

JOH. CHRISTIAN FABRICIUS
Professor der Economisch-Naturlichen
und Kameral-Wissenschaften
zu Halle.

ELLA ZIMSEN

THE TYPE MATERIAL OF
I. C. FABRICIUS

MUNKSGAARD

COPENHAGEN 1964

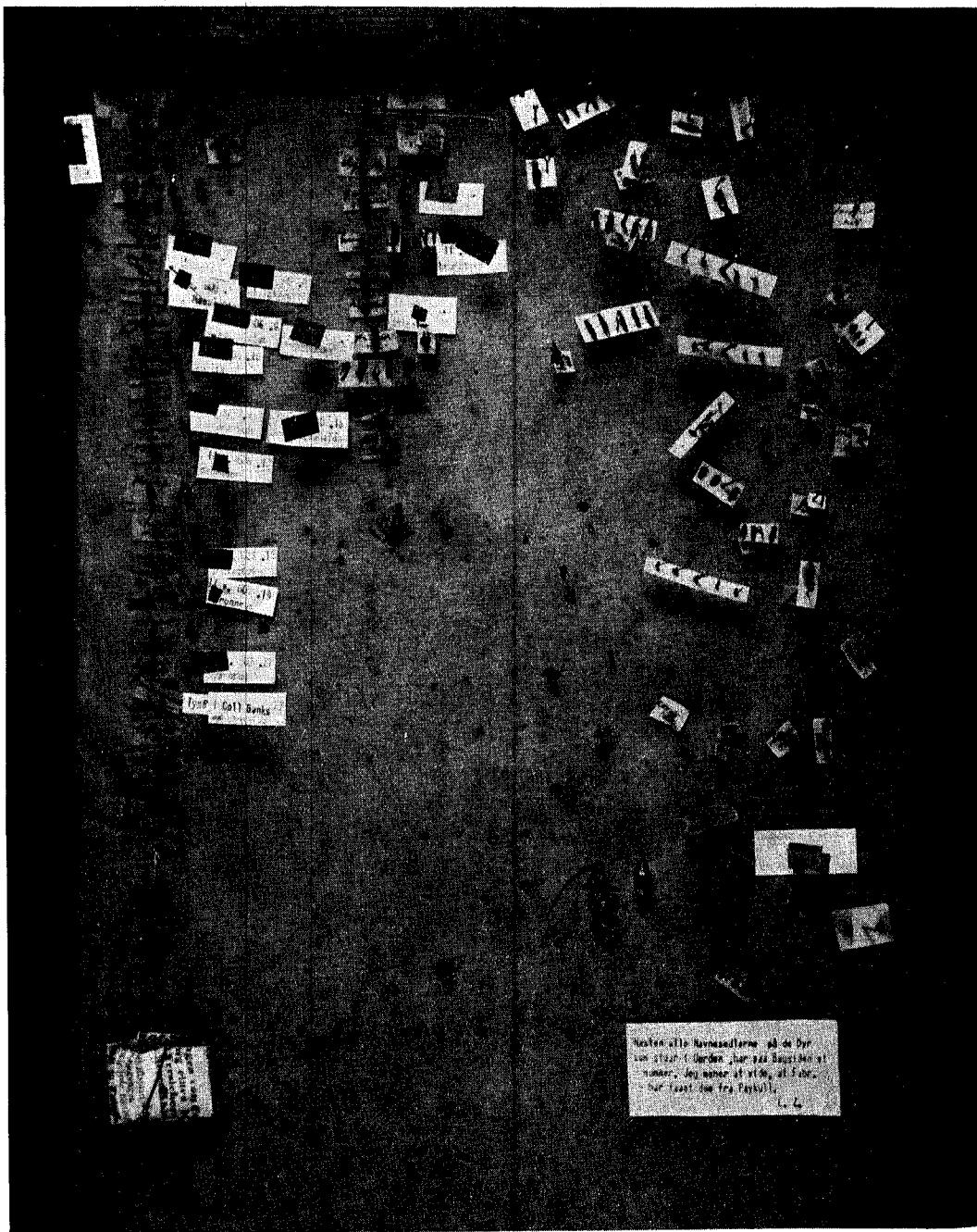
*Udgivet med støtte
af Carlsbergfondet*

© 1964 by Munksgaard, Copenhagen, Denmark

Printed in Denmark by Winds Bogtrykkeri, Haderslev

CONTENTS

Introduction	7
Coleoptera	19
Index	239
Hemiptera	281
Index	343
Hymenoptera	355
Index	432
Diptera including Anoplura and Acarina	447
Index	499
Lepidoptera	509
Index	590
Other orders of insects	608
Index	624
Myriopoda	629
Index	632
Arachnida (see also under Diptera)	633
Index	639
Crustacea	641
Index	654



The only drawer from Fabricius' collection left in its original condition. To the left it contains the last of the Staphylinidae, to the right some unidentified material.

INTRODUCTION

The present publication contains a list of all the Fabrician types. Included are also the Lund types of the beetle family Brenthidae, which Fabricius re-described in *Systema Eleutheratorum*, based on the Lund type specimens from his and Sehested's collections; and also the Weber types, many of which are found in Fabricius' collection. In some listed species no mention of a previous author is made by Fabricius although some of the species may bee found to bee præ Fabrician ones.

The original idea was to draw up a list of the types in Sehested and Tønder Lund's collection in Copenhagen; however, to avoid mistakes, it very soon proved necessary to go through Fabricius' own collection in Kiel. Owing to his interest in the work, Dr. S. L. Tuxen arranged for this collection to be deposited in the Zoological Museum of Copenhagen for an indefinite period, where it is now to be found.

In the present publication the species are mentioned in the same order as in Fabricius' monographs; his collection was and is still arranged in this order. This applies to Coleoptera, Hymenoptera, Hemiptera, and Diptera. Owing to the fact that Fabricius' monograph of Lepidoptera was never finished, these insects are mentioned in chronological order. This is also the case with regard to the smaller insect orders. The first description of the species is always given. Also included are the notes left in the collections in Copenhagen by the authors working on the types, e. g. the selection of lectotypes, etc.

Below is given a short description of Fabricius' life, mainly based on his autobiography.

Johann Christian Fabricius was born 7th January, 1745, in Tønder in the Duchy of Slesvig, where his father was a county and city physician. His education was of a more liberal nature than was customary at that time. Not all subjects taught him by his private tutor interested the lively boy. But there were three volumes with dried up plants in his father's not insignificant library which caught his interest. They were examined, and if he discovered a Linnean species, his enthusiasm was immense. He also collected plants and insects in the neighbourhood, but »Cicero had to suffer for this«, as he says himself. Fabricius matriculated from a »Gymnasium« in Altona, and in 1762 he came to Copenhagen whereto his father had been transferred. In the same year Fabricius went to Uppsala to study under Linné. Throughout the description of his stay there one notices his enthusiasm for Linné, and the latter, too, was not sparing in praise of his brilliant pupil. Fabricius must indeed have been

rather charming for he got friends wherever he went on his many journeys in Europe; from Norway to Italy, from England to present-day U.S.S.R. In 1764 he returned to Copenhagen. Instead of attending lectures, he examined the Charlottenborg Museum collections in Copenhagen, especially those of Forskål which the latter had sent home from his journey in the Near East. During his six-month stay in Copenhagen Fabricius already started his systematic works. Linné's inspiring lectures, the discussions and the excursions with him had proved fruitful.

In 1765, Fabricius and his elder brother went to study in Germany and Holland: his brother to Leyden, and Fabricius to Leipzig to study economy with Professor Schreiber. It was doubtlessly Fabricius' father who encouraged him to study this subject, and since the sons were amply financed by their father, Fabricius studied diligently with Schreiber. However, he simultaneously attended botanical lectures with Schreiber's son, with whom he became great friends. As Fabricius was ardently working on entomology, his friend presented him his whole insect collection. Later on Fabricius went to Holland where in Leyden he attended lectures by Allemand in chemistry and physics. He often visited the latter's insect collection, and described the new species he discovered therein as well as in other collections in Amsterdam, The Hague, and Delft. In the spring 1767 Fabricius went to Edinburgh where he met his brother. Together they travelled on horseback through the Scottish Highlands, collecting plants and insects. In the autumn both brothers went from Edinburgh to London, once again on horseback. There Fabricius met Solander, who was attached to the British Museum. Fabricius' days were now spent on working on entomology, and in the evenings he would frequent the scientific club where he met Hunter, Drury, Eaton, Fothergill, and several others. All of them opened their homes to him, and he was free to go through their collections and describe new species. Fabricius writes in his autobiography »also my collection increased, and everything was sent to Copenhagen where Zoëga, my friend (together with whom he had studied under Linné) arranged and kept the collection«.

While in London Fabricius was appointed professor extraordinarius in economy at »Charlottenborg Naturaliekabinet«, with permission to travel for another two years. When Solander, his very good friend and teacher, together with Banks joined Cook on his circumnavigation of the globe, Fabricius left London for Paris. He was well received there by the French scientists, among others, Geoffroy. However, the young Fabricius' enthusiasm for Paris was rather tepid; he writes himself how in his youthfulness he despised everything that was not English. He soon left Paris and travelled via Lyon and Marseille to Italy. In Turin he made the acquaintance of Allioni, the scientist, who was extremely kind to him, and to whom Fabricius owes his knowledge of the Italian fauna and flora. However, he did not stay for long in Italy, but started home through Germany, where he visited many colleagues and concentrated

especially on the collecting of minerals. In the autumn of 1769 he at last returned to Copenhagen, where he now became professor extraordinarius at the University, to which the »Naturaliekabinet« had in the meantime become attached. Fabricius spent the winters of the following years in Copenhagen and the summers in London where he worked on Banks', Hunter's, and Drury's collections. Then, in 1775, his *Systema Entomologiae* was published, the main part of which was based on his own collectings in England and on English collections in general.

At this time Fabricius' life changed completely, owing to the death of his generous father. He had constantly supported his son who was not at all able to live on his professorial salary; even less so, after his marriage in 1771. Fabricius now accepted the offer of a professorate in natural science and economy at the University of Kiel. However, conditions there soon proved unsatisfactory. There was neither a library nor a collection, and since once again he was unable to live on his salary, he warned the authorities that he might have to settle down in London. This resulted in an increase of his salary. During these years Fabricius made several long State-supported journeys, i. a. to Norway, Vienna, and St. Peterburg. From these travels he published various »letters« and »journeys«, doubtlessly with the purpose of improving his economy, which was still so unsatisfactory that in 1788 he tendered his resignation. However, an urgent request on the part of his students resulted in its withdrawal.

From now on he lived in Kiel for the winter months only; and from there he and his family went sometimes to London and sometimes to Paris. Later, after a daughter's death, the family lived permanently in Paris. Fabricius himself spent his winters alone in Kiel. His first visit to Paris had been unsuccessful, as we already know; but now that he resided there, his associates were famous zoologists as Cuvier and Lamarck, as well as Latreille, Geoffroy, and Olivier. In his autobiography Fabricius mentions with the greatest veneration Desfontaines, Bosc, Sylvestre, Brogniard, Broussonet, and several others, all of whom very kindly opened their collections to him.

In the year 1798–1804 Fabricius spent the spring in Copenhagen, studying Sehested and Tønder Lund's collections which were remarkable for their time. His first systematic work in 1775, *Systema Entomologiae*, was followed in 1776 by *Genera Insectorum*; in 1781 by *Species Insectorum*, and in 1787 by *Mantissa Insectorum*. His main work, *Entomologiae Systematica I–IV*, was published during the years 1792–94 and followed by *Supplementum Entomologiae Systematicae* in 1798. Finally, in 1801 and during the period till his death, his monographs of the larger insect orders were published. First *Systema Eleutherotorum I–II* in 1801, then *Systema Rhyngotorum*, 1803, *Systema Piezatorum*, 1804, and, finally, *Systema Antliatorum*, 1805. The printing of *Systema Glossatorum* was started in 1807, however, as previously mentioned, it was never finished. For 130 years this torso was hardly known, as only very few copies existed. In 1938 Felix Bryk published a facsimile edition. In 1776 his

Philosophia Entomologica appeared, which Kai L. Henriksen in his History of the Danish Entomology estimates »without comparison the most important and significant work within Danish Entomological science«.

In the autumn of 1806 Fabricius returned for the last time from Paris to Kiel, where he died on March 3rd, 1808.

FABRICIUS' COLLECTION

The Coleoptera Collection

According to H. A. Hagen, the German entomologist, the Fabrician collection in Kiel, in 1844, consisted of 80 boxes; half of it, Coleoptera, was well-preserved, and the remainder »sehr zerfressen«. After 1844, the whole collection was rearranged into other boxes; the last box, however, containing Staphylinidae, remained untouched and is still kept as it was in Fabricius' lifetime. When the collection arrived in Copenhagen it was a disappointment to discover that the original labels no longer existed, but had been re-written. However, the original label was later found beneath the new label. In this way, labels may have been interchanged, and this in some cases has now been proved. Unfortunately, it was necessary to transfer the collection to new boxes in order to obtain the original labels which had sometimes been incorrectly interpreted. The animals are in a good condition, considering the age of the collection, a large part of it being about 200 years old. There are no locality labels in Fabricius' own collection. Also peculiar are the very small name labels which Fabricius used: usually only a small scrap of paper on which was written the name of the species; never any mention of the genus. Fabricius' handwriting is generally easy to identify. There is, however, a possibility that some of the labels were not written by him. The names on the majority of the labels have been identified; but some of them have been eaten by Psocus, so that the writing has almost disappeared; others are completely illegible, Fabricius' collection also includes many non-Fabrician species. Thus there are a great many Linnean species among the Coleoptera, the name labels of which are written in a fine, easily legible handwriting. Maybe Fabricius got them from Linné; but nobody really knows.

The Hymenoptera collection consists of 24 boxes. As is the case with the other collections, it is no longer in Fabricius' original boxes; the name label, however, has not been removed from the insects. Fabricius' collection of Hymenoptera is the collection in which the insects have most often been rearranged in the past; and this fact does not make the work easier for future specialists.

The Hemiptera collection is kept in 13 boxes, arranged according to Systema Rhyngotorum, and with an extra box containing specimens of Lygaeus, Reduvius, Capsus, and Zelus. On the top of this box there is a label on which is written »Aus orig. Kästen von Fabricius, wahrscheinlich wertlos«. Most of the

insects in the box are unlabelled; some names are non-Fabrician and some are illegible.

The *Lepidoptera* collection consists of 9 boxes. As shown in the list of the Fabrician Lepidoptera, quite a number has been lost; so many that I touched on the idea of including the now existing species only.

As regards the Schiffermüller-Fabrician species, those concerning which Fabricius cites Schiffermüller have not been included in the list, owing to the fact that there has been and still is, some disagreement as to the question Schiffermüller-Fabricius.

The supplement at the end of the list includes all the Schiffermüller-Fabrician species which are still to be found in the Fabricius collection. They are not many.

The *Diptera* collection is a tragedy. Among the ten existing boxes there is only one in which the insects are reasonably well preserved; the rest has been eaten by dermestids. There is reason to suppose that the collection was spoiled even at the beginning of the last century, since many authors at that time mention its miserable condition. The Kiel Museum authorities have fortunately had the good sense to keep the name labels even if an insect was missing. They can thus tell us with certainty that the type does not exist.

It may be noted that Sehested & Tønder Lund's collection comprises many Fabrician species donated by himself. Among these specimens lectotypes may be chosen if the type itself is lost.

Besides the above collections, there are 4 boxes of Orthoptera, 3 boxes of Odonata, and some specimens of other orders.

SEHESTED & TØNDER LUND'S COLLECTION

After Fabricius' own collection, that of Sehested and Tønder Lund includes by far the greatest number of Fabrician types, and it is extremely well-preserved.

Niels Tønder Lund (1749–1809) was tutor to the young Count Ove Sehested, and for a period of two years, both of them attended lectures by Fabricius in Kiel and became keen collectors of Danish insects, especially Tønder Lund.

The collections also included many tropical insects. Both Sehested and Tønder Lund held high posts in the Civil Service, through which they were able to contact officials sent out to the Danish colonies, in Guinea, Tranquebar, and the West Indies; and from these regions they obtained large collections of insects.

While their tropical collection is well labelled with regard to localities, the localities of the Danish specimens are seldom stated.

Later on the two friends, Sehested and Tønder Lund, combined their collections, and the right of possession was transferred to Tønder Lund. In 1809

Tønder Lund went to Norway to take a seat in the Government committee, but the ship was lost at sea. The collection was then sold to the Danish State for a very large amount, in favour of his widow.

During the first half of the last century large quantities of duplicates from the Sehested & Tønder Lund collection were used as exchange material. As a result of this, authors in various European museums thought themselves to be confronted with original Fabrician types because both locality and name of collector agreed with Fabricius' statements. Sehested & Tønder Lund's collection of types to-day comprises 46 boxes. In the middle of the last century, the unpardonable mistake was made of copying the original labels of the majority of the collection and then placing the insects in the general collection of the museum, but without keeping the original labels, as they did in Kiel. The Fabrician type specimens were marked with a very small green label. However, in a very few cases this procedure may have been omitted and thus, the original type specimens may still be found in the general collection. A few cases are known. Only a small part of the collection carries the original labels. It is said that a sensible museologist managed to stop the undertaking, but, unfortunately, too late.

As mentioned above, Sehested and Tønder Lund were in contact with several tropical collectors, many of whom, too, sent their insects to Fabricius, and below is given a survey of the most important ones, to a great extent based on Kai L. Henriksen's book »Den danske Entomologis Historie« (Ent. Medd. 15 1921-37).

Ingobert Karl Daldorff was a pupil of Fabricius. In 1790 he went to Tranquebar where he was appointed an officer in the Danish garrison. He returned home in 1793, and became Dr. phil. at the University of Kiel; the same year he was promoted senior-lieutenant and member of the colony council in Frederiksnagore, Bengal. He went first, however, to Sumatra, where he also collected insects. Then, in 1798, he went to Frederiksnagore, where he died in 1802. — Daldorff sent animals to Sehested and Tønder Lund as well as to Fabricius, and the latter is generally correct in his informations regarding the collection in which any particular type may be found. However, some mistakes have been made, some animals which according to Fabricius should be in his own collection being present only in Sehested and Tønder Lund's collection.

In *Systema Entomologiae* 1775, Fabricius describes about 100 new species, collected by Koenig. *Johan Gerhard Koenig* was born in Riga in 1728. He came to Denmark in 1748, where he stayed for some years, and whence he went to Sweden to study medicine. There he attended lectures by Linné in botany. When in 1767 he was appointed missionary physician in Tranquebar, he devoted himself to his zoological interests, besides his medical profession. His botanical collections were sent to Banks in London, whereas his zoological collections were sent to the Charlottenborg Museum in Copenhagen; but many types are now lost. However, owing to the fact that Fabricius, as mentioned above, even

in his very youth worked on the Charlottenborg collection many of the types still exist in Fabricius' own collection.

»Guinea Isert« is a locality and name which is very often found among the types in Sehested & Tønder Lund's Collection. *Paul Erdmann Isert* was born in 1756 in Brandenburg. His family emigrated to Denmark, where Isert studied medicine. In 1783 he was appointed senior surgeon in Danish Guinea. In 1787 he went with a shipment of slaves to the West Indies, and from there to Denmark. His indignation as regards the treatment of the slaves by the Europeans resulted in the praiseworthy fact that he interested Count Schimmelmann, the Danish Minister of finances in plans for bettering the conditions of the negroes, among other things by founding plantations in their homeland on which they could work. – Unfortunately his plan came to nothing, for he died in 1787 shortly after his return to Guinea. It is no doubt largely due to him that Denmark was the first state to prohibit the slave trade.

Johan Wilhelm Hesse was like Isert a surgeon in Guinea. He served from 1786 to 1796, when he returned to Denmark. *Meier*, whose name is now and then found on labels, is supposed to be identical with Peter Meier. He was first employed by the Danish Commercial Compagny in Guinea, and later on he managed his own plantations; he died in Guinea in 1815.

Peter Kofoed Anker Schousboe was born in 1760. He matriculated in 1785 and studied botany. During the years 1791 to 1793 he went to Spain and Morocco for study. From 1800 till his death he was a consul in Tanger where, besides attending to his post as consul, he wrote important botanical monographs. In addition he collected insects which he sent to Sehested and Tønder Lund, until their collection, as mentioned above, was sold to the Danish State. Later he sent insects to the Royal Museum of Natural History in Copenhagen.

Johann V. Rehbinder, another of Fabricius' Algerian connections, was born in Kiel in 1757. In 1780 he became a secretary at the consulate in Algeria, and from 1781 to 1797 he was consul there.

With regard to *Stub*, whom Fabricius mentions as a collector of Algerian insects, we have no information.

Martin Vahl, the famous Danish botanist, is often mentioned by Fabricius as a collector especially from the »Barbary« and Spain. He was born in Norway in 1749, and matriculated in 1766. He studied botany in Uppsala under Linné. On his many botanical journeys he also collected insects, until, in 1801, he obtained a professorate at the University of Copenhagen. On his death in 1805 he left a small insect collection, which was placed in The Royal Museum of Natural History, Copenhagen. Many types of insects, in Fabricius' own collection as well as in that of Sehested and Tønder Lund, have been preserved. It should here be pointed out that Fabricius' statements as regards localities may sometimes be wrong; and especially as regards the insects from Vahl, the statements are often incorrect.

Among smaller Danish collections on which Fabricius worked should be men-

tioned »Mus. Tottianum«, from which he describes about 60 new species in his *Systema Entomologiae*. The collection was built up by Count Otto Thott, 1703–1785, who, like Sehested, held high positions in the Danish Government. On his death Thott's collection was sold by auction. Both in Fabricius' and Tønder Lund's collections there are insects originally belonging to Thott; in the latter's collection they are labelled »e Mus. Thott«; the missing types must be considered lost.

Schlanbusch is mentioned by Fabricius as a collector of insects from South Europe, especially Italy, but also from Tranquebar, and his animals are found in Sehested & Tønder Lund's Collection. He is presumed to be identical with Theodor Schlanbusch, Sehested's brother in law, who was born in 1756 in Norway. He graduated in law in 1779, and in 1784 he was sent out as ambassador to the Sicilian Court. Later he became prefect of Rendsburg.

Baron Mikael Herman Løvenskiold was born in 1751. He graduated in law and later became a prefect. He died in 1807 on his estate at Aggersvold. His collection of about 2200 species in 3000 specimens, which was arranged by Sehested, was given to Herlufsholm School. Later, the Fabrician types were taken out of the collection, and they are now in Sehested & Tønder Lund's Collection in Copenhagen, nearly all of them in a good state of preservation.

Finally, *Krieger* should be mentioned, whom Fabricius speaks of in his later works; he is probably identical with Johan Frederik Krüger, a surgeon in Guinea during the years 1801 to 1804.

As regards *Thorstenson*, whom Fabricius sometimes mentions in his *Systema Entomologiae* 1775, we have no information.

In Fabricius' later works the insects from the West Indies are very often mentioned as originating from *Smidt*. On old well-preserved original labels from Sehested & Tønder Lund's Collection the name is spelled *Schmidt*. In the 1780's there lived a custom-house officer, Adam Levin Smidt, and a surgeon, Johan Christian Schmidt, both of them employed on St. Croix. It is not certain who is meant.

Already in *Systema Entomologiae* 1775, v. *Robr* is mentioned as a collector from the West Indies. He was one of Fabricius' most interested collectors, and the latter in fact had a high opinion of him. Julius Rohr was born in 1735 in Merseburg. He began his studies of natural history and medicine in Halle, but finished them in Copenhagen whereto he went having lost his fortune during the troubled period in Germany. In 1757 he went for the first time to the West Indies, but the collection of specimens he sent home was lost at sea. His financial circumstances were very miserable at the time of his first visit; however, in 1765 they improved greatly as he was appointed architect in connection with the fortification of the islands, with the rank of captain. In 1783, by order of the Government, he made a zoological journey to the Antilles and the nearest countries along the coast of South America, i. a. Cayenne. From this journey he sent home large collections of insects. During this period he also founded a

botanical garden on St. Croix. In 1792, after his appointment to the Ministry of Finance, von Rohr went to Guinea in order to develop Isert's plans concerning plantation work. The ship, however, disappeared completely during the voyage from the West Indies to Guinea.

Friedrich Weber is often mentioned by Fabricius as a collector, and most of the types Weber describes in »Observationes Entomologiae« Kiliae 1801 are found in Fabricius' collection. Weber was born in Kiel in 1781, and was the son of physician, professor Georg Weber. He studied medicine and, due to the influence of Fabricius, became a keen botanist and entomologist. Having completed his medical studies in 1803 in Copenhagen, he was appointed professor of medicine in Kiel in 1811. He died in 1823.

Lorenz Spengler, whose name Fabricius mentions particularly in connection with crustaceans, was born in Schaffhausen in 1720, and in 1748 became a resident of Copenhagen. In those days it was considered fashionable among people of education and leisure to occupy themselves with some sort of handicraft. Christian VI and his queen were very interested in the various crafts, and Spengler, on the strength of his skill as a turner, attracted the attention of the court and obtained a royal appointment. Later, he was appointed keeper of the Royal Art Collection. He was very interested in zoology and wrote several monographs on molluscs. In addition to a very large collection of shells, which after his death was placed in the Royal Museum of Natural History in Copenhagen, he also possessed a collection of insects containing Fabrician types. However, there is no information as to the fate of this collection. There do exist, however, many dried-up crustacean types of the Fabrician species. Spengler died in 1807.

OTHER COLLECTIONS

Out of approximately 1500 new descriptions in *Systema Entomologiae*, one third was from Joseph Banks' Collection. *Banks* was born in 1743, in London, and died there in 1820. He was educated at Eton and Oxford and was widely travelled, his journeys to Labrador and Newfoundland being of particular interest. After having taken part in Cook's first voyage round the globe (1768–71), Banks visited Iceland and Shetland Islands in 1772. He was made a baronet, and became president of the Royal Gardens, president of the Royal Society, and a member of the Privy Council. His collection, including the large number of Fabrician types, came to the British Museum via the London Linnean Society. It is housed in the British Museum to-day – a well preserved and easily accessible collection.

William Hunter, the famous physician and anatomist, 1718–1783, met Fabricius during the latter's first visit to England in 1767. In the *Systema Entomologiae*, 1775, there is a large number of new descriptions from Hunter's collections, and Professor Graham Kerr in his paper »Remarks upon the Zoolo-

gical Collection of the University of Glasgow», gives a list of the Fabrician types in the Hunter collection. Kerr remarks in his preface »I make no pretence of completeness in the following list«, and, in fact, Robert Staig, in his paper »The Fabrician types of Insects in the Hunterian Collection of Glasgow University« 1931–1940 actually included more types than did Kerr. On reading Staig's paper, one obtains a vivid impression of the difficulties he had to contend with. He writes in his preface »the labels are not attached to the specimens, but are fastened to the bottom of the drawer, and are placed, each label immediately above the specimen or specimens to which it refers. When Professor Graham Kerr examined the collection, he found that certain drawers had been tampered with by some person or persons unskilled; in several instances the specimens and labels were obviously misplaced and the labels had been gummed on to the bottom of the drawer, the original pins having been removed...«. So in this collection the harm was not caused by *Pcocus* and dermestids, but by *Homo sapiens*; however, – and I cite Staig again – »fortunately I have been able (after considerable trouble and deplorable loss of time) to locate most of the misplaced types. The types are still in a remarkably good state of preservation«.

James Lee's collection is to-day in The Hope Department of Entomology in the University of Oxford. On inquiring at the museum I obtained the names of a few types which had been identified, and several more will, no doubt, be identified in the future.

It might well prove very difficult to-day to identify types from *Drury's* collection with any degree of certainty. According to Walther Horn, Drury's collection was sold in 1805 by auction at Stevens in London. The Lepidoptera reached the British Museum through the Milne Collection. Dr. China of the British Museum states (in litt.) »Mr. Tams who has been investigating the whereabouts of the Drury types which came to the Museum through the Milne Collection purchased at the Drury sale, has been unable to trace any types in the collection of Hemiptera and Lepidoptera and so far has only been able to trace one doubtful type specimen. It seems likely that the specimens from the Milne Collection were not marked as Drury types at the time, and have probably been eliminated from the collection as being bad specimens. Further investigation by Mr. Tams is likely to take a very long time«.

The new species which Fabricius described during his stays in Paris were mainly from Bosc's collection. *L. A. Bosc d'Antic* was born in Paris in 1759. He was very interested in natural sciences, botany and entomology in particular, and even in his early youth he collected insects. Being forced to flee from France during the French Revolution he took refuge in America where he lived for some years. During his stay there, he again collected insects, especially in and around the environs of New York. He was an intimate friend of Fabricius and is the first French entomologist to travel abroad. On his death in 1828, his collection was placed in the Museum National d'Histoire Naturelle, Paris. While a great

many Heteroptera and Homoptera types are well preserved there are very few Diptera types; and Prof. Séguy has stated (in litt.) that the types absent in the present list »sont détruits ou définitivement perdus«. Similarly, Dr. Viette has pointed out that none of the Lepidoptera types from Bosc's collection have been preserved. According to a statement given by the museum, there are only a few types of Hymenoptera in existence, and with regard to beetle types, only a few have been identified. If, however, at some future date, the many large, old collections of the museum are thoroughly examined, many of the Bosc types will no doubt be brought to light. Furthermore, as Bosc labelled his insects in his own handwriting, the labels are easy to recognize.

From the Mus. Desfontaines, Fabricius described about 100 species, all of them from North Africa. René Louriche Desfontaines, 1755–1833, was a professor at the Jardin des Plantes. His most important work »Flora Atlantica« deals with plants from Tunisia and Algeria, where he travelled around 1790, and where, besides studying botany, he also collected insects. According to Walther Horn, his collection was placed in 1828 in the museum in Paris. Today, however, the staff at the museum are unable to give any information as to its whereabouts.

Peter Forskål, who is mentioned in Fabricius' first publications, was born in Helsingfors in 1732. He was a pupil of Linné and took part in the so-called »Arabian Journey«, a Danish expedition with various scientific aims, supported by the Danish Government. Among other countries, the expedition went to Egypt and Arabia, but had a tragic ending in that five of the six scientists succumbed to endemic fever. Among these was Forskål, who died in 1763. Before his death, however, he managed to send home collections of natural history specimens, even though some of them never reached their destination. Quite a number of the insect species which Fabricius described from the Forskål collections are still preserved in the Fabrician type collections.

Gustav von Paykull's (1759–1826) collection is in Naturhistoriska Riksmuseet in Stockholm. Not one of his insects is marked »type«; consequently, it will be very difficult to state which of them actually are types. However, in the event that no specimen of species originating from Paykull is present in Fabricius' collection, it might be worthwhile to consider selecting a lectotype from Paykull's collection.

Carlo Allioni's (1726–1804) collection was placed in the Zool. Mus. Univ. in Torino. On inquiring at the museum I was informed that the collection has been destroyed by fire.

According to Walther Horn (Ent. Beihefte Bd. 2 1935 p. 119) the collection of J. G. Hübner was sold to H. v. Minkwitz and the Coleoptera and Lepidoptera resold to E. Fr. Germar. Still according to Walther Horn, Germar's collection of Curculionidae was transferred to The Zool. Univ. Museum in Halle and a selection of Coleoptera to the Zool. Museum in Berlin. Dr. Kämpfe in-

² The Type Material of I. C. Fabricius

formed me that in Halle there exists no part of Hübner's collection, however, they were aware of the fact that Hübner sent material to Fabricius.

Ignaz Schiffermüller's (1727–1809) collection of Lepidoptera was placed in the Naturhistorisches Museum in Vienna in 1806, where it was destroyed in a fire in 1848. During his stay in Linz with Schiffermüller, Fabricius went through the whole collection »und die Insekten nach meinem Systeme bestimmte und beschrieb«. In Fabricius' collection there are several Lepidoptera originating from Schiffermüller's collection.

Besides the above collectors, Fabricius was in contact with many other entomologists who sent insects for his collection. Some of them are only mentioned a few times, others more frequently. It is of course within the range of possibility that Fabrician types may still be found in various parts of Europe. However, many of the collections on which Fabricius worked changed hands several times, and may finally have found a permanent place in one museum or other; it will, therefore, be difficult to discover their whereabouts.

For this same reason I have not written »lost« in the list in every case where it was impossible to locate the type. »Lost« means that I am absolutely certain no type specimens remain. But it must be realized that the possibility of locating a type even in cases where »lost« is not expressly stated, is in most cases less than minimal.

I feel I cannot conclude this preface without expressing my sincere thanks to Dr. S. L. Tuxen, Keeper of the Entomological Department of the Zoological Museum of Copenhagen, for the unfailing interest he has shown in my work and for all the help and assistance he has rendered throughout the years.

In particular, I also wish to thank Dr. Sv. G. Larsson, the Zoological Museum of Copenhagen, who identified a very large number of Coleoptera, with the final result that some of them proved to be non-Fabrician species, and some nomina nuda.



Fabricius.

1207. *Nomada scutellaris* Spec. Ins. I p. 487 · 2 »in Sibiria D. Pallas Mus. Dom. Banks«. (Syst. Piez. p. 387 · 4) – London 1 specimen (= *Thyreus*). (Kiel 1 specimen). The spec. in Kiel designated as Lectotype by Lieftinck 1958.
1208. *Melecta remigata* Syst. Piez. p. 387 · 5 »in Carolina Mus. Dom. Bosc« – (Kiel 1 specimen).
1209. *Nomada tibialis* Ent. Syst. II p. 346 · 4 »- - - Mus. Dom. de Sehestedt«. (Syst. Piez. p. 387 · 6) – Copenhagen 1 specimen. (Kiel 1 specimen).
1210. *Apis punctata* Syst. Ent. 1775 p. 385 · 43 »in Anglia«. (Syst. Piez. p. 387 · 7) – Kiel 2 specimens = *orbatus* (Lep.) Lieftinck det. 1958.
1211. *Epeolus punctatus* Syst. Piez. p. 389 · 2 »Parisiis Mus. Dom. Bosc«. –
1212. *Epeolus mercatus* Syst. Piez. p. 389 · 3 »in Carolina Mus. Dom. Bosc«. –
1213. *Nomada agrestis* Mant. Ins. I p. 306 · 5 »in Hispaniae agris Dom. Vahl«. (Syst. Piez. p. 390 · 1) – Copenhagen 1 specimen. (Kiel 9 specimens).
1214. *Nomada rufipes* Ent. Syst. II p. 347 · 8 »in Germania«. (Syst. Piez. p. 391 · 5) – Kiel 1 specimen.
1215. *Nomada 2-punctata* Syst. Piez. p. 392 · 8 »Tranquebariae Dom. Daldorff Mus. Dom. Lund«. – Copenhagen 1 specimen.
1216. *Nomada striata* Ent. Syst. II p. 348 · 9 »in Europa Mus. Dom. Lund«. (Syst. Piez. p. 392 · 9) – Copenhagen 2 specimens.
1217. *Nomada stigma* Syst. Piez. p. 393 · 11 »in Algier Dom. de Rehbinder«. – Kiel 1 specimen.
1218. *Nomada fulvicornis* Ent. Syst. II p. 348 · 11 »in Italia Dr. Allioni«. (Syst. Piez. p. 393 · 12) – Kiel 2 specimens.
1219. *Nomada gibba* Syst. Ent. 1775 p. 389 · 5 »in Anglia Mus. Banks«. (Syst. Piez. p. 393 · 13) – London 2 specimens. (Kiel 3 specimens the label not with the Fabr. handwriting).
1220. *Nomada atrata* Syst. Piez. p. 393 · 14 »Kiliae«. – Kiel 1 specimen.
1221. *Nomada Schottii* Syst. Piez. p. 394 · 15 »in Moraviae hortis sub. terra nidulans Dom. Schott«. – in Coll. Kiel 1 specimen labeled *rufiventris* sugested F.
1222. *Nomada albilibris* Ent. Syst. II p. 349 · 13 »Kiliae«. (Syst. Piez. p. 394 · 16) – Kiel 5 specimens.
1223. *Nomada cingulata* Syst. Ent. 1775 p. 390 · 7 »in Sveciae nemoribus«. (Syst. Piez. p. 394 · 17) – Kiel 3 specimens.
1224. *Nomada minuta* Syst. Piez. p. 394 · 19 »Kiliae«. – Kiel 4 specimens.
1225. *Formica compressa* Mant. Ins. I p. 307 · 2 »Tranquebariae Dom. Hybner«. (Syst. Piez. p. 396 · 2) – Kiel 4 specimens.
1226. *Formica femorata* Syst. Piez. p. 397 · 3 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen).
1227. *Formica smaragdina* Syst. Ent. App. 1775 p. 828 »in India, Edler«. (Syst. Piez. p. 397 · 4) – Kiel 2 specimens.

*1223a *Nomada gemmifera* Syst. Piez. p. 394 · 18 "Illustration abepta de Augst. 1816" Wert Lepid.

1228. *Formica thoracica* Syst. Piez. p. 397 · 5 »in Barbaria Dom. Stubb Mus. Dom. Lund«. — Copenhagen 1 specimen.
1229. *Formica ruficornis* Syst. Piez. p. 397 · 6 »in India orientali Dom. Daldorff Mus. Dom. de Sehestedt«. — In Coll. Sehestedt & T. Lund, Copenhagen 1 specimen labeled »*F. ruficornis* New York, Rohr«. (Kiel 1 specimen).
1230. *Formica rufipes* Syst. Ent. 1775 p. 391 · 2 »in Brasilia Mus. Banks«. (Syst. Piez. p. 398 · 7) — London 1 specimen. (Kiel only a pin with the namelabel).
1231. *Formica bicolor* Ent. Syst. II p. 351 · 5 »in Barbaria Dom. Desfontaines«. (Syst. Piez. p. 398 · 8) — vide the preface.
1232. *Formica rapax* Syst. Piez. p. 398 · 9 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. — Copenhagen 2 specimens.
1233. *Formica didyma* Spec. Ins. I p. 489 · 5 »in Italia D. Allioni«. (Syst. Piez. p. 398 · 10) — Kiel 2 specimens.
1234. *Formica pubescens* Syst. Ent. 1775 p. 392 · 5 »in Hungaria Mus. Totianum«. (Syst. Piez. p. 399 · 12) — Kiel 2 specimens.
1235. *Formica ferruginea* Ent. Syst. Suppl. p. 279 »in America«. (Syst. Piez. p. 399 · 14) — Kiel 1 specimen.
1236. *Formica flavescentia* Ent. Syst. II p. 353 · 12 »Cajennae«. (Syst. Piez. p. 399 · 15) — Kiel 1 specimen.
1237. *Formica testacea* Syst. Piez. p. 400 · 16 »in Moraviae truncis emortuis Dom. Schott«. —
1238. *Formica stigma* Syst. Piez. p. 400 · 18 »in America meridionali Dom. Smidt Mus. Dom. Lund«. — Copenhagen 2 specimens. (Kiel 1 specimen).
1239. *Formica cinerascens* Mant. Ins. I p. 308 · 12 »Tranquebariae Dom. Hybner«. (Syst. Piez. p. 401 · 19) —
1240. *Formica elongata* Mant. Ins. I p. 308 · 13 »Tranquebariae Dom. Lund«. (Syst. Piez. p. 401 · 20) — Copenhagen 1 specimen.
1241. *Formica 6 guttata* Ent. Syst. II p. 354 · 17 »in Insula St. Crucis Americae Dr. Pflug«. (Syst. Piez. p. 401 · 21) — Kiel 1 specimen.
1242. *Formica foetens* Ent. Syst. II p. 354 · 18 »in Guinea Dr. Isert«. (Syst. Piez. p. 401 · 22) — Kiel 1 specimen.
1243. *Formica harpax* Syst. Piez. p. 401 · 23 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. — Copenhagen 2 specimens. (Kiel 1 specimen).
1244. *Formica destructor* Syst. Piez. p. 402 · 24 »in America meridionali Dom. Smidt Mus. Dom. Lund«. — Copenhagen 1 specimen.
1245. *Formica perditor* Syst. Piez. p. 402 · 25 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. — Copenhagen 1 specimen = *Dolichoderus bidens* Torell det.
1246. *Formica rufibarbis* Ent. Syst. II p. 355 · 20 »in Gallia«. (Syst. Piez. p. 402 · 26) — Kiel 1 specimen.

1247. *Formica maculata* Spec. Ins. I p. 491 · 15 »in Africa aequinoctiali Mus. Dom. Banks«. (Syst. Piez. p. 403 · 29) – London 1 specimen. (Kiel 1 specimen).
1248. *Formica truncorum* Syst. Piez. p. 403 · 31 »in truncis emortuis Moraviae Dom. Schott«. – Kiel 2 specimens.
1249. *Formica ruficeps* Syst. Piez. p. 404 · 32 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen).
1250. *Formica viatica* Mant. Ins. I p. 308 · 20 »in Hispania Dom. Vahl«. (Syst. Piez. p. 404 · 33) – Copenhagen 1 specimen. (Kiel 2 specimens).
1251. *Formica aegyptiaca* Syst. Ent. 1775 p. 393 · 12 »in Aegypto Forskåhl«. (Syst. Piez. p. 404 · 34) – Kiel 2 specimens.
1252. *Formica antiguensis* Ent. Syst. II p. 357 · 30 »in Antigua Insula Mus. Dom. Banks«. (Syst. Piez. p. 404 · 35) – Not in Brit. Mus. Coll. (Kiel 1 specimen).
1253. *Formica cylindrica* Ent. Syst. Suppl. p. 280 · 31 »in India Mus. Dom. Bosc«. (Syst. Piez. p. 404 · 36) –
1254. *Formica guineensis* Ent. Syst. II p. 357 · 31 »in Guinea Dr. Isert«. (Syst. Piez. p. 404 · 37) – Copenhagen 3 specimens. (Kiel 3 specimens).
1255. *Formica juvenilis* Syst. Piez. p. 405 · 38 »in Gallia«. –
1256. *Formica binodis* Syst. Ent. 1775 p. 393 · 13 »Aegypto Forskåhl«. (Syst. Piez. p. 405 · 39) – Kiel 2 specimens.
1257. *Formica gracilis* Syst. Piez. p. 405 · 40 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 3 specimens. (Kiel 1 specimen).
1258. *Formica tenuis* Syst. Piez. p. 405 · 41 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 1 specimen. (Kiel 1 specimen).
1259. *Formica filiformis* Syst. Piez. p. 405 · 42 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens.
1260. *Formica rufitarsis* Syst. Piez. p. 406 · 45 »in Austria Dom. de Megerle« – Kiel 1 specimen.
1261. *Formica tuberum* Syst. Ent. 1775 p. 393 · 15 »in Svecia«. (Syst. Piez. p. 407 · 47) – Kiel 3 specimens.
1262. *Formica flava* Spec. Ins. I p. 491 · 20 »in Europae borealis sylvis«. (Syst. Piez. p. 406 · 44) – Kiel 1 specimen.
1263. *Formica vagans* Ent. Syst. II p. 358 · 37 »in Saxonia Dr. Heisse«. (Syst. Piez. p. 407 · 48) – Kiel 1 specimen.
1264. *Formica lapidum* Syst. Piez. p. 407 · 49 »in Austria Dom. de Megerle«. – Kiel 1 specimen.
1265. *Formica acervorum* Ent. Syst. II p. 358 · 38 »in Daniae nemoribus Mus. Dom. de Sehestedt«. (Syst. Piez. p. 407 · 50) – Copenhagen 1 specimen. (Kiel 3 specimens).

1266. *Formica flavigaster* Ent. Syst. Suppl. p. 280 »Cajennae«. (Syst. Piez. p. 408 · 52) – Kiel 3 specimens. (Copenhagen 1 specimen).
1267. *Formica tarsata* Ent. Syst. Suppl. p. 280 »in Insula Goré Africae Mus. Dom. Bosc«. (Syst. Piez. p. 408 · 53) – Kiel 2 specimens.
1268. *Formica tuberculata* Ent. Syst. Suppl. p. 280 »Cajennae Mus. Dom. Bosc«. (Syst. Piez. p. 408 · 54) –
1269. *Formica villosa* Syst. Piez. p. 409 · 55 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen).
1270. *Formica abdominalis* Syst. Piez. p. 409 · 56 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 2 specimens. (Kiel 4 specimens).
1271. *Formica rufiventris* Syst. Piez. p. 409 · 57 »ad Cap. Bon. Spei Mus. Dom. Lund«. – Copenhagen 2 specimens.
1272. *Formica australis* Syst. Ent. 1775 p. 393 · 16 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 410 · 59) – London 1 specimen.
1273. *Formica fungosa* Ent. Syst. Suppl. p. 281 · 42 »Cajennae«. (Syst. Piez. p. 410 · 60) – Kiel 1 specimen.
1274. *Formica clavata* Syst. Ent. 1775 p. 394 · 18 »in India«. (Syst. Piez. p. 410 · 61 »in America meridionali«) – Kiel 2 specimens.
1275. *Formica attelaboides* Syst. Ent. 1775 p. 394 · 19 »in Brasilia Mus. Banks«. (Syst. Piez. p. 410 · 62) – London 1 specimen. (Kiel 3 specimens).
1276. *Formica arenaria* Mant. Ins. I p. 310 · 34 »in Barbaria arena mobili Dom. Vahl«. (Syst. Piez. p. 411 · 63) – Copenhagen 2 specimens. Kiel 1 specimen.
1277. *Formica megacephala* Ent. Syst. II p. 361 · 47 »in Isle de France Mus. Dom. Bosc«. (Syst. Piez. p. 411 · 64) – (Kiel 1 specimen).
1278. *Formica Ammon* Syst. Ent. 1775 p. 394 · 20 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 411 · 65) – London 1 specimen. (Kiel 2 specimens).
1279. *Formica acuta* Syst. Piez. p. 411 · 67 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 1 specimen.
1280. *Formica vorax* Syst. Piez. p. 412 · 68 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. The specimen without namelabel = *Pheidole* sp. (Kiel 1 specimen).
1281. *Formica tridentata* Syst. Piez. p. 412 · 69 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 2 specimens. (Kiel 2 specimens).
1282. *Formica coronata* Syst. Piez. p. 413 · 70 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 1 specimen.
1283. *Formica carinata* Syst. Piez. p. 413 · 71 »in nova Caledonia Dom. Billaudière«. – Kiel 2 specimens.
1284. *Formica argentata* Syst. Piez. p. 413 · 72 »in nova Caledonia Dom. Billaudière«. – Kiel 1 specimen.
1285. *Formica militaris* Spec. Ins. I p. 493 · 30 »in Africa aequinoctiali Mus. Dom. Banks«. (Syst. Piez. p. 414 · 73) – London 1 specimen.

1286. *Formica 4-dens* Ent. Syst. II p. 362 · 51 »Cajennae Mus. Dom. Bosc«. (Syst. Piez. p. 414 · 74) – (Kiel 1 specimen).
1287. *Formica hystrix* Syst. Piez. p. 414 · 75 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 3 specimens).
1288. *Lasius emarginatus* Syst. Piez. p. 416 · 2 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen placed with *Myrmecia emarginata*).
1289. *Lasius exulans* Syst. Piez. p. 416 · 3 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 2 specimens. (Kiel 2 specimens).
1290. *Formica sericea* Ent. Syst. Suppl. p. 279 »in Senegal Mus. Dom. Bosc«. (Syst. Piez. p. 416 · 4) –
1291. *Formica melanocephala* Ent. Syst. II p. 353 · 13 »Cajennae Mus. Dom. Bosc«. (Syst. Piez. p. 417 · 5) –
1292. *Formica albipennis* Ent. Syst. II p. 354 · 19 »in Insula St. Crucis Americae Dr. Pflug«. (Syst. Piez. p. 417 · 6) – Kiel 1 specimen.
1293. *Formica pallipes* Mant. Ins. I p. 309 · 21 »Cajennae Dom. v. Rohr«. (Syst. Piez. p. 417 · 7) – Kiel 1 specimen.
1294. *Formica virescens* Syst. Ent. 1775 p. 392 · 9 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 417 · 8) – London 2 specimens. (Kiel 1 specimen).
1295. *Formica conica* Ent. Syst. Suppl. p. 279 »Tranquebariae Dom. Daldorff«. (Syst. Piez. p. 418 · 10) – Kiel 3 specimens. (Copenhagen 2 specimens).
1296. *Cryptocerus marginatus* Syst. Piez. p. 419 · 2 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 1 specimen.
1297. *Cryptocerus clypeatus* Syst. Piez. p. 420 · 3 »in America meridionali Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 2 specimens).
1298. *Cryptocerus umbraculatus* Syst. Piez. p. 420 · 4 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 1 specimen.
1299. *Cryptocerus minutus* Syst. Piez. p. 420 · 5 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens.
1300. *Formica grossa* Mant. Ins. I p. 309 · 29 »Cajennae Dom. v. Rohr«. (Syst. Piez. p. 421 · 1 B) – Kiel 1 specimen.
1301. *Formica biscutata* Syst. Ent. 1775 p. 394 · 17 »Cajennae, Mallet«. (Syst. Piez. p. 422 · 4) –
1302. *Formica erythrocephala* Syst. Ent. 1775 p. 391 · 3 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 423 · 5) – London not in Coll. Banks.
1303. *Atta geminata* Syst. Piez. p. 423 · 6 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 2 specimens. (Kiel 3 specimens).
1304. *Formica unispinosa* Ent. Syst. II p. 359 · 39 »in Guadeloupe Insula Dom. de Badier«. (Syst. Piez. p. 423 · 1) – Kiel 1 specimen.
1305. *Formica gulosa* Syst. Ent. 1775 p. 395 · 25 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 424 · 2) – London 1 specimen. (Kiel 1 specimen).

1306. *Formica forficata* Mant. Ins. I p. 310 · 42 »in Terra Diemenii Mus. Dom. Banks«. (Syst. Piez. p. 424 · 3) – London 1 specimen. (Kiel 1 specimen).
1307. *Myrmecia esuriens* Syst. Piez. p. 424 · 4 »Cajennae Dom. v. Rohr«. – Kiel 2 specimens.
1308. *Formica rostrata* Mant. Ins. I p. 310 · 43 »Cajennae Dom. v. Rohr«. (Syst. Piez. p. 425 · 5) – Kiel 1 specimen.
1309. *Formica hamata* Spec. Ins. I p. 494 · 35 »Cajennae Mus. Dom. Yeats«. (Syst. Piez. p. 425 · 6) – Kiel 1 specimen.
1310. *Myrmecia cordata* Syst. Piez. p. 425 · 8 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen).
1311. *Myrmecia hastata* Syst. Piez. p. 426 · 9 »in America meridionali Dom. Smidt Mus. Dom. Lund«. – Copenhagen 2 specimens.
1312. *Formica maxillosa* Syst. Ent. 1775 p. 396 · 27 »in India Mus. Hagense«. (Syst. Piez. p. 426 · 10) –
1313. *Myrmecia emarginata* Syst. Piez. p. 426 · 11 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. (Kiel 1 specimen).
1314. *Dorylus mediatus* Syst. Piez. p. 428 · 3 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 2 specimens. Kiel 1 specimen.
1315. *Mutilla derasa* Syst. Piez. p. 429 · 2 »in America meridionali Dom. Smidt Mus. Dom. de Sehestedt«. – Copenhagen 1 specimen.
1316. *Mutilla antiquensis* Syst. Ent. 1775 p. 396 · 2 »in Insula Antigua Drury«. (Syst. Piez. p. 429 · 3) – Kiel 1 specimen.
1317. *Mutilla guineensis* Ent. Syst. II p. 367 · 3 »in Guinea Dom. Isert«. (Syst. Piez. p. 429 · 4) – Copenhagen 2 specimens.
1318. *Mutilla diadema* Mant. Ins. I p. 311 · 3 »Surinami Dom. Hybner«. (Syst. Piez. p. 429 · 5) – Kiel 1 specimen.
1319. *Mutilla formicaria* Syst. Ent. 1775 p. 397 · 4 »in nova Hollandia Mus. Dom. Banks«. (Syst. Piez. p. 430 · 7) – London 1 specimen. (Kiel 2 specimens).
1320. *Mutilla exulans* Syst. Ent. 1775 p. 397 · 5 »in America Drury«. (Syst. Piez. p. 430 · 8) –
1321. *Mutilla aurata* Syst. Ent. 1775 p. 397 · 6 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 430 · 9) – not in Coll. Banks.
1322. *Mutilla continua* Syst. Piez. p. 430 · 10 »in Guinea Mus. Dom. Lund«. – Copenhagen 3 specimens. (Kiel 1 specimen).
1323. *Mutilla flabellata* Syst. Piez. p. 431 · 12 »in Senegallia Mus. Dom. Lund«. – Copenhagen 1 specimen.
1324. *Mutilla ruficornis* Syst. Ent. 1775 p. 397 · 8 »in nova Hollandia Mus. Banks«. (Syst. Piez. p. 431 · 13) – not in Coll. Banks.

INDEX

abbreviata <i>Pelopoeus</i>	582	albilabris <i>Hylaeus</i>	928
abbreviator <i>Ichneumon</i>	199, 368	albilabris <i>Nomada</i>	1222
abbriviatu <i>s</i> <i>Pelopoeus</i>	582	albimacula <i>Polistes</i>	875
abdominalis <i>Formica</i>	1270	albipennis <i>Formica</i>	1292
abdominalis <i>Ichneumon</i>	220	alipes <i>Apis</i>	930
abdominalis <i>Philanthus</i>	971	albitarse <i>Trypoxylon</i>	498
abdominalis <i>Sphex</i>	553	albitarsis <i>Bombus</i>	1108
abdominalis <i>Tenthredo</i>	17	alevarius <i>Ichneumon</i>	224
abdominalis <i>Thynnus</i>	687	alternans <i>Hylaeus</i>	1020
accusator <i>Ichneumon</i>	318	alvearius <i>Cryptus</i>	224
acervorum <i>Formica</i>	1265	amalthea <i>Apis</i>	1372
acraensis <i>Apis</i>	1117	ambulatorius <i>Ichneumon</i>	96
aculeator <i>Ichneumon</i>	283	americana <i>Bembex</i>	663
acuminator <i>Ichneumon</i>	350	americana <i>Vespa</i>	868
acuta <i>Chalcis</i>	434	americanorum <i>Apis</i>	1081
acuta <i>Formica</i>	1279	amethystina <i>Apis</i>	1071
adscendens <i>Cynips</i>	422	amethystina <i>Chrysis</i>	488
aegyptiaca <i>Formica</i>	1251	amethystina <i>Sphex</i>	625
aenea <i>Apis</i>	1049	amicetus <i>Ichneumon</i>	364
aenea <i>Chrysis</i>	482	Ammon <i>Formica</i>	1278
aeneus <i>Dryinus</i>	571	amplecta <i>Tenthredo</i>	71
aestuans <i>Vespa</i>	795	analis <i>Andrena</i>	1022
aethiops <i>Tenthredo</i>	57	analis <i>Anthophora</i>	1178
affinis <i>Ichneumon</i>	218	analis <i>Apis</i>	1163
affinis <i>Sphex</i>	579	analis <i>Hylotoma</i>	24
affinis <i>Vespa</i>	779	analis <i>Larra</i>	646
affirmator <i>Ichneumon</i>	146	analis <i>Philanthus</i>	972
africana <i>Apis</i>	1082	analis <i>Scolia</i>	756
africana <i>Vespa</i>	790	analis <i>Sphex</i>	517
aggressor <i>Ophion</i>	361	analis <i>Tenthredo</i>	34
agilis <i>Ichneumon</i>	226	analis <i>Vespa</i>	782, 854
agrestis <i>Nomada</i>	1213	anator <i>Ichneumon</i>	212
agrorum <i>Apis</i>	1090	anator <i>Bracon</i>	301
alata <i>Apis</i>	1101	angulata <i>Polistes</i>	871
albatorius <i>Ichneumon</i>	94	annulata <i>Chalcis</i>	453
albiceps <i>Xylocopa</i>	1068	annulata <i>Sphex</i>	560
albicornis <i>Sirex</i>	80	annulata <i>Tenthredo</i>	21
albicornis <i>Tenthredo</i>	38	annulata <i>Tiphia</i>	699
albifrons <i>Sphex</i>	610	annulator <i>Cryptus</i>	181
albifrons <i>Vespa</i>	799	annulator <i>Ichneumon</i>	124
albilabris <i>Crabro</i>	997	annulatorius <i>Ichneumon</i>	110

annulatus Ichneumon	355	atrophica Vespa	891
antennata Eucera	1201	attelaboides Formica	1275
antennator Ichneumon	336	attenuata Vespa	883
antiguensis Apis	1080	aucta Liris	677
antiguensis Formica	1252	aucta Vespa	837
antiguensis Mutila	1316	aurata Joppa	333
apicalis Vespa	808	aurata Mutila	1321
apiformis Chalcis	1562	aurata Sphex	674
apiformis Masaris	927	aurata Vespa	797
approximator Ichneumon	304	aurea Scolia	734
apraca Apis	1089	auriculatus Ichneumon	144
aptera Cynips	400	auripennis Dryinus	572
apterus Bethylus	719	auripennis Pompilus	535
arbustorum Apis	1086	auritus Philanthus	952
arbustorum Tenthredo	70	aurulenta Larra	645
arcuata Vespa	914	aurulenta Mutila	1346
arenaria Formica	1276	aurulenta Polistes	870
arenaria Mutila	1331	aurulenta Sphex	637, 1365
arenaria Sphex	589	aurulentus Bombus	1097
arenaria Vespa	791	Australasiae Mutila	1334
argentata Apis	1183	australis Formica	1272
argentata Formica	1284	austriaca Andrena	1018
argentata Pepsis	596	austriaca Chrysis	475
argentata Vespa	809	autumnalis Apis	1099
arietis Vespa	889		
armata Apis	1116	barbara Apis	1118
armator Bracon	287	barbara Mutila	1333
armator Ichneumon	209	barbata Anthophora	1171
armatorius Cryptus	150	barbata Xylocopa	1069
Arpactus Mellinus	949	barbator Ichneumon	316
arrogator Ichneumon	130	bengalensis Polistes	877
arundinator Pimpla	313	bicincta Apis	1124
assertorius Ichneumon	167	bicincta Scolia	749
assimilis Sphex	522	bicincta Tenthredo	27
ater Philanthus	1059	bicincta Vespa	827
atra Leucospis	460	bicinctus Crabro	509
atra Sphex	584	bicolor Andrena	1025
atrrata Apis	1166	bicolor Apis	1169
atrrata Eumenes	915	bicolor Formica	1231
atrrata Nomada	1220	bicolor Larra	650
atrrata Joppa	337	bicolor Nomada	1206
atrrata Prosopis	936	bicolor Salius	340
atrrata Scolia	721	bicolor Sphex	563
atrrata Vespa	806	bicolor Vespa	787
atrator Ichneumon	135	bidens Ichneumon	264
atratorius Ichneumon	89	bidentata Apis	1193
atratum Trypoxylon	501	bidentorius Ichneumon	113
atratus Ichneumon	358	bifasciata Sphex	537
atricornis Eucera	1196	bifasciata Larra	644
atricornis Eumenes	919	bifrons Centris	1130
atripennis Hylotoma	23	biguttata Scolia	760
atripennis Pepsis	600	biguttata Vespa	835
	630		

biguttatus Pompilus	538	carolina Bembex	661
Billardieri Polistes	865	carolina Centris	1122
bimaculata Scolia	732	castigator Ichneumon	139
bimaculatus Ichneumon	450	castrator Ichneumon	267
binodis Formica	1256	caudator Ichneumon	191
binodis Sphex	586	cephalotes Tenthredo	5
binodis Vespa	911	cerana Apis	1158
binotata Scobia	755	chinensis Vespa	846
binotata Vespa	834	chloris Megilla	1050
bioculata Polistes	880	chrysis Ichneumon	404
bipunctata Nomada	1215	ciliata Bembex	671
bipunctata Sphex	546	ciliata Mutilla	1348
bipunctata Vespa	838	ciliata Sphex	633
bipunctatus Crabro	945	ciliata Tipha	733
bipunctatus Mellinus	934	cilipes Centris	1143
biscutata Formica	1301	cincta Andrena	1036
bispinosa Chalcis	451	cincta Apis	1125
bistriata Polistes	895	cincta Evania	511
blanda Tenthredo	46	cincta Larra	641
bombylans Apis	1127	cincta Sphex	608
breviatorius Cryptus	175	cincta Vespa	778
brevicauda Leucospis	459	cinctorius Ichneumon	179
brevicornis Eucera	1202	cinerascens Formica	1239
brevipennes Sphex	570	cinerascens Vespa	807
brunnea Vespa	803	cinerea Sphex	541
brunneator Ichneumon	250	cinerea Vespa	899
brunnipes Vespa	829	cingulata Andrena	1042
bryorum Apis	1088	cingulata Centris	1110
bucephala Apis	1188	cingulata Eumenes	916
cajennensis Apis	1079	cingulata Larra	648
cajennensis Vespa	893	cingulata Nomada	1223
calculator Ichneumon	253	cingulata Sphex	680
calens Chrysis	466	cingulata Tenthredo	25
callosa Apis	1054	cingulata Tipha	648
calumniator Cryptus	194	circinalis Eumenes	907
calva Mutilla	1353	circularis Philanthus	960
campaniformis Vespa	913	circulata Andrena	1041
campanulata Eumenes	924	clavata Chalcis	436
campanulator Ichneumon	256	clavata Formica	1274
capillator Ichneumon	300	clavator Ichneumon	367
capitata Scolia	722	clavatorius Bassus	243
capitator Cryptus	189	clavatus Ichneumon	326
capitator Ichneumon	293	clavicornis Tenthredo	13
capitatus Pompilus	518	clavipes Centris	1135
capitivus Pompilus	568	clavipes Chalcis	427
carbonaria Apis	1161	clavus Sphex	587
carinata Formica	1283	clypeatus Cryptocerus	1297
carinator Ichneumon	133	coccinea Hylotoma	12
carnatica Vespa	793	coccineus Pompilus	529
carnea Chrysis	490	cochleata Scolia	772
carniflex Vespa	852	coecutiens Apis	1140
		coerulans Chrysis	472

Hymenoptera

435

cursitans Ichneumon

227

coerulator Ichneumon	141	cuneata Vespa	792
coerulea Polistes	885	curvator Ichneumon	215
coeruleopennis Vespa	897	curvatorius Bassus	240
coerulescens Chrysis	474	curvipes Andrena	1035
coerulescens Tenthredo	14	custodiator Ichneumon	140
coeruleus Bombus	1076	cyanea Andrena	1194
coerulipes Chrysis	474	cyanea Chalcis	443
collaris Megilla	1032	cyanea Vespa	886
collaris Scolia	1340	cyaneus Ichneumon	408
collaris Sphex	515	cyaneus Sirex	79
collaris Tiphia	707, 709	cyanipennis Scolia	754
compensator Ichneumon	387	cyanipennis Sphex	594
compressa Cynips	424	cyanipennis Vespa	869
compressa Evania	491	cyathiformis Eumenes	920
compressa Formica	1225	cylindrator Ichneumon	317
compressa Sphex	638	cylindrica Formica	1253
compressicornis Pelopoeus	585	cylindrica Scolia	770
compressicornis Tenthredo	54	cylindricus Hylaeus	1005
compressipes Apis	1157	debellator Ichneumon	192
compressus Ichneumon	351	decoratorius Ichneumon	180
compressus Sirex	774	defensor Ichneumon	288
concinna Vespa	800	dentator Ophion	382
confiscator Bassus	257	dentator Pimpla	307
conica Chalcis	440	dentatorius Cryptatorius	164
conica Formica	1295	dentatus Ichneumon	327
conica Vespa	904, 905	dentatus Thynnus	685
conicus Ichneumon	456	dentipes Chalcis	445
constrictor Cryptus	198	denunciator Ichneumon	286
continua Bembex	665	depressus Bethylus	715
continua Mutila	1322	depressus Ichneumon	409
continuus Crabro	987	deprimator Ichneumon	145
cordata Myrmecia	1310	derasa Mutila	1315
cornuta Apis	1121	destructarius Ichneumon	152
cornutus Crabro	974	destructor Formica	1244
coronata Formica	1282	diadema Crabro	955
coronata Mutila	1326	diarema Mutillo	1318
coronator Pimpla	325	diadema Vespa	906
coronatus Oryssus	72	didyma Formica	1233
coronatus Philanthus	951	dimidiata Apis	1109
costalis Tenthredo	15	dimidiata Chalcis	428
crassicornis Tiphia	643	dimidiata Chrysis	480
crassipes Apis	1134	dimidiata Pepsis	631
crassipes Crabro	992	dimidiata Sphex	523
crassipes Eucera	1203	dimidiata Tenthredo	64
crenator Pimpla	309	dimidiator Bracon	274
crocea Tenthredo	56	dimidiator Ichneumon	127
crucis Pepsis	592	dimidiator Ophion	378
cruenta Sphex	531	dimidiatus Crabro	989
cryptarum Apis	1073	discolor Sphex	558
culpator Bracon	277	disjuncta Apis	1174
cultellator Ichneumon	345	dispar Leucospis	462
cunctator Ichneumon	258		

dissectus <i>Philanthus</i>	969	expectatorius <i>Ichneumon</i>	99
dorsalis <i>Bethylus</i>	720	explanatus <i>Dryinus</i>	575
dorsalis <i>Ichneumon</i>	407	extennator <i>Ophion</i>	381
dorsalis <i>Vespa</i>	858	exulans <i>Lasius</i>	1289
dorsata <i>Apis</i>	1162	exulans <i>Mutilla</i>	1320
dorsata <i>Joppa</i>	331		
dorsata <i>Mutilla</i>	1327	fabricator <i>Ichneumon</i>	142
dorsata <i>Polistes</i>	896	falcator <i>Banchus</i>	347
dorsata <i>Tenthredo</i>	9	falcator <i>Ichneumon</i>	376
dorsata <i>Tiphia</i>	704	falcatorius <i>Ichneumon</i>	347
dorsigera <i>Leucospis</i>	458	fantoma <i>Sirex</i>	78
dromedarius <i>Sirex</i>	84	fasciata <i>Andrena</i>	1039
dubia <i>Mutilla</i>	1341	fasciata <i>Bembex</i>	656, 668
dubitorius <i>Ichneumon</i>	173	fasciata <i>Chrysis</i>	484
Eglanteriae <i>Tenthredo</i>	16	fasciata <i>Eumenes</i>	921
elator <i>Banchus</i>	348	fasciata <i>Evania</i>	508
elatus <i>Bombus</i>	1101	fasciata <i>Joppa</i>	335
elector <i>Ichneumon</i>	299	fasciata <i>Larra</i>	651
electorius <i>Bassus</i>	234	fasciata <i>Sphex</i>	540
elegantiorius <i>Cryptus</i>	166	fasciator <i>Ichneumon</i>	508, 271
elevata <i>Pepsis</i>	615	fasciatorius <i>Ichneumon</i>	107, 108
elongata <i>Formica</i>	1240	fasciatus <i>Ichneumon</i>	229
elongator <i>Ichneumon</i>	134	fastidiator <i>Ichneumon</i>	275
elongatus <i>Zethus</i>	901	favosa <i>Apis</i>	1165
emarciator <i>Ichneumon</i>	261	femorata <i>Formica</i>	1226
emarginata <i>Chalcis</i>	432	femorata <i>Joppa</i>	332
emarginata <i>Myrmecia</i>	1313	femorata <i>Sphex</i>	605
emarginata <i>Sirex</i>	83	femorata <i>Tiphia</i>	689
emarginata <i>Vespa</i>	818	femorata <i>Xylocopa</i>	1061
emarginatus <i>Lasius</i>	1288	femorator <i>Ichneumon</i>	285
emarginatus <i>Thynnus</i>	686	femoratus <i>Crabro</i>	1363
enervator <i>Ichneumon</i>	202	femoratus <i>Pompilus</i>	524
ephippium <i>Mutilla</i>	1335	fenestrata <i>Apis</i>	1063
ephippium <i>Tiphia</i>	702	ferrugata <i>Mutilla</i>	1354
ephippium <i>Vespa</i>	780	ferrugator <i>Ichneumon</i>	129
equestris <i>Trypoxylon</i>	502	ferrugatorius <i>Ichneumon</i>	169
equestris <i>Apis</i>	1085	ferruginea <i>Apis</i>	1156
erectorius <i>Ichneumon</i>	122	ferruginea <i>Chalcis</i>	446
erigator <i>Ophion</i>	384	ferruginea <i>Formica</i>	1235
erythrocephala <i>Formica</i>	1302	ferruginea <i>Hylotoma</i>	22
erythrocephala <i>Larra</i>	640	ferruginea <i>Scolia</i>	735
erythrocephala <i>Mutilla</i>	1351	ferruginea <i>Vespa</i>	878
erythrocephala <i>Scolia</i>	742	ferrugineus <i>Ichneumon</i>	356
erythrocephala <i>Sphex</i>	576	fervida <i>Apis</i>	1100
esuriens <i>Myrmecia</i>	1307	fervida <i>Chrysis</i>	481
esuriens <i>Vespa</i>	910	festinans <i>Ichneumon</i>	232
exaltata <i>Sphex</i>	549	festiva <i>Chrysis</i>	465
examinator <i>Cryptus</i>	204	festiva <i>Eucharis</i>	423
exhaustator <i>Ichneumon</i>	372	festiva <i>Pepsis</i>	616
exhortator <i>Ichneumon</i>	369	festivator <i>Ophion</i>	391
expectator <i>Bracon</i>	289	festivus <i>Ichneumon</i>	391
		filator <i>Bracon</i>	269

filiformis Formica	1259	frutetorum Tenthredo	8
fimbriata Xylocopa	1064	fugax Sphe ^x	544
firmator Ichneumon	207	fugax Trypoxylon	500
flabellata Eucharis	426	fulgens Ichneumon	420
flabellata Mutilla	1323	fulvata Megilla	1040
flagellator Ichneumon	389	fulvicornis Mellinus	950
flagratorius Bassus	235	fulvicornis Nomada	1218
flava Chalcis	431	fulvicornis Tenthredo	53
flava Formica	1262	fulvipennis Sphe ^x	564
flava Sphex	559	fulvipes Apis	1155
flava Tenthredo	48	fulvipes Liris	672
flavator Ichneumon	297	fulvipes Megilla	1044
flavatorius Bassus	238	fulvus Ichneumon	354
flavatorius Ichneumon	115	fulvus Pompilus	557
flavescens Formica	1236	fungosa Formica	1273
flavescens Vespa	812	furcata Eucharis	425
flavicans Ichneumon	330	furcatus Bombus	1096
flavicans Polistus	872	fusca Polistes	864
flavicornis Apis	1136	fuscata Sphex	533
flavicornis Formica	1266	fuscata Vespa	844
flavicornis Sirex	76	fuscator Ichneumon	201
flavicornis Sphex	628	fuscatus Ichneumon	222
flavicornis Tenthredo	29	fuscicornis Sirex	77
flavifrons Apis	1177	fuscipenne Trypoxylon	499
flavifrons Ophion	363	fuscipennis Pepsis	598
flavifrons Scolia	726		1343
flavilabris Hylaeus	929	geminata Atta	1303
flavipennis Sphex	600	generator Ophion	375
flavipes Apis	1009	geniculatorius Cryptus	159
flavipes Crabro	961	geniculatus Crabro	995
flavipes Chalcis	455	germanica Tenthredo	35
flavipes Sphex	583	germanica Vespa	783
flavipes Tipha	691	gibba Nomada	1219
flavipes Vespa	840	gibbosa Vespa	813
flavus Ichneumon	357	gigas Leucospis	457
floralis Anthophora	1172	gigas Pepsis	613
florea Andrena	1017	glabrata Mutilla	1352
florea Apis	1191	glabratus Tipha	714
florentina Apis	1149	glaucia Apis	1197
foetens Formica	1242	glaucia Bembex	658
foliator Ichneumor	260	glaucatorius Ichneumon	90
forficata Formica	1306	globosa Apis	1179
formicaria Eumenes	918	globularis Scolia	1370
formicaria Mutilla	1319	gloriator Bassus	255
formicator Ichneumon	344	gloriosa Chrysis	478
fossulana Scolia	737	gonagra Tenthredo	40
frictorius Ichneumon	97	gracilis Formica	1257
frontalis Anthophora	1176	gramminea Megilla	1052
frontalis Prosopis	940	grisea Andrena	1123
frontalis Sphex	516	grisea Apis	1187
frontalis Vespa	828	grisea Eucera	1200
frontatorius Ichneumon	242	grisea Vespa	909

grossa Formica	1300	histrionica Scolia	1369
grossa Sphe ^x	617	histrionica Tiphia	690
grossa Tiphia	692	holosericea Apis	1170
grossorius Ichneumon	91	holosericea Sphe ^x	588
guineensis Apis	1160	holsatica Vespa	785
guineensis Formica	1254	hortorum Scolia	743
guineensis Mutilla	1317	hospi ^t ator Ichneumon	280
guineensis Vespa	898	hottentotta Mutilla	1333
gulosa Andrena	1132	humilis Vespa	845
gulosa Formica	1305	hungarica Mutilla	1325
guttata Sphe ^x	552	hyalinata Sphe ^x	682
		hystrix Formica	1287
haemorrhoea Apis	1021		
haemorrhoidalis Andrena	1026	ichneumoniformis Larra	642
haemorrhoidalis Apis	1131	ignitus Ichneumon	418
haemorrhoidalis Pompilus	562	initiatorius Cryptus	161
haemorrhoidalis Scolia	728	incitator Ichneumon	321
haemorrhoidalis Sphe ^x	595	indica Apis	1159
haemorrhoidalis Tenthredo	69	infundibuliformis Eumenes	917
haemorrhoidalis Tiphia	700	initiator Ichneumon	298
haemorrhoidalis Vespa	798	insidiator Ichneumon	292
halensis Mutilla	1329	instigator Ichneumon	203
hamata Formica	1309	instructor Ichneumon	128
hapax Formica	1243	integer Thynnis	688
hastata Myrmecia	1311	integra Bembex	668
hastator Bracon	273	integra Chrysis	476
hastator Foenus	393	interrupta Apis	1151
hastator Ichneumon	343	interrupta Bembex	679
hastatus Oxybelus	1001	interrupta Hylotoma	10
Hattorfiana Nomada	1019	interrupta Scolia	767
hebreia Vespa	860	interrupta Tenthredo	60
hectica Polistes	882	interruptorius Ichneumon	93
hector Cryptus	186	interruptus Crabro	679
hemiptera Sphe ^x	581	interruptus Mellinus	999
hemiptera Tiphia	718	interstictus Philanthus	968
hemipterus Ichneumon	225	intratorius Ichneumon	86
heros Bembex	653	intricatorius Cryptus	172
heros Sphe ^x	614	iocator Ichneumon	386
hircanus Pompilus	548	irrigator Ichneumon	247
hirsuta Andrena	1033	irritator Ichneumon	310
hirta Apis	1058	irorata Ichneumon	214
hirticollis Scolia	744	irroratorius Ichneumon	157
hirtipes Andrena	1057	italica Apis	1091
hirtipes Apis	1112	italica Cynips	403
hirtipes Sphe ^x	609	italica Mutilla	1336
hirtus Pompilus	555	itinerator Ichneumon	265
hispanica Apis	1029		
histrio Banchus	1371	jamaicensis Sphe ^x	580
histrio Evania	507	Johannis Pepsis	591
histrio Ichneumon	147	juncea Vespa	899
histrio Nomada	1204	juvenilis Formica	1255
histrio Philanthus	953		

labiata Andrena	1015	lunulata Eumenes	922
labiata Apis	1192	lusca Chrysis	469
labiata Bembex	659	lusca Pepsis	622
labiata Megilla	1045	lutaria Sphex	590
labiata Sphex	527	lutea Joppa	339
labiata Vespa	789	lutea Tenthredo	62
labiatus Crabro	958	luteator Ichneumon	339
labiatus Zethus	902	luteicornis Pepsis	619
laboratorius Ichneumon	105	luteicornis Tenthredo	30
laboriosus Bombus	1103	luteipennis Pepsis	597
laeta Tenthredo	3	luteipennis Pompilus	561
laetatorius Ichneumon	114	lutorius Ichneumon	118
laetus Philanthus	965	lyncea Chrysis	470
laminator Ichneumon	268		
laminatorius Ichneumon	101	macaensis Vespa	851
lanata Apis	1167	macilenta Vespa	900
lanceolata Bracon	279	macilentus Sirex	775
lanio Vespa	842	macula Pepsis	601
lanipes Apis	1137	macula Philanthus	966
lapidarius Crabro	976	maculata Apis	1147
lapidator Ichneumon	132, 200	maculata Bembex	654
lapidum Formica	1264	maculata Chalcis	435
lapponica Apis	1078	maculata Chrysis	477
lateralis Tenthredo	43	maculata Evania	505
lateralis Vespa	861	maculata Formica	1247
latrator Ichneumon	373	maculata Sphex	550
Latreillei Bethylus	716	maculata Tiphia	693
liberatorius Cryptus	148	maculator Ichneumon	211
liliacea Polistes	849	maculatorius Ichneumon	241
limbatum Anthidium	1154	maculatus Crabro	979
lincea Chrysis	470	madraspatana Sphex	577
lineata Bembex	666	magus Sirex	74
lineata Nomara	1000	mandator Ichneumon	206
lineata Vespa	848	mandibulare Chlorion	634
lineator Ichneumon	210	mandibularis Tenthredo	41
lineatus Bassus	263	marginalis Vespa	856
lineola Mutila	1349	marginata Andrena	1024
linguaria Apis	1199	marginator Bassus	252
lobata Sphex	632	marginatorius Ichneumon	171
longimana Centris	1114	marginatus Cryptocerus	1296
longipennis Cynips	398	marginella Tenthredo	26
lotatorius Ichneumon	102	marginella Vespa	796
lucidator Ichneumon	213	marylandia Apis	1083
lucidula Chrysis	479	maura Scolia	746
lucorum Tenthredo	70	maura Sphex	681
luctuosa Apis	1120	maura Tenthredo	36
lugubris Crabro	991	maxillosa Formica	1312
lugubris Mutila	1332	maxillosa Sphex	612
lunata Bembex	660	mediator Pimpla	320
lunata Sphex	578	mediatorius Ichneumon	104
lunator Ichneumon	305	mediatus Crabro	986
lunicornis Pompilus	542	mediatus Dorylus	1314

megacephala Cynips	402	mussitans Apis	1111
megacephala Formica	1277	mutator Ichneumon	294
melanocephala Formica	1291	mutatorius Ichneumon	154
melanocephala Mutilla	1356	mutillarius Ichneumon	217, 230
melanocephala Tenthredo	18	myops Vespa	855
meliorator Pimpla	324	Myosotidis Tenthredo	63
melioratorius Ichneumon	117	mystacea Apis	1185
mensurator Ichneumon	314		
mercator Bracon	284	namea Tipha	697
mercator Ichneumon	388	narrator Ichneumon	138
mercatorius Ichneumon	109	narratorius Cryptus	168
mercatus Epeolus	1212	natatorius Ichneumon	92
meritorius Bassus	237	necator Ichneumon	216
metallica Andrena	1043	necator Pimpla	323
metallica Megilla	1050	necatorius Ichneumon	103-112
micans Pompilus	534	nemorum Apis	1075-1094
micratorius Ichneumon	111	nemorum Tenthredo	7
migrator Ichneumon	248	Nestor Vespa	851
militaris Formica	1285	nidulans Apis	1119, 1093
militaris ompilus	569	nidulans Vespa	831
minuta Andrena	1018	nidulator Ophion	377
minuta Apis	1056	niger Pompilus	526
minuta Eumenes	925	nigra Sphex	526
minuta Evania	493	nigra Tipha	701
minuta Nomada	1224	nigrator Ichneumon	123
minuta Vespa	841	nigrator Ophion	392
minutator Ichneumon	296	nigratorius Ichneumon	87
minutorius Cryptus	156	nigricornis Andrena	1141
minutorius Ichneumon	244	nigricornis Chalcis	438
minutus Bethylus	717	nigricornis Evania	492
minutus Bombus	1107	nigricornis Ichneumon	405
minutus Crabro	998	nigricornis Sirex	75
minutus Cryptocerus	1299	nigricornis Sphex	547
minutus Hylaeus	933	nigripennis Polistes	853
minutus Ichneumon	421	nigripennis Tenthredo	52
mixta Sphex	532	nigripes Mutilla	1358
mixta Tipha	1366	nigripes Sphex	683
mniorum Apis	1095	nigrita Andrena	1038
moratorius Ichneumon	85	nigrita Apis	1065
morio Apis	1060	nigrita Mellinus	939
morio Hylaeus	1010	nigrita Scolia	723
morio Ichneumon	362	nigrita Sirex	81
morio Scolia	1368	nigrita Sphex	627
morio Sphex	514	nigrita Tenthredo	55
morio Tenthredo	44, 57	nitida Sphex	545
morio Tipha	710	nitidula Chalcis	439
morio Vespa	884	nitidula Chrysis	487
moschator Ichneumon	137	nitidula Melecta	1205
motatorius Ichneumon	151	nitidula Prosopis	931
mucronatus Crabro	1002	nitidula Vespa	805
muscaria Apis	1128	nitidulus Crabro	977
musciformis Apis	1126	nitidulus Ichneumon	416

niveata Anthophora	1184	parvula Apis	1055
nobilitata Scolia	751	parvula Chrysis	486
nobilis Sphex	565	parvula Mutilla	1344
noctilio Sirex	82	parvula Polistes	894
nominator Ichneumon	270, 335	parvulus Bombus	1105
norwegica Vespa	786	pavida Tenthredo	32
notata Anthophora	1181	Pedator Ichneumon	306
notata Scolia	750	pedatorius Ichneumon	88
notator Pimpla	311	pedemontana Mutilla	1337
notulatorius Cryptus	174	pedestris Ichneumon	231
nugatorius Ichneumon	107, 108	pedestris Tiphia	712
nunciator Ichneumon	371	pediculana Centris	1144
nuptatorius Ichneumon	121	pedicularius Ichneumon	230
nutritor Ophion	385	peltatus Crabro	984
objurgator Ichneumon	182	pennator Ichneumon	266, 315
obscura Joppa	338	pennator Ophion	374
obscura Pepsis	611	perditor Cryptus	188
obscura Tenthredo	4	perditor Formica	1245
obscura Tiphia	696	petiolaris Mutilla	1347
obscuratus Ophion	360	petiolata Evania	494
obscurus Ophion	360	petiolata Leucopis	461
obsoletorius Ichneumon	98	petiolata Vespa	903
obsoletus Ichneumon	406	petiolator Ophion	390
occisorius Ichneumon	106	phthisica Vespa	881
occultus Crabro	983	phthiscus Cephus	776
ocellata Sphex	621	picta Chalcis	429
ocellator Bracon	290	pictus Banchus	352
octoguttata Scobia	760	pictus Crabro	551
oculata Chrysis	468	pilipes Andrena	1011
oculata Mutilla	1328	pilipes Apis	1033
oculata Vespa	804	plagiocephala Tarpa	6
oculator Ichneumon	143	planiceps Dryinus	574
oculatorius Ichneumon	176	planifrons Dryinus	573
olitorius Ichneumon	155	plumbea Sphex	624
olivacea Apis	1084	plumipes Apis	1115
olivacea Bembex	657	podagraria Chalcis	448
opaca Tenthredo	51	polycerator Ichneumon	302
oratorius Ichneumon	95	pomiformis Vespa	912
ornator Ichneumon	282	pomorum Chalcis	441
ornatus Philanthus	959	porrectorius Ichneumon	233
osculatorius Ichneumon	170	praecatorius Ichneumon	158
ovator Ichneumon	131	praedator Bassus	254
pacca Sirex	764	pratensis Tenthredo	68
pacifica Polistes	867	pratorum Apis	1094
pallens Apis	1146	prisma Scolia, Hellus	763
pallens Polistes	874	proficiscator Ichneumon	278
pallicornis Tenthredo	31	profligator Ichneumon	197
pallipes Formica	1293	psyllius Sirex	73
Panzeri Chrysis	471	pubescens Apis	1182
parietina Apis	1030	pubescens Formica	1234
		pubescens Polistes	888
		pubescens Sphex	607

pubicornis Hylotoma	11	quadripustulata Scolia	753
pulcher Pompilus	539	quadrum Ichneumon	411
pulicarius Ichneumon	228	quercus ilicis Cynips	394
punctata Apis	1138, 1210	quercus radicis Cynips	395
punctata Bembex	655	quercus terminalis Cynips	396
punctata Chalcis	433	quaestor Ophion	359
punctata Nomada	1003	quinquecincta Scolia	748
punctata Sphex	433	quinquecincta Tipha	694
punctata Tenthredo	67	quinquecincta Vespa	794
punctatorius Cryptus	162	quinquecinctus Crabro	963
punctatus Epeolus	1211	quinquecinctus Mellinus	948
punctatus Ichneumon	329	quinquefasciata Scolia	747
punctigera Chalcis	454	quinquefasciata Vespa	817
puncotorius Ichneumon	178	quinquemaculata Philanthus	970
punctum Polistes	863	quinquepunctata Scolia	759
punctum Sphex	513	radula Scolia	738
purgator Ichneumon	272	radula Tipha	703
purpurascens Apis	1070	radula Vespa	822
purpurascens Ichneumon	410	ramicornis Ichneumon	415
purpurata Chrysis	473	rapax Formica	1232
pusilla Chalcis	452	recreator Cryptus	205
pusilla Chrysis	489	regalis Mutila	1342
pygmaea Andrena	1027	regenerator Cryptus	196
pygmaea Apis	1106, 1361	regia Chrysis	483
pygmaea Chalcis	437	regius Pompilus	566
pygmaea Evania	497	rejecta Vespa	890
pygmaea Vespa	892	relictus Ophion	365
pyramidea Chalcis	440	remigata Melecta	1208
pyriformis Vespa	908	repanda Bembex	662
quadrator Ophion	379	repandus Crabro	684
quadricincta Apis	1047	restaurator Ichneumon	136, 193
quadricincta Mellinus	943	robator Ichneumon	312
quadricincta Vespa	815	rostrata Formica	1308
quadricinctus Apis	1006, 1047	rotundata Apis	1153
quadricinctus Crabro	982	rubiginosa Scolia	729
quadridens Formica	1286	ruderatus Apis	1074
quadrifasciata Mellinus	944	rufibarbis Formica	1246
quadrifasciata Scolia	739	ruficeps Formica	1249
quadrifasciata Vespa	816	ruficollis Chalcis	449
quadriguttata Scolia	761	ruficollis Evania	510
quadrimeaculata Scolia	724	ruficollis Mutila	1345
quadrimeaculata Tenthredo	47	ruficornis Bembex	647
quadrimeaculatus Crabro	975	ruficornis Cynips	401
quadrinotata Scolia	725	ruficornis Eucera	1198
quadripunctata Andrena	1016	ruficornis Evania	496
quadripunctata Chalcis	447	ruficornis Formica	1229
quadripunctata Scolia	758	ruficornis Mellinus	942
quadripunctata Sphex	623	ruficornis Mutila	1324
quadripunctata Vespa	839	ruficornis Philanthus	967
quadripunctatus Crabro	996	ruficornis Scolia	730
quadripustulata Lara	753	ruficornis Sphex	620

ruficornis <i>Tiphia</i>	1367	senilis <i>Bembex</i>	669
ruficornis <i>Xylocopa</i>	1067	senilis <i>Pompilus</i>	519
rufifrons <i>Larra</i>	649	senilis <i>Scolia</i>	768
rufipennis <i>Apis</i>	1168	septemcincta <i>Scolia</i>	769
rufipennis <i>Liris</i>	673	serena <i>Tiphia</i>	698
rufipennis <i>Sphecius</i>	599	sericea <i>Formica</i>	1290
rufipennis <i>Tenthredo</i>	37	sericea <i>Pepsis</i>	604
rufipes <i>Andrena</i>	1014	sericea <i>Vespa</i>	832
rufipes <i>Apis</i>	1155, 1175	sericeus <i>Ichneumon</i>	223
rufipes <i>Crabro</i>	957	serrator <i>Ichneumon</i>	291
rufipes <i>Cynips</i>	399	serratorius <i>Cryptus</i>	165
rufipes <i>Evania</i>	495	serratulae <i>Cynips</i>	397
rufipes <i>Formica</i>	1230	serricornis <i>Pepsis</i>	626
rufipes <i>Liris</i>	678	serripes <i>Chalcis</i>	444
rufipes <i>Mutilla</i>	1355	serripes <i>Vespa</i>	814
rufipes <i>Nomada</i>	1214	sessilis <i>Evania</i>	512
rufipes <i>Podium</i>	503	serva <i>Tenthredo</i>	20
rufipes <i>Vespa</i>	802	sexincta <i>Scolia</i>	766
rufitarsis <i>Formica</i>	1260	sexinctus <i>Apis</i>	1007
rufiventre <i>Podium</i>	504	sexinctus <i>Crabro</i>	980
rufiventris <i>Anthophora</i>	1186	sexdentata <i>Chrysis</i>	485
rufiventris <i>Formica</i>	1271	sexdentata <i>Chrysis</i>	485
rufiventris <i>Scolia</i>	757	sexfasciata <i>Bembex</i>	670
rufiventris <i>Tenthredo</i>	37	sexfasciata <i>Vespa</i>	821
rupestris <i>Apis</i>	1087, 1359	sexguttata <i>Formica</i>	1241
rusticus <i>Pompilus</i>	567	sexguttata <i>Scolia</i>	762
sabulosus <i>Crabro</i>	941	sexmaculata <i>Scolia</i>	727
saltator <i>Ichneumon</i>	380	sexpunctata <i>Scolia</i>	759
sanguinolenta <i>Sphecius</i>	530	sexpunctatus <i>Philanthus</i>	962
sartor <i>Cryptus</i>	184	sexpunctatus <i>Pompilus</i>	342
Saxonia <i>Vespa</i>	784	sibirica <i>Apis</i>	1092
scaber <i>Mellinus</i>	937	sibirica <i>Sphecius</i>	635
scraborator <i>Ichneumon</i>	143	signata <i>Tenthredo</i>	66
schach <i>Vespa</i>	843	signatorius <i>Ichneumon</i>	153
Schottii <i>Nomada</i>	1221	similator <i>Bracon</i>	281
scutatus <i>Crabro</i>	985	similatorius <i>Ichneumon</i>	116
scutellaris <i>Nomada</i>	1207	similis <i>Bombus</i>	1098
scutellaris <i>Tenthredo</i>	59	similis <i>Hylaeus</i>	932
scutellaris <i>Vespa</i>	830	similis <i>Sirex</i>	765
scutellata <i>Chrysis</i>	467	similis <i>Sphecius</i>	521
scutellata <i>Scolia</i>	736	simplex <i>Chalcis</i>	442
seductor <i>Cryptus</i>	190	simplex <i>Vespa</i>	819
seductorius <i>Ichneumon</i>	236	sinuata <i>Vespa</i>	825
segmentaria <i>Apis</i>	1164	sinuatus <i>Crabro</i>	981
segmentaria <i>Tenthredo</i>	61	smaragdina <i>Formica</i>	1227
segmentator <i>Ichneumon</i>	308	smaragdula <i>Apis</i>	1053
segmentorius <i>Bassus</i>	245	smaragdula <i>Chrysis</i>	464
seladonia <i>Apis</i>	1051	soeroensis <i>Apis</i>	1077
semicincta <i>Apis</i>	1190	sollicitarius <i>Ichneumon</i>	120
seminuda <i>Apis</i>	1173	speciosa <i>Sphecius</i>	629
senilis <i>Apis</i>	1102	speculator <i>Bracon</i>	276
		spectator <i>Bassus</i>	259

sphegea Mutilla	1339	tarsata Formica	1267
Sphegium Ichneumon	412	tarsata Tenthredo	42
spinarum Tenthredo	19	tarsator Ophion	370
spinator Ichneumon	251	tarsatorius Cryptus	160
spinator Ophion	383	tarsatum Anthidium	1148
spinatorius Cryptus	163	tecta Vespa	810
spinipes Apis	1142	tenuis Formica	1258
spinosa Bembex	664	tepidia Vespa	847
spinosa Ceropales	509	testacea Formica	1237
spinosa Euglossa	1145	testacea Polistes	873
spinosa Eumenes	923	testaceus Ichneumon	262
spinosus Crabro	973	teutonus Pompilus	543
spiralis Andrena	1372	Thomae Sphex	593
splendens Ichneumon	417	thoracica Apis	1012
splendida Apis	1062	thoracica Forica	1228
splendida Chrysis	463	thoracica Scolia	708
splendidulus Pompilus	536	thoracica Tiphia	707
splendidum Chlorion	636	thoracicus Hylaeus	1008
splendidus Ichneumon	417	tibialis Centris	1139
sponsatorius Ichneumon	100	tibialis Crabro	993
sponsor Ichneumon	195	tibialis Nomada	1209
sponsorius Ichneumon	119	tibialis Sphex	606
sputator Ichneumon	126	togata Tenthredo	33
squamigera Vespa	836	tomentosa Sphex	603
stellata Sphex	618	tornator Cryptus	187
stercorator Ichneumon	319	tranquebaricus Bombus	1072
stictica Apis	1150	transversa Vespa	788
sticticus Ichneumon	219	trepida Xylocopa	1066
stigma Cleptes	419	trianguluni Hylaeus	1364
stigma Formica	1238	triangulum Vespa	954
stigma Ichneumon	413	tricincta Liris	676
stigma Nomada	1217	tricincta Tenthredo	28
stigma Tenthredo	65	tricincta Tiphia	706
stigma Vespa	811	tricincta Vespa	781
stigmatizans Ichneumon	419	tricinctus Crabro	990
striata Bembex	567	tricinctus Mellinus	947
striata Nomada	1216	tricolor Andrena	1034
striata Vespa	850	tricolor Ichneumon	366
strigata Andrena	1037	tricolor Sphex	652
strigator Ichneumon	322	tricolor Vespa	833
strigosa Tenthredo	45	tridens Crabro	1003
subterraneus Crabro	978	tridens Scolia	740
sulphuratorius Bassus	239	tridens Vespa	988
sulphurea Tenthredo	49	tridentata Apis	1189
sumatrae Polistes	862	tridentata Formica	1281
sutor Cryptus	185	tridentatus Bembex, Crabro, Scolia	741
sylvarum Tenthredo	1	trifasciata Tiphia	705
tabida Vespa	879	trifasciata Vespa	824
tabidus Sirex	777	trifidus Philanthus	964
tabiformis Centris	1129	triloba Vespa	820
tamula Vespa	866	tripunctata Vespa	826
		tripunctator Ichneumon	208

trispinosa Apis	1004	variegata Scolia	731
tristis Tenthredo	2, 58	variegata Sphecodes	528
tristrigata Vespa	946	variegata Tiphia	695
tristrigatus Mellinus	946	variegata Vespa	823
troglodyta Sirex	773	variegator Ichneumon	349
truncator Ichneumon	249	variegatus Mellinus	935
truncorum Formica	1248	varius Ichneumon	353
tuberculata Apis	1195	varius Pompilus	520
tuberculata Formica	1268	velox Tenthredo	39
tuberculata Mitilla	1350	ventilabris Philanthus	956
tuberum Formica	1261	versicolor Apis	1133
tumulorum Megilla	1031	versicolor Mutilla	1338
tunensis Apis	1180	verticalis Joppa	334
tunensis Mutilla	1330	verticalis Scolia	752
turcica Sphecodes	554	verticillatus Ichneumon	414
umbraculata Centris	1113	vespertilio Sirex	72
umbraculatus Cryptocerus	1298	vespiformis Masaris	926
umbratus Ichneumon	221	vespiformis Sphecodes	639
uncinata Vespa	801	vestita Apis	1013
unicolor Salius	341	veterana Apis	1104
unicolor Sphecodes	596	viatica Formica	1250
unifasciata Scolia	745	viduatorius Cryptus	149
unispinosa Formica	1304	vigilator Ichneumon	125
urinator Ichneumon	295	villosa Apis	1360
Ursus Sphecodes	525	villosa Formica	1269
vaga Tenthredo	50	villosa Sphecodes	556
vagans Formica	1263	villosa Tiphia	711
vagans Mutilla	1357	villosus Bethylus	713
vagatorius Ichneumon	303	vindicator Cryptus	183
vagatorius Ichneumon	109	violacea Sphecodes	602
varia Vespa	887	virescens Andrena	1046
variabilis Vespa	859	virescens Formica	1294
varians Liris	675	virginea Polistes	876
variatorius Cryptus	177	viridator Banchus	346
varicornis Crabro	994	viridula Apis	1048
varicornis Ichneumon	328	volvulus Scolia	771
variegata Apis	1152	vorax Formica	1280
variegata Chalcis	430	vulpina Andrena	1023
variegata Evania	506	Zonator Ichneumon	246