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Revisional Notes on the Types of Ichneumoninae of Cresson, Cushman, Ashmead and Others

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During January and February 1959 I studied the types of Ichneumoninae in the collections of the Connecticut Agricultural Experimental Station in New Haven, Connecticut, of the Academy of Natural Sciences in Philadelphia, and of the United States National Museum in Washington. As a result of my studies I propose the following changes in the taxonomy as used by Townes in the Catalog (Hymenoptera of America North of Mexico), 1951, for the Ichneumoninae. The entities dealt with will be given in the original combination, followed by the combination as used by Townes, 1951, and lastly by what I consider the correct combination and status.

In a few cases my concept of genera differs from Townes' as applied in the 1951 Catalog. As these differences will become apparent in the following combinations they need to be explained.

The type of the genus *Amblyteles*, the palaearctic species *armatorius* Panzer, is, as indicated by its name, "armed" by strong apophyses of the propodeum, similar to the genus *Polysphincta*. I do not know at present any other species which I could consider as congeneric with it. Therefore I confine the genus *Amblyteles* to the single palaearctic species, the type of the genus. All North American species of this group that do not belong to *Eutanyacra* Cameron or *Spilichneumon* Thomson I place in the genus *Pseudamblyteles* Ashmead which has as

type a palaearctic species, *palliatorius* Gravenhorst, related to the nearctic *bisonatus* Cresson and *robustus* Cresson.

The genera *Barichneumon* Thomson and *Melanichneumon* Thomson have been synonymized by Townes 1951 and separated again by Walkley 1958. Both possibilities have their strong "pro" and "contra." Although the types of the two genera, *anator* Fabricius and *spectabilis* Homgren respectively, are strikingly different, a great variety of intermediate forms exists. This matter needs further consideration and investigation. In the list below for the time being I am following Townes in lumping all the species into one genus.

I am not fully satisfied with Townes' arrangement of the Platylabini. The type of the genus *Platylabus*, the species *rufus* Wesm., is characterized by deep, transverse gastrocoeli. I still am convinced that *Asthenolabus* Heinrich with obsolete or subobsolete gastrocoeli must be considered a distinct genus. I am placing in *Platylabus* all species with pronounced gastrocoeli, transverse or not transverse. *Cyclolabus* Heinrich and *Ectopius* Wesm. are distinct genera, both, unlike *Platylabus*, with small, circular or very short oval propodeal spiracles, but distinguished by the difference of the gastrocoeli, which are transverse and pronounced in *Cyclolabus* but obsolete or indicated only by a slight, longitudinal impression in *Ectopius*. *Cyclolabus* is more closely allied to *Platylabus* than is *Ectopius*.

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1. *Trogus canadensis* Provancher ♀ = *Conocalama copei* (Cress) ♂ = *Conocalama canadensis* (Provancher), syn. resur. tentat.

The type of *Conocalama copei*, a male from Virginia, has a flat postpetiole without any trace of the conical elevation regarded by Hopper as the distinctive character separating the nearctic genus *Conocalama* Hopper from the palaearctic *Callajoppa* Cameron. As long as we do not know that this char-

acter mutates individually—and so far there seems to be no evidence that it does—we better consider the species *copei* as different from *canadensis*, even though the color is identical. Also the shape of the propodeum of *copei* differs slightly from the norm of *canadensis* in sloping down a little less abruptly and steeply from the ridge formed by the costulae and the carina that replaces the area superomedia, the latter carina not elevated (as is usual in *canadensis*) and forming a wider arc.

2. *Amblyteles* (*Chasmodon*) *pequoitorum* Viereck ♀ = *Ichneumon pequoitorum* (Viereck) = *Coelichneumon pervagus* (Cresson) ♂, new synonymy.
3. *Ichneumon semicoccineus* Cresson ♂ = *Pterocormus rufiventris* (Cresson) = *Ichneumon semicoccineus* Cresson ♂, syn. resur.

The type, a male from "Western Territories," is similar in color to *rufiventris* but distinctly different in morphology. Head and temples are considerably wider, the cheeks shorter, the hind femora much stouter. Also the yellow color of face and clypeus differs from *rufiventris* ♂.

4. *Ichneumon gestuosus* Cresson ♀ = *Melanichneumon gestuosus* (Cresson) ♀ = *Ichneumon gestuosus* Cresson ♀, comb. resur.
5. *Ichneumon lewisi* Cresson ♀ = *Pseudamblyteles lewisi* (Cresson) = *Ichneumon lewisi* Cresson ♀, comb. resur.
6. *Ichneumon inurbanus* Cresson ♀ = *Pterocormus inurbanus* (Cresson) = *Ichneumon semicoccineus* Cresson ♂, new synonymy.
7. *Ichneumon propitius* Cresson ♂ = *Hoplismenus propitius* (Cresson) = *Ichneumon propitius* Cresson ♂, comb. resur.

This species possesses none of the characters which determine the genus *Hoplismenus*. Even the shape of the highly elevated scutellum is different from the norm of the latter genus, and the short protruding corners of the areae dentiparae have but little resemblance to the long apophyses of a typical *Hoplismenus*. In his monograph of the genus, Swift has already

mentioned these facts and has included the species in *Hoplismenus* only because he considered its characters as too little significant for erecting a new genus for it.

The species is a parasite of Nymphalidae, sharing this biological character not only with the genus *Hoplismenus* but also with *Thyrateles* Perkins and furthermore with the *gracilicornis*-group of *Ichneumon* Linnaeus. *Thyrateles*—and also the *gracilicornis*-group—tend morphologically to an elevation of the scutellum and to a deepening of the gastrocoeli as is equally evident in the species under discussion. As *Thyrateles* is confined to species with abdomen amblypygous or semi-amblypygous, the species *propitius* can be placed only in the genus *Ichneumon*, unless a new genus would be erected for it. Even though it differs from the norm of this genus in the areolation of the propodeum, its relationship to *Ichneumon* is further confirmed by the pattern of sexual dichromatism of the species, the females having ferruginous, the males yellow hind tibiae with black apex.

8. *Amblyteles* (*Pterocormus*) *quadrizonatus* Viereck ♂ = *Pterocormus quadrizonatus* (Viereck) = *Ichneumon subdulus* Cresson ♀, new synonymy.

9. *Ichneumon versabilis* Cresson ♂ = *Pterocormus maius* (Cresson) ♀ = *Ichneumon versabilis* Cresson ♂, syn. resur.

The shape of the deep, transverse gastrocoeli of the male type excludes the possibility of associating it with *maius* female, a species with small and shallow gastrocoeli.

10. *Amblyteles balteatus* Hopper ♂ = *Amblyteles rufizonatus* (Cresson) ♀ = *Ichneumon volesus* Cresson ♀, new synonymy.

The deep, transverse gastrocoeli of the male type exclude the generic placement of the species in *Amblyteles* or *Pseudamblyteles*. The new association of the two sexes is obvious.

11. *Amblyteles* (*Pterocormus*) *winkleyi* Viereck ♀ = *Pterocormus instabilis* (Cresson) = *Ichneumon winkleyi* (Viereck) ♀, syn. resur.

I. winkleyi and *instabilis* are two very similar and closely allied but distinct species as I found by careful examination and observation extended over a period of years.

12. *Ichneumon lividulus* Provancher ♀ = *Ichneumon lividulus* Provancher = *Ichneumon zelotypus* Cresson ♂, new synonymy.

Association of sexes concluded from corresponding morphology and from field observation.

13. *Ichneumon juxta* Cresson ♂ = *Amblyteles juxta* (Cresson) = *Spilichneumon juxta* (Cresson) ♂, new comb.

14. *Ichneumon consimilis* Cresson ♂ (preocc.) = *Amblyteles nubivagus* (Cresson) = *Spilichneumon nubivagus* (Cresson), ♂, new comb.

15. *Amblyteles fraternus* Cresson ♂ = *Amblyteles fraternus* Cresson = *Spilichneumon nubivagus* (Cresson) ♂, new comb. and new synonymy.

16. *Ichneumon comes* var. *aleatorius* Cresson ♂ = *Amblyteles aleatorius* (Cresson) = *Spilichneumon subrufus* (Cresson) ♂, new comb. and new synonymy.

17. *Ichneumon inconstans* Cresson ♂ = *Amblyteles inconstans* (Cresson) = *Spilichneumon subrufus* (Cresson) ♂, new comb. and new synonymy.

18. *Ichneumon koebelei* Swezey = *Pseudamblyteles koebelei* (Swezey) = *Spilichneumon superbus* (Provancher), new comb. and new synonymy.

19. *Ichneumon torvinus* Cresson ♂ = *Chasmias torvinus* (Cresson) = *Chasmias saucius* (Cresson) ♀, new synonymy.

20. *Ichneumon procax* Cresson ♂ = *Ichneumon procax* Cresson = *Thyrateles procax* (Cresson) ♂, new comb.

The female of this species (see below) is amblypygous. Consequently it can not be regarded as an *Ichneumon*. The deep and large gastrocoeli with strongly developed thyridia, the elevated scutellum and the biological fact of parasitism on Nymphalidae establish satisfactorily its position within the genus *Thyrateles* Perkins, although the extremely spinose tarsi

of *procar* form a peculiar character not present in the other species of the genus.

21. *Amblyteles torontosus* Davis ♀ = *Amblyteles torontosus* Davis = *Thyrates procar* (Cresson) ♂, new comb. and new synonymy.

The association of sexes has been proved by a series of both males and females reared from the same host (Canadian National Collection).

22. *Amblyteles mormonus* Cresson ♀ = *Pseudamblyteles mormonus* (Cresson) = *Thyrates mormonus* (Cresson) ♀, new comb.

This species is closely related to *camelinus* Wesm., the palaearctic type of the genus *Thyrates*.

23. *Ichneumon marianopolitanensis* Provancher ♀ = *Amblyteles rufisonatus* (Cresson) ♀ = *Ctenichneumon syphax* (Cresson) ♀, new comb. and new synonymy.

This is a dichromatic species, occurring regularly in two differently colored phases, the one with segments 2-7 red (*syphax*), the other with only 2-3 red, 4-7 being black (*rufisonatus*).

24. *Amblyteles perannulatus* Hopper ♀ = *Amblyteles perannulatus* Hopper = *Eutanyacra perannulata* (Hopper) ♀, new comb.

25. *Ichneumon nobilis* Cresson ♂ = *Pseudamblyteles munificus* (Cresson) ♂ = *Eutanyacra munifica* (Cresson) ♂, new comb.

26. *Ichneumon grotei* Cresson ♂ = *Pseudamblyteles grotei* (Cresson) = *Eutanyacra suturalis* (Say) ♀, new comb. and new synonymy.

The association of *propinquus* Cresson ♀ and *grotei* ♂ has been proved by a series of both males and females reared from the same host (Can. Natl. Coll.).—The original description of *suturalis* could be applied to a number of different species, all

equally matching it. As the type is lost I accept according to the principle of priority the synonymy of *propinquus* and *suturalis* as established by Townes.

27. *Ichneumon rubellus* Cresson ♂ = *Pseudamblyteles animosus* var. *rubellus* (Cresson) = *Pseudamblyteles rubellus* (Cresson) ♂.

Differences in the gastrocoeli indicate that *rubellus* is a distinct species, not a mere variety of *animosus*.

29. *Ichneumon infidelis* Cresson ♂ = *Pterocormus infidelis* (Cresson) = *Intermedichneumon calcatorius* (Thunberg) ♂, new synonymy.

30. *Platylabus opacitas* Davis ♂ = *Aoplus opacitas* (Davis) = *Aoplus cestus* (Cresson) ♀, new synonymy.

31. *Ichneumon sitkensis* Ashmead ♂ = *Aoplus vagans sitkensis* (Ashmead) = *Aoplus ruficeps sitkensis* (Ashmead) ♂, new comb.

The type (from Alaska) differs from the eastern subspecies *ruficeps vagans* Provancher only in the lack of the white annulus of flagellum.

32. *Ichneumon helvipes* Cresson ♀ = *Melanichneumon helvipes* (Cresson) = *Melanichneumon anator* (Fabricius) ♀, new synonymy.

33. *Ichneumon blanchardi* Davis ♀ = *Melanichneumon rubicundus* (Cresson) ♀ = *Melanichneumon blanchardi* (Davis) ♀, syn. resur.

M. rubicundus auct. is a complex species, probably better placed in a genus other than *Melanichneumon*, which would also contain *annulicornis* Ashm. The species *blanchardi* ♀ may be separated from *mucronatus* Provancher ♂ and *annulicornis* ♀ by the somewhat shorter propodeum with consequently shorter areae dentiparae and superomedia, and by the lack of teeth of the propodeum. The type of *rubicundus* ♀ has distinct apophyses of the propodeum as has *mucronatus* ♂. Whether both can be associated as sexes of the same species needs to be investi-

gated and seems to be doubtful. If they are not the same, *rubicundus* (preocc.) will have to be renamed.

34. *Ichneumon belfragei* Cresson ♂ = *Pseudamblyteles belfragei* (Cresson) = *Melanichneumon belfragei* (Cresson) ♂, new comb.
 35. *Amblyteles ohioensis* de Gant ♂ = *Melanichneumon gestuosus* (Cresson) ♂ = *Melanichneumon nigripes* (Provancher) ♂, new synonymy.

In this species mutants with partially obscure reddish color on the second or second and third tergite, as represented by the type specimen of *nigripes*, are rare in the male sex, but rather common in females.

36. *Cratichneumon pluto* Viereck ♂ = *Melanichneumon gestuosus* (Cresson) ♂ = *Melanichneumon nigripes* (Provancher) ♂, new synonymy.
 37. *Ichneumon cordatus* Cresson ♂ = *Melanichneumon cordatus* (Cresson) = *Melanichneumon subcyaneus cordatus* (Cresson) ♂, new status.

I. cordatus evidently is nothing more than the western, less white-marked form of *subcyaneus*.

38. *Ichneumon solitus* Cresson ♀ = *Melanichneumon solitus* (Cresson) = *Melanichneumon subcyaneus cordatus* (Cresson) ♀, new synonymy.

The other sex of the former species.

39. *Ichneumon neutralis* Cresson ♂ = *Ichneumon neutralis* (Cresson) = *Melanichneumon subcyaneus neutralis* Cresson ♂, new comb. and new status.

This is another bluish-black *Melanichneumon* male, distinguished by entirely black hind legs. I suppose that this also belongs to *subcyaneus* as a geographical subspecies.

40. *Ichneumon ornatipes* Cresson ♂ = *Melanichneumon ornatipes* (Cresson) = *Melanichneumon virginicus* (Cresson) ♀, new synonymy.

M. virginicus ♀ has two striking and unique characters: the clypeus is extraordinarily widened and very deeply depressed, and the hind femora are unusually short and thick. The same features are evident in *ornatipes* ♂, except that the clypeal character is developed to a much lesser degree as is to be expected according to the rules of normal sexual dimorphism. The striking difference in color (red abdomen in the female, black abdomen in the male) represents in the Nearctic Region a rather typical phenomenon, well known in the genera *Probolus*, *Ctenichneumon*, *Tricholabus* and *Pristicerus* but until now not observed in *Melanichneumon*. Nevertheless the association of sexes may be considered in all probability as correct.

41. *Ichneumon pusillus* Cresson ♀ = *Cratichneumon paratus* (Say) = *Cratichneumon pusillus* (Cresson) ♀, syn. resur.

The type, a very small specimen from Delaware, shows no trace of the little scopula which, as far as my experience goes, is constantly present in *paratus* females. It also differs from the latter in color pattern of the legs and in size. Therefore I do not believe that the species *pusillus* could possibly be regarded as a synonym of *paratus*. I rather suspect its specific identity with *annulatipes* Provancher ♀. However, even if this should be true, it would probably represent a differently colored southern subspecies. Our knowledge of this extremely difficult group of numerous small *Cratichneumon* species is still so poor and defective that the attempt of subspecific associations should be postponed.

42. *Ichneumon kincaidi* Ashmead ♂ = *Cratichneumon kincaidi* (Ashmead) ♂ = *Cratichneumon citrinops kincaidi* (Ashmead) ♂, new comb.

European specimens of *citrinops* Wesmael differ from Alaskan specimens on *kincaidi* in nothing except the color of femora III which are red with black apex in the former, entirely infuscated in the latter.

43. *Amblyteles (Pterocormus) quintilis* Viereck ♂ = *Cratichneumon quintilis* (Viereck) = *Cratichneumon annulatipes* (Provancher) ♀, new synonymy.

Cr. quintilis ♂ is well distinguished from all similar male species of the genus occurring in the Eastern Canadian Zone by the long row of tylodes beginning on the 2nd or 3rd joint of flagellum, and by the sternauli on the mesosternum unusually strongly impressed. The association of the sexes I concluded from observations in the field and matching characters.

44. *Ischnus volens* Cresson ♂ = *Cratichneumon volens* (Cresson) = *Cratichneumon brevipennis* (Cresson) ♀, new synonymy.

An aberrant species of the genus, unmistakably characterized by the presence of several irregular vertical carinae on the frons, which are strongly developed in the female, weakly in the male.

45. *Ichneumon brevipennis* Cresson ♀ = *Ichneumon brevipennis* (Cresson) = *Cratichneumon brevipennis* (Cresson) ♀, new comb.

46. *Ischnus variegatus* Provancher ♂ = *Cratichneumon W-album* (Townes nec Cresson) = *Cratichneumon variegatus* (Provancher) ♂, syn. resur.

The specimen in the Cresson collection designated as the lectotype of *I. W-album* does not match the original description of the latter in characters of specific distinction. As the collection contains no specimen which does match the description, I have reported the type as to be considered as lost. The specimen wrongly designated as type of *W-album* is specifically identical with *I. variegatus* which therefore is the correct name for the species *W-album* of authors.

47. *Cratichneumon popofensis* Ashmead ♀ = *Cratichneumon popofensis* Ashmead = *Cratichneumon yakutatensis* Ashmead ♂, new synonymy.

I found no reason for separating these two well matched sexes as different species, especially so since a male specimen of *yuka-*

tatensis from Popoff Island (the terra typica of *popofensis*) is in the collection of the U. S. National Museum.

48. *Anisobas nearcticus* Cushman ♀ = *Anisobas texensis* (Ashmead) = *Anisobas texensis nearcticus* Cushman ♀, syn. resur.

The type of *nearcticus* as well as two specimens in my collection, all from Maine, differ slightly in color from the type of *texensis*. They all have the white stripe of the outer orbits considerably abbreviated and the 4th tergite black only at the apex and with white apical band either lacking or strongly reduced. They are all considerably smaller than *texensis* and have the apex of the flagellum a little less sharply attenuated. I therefore would prefer to maintain the name *nearcticus* with subspecific status.

49. *Eurylabus agilis* Cresson ♀ = *Platylabus scutellatus* (Provancher) = *Asthenolabus agilis* (Cresson) ♀, syn. resur. and new comb.

P. agilis is undoubtedly a distinct species, differing from *scutellatus* (a species also belonging to the genus *Asthenolabus* Heinrich) by the lack of white anal markings.

50. *Platylabus metallicus* Bradley ♀ = *Platylabus clarus* (Cresson) = *Platylabus metallicus* Bradley ♀, syn. resur.

There seems to be no doubt that this is a distinct species, constantly different from *clarus* in its smaller size, less extended white marks (for example the upper margin of pronotum never being entirely white, usually entirely blue), and a little more widened flagellum.

51. *Platylabus montanus* Cresson ♀ = *Ichneumon vaejer* Cresson "♀" = ♂ (preocc.) = *Platylabus perkinsi* Walkley, new synonymy.

52. *Platylabus consors* Cresson ♂ = *Platylabus consors* Cresson = *Platylabus rufipes consors* Cresson ♂, new comb. and status.

Differs from *rufipes rufipes* Provancher only by lack of the white annulus on flagellum.

53. *Platylabus californicus* Cresson ♀ = *Platylabus californicus* Cresson = *Platylabus rufipes consors* Cresson ♀, new synonymy.

54. *Probolus subdentatus* Ashmead ♂ = *Ectopius subdentatus* (Ashmead) = *Cyclolabus gracilicornis subdentatus* (Ashmead) ♂, new status.

The western subspecies *subdentatus* differs from the eastern *gracilicornis gracilicornis* Provancher only in the lack of the white annulus of the flagellum, thus paralleling *Platylabus rufipes rufipes* Provancher (Eastern) and *Platylabus rufipes consors* Cresson (Western).

55. *Hoplismenus ornatus* Cresson ♀ = *Thaumtoteles ornatus* (Cresson) = *Ambloplisus ornatus* (Cresson) ♀, new comb.

The genus *Ambloplisus* Heinrich was erected in 1930 (Mitt. Zool. Mus. Berlin, XV, 3/4, p. 551) for the Peruvian species *primus* Heinrich, which is congeneric with *ornatus*.

56. *Platylabus foxi* Davis ♂ = *Thaumtoteles ornatus* (Cresson) = *Tropicolabus foxi* Davis ♂, syn. resur. and new genus.

The type of *Platylabus foxi*, made here the type of the new genus *Tropicolabus*, differs morphologically from the genus *Ambloplisus* Heinrich (syn. *Thaumtoteles* Hopper) in the shape of the head, scutellum, propodeum, first segment and gastrocoeli. The gastrocoeli which as a general rule do not undergo considerable sexual dimorphism are deep and extremely wide with just a very narrow interval between them. The species therefore can not be placed in the genus *Ambloplisus* or *Hoploplatystylus* Schmiedeknecht. It could eventually pass as a member of the genus *Platylabus* except for the very strong, long and somewhat upwards curved apophyses of the propodeum, which may be considered as the character separating *Tropicolabus* from *Platylabus*.

57. *Hoplismenus transversus* Davis ♂ = *Hoplismenus scutellatus* (Provancher) = *Hoplismenus scutellatus transversus* Davis ♂, new status.

There seem to be no morphological differences between *scutellatus* (from Quebec) and *transversus* (from Idaho). The color differences, however, are significant enough to indicate a subspecific differentiation. *H. scutellatus transversus* differs from *scutellatus scutellatus* by its 1) almost entirely red mesonotum, 2) entirely red abdomen, 3) lack of annulus on flagellum.

Some North American Collembola Records

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During the past number of years I have been working on the Collembola fauna of North America and have been able to examine many collections from most of the region. The following records of the occurrence of Collembola seem worthy of note.

Subfamily Onychiurinae Börner, 1901

Onychiurus cocklei Folsom

One of the most interesting accounts of the occurrence of Collembola, and I might add most intriguing to collectors, is that given by J. W. Folsom entitled "The Golden Snow-Flea, *Aphorura cocklei*, n.sp." This appeared in The Canadian Entomologist (vol. XL) in 1908 and described the swarming in Kaslo, British Columbia of "a minute yellow Collembolan that appears in crowds so dense as to cover the snow with a carpet of gold." It was of particular interest to me when this species was discovered here in the mountains of North Carolina swarming in (7) January 1955. They were found swarming by the millions over logs and over the surface of the water of a 2 acre pond near Black Mountain, N. C. Also strips of them were