64.

——, 1954b. Les Bembecinus de la région paléarctique. — Mitt. Schweiz. Ent. Ges., vol. 27, pp. 241-276.

——, 1956a. Notes sur les Lindenius paléarctiques. — Mitt. Schweiz. Ent. Ges., vol. 29, pp. 145-185.

——, 1956b. Hyménoptères récoltés par une mission suisse au Maroc (1947), Sphecidae 4. — Bull. Soc. Sci. Nat. Phys. Maroc, vol. 36, pp. 139-164.

——, 1957. Quelques Cerceris de l'Europe méridionale. — Mitt. Schweiz. Ent. Ges.. vol. 30, pp. 327-337.

BEQUAERT, J., 1928. The Diplopterous wasps of Fabricius, in the Banksian collection at the British Museum. — Bull. Brooklyn Ent. Soc., vol. 23, pp. 53-63.

BERLAND, L., 1925. Faune de France, no. 10. Hyménoptères vespiformes I. — Paris, 364 pp.

—— 1926-1929. Les Sphegidae du Muséum National de Paris. — Bull. Mus. Hist. Nat.

Paris, 1926, pp. 163-170, 200-206, 282-285; 1927, pp. 150-156, 12 figs.; 1928, pp. 329-331; 1929 (ser. 2, vol. 1), pp. 309-312.

BINGHAM, C. T., 1897. Fauna of British India, including Ceylon and Burma. Hymenoptera, vol. 1. — London.

DAHLBOM, A. G., 1843-5. Hymenoptera europaea, praecipue borealia, etc., vol. 1 — Lund.

DALLA TORRE, C. G. DE, 1897. Catalogus Hymenopterorum, vol. 8, Fossores (Sphecoidea, pp. 347-714).

DUFOUR, L., 1834. Sur une nouvelle espèce d'Anoplius qui n'offre qu'un seul ocelle. — Ann. Soc. Ent. France, vol. 2 (1833), pp. 483-485.

FABRICIUS, J. C., 1775. Systema Entomologiae ... Flensburgi et Lipsiae, 30 + 832 pp.

——, 1781. Species Insectorum, vol. 1. Hamb. et Kilonii, 8 + 552 pp.

——, 1787. Mantissa Insectorum, vol. 1. Hafniae, 20 + 348 pp.

——, 1790. Nova Insectorum Genera. — Skrivt. Naturhist. Selsk. Kjøbnhavn, vol. 1, pp. 213-228.

——, 1793. Entomologia Systematica, vol. 2. Hafniae, 8 + 519 pp.

——, 1794. Do., vol. 4. Hafniae, 8 + 472 pp. (Appendix: Specierum nuper detectarum, pp. 435-462).

——, 1798. Supplementum Entomologiae Systematicae. Hafniae, 2 + 572 pp.

——, 1804. Systema Piezatorum. Brunsvigae, 14 + 440 + 30 pp.

FAESTER, K., 1949. Westeuropäische Sphegiden, I, Oxybelus Latr. — København.

FERNALD, H. T., 1931. Notes on some American Sphecinae (Hym.). — Ann. Ent. Soc. Am., vol. 24, pp. 439-450.

FOX, W. J., 1901. The proper names of certain genera of Hymenoptera. — Ent. News, vol. 12, pp. 267-269.

GMELIN, J. FR., 1790. Caroli Linnaei Systema Naturae, Ed. 13, vol. 1. part 5. — Lipsiae.

GUIGLIA, D., 1953. Gli Oxybelini d'Italia. — Ann. Mus. Civ. Stor. Nat. Genova, vol. 66, pp. 55-158.

HANDLIRSCH A., 1887-1895. Monographie der mit Nysson und Bembex verwandten Grabwespen, I-VIII — Sitzber. Kais. Akad. Wiss. Wien, vol. 95 (1887 a), pp. 246-421, 5 pls; vol. 96 (1887 b), pp. 219-311, 2 pls.; vol. 97 (1888), pp. 316-565, 3 pls.; vol. 98 (1889), pp. 440-517; vol. 99 (1890), pp. 77-166, 1 pl.; vol. 101 (1892), pp. 25-205, 3 pls.; vol. 102 (1893), pp. 657-942, 7 pls.; vol. 104 (1895), pp. 801-1078, 2 pls.

HEDICKE, H., 1941. Ueber das Erscheinungsjahr von Fabricius' Systema Piezatorum. — Mitt. Deutsch. Ent. Ges., vol. 10, pp. 82-83.

HENRIKSEN, KAI L., 1921-1927. Oversigt over Dansk Entomologis Historie. — Entom. Meddel., København, vol. 15, pp. 1-288 (continued on pp. 289-578 by S. L. Tuxen).

HONORÉ, A. M., 1944. Revue des espèces égyptiennes du genre Sphex Linné, 1758. — Bull. Soc. Fouad 1 *er* Ent., Cairo, vol. 28, pp. 45-79, 8 figs.

HORN, W., & ILSE KAHLE, 1935-7. Ueber entomologische Sammlungen. — Entom. Beihefte, vols. 2-4, 536 pp., 38 pls.

KOHL, F. F., 1884. Die Gattungen und Arten der Larriden Aut. — Verhandl. Zool. Bot. Ges. Wien, vol. 34, pp. 171-268, 327-454, pls. VIII, IX, XI, XII.

——, 1890. Die Hymenopterengruppe der Sphecinen. I. Monographie der natürlichen Gattung Sphex Linné (sens. lat.). — Ann. Naturh. Hofmus. Wien, vol. 5, pp. 77-194, 317-462, pls. VIII-XII.

——, 1893. Ueber Ampulex Jur. (s.l.) und die damit enger verwandten Hymenopterengattungen. — Ann. Naturh. Hofmus. Wien, vol. 8, pp. 455-516, pls. XI-XIII.

——, 1895. Zur Monographie der natürlichen Gattung Sphex Linné. — Ann. Naturh. Hofmus. Wien, vol. 10, pp. 42-74, pls. IV and V.

——, 1902. Die Hymenopterengruppe der Sphecinen. II. Monographie der neotropischen Gattung Podium Fabr. — Abh. Zool. Bot. Ges. Wien, vol. 1, part 4, pp. 1-101, pls. I-VIII.

——, 1906. Die Hymenopterengruppe der Sphecinen, III. Monographie der Gattung Am-

mophila W. Kirby. — Ann. Naturh. Hofmus. Wien, vol. 21, pp. 228-382, pls. VII-XIII.

——, 1915. Die Crabronen der paläarktischen Region. — Ann. Naturh. Hofmus. Wien, vol. 29, pp. 1-453, pls. I-XIV.

——, 1918. Die Hautflüglergruppe Sphecinae, IV. Die natürliche Gattung *Sceliphron* Klug (*Pelopoeus* Latr.) — Ann. Naturh. Hofmus. Wien, vol. 32, pp. 1-171, 82 figs.

KROMBEIN, K. V., 1958. Synoptic Catalog, Hymenoptera of America North of Mexico, First Supplement. — Washington.

LECLERCQ, J., 1954. Monographie systématique, phylogénétique et zoogéographique des Hyménoptères Crabroniens. — Liège, les Presses „Lejeunia", 371 pp.

——, 1955. Hymenoptera Sphecoidea (Sphecidae I. Subfam. Sphecinae). — Expl. Parc National de l'Upemba, I, Mission G. F. de Witte, fasc. 34, 137 pp.

LEPELETIER DE ST. FARGEAU, A. DE, 1845. Histoire Naturelle des Insectes. Hyménoptères, vol. 3. — Paris.

LINDEN, P. L. VAN DER, 1829. Observations sur les Hyménoptères d'Europe de la famille des Fouisseurs, II. — Mém. Acad. Sci. Bruxelles, vol. 5, pp. 11-125.

MAIDL, F., 1925. Fauna Sumatrensis, 11. Sphecidae. — Ent. Mitt. Berlin, vol. 14, pp. 376-390, 26 figs.

——, and A. KLIMA, 1939. Sphecidae, I, in H. Hedicke, Hymenopt. Cat., part 8. — 's-Gravenhage, pp. 1-150.

MUESEBECK, C. F. W., KARL V. KROMBEIN, and HENRY K. TOWNES. 1951. Hymenoptera of America North of Mexico, Synoptic Catalog. — Washington (First Supplement: see K. V. Krombein).

NURSE, C. G., 1903. New species of Indian Hymenoptera. — Jl. Bombay Nat. Hist. Soc., vol. 15, pp. 1-18.

PARKER, J. B., 1929. A generic revision of the fossorial wasps of the tribes Stizini and Bembicini with notes and descriptions of new species. — Proc. U. S. Nat. Mus., vol. 75, no. 2776, 203 pp.

PATE, V. S. L., 1937. The generic names of the Sphecoid wasps and their type species. — Mem. Amer. Ent. Soc., no. 9, 103 pp.

——, 1946a. New Pemphilidine wasps, with notes on previously described forms. I. Ectemnius. — Notulae Naturae 171: 1-14.

——, 1946b. The generic names of the spider wasps (*Psammocharidae* olim *Pompilidae*) and their type species. — Trans. Amer. Ent. Soc., vol. 72, pp. 65-137.

——, 1947. On the Gorytine Wasps of the West Indies. — Ent. News, vol. LVIII, pp. 93-98.

RADOSZKOWSKI, O., 1881. Hyménoptères d'Afrique (Angola). — Jorn. Sc. math., phys. et nat. de Lisboa, vol. 8, no. XXXI, pp. 197-221.

RICHARDS, O. W., 1934. The American species of the genus Trypoxylon. — Trans. R. Ent. Soc. Lond., vol. 82, pp. 173-362.

——, 1935. Notes on the Nomenclature of the Aculeate Hymenoptera, etc. — Trans. R. Ent. Soc. Lond., vol. 83, pp. 143-176.

——, 1937. Results of the Oxford University Expedition to British Guiana, 1929. Hymenoptera, Sphecidae and Bembecidae. — Trans. R. Ent. Soc. Lond., vol. 86, pp. 101-118, 1 pl.

ROGENHOFER, A., and K. W. VON DALLA TORRE, 1882. Die Hymenopteren in I. A. Scopoli's Entomologia Carniolica und auf den dazugehörigen Tafeln. — Verhandl. K. K. Zool. Bot. Ges. Wien, vol. 32, pp. 593-604.

SANDHOUSE, G. A. 1940. A review of the Nearctic wasps of the genus Trypoxylon. — Amer. Midland Nat, vol. 24, pp. 133-176, 4 pls.

SAUNDERS, E., 1910. Hymenoptera Aculeata collected in Algeria by the Rev. Alfred Edwin Eaton and the Rev. Francis David Morice. — Trans. Ent. Soc. Lond., 1910, pp. 517-531.

SAUSSURE, H. DE, 1867. Reise der österreichischen Fregatte „Novara". Zool., vol. II, Hymenoptera (pp. 1-156, pls. I-IV). — Wien.

——, 1892. Histoire naturelle des Hyménoptères, I, in: A. Grandidier, Hist. phys. nat. polit. de Madagascar, vol. 20. — Paris.

SCHMIEDEKNECHT, O., 1930. Die Hymenopteren Nord- und Mitteleuropas. 2e Auflage. — Jena.

SCHULZ, W. A., 1911. Zweihundert alte Hymenopteren. — Zoologische Annalen, vol. 4, pp. 1-220.

——, 1912. Aelteste und alte Hymenopteren skandinavischer Autoren. — Berlin. Entom. Zeitschr., vol. 57, pp. 52-102.

SCOPOLI, J. A., 1763. Entomologia Carniolica, etc. — Vindobonae.

SHERBORN, C. D., 1923. On the Dates of G. W. F. Panzer's 'Fauna Insect. German'. — Ann. Mag. Nat. Hist. ser. 9, vol. 11, pp. 566-567.

SMITH, F, 1856. Catalogue of Hymenopterous Insects in the collection of the British Museum, vol. 4. — London.

SPINOLA, M., 1853. Compte Rendu des Hyménoptères inédits provenant du voyage entomologique de M. Ghiliani dans le Para en 1846. — Mem. R. Accad. Sci. Torino, ser. 2, vol. 13, pp. 19-94.

STÅL, C., 1868-9. Hemiptera Fabriciana. — Kongl. Svenska Vetensk. Ak. Handl., vol. 7, no. 11 (1868), vol. 8, no. 1 (1869).

TURNER, R. E., 1908. Notes on the Australian Fossorial Wasps of the Family Sphegidae, with Descriptions of new Species. — Proc. Zool. Soc. Lond. 1908, pp. 457-535.

——, 1909. Remarks on some Genera of the Scoliidae, with Descriptions of New Species. — Ann. Mag. Nat. Hist., ser. 8, vol. 3, pp. 476-486.

——, 1911. Notes on fossorial Hymenoptera, IV. — Ann. Mag. Nat. Hist., ser. 8, vol. 7, pp. 479-485.

——, 1912. Notes on fossorial Hymenoptera, X. — Ann. Mag. Nat. Hist., ser. 8, vol. 10, pp. 361-377.

——, 1918. Notes on fossorial Hymenoptera, XXXII. — Ann. Mag. Nat. Hist., ser. 9, vol. 1, pp. 86-96.

TURTON, W., 1802. — A general system of Nature, etc., translated from Gmelin's last edition, etc., vol. 3. — London.

VECHT, J. VAN DER, 1959a. On some Fabrician types of Indo-Australian Vespidae. — Arch. Néerl. Zool., vol. 13, 1 Suppl. (Vol. Jubilaire C. J. van der Klaauw), pp. 234-247.

—— 1959b, 1960. Notes on Aculeate Hymenoptera described in the period 1758-1810. — Ent. Ber., vol. 19 (1959) pp. 65-70 (part I); pp. 127-133 (part II); 211-215 (part III); vol. 20 (1960), pp. 4-7 (part IV).

VECHT, J. VAN DER, & K. V. KROMBEIN, 1955. The subspecies of Sphex sericeus (Fabr.). (= S. aurulentus auct., nec Fabr. 1787). — Idea, vol. 10, pp. 33-43.

VERHOEFF, P. M. F. 1948. Systematisches Verzeichnis der niederländischen *Oxybelus*-Arten. — Tijdschr. v. Entom., vol. 89 (1946), pp. 158-208.

WILLIAMS, F. X., 1928. Studies in tropical wasps, their hosts and associates (with descriptions of new species). — Bull. Hawaii Sugar Pl. Ass., Ent. Ser., vol. 19, pp. 1-179, 33 pls., 16 Text figs.

WILLINK, A., 1951. Las especies Argentinas y Chilenas de "Clorionini". — Acta Zool. Lilloana, vol. 11, pp. 53-255.