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ENTOMOLOGY.—*Holarctic elements among the Ichneumoninae of Maine.*

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Until recently zoologists both of the United States and Europe have been strongly influenced by the belief that the New World was inhabited by a fauna totally different from that of the old Continent. The Palearctic and Nearctic subregions were considered as two clearly separated faunal regions. Slowly, however, the realization grew that this idea of the two worlds had to be modified, and science began the work of synthesis. It has become evident that besides the different endemic faunas of the northern parts of Eurasia and America there exists a rather considerable element of Holarctic species spread over the whole of the northern parts of both continents and that many species slightly different from one another in America and Eurasia have to be considered only as geographical subspecies of one and the same species. The purpose of this paper is to make a further contribution to our knowledge of such Holarctic elements.

In order to determine whether certain forms may belong together in the same species the consideration of biological facts and field observations seems to be not less important than the comparison of morphological characters; so I am using wherever possible the former as well as the latter for the following statements of Holarctic specific identities. I have not been able to find out in all cases whether the species identified below under the European names have already been described and recorded under American names. In other words, in some cases the synonymy remains unsettled. I am indebted to Prof. Henry K. Townes for the determination of the species described by Cresson and Provancher. I am unable to follow Townes in regard to the names of genera (Hymenoptera North of Mexico, 1951) because I acknowledge the decisions of the International Commission on Zoological Nomenclature which has ruled the names *Ichneumon*, *Pimpla*, *Ephialtes*, and *Cryptus* to be nomina conservanda.

Coelichneumon pumiliosimilis Heinrich ♀ ♂ (new record)

Orig. descr.: Bonner Zool. Beiträge 1951: 251. Described from northern Germany and the Alps.

The relatively small size, shape, and the particular type of coloration and proportions of joints of female antennae are identical with the type. Sides of scutellum white as is usual in the European males not only in the American male but also in all three American females (scutellum of the three known European females being entirely black). White marks of coxae I and II of the male larger than in European specimens.

2 ♀♀, 1 ♂ from Dryden, Maine, 1 ♀ from Carthage, Maine; ♀ ♂ compared with types.

Coelichneumon tauma Heinrich ♀ (new record)

Orig. descr.: Bonner Zool. Beiträge 1951: 253-254. Described from Austrian Alps.

Identical with type, even in such characters as the small white spots of the inner orbits on each side of the base of the antennae. Abdomen totally black, the brownish tint of segment 2-3 of the type evidently being accidental.

1 ♀ from Maine, bred from a pupa of Geometridae, by A. E. Brower; ♀ compared with type.

Coelichneumon calcatorius Thunberg (n. comb.) ♀ ♂ (new record)

Syn. *I. sylvanus* Holmgren.

White marks of inner orbits and upper margin of pronotum somewhat more extended than in my single European specimen (a female from Austrian Alps). Otherwise so identical that a subspecific separation does not seem to be possible.

1 ♀, 2 ♂♂ from Dryden, Maine; 2 ♂♂ from Maine, bred from *Olene* by A. E. Brower. (In spite of the identity of the shape of gastrocoeli with *Stenichneumon* Thomson this species does not fit into this genus in regard to the shape and areolation of propodeum. The new host record of Dr. A. E. Brower confirms this suggestion, because all typical species of the genus *Stenichneumon* Thomson are parasites of species of the genus *Plusia*.)

Stenichneumon militarius Thunberg subsp.? ♀ ♂

Females seem to be identical with European specimens.

The males which probably belong to them have antennae without white bands unlike the European males of the species. If this character should be proved to be constant the American population would have to be considered as a different subspecies though distinguishable only in the male sex.

♀ ♂ Dryden, Maine, ♂♂ Maine, bred from pupae of a *Plusia* species by A. E. Brower.

Stenichneumon culpator Schrank subsp. *cincticornis* Cresson, ♀ ♂ (n. comb., n. status)

Ichneumon cincticornis Cresson, 1864.

Sculpture, proportion of joints of female antennae and whole morphology identical with the type [illegible], especially in the unique character consisting of the peculiarly shaped tooth of coxae III of the female.

Subspecifically different by the constant black color of the whole abdomen in both sexes which however occurs occasionally also in the European subspecies (var. *ater* Berth.), and by the constant largely yellowish banded antennae of the male (the antennae of European males usually being entirely black, exceptionally only white banded).

Ichneumon sarcitorius Linnaeus subsp. ♀ ♂ (new record)

Males do not show any differences from the European specimens.

Females differ as follows: End of hind femorae not black, hind part of third segment not clear red but somewhat yellowish in tint (as in some Oriental subspecies of this species); the fourth segment with a whitish outer margin.

Open fields are the habitat of the American subspecies as well as of the European and Oriental.

This species is spread over the most part of the Northern Hemisphere and goes south in Asia into Northern Persia. It splits into several subspecies (cf. Heinrich, Mitt. Deutsch. Ent. Ges. II, 1931; 27–29).

The above described form from Maine belongs doubtless to the same species as *sarcitorius jucundus* Brullé, named in 1846 from a specimen from "South America" and since recorded from Kansas and other localities in the United States but not yet, as far as I know, from Maine. I hesitate, however, to use Brullé's name for the subspecies of *sarcitorius* Linnaeus recorded from Maine, because the single female collected there and described above differs definitely in color from typical females of *jucundus* from more southern localities. This difference, as soon as proved to be constant instead of individual only, will indicate another (northern) subspecies in a certain degree intermediate between the Eurasian subspecies of *sarcitorius* and *sarcitorius jucundus.*

1 ♀, numerous ♂♂ Dryden, Maine.

Ichneumon languidus Wesmael subsp. *bimembris* Provancher ♀ (n. status)

Identical in color and all other characters with European specimens except that the antennae are slightly more slender.

♀♀ Dryden, Maine.

Ichneumon nereni Thomson (= raptorius auct.) subsp. ♀ ♂ (new record)

Female.—Basal joints of antennae reddish, fifth segment not white marked. (This coloration is rather common also in European specimens.) Antennae somewhat more slender.

Males agree well with European.

♀♀ ♂♂ Dryden, Maine.

Ichneumon deliratorius Linnaeus subsp. *cinctitarsis* Provancher ♀ ♂ (n. status) (♀ a new record)

Female.—The particular type of coloration, scopula of coxae III and relatively deep gastrocoeli identical with European specimens. Proportions of segments of antennae similar, the latter however somewhat stouter in the American specimen.

Male.—Differs from European males in the partially white coxae and in the white annulus of each segment of tarsi III.

In contrast to the overwhelming majority of species of this genus the females of European *deliratorius* Linnaeus do not hibernate. Instead there are two generations, one in the spring, the second in the late fall. The American subspecies seem to show the same biological character; male and female were caught in the second half of September.

♀ ♂ Dryden, Maine.

Barichneumon anator Fabricius ♀ (new record)

Identical with the European specimens.

♀ Dryden, Maine.

Cratichneumon nigritarius Fabricius subsp. *acerbus* Cresson ♀ ♂ (n. status)

Female.—White marks of tibiae smaller, main color of legs darker, deep black.

Male.—Identical with the European specimens except that the white stripe of inner orbits is more often lacking.

Males of this species in Europe have a particular, typical smell which I used as the best character for quickly distinguishing them in the field from other similar species. The American males smell just the same. Subspecies *nigritarius* Fabricius as the typical parasite of *Bupalus piniarius* is found only in or near coniferous woods. Subspecies *acerbus* Cresson also seems to prefer coniferous woods but is not confined to them.

Limerodops fossorius Linnaeus subsp. *belangeri* Cresson ♀ (n. comb., n. status)

Amblyteles Belangeri Cresson. 1877.

The American subspecies differs from the European only slightly in the somewhat more extended black color of the end of hind tibiae, in the nearly entirely or entirely black antennae, the black scutellum and the somewhat smaller size. In the high mountain region of Bavarian Alps (Allgäu) I found however a specimen *fossorius* Linnaeus which agrees exactly in all these points with *belangeri* Cresson, except for the less extent of black color on the end of tibiae III.

At the time he described *belangeri*, Cresson was in doubt as to its generic position and stated in the original description that it "probably belongs to Wesmael's subgenus *Limerodes*," which was my own former opinion about *fossorius* Linnaeus. The genus *Limerodops* Heinrich with the species *fossorius* Linnaeus as type was erected and described in Mitt. Münchener ent. Ges. 35–39: 44-45. 1945–1949.

1 ♀ Dryden, Maine.