

The Linnean types of *Ichneumon* flies.

By

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The private collections of Carl von Linné were after his death purchased by sir J. E. Smith, came soon to the Linnean Society in London and are its chief treasure. Much as this transaction must be deplored from Swedish side, for the collections themselves is has pretty certainly been an advantage. In Sweden they would probably have been for a long time more or less neglected and ill-used, in England they have always been an object for veneration, and parts of them also for study.

The insects crossed the North Sea in a none too good state of preservation after their sojourn in the damp little museum building at Hammarby, Linné's summer residence. Smith incorporated them with his own collection but had the good sense to retain the original labels, who alone make it possible to recognize the Linnean specimens. Generally the existing specimens are genuine, but in a few cases changes of labels or specimens have been made which complicate the identification of types. A number of species are lost, but most of these were probably missing already at the sending out of the collection.

Curiously enough the Ichneumonid types have, to my knowledge, never been studied except one species (*compunctor*). Mr. Morley in his extensive work »Ichneumons of Great Britain» (5 vols.) never mentions their existence, much less used them. Many Linnean names are now used in a traditional way, mostly as Gravenhorst placed them, without having seen the types, in his big »Ichneumonologia Europæa» of 1829. Almost no later author seems to have had any curiosity about the correctness of his identifications, which were, as will be shown, in many cases wrong. — My own interest in these types may be taken for a result of numerous excursions in the Upsala region during my student years at the university where Linné lectured. By them I got a fairly good acquaintance with Linné's collecting ground and its Ichneumonid fauna. It is only natural that I wanted to study his types, the great majority of which were taken in the surroundings of Upsala, prob-

ably all those for which no other locality is indicated. In the spring of 1928 came at last the desired opportunity by a grant from the Swedish Academy of Sciences, supplemented by a courteous positive answer from the Linnean Society to my application for permission to study the Linnean specimens.

To both these celebrated institutions I tend my humble and sincere thanks and wish to specially acknowledge the kind help given by the officials of the Society, among whom I had most to do with Mr. Spencer Savage.

When studying the types it was sometimes felt as an inconvenience that there was no material for comparison at hand; one species (*prærogator*) could not be definitely named for that reason. The collection would no doubt be of more use if deposited in the British Museum, as has already been proposed, but one can easily understand that the Society does not like to be deprived of its most valued possession. — During my visit in 1928 the Linné specimens were still mixed with the Smith collection, but in a brief visit 1930 I saw that they had been rearranged as a special collection, probably according to Dr. Jackson's Catalogue of 1913. This catalogue being compiled exclusively from signs in Linné's own copies of *Syst. naturæ* ed. X and XII, cannot pretend to correctly enumerate the species present at the death of Linné, and the collection shows this conclusively. There are 13 types of *Ichneumonoidea* not in the catalogue but existing in the collection, 4 names in the catalogue are not represented by types, and one name in the catalogue is represented by another in the collection (*agricolator*). Two of the species not represented by types I consider as nevertheless correctly identified (*raptorius* and *strobilellæ*). — In the Stockholm Museum there is a unique Linnean type belonging to the De Geer collection: *Ichn. ariolator* from Surinam, a Cryptine ♂ whose ♀ I had the good fortune to capture in 1915 at Rio Branco in Brazilian Amazonas.

Of Linné's works the following were indispensable for elucidating the types:

Fauna suecica ed. I, 1746, and ed. II, 1761.

Systema naturæ ed. X, 1758, and ed. XII, 1767.

Mentioned above is the catalogue of the Linnean Society: Jackson, B. D. Catalogue of the Linnean specimens of *Amphibia*, *Insecta* and *Testacea* noted by Carl von Linné. Transcribed and codified by — — —. Suppl. to Proc. Linn. Soc. for the 125th Sess., 1912—13. London 1913. 48 sides.

I have to thank the Society for a copy of this catalogue.

Discussion of types.

Acarorum (*Mutilla*) 1758, p. 593 = *Gelis ac.* L. & auct. a Foerst.

The unique type is glued on a quadrangular piece of paper and fits the short diagnose. But the description in *Fauna Suecica* ed. II is added later and belongs to another species (*»thorax niger»*) no longer represented. — Linné's other *Gelis*, *Mut. formicaria*, no longer exists, and the species now called so may be that of Gravenhorst and Foerster, but has its safe fundament in Thomson's description of 1884.

agricolator (*Ichneumon*¹) 1767 no. 54 = *Cenocoelius secalis* L. 1758, p. 567.

Syn. *Cenoc. rubriceps* Ratz., Thoms.

The type is a ♀ without abdomen and hind legs. Already Linné discovered the identity of *secalis* and *agricolator*, for the Linnean label on the type carries both names, thus

agricolator
secalis

Perhaps this means that the same specimen represents both species, for there is no separate specimen of *secalis*, though only this name figures in the list of Jackson (p. 35).

aphidum 1746 no. 953, 1758, p. 568 = ?*Aphidius* sp.

The specimen carrying a Linnean label with this name is no type, because it does not fit the description. In fact, it belongs to the next species in the collection (as it was arranged in the spring of 1928), *Spathius exarator* L. The real *aphidum* L. almost certainly was an *Aphidius* Nees, and it would be the genotype if we only knew what species it was, but this unfortunately never can be known.

assectator 1758, p. 566 = *Gasteruption ass.* L. & auct. pro p.

Syn. *Gast. affectator* auct. pro p.

A pair of which the ♀ suits the description and is the type, the ♂ being of another species, *jaculator* L. Since Schletterer's monograph of 1889 it has been usual to spell the species name *affectator*, but this has no support in Linné's works. Everywhere it is written with the long *ſ* or *f*, not with the similar *f* or *f*, so *assectator* is the correct name, whatever Linné may have meant with it.

bicolorus 1767 no. 58 = *Ctenochares bic.* L.

Syn. *Ct. instructor* Fabr.

The type is a ♀ lacking the antennæ. Near it in the box was another ♀ of the same species. This is the only exclusively southern species among the existing types of *Ichneumonoidea*.

¹ Like all the following species.

cinctus 1746 n:o 984, 1758, p. 566 = *Hemiteles c.* L.

Syn. *H. bicolorinus* Gr.

There is a single ♀ without antennæ and legs. Not occurring in Jackson's list.

circumflexus 1746 no. 974, 1758, p. 566 = *Exochilum circ.* L. & auct.

One ♀ without antennæ, certainly the type.

comitator 1758, p. 563 = *Coelichneumon com.* L. non auct.

Syn. *C. lineator* F. & auct.

One ♀ in the collection, probably the type. The diagnose is so short that any black Ichneumonine with white antennal ring will suit it. Linné evidently did not see through his weak lens the white points on the vertex and before the scutellum, so when Fabricius discovered the latter ones he took it for granted there was a new species before him. The *comitator* auct. non L. will need another name, but I am afraid *auspex* O. F. Müller 1776 and *fasciatus* Gmelin 1790 who are next in turn according to Dalla Torre's Catalogue, are of rather dubious identity.

compunctor 1746 n:o 957, 1758, p. 564 = *Apechthis comp.* L.

Syn. *A. brassicarie* Poda.

There are two ♀ in the collection, as already reported by Mr. R. E. Turner, who by request of Messrs. Cushman and Rohwer (Proc. ent. Soc. Wash. 20, 1918, p. 187) inspected this species. He thought both specimens to be *Pimpla instigator* F. and found it most uncertain that either should be the type. — My opinion about these specimens is another. They belong to different species and according to modern taxonomy also to different genera. The first specimen, with label »957?», is almost certainly Linnean, for it exactly suits the description of *compunctor*; it is *Apechthis brassicarie* Poda. The second specimen, with label »Angl. J. E. S.», belongs to Smith's collection and has of course no type value; it is *Pimpla instigator* F. In the Linnean description of 1746 there is one character fitting *brassicarie* but not *instigator*: »Antennæ — — — subtus secundum totam longitudinem dilute testaceæ — — —». It is unfortunately not included in the diagnose of 1758, which may belong to either species, but its discriminating value remains undiminished. — In Jackson's list this species is absent.

constrictorius 1758, p. 561 = ?

The single specimen, a *Ctenichneumon* ♀, has an apparently Linnean label, but with a ? under the name. It cannot well be

the type, for the thorax is not at all bidentate, as the diagnose requires.

crispatorius 1758, p. 561 = *Amblyteles* cr. L. & auct.

One ♀ in good condition. There has never been any doubt about this species, which I have myself found a few times hibernating in spruce stumps near Upsala.

culpatorius 1758, p. 561 = *Probolus culp.* L. non auct.

Syn. *P. alticola* Gr.

There is a specimen of each sex, the ♀ carrying a Linnean label and being the type. The ♂ lacks head and hind legs and is quite different, *Hoplismenus bispinatorius* Thunb. — Absent from Jackson's list.

deliratorius 1758, p. 562, 1761 no. 1597 = *Ichneumon del.* L. & auct.

One ♂ with no antennæ, type. The diagnose of 1758 gives no certainty, but the description of 1761 is convincing.

denigrator 1758, p. 563 = *Atanycolus den.* L. non auct.

Syn. *A. heteropus* Thoms.

Two ♀ are in the collection, the first one carries a Linnean label and is the type. It is in good condition and measures 10—11 mm in length. The usually so-called *denigrator* has the 1st tergite black, which is not supported either by diagnose or by description (1761). The same species has joint 5 of the hind tarsi distinctly shorter than 3 and only a little longer than 4, in *heteropus* joints 3 and 5 are about equal, 4 considerably shorter. I have taken *heteropus* myself in the prov. of Upland on a felled spruce trunk. — The other ♀ is no doubt the one mentioned 1761: »Alium vidi simillimum» etc.; it is *Cyanopterus flavator* F., which species Fahringer 1926 evidently doubted as a Swedish denizen. It goes farther northwards than Upsala, the Stockholm Museum possessing specimens from the province of Hälsingland and myself one from Jämtland.

desertor 1758, p. 563 = *Cremnops des.* L. & auct.

One ♀, certainly the type. I have found it myself in the prov. of Upland, where it is, however, rare enough.

designatorius 1746 n:o 965, 1758, p. 562 = *Melanichneumon des.* L.

Syn. *M. fortipes* Wesm.

The single ♂ in the collection, no doubt the type, has the scutellum totally white. Generally only the sides and apex of the ♂ scutellum are pale, but already Kriechbaumer, who 1898 first described this male, mentions both forms of ornamentation. Thom-

son 1896 introduced *fortipes* as Swedish from just the province of Upland, and I have later got a ♀ from Dalecarlia (leg. E. Klefbeck) which so far marks the northern limit of the species.

edictorius 1746 no. 960, 1758, p. 562 = *Ctenichneumon ed.* L. non auct.

Syn. *Ct. fossorius pallipes* Grav.

Two ♂ in the collection, both of the same species and agreeing with the description. In autumn, this is the commonest form of the genus in the conifer woods about Upsala; that Linné 1746 writes: »Habitat in pratis», must not be taken too literally. Before this, *edictorius* was considered a ♂ variety of *Ct. divisorius* Gr., which species is a southern one in Sweden and scarcely found at Upsala.

exarator 1758, p. 564 = *Spathius ex.* L. & auct.

Two ♀ without head in the collection, a Linnean label designating the type. Not in Jackson's list. An easily recognized house-insect and consequently always correctly understood.

extensor 1746 no. 986, 1758, p. 564 = *Eubadizon ext.* L. & Marshall.

Syn. *E. pectoralis* Nees & auct.

One ♀ with Linnean label, certainly the type though Linné expressly states in his 1758 diagnose: »corpore nigro immaculato». — This species has always been a mystery, several authors have tried to solve it in different ways, and I suppose Marshall had seen this type before giving the correct name. The red mesosternum was probably never seen by Linné, for specimens were at that time — and much later, too — meant to remain in their boxes and were consequently usually studied from above with weak lenses. What specially strenghtens my conviction of the present specimen as the type, is the mentioning 1746 of »duæ setæ sive tentacula ad os». Looking at the specimen, no doubt the maxillary palps are meant. In most specimens these are invisible from above, but here the head is sharply reclined and the long white palps show off excellently. In his own copy of Syst. Nat. ed. 10, Linné has changed in ink »tentaculis» to »palpis».

fossorius 1761 no. 1599 = *Amblyteles foss.* L. non auct.

Syn. *A. subsericans* Gr.

There is one ♂, certainly the type. G. Heinrich wants this species to be included in the genus *Limerodes* Wesm. The well-known *fossorius* Grav. will have to take another Linnean name (see *edictorius*), but is of another genus. — Among the Fabricius types in Brit. Mus. there is a *subsericans*, correctly labelled as *fossorius* L., and Grav. quotes *foss.* L. as a synonym of *subser.*

fusorius 1761 n:o 1598 = *Protichneumon fus.* L. non Thoms.

Syn. *Ichn. fuscus* L. 1767; *P. pisorius* Thoms. non L.

There are three ♂, all *Protichneumon* of different species. First comes the type, then *P. fuscipennis* W. with totally black face, and lastly *P. fusorius* Thoms. with black and yellow hind femora. Evidently *fusorius* comprised all *Protichneumons* with red abdomen and black antennæ, that is the males, while their females with white-ringed antennæ formed *pisorius* L. The real species were to Linné and his followers inclusive Gravenhorst simple varieties. The type is specially recognized by »frons lineæ lutea ante singulum oculum», viz. pale anterior orbits. Not in Jackson's list.

glaucopterus 1746 no. 973, 1758, p. 566 = *Opheltes gl.* L. & auct.

Only one specimen with four abdominal segments left. There seems never to have been any doubt about this species.

incubitor 1746 no. 970, 1758, p. 563 = *Gambrus inc.* L. non auct.

Syn. *G. ornatus* Grav.

There are three ♀, the first of which carries a Linnean label and is probably the type. It lacks hind legs and looks freshly emerged, the tip of the abdomen carrying a large mass of whitish materia. Since the sixth tergite has no white spot and the nervellus is broken below the middle, the specimen may belong to *G. inferus* Thoms., but femora I are not black at base and femora III are described as simply red. I do not think *inferus* differs specifically from *ornatus*, Thomson described many species from too scanty material. The second specimen is *Spilocryptus mandator* L. (*cimbicis* Tschek) with the four anterior coxæ black. The third specimen, with a label »970?», is a typical *G. ornatus* Gr. Not in Jackson's list.

inculcator 1746 no. 972, 1758, p. 565 = *Cryptus inc.* L.

Syn. *C. sponsor* F.

One ♀ with Linnean label, probably the type, because the strongly incurved abdomen seems to agree with the words »abdomine falcato» in F. suc. ed. II. The antennæ are simply called »nigræ», but in the present specimen two of the middle joints have a small white spot above, evidently not observed by Linné. This species is a distinctly southern one in Sweden, but may still be found at Upsala, where I have taken it.

infractorius 1761 no. 1584 = *Platylabus inf.* L. non auct.

Syn. *P. phaleratus* Hal.; *P. leucogrammus* Wesm.

One ♀ in very good condition, certainly the type. Thanks to the characteristic white pattern I guessed this synonymy already in 1914 (Ark. f. zool. 9: 2).

jaculator 1746 no. 985, 1758, p. 565 = *Gasteruption jac.* L., Thoms.

Syn. *G. Thomsoni* Schlett.

Two ♀ of the same species in the collection, certainly types. In all southern Sweden and still at Upsala this is by far the commonest long-tailed species. It soon begins to be superseded by *G. subtile* Thoms., which species is in the prov. of Hälsingland (lat. 61—62° N.) the only long-tailed one to my experience.

lituratorius 1761 no. 1594 = *Hypsantyx lit.* L. non auct.

Syn. *H. impressus* Grav.

The single ♂ is in good condition and certainly the type. From Thunberg and Gravenhorst till now this name has been used for another tryphonine of the genus *Diaborus* Först., Thoms., where the pale pattern on each tergite consists in a semicircular white spot behind. In *Hypsantyx* ♂ only the apical margin of the four first tergites is yellow in the middle, just as Linné describes it (in the ♀ only the three first apical margins are yellow-marked, the 3d one often obsolete). The name to be assumed by the *Diaborus* seems to be *scalaris* Gr. 1829, for *lituratorius* Thunb. 1822, 1824 has two other species as types (see Roman 1912).

luctatorius 1746 no. 983, 1758, p. 562 = *Amblyteles luct.* L. non auct.

Syn. *A. erratorius* Thunb.; *culpatorius* Grav.; *litigiosus* Wesm.

The collection contains three ♂ of different species. The first one is certainly the type, because the fourth tergite with its 3 dark red spots agrees exactly with the description. Only one previous author has made a correct guess at *luctatorius* L., but that author was Thomson (Ann. soc. ent. France 1886, p. 24). — The other two specimens are *Ichneumon suspiciosus* Wesm. and *Amblyteles (Spilichn.) occisorius* F., of which *suspiciosus* is common in the woods around Upsala, but *occisorius* is a distinctly southern species I have never myself found at Upsala. *A. erratorius* is rather scarce around Upsala and I cannot remember having found the ♂ there, but the ♀ used to occur in spring, running on the ground in sunny, grassy places.

luteus 1746 no. 967, 1758, p. 566 = *Ophion lut.* L., Thoms.

As arranged in the spring of 1928, there were 4 specimens in two rows. The first one, a ♂, seems to be the type, carrying a Linnean label and being rather uniformly yellow. The next specimen is a ♀ of the white-designed *O. obscurus* F., the third one, labelled »Angl. Jones» is *Paniscus ocellaris* Thoms. ♂, and lastly comes with no label a ♀ of *Enicospilus merdarius* Grav.

mandator 1758, p. 565 = *Spilocryptus mand.* L.

Syn. *S. cimbicis* Tschek.

The two ♂ in the collection are probably types, for they agree with the few characters mentioned. Evidently they were only looked at from above, where the white ornaments on face, coxæ, trochanters I, II and tarsi III are invisible. The species occurs more or less in southern and central Sweden. Not in Jackson's list.

manifestator 1746 no. 959, 1758, p. 563 = *Ephialtes man.* L. non auct.

Syn. *E. carbonarius* auct.

There are four ♀ of three species in the collection. Specimens 1 and 3 belong to the type species, 1 being recognizable as type by the very long terebra with diverging halves of the sheath. The second specimen is a huge *E. gnathaulax* Thoms., 20 mm long; the last one is labelled »Angl. Jones» and came from Smith's collection, it is *mesocentrus* Gr. Thus the traditional *manifestator* is altogether absent and must take either the name *imperator* Kriechb. (1854) or, if correctly included among the synonyms by Dalla Torre, *adulator* Vill. (1789). On the other hand, Gravenhorst as early as 1807 correctly used the name *manifestator* L.

moderator 1758, p. 564 = *Nemeritis (Phædroctonus) mod.* L. non auct.

Syn. *C. flaviventris* Ratz., Rn.; *N. cremastoides* Holm. & auct.

The single ♀ in the collection is gummed on a large piece of paper beside a white, cylindrical cocoon, the paper carrying the inscription »strobilell». This is almost certainly the type, the only objection being the length of the terebra. In the present species it is not quite the length of the abdomen, Linné's description says »aculeo corpore subbreuiore»; evidently he judged it rather hastily. — According to Linné, *moderator* is a parasite of his *Ichn. strobilella*, but later investigation in Sweden (see I. Trägårdh 1917) has shown *N. flaviventris* directly to parasitize the spruce cone moth *Laspeyresia strobilella* L.

molitorius 1761 no. 1587 = *Ichneumon mol.* L. & auct.

Syn. *I. crassifemur* Thoms.

Two ♀ in the collection, certainly types. Both agree more or less in the sculpture of their hind femora with *crassifemur*. In 1910 I saw Thomson's types of that name and did not think them deserve specific rank. In the latest years G. Heinrich has expressed the same opinion and thinks moreover that *melanotis* Holmg. is another synonym. He may be right about *melanotis*, but I am not yet quite convinced. — Not in Jackson's list.

peregrinator 1758, p. 563 = *Barichneumon per.* L. non Gr. nec Rn.

Syn. *I. scriptorius* Thunb.; *vacillatorius* Grav.

Represented by three different ♀, of which the first one with Linnean label is probably the type. Of this species Linné gave a very meagre diagnose, not supplemented by any later description. In Thunberg's collection *peregrinator* is represented by *Ichn. latrator* Grav., which species I 1912 found very acceptable. The present species is, however, still a little closer to the diagnose, for »segmentis duobus ultimis nigris» certainly suits *scriptorius* better than *latrator*, where the black abdominal tip is broader. On the other side, »ano albido» is more like *latrator* than *scriptorius* who has only pale membranaceous margins at tip. At Upsala I have found *scriptorius* ♀ in numbers running on window-panes and think this to be no rare occurrence; Linné may have found it the same way. — The second specimen has the terebra exerted and is a *Microcryptus* with thick antennæ and pale tip of the scutellum. The last ♀ is a small *Ichneumon* of the *latrator* group with black femora, possibly *spurius* Wesm. — Not in Jackson's list.

persuasorius 1746 n:o 964, 1758, p. 562 = *Rhyssa pers.* L. & auct.

One pair without heads, certainty types. Occurs in the pine woods of all the holarctic zone.

pisorius 1746 no. 966 & 968, 1758, p. 561 = *Protichneumon pis.* L. non Thoms.

Syn. *P. fusorius* Thoms. non L.

Only one ♀ in the collection, certainly type of F. Suec. 966, though the tibiæ III are yellow with black ends, but probably Linné did not observe this difference from the other species with red abdomen, the tibiæ not being readily seen from above. This species is the regular parasite of *Sphinx pinastri* and has nothing to do with »*Phalæna*» *psi*. Linné's statement applies to F. suec. 968, now lost, as is evident by his own copy of this work, where it is added to that number in ink. — Thomson's ingenious interpretation of *pisorius* and *fusorius* has unfortunately foundered on priority. Linné no doubt originally meant no. 968 with his *pisorius*, but included no. 966 when he named it. This species has to carry the name not only because it stands first, but also because it is the one we certainly know. In Syst. nat. ed. XII there is added to *pisorius* a »variety» with ferrugineous antennæ and femora, which seems to be *Trogus lutorius* F.

prærogator 1758, p. 565 = *Angitia præ.* L. non auct.

Syn. *A. ?armillata* Grav.

The single ♂ is certainly the type. It is gummed on a large piece of paper beside a thick white cocoon; on the paper is the note in ink: »*Salicis*». The species could not be reliably determined from lack of material for comparison, *Angitia* being a large

and difficult genus and more so in the ♂ sex. -- Since Gravenhorst we are accustomed to use this name for the Tryphonine *Dyspetes*, a southern species I have never found at Upsala, and moreover an enemy of sawflies, not of moths.

pugillator 1746 no. 975, 1758, p. 565 = *Anomalon pug.* L. non auct. (?).

Syn. *A. latro* Grav. var.

One pair in the collection, the ♂ carrying a Linnean label but certainly not the type, because it has the whole face yellow. The ♀ ought to be type, but I am not quite sure, for Linné has a couple of bewildering statements. In the diagnose he says: »pedibusque lutels.», but in the description: »pedes maxima parte nigri sunt». In the pair at hand the legs I and II are red, III black with largely red tibiae, all coxae black. Furthermore the species is said to be common: »Habitat vulgaris Upsaliae, frequens in viis», which is certainly not true about anything like this species in the Upsala region. I have once or twice found specimens of the allied group *Erigorgus*, but never *A. latro*. Perhaps Linné had the luck to find this species once swarming in numbers, but I think it more probable he confounded a lot of more or less similar Ophionines and happened to pick out this pair as a sample of them all. The *latro* group like *Erigorgus* are vernal or early summer forms, but at the same time a few species of *Campoplex* use to be flying, some years numerous enough to be called common. All these Ophionines are very quick to sting when grasped with the fingers. — As a result of this discussion I think we may accept the present species as *pugillator*, the pair at hand suiting the description enough to be possibly the original one. Since Foerster an early species of *Campoplex* has had this name, and I think it can keep it, though with Foerster as author.

quaesitorius 1761 no. 1582 = *Ichneumon quaes.* L. & auct.

One ♀, certainly the type. A rare species I have never found myself. There is also a ♂ of *Hoplismenus terrificus* Wesm., not agreeing with the description.

raptorius 1758, p. 561 = (*Amblyteles* [*Spilichn.*] *rapt.* L. sec. Thoms., non auct.)

(Syn. *A. quadriguttorius* Thunb.; *Gravenhorsti* Wesm.).

Represented by a ♀ of *Ichneumon primatorius* Forst. with Linnean label, but certainly not the type. The reasons against are: 1. the fourth abdominal tergite has no white spot above, 2. femora I are largely black, 3. the conspicuous whitish spot above on the hind coxae and 4. the large size are not mentioned by Linné,

which is rather unlikely. Beside this ♀ there is another, English one of the same species.

Already in 1812 I expressed my endorsement of Thomson's 1887 opinion about the identity of this species. No other species from Upsala has regularly a white spot on the fourth abdominal tergite, so I am still convinced Thomson is right. The description of 1761 means another species (see Roman 1912).

reluctator 1758, p. 563 = *Echthrus rel.* L. & auct.

The type is a rather small ♀ of this wellknown forest species. In England the black-legged form of it was introduced 1907 by Cl. Morley as the Cryptine *Nyxeophilus corsicus* Marsh., but in 1908 he wrote about the Pimpline *E. reluctator* without mentioning the former name. The genus really belongs to the *Cryptinae*.

resinellæ 1758, p. 565 = *Macrocentrus res.* L.

Syn. *M. thoracicus* Nees, Thoms.

A single ♂ gummed on a piece of paper with »*Resinellæ*» written in Linné's hand. This type has the thorax quite black with fulvous legs, the hind tibiæ, however, brown with yellow base. No *Macrocentrus* is enumerated by either Marshall or Dalla Torre as a parasite of *Evetria resinella*, but de Gaulle's French Catalogue of 1908 reports *M. interstitialis* Ratz. from this host. Ratzeburg has described the species as a *Brachistes* and Marshall lists it as a doubtful species of *Calyptus*; why de G. has transferred it to *Macrocentrus* is unknown to me.

ruspator 1758, p. 565 = *Helcon rusp.* L. & auct.

One ♀ without antennæ. certainly type. Not in Jackson's list.

rutilator 1761 no. 1607 = *Tryphon rut.* L. & auct.

One ♀, certainly type. As in continental Europe, this species is common in the greater part of Sweden on meadows, but does not extend to the subalpine meadows in the northwestern part of the country.

sarcitorius 1746 n:o 976, 1758, p. 561 = *Ichneumon sarc.* L. & auct.

Three ♀ in the collection, one with Linnean label, certainly the type. The ♂ is rather different and was described as *vaginatorius* L.

saturatorius 1758, p. 561 = *Melanichneumon sat.* L. & auct.

One pair of the same species, the ♀ with Linnean label and probably the type. Like the three preceding species, this one has always been correctly recognized.

strobilellæ 1758, p. 564 = (*Ephialtes strob.* L.).

(Syn. *E. glabratus* Ratz.)

The pair whose ♀ carries a Linnean label with this name, does not fit the description at all, but it agrees excellently with

turionellæ, and I have consequently considered them as being that species.

But what is then *strobilellæ*? The type ought to be a ♀ with terebra twice longer than the body and black hind legs. We have not many species with such a long terebra, and the dark hind legs further restricts the possibilities. Linné suspected identity with *F. suec.* 971, but that species is no doubt *Cryptus recreator* F. (*latitarsis* Thoms.) with much shorter terebra. The real *strobilellæ* was found to live in »*Phalæna*» *strobilella* like *moderator*, and it seems probable both came out from the same batch of spruce cones, since Linné thought *moderator* to be the parasite of *strobilellæ*. In this case *Ephialtes glabratus* is tolerably certain to be the true *strobilellæ*, for in later years Trägårdh has found just *Nemeritis flaviventris* and *Ephialtes glabratus* to be the two commonest Ichneumonid parasites of *Laspeyresia strobilella* L. in Sweden. In *glabratus* the terebra is not twice the length of, but longer than the body, and the hind legs are not exactly black, but brown; this is evidently not to be taken quite literally.

sugillatorius 1758, p. 561 = *Coelichneumon sug.* L. & auct.

One ♀, certainly type of this widespread and wellknown species.

titillator 1746 no. 971, 1758, p. 565 = *Cryptus tit.* L. non auct.(?).

Syn. *C. recreator* F.; *latitarsis* Thoms.

It is not possible to fix this species with absolute certainty, because there is for once too much material in the collection, five ♂, of which none can be rejected as certainly not Linnean. The important colour features are the red abdomen with only segment 1 black, and the totally black hind legs with white tarsi. Only the third and fifth specimens fulfil both requirements. No. 3 seems surprisingly enough to be *Cryptus obscuripes* Zett., a decidedly northern species below middle size, to my knowledge only twice found as far south as the province of Upland. The specimen has no central white spot in the face and a brown anterior half of tergite 2, but is otherwise typical. No. 5 is *Cryptus recreator* F., a large species I have found several times at Upsala and whose ♀ was, as said under *strobilellæ*, known to Linné as no. 971 of *F. suec.* ed. I. Of these two species I do not hesitate to think *recreator* more likely to be the true *titillator*.

The other three specimens, having more or less red hind legs, cannot be considered. No. 1 is *Meniscus piceator* Thunb. carrying the Linnean name label, no. 2 like all the following is a *Cryptus*, possibly *sponsor* F., but without central pale point in the face and with quite black hind coxæ. If there is any central pale point in the mesonotum, the needle conceals it. No. 4 is *C. titubator* Thunb. (*infumatus* Thoms.), very common in all Sweden and quite like

obscuripes, but with paler hind legs. On no. 2 there is a small label »982», meaning that number in F. suec. I, which species it cannot be. — Linné altered his position in regard to this species, for in 1761 he took up F. suec. I 982 as *titillator* and consequently described the abdomen »ferrugineo basi apiceque nigro».

turionellæ 1758, p. 564 = *Pimpla tur.* L. non auct.

Syn. *Pimpla examinador* F.

As already mentioned under *strobilellæ*, I am convinced the specimens placed there rightly belong here and are the true types of *turionellæ*. They are a ♀ of *P. examinador* and a ♂ of *Glypta resinana* Htg; the ♀ carries on the needle a pupa with the posterior end missing, the ♂ a hollow spruce bud. The description applies to the ♀, but the ♂ seems to be the original one, for it suits the few negative words about that sex. It is the colour pattern of the tibiae II that proclaims *examinador* as the real *turionellæ* L., these tibiae being more or less brownish with a small white ring or spot. In *turionellæ* auct. non L. (a meadowspecies, while *examinador* is a forest one) they are simply red. The difference in coxal colour was not known to Linné, but he described the colour of the four posterior tibiae in his *turionellæ*. The correct name for the false *turionellæ* seems to be *contemplator* Müll. 1776, if Dalla Torre is right in his list of synonyms.

The specimen labelled as *turionellæ* is a ♀ *Polysphincta carbonator* Grav. and differs from the description in the following points: 1. the antennæ are shorter than, not as long as the body; 2. the abdomen is evidently depress, not cylindrical; 3. the tibiae II are pale variegated, not fuscous with a white ring; 4. the terebra is so very short that Linné probably would not have used the tame phrase »aculeus abdomine brevior»; and 5. the whole genus *Polysphincta* is ectoparasitic on grown spiders and has nothing to do with moths.

vaginatorius 1758, p. 562 = *Ichneumon sarcitorius* L. & auct.

One small ♂ of the northern form with whitish decoration, certainly the type. The synonymy has been known for a long time.

volutatorius 1758, p. 562 = *Banchus vol.* L. & auct.

Four ♂ in the collection, the first one with Linnean label and certainly the type. The two next specimens are the same species, the last one *B. falcatorius* F.

List

of identified Linnean types of the superfamily

Ichneumonoidea

Obs.! For synonyms, status of types and circumstances leading to their identification, see discussion above.

Fam. Ichneumonidae.

<i>Amblyteles crispatorius</i> L.	Correct.
» <i>fossorius</i> L.	for <i>subsericans</i> Grav.
» <i>luctatorius</i> L.	» <i>erratorius</i> Thunb.
» <i>raptorius</i> L.	» <i>quadriguttorius</i> Thunb.
<i>Angitia prærogator</i> L.	» <i>?armillata</i> Grav.
<i>Anomalon pugillator</i> L.	» <i>latro</i> Grav. var.
<i>Apechthis compuncator</i> L.	» <i>brassicariæ</i> Poda.
<i>Banchus volutatorius</i> L.	Correct.
<i>Barichneumon peregrinator</i> L.	for <i>scriptorius</i> Thunb.
<i>Coelichneumon comitator</i> L.	» <i>lineator</i> F.
» <i>sugillatorius</i> L.	Correct.
<i>Cryptus inculcator</i> L.	for <i>sponsor</i> F.
» <i>titillator</i> L.	» <i>recreator</i> F.
<i>Ctenichneumon edictorius</i> L.	» <i>fossorius pallipes</i> Grav.
<i>Ctenochares bicolorus</i> L.	» <i>instructor</i> F.
<i>Echthrus reluctator</i> L.	Correct.
<i>Ephialtes manifestator</i> L.	for <i>carbonarius</i> Grav.
» <i>strobilellæ</i> L.	» <i>glabratus</i> Ratz.
<i>Exochilum circumflexum</i> L.	Correct.
<i>Gambrus incubitor</i> L.	for <i>ornatus</i> Grav.
<i>Gelis acarorum</i> L.	Correct.
<i>Hemiteles cinctus</i> L.	for <i>bicolorinus</i> Grav.
<i>Hypsantyx lituratorius</i> L.	» <i>impressus</i> Grav.
<i>Ichneumon deliratorius</i> L.	Correct.
» <i>molitorius</i> L.	»
» <i>quæsitarius</i> L.	»
» <i>sarcitorius</i> L.	»
<i>Limerodes fossorius</i> L.	see <i>Amblyteles</i> .
<i>Melanichneumon designatorius</i> L.	for <i>fortipes</i> Wesm.
» <i>saturatorius</i> L.	Correct.
<i>Nemeritis moderator</i> L.	for <i>flaviventris</i> Ratz.
<i>Opheltes glaucopterus</i> L.	Correct.
<i>Ophion luteus</i> L.	»
<i>Phædroctonus moderator</i> L.	see <i>Nemeritis</i> .
<i>Pimpla turionellæ</i> L.	for <i>examinator</i> F.

<i>Platylabus infractorius</i> L.	for <i>phaleratus</i> Hal.
<i>Probolus culpatorius</i> L.	» <i>alticola</i> Grav.
<i>Protichneumon fusorius</i> L.	» <i>pisorius</i> Thoms. & auct.
» <i>pisorius</i> L.	» <i>fusorius</i> Thoms. & auct.
<i>Rhyssa persuasoria</i> L.	Correct.
<i>Spilichneumon raptorius</i> L.	see <i>Amblyteles</i> .
<i>Spilocryptus mandator</i> L.	for <i>cimbis</i> Tschek.
<i>Tryphon rutilator</i> L.	Correct.

Fam. Evaniidæ.

<i>Gasteruption assectator</i> L.	for <i>affectator</i> Schlett. & auct.
» <i>jaculator</i> L.	» <i>Thomsoni</i> Schlett. & auct.

Fam. Braconidæ.

<i>Atanycolus denigrator</i> L.	for <i>heteropus</i> Thoms.
<i>Cenocoelius secalis</i> L.	» <i>rubriceps</i> Ratz. nec Ashm.
<i>Cremonops desertor</i> L.	Correct.
<i>Eubadizon extensor</i> L.	for <i>pectoralis</i> Nees.
<i>Helcon ruspator</i> L.	Correct.
<i>Macrocentrus resinellæ</i> L.	for <i>thoracicus</i> Nees.
<i>Spathius exarator</i> L.	Correct.