SYNOPSIS OF NEARCTIC ICHNEUMONINAE STENOPNEUSTICAE WITH PARTICULAR REFERENCE TO THE NORTHEASTERN REGION (HYMENOPTERA) SUPPLEMENT 2

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Résumé

Dans le présent travail, deux genres nouveaux sont ajoutés à la faune néartique: *Menkokia* Heinrich, qui était utilisé pour les espèces de la faune orientale est maintenant utilisé pour l'espèce nord-américaine *blandii* Cresson tandis que le nouveau genre *Neolinycus* est utilisé pour une espèce de la tribu *Platylabini* récemment découverte au Mississippi.

A la faune nord-américaine, vingt-trois nouvelles espèces viennent s'ajouter : *Protichneumon sartoris, Coelichneumon duffieldi, Canadelphus ruberior, Spilichneumon pernigricornis, Eutanyacra vilissimops, Cratichneumon carolinae, C. austropicripes, C. naumanni, C. georgius, C. fuscior, C. broweri, Homotherus pseudoporcellariae, Barichneumon flaviscuta, B. sphageti, B. crassipunctatus, B. seticornutus, B. californicus, Melanichneumon neoleviculops, Platylabus sphageti, P. dilleri, Linycus perturbator, L. temporalis, Neolinycus michaelis.*

Deux nouvelles sous-espèces du genre *Cratichneumon* sont décrites: *insignitus* appartenant à l'espèce *variegatus* Provancher et *mississippi* appartenant à l'espèce *flavipectus* Cresson.

La description originale des mâles de cinq espèces, jusque là connues seulement par les femelles, s'ajoute à ce travail. Il s'agit de *Ichneumon grandisops* Heinrich, *Cratichneumon alternans* Provancher, *Cryptefflgies megalurus* Heinrich, *Barichneumon excelsior* Henrich et *Platylabus sexmaculatae* Heinrich. La femelle de l'espèce *Coelichneumon albicoxa* Heinrich, connu seulement par le mâle, est aussi décrite.

L'association de la femelle *Platylabus albidorsus* Heinrich avec le mâle *P. berndi* Heinrich amène conséquemment la synonymie de *P. albidorsus* à *P. berndi*. Une étude des mâles de *Coelichneumon albicoxa* Heinrich et de *Cratichneumon acronyctae* Heinrich a montré la grande variabilité chromatique qui existe. De nouvelles données biologiques ont permis de démontrer que l'espèce *deliratorius cinctitarsis* Provancher qui était placée dans le genre *Ichneumon* Linnaeus appartient maintenant au genre *Coelichneumon* Thomson.

Une nouvelle clé est présentée pour les mâles de *Homotherus* Foerster et une nouvelle version de la dernière partie de la clé des mâles de *Cratichneumon* est faite. La position taxonomique des espèces voisines de *Spilichneumon brouteus* Cresson et *Spilichneumon nubiragus*

Cresson, connues par les mâles, est discutée et une clé est présentée pour distinguer les femelles. Ce travail est complété par de nouvelles données sur la biologie et la distribution de vingt-huit espèces d'*Ichneumonidae*.

Abstract

Two genera, previously unknown from the Nearctic fauna, are added: genus *Menodia* Heinrich, applied so far only to species of the Oriental fauna, now used for the North American species *blandi* Cresson, and genus *Neolinycus*, new genus, with a species of the tribe *Platylabini* recently discovered in Mississippi as generotype.

To the fauna of North America twenty three new species are added: *Protichneumon sartoris, Coelichneumon duffieldi, Caradelphus ruberior, Spilichneumon peraligicornis, Eutanyacra vilissimops, Cratichneumon carolinae, C. australipicipes, C. naumanni, C. georgius, C. fuscior, C. brooveri, Homotherus pseudoporcellariae, Barichneumon flavicuta, B. sphageti, B. crassipunctatus, B. setticornutus, B. californicus, Melanichneumon neoclericolops, Platylabus sphageti, P. dilleti, Linycus perturbator, L. temporalis, Neolinycus michaelis.*

Furthermore two new subspecies are named in the genus *Cratichneumon, insignitus* (from the southeastern States) of the species *variegatus* Provancher and *mississippi* (from Mississippi) of the species *flavipectus* Cresson.

To 5 species, originally based on the female sex only, *Ichneumon grandisops* Heinrich, *Cratichneumon alternans* Provancher, *Cryptefflges megalurus* Heinrich, *Barichneumon excelsior* Heinrich, and *Platylabus sexmaculatae* Heinrich the associated males are described for the first time; to *Coelichneumon albicoxa* Heinrich, based originally on the male sex alone, the associated female is described.

The species *Platylabus albidoratus* Heinrich, ♀, although chromatically very strongly different, is recognized as the associated sex, and consequently as synonym, of *Platylabus berndi* Heinrich, ♂. Additions to the known range of distribution, and/or biological new observations are given for twenty eight species.

A chromatic variability greater than originally described was found and is discussed for the males of the species *Coelichneumon albicoxa* Heinrich and *Coelichneumon acronycae* Heinrich. The species *delineatorius cuculiarsis* Provancher is, on the base of new biological evidence, transfered from the genus *Ichneumon* Linnaeus to the genus *Coelichneumon* Thomson. To the males of the genus *Homotherus* Foerster a new key is given and the last part of the old key to the males of the genus *Cratichneumon* is replaced by a new version.

The two very similar species *Spilichneumon brontesi* Cresson and *Spilichneumon nubivagus* Cresson, both based on the male sex, are discussed in detail and a key is given to distinguish the two probably associated females.

Introduction

This second supplement to the *"Synopsis of Nearctic Ichneumoninae Stenopneusticae"* brings some further additions to the tribe *Protichneumonini* and to the subtribe *Ichneumonina* and subtribe *Amblytelina* of the tribe *Ichneumonini*, all of which have already been treated in part in the first supplement (Le Naturaliste Canadien, 1969, Vol. 96, p. 935-963).

The main content of this supplement, however, is the subtribe *Cratichneumonina* of the tribe *Ichneumonini* and the tribe *Platylabini*, both not supplemented before.

The abbreviation : S.N.I.S. is used for the "Synopsis of Nearctic Ichneumoninae Stenopneusticae with particular reference to the Northeastern Region. (Hymenoptera)", by Gerd Heinrich, 1961-1963.

For other introductory comments see also introduction to Supplement 1, p. 936-937.

I. Tribe *Protichneumonini* [1]

1. Genus *Protichneumon* Thomson

As already mentioned in Supplement 1, a revision of this genus in the frame of a monograph on the Ichneumoninae of Florida is waiting for publication. The genus is therefore not treated here, except for the description of a recently discovered additional new species.

7. *Protichneumon sartoris*, new species

TYPES

Holotype.—♀, "Mississippi, Oktibbeha Co., Starkville, 14–20—VII–1970". Collected by C.F. Sartor. C.G.H. II.

Paratype.—1 ♀, Forsyth, Monroe Co., Georgia, 28 V to 4–VI–1970, collected by F. Naumann. C.G.H. II.

PREAMBLE

In my manuscript on the Ichneumoninae of Florida (to appear in Volume 7, Arthropods of Florida and Neighboring Land Areas) six North American species of this genus have been listed. The discovery of a well distinguished seventh species in the southeastern part of the United States came as a great surprise.

[1] Continuation of Supplement I, *Naturaliste can.*, 96, p. 937-940.

Differs from *grandis* Brullé (as well as from *ambiguus* Cresson and *victoriae* Heinrich) by : (1) considerably more slender femora III ; (2) considerably more slender, less widened beyond middle flagellum, with somewhat more elongate, cylindrical segments 1–6 ; (3) considerably larger and denser scopa on coxae III ; (4) markedly stronger convex scutellum.

Agrees in characters (1), (2), and (4) with *radtkeorum* [2] ; differs from *radtkeorum* most decisively by character (3) and in addition by : (1) more convex temples and cheeks ; (2) considerably smaller size ; (3) entirely red postpetiole.

Probably most closely related to the northern species *effigies* Heinrich as indicated by the small size, red postpetiole, and unusually large scopa ; different from that species also by : (1) less narrowed toward mandible base cheek profile ; (2) coarser sculpture of abdomen ; (3) dark chestnut-red, instead of light orange-ferruginous color of abdomen.

Female

Black, including legs and base, or most, of petiole ; postpetiole and rest of abdomen dark brown-red ; wings uniformly and deeply infuscated ; white are only: small marks on orbits of vertex, frontal orbits narrowly, and anterior side of tibiae I ; flagellum with white dorsal annulus on segments 7 (apex) or 8 to 14 or 15 ; length 20 mm.

Named in honor of Mr. C. F. Sartor, who's sustained endeavor in insect trapping helped considerably to advance the knowledge of the Ichneumoninae of Mississippi.

2. Genus *Coelichneumon* Thomson

(1.) *Coelichneumon phaenomenon* Heinrich

Coelichneumon phaenomenon Heinrich, 1961, S.N.I.S., p. 35-36, ♀ ♂.

DISTRIBUTION

Maine (type locality), Alberta, Alaska.

NEW RECORDS

1 ♂, New York, Rochester, 7-VI-1968, leg. R. Duffield.
1 ♀, New York State (no further data).

MALE

The specimen from New York is much more extensively white-marked than the allotype described from Alaska. The following are white, in addition to the white markings of the allotype : large lateral marks on tergites 3 – 5, small ones also on the 6th tergite, lateral marks on propodeum, face almost entirely, coxae III apically, femora III apically, tibiae III basally on exterior side.

FEMALE

The specimen from New York is also more extensively white-marked than the holotype from Maine and corresponds in this respect with the sympatric male. White are, in addition to the white markings of the holotype : two short median lines on the mesoscutum, postscutellum, two small marks on the propodeum, small marks on apices of all coxae, mark on carinal triangle (on propodeum), and lateral marks on the 5th tergite.

The chromatic peculiarities of the two specimens from New York suggest the possibility of subspecific differentiation from northern populations, however, the paucity of material prevents taxonomic conclusions.

[2] This species is being published in the above mentioned Florida monograph, expected to be off the press in 1972.

(16.) *Coelichneumon eximiops* Heinrich

Coelichneumon eximiops Heinrich, 1961, S.N.I.S., p. 49-50, ♀ ♂.

NEW RECORD

1 ♀, New York, Lake Mohonk, New Paltz, July 1970, leg. D. Smiley.

(22.) *Coelichneumon barnstoni* Morley

Coelichneumon barnstoni Morley, 1915, Rev. Ichn. Brit. Mus., 4, p. 130, ♂.
Coelichneumon barnstoni Heinrich, 1961, S.N.I.S., p. 54-55, ♀ ♂.

DISTRIBUTION

Canada (Hudson Bay to Ontario and Alberta) ; Pennsylvania, Maryland, Wisconsin.

NEW RECORD

New York, Mt. Slide, Catskill Mts., leg. R. Duffield and F. Hough.

MALE

The male of this species caught along with the female and doubtlessly associated with it, has no white mark on the scutellum. According to the series I have in my collection, this seems to be the normal coloration rather than an exception. Consequently, the key for the males of the genus *Coelichneumon* needs to be amended by splitting the alternative 33 as follows :

– – Scutellum slightly convex, sparsely punctured ; wings not, or slightly infuscated ; tyloids on segments 6 or 7 to 13 or 14. ..... 33a
33a Abdomen, in strong light, with a slight bluish tint ..... *barnstoni* Morley
– – Abdomen without trace of bluish tint. ..... *ater* Cresson

(47.) *Coelichneumon albicoxa* Heinrich

Coelichneumon albicoxa Heinrich, 1961, S.N.I.S., p. 81-82, ♂.

TYPES

Holotype.— ♂, Michigan Ann Arbor. C.G.H. II.

Neallotype.— ♀, New York, Rochester, 21–VI–67, leg. R. Duffield. C.G.H. II.

DISTRIBUTION

Southern Ontario and Michigan south to North Carolina; Wisconsin.

MALE

A series of 12 specimens, 10 from New York, 2 from Massachusetts, collected by R. Duffield, display the following, remarkable span of individual variability of white markings, including also the coxae III, the predominantly white color of which had originally been considered a specific character:

coxae III predominantly white	3
coxae III white-marked	3
coxae III entirely black	6
praecutellar carinae white-marked	4
propodeum white-marked	3
more or less restricted white markings on lower half of mesopleura and/or prepectus, and/or on mesosternum near sternauli	8

Face and clypeus varying from entirely white to broadly black medially; often a white mark on apex of pronotal base, on base of mandibles, and a white dot on lower, outer orbits. Always white are: scutellum (except base narrowly black), postscutellum, collare, pronotal ridge, subalarum, part of tegulae, coxae I and II apically to predominantly, marks on vertical orbits; flagellum always with white annulus.

Flagellum with very small, short-oval tyloids on segments 6 or 7 to 15, 16 or 17.

FEMALE

Two, so far undescribed, females of the genus *Coelichneumon* have been collected during 1969 by Mr. R. Duffield, both in the New York State. One of them represents, in all probability, the long missing other sex of *albicoxa* Heinrich, the other a new species to be described further on in this paper. As the males of *albicoxa* have always a distinctly aciculate median field of the postpetiole and never display a long, white strip on outer orbits, the female, which disagrees with them in these two characters, has been considered as the new species; the other female, which does agree and has, in addition, been found along with males of *albicoxa* in the same area near Rochester, New York, is regarded as the other sex of the latter species.

Distinguished by a lanceolate flagellum, with unusually short basal and strongly widened median segments, by complete lack of a scopa on coxae III, and by white marks on scutellum and collare.

Black, the following white: small marks on orbits of vertex, frontal orbits narrowly, a very small spot on upper facial orbits (level with antennal sockets), bipartite mark on collare, two lateral marks on apex of scutellum, subalarum, and inner side of tibiae I and of apices of femora I; flagellum with white, not quite complete, annulus; length 13 mm.

Flagellum.—Short, strongly widened beyond middle, sharply attenuated at apex, with 40 segments, the first only a trifle longer than wide, in lateral view the second to fourth approximately square, the following wider than long, the widest on the flat side more than 3 times as wide as long. Black, with white, nearly complete, annulus on segments 6-13.

In the key for the females of the genus *Coelichneumon* (S.N.I.S., p. 28-32), this female runs clearly to the species *ater* Cresson, No. 45; the differences from the latter are indeed only slight: the relative length of the basal segments of flagellum is a trifle shorter, the femora, particularly femora II, are still a trifle stouter, and there are white markings on collare and scutellum which are absent in *ater* of northern provenance.

The summary of all the above mentioned facts raises the question whether *albicoxa* and *ater* may not perhaps be one and the same species, with extraordinarily variable individuals (particularly males); this matter needs further research.

49. *Coelichneumon* duffieldi, new species

TYPES

Holotype.— ♀, "Letchworth St. Pk., 8–22–1969, R. Duffield". C.G.H. II.

DISTRIBUTION

New York (type locality).

PREAMBLE

The species is well distinguished by the following structural characters: (1) flagellum bristle-shaped, elongate, and slender, only slightly widened beyond middle; (2) coxae III coarsely and very densely punctured all over, without trace of scopa; (3) mandibles normal, without marked gap between teeth, the lower tooth rather small; (4) postpetiole without distinct longitudinal striation, the median field sparsely, the lateral field densely punctured; (5) area superomedia fairly narrow, markedly longer than wide.

In the key for the females of the genus *Coelichneumon* (S.N.I.S., p. 28-32), the holotype runs smoothly to alternative 48 and to the species *orpheus* Cresson,

Synopsis and Reclassification of the Ichneumoninae Stenopneusticae of Africa, p. 233), the genus *Catadelphus* clearly belongs to the Protichneumonini.

4. *Catadelphus ruberior*, new species

TYPES

Holotype.— ♀, "W.W. Peter, Agr. Coll. Miss., IV–1918". C.G.H. II. (One leg and antenna missing.)

Allotype.— ♂, "T.F. Shelton, AMC Miss., June 17". C.G.H. II. (Three legs and one wing are missing.)

Paratypes.—1 ♀, "G.B. Baylis, A. Col. Miss., May 14, 1918". Collection of the Mississippi State University, Starkville, Mississippi; 1 ♀, " ..... VIII–1915, ... Miss." (label partially destroyed). Collection of the Mississipi State University; 1 ♀, "L.F. Cari, Agr. Col. Miss., IV–18–1918". C.G.H. II.

DISTRIBUTION

Known only from type locality: Starkville, Mississippi.

PREAMBLE

By their red abdomen combined with black legs and with uniformly and deeply infuscated wings, females are similar to the northern species *semiruber* Hopper. They differ from the latter rather strikingly by red scutella and predominantly red mesoscutum and head. In structure the two forms are almost congruent, except that the tarsi III appear to be slenderer and more elongate in *ruberior* than in *semiruber*. The hypothetic possibility to consider all North American forms of this genus as associated subspecies has already been discussed in S.N.I.S., p. 813; however, the biological data, particularly host records for all forms involved, which could confirm or contradict such hypothesis are still lacking.

FEMALE

Head red, excluding black median part of frons and the ocellar region; sterna, pleura, and propodeum black, mesoscutum and sometimes propleura red, the former sometimes with infuscated longitudinal bands on lateral lobes; legs black; abdomen red; basal part of petiole and the flagella black, the latter without white annulus; wings uniformly and deeply infuscated; length 18-20 mm.

MALE

Head more extensively infuscated than in female; thorax as in female; first tergite to beyond base of postpetiole and tergites 3-7 uniformly black, the second tergite uniformly red; legs and wings as in female; length 21 mm.

NOTE

All five types were collected by students of the Agricultural College in Starkville, 53-56 years ago, apparently close to the campus. Never since has another specimen been found, neither by students collecting in the vicinity of the university, nor by me during my recent collecting trip to Mississippi. Most likely the species has been exterminated in the area of Starkville by the progressive destruction of its natural habitat. It may still exist, however, in other parts of the State.

II. Tribe *Ichneumonini*

A. Subtribe *Ichneumonina* [3]

1. Genus *Ichneumon* Linnaeus

(12.) *Ichneumon conscopa* Heinrich

Ichneumon conscopa Heinrich, 1961, S.N.I.S., p. 250, ♀.

NEW RECORD

Maine: Mt. Blue near Weld.

VARIABILITY

For eight years the holotype remained the only known specimen of this species; in 1969, R. Duffield collected a second female on Mt. Blue; the new specimen agrees perfectly with the holotype, except for the presence of yellow lateral marks on the postpetiole and 2nd tergite and for the extensively ferruginous mesoscutum.

In the original diagnosis the species *conscopa* was compared only with the very similar *annulatorius* Fabricius, which can be easily distinguished by the polished coxae III with very sparse punctures and without a trace of scopa. However, *conscopa* is much more closely related to *glaucopygos* Heinrich than to *annulatorius*. The two species, *conscopa* and *glaucopygos* share the dense puncturation of the coxae III, including the finely and very densely punctured region on the apical, interior part of the latter. The only essential differences between *conscopa* and *glaucopygos* are: (1) the lack of tangible pilosity (= "scopa") on the densely punctured area of coxae III in *glaucopygos*; (2) the lack of a yellow mark on the 7th tergite in *conscopa*; (3) the seemingly a triffle less shorter femora III in *conscopa*.

As *glaucopygos* has been found to be a species of particularly high chromatic variability, the possibility can not be ruled out that even the apparently distinctive specific characters of *conscopa* may fall into the frame of individual variability of the species *glaucopygos*. This question needs further attention and investigation.

[3] Continuation of Supplement I, *Naturaliste can.*, 96, p. 940-954.

(32.) *Ichneumon pumilops* Heinrich

Ichneumon pumilops Heinrich, 1961, S.N.I.S., p. 276-277, ♀.

NEW RECORDS

Maine: Mt. Blue, several ♀ (C.G.H. II.); Ohio: New Concord, 20 ♀ (Coll. R. Duffield).

VARIABILITY

In several specimens of the series from Ohio the ferruginous mesoscutum is variegated with black (as rarely also in northeastern specimens); in one specimen the entire mesoscutum is black.

(40.) *Ichneumon vivax* Cresson

Ichneumon vivax Cresson, 1877, Amer. Ent. Soc. Trans., 6:178, ♀.
Ichneumon vivax Heinrich, 1961, S.N.I.S., p. 286, ♀.

NEW RECORD

Ohio: Mohican State Park, 6 ♀, hibernating, leg. C. Dasch.

The Ohio specimens have been compared with the holotype and were found to be specifically identical. They are, however, 1–2 mm larger in size, have 3–4 more flagellar segments, and display, in contrast to the type, white lateral marks on coxae II and a white mark on subalarum. Whether these small differences indicate a subspecific separation is dubitable and can not be decided now as only one specimen, the holotype, is known from the type locality.

(41.) *Ichneumon valdopacus* Heinrich

Ichneumon valdopacus Heinrich, 1961, S.N.I.S., p. 287-288, ♀.

NEW RECORD

New York: Mt. Slide, Catskill Mts., summit region; leg. R. Duffield and F. Hough. This is the second recorded specimen of this species; it agrees completely with the holotype.

(53.) *Ichneumon grandisops* Heinrich

Ichneumon grandisops Heinrich, 1961, S.N.I.S., p. 305-306, ♀.

Holotype.—♀, C.N.C.

Neallotype.—♂, New Concord, Ohio, 26-X-1969, leg. R. Duffield, C.G.H. II.

DISTRIBUTION

New York (type locality), Connecticut, Ohio, North Carolina.

MALE (NEALLOTYPE)

Wings strongly and evenly infuscated; abdomen ferruginous-red, except black first segment; head, thorax, and legs black, except the following white: lateral fields of face, clypeus laterally, mandibles extensively, apical margins of all first trochanters narrowly, second trochanters I and II, second trochanters III ventrally, tibiae and tarsi I and II ventrally, apices of femora I and II ventrally, base of tibiae III ventrally, and scape ventrally; flagellum uniformly black; length 18 mm.

Flagellum.—With 44 segments and with narrow, elongatroval tyloids on segments 7–18, the longest (on segments 9–15) almost reaching to the bases, but not to the apices of segments, the one on the 18th segment minute. Uniformly black, scape ventrally white.

STRUCTURAL CHARACTERS

Oral and genal carinae meet at a distance longer than the width of mandible base before the latter; malar space considerably shorter than width of mandible base; scutellum distinctly raised above postscutellum, sloping in gradual curve downward to the latter; area superomedia transverse-rectangular.

VARIABILITY

In a specimen collected at the same locality and on the same day as the neallotype, tergites 1–3 and the base of the 4th tergite are black, and the entire face and clypeus are white, as is also the dorsal surface of the scutellum. There are also small differences in the white markings of the legs and in the shape of the tyloids; nevertheless the two specimens seem to belong to the same species.

(68.) *Ichneumon feralis* Cresson

Ichneumon feralis Cresson, 1867, Amer. Ent. Soc. Trans., 1:361, ♀.
Ichneumon feralis Heinrich, 1961, S.N.I.S., p. 120-121, ♀.

NEW RECORD

New York: Mt. Slide, Catskill Mts. (summit region); ♀, leg. F. Hough and R. Duffield.

3. Genus *Menkokia* Heinrich

Melanichneumon subgenus *Menkokia* Heinrich, 1934, Mitt. Zool. Mus. Berlin, XX, p. 209-210.
Type species. — *Menkokia major* Heinrich. Original designation.

DISTRIBUTION

Celebes (type locality); Burma (C.G.H. II.); North America.

PREAMBLE

The generic position of the North American species *Ichneumon blandii* Cresson, in the S.N.I.S. (p. 612-613) attributed with reservation to the genus *Vulgichneumon* Heinrich, should be revised. The striking chromatic characters of this species, its laterally distinctly carinate scutellum, the aciculate median field of postpetiole, the deeply impressed gastrocœli, and the structure of flagellum of the female represent a combination of features which seem to make a generic separation from *Vulgichneumon* mandatory. As in the Holarctic region no other genus exists to which the species *blandii* could possibly be attributed, I examined the relationship of this species to a multitude of similar tropical genera. I found that the genus *Menkokia*, originally described from Celebes, covers the species *blandii* perfectly. Seen from the zoogeographical point of view, it may seem strange that a genus described from Celebes should occur in North America ; however, many other genera of Holarctic distribution have been recorded from Celebes already, as for example *Ichneumon, Ctenichneumon, Cœlichneumon, Platylabus.*

The following are the decisive characters of the genus *Menkokia* : (1) scutellum laterally distinctly carinate (usually moderately raised above postscutellum) ; (2) median field of postpetiole longitudinally rugose or aciculate (more or less distinctly limited) ; also tergites 2 and 3 fairly coarsely sculptured, usually longitudinally rugose-punctate in the middle ; (3) gastrocoeli distincly, sometimes fairly deeply impressed, of medium size ; (4) area superromedia longer than wide, hexagonal or half-elliptic, with costulae approximately in the middle, narrowed toward area basalis ; (5) flagellum of female bristle-shaped, long, with elongate basal segments, usually distinctly widened beyond middle ; (6) mandibles normal, fairly slender ; (7) propodeum of the clearly broken type ; apices of areae dentiparae pointed, though not projecting.

Townes (Cat. Reclass. Indo-Austr. Ichn., 1961, p. 357) has synonymized *Menkokia* with *Bystra* Cameron. I do not agree with this synonymy as the above mentioned characters (2) and (3) clearly indicate a generic difference. *Bystra* and *Menkokia* are related and have some characters in common, but to me they appear to be two quite different genera nevertheless.

MORPHOLOGICAL CHARACTERS

Flagellum.—Of female long or moderately long, bristle-shaped, with elongate basal segments, ventrally flattened and usually widened beyond middle, strongly attenuated toward apex ; of male moderately nodose, with distinct, transverse bristle-ridges and with a row of distinct tyloids.

Head.—Temple profile more or less strongly narrowed behind eyes, only slightly curved ; occiput and temples declivous from margin of eyes and from ocelli ; cheek profile in front view distinctly narrowed toward mandible base, straight ; upper frons not concave ; malar space somewhat shorter than width of mandible base ; mandibles normal, moderately slender.

Thorax.—Mesoscutum somewhat longer than medially wide, fairly convex, without notauli ; scutellum slightly to moderately raised above postscutellum, dorsally convex, laterally distinctly carinate ; propodeum of the clearly broken type, the horizontal part medially usually slightly shorter than the area posteromedia ; carination complete and prominent ; area superomedia somewhat longer than wide, hexagonal or semi-elliptic, with costulae approximately in the middle, narrowed from costulae toward area basalis ; the latter sometimes more or less indistinct, coarsely sculptured ; areae dentiparae not curved downward, with pointed apices ; mesopleura densely punctured, with distinct speculum.

Legs.—Moderately long, fairly slender ; coxae III without scopa.

Wings.—Nervulus interstitial ; areolet pentagonal, strongly narrowed in front, the intercubiti nearly coalescent ; radius only slightly curved at apex.

Abdomen.—Of female oxypygous, the ovipositor usually somewhat projecting ; postpetiole with more or less distinct median field which is longitudinally striate or rugose ; gastrocoeli of medium size, each narrower than their interspace, distinctly impressed to fairly deep, with distinct thyridia ; space between gastrocoeli longitudinally rugose or striate, the rest of the 2nd tergite and the 3rd (sometimes also the 4th tergite) likewise coarsely and densely sculptured, either rugose-punctate or punctate.

CHROMATIC CHARACTERS

Scutellum white, often medially black with white sides ; tergites 6 and 7 always with white apical marks ; anterior tergites, at least the first one, more or less extensively white-marked, either with white apical margins or apical bandings, or with latero-apical marks ; prescutellar carinae white, usually also mesoscutum with short median white lines ; basic color black, or red and black.

4. Genus *Thyrateles* Perkins

(4.) *Thyrateles instabilis* Cresson

Ichneumon instabilis Cresson, 1867, Amer. Ent. Soc. Trans., 1:303, ♀ ♂.
Thyrateles instabilis Heinrich, 1961, S.N.I.S., p. 352-354, ♀ ♂.

BIOLOGY

A female was found hibernating between the roots of an uprooted tree on Mt. Blue, Maine, May 5th 1969. This seems to be the first record of hibernation of this species.

B. Subtribe *Amblytelina* [4]

2. Genus *Spilichneumon* Thomson

(2.) *Spilichneumon borealis* (Provancher)

Amblyteles borealis Provancher, 1882, Naturaliste can., XIII, p. 328, ♀.
Spilichneumon borealis Heinrich, 1960, S.N.I.S., p. 185-186, ♀ ♂.
Holotype.— ♀, Département de Biologie, Université Laval, Québec.

DISTRIBUTION

Québec : Chicoutimi (type locality) ; Ontario : Mer Bleue near Ottawa.

ECOLOGY

The species is confined to peat bogs, where it appears in the latter part of summer ; males are flying from about middle of August through September.

NEW RECORD

Maine : Chesterville ; 2 ♀, numerous ♂.

DESCRIPTIVE NOTES

Female.—According to previous description, the base of the second tergite is obscure-yellowish in the holotype ; the color may be due to fading in the old specimen. In fresh specimens from Maine the color of tergites 2 and 3 varies from uniformly ferruginous-red to predominantly black, with the base of the second tergite (and very narrowly also the base of the third) ferruginous. In the specimens from Maine the frontal orbits are narrowly ferruginous up to vertex.

Male.—Amendation of description, based on 20 specimens from Maine : black ; yellowish-white are : always clypeus, face, mandibles (except teeth), apex of pronotal ridge, subalarum, tegulae in part, scutellum, tibiae and tarsi I and II, tibiae III (except black apex), apices of femora I and II, entire ventral side of femora I, base on tarsi III, all second trochanters, first trochanters I and II apically and more extensively on dorsal side, apices of coxae I and II more or less extensively (sometimes barely), and collare (exceptionally the latter entirely black) ; in about half of the specimens the postscutellum is white-marked or white and the first trochanters III apically restrictedly white-lined or white-marked ; ventral side of femora II pale brownish-tinged-yellow in varying extent : rarely in whole length, exceptionally not at all, usually partially ; usually the extreme base of femora III pale brownish or yellowish ; apices of segments 1 and 2 of tarsi III and the segments 4 and 5 predominantly, infuscated ; tergites 2 and 3 yellow, the second apically broadly, exceptionally

[4] Continuation of Supplement I, *Naturaliste can.*, 96, p. 935-963 (1969).

almost entirely, black ; the third tergite with narrower apical black band, sometimes almost entirely black or entirely yellow.

Tyloids on segments 4 or 5 to usually 15, rarely to segments 14 or 16.

(3.) *Spilichneumon valdetypicus* Heinrich

Spilichneumon valdetypicus Heinrich, 1961, S.N.I.S., p. 186, ♀.

NEW RECORD

Maine, Mt. Blue near Weld, ♀.

ECOLOGY

Mountain meadow.

DESCRITIVE NOTES

The specimen from Maine was compared with the holotype ; the female from Maine has white apical marks on the 6th and 7th tergite ; in the holotype the 6th tergite bears an indistinct, reddish apical mark instead of a white one ; this may be an individual variation or an indication of subspecific distinction ; as the two specimens agree otherwise completely, there is no doubt about their specific identity.

(4. and 5.) *Spilichneumon bronteus* (Cresson) and *nubivagus* (Cresson)

Ichneumon bronteus Cresson, 1864, Ent. Soc. Phila. Proc., III, p. 144, ♂, and *Ichneumon nubivagus* Cresson, 1867, Amer. Ent. Soc. Trans., I, p. 291, ♂. (New name for *consimilis* Cresson, 1864, loc. cit., p. 163, preocc.).

TYPES

Holotype.—*Ichneumon bronteus*, ♂, A.N.S.
Ichneumon consimilis, ♂, A.N.S.

Neallotype.—*Spilichneumon nubivagus* Cresson, ♀, "Little Cottonw'd Cr., Ida., 5-VII-1965, Craters of the Moon Nat. Mon." C.G.H. II.

DISTRIBUTION

bronteus : Pennsylvania (type locality) north to Québec, Ontario and west probably to Continental Divide.

nubivagus : Colorado (type locality) north to British Columbia and east to Atlanctic. This extensive range probably to be subdivided into a number of geographical subspecies.

PREAMBLE

These two species, both based by the author on males only, present two taxonomic, hitherto still unsolved, problems : (1) are they indeed two distinct

species in spite of their structural congruence, and (2) if so which are the females associated with them? In my treatment in the S.N.I.S. I took tentatively an affirmative point of view in regard to the first question; as to the second, I was unable to divide the ample material of eastern females at hand into two morphologically distinguishable species and consequently attributed them all to *bronteus*; this left *nubivagus* female unknown.

In Maine, in lower altitudes, the two males, *bronteus* with black, more or less extensively yellow-banded abdomen, and *nubivagus* with uniformly red abdomen, are common and occur frequently side by side in the same habitat. Simultaneously and sympatric with these males, populations of females were found with red femora III and first segment and also with black femora III and first segment, but otherwise seemingly undistinguishable; therefore all these females were considered to be associated with *bronteus* ♂.

However, during recent years I collected on a mountain meadow (Mt. Blue, near Weld, Franklin Co., Maine) a considerable number of typical *bronteus* males, without any admixture of *nubivagus* males. Along with them a series of females was caught, without doubt the associated sex, all without exception with black femora III and black first segment. The apparent ecological isolation of a typical *bronteus* population, the females of which all had black femora III, indicates that the color of legs of the females may be specifically indicative, in spite of the lack of structural confirmation.

A careful reexamination of my material of females from the East seems to reveal some extremely subtle structural differentiation between specimens with black femora III and black first segment and such ones with red femora and red first segment: in the former category the flagellar segments are not quite as abbreviated as in the latter and the femora III seems to be imperceptibly narrower (in lateral view) and less densely and extensively punctured; but, these differences are almost too subtle to be used for practical identification purposes, and besides, they do not hold for all specimens with black femora (they do hold for the ones with red femora); the latter complication would mean that the color of femora III is constantly black in one species, but can vary occasionally from red to black in the other.

My present conclusion is that *bronteus* and *nubivagus* are distinct species and that females with black femora III and first segment, combined with a trifle more elongate basal segments of flagellum belong to the former, females with red femora III (varying occasionally to black) and red first segment, combined with slightly more abbreviated flagellar segments, belong to the latter. This conclusion still remains hypothetical until final proof can be obtained by rearing.

Characters distinguishing *bronteus* from *nubivagus*:

FEMALES

bronteus	*nubivagus*
1. femora III black	1. femora III red or sometimes black
2. post petiole entirely or predominantly black	2. postpetiole red
3. first flagellar segment approximately 1.75 times as long as apically wide	3. first flagellar segment approximately 1.4 times as long as apically wide
4. in dorsal view 6th flagellar segment about as long as wide	4. in dorsal view 4th flagellar segment about as long as wide
5. femora III in lateral view slightly slenderer than in *nubivagus*.	5. femora III in lateral view slightly wider than in *bronteus*
6. femora III on exterior side rather sparsely punctured, only dorsally densely	6. femora III on exterior side and dorsally densely punctured
7. flagellum with extensive, clear-white annulus	7. flagellum without or, sometimes with, indistinct, whitish annulus

NOTE

In the neallotype of *nubivagus* from Idaho mesosternum and horizontal part of propodeum are ferruginous; whether this is characteristic of western populations remains to be investigated.

(6.) *Spilichneumon citrinus* (Provancher)

Ichneumon citrinus Provancher, 1886, Add. Corr. Faune Ent. Canada Hym., p. 31, ♂.
Spilichneumon citrinus Heinrich, 1960, S.N.I.S., p. 189, ♂.
Spilichneumon citrinus Heinrich, 1968, *Naturaliste can.*, 95, p. 722, ♂.

NEW RECORD

(Le Naturaliste canadien, 1968): Maine, Mt. Blue, near Weld.

DISCUSSION

See loc. cit., 1968; in last paragraph replace *Spilichneumon nubivagus* Cresson by *Spilichneumon bronteus* Cresson (with reference to the new treatment of the two species in present publication).

11. *Spilichneumon pernigricornis*, new species

TYPES

Holotype.— ♀, "Grand Teton, Nat. Pk. Wyo., H.E. and M.A. Evans, Snake R., 5 mi S. Elk, 6600', VIII-4/10-64." C.G.H. II.

Allotype.— ♂, Ravalli Co., Sula, Montana, 4500'–5000', H.V. Weems, Jr. C.G.H. II.

Paratype.— ♀, "Spring Hollow Camp Ground, Logan Canyon Cache Natl. Park, Utah, 5000'–5500', H.V. Weems, Jr., 26–VI–66. C.G.H. II.

DISTRIBUTION

Wyoming, Utah, Montana, 4500'–6600'.

PREAMBLE

Most closely related in structure to the *bronteus* group, but probably uniquely, distinguished by almost uniformly deep black flagellum and deep black legs III, and by nearly uniformly black thorax, head, and legs I and II.

FEMALE

Abdomen red, except black first segment; head, thorax, and legs almost entirely black, with some obscure ferruginous markings; wings distinctly, though moderately, infuscated; flagellum almost uniformly deep black; length 14 mm.

Flagellum.—Rather short, bristle-shaped, moderately attenuated at apex, with 41 short segments, practically identical in proportions with *bronteus*, the first about 1.7 times as long as apically wide, in dorsal view the 6th square. Deep black, ventrally dark brown beyond middle; scape black.

Head.—Structure, including mandibles, as in *bronteus*. Black, frontal and vertical orbits ferruginous.

Thorax.—Structure and sculpture as in *bronteus*, area superomedia likewise very finely, mainly longitudinally rugose. Uniformly black, sometimes the following parts dark ferruginous: collare, two longitudinal, very indistinct stripes on mesoscutum, and an, also indistinct, median mark on scutellum.

Legs.—As in *bronteus*. Black; tibiae and tarsi I and II ventrally, the tarsi also apically, dark ferruginous, dorsally black-brown.

Wings.—Moderately infuscated.

Abdomen.—Structure and sculpture as in *bronteus*. Color as described above.

MALE

(Allotype); *base of clypeus, facial and frontal orbits up to vertex ferruginouns, as are also the tibiae III medially, tibiae and tarsi I and II entirely, and the tarsi III partially; abdomen red, except black first segment; flagellum uniformly black; length 18 mm.*

Flagellum.—With 45 segments and with elongate, narrow, almost parallel-sided tyloids on segments 5-14, which reach from bases to ends of segments 7-11. Uniformly black, including scape.

REMARK

This form may well be the western geographical subspecies of *bronteus*, but at the present time the knowledge of the western fauna is still too incomplete for subspecific association.

3. Genus *Eutanyacra* Cameron

(4.) *Eutanyacra consignata* (Cresson)

Ichneumon consignatus Cresson, 1967, Amer. Ent. Soc. Trans., I, p. 298, ♂.
Eutanyacra consignata Heinrich, 1961, S.N.I.S., p. 438-431, ♂♀.

NEW RECORDS

Southern Maine: North Berwick, 1 ♀; New York: Lake Mohonk, 2 ♀, leg. D. Smiley.

(12.) *Eutanyacra solitaria* Heinrich

Eutanyacra solitaria Heinrich, 1961, S.N.I.S., p. 442-443, ♀.

NEW RECORD

Maine, Mt. Blue near Weld; ♀.

(14.) *Eutanyacra munifica* (Cresson)

Ichneumon munificus Cresson, 1867, Amer. Ent. Soc. Trans., I, p. 2990, ♂.
Eutanyacra munifica Heinrich, 1961, S.N.I.S., p. 444-446, ♂♀.

NEW RECORDS

Maine, Ragged Island, 1 ♀; Pennsylvania, Smethport, 2 ♀.

ECOLOGY

Ecologically sharply separated from *saguenayensis* Provancher, being confined to overgrown, dry fields and deforested hill slopes.

DESCRIPTIVE NOTES

Female: Equal in color to *vilissima* Heinrich (particularly to the subspecies *rubricoxa* Heinrich and to *solitaria* Heinrich. Can be distinguished from these two species in appearance by markedly larger size (14-16 mm long), in structure by comparatively shorter basal segments of flagellum, in frontal view still wider cheek profile, apically more broadly blunted upper mandible tooth, and particularly by stouter femora I and II. The same characters, except size and mandibles, distinguish this female from the equally large *saguenayensis*.

Male: Extremely similar to *saguenayensis*, but femora comparatively shorter and slightly thicker, and tergites 2 and 3 comparatively wider; most specimens distinguished in addition by unobtrusive, short, lateral yellow lines on mesoscutum at tegulae and by the yellow mark on mesopleura being more restricted than in *saguenayensis*, often entirely lacking; femora II not, or restric-

tedly black-marked (in *saguenayensis* usually extensively black, exceptionally also entirely ferruginous).

(15.) *Eutanyacra saguenayensis* (Provancher)

Ichneumon saguenayensis Provancher, 1888, Hym. Add. VII. p. 356-357. ♂.
Eutanyacra saguenayensis Heinrich, 1961, S.N.I.S., p. 446-448. ♂ ♀.

NEW RECORD

Maine : Chesterville (2 ♀, 20 ♂).

ECOLOGY

In strong contrast to the similar *munifica* Cresson, apparently confined to peat bogs with dense growth of *Vaccinium*.

DESCRIPTIVE NOTES

Male : For the subtle chromatic differences from *munifica* see the preceding species. Among the 20 specimens from Maine (Chesterville) are 3 erythristic mutants of striking coloration : tergites 1-4 basally black, followed by ferruginous-orange, and apically yellow ; the following tergites light ferruginous, 5 and 6 basally black ; all femora ferruginous without black markings ; mesoscutum black with two longitudinal ferruginous bands, in one specimen uniformly light ferruginous.

Differs from *munifica* only slightly in structure as follows :

saguenayensis	*munifica*
1. femora III comparatively longer and slightly slenderer	1. femora III comparatively shorter and slightly thicker
2. second tergite slightly narrower than medially long	2. second tergite somewhat wider than medially long
3. third tergite about 1.5 times as wide apically as medially long	3. third tergite about twice as wide apically as medially long

17. *Eutanyacra vilissimops*, new species

TYPES

Holotype.— ♀, "Kazubazua, Québec, Canada, hibernating, 21–10–1956", leg. G. Heinrich. C.G.H. II.

Holotype.—1 ♀, same data. C.G.H. II.

DISTRIBUTION

Canada : Québec.

ECOLOGY

The two types were found together under a carpet of moss on the ground, in open country, at the border of a small grove of young aspens and pines. The two very similar and closely related species, *vilissima* Heinrich and *solitaria* Heinrich, were collected in great numbers in hibernation, but without exception in rotten tree stumps in the woods only. This ecological peculiarity of the two type specimens seems to be a confirmation of their specific distinction.

PREAMBLE

Extremely similar *to vilissima* and *solitaria* ; differing from these species mainly by markedly inflated cheeks and consequently stronger curved cheek profile, rendering the outline of head in frontal view approximately square ; furthermore the scutellum is slightly more raised above the postscutellum than in *vilisima* and *solitaria*, the sculpture of the abdomen is coarser, in particular the 4th tergite is denser and more distinctly punctured almost to the end, and the interspace of the gastrocoeli is coarser aciculate. Chromatically distinguished from the two species by darker ferruginous basic color of the entire body and by ferruginous (instead of yellow) scutellum. In contrast to *vilissima vilissima*, pleura and coxae predominantly ferruginous.

FEMALE

Flagellum with white annulus ; head dark ferruginous, with only antennal cavities and sometimes a mark on malar space black ; thorax dark ferruginous with restricted black markings, mesoscutum entirely, propodeum almost entirely, pleura predominantly dark ferruginous ; scutellum ferruginous, laterally toward apex faintly yellow-tinged ; the following black : prosternum basaly and apically, mesosternum medially and apically, prepectus predominantly to entirely, pronotum medially or more extensively (except ferruginous upper half of propleura and pronotal base), posterior and superior margin of mesopleura, basal furrow of scutellum and the auxillary troughs, and the basal furrow of propodeum all around ; abdomen dark ferruginous, with black basal bands on tergites 2-4 and with more or less extensively black petiole ; legs dark ferruginous, without black markings except restrictedly black bases of coxae ; length 14-15 mm.

Flagellum.—Bristle-shaped, long, extremely attenuated toward apex, with 40-41 segments, the first about twice as long as apically wide, seen from the side, the 7th approximately square, none wider than long. Pale ferruginous, with complete yellowish-white annulus on segments 7-12, dorsally infuscated toward apex ; scape uniformly pale ferruginous.

STRUCTURAL CHARACTERS

Temple profile not tangibly narrowed behind eyes, distinctly curved.

Scutellum somewhat raised above postscutellum, dorsally flat ; area superomedia square or wider than long ; costulae and lateral carinae of area posteromedia obsolete.

Sculpture of abdomen coarser than in *vilissima*; interspace of gastrocoeli coarsely and regularly aciculate; second tergite coarsely and very densely punctured all over, the third tergite likewise densely though slightly finer punctured; the fourth tergite, in contrast to *vilissima*, also distinctly and densely punctured to beyond middle, although considerably finer than the third tergite.

4. Genus *Netanyacra* Heinrich

Netanyacra Heinrich, 1968, *Naturaliste can.*, 95, p. 709-711.

The following 4 new species were originally included in this genus:

1. *Netanyacra nuevoleonis* Heinrich (type species), *loc. cit.*, p. 709-711; distribution: northern Mexico, Nuevo Leon.
2. *Netanyacra leucopus* Heinrich, *loc. cit.*, p. 712-714; distribution: South Carolina, Tennessee, Kentucky.
3. *Netanyacra diacotae* Heinrich, *loc. cit.*, p. 714-715; distribution: South Dakota (type locality), Alberta.
4. *Netanyacra arizonae* Heinrich, *loc. cit.*, p. 716-717; distribution: Arizona.

2. *Netanyacra leucopus* Heinrich

NEW RECORDS

Georgia: Homer, Banks Co., 1 ♀, numerous ♂, and Forsyth, Monroe Co., 4 ♂; Florida: Tallahassee, 1 ♀.

5. Genus *Tricholabus* Thomson

Tricholabus Thompson, 1894, Op. Ent. 19, p. 2103 and 2113.
Tricholabus Heinrich, 1961, S.N.I.S., p. 387-389.

DISTRIBUTION

This genus is not confined to the temperate zones of the Old and New World as recorded by Heinrich, *loc. cit.*, 1961; according to H. Townes (Cat. Reclass. Nearct. Ichn., 1966, p. 254) *Tricholabus* is also well represented in the Neotropical Region (6 species in Mexico and Paraguay).

BIOLOGY

Since the publication of the S.N.I.S., the findings of R. Hinz, Germany, have added new facts to our knowledge of the biology of this genus. According to communications received by letter from R. Hinz, the European species *strigatorius* Gravenhorst parasitizes full grown caterpillars of *Euclidia* (= *Euclidimera*, Catocalinae). This is a further confirmation of the rule, that amblypygous females lay their eggs into caterpillars, oxypygous females into the (fresh) pupae of their hosts.

(4.) *Tricholabus mitchelli* Heinrich

Tricholabus mitchelli Heinrich, 1961, S.N.I.S., p. 395-396, ♀ ♂.

DISTRIBUTION

Coastal belt (salt marshes) of the Atlantic, from Virginia north to Massachusetts.

NEW RECORD

Maine: Reid State Park, near Georgetown; salt marsh; series of both sexes.

6. Genus *Obtusodonta* Heinrich

Obtusodonta Heinrich, 1962, S.N.I.S. (Addenda), p. 872-873. *Type species.* — *Spilichneumon obscuricolor* Heinrich.

DISTRIBUTION

Holarctic, as the Palaearctic species *Ichneumon equitatorius* Panzer, placed by the European authors in the genus *Amblyteles* Wesmael and by Townes (1965, Cat. East. Palaearct. Inchn.) in the genus *Ichneumon* L. (=*Pterocormus* Townes), shares all distinctive characters with the type species of *Obtusodonta*.

4. *Obtusodonta restricta* (Cresson)

Ichneumon restrictus Cresson, 1877, Amer. Ent. Soc. Trans., VI, p. 109, ♂.
Ichneumon restrictus Heinrich, 1961, S.N.I.S., p. 344-345, ♂.
Obtusodonta montana Heinrich, 1962, S.N.I.S., p. 875-877, ♀ ♂.
Obtusodonta restricta Heinrich, 1969, *Naturaliste can.*, 95, p. 948, ♀ ♂ (*Obtusodonta montana* Heinrich as synonym).

Holotype.— ♂, A.N.S.

DISTRIBUTION

New York (type locality); Maine; Québec.

ECOLOGY

In New York and New England confined to the summit regions of higher mountains.

D. Subtribe *Cratichneumonina*

Subtribe Cratichneumonina Heinrich, 1967, Synopsis and Reclass. of the Ichneumoninae Stenopn. of Africa, south of the Sahara, p. 27 (key), p. 791-792 (description).
Type genus. — *Cratichneumon* Thompson.

DISTRIBUTION

Worldwide.

1. Genus *Cratichneumon* Thomson

Cratichneumon Heinrich, 1961, S.N.I.S., p. 98.

(7.) *Cratichneumon takomae* Heinrich

Cratichneumon takomae Heinrich, 1961, S.N.I.S., p. 116, ♂.

NEW RECORD

Southern Maine : North Berwick.

REMARK

The specimen from Maine disagrees with the original description only by lack of white marks on coxae and trochanters I and II, but is otherwise typical.

(9.) *Cratichneumon ashmeadi* (Schulz)

Ichneumon ashmeadi Schulz, 1906, Spolia Hym., p. 128, ♂ (new name for *Imitator* Ashmead, 1902, preocc.).
Cratichneumon ashmeadi Heinrich, 1961, S.N.I.S., p. 118-119, ♀ ♂.

NEW RECORD

Maine : Mt. Katahdin (summit region), leg. A.E. Brower ; British Columbia : Robson, leg. H.R. Foxlee.

ECOLOGY

In Maine apparently confined to the summit regions of the highest elevations.

(10.) *Cratichneumon acronictae* Heinrich

Cratichneumon acronictae Heinrich, 1961, S.N.I.S., p. 125-126, ♀ ♂.

VARIABILITY

A series of 7 males caught 1965 in southern Maine (North Berwick) in a Malaise trap shows a surprising degree of variability. Only two specimens agree completely with the original description (*loc. cit.* 1961), while the other 5 specimens differ from it markedly in color of legs. In these 5 specimens the black markings on femora and tibiae III are lacking and the ventral side of coxae III is extensively white only in one of them, uniformly ferruginous in the 4 others. The extent of white on mesoscutum and mesopleura is also reduced as compared to the allotype of *acronictae*. All specimens show the large, oval tyloids and the concave clypeus characteristic for *acronictae*, although the concavity of the clypeus seems to be somewhat less pronounced.

I suppose that the entire series represents the species *acronictae*, but there is no final proof for that.

(11b.) *Cratichneumon variegatus insignitus*, new subspecies

TYPES

Holotype.— ♀, "Forsyth, Monroe Co., Georgia, U.S.A., 20–30–May 1968", leg. G. Heinrich. C.G.H. II.

Allotype.— ♂, same locality, 9 to 17–X–1970. C.G.H. II.

Paratypes.—4 ♀, same locality, June and July 1969 and 1970 ; 8 ♀, Water Valley, Yalobusha Co., Mississippi, September and October 1970 ; 1 ♀, Raleigh, North Carolina, 10–June–1951. All in C.G.H. II.

DISTRIBUTION

North Carolina south to southern Georgia and west to Louisiana ; northern limits between this and the nominate form are not clearly established yet.

PREAMBLE

Females of this subspecies differ in color markedly from populations from the type locality (southern Canada and New England), particularly by much more extensive white markings on head and thorax. Both sexes differ from the nominate form also slightly in structure by wider, more curved temple profile and cheek profile.

FEMALE

In contrast to the nominate form : mesopleura with conspicuous white band which runs almost diagonal from the posterior lower corner of mesopleura to the anterior upper corner ; white band on orbits continues from vertex and temple along the hind margin of eye to or almost to mandible base, widening below over most of the surface of cheeks ; area superomedia and areae spiraculiferae always uniformly white, as are also coxae and trochanters I and II.

MALE

Agrees in the distribution of white with the male of the nominate form, but the anterior tergites, particularly tergites 2-3-4 are, on the average, distinctly more extensively blackish-infuscated. As in the female, the temple profile is wider behind eyes than in the male of the nominate form and the temples are stronger convex ; furthermore, the puncturation of tergites 2 and 3 is denser and slightly coarser.

NOTE

The extent of white pattern is strikingly constant in subspecies *insignitus* but individually rather variable in *variegatus variegatus*. Exceptionally specimens with the extensive white pattern characteristic for *insignitus* are also found in northern populations, even as far north as Canada.

In head structure and sculpture this subspecies agrees with a black-banded (in both sexes), endemic species from Florida to be described in near future.

(18.) *Cratichneumon puncticoxa* Heinrich

Cratichneumon puncticoxa Heinrich, 1961, S.N.I.S., p. 133-134, ♀ ♂.

NEW RECORD

Pennsylvania : Smethport.

FEMALE

In the key for the females of the genus *Cratichneumon* (S.N.I.S., p. 101, couplet 28) the remark "tarsi III always uniformly pale yellowish" should be amended to "tarsi III in the great majority of specimens uniformly pale orange-yellow". Likewise in the treatment of this species the description of the color of legs should be amended as follows : "tarsi III in the great majority of specimens uniformly pale orange-yellow, exceptionally moderately infuscated".

(22.) *Cratichneumon vaccinii* Heinrich

Cratichneumon vaccinii Heinrich, 1961, S.N.I.S., p. 141-142, ♂.

NEW RECORDS

Maine : Orono ; northwestern Pennsylvania : Smethport.

ECOLOGY

In Maine peat bog with dense cover of *vaccinium*, in Pennsylvania vaccinetum on dry ground.

(30.) *Cratichneumon alternans* (Provancher)

Phygadeuon alternans Provancher, 1882, Naturaliste can., XIII, p. 335, 358, ♀.
Cratichneumon alternans Heinrich, 1961, S.N.I.S., p. 153-154, ♀.

Holotype.— ♀ (thorax only), Département de Biologie, Université Laval, Québec.

Neallotype.— ♂, Dryden, Maine, 25-VI-61. C.G.H. II.

DISTRIBUTION

Québec.

NEW RECORD

Maine : Dryden, 2 ♀, 8 ♂.

PREAMBLE

The 8 specimens of the male described below were collected at the same locality as the 2 females ; they match the latter morphologically and, in particular, in its extremely small size which is practically the smallest within this genus. It is therefore highly probable that the association of sexes is correct.

MALE

Head and thorax black with white markings ; abdomen red-brown, tergites 1-5 basally more or less extensively blackish ; coxae III entirely or predominantly black, as are also the femora III ; all tibiae and tarsi white, tibiae III apically black, tarsi III sometimes slightly orange-tinged ; all trochanters and coxae I and II white ; femora I and II pale ferruginous and yellowish ; usually mesosternum white-marked ; propodeum sometimes restrictedly brownish or white-marked ; flagellum with annulus ; length 4-7 mm.

Flagellum.—With 26-27 segments and with narrow, elongate tyloids on segments 5-11, rather short, only slightly attenuated at apex, the first segment in lateral view about twice as long as wide, about the 10 apical segments in lateral (exterior) view nearly square. Black, ventrally pale brownish, with complete white annulus on segments 13 or 15 to 16, 17 or 18 ; scape black, ventrally white.

Head.—Temple profile not narrowed behind eyes, broadly rounded ; frons slightly convex ; cheeks in lateral view moderately wide, distinctly convex ; malar space subobsolete ; median field of face distinctly protruding, particularly toward upper end ; frons extremely finely coriaceous, with a few fine punctures. Black, the following white : clypeus, face, mandibles except teeth, malar space, outer orbits broadly, in neallotype only lower part of frontal orbits, the outer orbits up to temple region and a mark on vertical orbits, in other specimens orbits white all around eyes.

Thorax.—Mesoscutum scarcely longer than wide ; anterior fourth of notauli rather distinct ; sternauli lacking ; mesosternum short, convex, about twice as wide as long ; mesopleura correspondingly short, about twice as high as medially long ; area posteromedia twice as long as horizontal part of propodeum medially ; area superomedia about twice as wide as long, not clearly defined all around. Black, the following white : collare, pronotal ridge and base, subalarum, scutella, and apical part of prosternum ; mesosternum sometimes white-marked but not the mesopleura ; sometimes also the propodeum white-marked.

Legs.—Femora III short and stout, about 3 times as long as medially wide. Color as described above ; femora III sometimes extensively brownish.

Wings.—Nervulus postfurcal ; areolet rather strongly narrowed in front.

Abdomen.—Tergites 2 and 3 distinctly punctured, finely coriaceous between punctures ; thyridia distinct, each about as wide as their interspace. Color as described above.

REMARK

There are a few very small specimens at hand with more or less extensively ferruginous mesoscutum and mesopleura, which I am unable to identify ; they may be variations of this species or perhaps dwarf specimens of *scitulus* Cresson.

In order to include the above described male of *alternans* Provancher, the key to the males of the genus *Cratichneumon* Thomson, published in S.N.I.S.,

1961, p. 103-107, should be replaced from couplet 44 on by the following, new version :

44. Abdomen black, tergites 1-2 or 1-3 apically yellow-banded. (Tarsi III uniformly white; length 10-11 mm.) ..... (32.) *modus* (Cresson)

Abdomen otherwise colored 45

45. Mesoscutum black, with distinct median white mark; length 10-15 mm. 46

Mesoscutum black or ferruginous, without median white mark; length 4-10 mm. 47

46. Coxae III dorsally extensively white-marked; black band on second tergite extending from its extreme base to beyond the thyridia; mesoscutum medially coarsely but not densely punctured; carination of propodeum strong and complete; frons at and below the level of lower ocellus slightly concave; length 12-15 mm. ..... (..... probably male of *paraparatus* Heinrich (S.N.I.S., 1962, p. 869, ♀.)

Coxae III dorsally entirely black; second tergite with irregular median black mark; mesoscutum much more finely and densely punctured, scarcely shiny; anterior part of carination of horizontal part of propodeum obsolete; frons at and below the level of lower ocellus slightly convex; length 10-11 mm. ..... (33.) *remanens* Heinrich

47. Tibiae III ferruginous or orange-ferruginous with black apices, at the most narrowly yellow-tinged at the base. (Tarsi III usually more or less infuscated.) 48

Tibiae III white or pale yellow with black apices. (Tarsi III white or pale yellow, without infuscation.) 49

48. Basic color of thorax black, without ferruginous markings; mesosternum not white-marked; flagellar segments slightly shorter than in alternative species; bacilliform tyloids on segments 4 or 5 to 12 or 13; basal tergites (at least 1-3) with conspicuous basal black bands; flagellum ventrally orange-ferruginous. (Length 8 mm.) ..... (40.) *rubricops* Heinrich

Basic color of thorax ferruginous, with rather restricted black markings; mesosternum white to sternauli; flagellar segments slightly longer than in alternative species; elongate, fairly narrow tyloids on segments 7-13; abdomen uniformly ferruginous; flagellum ventrally black-brown. (Length 9 mm.) ..... *unidentified* ♂ (New York: Lake Mohonk)

49. Mesoscutum and mesopleura more or less extensively to entirely ferruginous; abdomen entirely, or almost entirely ferruginous. (Sterna and mesopleura usually extensively yellowish-white; length 7-8 mm.) ..... (31.) *scitulus* Cresson

Mesoscutum and mesopleura uniformly black; abdomen extensively banded with black, or extensively blackish-infuscated. 50

50. Tergites 1-3 blackish, with obscure-brownish apical bands, the following tergites predominantly or entirely blackish; area superomedia very strongly abbreviated, usually several times wider than long, always with very clearly prominent surrounding carina; length 9-10 mm. (Mesosternum usually black, sometimes with white mark on each side of median furrow.) ..... (38.) *rubricus* Provancher

Abdomen red-brown, tergites 1-5 basally more or less extensively blackish; area superomedia slightly less abbreviated, the surrounding carina more or less indistinct or partially obsolete, particularly in front; length 4-7 mm. (Mesosternum usually with white mark on each side of median furrow and a second white mark beyond sternauli; median field of face more protruding in *rubricus*.) ..... (30.) *alternans* Provancher

(37b.) *Cratichneumon flavipectus mississippi*, new subspecies

TYPES

Holotype.— ♀, "Water Valley, Yalobusha Co., Mississ., U.S.A., 6 to 20-X-70", leg. M. Horan. C.G.H. II.

Allotype.— ♂, "Water Valley, Lafayette Co., Mississ., U.S.A., 8-VII-70". C.G.H. II.

Paratypes.—5 ♀, same data as holotype; 2 ♀, same locality, 29-IX to 5-X-1970; 10 ♀, same locality, 21-31-X-1970; all leg. M. Horan. All in C.G.H. II.

PREAMBLE

Females differ in color rather strikingly from northeastern populations (including the type region, southern Canada) by almost uniformly light ferru-

ginous color of the entire body, with practically total lack of black markings, combined with light yellow scutellum. The structural characters, however, including the finely alutaceous, unpunctured sculpture of the second tergite, agree so completely with *flavipectus*, that the subspecific association seems to be undubitable.

FEMALE

Color of entire body markedly lighter than in nominate form; head and abdomen without black markings, uniformly light ferruginous, thorax almost uniformly so colored; femora III only exceptionally somewhat infuscated on the extreme apex; on thorax, only the following parts blackish-infuscated: a narrow and short, indistinct, horizontal line on middle of propleura, spot below subalarum, basal furrow of scutellum and of propodeum, and axillary troughs of mesonotum and of metanotum; often mesopleura on lower half and apical part of propodeum on both sides, with indistinctly yellow-tinged area; otherwise as nominate form, including blackish apex of tibiae III and infuscation on metatarsus III; flagellum as described for nominate form (S.N.I.S., p. 163).

MALE

Agrees with the female in the alutaceous sculpture of the second tergite, in the color pattern of tibiae and tarsi III, and in the almost uniformly light ferruginous color of the abdomen.

Head white, with only ocellar and occipital regions black; sterna, prepectus, propleura and mesopleura white, with only a small, black mark below subalarum and a short, horizontal black band on each side in the middle of anterior part of propleura; mesoscutum black with white median mark; scutellum and postscutellum white, axillary troughs and base of propodeum black; rest of horizontal part of propodeum and basal part of metapleura light ferruginous, shading on the metapleuron into whitish; declivity whitish; abdomen uniformly light ferruginous, only petiole black; legs, including coxae III, light orange-ferruginous, all trochanters, coxae I and II, and ventral side of coxae III whitish; coxae III dorsally with black apical mark; tip of femora III dorsally black, as is also the broad apex of tibiae III and the metatarsus III; second segment of tarsi III partially infuscated, the rest of tarsi III and the tarsi I and II whitish.

Flagellum.—With 30 segments and with narrow, fairly short, bacilliform tyloids on segments 4–12. Black, ventrally orange, with complete white annulus on segments 13–17; scape ventrally white.

(39.) *Cratichneumon rubricoides* Heinrich

Cratichneumon rubricoides Heinrich, 1961, S.N.I.S., p. 165-167, ♀ ♂.

NEW RECORD

Maine: Mt. Blue near Weld (leg. E. Diller).

DESCRIPTIVE NOTES

To the two differences from *rubricus* Provancher stressed in the original description of this species (much shorter ovipositor and somewhat less abbreviated propodeum) a third may be added: the third tergite slightly more densely, regularly, and distinctly punctured.

(42.) *Cratichneumon pertenuis* Heinrich

Cratichneumon pertenuis Heinrich, 1961, S.N.I.S., p. 169-170, ♀.

NEW RECORD

Maine: Camden; leg. G. Heinrich, 7–VIII–1965.

DESCRIPTIVE NOTES

The specimen from Maine, the second of this species collected so far, was compared with the holotype and found to be doubtlessly conspecific. It differs only from the type by black femora III and by predominantly black-brown femora II.

49. *Cratichneumon carolinae*, new species

TYPES

Holotype.—♀, "Raleigh (N. Carolina), U.S.A., 10 June 1951". C.G.H. II.

Paratypes.—2 ♀, Forsyth, Monroe Co., Georgia, 20–30 May, 1968. C.G.H. II.

DISTRIBUTION

North Carolina (type locality); Georgia.

PREAMBLE

Well distinguished by bristleshaped, apically attenuated flagellum.

FEMALE

Light orange, with rich white markings on thorax and predominantly white head; femora, tibiae, and tarsi III uniformly light orange, the tibiae III without a trace of basal or apical infuscation; the following white: head (except orange antennal cavity, middle of frons, ocellar and occipital regions), collare, pronotal ridge and base, tegulae, subalarum, scutellum, postscutellum, declivity of propodeum, nearly lower half of mesopleura, all trochanters, coxae I, and apical half of coxae II; black are only: short band on middle of anterior part of propleura, extreme base of prosternum, mark on base of prepectus, a small mark below subalarum, basal furrow of scutellum, and the axillary troughs of mesonotum and metanotum; flagellum black with complete white annulus; length 9 mm.

Flagellum.—Bristle-shaped, fairly long, slender, slightly widened beyond middle, distinctly attenuated toward apex, with 32 segments, the first twice as long as apically wide, in lateral view the 7th approximately square, the widest on the flat side about 1.5 times as wide as long. Black, with complete white annulus on segments 7 (apex) to 14; scape ventrally orange, the segments before annulus ventrally brown.

Head.—Temple profile moderately narrowed behind eyes, slightly curved; cheek profile moderately narrowed toward mandible base; malar space somewhat shorter than width of mandible base; median field of face moderately protruding; face and frons finely and not very densely punctured, very finely coriaceous between punctures. Color as described above.

Thorax.—Mesoscutum finely and moderately densely punctured, finely coriaceous between punctures; anterior third of notauli distinct; sternauli on mesosternum rather sharply impressed; scutellum very slightly convex, shiny, with a few scattered punctures; horizontal part of propodeum finely and densely, irregularly coriaceous-rugose, without distinct carination (only apical part of lateral carinae of area superomedia recognizable in holotype), medially somewhat shorter than area posteromedia; lateral carinae of the latter also obsolete.

Legs.—Fairly slender; coxae III finely and densely punctured, finely coriaceous between punctures, not shiny, without scopa.

Wings.—Areolet pentagonal though intercubiti strongly narrowed in front; nervulus slightly postfurcal; stigma brownish.

Abdomen.—Postpetiole finely and densely coriaceous-rugose, with faintly indicated median field; gastrocoeli obsolete, thyridia indicated; second tergite finely and densely punctured, coriaceous between punctures, the third tergite more finely and less densely punctured to beyond middle; ovipositor distinctly projecting, with black-brown sheaths.

VARIABILITY

In one specimen from Georgia, white on mesopleura is reduced to a mark; sometimes area posteromedia orange, instead of white; black mark on pronotum sometimes extended into a median black band from side to side.

50. *Cratichneumon austropiceipes*, new species

TYPES

Holotype.— ♀, "Water Valley, Yalobusha Co., Mississ., U.S.A., 29–IX to 5–X–70"; leg. M. Horan. C.G.H. II.

Allotype.— ♂, same locality, 13–27–VII–1970. C.G.H. II.

Paratypes.—1 ♀, "Forsyth, Monroe Co., Georgia, USA, 18 to 31–X–1970", leg. F. Naumann, 1 ♂, same locality, 21 to 28–VIII–1970. C.G.H. II.

PREAMBLE

This is evidently a distinct form, confirmed also by the fact that the two female types, although coming from far distant localities, are completely congruent in color and structure. It belongs in the *w-album group* and seems to be closely related to *piceipes* Heinrich. As so often, the answer to the taxonomic question whether subspecific association with the latter species or distinct specific status is preferable, remains hypothetic and arbitrary. On account of slight morphological differences from the holotype of *piceipes* I prefer to introduce this form tentatively as a full species.

Females differ chromatically from *piceipes* by extensively dark (blood-) red coxae and head; they also differ from the holotype of *piceipes* by dark red femora (all coxae and femora are pitch-black in type of *piceipes*, but the color of femora seems to vary individually in northern populations of that species). Distinguished in structure from *piceipes* by less narrowed behind eyes, distinctly curved temple profile and by less widened flagellum, the widest segment on the flat side being only very slightly wider than long.

FEMALE

Head predominantly blood-red, the red color covering nearly entire vertex, occiput and cheeks, most of frons, and median field of face; thorax black, with indistinctly red median area; white are: scutellum, postscutellum, subalarum, collare, and pronotal ridge (somewhat indistinctly) except basally; abdomen red, except black petiole; coxae blood-red, variegated more or less extensively with black; all femora red, at least femora III blackish at the extreme apex; all tibiae and tarsi black dorsally, the former with white dorsal mark beyond base; flagellum with white annulus; length 10–11 mm.

Flagellum.—Filiform, fairly slender, barely widened beyond middle, just a trifle tapering at apex, with 32 segments, the first almost twice as long as apically wide, in lateral view the 7th square, the widest on the flat side only slightly wider than long. Black, with nearly complete white annulus on segments 8–15; scape ventrally red.

STRUCTURAL CHARACTERS

Temple profile barely narrowed behind eyes, distinctly curved; scutellum and mesoscutum flat, the latter coarsely and rather densely punctured, shiny between punctures; area superomedia somewhat wider than long, in paratype not clearly defined from area basalis; pleura, particularly mesopleura, very coarsely and densely rugose-punctate; postpetiole very finely coriaceous; second tergite densely, moderately finely punctured, thie third sparsely, very finely punctured, alutaceous between punctures; femora III short and stout; coxae III with scopa.

MALE

Similar in appearance and color pattern to *w-album*, but temple profile in vertical view markedly more bulging than in that species and in the allotype of *piceipes*.

Head and thorax black with very rich white markings; mesoscutum with white median mark; abdomen light ferruginous, only petiole black, postpetiole with apical ivory band; femora I and II orange-red, III red, the apex dorsally black; tibiae III at base narrowly, at apex broadly black, medially white; tarsi III in allotype partially blackish-infuscated, in paratype predominantly blackish; the following black: antennal cavity, broad middle of frons, ocellar and occipital regions, mesoscutum except median mark, pronotum except ridge and base, upper hind third of mesopleura, mark before coxae II, base of prosternum and of prepectus, metapleura nearly entirely, horizontal part of propodeum except area superomedia and apical parts of areae dentiparae, exterior side of coxae III, and malar space; rest of head, thorax, and coxae, white; white around eyes narrowly, or almost interrupted on vertex; length 13 mm.

Flagellum.—With 35–36 segments and with short, bacilliform tyloids on segments 7–13, the first and last punctiform. Black, ventrally orange, with white annulus on segments 13–20; scape ventrally white.

STRUCTURAL CHARACTERS

Clypeus with a depression apically in the middle; scutellum moderately convex.

51. *Cratichneumon naumanni*, new species

TYPES

Holotype.—♀, "Forsyth, Monroe Co., Georgia, U.S.A., 20–30. Mai, 1968;" leg. G. Heinrich. C.G.H. II.

PREAMBLE

A slender species, distinguished by uniformly light ferruginous color of head, mesoscutum, abdomen, and legs including coxae, mesopleura and propodeum almost uniformly so colored. Seemingly related to *ferrugops* Heinrich from Canada and Michigan, but smaller and clearly distinguished in structure as a species by slenderer, much less widened beyond middle flagellum, relatively longer malar space, and less widened cheeks. Distinguished chromatically rather strikingly by strong reduction of black markings: on propodeum to areae coxales, on mesopleora to stripe below subalarum.

FEMALE

Light ferruginous; the following yellow: collare, pronotal ridge, subalarum, scutellum, postscutellum, and part of carinal triangle; dorsal side of trochanters and of base of coxae III yellow-tinged; tibiae III without trace of yellow mark; the following black: basal part of prosternum, entire prepectus and mesosternum, basal half of propleura, narrow band below subalarum and lower hind corner of mesopleura, areae coxales, basal furrow of scutellum, axillary troughs of mesonotum and metanotum, and narrowly the sutures around mesoscutum; areae dentiparae with infuscated mark; head and abdomen without yellow and black marks; flagellum with annulus; coxae III with scopa; length 13 mm.

Flagellum.—Subfiliform, slightly widened beyond middle, slightly tapering toward apex, with 32 segments, the first fully 1.5 times as long as apically wide, in lateral view the 5th approximately square, the widest on the flat side nearly 1.5 times as wide as long. Black, with dorsal white annulus on segments 8–14, segments 1–4 dorsally toward apex, ventrally entirely ferruginous; scape ferruginous.

STRUCTURAL CHARACTERS

Temple profile barely narrowed behind eyes, slightly curved; cheek profile slightly narrowed toward mandible base; malar space as long as width of mandible base; mesoscutum flat, not very densely punctured, polished between punctures; horizontal part of propodeum medially distinctly shorter than area posteromedia, the area superomedia hexagonal and slightly wider than long; postpetiole very finely coriaceous-rugose; second tergite densely, though rather finely punctured to beyond middle.

Named in honor of Mr. Fred Naumann of Forsyth, who has supported my ichneumonological investigations in Georgia over several years by his kind hospitality, and also by taking care of an insect trap most successfully during the summer 1970.

52. *Cratichneumon georgius*, new species

TYPES

Holotype.—♀, "Forsyth, Monroe Co., Georgia, U.S.A., 20–30–Mai, 1968, G. Heinrich leg." C.G.H. II.

Paratypes.—1 ♀, 30 mi south of Forsyth, other data as holotype; 1 ♀, locality as holotype, 28–V–4–VI–1970, both leg. G. Heinrich. C.G.H. II.

DISTRIBUTION

Southern Georgia.

PREAMBLE

One of the largest North American forms of the genus, in size equal, in color similar to *anisotae* Heinrich, but differing markedly from that species by structure of flagellum (see below) and chromatically by bright red basic color of head, coxae III, and of disc of mesoscutum; also distinguished by very

clear, dorsal, yellow marks beyond base of all tibiae; coxae III with distinct scopa.

FEMALE

Head red, with orbits broadly yellow almost all around eyes and with ocellar triangle and carina occipitalis black; thorax black, the following yellow: collare, mark on lower end of pronotal base, entire pronotal ridge, subalarum, tegulae in part, median mark on mesoscutum, scutellum, postscutellum, areae posteroexternae together with ends of areae spiraculiferae, apical margin of areae dentiparae, and basic color of area superomedia, the latter partially infuscated; abdomen uniformly red, including first segment; legs red, all tibiae with distinct yellow dorsal mark beyond base; all coxae and trochanters dorsally white or white-marked; all tarsi orange-tinged ivory; flagellum black with white annulus; length 17 mm.

Flagellum.—Moderately long, distinctly widened beyond middle and tapering toward apex, with 38 or 39 segments, the first about 1.5 times as long as apically wide, in lateral view the 7th approximately square, on the flat side the widest more than twice as wide as long, the penultimate segment square. Black, with complete white annulus on segments 7 or 8 to 17 or 18, segments before annulus with brown apical margins on dorsal side, more extensively brown on ventral side; scape ventrally ferruginous.

STRUCTURAL CHARACTERS

Head structure as in *anisotae:* temple profile not narrowed behind eyes, cheek profile in frontal view barely narrowed toward mandibles, both somewhat curved; malar space a little shorter than width of mandible base; median field of face and lower parts of lateral fields markedly protruding, the former with distinct, lateral depressions; mesoscutum flat, coarsely and moderately densely punctured, polished between punctures; base of notauli and the sternauli on the mesosternum distinct; carination of propodeum complete and distinct; area superomedia hexagonal, slightly longer than wide, with costulae somewhat before middle, narrowed from costulae toward area basalis; in lateral view carinae metapleurales and dentiparae exteriores not diverging toward their apices but subparallel; postpetiole extremely finely coriaceous-rugose, second tergite very finely and not densely punctured nearly to the end, with extremely fine coriaceous under-sculpture; the third tergite practically without puncturation; coxae III with distinct scopa.

53. *Cratichneumon fuscior*, new species

TYPES

Holotype.—♀, "Homer, Banks Co., Georgia, U.S.A., 10–V–1970"; leg. G. Heinrich. C.G.H. II.

PREAMBLE

The holotype looks like a dwarf specimen of *georgius* Heinrich, agreeing with the latter generally in structure (partilularly of the head) and in color pattern as well. Differs from *georgius* by black basic color of face, malar space, frons, entire horizontal part of propodeum including area superomedia, and by basally and apically on dorsal side blackish-infuscated tibiae III. These chromatic differences could well be within the limits of individual variability. Their combination with a less widened flagellum, much smaller size, and a different biotope (Banks Co. is located at the foot of the southern spurs of the appalachian chain) suggest strongly, however, that the holotype represents a form different from *georgius*. The two forms may be subspecifically associated. Further research is necessary to clarify this complex of forms.

The holoype resembles in size and color also *subfilatus* Heinrich, but differs from the latter clearly as a species by considerably wider temples and cheeks.

FEMALE

Head black, with entire cheeks up to temple region red, and the following yellow: orbits of face, frons, vertex and temples broadly, a mark on lower outer orbits, median field of face, and the clypeus (the latter two reddish-tinged); thorax black, the following yellow: collare, lower part of pronotal base, entire pronotal ridge, subalarum, median mark on mesoscutum, scutellum, postscutellum, areae posteroexternae; abdomen uniformly red, including first segment; legs red, all tibiae with distinct, dorsal, yellow mark beyond base, tibiae III basally and apically blackish-infuscated on dorsal side; all coxae and trochanters light ferruginous, trochanters I dorsally white, coxae III with slightly yellowish-tinged area on dorsal side; all tarsi orange-tinged ivory; flagellum black, with white annulus; length 14 mm.

Flagellum.—Moderately long, slightly widened beyond middle and tapering toward apex, with 34 segments, the first about 1.5 times as long as apically wide, in lateral view the 7th approximately square, on the flat side the widest nearly 1.5 times as wide as long, the penultimate segment somewhat wider than long. Black, with almost complete, white annulus on segments 9–16, segments before annulus with brown apical margins on dorsal side, entirely brown on ventral side; scape ventrally ferruginous.

STRUCTURAL CHARACTERS

As described for *georgius*, except that in lateral view the carinae metapleurales and dentiparae exteriores are distinctly diverging toward their apices; femora III relatively somewhat shorter and in lateral view slightly stronger and more abruptly widened toward middle; coxae III as in *georgius*, with distinct scopa.

54. *Cratichneumon broweri*, new species

TYPES

Holotype.— ♀, "Aroostook Co., Maine, U.S.A., Round Mt., July". C.G.H. II.

DISTRIBUTION

Northern Maine.

PREAMBLE

A fairly small species, distinguished by its strongly widened beyond middle, and thus nearly lanceolate (but apically only slightly attenuated) flagellum, which separates it at once from *annulatus* Provancher, *facetus* Cresson, *scitulus* Cresson, and *rubricops* Heinrich. Comparable in structure of flagellum only to *rubricus* Provancher, from which it clearly differs by not abbreviated propodeum and broader head.

In the key to the species of *Cratichneumon*, females, S.N.I.S., p. 103, the species runs to couplet 48, where it can be eliminated at once by the structure of the flagellum.

FEMALE

Predominantly ferruginous, thorax darker than abdomen; entire sterna and prepectus, parts of pleura, of mesoscutum, and of legs III black; scutellum and extreme apex of pronotal ridge yellow; flagellum with complete white annulus; tibiae not yellow-marked; length 8 mm.

Flagellum.—Short, subfiliform (close to lanceolate), considerably widened beyond middle, only slightly attenuated toward apex, with 29 segments, the first about 1.5 times as long as apically wide, in lateral view the 6th square, on the flat side the widest about twice as wide as long, counted from the apex only the second and third segments about as wide as long, the following segments wider than long. Black, segments 1–6 apically narrowly red-brown, segments 7 (apex) to 15 with complete, white annulus.

Head.—Temple profile not tangibly narrowed behind eyes, slightly curved; cheeks and temples in lateral view broad and distinctly convex; carina genalis running parallel to margin of eye practically to mandible base; malar space somewhat longer than width of mandible base; median field and lower parts of lateral fields of face distinctly protruding; frons finely coriaceous, sparsely and finely punctured. Ferruginous, face and clypeus paler than the rest; a narrow belt all along carina genalis and occipitalis blackish-infuscated; frontal and upper part of facial orbits narrowly and indistinctly yellow-tinged.

Thorax.—Mesoscutum slightly longer than wide, barely convex, finely and densely coriaceous, fairly sparsely punctured, slightly shiny; notauli only basally, sternauli slightly, indicated; scutellum flat, apically truncate, shiny, with some scattered, fine punctures; all pleura coarsely and densely punctured, punctures on their lower parts running into irregular, longitudinal rugosity; horizontal part of propodeum somewhat shorter than area posteromedia, the latter broad with indistinct lateral carinae, concave; area superomedia slightly wider than long, indistinctly delimited toward area basalis, with costulae in the middle, approximately hexagonal, irregularly rugose; carinae coxales distinct. Dark ferruginous, propodeum lighter ferruginous; yellowish are: scutellum, collare, subalarum, and apex of pronotal ridge; the following black: prosternum (except apically), prepectus entirely, mesosternum (partially indistinctly ferruginous-tinged), pronotum (except about upper third of propleura and the pronotal base), mesopleura along upper, lower, and anterior border, areae coxales and most of areae metapleurales, basal furrow of scutellum, and axillary troughs of mesonotum and metanotum; lateral lobes of mesoscutum and anterior part of median lobe extensively blackish-infuscated.

Legs.—Femora stout, femora III in lateral view not much more than three times as long as medially wide; coxae III without scopa, densely punctured. Ferruginous, including all coxae; about apical third of femora III blackish-infuscated; posterior sides of femora I and II less strongly infuscated; all trochanters pale yellowish-tinged.

Abdomen.—Postpetiole with indistinct median field, finely coriaceous-rugose; gastrocoeli and thyridia indistinct; second tergite distinctly and very densely punctured, the third more finely, less distinctly, and only sparsely punctured, both with very fine, coriaceous undersculpture and somewhat shiny, the second tergite not quite as long as apically wide; ovipositor distinctly projecting. Ferruginous, only the petiole ventrally, laterally, and at the base also dorsally, black.

2. Genus *Homotherus* Foerster

Homotherus Foerster, 1868, Verh. Naturh. Ver. Preuss. Rheinland, XXV, p. 185.
Homotherus Heinrich, 1961, S.N.I.S., p. 173.
Type species. — *Ichneumon locutor* Thunberg.

DISTRIBUTION

Holarctic.

PREAMBLE

The transverse shape of the thyridia, with their narrow interspace, is the only decisive character distinguishing this genus from *Cratichneumon* Thomson; it is not always easily recognizable, particularly in females. In the S.N.I.S. the species of *Homotherus* have therefore been incorporated in the key for the genus *Cratichneumon*. In the key for the males, couplet 37, an error has occured; as found later on, the vertical, median impression on the frons is characteristic

for the males of both species treated under couplet 37 and of *porcelariae* Heinrich, as well. The key for the males of the genus *Homotherus* has therefore been revised and separated from the genus *Cratichneumon*, as follows below.

Key

to the species of the genus *Homotherus* Foerster

Males

1. Flagellum with white annulus; (frons with narrow, longitudinal, median impression below lower ocellus) 2

   Flagellum without annulus; (frons with or without longitudinal, median impression) 4

2. Mesosternum and mesoscutum bright ferruginous-red. (Femora III red, except black apex; tarsi III markedly infuscated; coxae III ferruginous-red, apically more or less extensively black; length 8–10 mm.) (Québec, south to West Virginia) ..... 1. *semiaoplus* Heinrich

   Mesosternum black, sometimes also mesoscutum predominantly black. 3

3. Tarsi III pale orange-ferruginous, not at all infuscated; first trochanters III uniformly pale yellow; femora III usually black, at least extensively blackish-infuscated. (Coxae III predominantly or entirely black, ventrally toward apex usually white; length 8–9 mm.) Québec, south to North Carolina) ..... 2. *townesi* Heinrich

   Tarsi III distinctly, though not strongly, infuscated; first trochanters III extensively black; femora III predominantly red, only apically black. (Coxae III predominantly ferruginous, sometimes white-marked; length 7–8 mm.) (Northern Maine) ..... 5. *pseudoporcelariae*, new species

4. Frons with longitudinal, median impression below lower ocellus; mesoscutum and mesosternum without white markings. (Length 8–9 mm.) (Manitoba, Labrador, New Brunswick, Ontario, Maine) ..... 3. *porcelariae* Heinrich

   Frons without longitudinal impression; mesoscutum with short, lateral white lines, mesosternum apically with white mark on each side of the median furrow. (Length 6 mm.) (New York) 4. *smileyi* Heinrich

4. *Homotherus smileyi* Heinrich

Homotherus smileyi Heinrich, 1968, *Naturaliste can.*, 95, p. 717-719, ♀ ♂.

DESCRIPTION, see *loc. cit.*

5. *Homotherus pseudoporcelariae*, new species

TYPES

Holotype.—♂, "Alagash Maine, 25–VIII–60". C.G.H. II.
Allotype.—♀, Mt. Blue, Franklin Co., Maine, 6 to 20–IX–69. C.G.H. II.
Paratypes.—2 ♂, same data as holotype. C.G.H. II.

PREAMBLE

The male shares with *townesi*, *semiaoplus*, and *porcelariae* the narrow and shallow longitudinal depression running down the middle of frons below lower ocellus. It differs chromatically strongly from *semiaoplus* by predominantly black mesoscutum, propodeum, sterna, and mesopleura; besides that, the temple profile is slightly more narrowed behind eyes and the femora are comparatively shorter and somewhat wider. Differs chromatically from *townesi* clearly by red, only apically black femora III (predominantly black in *townesi*), by uniformly light-orange ventral side of flagellum (dark brownish in *townesi*), and by blackish-infuscated tarsi III (reddish-yellowish in *townesi*). Closest related to *porcelariae* in color as well as in head structure, but distinguishable at once by the presence of a broad, white flagellar annulus and by predominantly red femora III.

The female associated (in all probability) to the holotype is also very similar to *porcelariae*, but distinguished by longer and more slender, uniformly red femora III and by black flagellum with very distinct white annulus; the yellow markings on frontal and vertical orbits are very distinct.

MALE

Head black, the following white: mandibles except teeth, entire face, clypeus and labrum, orbits around eyes except at temples, the white orbital band triangulary widened on vertex and gradually widened from temple region downward over entire width of cheeks at mandible base, including malar space; thorax black, mesoscutum with bipartite, median ferruginous mark, lower half of mesopleura and the propodeum both more or less extensively ferruginous, the latter sometimes predominantly ferruginous; the following white: collare, pronotal ridge and base, tegulae, subalarum, scutellum, postscutellum, and sometimes indistinct marks on apices of areae dentiparae or on lower half of mesopleura; abdomen ferruginous except black petiolus; coxae and trochanters I and II, usually apex of coxae III and trochanters III ventrally and sometimes

a dorsal mark on base of coxae III white ; all femora and basic color of coxae III orange-ferruginous, the femora III apically blackish-infuscated, the coxae III also with more or less extensive blackish infuscations ; tibiae and tarsi I and II ivory, the tibiae III pale ferruginous with black apical third; tarsi III blackish-infuscated, except narrow bases and apices of segments ; flagellum with white annulus ; length 7-8 mm.

Flagellum.—With 30-33 segments and with bacilliform tyloids on segments 5-11. Black, ventrally pale ochreous-orange, with dorsal white annulus on segments 13-16 ; scape ventrally white.

STRUCTURAL CHARACTERS

Temple profile distinctly narrowed behind eyes, slightly curved ; malar space almost half as long as width of mandible base ; frons sparsely and very finely punctured, extremely finely coriaceous, with distinct longitudinal median impression.

Sternauli indicated ; anterior fourth of notauli very distinct ; mesoscutum, particularly anterior part, very densely punctured and densely and finely coriaceous, subopaque ; anterior part of median lobe slightly more convex than in *townesi* and *semiaoplus ;* area superomedia wider than long, narrowed in front, approaching a halfmoon shape ; scutellum apically truncate, convex, and somewhat raised above postscutellum ; carination of propodeum prominent and complete.

Postpetiole shiny, very finely irregularly rugose ; thyridia rather indistinct, each slightly wider than their interspace ; 2nd and 3rd tergites distinctly and densely punctured.

FEMALE

Almost uniformly ferruginous, including legs ; narrow band on frontal orbits and marks on vertical orbits bright yellow ; black are only : base of prosternum, prepectus, band on lower half of propleura from side to side, basal furrow of scutellum and of propodeum and axillary troughs ; flagellum black with white annulus ; length 9 mm.

Flagellum.—Filiform, short, somewhat thicker than in *porcelariae*, with 26 segments, the first about 1.5 times as long as apically wide, the 4th approximately square, none wider than long. Deep black, including scape, with complete white annulus on segments 8-12.

SRUCTURAL CHARACTERS

Generally as in *townesi* and *porcelariae* but femora III tangibly longer and more slender ; postpetiole moderately coarsely longitudinally rugose.

3. Genus *Crypteffigies* Heinrich

Aculichneumon subgenus *Crypteffigies* Heinrich, 1961, S.N.I.S., p. 15-17.
Crypteffigies Heinrich, 1968, Syn. a. Reclass. Ichn. Stenopn. of Africa, V, p. 1106 (in preamble to *Aculichneumon* Heinrich).
Type species. — *Cratichneumon confusus* Ashmead.

DISTRIBUTION

Holarctic.

2. *Crypteffigies megalurus* Heinrich, new status

Aculichneumon (Crypteffigies) confusus megalurus Heinrich, 1961, S.N.I.S., p. 180, ♀.

TYPES

Holotype.— ♀, C.G.H. II.
Neallotype.— ♂, "Mt. Blue (Maine), U.S.A., 12-VI-1965". C.G.H. II.

DISTRIBUTION

Ontario (type locality) ; Maine : Mt. Blue, Dryden, Farmington.

PREAMBLE

Both sexes agree with *confusus* Ashmead in structure and sculpture and are so similar in color pattern to the latter species that a very close relationship is undubitable. Most likely the two forms also replace each other geographically. Nevertheless I prefer to treat them as two distinct species because the size and also the color of males is rather strongly differentiated.

In 1965 *megalurus* was found for the first time in Maine and collected during that year quite frequently in different localities close to the type locality of the neallotype. Alltogether 2 ♀ and 20 ♂ were found ; not a single specimen appeared since.

Males differ from *confusus* chromatically by considerably more extensive white markings on head and thorax, by almost entirely black tarsi III, and by larger size.

MALE

Head black, with face, clypeus, frontal orbits up to about lower ocellus, malar space, apex of cheeks, and outer orbits broadly, up nearly to temple region, white ; thorax black, with the distribution of red-brown as in confusus, *except the following parts white : mesosternum predominantly, about apical half of prosternum, broad exterior belt of prepectus, sometimes mark on collare, pronotal ridge partially or (usually) for entire length, lower part of pronotal base, subalarum, tegulae predominantly, apex of scutellum, coxae and trochanters I and II almost entirely, usually coxae III ventrally toward apex ; tarsi III predominantly black, tip of tibiae III more or less distinctly black ; abdomen*

red-brown, at least petiole, usually also base of second tergite black, often tergites 1-3, exceptionally tergites 1-4, or even to 5 with black basal bands; flagellum without annulus; length 8-(usually) 9 mm.

Flagellum.—With 32 to (usually) 34 segments, the 5th to 13th with bacilliform tyloids. Black, ventrally pale orange-yellow; scape ventrally white.

REMARK

The female flagellum has 25 segments, 7-9 segments less than the flagellum of the male; this is an unusual sexual dimorphism in the antennal structure.

4. Genus *Barichneumon* Thomson

Melanichneumon subgenus *Barichneumon* Heinrich, 1962, S.N.I.S., p. 620-628.
Type species. — *Ichneumon anator* Gravenhorst.

DISTRIBUTION

Holarctic.

PREAMBLE

This group has been treated in S.N.I.S., *loc. cit* as a subgenus of the genus *Melanichneumon* Thomson, but is now considered as a full genus, which apparently has reached the highest degree of speciation in the southeastern region of North America (the southwestern region has so far not been sufficiently explored).

Only 5 species from northeastern North America were treated until 1962 (S.N.I.S., p. 620-628). Seven additional, new forms are described from Florida in a monographic manuscript on the fauna of that state (to be published during 1972). Four further species from southeastern USA and one from the southwest are described below; they are provided with numbers 13-17 (in subsequence of the 12 species treated previously in S.N.I.S. and in Florida manuscript).

STRUCTURAL CHARACTERS

The genus is closely related to *Melanichneumon* and to *Vulgichneumon* Heinrich; the dividing line between these genera is not very sharp. *Barichneumon* contains only small forms, usually 5-8 mm, at the most 10 mm long. They are distinguished in structure by (1) the short, convex abdomen of females with always neatly, regularly, and fairly corsely punctured postpetiole and anterior tergites; (2) fairly short propodeum with clear and complete carination, the area superomedia being usually strongly narrowed in front and hexagonal; (3) short and stout, filiform or subfiliform antennae of females (except the *excelsior* group with still unsufficiently cleared generic position); (4) short and stout legs, particularly femora, of females.

The gastrocoeli are, in contrast to *Vulgichneumon*, of corresponding structure in the two sexes: always small, sometimes moderately impressed, often subobsolete; scutellum and mesoscutum are flat, the former sometimes bearing low lateral carinae at base, or, exceptionally for its whole length.

CHROMATIC CHARACTERS

With the exception of the Holarctic, black type species *anator* Fabricius, the basic color of all North American females of the genus *Barichneumon* is ferruginous or orange-ferruginous. In contrast to the European fauna, only the minority of them displays a white mark on the 7th tergite, exceptionally also on the 6th; black markings on head and thorax are more extensive in northern species than in southern; a pronounced sexual dichroism is the rule, to the effect that the head and thorax of males are considerably more melanistic than of females and at the same time also more extensively white-marked.

BIOLOGICAL CHARACTERS

As the *Barichneumon* females are oxypygous, it can be assumed that they deposit their eggs into the pupa, not into the larva of the hosts. The small size of all species of the genus suggests that Microlepidoptera are their hosts. So far, however, host records are lacking completely; this could be explained by the fact that pupae of Microlepidoptera are very rarely collected. Specimens of *Barichneumon* on account of their small size and fast flight are seldom caught by hand net, but they are rather common nevertheless as they are caught in Malaise traps in great numbers, sometimes in hundreds. This suggests that the populations of some of their hosts occasionally approach calamity level and that the specimens of *Barichneumon* may play an important role in their control.

(26). *Barichneumon excelsior* Heinrich

Melanichneumon (*Barichneumon*) *excelsior* Heinrich, 1962, S.N.I.S., p. 627-628, ♀.

TYPES

Holotype.— ♀, Maine, Mt. Blue. C.G.H. II.
Neallotype.— ♂, "Mt. Blue (Maine), U.S.A., 31-VII-1960". C.G.H. II.

DISTRIBUTION

Maine, Québec, Ontario.

NEW RECORD

Virginia: Pembroque, Mountain Lake Biological Station, 9-VII-1969, leg. G. Heinrich, ♀.

PREAMBLE

The new record adds to the known range of this species a considerable extension southwards, along the Appalachian chain. The female from Virginia

differs from the majority of northern specimens by much more extensively infuscated thorax. That it represents a distinct subspecies appears unlikely as the melanism varies individually to a high degree also in northern populations (see next paragraph).

VARIABILITY

A series of females from Mt. Blue, Maine, contains specimens with yellow and with ferruginous scutellum and with or without white apical mark on the 7th tergite; there is also one specimen quite strikingly different from all others by uniformly black basic color of head, thorax (including scutellum), coxae, and trochanters; this specimen has the general appearance of a distinct different species, however, no sculptural or structural difference from the holotype can be found; it seems to me therefore likely that a high degree of individual variability in the extent of melanistic pattern is a peculiar character of this species.

MALE

Females of *excelsior* have frequently been collected over a period af many years on Mt. Blue (Maine), but a sympatric, chromatically matching male was never discovered. This suggests that the males may display a deceiving degree of sexual dichroism, probably a pronounced melanism, as occasionally also occurs in the females and as is already known in a number of *Barichneumon* species. Considering this aspect, the below-described male from the type locality can, with some probability, be regarded as the associated sex; this male corresponds well with the *excelsior* female in structure, but is strikingly different in color; it is very similar to the European species *bilunulatus* Holmgren.

Head and thorax black, with white pattern; abdomen red, the first and the three last segments predominantly black; the following white: orbits around eyes (interrupted on malar space, strongly narrowed on temples, widened on face), sides of clypeus, collare, pronotal ridge, scutellum except base, postscutellum, and subalarum; legs brownish-red, the following black: all coxae and trochanters, nearly apical third of femora and of tibiae III, the tarsi III; tarsi I and II toward apices and ventral side of femora I blackish-infuscated; flagellum without annulus; length 9 mm.

Flagellum.—With 35 segments and with distinct, almost parallel-sided tyloids on segments 4-13, the first and last punctiform, the rest reaching from bases to apices of segments. Black, ventrally brown-tinged; scape uniformly black.

NOTE

A male from Raith, Ontario, Canada, which also seems to belong to this species, has a yellowish apical band on the postpetiole and entirely black femora III.

13. *Barichneumon flaviscuta*, new species

TYPES

Holotype.—♀, "Water Valley, Yalobusha Co., Mississ., U.S.A., 6 to 20–X–70"; leg. M. Horan. C.G.H. II.

Allotype.—(tentative) ♂, same data. C.G.H. II.

Paratype.— 1 ♂, same locality, 21–31–X–1970. G.G.H. II.

PREAMBLE

Among the numerous forms of this genus recorded from the southeastern states of the USA, only two females display an uniformly yellowish-white scutellum: the allotype of *archboldi* Heinrich from Central Florida and the holotype of this species. These two specimens also agree in almost all structural characters, which makes their close relationship undubitable. The answer to the question whether *flaviscuta* should be considered as a subspecies of *archboldi* or as a distinct species remains arbitrary for the time being. So far neither the male of *archboldi* nor any male closely related to it has been found outside Florida. If the tentative allotype, recorded above, should be confirmed as doubtlessly the associated sex (as I expect it will be), its considerable chromatic differentiation from *archboldi* would strongly support my hypothesis that *flaviscuta* should be considered as being a distinct species.

FEMALE

Considerably smaller than *archboldi* (allotype), differing furthermore from the latter by lighter, orange-tinged basic color of the entire body, lack of black markings and sutures on the thorax, apically blackish-infuscated tibiae and tarsi III, and by subobsolete gastrocoeli.

Light orange-ferruginous without black markings; clear yellowish-white are: entire scutellum, collare, pronotal ridge, upper section of pronotal base narrowly, subalarum, two marks on propodeum (covering areae posteroexternae together with apices of areae dentiparae and spiraculiferae), orbits almost around eyes, all trochanters ventrally, coxae I and II except basally, and a dorsal mark on coxae III; seventh tergite with small, whitish, apical mark; apices of tibiae III and of tarsi III blackish-infuscated; flagellum with white, dorsal annulus; length 8 mm.

Flagellum.—Subfiliform, only a trifle tapering at apex and a trifle widened beyond middle, with 27 segments, the first slightly less than twice as long as apically wide, in lateral view the 5th square, the widest on the flat side about 1.3 times as wide as long. Black, with nearly complete white annulus on segments 6-13; scape ventrally ferruginous.

STRUCTURAL CHARACTERS

Temple profile scarcely narrowed behind eyes, with distinctly curved outline; malar space about half as long as width of mandible base; scutellum

laterally carinate to about middle; sternauli sharply impressed on mesosternum, notauli basally distinct; carination of propodeum complete, areae dentiparae somewhat slanting, with moderately drawn out apices; area superomedia fairly large, about as wide as long, pentagonal; area basalis with small, projecting median tubercle; gastrocoeli and thyridia recognizable, small, the former superficial, triangular; postpetiole and tergites 2 and 3 coarsely and densely, the base of the 4th tergite finely and less densely punctured; femora III stout and fairly short.

MALE (tentative)

Head white, with black antennal cavity, middle of frons, ocellar and occipital regions, and malar space; thorax black, including entire mesoscutum, with the following white parts: apical part of prosternum, exterior belt of prepectus, mesosternum (except black mark before coxae II), lower two-thirds of mesopleura, collare, pronotal ridge and base, subalarum, scutellum, postscutellum, base of carina metapleuralis, and two large marks on propodeum (covering areae posteroexternae and apical parts of areae dentiparae and spiraculiferae); abdomen orange-ferruginous, postpetiole with ill-defined, yellowish apico-lateral marks; legs ferruginous, coxae and trochanters I and II white, basic color of coxae III and trochanters III, apices of femora III and of tibiae III, and the tarsi III almost entirely, black; coxae III with large dorsal white mark and white apical margin below; flagellum without annulus; length 7 mm.

Flagellum.—With 30-31 segments and with bacilliform, long tyloids on segments 5-13. Black, ventrally light brown; scape ventrally white.

14. *Barichneumon sphageti*, new species

TYPES

Holotype.— ♀, "(Maine), U.S.A., Chesterville, 12–9–65"; leg G. Heinrich. C.G.H. II.

DISTRIBUTION

Maine.

BIOTOP

Black spruce peat bog.

PREAMBLE

A small species, superficially similar in size and in structure of flagellum to *sorex* Heinrich, but distinguished by the cheek profile being considerably more narrowed toward mandibles, and by considerably more inflated femora III. Well characterized in color by white apical marks on the 6th and 7th tergite.

FEMALE

Orange-ferruginous, with restricted black and very restricted white markings on thorax; white are only: collare, extreme end of pronotal ridge, mark on subalarum, and apical marks on tergites 6 and 7; the following black: antennal depressions, median mark on pronotum (behind collare), base of prosternum and of prepectus, basal furrow of scutellum and of propodeum, axillary troughs, lower margin of areae coxales, and apices of femora and tibiae III; tarsi III and basic color of tergites 6 and 7 blackish-infuscated; flagellum with white annulus; length 5 mm.

Flagellum.—Short, subfiliform, slightly tapering toward apex, not widened beyond middle, with 27 segments, the first less than twice as long as apically wide, in lateral view the 7th square, the widest on the flat side also approximately square. Black, ventrally brownish, with dorsal white annulus on segments 7-12; scape ferruginous, dorsally infuscated.

STRUCTURAL CHARACTERS

Temple profile moderately narrowed behind eyes, a trifle curved; cheek profile in front view strongly narrowed toward mandibles, nearly straight; malar space slightly longer than width of mandible base; face slightly receding from upper margin toward margin of clypeus; median field of face moderately protruding.

Mesoscutum densely punctured, smooth and shiny between punctures; scutellum sparsely punctured, shiny, laterally not carinate except at the extreme base; area posteromedia wide, somewhat longer than horizontal part of propodeum medially; carination of propodeum complete; area superomedia apically slightly wider than medially long, with costulae slightly beyond middle, strongly narrowed from costulae toward area basalis; areae dentiparae fairly long, the carinae dentiparae exteriores nearly straight, and parallel to carinae dentiparae interiores.

Postpetiole, the second tergite and the third tergite almost to the end, densely and evenly punctured; gastrocoeli small but distinct, triangular, their pointed inner angles with an interspace narrower than one of them; thyridia fairly distinct.

Nervulus interstitial; areola rhomboidal in type specimen; stigma blackish.

Femora III very stout, inflated, in lateral view only three times as long as medially wide; coxae III densely punctured, without scopa.

NOTE

In the key to the females of *Barichneumon* (S.N.I.S., p. 620) this species runs straight to *sorex;* for the differences from that species see preamble.

15. *Barichneumon crassipunctatus*, new species

TYPES

Holotype.— ♀, "31.VIII.7.IX.70, Athens - Nicholson, Georgia, U.S.A." C.G.H. II.

DISTRIBUTION

Nicholson, near Athens, Georgia.

PREAMBLE

The holotype is distinguished by the combination of the following characters: (1) fourth tergite almost as densely and strongly punctured to its middle as the third; (2) areae dentiparae elongate, narrower and rather strongly slanting down closely to the base of coxae III; (3) scutellum laterally (weakly) carinate at the base only; (4) apices of femora III and tibiae III blackish infuscated.

It shares the infuscated apices of femora and tibiae III with *peramoenus* Heinrich and *sorex* Heinrich, but differs from these species decisively in structure of propodeum (see No. 2).

It comes rather close in the structure of the areae dentiparae to *floridanus* Heinrich and *fuscosignatus* Heinrich, but differs from these species in the sculpture of the fourth tergite, from *floridanus* in addition clearly by wider and more strongly curved temple profile, from *fuscosignatus* in addition decisively by lack of lateral carinae of scutellum (see No. 3).

FEMALE

Dark ferruginous, with very restricted black or blackish markings and almost without white markings; the following black or blackish: base of prosternum and of prepectus, basal furrow of scutellum and of propodeum, axillary troughs, apices of femora and of tibiae III, and the tarsi III predominantly; collare yellowish; pronotal ridge, vertical and frontal orbits indistinctly yellowish-tinged; flagellum with white annulus; length 6 mm.

Flagellum.—Subfiliform, only slightly tapering toward apex, barely widened beyond middle, with 28 segments, the first about 1.5 times as long as apically wide, in lateral view the 5th square. Black, with dorsal white annulus on segments 6 – 12; scape ferruginous, dorsally infuscated, except basally.

STRUCTURAL CHARACTERS

Temple profile only slightly narrowed behind eyes, slightly curved; malar space somewhat longer than width of mandible base.

Mesoscutum fairly densely and distinctly punctured; scutellum with a few scattered fine punctures, shiny, flat, laterally carinate only basally; horizontal part of propodeum medially markedly shorter than area posteromedia; area superomedia apically about as wide as medially long, with costulae behind middle, strongly narrowed from costuae to area basalis; areae dentiparae narrow, elongate, slanting comparatively far downward toward base of coxae III.

Postpetiole with faint indication of median field, densely and neatly, fairly coarsely punctured, as are also tergites 2 and 3, and more than the basal half of the fourth tergite; gastrocoeli and thyridia small and superficial; femora III rather short, in lateral view about 3 times as long as wide.

16. *Barichneumon seticornutus*, new species

TYPES

Holotype.—♀, "Athens, Nicholson, Georgia, U.S.A., 5–31–VIII–1970"; leg. H. Hermann. C.G.H. II.

Allotype.—(tentative) ♂, "Athens, Georgia, U.S.A., 12–15–VII–1969". C.G.H. II.

DISTRIBUTION

Georgia.

PREAMBLE

So far the only known southeastern female which shares with the more northern *excelsior* Heinrich the clearly bristle-shaped, long, and slender structure of flagellum. These two species form, together with some palaearctic forms, a group which could be considered as being a genus, closely related to the Ethiopian-Oriental genus *Crytea* Cameron, differeing from the latter only by flat, laterally not carinate scutellum.

Differs from *excelsior* clearly as a species in structure (1) by distinctly slenderer femora II and III, (2) by the temple profile being distinctly narrowed behind eyes, with straight outline, and (3) by slenderer flagellum, not the least widened beyond middle. Differs from *excelsior* chromatically by broadly white orbits all around eyes, entirely white pronotal ridge and base and coxae I and II, and by lack of black on mesosternum, propleura, and propodeum. Shares with *excelsior* the white apical mark on 7th tergite.

FEMALE

Light ferruginous, with very restricted black markings on head and thorax; the following white: orbits broadly all around eyes, mandible base, collare, pronotal ridge and base, mark on tegulae, subalarum, scutellum, postscutellum, coxae I and II predominantly, first trochanters I and II toward apex, and apical mark on 7th tergite; areae posteroexternae indistinctly whitish; the following black: antennal cavities, ocellar and occipital regions, base of prosternum, pronotum medially (behind collare), base of prepectus, mark below subalarum, basal furrow of scutellum and of propodeum, the axillary troughs, and tarsi III from apex of metatarsus on; extreme apex of femora and tibiae III slightly infuscated; flagellum with annulus; length 8 mm.

Flagellum.—Bristle-shapped, fairly long, very slender, strongly attenuated toward apex, with 33 segments, the first about 3.5 times as long as apically

wide, in lateral view the 13th approximately square, on the flat side the widest scarcely wider than long. Black, with dorsal white annulus on segments 6-13; scape ventrally ferruginous.

STRUCTURAL CHARACTERS

Temple profile markedly narrowed behind eyes, with almost straight outline; cheek profile in front view considerably narrowed toward mandibles, with straight outline; malar space slightly longer than width of mandible base; median field of face only slightly protruding.

Mesoscutum densely and evenly punctured, shiny between punctures, slightly convex; notauli indicated only at the extreme base; sternauli fairly distinct; propodeum abbreviated, the area posteromedia nearly twice as long as horizontal part medially; carination distinct and complete; area superomedia horseshoe-shaped, almost as wide as long.

Postpetiole neatly punctured, with distinct median field; tergites 2 and 3 densely, regularly, and strongly punctured all over; gastrocoeli and thyridia distinct, nearly as wide as their interspace; 4th tergite very finely and not densely punctured to about middle.

Nervulus markedly postfurcal; areolet pentagonal; radius straight.

Coxae III densely and evenly punctured all over; without scopa.

MALE (tentative)

This male, probably associated with the holotype, is distinguished by the structure of gastrocoeli and thyridia, which are more pronounced, deeper, and longer than in most other species, but corresponding with the holotype; also, by an abbreviated propodeum with the area superomedia distinctly wider than long, under consideration of the normal sexual dimorphism, corresponding with the holotype. In color differing strongly from the female by black basic color of head, thorax, and coxae III, in a parallel to the closely related species *excelsior* Heinrich. It shares with the female the apical white mark on the 7th tergite and the infuscated pattern on legs III.

Head and thorax black, with rich white pattern, and with some irregular, ferruginous areas on pleura; the following white: head, including mandibles (except black antennal cavities, middle of frons, ocellar and occipital regions), apical half of prosternum, collare, pronotal ridge and base, exterior belt of prepectus, anterior outer region of mesosternum together with anterior lower part of mesopleura, markings on posterior, lower part of mesopleura, subalarum, tegulae, scutellum, postscutellum, areae posteroexternae together with apical half of areae dentiparae and apical parts of areae spiraculiferae, entire coxae and trochanters I and II, interior side of coxae III and their dorsal side basally, apico-lateral marks on postpetiole, and an apical mark on 7th tergite; rest of abdomen orange-ferruginous, the apical margin of 2nd tergite yellowish-

tinged; femora, tibiae, and tarsi I and II pale orange-ferruginous, trochanters III and base of femora III orange-ferruginous, the latter extensively blackish-infuscated toward apex, the former on exterior side infuscated; tibiae III basally ferruginous, shading into blackish toward middle; tarsi III blackish; flagellum without annulus; length 9 mm.

Flagellum.—With 32 segments and with elongate-oval tyloids on segments 6-17, the longest occupying about median half of segments. Black, ventrally pale brown; scape ventrally white.

17. *Barichneumon californicus*, new species

TYPES

Holotype.— ♀, "U.S.A., Calif., Los Angeles, 5 Oct. 1969, leg. B. Heinrich". C.G.H. II.

DISTRIBUTION

California.

PREAMBLE

The holotype differs chromatically from all eastern and southeastern species by uniformly ferruginous color of the entire body, including legs, with complete lack of black as well as white markings (except white flagellar annulus). Morphologically it approaches (among the northeastern species) *soror* Cresson and even more *sorex* Heinrich, differing from the former considerably in head structure (by more narrowed, almost straight temple profile), from the latter by rather distinct, fairly deeply impressed, triangular gastrocoeli and distinct thyridia. The species is clearly distinguished from all recently named species from the southeast by the fairly pronounced and wide gastrocoeli, which are even somewhat wider than their interspace, in combination with the laterally not carinate scutellum and with the, described below, structure of the flagellum.

FEMALE

Uniformly ferruginous, including legs, without black or white markings; flagellum with white annulus; length 7 mm.

Flagellum.—Subfiliform, a trifle widened beyond middle, slightly attenuated toward apex, with 31 segments, the first about 1.5 times as long as apically wide, in lateral view the 5th square, the widest on the flat side nearly 1.5 times as wide as long. Ferruginous, including scape, with dorsal white annulus on segments 7-13, segments beyond annulus dorsally markedly infuscated.

STRUCTURAL CHARACTERS

Temple profile distinctly narrowed behind eyes, almost straight; cheek profile likewise narrowed toward base of mandibles and almost straight; malar

space nearly as long as width of mandible base; median field of face and lower part of lateral fields distinctly protruding.

Mesoscutum moderately coarsely and not very densely punctured, polished between punctures; scutellum polished, with very few scattered, fine punctures, laterally not carinate, except the extreme base; area superomedia about as long as apically wide, gradually narrowed toward area basalis, forming a half-oval, finely coriaceous, not punctured; areae dentiparae fairly long and slightly slanting; propleura and mesopleura coarsely and moderately densely punctured, shiny between punctures, speculum smooth and shiny; metapleura with a large, impunctate, almost smooth area, covering more than anterior half of the metapleura.

Puncturation of postpetiole and tergites 2 and 3 as described for the genus; gastrocoeli distinctly deepened, comparatively large, triangular, their interspace slightly narrower than one of them; 4th tergite finely punctured not quite to the middle.

Femora III only moderately stout; coxae III with indistinct scopa, indicated by an extremely finely and densely punctured, opaque area with sparse pilosity; rest of ventral side of coxae III moderately coarsely and sparsely punctured, polished between punctures; coxae II polished, with few scattered punctures.

5. Genus *Vulgichneumon* Heinrich

Melanichneumon subgenus *Vulgichneumon* Heinrich, 1961, S.N.I.S., p. 17 and 1962, S.N.I.S., p. 604-606.
Vulgichneumon Townes, 1965, Cat. and Reclass. E.Pa.Ichn., p. 432.
Type species. — *Ichneumon brevicinctor* Say.

Distribution

Holarctic, Oriental, and Ethiopian. Perhaps worldwide.

9. *Vulgichneumon heleiobartos* Porter

Melanichneumon (*Vulgichneumon*) *heleiobartos* Porter, 1964, Psyche, 74, p. 130-133, ♀ ♂.
Holotype.— ♀, M.C.Z., No. 31072.

Distribution

New Jersey: Metuchen (type locality).

Preamble

Apparently a very local species, as it is known only from the type locality so far. I have seen the holotype and have compared it with all similar European species of the genus, but found no indication that it could be linked subspecifically with any one of them. The differences from the related Nearctic forms are already thouroughly explained in the comprehensive original description.

Female

Black, frontal orbits narrowly white, tergites 6 and 7 with white anal marks; anterior tibiae exteriorly predominantly dull-whitish; flagellum with white annulus; length 8.5 mm.

Flagellum.—Fairly short, filiform, a trifle widened beyond middle, with 31 segments, the first approximately twice as long as apically wide, in dorsal view the 5th or 6th approximately square, the widest on the flat side about 1.5 times as wide as long. Black, with dorsal white annulus on segments 7-12.

Male

Black, with the following white markings: mandibles except teeth, clypeus, face, frontal orbits up to level with lower ocellus, little more than lower half of outer orbits (broadly interrupted on malar space), collare extensively, pronotal ridge, subalarum predominantly, scutellum (except a triangular, basal area occupying about one-fourth of its surface), anterior side of femora I and II apically and of tibiae I, tergites 6 and 7 predominantly; length 9.5 mm.

Flagellum.—With 32 segments and with bacilliform tyloids on segments 5-13. Black, scape ventrally white.

For detailed description, variability, and ecology see original description.

6. Genus *Melanichneumon* Thompson

Melanichneumon subgenus *Melanichneumon* Heinrich, 1962, S.N.I.S., p. 583-604.
Type species. — *Ichneumon spectabilis* Holmgren.

Distribution

Holarctic. One species from Mexico (Townes, 1966, Catal. of Neotropic Ichneumonidae, p. 261).

14. *Melanichneumon neoleviculops*, new species

Types

Holotype.— ♀, "Dryden, Maine, U.S.A., 19 August 1965". C.G.H. II.
Allotype.— ♂, same locality, 13 June 1965. C.G.H. II.
Paratype.—1 ♀, New Concord, Ohio, Oct. 1, 1964, leg. C. Dash. C.G.H. II.

Distribution

Maine, Ohio.

PREAMBLE

The female is rather similar in color pattern and appearance to *leviculus* Cresson and *leviculops* Heinrich. It differs from the former species by lack of scopa on coxae III and from both species by distinctly slenderer, comparatively longer basal segments of flagellum, denser sculpture of mesoscutum and coxae III, and by slenderer femora III. The male differs from *leviculus* by large white apical marks on tergites 6 and 7 (the male of *leviculops* is not known).

FEMALE

Coxae III ventrally rather densely punctured, without scopa. *Head and thorax black, with only small marks on vertical orbits and the entire scutellum white; collare indistinctly reddish-white-marked; abdomen red, tergites 4-7 black, the 6th with smaller, the 7th with large, apical, white mark; the 4th tergite sometimes laterally red; coxae, trochanters, and femora nearly entirely black, the tibiae black or blackish, tibiae III basally extensively reddish, tibiae I and II yellowish on anterior side; tarsi III blackish, tarsi I and II predominantly brownish; flagellum with white annulus; length 8-9 mm.*

Flagellum.—Lanceolate, strongly widened beyond middle and considerably attenuated toward apex, with 30-31 (holotype) segments, the first about twice as long as apically wide, in lateral view the 5th square, the widest on the flat side nearly 2.5 times as wide as long. Black, with dorsal annulus on segments 6 (holotype) or 7 to 13; segments before annulus apically brownish.

STRUCTURAL CHARACTERS

Temple profile and cheek profile distinctly narrowed behind eyes and toward mandible base respectively, both with almost straight outlines; malar space somewhat longer than width of mandible base.

Mesoscutum, in contrast to *leviculops*, very densely punctured all over, almost opaque; notauli barely indicated at the extreme base, sternauli indicated; carination of propodeum complete, very clear and regular; area superomedia slightly longer than apically wide, with costulae shortly beyond middle, strongly narrowed toward area basalis, hexagonal or approaching the form of a gothic arch.

Postpetiole with fairly distinct median field, densely punctured; gastrocoeli very small and superficial, thyridia indistinct; tergites 2 and 3 fairly coarsely and very densely punctured, distinctly more densely than in *leviculops*; the 4th tergite more finely punctured to beyond middle.

Femora III considerably slenderer than in *leviculops*, coxae III considerably denser punctured all over.

MALE

Head and thorax black, with the following white: small marks on vertical orbits, collare, mark on tegulae, scutellum (except basal slope); tergites 1-3 and lateral parts of the 4th tergite red, rest of the 4th tergite and basic color of tergites 5-7 black, the 6th and 7th with large, apical white marks; legs predominantly black, the tibiae III red to beyond middle; tibiae I and II, apex of femora I, and the tip of femora II yellowish on anterior side, the tarsi I and II ventrally yellow-tinged ferruginous, tarsi III blackish, bases of segments narrowly ferruginous; flagellum with white annulus; length 9-10 mm.

Flagellum.—With 33 segments and with small, narrow tyloids on segments 5-12. Black, with complete white annulus on segments 11-17; ventrally brownish.

NOTE

There are two males at hand, one from northern Maine, the other from central Maine, Mt. Blue, which agree generally with the allotype, but have white facial orbits and a white dot on the end of pronotal ridge and on the subalarum. Whether they represent variations of *neoleviculops* or the, so far unknown, other sex of *leviculops*, can not be decided here.

7. Genus *Platylabops* Heinrich

Platylabops Heinrich, 1950, Mitteil. Sammelst. Schmarotzerbest., 27, p. 4, 5.
Platylabops Heinrich, 1962, S.N.I.S., p. 640.

The type species of this genus is not *hinzi* Heinrich, as erroneously recorded in S.N.I.S., 1962, but *apricus* Gravenhorst, as published originally by Heinrich, loc. cit. 1950, p. 4.

V. Tribe *Platylabini*

1. Genus *Platylabus* Wesmael

(7.) *Platylabus subrubricus* Heinrich

Platylabus subrubricus Heinrich, 1962, S.N.I.S., p. 714, ♀ ♂.

NEW RECORD

Central Maine: Dryden (one female).

VARIABILITY

The specimen from Maine agrees almost completely with western specimens; the complete white annulus on flagellum covers segments 8-13.

(8.) *Platylabus luteatae* Heinrich

Platylabus luteatae Heinrich, 1962, S.N.I.S., p. 715, ♀ ♂.

NEW RECORDS

Central Maine: Mt. Blue, at the summit region (one female); Pennsylvania: Smethport (2 females).

VARIABILITY

The three, newly recorded females agree with the original description, except that in all of them only the apical one-third of tibiae III is black, and that, in addition to the original description the following are white : frontal orbits narrowly (in specimen from Maine and in one from Pennsylvania), the tegulae, apical margin of cheeks, mandibles in part, sometimes (one specimen from Pennsylvania) mark on subalarum ; the white on pronotal ridge varies from a small mark on its apex to the whole length.

Flagellum with 31 segments in all three specimens, with dorsal white annulus on segments 9-11, in one from Pennsylvania on segments 8-12.

(23.) *Platylabus berndi* Heinrich

Platylabus berndi Heinrich, 1962, S.N.I.S., p. 731-732, ♂.
Platylabus albidorsus Heinrich, 1962, S.N.I.S., p. 740-741, ♀ ; new synonym.

Holotypes.—Platylabus berndi Heinrich, ♂. C.G.H. II. ; *Platylabus albidorsus* Heinrich, ♀. C.G.H. II.

DISTRIBUTION

Maine, Franklin Co. (type locality), Ontario, Québec.

DISCUSSION OF SYNONYMY

In the holotype of *berndi* (♂) the mesoscutum is black with white median mark, the abdomen black with transverse white bands on tergites. In the holotype of *albidorsus* (♀) the mesoscutum is light ferruginous-red with white median mark, the abdomen uniformly light ferruginous. Because, as a rule, in strong contrast to the tribe Ichneumonini, the tribe Platylabini displays none, or very little sexual dichroism, it did not occur to me that these two holotypes could possibly represent the associated sexes of one and the same species. Further observation of the two "species" in their type localities, extended now over nearly a decade, revealed that (a) *albidorsus* females occur regularly in two phases, a melanistic, rarer one, with black basic color of the mesoscutum, and a more frequent, erythristic one with ferruginous basic color of mesoscutum (both with white median mark), and (b) that neither females agreeing fully in color with *berndi*, nor males matching *albidorsus* did occur, but the two forms were found to be sympatric everywhere. Consequently, it can be assumed that in all probability *albidorsus* is the associated other sex and synonym of *berndi*, the more so, as occasional occurence of a melanistic phase of *albidorsus* also supports this hypothesis. The case of this strongly sexual-dichroistic *Platylabus* species is one of the few exceptions from the rule.

NOTE

The melanistic phase of *berndi* ♀ is not included in the key to the females of the genus *Platylabus* (S.N.I.S., p. 699-702) ; it runs clearly to couplet 29 where it is distinguished from both alternatives by the median white mark on mesoscutum and larger size.

(35.) *Platylabus ornatus* (Provancher)

Phygadeuon ornatus Provancher, 1875, *Naturaliste can.*, 7: 181-182, ♀.
Platylabus ornatus Heinrich, 1962, S.N.I.S., p. 747-748, ♀ ♂.

NEW RECORD

New York : Mt. Slide, Catskill Mts. (males and females).

VARIABILITY

Fits into the frame of the description for eastern populations given by Heinrich (loc. cit., p. 748). In one male mesoscutum is uniformly black.

(36.) *Platylabus sexmaculatae* Heinrich

Platylabus sexmaculatae Heinrich, 1962, S.N.I.S., p. 749, ♀.

TYPES

Holotype.— ♀, Maine, C.N.C.
Neallotype.— ♂, "U.S.A., Maine, Chesterville, 15-VI-1965." C.G.H. II.

DISTRIBUTION

Maine (type locality), Alberta.

MALE

Except for the normal sexual dichroism, in particular the greater extent of white markings of head, the male matches the holotype perfectly, leaving no doubt about the correctness of the association.

Slightly similar to *dilleri* Heinrich, but distinguished by uniformly red abdomen and extensively black propodeum, coxae, and trochanters ; scutellum considerably more raised than in *dilleri* and the size is larger.

Head and thorax black, with white markings, thorax also with extensively red meso-and metapleura ; the following are white : face, except black median field (the black color extending below to the clypeal foveae), clypeus, except median, longitudinal black band, orbits around eyes (except black malar space and narrow interruption on vertex), the white extending over cheeks to mandible base, mandibles except teeth, collare, pronotal ridge and base, tegulae, subalarum, scutellum (except base, lateral slopes and lateral carinae), coxae I ventrally, coxae II narrowly at apex, and ventral marks on trochanters I and II ; abdomen uniformly red ; legs red, basic color of all coxae and trochanters black, the coxae II and III extensively red on exterior side ; black are also : apices of femora III and of tibiae III, and the tarsi III ; segments 3-5 of tarsi I and II infuscated ; tibiae I and II yellow-tinged on anterior side ; flagellum with white annulus ; length 8 mm.

Flagellum.—With 36 segments and with indistinct, elongate-oval tyloids on segments 10-18. Black, with complete white annulus on segments 10-14; scape black.

NOTE

This male runs in the key to the males of the genus *Platylabus* (S.N.I.S., p. 702-704) at first to couplet 23, where neither of the two alternatives fits exactly. As the first one mentions, that the pleura "are never ferruginous", one would have to choose the second which leads to *ornatus* (variation with black mesoscutum); differs from *ornatus* by black horizontal part and declivity of propodeum, black tarsi III, and more extenively black tibiae III. In order to include this species, the key needs extensive emendation.

(37.) *Platylabus perkinsi* Walkley

Platylabus perkinsi Walkley, 1958, Syn. Cat., 1st Suppl., p. 48 (new name).
Platylabus perkinsi Heinrich, 1962, S.N.I.S., p. 750-751. ♀ ♂.

NEW RECORD

Central Maine: Mt. Blue (2 females).

41. *Platylabus sphageti*, new species

TYPES

Holotype.— ♀, "Chesterville, Maine, U.S.A., 30-VII-1967, peat bog;" leg. G. Heinrich. C.G.H. II.

Paratype.— ♀, same locality, 8-VIII-1966. C.G.H. II.

DISTRIBUTION

Maine.

BIOTOP

Black spruce peat bog.

PREAMBLE

A fairly small species of pale ferruginous basic color of entire body, with restricted black and almost without yellow markings. In the key for the females of the genus *Platylabus* (S.N.I.S., p. 699-702) runs to couplet 40 and to the species *monotonops* Heinrich from Long Island, New York; apparently closely related to that species, but differing as follows: (1) all trochanters and trochantelli pitch-black; (2) tarsi III not infuscated, except last segment; (3) scutellum not yellow but ferruginous, with irregular, yellowish spot on apex; (4) puncturation on mesoscutum and tergites 2 and 3 denser and coarser, particularly the interspace of gastrocoeli not shiny and nearly smooth but coarsely and densely punctured. Whether this form represents a full species or a northern subspecies of *monotonops* remains to be further investigated.

FEMALE

Pale ferruginous, all trochanters pitch-black; black are also: a median mark on pronotum (behind collare), basal furrow of scutellum and of propodeum, axillary troughs, and broadly the apices of femora and tibiae III; there is an irregular, yellowish spot on apex of scutellum and a faint indication of a narrow, yellowish line on frontal orbits and of a spot on vertical orbits; collare yellowish; flagellum with white annulus; length 8 mm.

Flagellum.—Bristle-shaped, long, slender, not widened beyond middle, all segments longer than wide, the first nearly 5 times as long as apically wide; with 38 segments. Black, with dorsal white annulus on segments 9-11 or 12; scape predominantly ferruginous.

STRUCTURAL CHARACTERS

Structure of head, scutellum, gastrocoeli, and tarsi III as described for *monotonops* (S.N.I.S., p. 745).

42. *Platylabus dilleri*, new species

TYPES

Holotype.— ♂, "Mt. Blue (Maine), U.S.A., 15-VI-1965"; leg. E. Diller. C.G.H. II.

DISTRIBUTION

Maine (Mt. Blue).

PREAMBLE

A small species, in color pattern somewhat similar to variations of *ornatus* Provancher males with black mesoscutum, but distinguishable at once by much smaller size, black tergites 5-7, broad and complete white flagellar annulus, and in structure by markedly wider, transverse gastrocoeli with very narrow interspace. The spiracles of propodeum are very small and only about twice as long as wide. The species thus stands on the dividing line between *Platylabus* and *Cyclolabus*.

MALE

Orange-ferruginous; the basic color of head and pronotum and the entire prosternum, prepectus, mesosternum, and mesoscutum black, as are also parts of mesopleura, tergites 5-7, and the extreme apices of femora and tibiae III; tarsi III moderately infuscated; the following white: face and clypeus (except black longitudinal median band), mandibles except teeth, labrum, lower half of frontal orbits, dots on vertical orbits, narrow band on median part of outer orbits, collare, pronotal ridge and base, tegulae, subalarum, scutellum, coxae I predominantly, mark on exterior side of coxae II and their apices, and trochanters I and II partially; rest of coxae I, ventral side of coxae II except basally, and less distinctly apical part of coxae III on ventral side blackish-infuscated;

mesopleura blackish all around except upper posterior region, the median surface extensively ferruginous; flagellum with white annulus; length 6 mm.

Flagellum.—With 31 segments. Black, with complete white annulus on segments 10-16; on the white segments, elongate, narrow tyloids faintly recognizable.

STRUCTURAL CHARACTERS

Frons below ocelli (in contrast to *ornatus*) slightly convex, very densely punctured; temple profile slightly narrowed, distinctly curved; mandibles fairly stout; malar space somewhat shorter than width of mandible base, median field of face moderately convex, coarsely and very densely rugose-punctate.

Mesoscutum densely punctured, extremely finely coriaceous, and slightly shiny between punctures; sternauli and anterior third of notauli indicated; scutellum moderately raised above postscutellum, convex, laterally carinate to apex, shiny; propodeum abbreviated; area posteromedia more than twice as long as horizontal part medially; area superomedia twice as wide as long; costulae and carinae coxales obsolete, carinae metapleurales subobsolete, spiracles of propodeum small, oval, about twice as long as wide; mesopleura coarsely and moderately densely punctured, including speculum; metapleura with some scattered, irregular, shallow punctures and rugae, shiny.

Postpetiole shiny, with some irregular rugosity and a few punctures, the median field weakly indicated; gastrocoeli deep, transverse, with narrow interspace, the latter coarsely, irregularly rugose; rest of second tergite and the third densely, fairly finely punctured, shiny between punctures; fourth tergite also densely, but somewhat finer punctured.

Nervulus interstitial; areolet pentagonal, but intercubiti strongly narrowed in front.

2. Genus *Linycus* Cameron

3. *Linycus perturbator*, new species

TYPES

Holotype.—♂. "North Berwick, southern Maine, U.S.A., July 1964." C.G.H. II.

Paratype.—1 ♂, same data, C.G.H. II.

DISTRIBUTION

Southern Maine.

PREAMBLE

This is not a quite typical species of the genus. It shares with *exhortator* Fabricius most of the decisive characters of *Linycus*, in particular the small,

almost circular shape of spiracles of the propodeum, the structure of the gastrocoeli which are neither deeply impressed nor transverse, but represented only by an oblique, coarsely-rugose furrow, and the very coarse, irregular rugosity of the basal part of second tergite. It differs, however, strongly from the Holarctic species *exhortator* by markedly wider and more curved cheek and temple profiles and in color by (at least in males) white tarsi. Also, the somewhat elongate, nearly paralled-sided shape of the abdomen of male is quite different from typical *Linycus* species.

MALE

Head and thorax black, with white markings and with blood-red mesopleura and propodeum; the following white: small mark on lower end of outer orbits, labrum, facial and frontal orbits (the latter narrowly, the former more widely), triangular marks on vertical orbits, subalarum, pronotal ridge except basally, and sometimes a small mark on end of scutellum; abdomen uniformly red, without apical white markings; legs red, with some black parts and with all tarsi white, except partially infuscated last segments; the following black: basic color of first trochanters I and II, ventral side of first trochanters III, coxae I and II on dorsal and inner side more or less extensively, coxae III restrictedly at apex dorsally and sometimes also ventrally, apices of femora III, sometimes also tip of femora I and II very narrowly, and the tibiae III except the reddish or whitish extreme base; tibiae I and II blackish-infuscated on dorsal side, narrowly ivory on ventro-anterior side; flagellum with white annulus; length 10 mm.

Flagellum.—With 30 segments, and with very distinct, large, elongate-oval tyloids on segments 8-15, the longest, on segments 10-12 reaching from bases to apices of segments. Black, with complete white annulus on segments 7 (apex) or 8 to 11 or 12 (base); scape uniformly black.

STRUCTURAL CHARACTERS

Head wide; temples slightly convex, temple profile only slightly narrowed behind eyes and strongly curved; cheek profile in front view moderately narrowed toward mandible base, short and nearly straight; malar space short, about half as long as width of mandible base; mandibles robust, fairly short; clypeus wide, distinctly convex; cheeks in lateral view distinctly convex, somewhat receding toward carina genalis; frons, face, clypeus, and cheeks densely and fairly coarsely punctured.

Mesoscutum slightly longer than wide, strongly convex, coarsely and densely punctured, shiny between punctures; anterior half of notauli pronounced; anterior part of sternauli distinct, though not very deep; scutellum fairly strongly raised above post-scutellum, dorsally moderately convex, with high lateral carinae; propodeum short, the area posteromedia about twice as long as horizontal part medially; carination complete, the carinae rather strongly raised, only carinae coxales obsolete; area superomedia about twice as wide as long,

hexagonal or approximately half-moon-shaped ; area posteromedia very wide ; areae dentiparae without projecting teeth.

Postpetiole with very distinct median field, laterally delimited by high carinae, which are particularly strongly protruding at base of postpetiole, coarsely irregularly rugose ; gastrocoeli as described in preamble ; interspace of gastrocoeli to about middle of second tergite extremely coarsely reticulate-rugose ; second tergite only slightly widened from base to end and distinctly longer than apically wide ; the third tergite nearly square, densely punctured, coriaceous between punctures.

Nervulus interstitial ; areolet pentagonal, but intercubiti strongly narrowed in front ; stigma black.

NOTE

In paratype tergites 3-6 blackish-infuscated toward apices.

4. *Linycus temporalis*, new species

TYPES

Holotype.— ♂, "Mt. Blue (Maine), U.S.A., 8-VI-1960." C.G.H. II.

DISTRIBUTION

Maine.

PREAMBLE

This is a quite typical species of the genus *Linycus*, in structure as well as in color pattern, differing from the male of *exhortator thoracicus* Cresson only in head structure and by markedly more projecting apices of areae dentiparae ; the temple profile is considerably less narrowed behind eyes and more strongly curved, and the cheeks are more convex ; distinguished in color by entirely black mesosternum, dorsally black scutellum, and predominantly black mesopleura.

MALE

Head and thorax black, without white markings ; the following ferruginous: entire propodeum, axillary troughs, apical margin of mesopleura, and a mark in the middle of apical part of mesopleura ; abdomen ferruginous, basic color of tergites 3-7 black, the third tergite with narrow apical ferruginous margin, the apical margin of the 4th tergite medially narrowly white ; tergite 5-7 with white apical bands ; legs ferruginous, the following black : coxae I, trochanters I and II, first trochanters III basally, apex of femora III, base of tibiae II and III narrowly, apex of tibiae II broadly, and the tarsi III ; apical segments of tarsi II infuscated ; flagellum with white annulus ; length 7 mm.

Flagellum.—With 31 segments and with fairly indistinct, small tyloids on segments 6-18, the ones on segments 13-15 nearly as long as these segments. Black, with complete white annulus on segments 7-11 ; scape black.

3. *Neolinycus*, new genus

Generotype.—*Neolinycus michaelis*, new species

DISTRIBUTION

Nearctic Region.

Descriptive notes.

Only three genera of the Platylabini with small, almost circular spiracles of the propodeum have been recorded from the Nearctic Zone so far : *Cyclolabus* Heinrich, *Linycus* Cameron, and *Apaeleticus* Wesmael. The type species of *Neolinycus* shares the above-mentioned structure of spiracles with these three genera, but differs otherwise decisively and generically from all of them. It is distinguished from *Cyclolabus* and *Apaeleticus* by structure of gastrocoeli and thyridia, which are neither deeply impressed nor transverse, but superficial and narrower than their interspace. It differs furthermore from *Apaeleticus* (1) by not coarsely, irregularly rugose propodeum, which, instead displays a complete and very clearly defined carination ; (2) by impunctate, finely coriaceous rugose median field of postpetiole ; (3) by not protruding median field of face. It differs from *Linycus* by (1) structure of gastrocoeli, which are not, as in the latter genus, indicated by a longitudinal, very strongly and characteristically irregularly rugose, slight depression ; (2) by the rhomboidal areolet (clearly pentagonal in *Linycus*) ; (3) by a peculiar head structure with very strongly reduced temple profile, the temples sloping down almost perpendicularly from the margin of eyes.

In a new key to the numerous genera of Platylabini of the Oriental Region (MS to be published in the frame of the "Burmesische Ichneumoninae", appearing in subsequent issues in the "Entomologisk Tidskrift", Sweden), this genus runs smoothly to couplet 17, *Cyclolabellus*, new genus. It differs, however, also from the latter genus decisively by pronounced, very deeply impressed sternauli, deeply impressed anterior third of notauli, subobsolete gastrocoeli, and shorter propodeum with the area superomedia wider than long and with distinct costulae.

1. *Neolinycus michaelis*, new species

TYPES

Holotype.— ♀, "Water Valley, Lafayette Co., Mississ., U.S.A., 5–10–VIII–1970" ; leg. Michael Horan. C.G.H. II.

DISTRIBUTION

Northern Mississippi.

FEMALE

Head white, antennal cavity, middle of frons, and cheeks along carina genalis ferruginous, ocellar and occipital regions black ; thorax pale orange,

the following white or whitish : collare, pronotal ridge and base, subalarum, tegulae, two narrow lines on mesoscutum along notauli, scutellum, postscutellum, declivity of propodeum (except area posteromedia), most of mesopleura, metapleura toward apex, sterna, and prepectus ; the following black : basal furrow of scutellum axillary troughs, narrowly lateral sutures of mesoscutum ; legs uniformly light orange, the coxae and trochanters I and II whitish ; flagellum with annulus ; length 6 mm.

Flagellum.—Long, bristle-shaped, very slender, not the least widened beyond middle, with elongate basal segments, apically strongly attenuated, with 35 segments, the first nearly 5 times as long as apically wide, the 12th in lateral view approximately square, none distinctly wider than long. Black, with dorsal white annulus on segments 5-11, segments before annulus brownish-tinged toward apices and ventrally.

STRUCTURAL CHARACTERS

Temple profile subobsolete, temples and occiput sloping steeply down to carina occipitalis, immediately from margin of eyes and ocellar region ; in lateral view cheeks and temple region very narrow and receding toward carina genalis, the latter meeting carina oralis far above mandible base ; cheek profile in front view very strongly narrowed toward mandibles, with straight outline, outline of head thus approaching a triangular shape ; mandibles very narrow, with very small apical teeth ; median field of face only slightly convex, the clypeus strongly convex in both directions ; malar space considerably longer than width of mandible base ; face, clypeus, and frons very finely and densely punctured and coriaceous between punctures, nearly opaque.

Mesoscutum nearly as wide as long, strongly convex, very densely and finely punctured and coriaceous between punctures ; anterior half of notauli distinct, sternauli pronounced ; scutellum moderately raised above postscutellum, convex, laterally distinctly carinate, densely punctured ; carination of propodeum distinct and complete, only bordering carinae of area posteromedia and area coxalis indistinct ; area posteromedia nearly twice as long as horizontal part medially ; area superomedia distinctly wider than long, hexagonal, with costulae in the middle ; spiracles of propodeum very small, subcircular ; areae dentiparae without tangible projections ; propodeum and pleura finely, irregularly rugose, the speculum smooth and shiny.

Postpetiole very finely coriaceous-rugose, without punctures and without recognizable median field ; gastrocoeli obsolete, the thyridia recognizable ; tergites 2-4 evenly and very densely, fairly coarsely punctured.

Nervulus interstitial ; areolet rhomboidal.

NOTE

Named in honor of the collector, Mr. Michael Horan of Water Valley, Mississippi.