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SYNOPSIS OF NEARCTIC ICHNEUMONINAE STENOPNEUSTICAE WITH PARTICULAR REFERENCE TO THE NORTHEASTERN REGION (HYMENOPTERA). SUPPLEMENT 3

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Résumé

Un nouveau genre *Terebraella* est décrit dans ce travail ainsi que son espèce-type *culiciops* n. sp.

À la faune néarctique, 14 espèces et 5 sous-espèces nouvelles du sud-est américain et une espèce de New-York viennent s'ajouter: *Protichneumon radtkeorum, Ichneumon weemsi, Eutanyacra nigritarsis, Barichneumon archboldi, B. danieli, B. carolinensis, B. floridanus, B. fuscosignatus, B. neosorex, Melanichneumon mystificans, Vulgichneumon phaeogenops, Cratichneumon floridensis, C. expers, C. valdefuscus, C. horani, Barichneumon calliandros peramoenus, Melanichneumon honestus milleri, M. disparilis flavidops, Neolinycus michaelis georgianus, Cratichneumon expers circumflavidus.*

A l'espèce *Neolynicus michaelsi* Heinrich, connue jusqu'à maintenant par la femelle, s'ajoute une description du mâle. L'aire de distribution de *Barichneumon libens* Cresson, s'étend à la Floride et aux états voisins du sud-est. L'association de la femelle avec le mâle de cette dernière espèce faite par Heinrich [SNIS, p. 627] est erronée et une autre femelle a été désignée et décrite. Le statut taxonomique de *Barichneumon sorex* Heinrich est mis en doute. L'exactitude de l'association des sexes pour cette espèce est discutée et deux hypothèses possibles sont formulées. Pour la première fois, une clé de toutes les espèces néarctiques appartenant au genre *Barichneumon* Thomson est présenté. Ce travail est complété par une clé des espèces du genre *Melanichneumon* Thomson rencontrées dans le sud-est de la région néarctique.

Abstract

A new genus *Terebraella* is introduced, with *culiciops*, new species, as the type-species.

To the Nearctic fauna are also added 14 species and 5 subspecies from the southeastern United States, and one species from New York.

The new species and subspecies are : *Protichneumon radtkeorum, Ichneumon weemsi, Eutanyacra nigritarsis, Barichneumon archboldi, B. danieli, B. carolinensis, B. floridanus, B. fuscosignatus, B. neosorex, Melanichneumon mystificans, Vulgichneumon phaeogenops, Cratichneumon floridensis, C. expers, C. valdefuscus, C. horani ; Barichneumon calliandros peramoenus, Melanichneumon honestus milleri, M. disparilis flavidops, Neolinycus michaelis georgianus, Cratichneumon expers circumflavidus.*

To the species *Neolynicus michaelis* Heinrich, based originally on the female sex only, the associated male is described.

To the range of distribution of the species *Barichneumon fibens* Cresson, Florida and the neighbouring southeastern States have been added ; the female associated by Heinrich (SNIS, p. 627) was recognized as incorrect and another female was described as the matching sex.

Doubts about the status of *Barichneumon sorex* Heinrich and the correctness of the association of sexes are discussed in detail and two possible hypothesis are formulated.

A comprehensive key for all Nearctic species of the genus *Barichneumon* Thomson is presented for the first time, and a key for the *Melanichneumon* Thomson species from the southeastern Nearctic Region.

Introduction

This third supplement to the *"Sypnopsis of Nearctic Ichneumoninae Stenopneusticae with particular reference to the Northeastern Region"* comprises the fauna of the *Southeastern* United States; it consequently alters the regional restriction originally indicated in the title of the Sypnopsis, adding the Southeast to the region of "particular reference".

The supplement complements our knowledge of the Nearctic Fauna substantialy by the addition of 15 new species and 3 new subspecies ; these new findings are the result of a special project carried out by the author over a period of five years, with the support of the Bureau of Entomology (Florida Department of Agriculture), Gainesville, Florida. The aim of the project was, and remains, the exploration of the fauna of Florida primarily, and of the neighbouring States, west to Louisiana, as well. A comprehensive synopsis of all species occurring in these regions is planned for publication in the series "Arthropods of Florida and the Neighbouring Land Areas" after conclusion of the project. I would like to express my appreciation and gratitude for all the support granted to me for the execution of the project.

I. Tribe *Protichneumonini*

Continuation of Supplement 1, *Naturaliste can.*, 96, p. 937-940 and of Supplement 2, *Naturaliste can.*, 98, p. 959-1026.

1. Genus *Protichneumon* Thomson

As already mentioned in Supplement 1 and 2, 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 the following, new species.

8. *Protichneumon radtkeorum*, new species [1].

Types

Holotype.—♀, "Fort Myers, Florida, U.S.A., 1.V.1968." C.G.H. II.

Allotype.—♂, same locality, 2.VII. 1967. C.G.H. II.

Paratypes.—7 ♀, 52 ♂, same locality, 2.IV. – 9.VIII. 1967 and 1968. C.G.H. II.

Distribution

From Florida north to Virginia and Maryland ; sporadic records from Pennsylvania and New York : west to Kansas (Lawrence).

Preamble

Shares with *grandis* Brullé and *sartoris* Heinrich the extremely coarse and dense sculpture of tergites 1-4 and the general color pattern. For the differences from *sartoris* see Supplement 2 (Naturaliste can., p. 962). Very similar in appearance and color to *grandis* and sympatric with that species over most of its range. Neither females nor males ever display a white mark on the apical part of scutellum, as occurs frequently in *grandis* ; otherwise there are no tangible chromatic differences, particularly in females. Females are to be distinguished from *grandis* by the following structural characters : (1) femora III considerably more slender and elongate ; (2) temple profile markedly narrowed behind eyes, with nearly straight outline ; (3) basal segments of flagellum completely cylindrical (that is, not in the least swollen apically) and slightly more elongate ; (4) the widest segment of flagellum on the flat side only slightly more than twice as wide as long (in *grandis* more than 3 times as wide as long).

Female

Black, including legs and first segment of abdomen ; rest of abdomen dark brown-red ; wings uniformly and very deeply infuscated ; white are only : anterior side of tibiae I, minute marks on vertical orbits and usually indications of small marks on upper frontal orbits, level with lower ocellus ; rarely (in northern specimens) a small white mark on upper facial orbits ; marks on orbits varying from white to dull-reddish ; flagellum with white annulus ; coxae III with scopa ; length 25 mm.

Male

Shows the same dark color as the female, with always entirely black scutellum and usually entirely black legs III. It is distinguished by the tyloids being elliptic, rather long and somewhat broader than in most other species.

[1] This species, already mentioned and differentiated from *sartoris* Heinrich on p. 962 of Supplement 2, has not been published in 1972 ; it is described here for the first time.

II. Tribe *Ichneumonini*

A. Subtribe *Ichneumonina*

Continuation of Supplement 1, *Naturaliste can.*, 96, p. 940-954 and of Supplement 2, *Naturaliste can.*, 98, p. 959-1025.

1. Genus *Ichneumon* Linnaeus

98. *Ichneumon weemsi*, new species

Types

Holotype.—♀, "Guana Wildlife Management Area, St. Johns Co., Fla., F. W. Mead, coll., 15.IV.1964." F.S.C.A.

Allotype.—♂, "Everglades Natl. Pk., Dade Co., F. W. Mead, coll., 10.IV.55." F.S.C.A.

Paratypes.—1 ♀, Gainesville, 13.IX.-1961 ; 1 ♂, Gainesville, 24.IV.1958. C.H.T. ; 1 ♀, Wauchala, Hardee Co., R. H. Rhodes, 8.III.1965., in Steiner trap. C.G.H. II.

Distribution

Florida.

Preamble

Females of this species are closely related in structure of mandibles and other characters to *creperus* Cresson ; they differ as follows : (1) coxae III with distinct scopa ; (2) basal segments of flagellum distinctly less abbreviated ; (3) tergites more densely punctured, the third completely opaque ; (4) femora III less stout ; (5) wings distinctly, though not strongly infuscated.

Female

Ferruginous ; the following black : prosternum, sometimes also mesosternum, base of propodeum (particularly laterally), all coxae and trochanters ventrally extensively to entirely, broad basal bands on tergites 3 and 4, usually petiole, apex of tibiae III broadly, and the tarsi III predominantly ; scutellum faintly yellow-tinged ; wings somewhat infuscated ; flagellum tricolored, with dorsal white annulus ; coxae III with distinct scopa ; length 11-14 mm.

Male

Head black, with frontal orbits narrowly, outer orbits broadly, and face and clypeus entirely yellow ; thorax black.

including entire mesosternum, mesopleura, and mesoscutum (the latter sometimes with short, lateral, yellow stripes at tegulae); propodeum with entire declivity yellow, including most of area superomedia and of areae dentiparae and parts of areae spiraculiferae; yellow are also: collare, pronotal ridge and base, subalarum, tegulae, and scutella; legs I and II almost entirely yellow and light ferruginous, with only coxae basally restrictedly black; legs III with most of coxae and femora and broad apices of tibiae black, their tarsi infuscated toward apex; abdomen black, with apical yellow bands on tergites 1-5, the 6th tergite apically and the 7th entirely ferruginous; flagellum without annulus, basally and ventrally ferruginous; length 13-15 mm.

B. Subtribe *Amblytelina*

Continuation of Supplement 1, *Naturaliste can.* (1969, 96, p. 954-963) and of Supplement 2, *Naturaliste can.* (1971, p. 959-1026).

Genus *Eutanyacra* Cameron

18. *Eutanyacra melanotarsis*, new species

Types

Holotype.—♀, "College Forest, Natchitoches Co., Louisiana, 17.VI.1971." C.G.H. II.

Allotype.—♂, Natchitoches, 10.V.-1965. C.G.H. II. (Flagella lacking).

Paratypes.—2 ♀, type locality, 14. and 17.VI.1971. C.G.H. II.

Distribution

Louisiana (type locality); Florida (1 ♂, Jacksonville, 22.XII.1967, leg. C.F. Zeiger).

Preamble

One of the numerous species of the genus with ferruginous basic color of the body and black-banded abdomen. Females are well distinguished from the majority of similar species by considerably swollen temple profile and cheek profile, distinctly (though not as strongly as in *succincta* Brullé) infuscated wings, and by broadly black apices of femora and tibiae III combined with uniformly deep black tarsi III; they are consequently most closely related to *validiceps* Heinrich and may well represent the southern vicarious form of that species. There are, however, the following, tangible differences from *validiceps*: (1) all femora distinctly slenderer and comparatively longer; (2) basal segments of flagellum comparatively longer; (3) tarsi III uniformly deep black; (4) wings distinctly infuscated. On account of these differences this form is treated here as a full species rather than a subspecies of *validiceps*.

Female

Ferruginous; the following black: base of prepectus, sutures of axillary troughs and basal furrow of propodeum narrowly, basal margin of 2nd tergite and/or gastrocoeli, broad basal band on 3rd tergite, end of femora III, more than apical third of tibiae III, and the tarsi III; flagellum tricolored: ferruginous, dorsal annulus white, black beyond annulus; wings moderately infuscated; length 12-13 mm.

Flagellum.—Bristle-shaped, long and slender, not widened beyond middle, with 38-39 segments, the first 2.5 times as long as apically wide, in lateral view the 6th square, none wider than long. Ferruginous, with dorsal white annulus on segments 6 or 7 to 11, apical section from the 14th segment on black; scape ferruginous.

Male

The male differs from *validiceps* only by lack of black markings on head and sterna; tarsi III, in contrast to female whitish, as in *validiceps*; wings barely infuscated; the 4th tergite also, with basal black band.

Ferruginous; scutellum and basic color of all tibiae and tarsi yellowish; more than apical third of tibiae III and the end of femora III black; tergites 2-4 with basal black bands, the one on the third tergite broader than the others; wings barely infuscated; length 13 mm.

Flagellum.—Lacking in allotype.

Note

In the specimen from Florida, the flagellum is light ferruginous, black beyond the 15th segment, segments 3-7 dorsally black.

As in this specimen, in contrast to allotype, the face, clypeus, apical part of metapleura, subalarum, and a band on anterior part of metapleura are pale yellow, it may well represent another subspecies.

C. Subtribe *Cratichneumonina*

(Continued from Supplement 2, *Naturaliste can.*, 98, 1971).

Genus *Cratichneumon* Thomson

(Continued from Supplement 2, *Naturaliste can.*, 98, 1971).

55. *Cratichneumon valdefuscus*, new species

Types

Holotype.—♂, "Highlands Hammock State Park, Florida, 25.IV.1968", C.G.H. II.

Allotype.—♀, "Chicot, Evangeline Co., Louisiana, 6.–13.X.1971", leg. D. Shaneck, C.G.H. II.

Paratypes.—1 ♂, 24.VIII.1969, 2 ♂, 13.IV.1970 and 5.V.1971 from type locality; 2 ♂, Gold Head Branch State Park, Clay Co., Florida; 2 ♂ Forsyth, Monroe Co., Georgia, 20.–30.V.1968 and 8.VII.1969; 1 ♂, Homer, Banks Co., Georgia, 11.V.1970; 1 ♂, Meridian, Mississippi, 29.VI.1970; 2 ♂, Water Valley, Yalobusha Co., Mississippi, 11.-V. and 5.VII.1970; Chicot, Evangeline Parish, Louisiana: 1 ♂, 28.V.1971; 1 ♂, 26.IV.1971; 1 ♂, 25.VIII.–1.IX.1971; 2 ♂, 25.VIII.–1.IX.1971; 2 ♂, 8.–15.-IX.1971; 2 ♂, 22.–29.1971; 4 ♂, 29.-IX.–6.X.1971; 1 ♂ and 1 ♀, 6.–13.X.-1971; 1 ♂ and 1 ♀, 20.–27.X.1971; 1 ♂, Elizabethtown, North Carolina, 30.-IV.1950. All the above in C.G.H. II.; 1 ♂, 28.VI.1937, Bemus Pt., New York; 2 ♂, Takoma Park, Maryland, 1. and 18.-VII.1943; 1 ♂, Moorestown, New Jersey, 14.VIII.1939; 1 ♂, Elizabethtown, North Carolina, 25.IV.1950. In C.H.T.

Distribution

Eastern U.S.A. from New York south to Central Florida and west to Louisiana.

Biology

Ecologically restricted to lowland forests with dense undergrowth. Has in the Southeast two generations, with the first peak of frequency at the beginning of May, the second in October.

Preamble

A very distinct species of medium to fairly large size. Males are chromatically well distinguished by (with very rare exceptions) almost entirely black color of anterior or most tergites, the first one being always apically narrowly white-banded (the following tergites with pale brownish or fulvous apical margins); they are in general appearance rather similar to southern populations of *variegatus* Provancher, but can be easily distinguished from that species by examination of tyloids and clypeus, the former being narrow and bacilliform (instead of broadly-oval), the latter not being dish-shaped-concave as a whole, but bearing only a small apico-median cavity.

Females display, as the males, uniformly fulvous (pale ochreous) tibiae III, without a trace of a yellow mark or annulus, but, in contrast to the male,

only the first tergite is black (with an apical, ivory band). They thus approach in color of legs *variegatus* on one side, and in color of abdomen *gracilior* Heinrich, *paraparatus* Heinrich, and *subfilatus* Heinrich on the other. They are clearly distinguished from *variegatus* by not widened beyond middle and barely attenuated at apex flagellum, by narrower temples and cheeks, and by uniformly black mesopleura. They differ from *paraparatus* by the distinctly, though only moderately densely and moderately strongly punctured 2nd tergite and also by the more slender flagellum, from *gracilior* by presence of a very distinct scopa on coxae III. Specimens are most closely related to *subfilatus*, differing only slightly by a trifle more slender flagellum, but can easily be distinguished by chromatic characters, in the first place by the ivory apical band of postpetiole (never occurs in *subfilatus*) and furthermore by the complete lack of a yellowish mark on tibiae III and by the almost uniformly black face, clypeus, cheeks, and outer orbits.

Male

Head and thorax dorsally black, with extensive white markings, ventrally predominantly white; mesoscutum with large, median white mark, propodeum with white W-pattern; all femora fulvous, without black parts; all tibiae orange-tinged fulvous, without black or yellow or ivory marks; all tarsi yellowish-white; upper surface of abdomen predominantly black; postpetiole with apical ivory band and lateral surfaces; the following tergites, usually at least tergites 2 and 3, with narrowly fulvous, sometimes yellowish-tinged, apical and lateral margins; the extent of apical fulvous bands on the following tergites gradually increasing, at least the last two tergites entirely or predominantly fulvous; flagellum with white annulus; length 12-17 mm.

Female

(Description based on allotype.) *Head and thorax black, only the following white: small spots on upper end of facial orbits, upper part of frontal orbits fairly broadly, band on temples and vertical orbits, collare, pronotal ridge, subalarum, scutella, median mark on mesoscutum (smaller than in* variegatus*), areae posteroexternae together with apices of areae spiraculiferae and base of carina metapleuralis; abdomen light ochreous, only the first tergite black, with apical ivory band; femora and tibiae uniformly fulvous, without black or yellow (ivory) marks; tarsi yellowish-tinged; flagellum with complete broad white annulus; length 13-15 mm.*

Flagellum

Of *male*: with 37-43 segments and with narrow, almost parallel-sided, elongate-oval tyloids on segments 5 or 6 or 7 to 14 or 17, the longest on segments 7 or 8 to 12 or 13 almost reaching from bases to apices of segments. Black, with complete white annulus on segments 13 or 14 to 24 or 25, sometimes even to 29; scape ventrally white, rarely only marked with white.

Of *female*: subfiliform, barely widened beyond middle, only a trifle tapering toward apex, with 36 (paratype) to 41 (allotype) segments, the first fully twice as long as apically wide, the 8th in lateral view square, the widest on the flat side barely wider than long. Black, with complete white annulus on segments 8-18 or 20.

56a. *Cratichneumon expers*, new species

Types

Holotype.—♀, "Tall Timber Research Station, Tallahassee, Florida, 7.–17.May 1968". C.G.H. II.

Allotype.—♂, Gold Head Branch State Park, Florida, 27.IV.1971. C.G.H. II.

Paratype.—1 ♀, Torreya State Park, Liberty Co., Florida, 11.V.1968; 1 ♀, 8 ♂, Gold Head Branch State Park, Clay Co., Florida, 27.IV.–6.V.1971. All in C.-G.H. II.; 1 ♀, Jacksonville, Laval Co., Florida, 8.V.1971, leg. G.F. Zeiger. F.S.-C.A.

Distribution

Northern Florida.

Preamble

This species is particularly distinguished by a strongly abbreviated propodeum, a character it shares with the *rubricus*-group. Otherwise females are in structure and color similar to *gracilior* Heinrich, the two species having a subbristleshaped, fairly long and slender (contrasting with *rubricus*) flagellum, lacking the scopa, and having a punctured 2nd tergite; differing clearly from *gracilior* by considerably more swollen temple – and cheek profiles, by the strongly abbreviated propodeum, and by less attenuated apical section of flagellum. In color also similar to *paraparatus* Heinrich, but distinguishable from this species (in addition to the different structure of propodeum and flagellum) at once by distinct and dense punctuation of 2nd tergite and complete lack of scopa on coxae III.

Males are well distinguished by strongly abbreviated propodeum, with area superomedia usually 3 times as wide as long, by rather wide, curved temple profile, and by subobsolete malar space, combined with the chromatic characters described below.

Females from North Carolina and Mississippi differ slightly in color of head, tibiae III and propodeum from the typical population of northern Florida.

Female

Propodeum almost entirely pale orange, with most of the declivity and the adjacent sections of metapleura yellowish-tinged and with only the basal furrow, the bases of or entire areae superoexternae and the metapleura basally and on lower and upper part black; mesothorax and prothorax black, with the following ferruginous-red parts: median lobe of mesoscutum more or less extensively, usually two short lateral bands on mesoscutum at tegulae, median part of mesopleura more or less extensively, and band on propleura between ivory pronotal ridge and black median part; mesoscutum usually with yellowish median mark; abdomen uniformly, head predominantly dark ferruginous; the following ivory: orbital band on vertex and temples, collare, entire pronotal ridge, mark on lower end of pronotal base, subalarum, scutellum, and postscutellum; always antennal cavities, sometimes also ocellar and occipital regions black; all trochanters and coxae I and II pale orange to ivory; coxae III and all femora ferruginous, all tarsi dull ivory, all tibiae orange-ferruginous, with distinct median ivory mark on dorsal side, the base of tibiae III narrowly, the apex more extensively blackish-infuscated above, as is also the tip of femora III; flagellum with white annulus; length 8-10 mm.

Flagellum.—Subbristle-shaped, fairly long, only slightly widened beyond middle and slightly attenuated toward apex, with 30-31 segments, the first not quite twice as long as apically wide, in lateral view the 7th square, the widest on the flat side nearly 1.5 times as wide as long. Black, with nearly complete white annulus on segments 7 or 8 to 15, ventrally toward base or entirely, brownish; scape ventrally orange, dorsally partially infuscated.

Male

The broad series of males collected at the same time and the same locality with one paratypical female, matches the latter in decisive structural and chromatic characters so well that the association of sexes appears doubtlessly correct.

Head ivory, except the following black parts : antennal cavities, middle of frons, ocellar region, occipital region, carina genalis, and a very small spot on rudimental malar space ; thorax ivory, the following black : mesoscutum (except large, median ivory mark), base of prosternum, propleura, about upper third of mesopleura, base to more than anterior half of area metapleuralis, always together with entire area coxalis, basal furrow of propodeum together with areae superoexternae, and a longitudinal band on each side of mesosternum (between a longitudinal, median ivory band and the sternauli), projecting backward around base of coxae II to the end of metapleuron; abdomen uniformly orange-ferruginous, except predominantly black, apically ivory, first tergite ; all coxae and trochanters ivory, the coxae III on exterior side orange and usually restrictedly black-marked ; femora I and II orange-ferruginous, ventrally usually ivory in part, femora III ferruginous, apically more or less extensively blackish ; all tibiae and tarsi ivory or orange-tinged ivory, the tibiae III narrowly blackish at base, broadly blackish at apex ; flagellum with white annulus ; length 11-12 mm.

Flagellum.—With 33 or 34 segments and with elongate-oval tyloids on segments 5 or 6 to 14 or 15, the longest, on segments 9-11, reaching from bases to apices of segments. Black, with complete, white annulus on segments 12 or 13 to 23 or 26, ventrally light brown to dark brown ; scape ferruginous, ventrally ivory, infuscated on exterior side.

56b. *Cratichneumon expers circumflavidus*, new subspecies

Types

Holotype.— ♀, "Mississippi, Oktibbeha Co., Starkville, 30.V.–4.VI.1971". C.-G.H. II.

Paratypes.—1 ♀, same data ; 1 ♀, North Carolina, Raleigh, 10.VI.1951. C.-G.H. II.

Distribution

North Carolina, Mississippi.

Female

Differs from nominate form mainly by ivory color on orbits not restricted to vertex and temples only, but extending over most of inner and outer orbits ; coxae III ivory-marked on dorsal side ; ivory median mark on dorsal side of tibiae less distinct ; length 9 mm.

57. *Cratichneumon horani*, new species

Types

Holotype.— ♀, "Water Valley, Yalobusha Co., Mississ., U.S.A., 6.–20.X.-1970." Michael Horan collected. C.G.H. II.

Allotype.— ♂, same data. C.G.H. II.

Paratype.—3 ♀, 2 ♂, same locality, 20.IX.–20.X.1970 ; 1 ♀, 4 ♂, same locality, 21.–31.X.1970, all collected by Michael Horan ; 1 ♀, same locality, 5.-VII.1970, leg. G. Heinrich. All in C.G.H. II. ; 1 ♀, Gainesville, Alachua Co., Florida, 2.V.1968. F.S.C.A.

Distribution

Mississippi and northern Florida.

Preamble

Females are chromatically similar to the species *pseudovinnulus* Heinrich. The two species are sympatric in parts of their ranges. Individuals are at once distinguishable from *pseudovinnulus* by the flagellum distinctly tapering toward the apex and by the punctured sculpture of 2nd tergite.

Males are distinguished by uniformly orange-ferruginous abdomen with apical ivory band on postpetiole, by black mesoscutum with white (usually surrounded by rufous) median mark, and by whitish, basally and apically blackish-infuscated tibiae III ; they share all these chromatic characters with *expers* Heinrich, which differs decisively by the obsolete malar space, abbreviated propodeum with strongly transverse area superomedia, and by only very restrictedly black-marked propodeum.

Female

Basic color of entire body, including legs, orange-ferruginous ; head, legs, and thorax extensively white, thorax also restrictedly black-marked, tibiae III basally and apically black on dorsal side ; the following white : orbits broadly around eyes, collare, pronotal ridge (entirely or apically), pronotal base partially, often median mark on mesoscutum, subalarum, irregular marks on mesopleura, areae superoexternae, carinal triangle, coxae I and II predominantly, coxae III dorsally extensively, all trochanters, median section of all tibiae on dorsal side, and usually marks on metapleura ; all tarsi orange-tinged whitish ; flagellum with annulus ; length 8-10 mm.

Flagellum.—Subbristle-shaped, slightly widened beyond middle, distinctly tapering toward apex, with 31-32 segments, the first about twice as long as apically wide, in lateral view the 7th square, the widest on the flat side nearly 1.5 times as wide as long. Black, with complete white annulus on segments 7 or 8 to 16 ; scape predominantly ferruginous.

Male

Basic color of mesoscutum, in contrast to female, black, with white median mark, the environment of which usually is ferruginous-tinged ; head white, with only antennal cavity, middle of frons, ocellar and occipital regions black ; thorax with the following white parts : collare, pronotal ridge and base broadly, subalarum, tegulae, median mark on mesoscutum, scutella, entire prosternum, entire mesosternum, mesopleura (except restricted black mark in their upper hind corner), broad exterior belt of prepectus all around, metapleura (except black areae coxales), declivity of propodeum ; area superomedia and areae spiraculiferae usually predominantly ferruginous ; color of abdomen, legs, and flagellum as in female ; coxae III with black dorsoapical spot, sometimes partially blackish on exterior side ; tip of femora III often blackish-infuscated ; length 9-11 mm.

Flagellum.—With 34-35 segments and with small, narrowly-oval tyloids on segments 7-14. Black, ventrally brown, with complete white annulus on segments 13-21 ; scape ventrally white.

Note

Named in honor of Mr. Michael Horan who helped greatly to advance my research on the Ichneumoninae of Mississippi by successful insect trapping.

58. *Cratichneumon floridensis*, new species

Types

Holotype.— ♀, "Archbold Biological Station, Lake Placid, Florida, U.S.A., 21.VI.1967." C.G.H. II.

Allotype.— ♂, same locality, 8.V.-1967. C.G.H. II.

Paratypes.—17 ♀, 34 ♂, same locality, February to June 1967 and 1968 ; 5 ♂, Orange River, Ft. Myers, Florida, March to May 1967 and 1968. All in C.G.H. II. ; 2 ♂, Orlando, Florida, March 1944. C.H.T. ; 2 ♂, Gainesville, Florida, 18.III.1947 ; 1 ♂, Brevard Co., Florida, 24.III.1954 ; 1 ♀, Alachua Co., Florida, 4.VII.1954, all leg. H. Weems. All in F.S.C.A.

Distribution

An endemic species of Florida, the northern border of its range roughly coinciding with the borderline of the State; south so far recorded to Ft. Myers, north to Jasper (Hamilton Co.), Jacksonville (Duval Co.), and Tallahassee (Lon Co.).

Preamble

This species belongs to the *paratus*-group, distinguished by impunctate, alutaceous 2nd tergite. It replaces geographically *pseudovinnulus* which inhabits the Lower and Upper Austral Zones. These two species could be considered as associated subspecies, but is seems to me that the differentiation in color and sculpture is considerable and calls for specific status. Besides, no intergradation of the two forms has been observed, although their ranges approach each other closely.

The sculpture of tergites, in both sexes, is still finer than in *pseudovinnulus* and shows a distinctly stronger gloss. Females are chromatically distinguished by the vivid blood-red basic color of the entire body including legs, contrasting sharply with the dorsally coal-black tibiae III displaying a clear-white annulus beyond base. Males also differ from *pseudovinnulus* by the vivid blood-red basic color of femora III and abdomen, the latter in most specimens lacking the black-and yellow-banded pattern of anterior tergites, characteristic for *pseudovinnulus* males.

Female

Head uniformly blood-red, without light or dark markings; thorax blood-red, the following white: collare, usually extreme apex of pronotal ridge, usually mark on subalarum, scutellum, sometimes postscutellum, rarely more or less distinct marks on areae posteroexternae; the following black: narrowly exterior margin on mesoscutum, basal furrow and lateral slopes of scutellum, axillary troughs, basal furrow of propodeum all around, areae coxales more or less extensively, base of prosternum, median furrow of mesosternum, short band below subalarum, and sometimes a mark on middle of pronotum; abdomen uniformly blood-red; legs ferruginous-red, femora III blood-red, rarely with black tip; tibiae III coal-black with complete white annulus beyond base, tibiae I and II with dorsal, median white mark; trochanters I and II white, trochanters III and coxae I and II pale orange to whitish; tarsi III pale ferruginous to almost whitish, the metatarsus III basally more or less extensively infuscated; flagellum with white annulus; length 5-11 mm.

Flagellum.—Filiform, short, a trifle narrowed toward base, with 25-29 segments, the first about 1.5 times as long as apically wide, in lateral view the 6th square, the widest on the flat side about 1.3 times as wide as long. Black, with complete white annulus on segments 8-12 or to 14 or 15; scape; scape uniformly red.

Male

Head white, the following black: apex of mandible, antennal cavity, middle of frons broadly, ocellar and occipital regions; mesoscutum black, often medially or predominantly blood-red, always with median white mark; white are: sterna, most of mesopleura, declivity of propodeum, and scutella; pleura with black and red parts; abdomen blood-red, tergites 1 and 2 often basally more or less extensively blackish-infuscated, sometimes also with whitish apical bands; legs ferruginous and vivid red, coxae I and II and all trochanters white; tibiae III dorsally coal-black, with broad, white annulus beyond base, tibiae I and II orange-ferruginous, with white dorsal mark beyond base; tip of femora III usually black; all tarsi whitish, base of metatarsus III usually more or less extensively infuscated; flagellum with white annulus; length 6-12 mm.

Flagellum.—With 29-34 segments and with bacilliform tyloids on segments 4 or 5 to 13 or 14 or 15, the longest, on segments 8-11, reaching close to bases and apices of segments. Black, with complete white annulus on segments 12 or 13 or 14 to 18 or 20 or 21, ventrally usually dark brownish-tinged; scape ventrally white.

Genus *Barichneumon* Thomson

(Continued from Supplement 2. *Nat. can.*, 98, 1971).

Preamble

A comprehensive faunistic exploration of the Ichneumoninae of the Southeastern States, which I carried out over a period of about five years with the support of the Florida Department of Agriculture (Bureau of Entomology), has led to the discovery of a surprising number of new species and subspecies. The majority of these new forms belong to the genus *Barichneumon* Thomson, sensu stricto, which in North America seems to have reached the highest degree of speciation in the Austro-riparian Zone.

The definition of Thomson's subgenus *Barichneumon* was rather vague, and the taxon has subsequently been applied to a multitude of heterogenous elements. It has since long been my aim to recognize, separate, and define the various different groups involved; this can be done only cautiously and gradually. The introduction of the genera *Stenobarichneumon*, *Vulgichneumon*, and recently (for the Palaearctic fauna) *Baranisobas* i.l. are the first steps in this direction.

The new forms described below almost all belong to *Barichneumon* Thomson, sensu stricto, which, under consideration of the greatly increased number of species and clearer conception of its morphology, is now treated as a full genus. Only the two species, *excelsior* Heinrich and *seticornutus*, new species, both included in the new key to the species of *Barichneumon*, do not fully agree in structure (particularly of flagellum and gastocoeli) with the rest of the species, and may later on deserve generic separation.

It appears, that in this genus, in contrast to most others of the subfamily, the males display stronger differentiated and more obvious chromatic characters of specific distinction than the females, which are similar in color and often very difficult to distinguish; this is the reason why in the following descriptions more often males have been chosen for holotypes than females. The association of sexes is still incomplete and in several cases tentative.

Structural characters

(1) Gastrocoeli very small, often punctiform or obsolete, with small, often indistinct thyridia, which in males are usually more distinct than in females but not removed from the base of second tergite (as in *Vulgichneumon*).

(2) Flagellum of female short and more or less stout, filiform, or subfiliform, the first segment usually less than twice as long as wide, at the most slightly more than twice as long.

(3) Abdomen of females short and convex, with fairly strongly sclerotized and neatly punctured tergites including postpetiole.

(4) Basal part of nervus basalis tends to curve slightly toward base of wing, thus rendering the lower, interior angle of the discocubital cell a right one.

(5) Spiracles of propodeum small, short, and usually not longer than 4 times as long as wide medially.

Basic color of Nearctic females (except black *anator*) ferruginous or orange, sometimes with apical white mark on seventh tergite.

A more detailed treatment of this genus is included in the monograph on the Fauna of Florida and the Neighboring States, to be published soon.

New key to the species of *Barichneumon* Thomson of Eastern North America

Females [1]

1.	Flagellum stout, short, or fairly short, filiform or subfiliform, sometimes slightly tapering toward apex, but never with long attenuated, sharply pointed end. (*Barichneumon* sensu stricto)	2
—	Flagellum long, slender, bristle-shaped.	18
2.	Abdomen uniformly black, tergites 6 and 7 with white apical marks. (Head and thorax black with restricted white markings; legs predominantly red; length 7–9 mm.)	1. *anator* Fabricius (SNIS, p. 621) Holarctic; not recorded from Western North America.
—	Abdomen predominantly ferruginous or orange. (8th tergite always, in majority of species also 7th tergite without white mark.)	3
3.	Scutellum clearly and entirely white. (7th tergite usually with apical white mark.)	4
—	Scutellum ferruginous (as the mesoscutum), at the most indistinctly whitish-tinged at apex and sides.	7
4.	Orbits broadly white around eyes; pronotal ridge entirely or predominantly white; coxae III white-marked dorsally.	5
—	Orbits not, or restrictedly white-marked; pronotal ridge at the most apically white; coxae III not white-marked dorsally. (Length 6.5–9 mm.)	6
5.	Apices of femora III and of tibiae III not infuscated; tarsi III ferruginous; median part of pronotum black. (Basic color of body dark ferruginous-red; length 10 mm.)	10. *archboldi*, new species Florida
—	Apices of femora III and of tibiae III blackish-infuscated; tarsi III nearly entirely blackish; pronotum not marked with black; basic color of body light orange-ferruginous; lenght 6–7 mm.	13. *flaviscuta* Heinrich (Suppl. 2) Mississippi, Georgia

[1] Note: "white" as used here in the key comprises all shades from pure white to pale yellow.

6.	Black markings less extensive; the following are black: base of prosternum narrowly, base of prepectus, small mark below subalarum, mesolcus, lower border of areae coxales; apices of femora III and of tibiae III usually only slightly infuscated.	2 a. *soror soror* Cresson (SNIS, p. 623) Delaware, Pennsylvania
—	Black markings much more extensive; the following usually black: prosternum and propleura extensively, prepectus and areae coxales entirely, mesosternum partially, area posteromedia partially; often all median areae of propodeum, and coxae in part, black; apices of femora III and of tibiae III extensively black	2 b. *soror bimaculoris* Dalla Torre (SNIS, p. 624) Québec, Ontario, Maine
7.	7th tergite with apical white mark.	8
—	7th tergite without apical white mark.	9
8.	Cheek profile in frontal view markedly narrowed toward mandible base; malar space considerably longer than width of the latter; flagellum slenderer and more distinctly tapering toward apex. (Scutellum never marked with white; length 5–6 mm.)	7. *sphageti* Heinrich (Suppl. 2) Maine, New York, Mississippi
—	Cheek profile barely narrowed toward mandible base, malar space markedly shorter than width of the latter; flagellum stouter and less tapering toward apex. (Scutellum, as a rule, more or less extensively to entirely white.)	6
9.	Orbits usually extensively white, at least vertical orbits so marked.	10
—	Orbits without distinct white or yellow markings.	16
10.	Orbits clearly white all around eyes, except on malar space. (Flagellum fairly short, not widened beyond middle, slightly tapering toward apex; scutellum laterally faintly carinate close to middle; apices of femora III and of tibiae III never infuscated; length 7–8 mm.)	9. *neosorex*, new species Florida, Georgia, Mississippi, Louisiana
—	Vertical orbits, sometimes also frontal white-marked, but never exterior orbits.	11
11.	Flagellum exactly filiform; temple profile barely to slightly narrowed behind eyes, with curved outline; scutellum not depressed and not completely flattened.	12
—	Flagellum subfiliform, moderately widened beyond middle and gradually tapering toward apex; temple profile rather strongly narrowed behind eyes, with almost straight outline.	14

12. Only vertical orbits white; scutellum apically truncate, distinctly wider at base than medially long; areae dentiparae abbreviated, the carina dentipara exterior shorter than exterior carina of area superoexterna; temple profile barely narrowed behind eyes. (Apices of femora III and of tibiae III never infuscated; length 5–6mm.) ..... 13. *carolinensis*, new species North Carolina south to southern Florida and west to Louisiana

— Vertical orbits together with frontal orbits white, downward at least to level with antennal sockets; shape of scutellum normal; areae dentiparae not abbreviated, the carina dentipara exterior slightly longer than exterior carina of area superoexterna; temple profile slightly narrowed behind eyes. (Apices of tibiae III and of femora III often infuscated.) 13

13. Basic color of body pale ferruginous; infuscation on apices of femora III and of tibiae III indistinct, often lacking; black markings on thorax, as on prepectus, on mesopleura below subalarum, on propleura, and on sutures around mesoscutum and basal furrow of propodeum very restricted and partially lacking. (Length 6–7 mm.) ..... 4. *libens* Cresson (SNIS, p. 626) Maine to southern Florida and west to Louisiana

— Basic color of body dark ferruginous; infuscation on apices of femora III and of tibiae III distinct and fairly extensive; black markings mentioned for alternative present, and more extensive. (Length 7–9 mm.) ..... 3. *sorex* Heinrich (SNIS, p. 624) Québec, Ontario, Maine (probably synonym or subspecies of *libens*)

14. Apices of areae dentiparae drawn out into long, gradually narrowed and markedly downward slanting ends; scutellum not completely depressed and laterally not carinate. (Vertical orbits, at the most, with a short and narrow whitish band; apices of femora III and of tibiae III not infuscated; length 7 mm.) ..... 12. *floridanus*, new species Florida

— Apices of areae dentiparae normally shaped and not markedly slanting; scutellum completely depressed and flattened, with low lateral carinae or sharp lateral edges at least to middle, usually beyond middle. (Length 7–8 mm.) ..... 15. (*paramoenus* Heinrich)

15. Apices of femora III and of tibiae III distinctly blackish infuscated. ..... 5 a. *paramoenus paramoenus* Heinrich (SNIS, p. 631, ♂) Southeastern Canada to southern Georgia, west to Louisiana

— Apices of femora III and of tibiae III not infuscated. .... 5 b. *paramoenus* calliandros, new subspecies, Florida

16. Apices of femora III and of tibiae III distinctly and rather extensively blackish infuscated; puncturation of tergites 1–4 coarser than in all alternative species; areae dentiparae elongate and slanting down close to base of coxae III. (Area superomedia apically about as wide as medially long; length 6 mm.) ..... 8. *crassipunctatus* Heinrich (Suppl. 2.) Georgia (Athens)

— Apices of femora III and of tibiae III not infuscated; puncturation less coarse; areae dentiparae, except in *floridanus*, not tangibly slanting. 17

17. Scutellum with fairly pronounced lateral carinae almost to its end. (Pale orange-ferruginous, only head and mesoscutum a shade darker; almost no black markings; first flagellar segment more than twice as long as apically wide; length 8 mm.) ..... 11. *fuscosignatus*, new species Florida, Georgia, Mississippi, Louisiana

— Scutellum without lateral carinae or with weak lateral carinae only at the base. 18

18. Apices of areae dentiparae slanting downward, drawn out, long, and narrowed gradually; gastrocoeli and thyridia very inconspicuous; basic color pale orange-ferruginous; vertical orbits usually with narrow, whitish band. (Length 8 mm.) ..... 12. *floridanus*, new species Florida

— Areae dentiparae normal, not tangibly slanting; gastrocoeli transverse, rather conspicuous, with comparatively large thyridia; basic color ferruginous; ventral orbits without trace of white. (Length 7 mm.) ..... 15. *californicus* Heinrich (Suppl. 2.) California

19. At the most frontal orbits narrowly white; pronotal ridge, at the most apically, pronotal base and coxae I and II not at all, white; sterna, propleura, and propodeum extensively black marked; femora II and III considerably thicker than in alternative species. (Length 8–10 mm.) ..... 17. *excelsior* Heinrich (SNIS, p. 627) Québec, Ontario, Maine

— Orbits broadly white all around eyes; pronotal ridge and base and coxae I and II entirely white; sterna, propleura, and propodeum without black markings; femora II and III considerably slenderer. (Length 8 mm.) ..... 16. *seticornutus* Heinrich (Suppl. 2.) Georgia (Athens)

Males

1. Basic color of entire abdomen black. (Flagellum without annulus; length 7–9 mm.) ..... 1. *anator* Fabricius (SNIS, p. 621) Holarctic

— Basic color of abdomen, except sometimes apical tergites, ferruginous or orange. 2

2. Mesoscutum entirely or extensively ferruginous. 3

— Mesoscutum black, with or without white markings. .. 7

3. Flagellum with white annulus. (Prescutellar carinae never marked with white ; abdomen orange, anterior tergites sometimes with whitish apical margins ; only tip of tarsi III infuscated ; length 9 mm.) ..... 12. *floridanus*, new species Florida

— Flagellum without annulus. 4

4. Mesoscutum with two longitudinal median and usually also with two short lateral white lines, partially black ; large species, 10 mm long. (Apices of femora III and of tibiae III black.) ..... 10. *archboldi*, new species, var. Florida

— Mesoscutum uniformly ferruginous, without longitudinal white lines ; small species, 5–7 mm long. 5

5. Prescutellar carinae white-marked ; femora III rather stout and thick. (Sterna and at least half, usually most of mesopleura white ; length 5–6 mm.) ..... 13. *carolinensis*, new species North Carolina to southern Florida, west to Louisiana

— Prescutellar carinae not white-marked ; femora III markedly slenderer and more elongate. (As yet unassociated and unidentified forms.) 6

6. White orbital band not interrupted on temples ; coxae III not white-marked ; femora III apically not infuscated. (Mesosternum white.) ..... specimens from northern Florida and Mississippi

— White orbital band interrupted on temples ; coxae III white-marked below and usually also above ; femora III apically infuscated. (Mesosternum and parts of mesopleura white.) ..... numerous specimens from Georgia, two from Maine and New York

7. Flagellum with white annulus. (Mesoscutum with four longitudinal white srtipes ; tarsi III in part white or yellowish ; length 7–10 mm.) ..... 5. *peramoenus* Heinrich

8

— Flagellum without white annulus. 9

8. Anterior tergites, usually 1–4, tricolored ; yellowish apically and laterally, black basally, and ferruginous-red between these two colors ; femora III and tibiae III apically broadly black ; basal segments of tarsi III yellowish with black apices, the apical segments blackish. ..... 5 a. *peramoenus peramoenus* Heinrich (SNIS, p. 631) Southeastern Canada to southern Georgia, west to Louisiana

— Abdomen without black bands, orange-ferruginous, at least tergites 1, or 1–2, often 1–4, rarely 1–5 with apical white bands ; femora III and tibiae III apically not infuscated ; tarsi III orange, partially white. ..... 5 b. *peramoenus caillandros*, new subspecies, Florida

9. Tyloids larger than in all other American species of this genus, elongate-oval, nearly parallel-sided, and, on segments 5–11 reaching almost from bases to apices of segments. (Mesoscutum usually only with two longitudinal median white stripes, sometimes also with two short lateral ones ; length 7–9 mm.) .... 9. *neosorex*, new species Florida, Georgia, Mississippi, Louisiana

— Tyloids much smaller, narrower, and shorter. 10

10. Mesoscutum with at least two longitudinal, median white lines, sometimes also with two lateral white lines. 11

— Mesoscutum without longitudinal white lines, usually uniformly black, rarely with an indistinct, pale yellowish or orange median mark. 13

11. At least the postpetiole with a large black mark, usually also the 2nd tergite with a black, often bipartite mark, exceptionally most tergites marked with black. (Tarsi III black, apices of femora III and of tibiae III not infuscated ; length 8 mm.) ..... 11. *fuscosignatus*, new species Florida, Georgia, Mississippi, Louisiana

— Abdomen without black marks. 12

12. Mesoscutum with two short median and usually also two short lateral white stripes, its basic color medially sometimes varying to ferruginous ; larger species, 9–11 mm long ; infuscation on apex of femora III and of tibiae III always distinct ; tarsi III black or blackish ; malar space with black mark. ..... 10. *archboldi*, new species Central Florida

— Mesoscutum usually with two short median white lines only, exceptionally also with two short lateral lines, never partially ferruginous ; small species, 6–7 mm long ; infuscation on apex of femora III and of tibiae III lacking or indistinct ; tarsi III not infuscated ; malar space never black-marked. ..... 4. *libens* Cresson (SNIS, p. 626) Illinois, Maine to Florida, west to Louisiana

13. All sterna, pleura, coxae, trochanters, and the entire propodeum uniformly black ; face and clypeus black, except white orbits ; tergites 1 and 5 predominantly, 6 and 7 entirely black. (Femora III apically to predominantly black ; length 10–11 mm.) ..... 17. *excelsior* Heinrich (SNIS, p. 627) Québec, Ontario, Maine

— All or some of these parts white-marked ; face and clypeus white ; abdomen without black tergites, except sometimes the first. 14

14.	Seventh tergite with apical white mark; area superomedia strongly transverse. (Mesosternum extensively white, mesopleura and propodeum white-marked; face, clypeus, cheeks, and orbits around eyes white; femora III and tibiae III extensively black; length 9 mm.)	16. *seticornutus* Heinrich (Suppl. 2.) Georgia
—	Seventh tergite without apical white mark; area superomedia not strongly tranverse. (Tarsi III and apices of femora III and of tibiae III black.)	15
15.	Mesosternum uniformly black. (Tarsi III blackish.)	16
—	Mesosternum partially to entirely white or yellow.	17
16.	Mesopleura black, with large white mark on lower half; metapleura uniformly black; femora III and tibiae III apically not infuscated; notauli obsolete. (Length 8 mm.)	14. *danieli*, new species New York
—	Mesopleura and metapleura more or less extensively ferruginous-red, without white markings; femora III and tibiae III apically black; anterior fourth of notauli distinct. (Length 8 mm.)	2 b. *soror bimacularis* Dalla Torre (SNIS, p. 624) Québec, Ontario, Maine
17.	Mesopleura, metapleura, and coxae without ferruginous parts; mesosternum, more than lower half of mesopleura, and markings on coxae III white; white band around orbits not interrupted, except narrowly on malar space. (Length 7 mm.)	6. *flavlscuta* Heinrich (Suppl. 2.) Georgia, Mississippi
—	Mesopleura, metapleura, and coxae III extensively to predominantly ferruginous; mesosternum more or less extensively pale yellow, this color often extending onto anterior and/or lower part of mesopleura; white band around orbits usually broadly interrupted on temples and narrowly also on malar space. (Length 7 mm.)	3. *sorex* Heinrich (SNIS, p. 624) (perhaps male of *sphageti* Heinrich) Ontario, Québec, south to Georgia

3. *Berichneumon sorex* Heinrich

Melanichneumon (Barichneumon) sorex Heinrich, 1962, SNIS, p. 624-626, ♀ ♂.

Types

Holotype.—♀, Mt. Blue near Weld, Maine, 18.VI.1960. C.G.H. II.

Allotype.—♂, same locality, 31.VII.-1960. C.G.H. II.

Distribution

Southeastern Canada (Québec and Ontario), Maine, south to Virginia.

Discussion

Both sexes, as represented by the holotype and allotype, were collected in numbers at the type locality. The association of sexes has therefore been regarded as secured. However, new evidence obtained recently in Georgia and northern Florida, has raised some doubts.

Broad series of males collected (mainly in Georgia) seem to be morphologically identical with the allotype of *sorex*; these southern populations show, however, a broad spectrum of individual chromatic variability and only very few of them are almost identical with the typical northern males. More puzzling is the fact, that in spite of very extensive collecting extended over a period of about 5 years and conducted with the help of Malaise traps as well, neither in Georgia nor in Florida has a typical female of *sorex* ever been found. The only female similar to *sorex* occuring in Georgia and Florida is the one, in all probability, correctly associated with *libens* Cresson, ♂. This situation leads to the following hypothesis: supposing that the association of sexes for the species *sorex*, as originally published by Heinrich, is not correct, then the species *sorex* (based on female) could perhaps represent a subspecies of *libens*, in which case the originally associated male would belong to another species as it is not conspecific with *libens*. This other species could be *sphageti* Heinrich, the female so far without associated male and recorded from Maine and Mississippi. An alternative hypothesis would be that *sorex* is indeed a full species with correctly associated sexes, of which the females are almost indistinguishable from *libens*, while the males are strikingly different. There is no conclusive evidence in support of one or the other hypothesis. The problem remains unsolved and is recommended for further observation.

4. *Barichneumon libens* Cresson

Ichneumon libens Cresson, 1877, Amer. Ent. Soc. Trans., 6, p. 181, ♂.

Melanichneumon (Barichneumon) libens Heinrich, 1962, SNIS, p. 627, ♂ (nec ♀!)

? *Melanichneumon (Barichneumon) sorex* Heinrich, 1962, SNIS, p. 624/5, ♀.

Types

Holotypes.—*Ichneumon libens* Cresson, ♂, Illinois, A.N.S.; *Melanichneumon (Barichneumon) sorex* Heinrich, ♀, Mt. Blue, near Weld, Maine, C.G.H. II.

Neallotype.—♀, Chesterville, Maine, 25.VIII.1967. C.G.H. II.

Distribution

Illinois and Maine south to New Jersey and North Carolina.

New records

Florida, Georgia, Mississippi, Louisiana.

Preamble

Distributional pattern, as revealed by comprehensive and systematic research of the southeastern Ichneumoninae during the past five years, indicates that the female I associated with the holotype of *libens* Cresson, loc. cit. 1962 (under reservation of later confirmation), was not correct. The female now attributed to this species was found in broad series together with great numbers of typical *libens* males, in a very restricted biotop in southern Florida and under circumstances which made the association of these sexes undubitable. Besides, these females match the *libens* males in the obsolete gastrocoeli which are barely indicated by sculpture, a character of this species so far overlooked and not present in the originally associated female; the latter I consider now a dwarf specimen of *sphageti* Heinrich (SNIS, Suppl. 2. Naturaliste can., 1971).

Male

(For full description see SNIS, loc. cit. 1962).

The chromatic pattern of males is amazingly constant in all populations of the eastern United States from Maine south to southern Florida. Characteristic

is the black mesoscutum with usually only two short, median white lines, which are often widened and confluent posteriorly. The white band on orbits is almost never interrupted on temples, never on malar space. Propodeum orange-ferruginous, always with lateral yellow marks, only area posteromedia and areae coxales entirely or partially black. The infuscation on ends of femora III and of tibiae III varies individually and is never considerable, often lacking, particularly in southern populations.

Variability of males

In addition to white markings mentioned above, in northern populations exceptionally, in southern populations often, the prescutellar carinae also are white-marked; in southern populations sometimes also two short, lateral white lines on mesoscutum, opposite tegulae are present and black marks on area posteromedia and areae coxales often reduced or entirely lacking.

Female

Distinguished by small size (corresponding with male) and by the combination of the following structural characters: (1) gastrocoeli obsolete; (2) flagellum exactly filiform, moderately slender, not widened beyond middle, and not tapering toward apex; (3) temple profile somewhat narrowed behind eyes and slightly curved.

Light ferruginous; frontal and vertical orbits broadly ivory, never the outer orbits; ivory are also: apex of pronotal ridge, collare, subalarum; abdomen without apical white mark; apices of femora III and of tibiae III more or less distinctly infuscated on dorsal side, in southern populations often not at all infuscated; black markings practically absent in southern populations, often fairly extensive in northern specimens; flagellum with dorsal white annulus, usually brownish toward base; length 6-7 mm.

Flagellum.—(Neallotype); exactly filiform, not widened beyond middle, with 25 segments, the first nearly twice as long as wide, in lateral view the 6th square, none wider than long. Black, with dorsal white annulus on segments 7-12, segments before annulus light brownish on ventral side, darker brown on dorsal side, particularly toward apices; scape ventrally ferruginous, dorsally blackish.

Note

I can not find tangible structural differences between southern females of *libens* and the neallotype of that species on one side and the holotype and type series of *sorex* Heinrich (from Mt. Blue, Maine) on the other. However, the specimens from Maine are definitely darker than southern populations of *libens*, with head and thorax considerably more extensively marked with black, and the average size is tangibly larger. See also discussion of species *sorex*.

5. *Barichneumon peramoenus* Heinrich

Melanichneumon (? subgenus) peramoenus Heinrich, 1962, SNIS, p. 631-632, ♂.

Types

Holotype.—♂, "Québec, Gatineau, 17.X.1956, Gerd H. Heinrich." C.G.H. II.

Neallotype.—♀, Amherst, Massachusetts, 15.V.1968, leg. R. Duffield. C.G.H. II.

Distribution

Southeastern Canada (Québec and Ontario), south to southern Georgia and west to Louisiana (Bayou Chicot and Natchitoches); not found in Florida.

Preamble

Numerous trapping records suggest that, in all probability, the female described below is associated with the holotype, a hypothesis also confirmed by the facts that in both sexes the femora III and tibiae III are blackish-infuscated apically (though in males, on the average, more extensively than in females) and that the scutellum is laterally carinate at the base, often to beyond middle. The newly associated and below described female establishes the, so far uncertain, generic position of the species.

Female

Ferruginous, the ends of femora III and of tibiae III more or less extensively blackish, tarsi III usually infuscated; the following ivory: at least vertical orbits, (usually also frontal orbits), base of mandibles, collare, pronotal ridge, and sides and apex of scutellum more or less distinctly and clearly; in southern specimens trochanters I and II, often also postscutellum, subalarum, coxae I and II, and trochanters III ivory-tinged; the following black: base of prepectus, axillary troughs, and basal furrow of propodeum narrowly; in neallotype and northern specimens also prosternum, middle of mesosternum, propleura, areae coxales, and parts of coxae III black; flagellum black, with white annulus; length 7-8 mm.

Flagellum.—Subfiliform, fairly stout and short, moderately widened beyond middle and gradually tapering toward apex; with 28-30 segments, the first about twice as long as apically wide, in lateral view the 6th or 7th square, the widest on the flat side slightly to 1.5 times as wide as long. Black, with dorsal white annulus on segments 7 or 8 to 13 or 14; scape ferruginous.

Structural characters

Temple profile, in vertical view, strongly narrowed behind eyes, with straight outline; cheek profile in front view likewise narrowed toward mandible base; malar space somewhat longer than width of mandible base; scutellum completely flat, with scattered, coarse punctures, running into some irregular, longitudinal rugae, and with distinct, though low, lateral carinae to about middle or almost to the end; horizontal part of propodeum fully as long as area posteromedia; area superomedia usually distinctly longer than wide, hexagonal, with costulae before middle, narrowed from costulae toward area basalis; areae dentiparae nearly parallelsided, longer than wide, not markedly slanting toward their apices, the carinae dentiparae interiores meeting the area posteromedia considerably behind apical margin of area superomedia; tergites 1-3 and basal third to half of 4th tergite coarsely punctured; gastrocoeli fairly small but distinctly impressed.

5 b. *Barichneumon peramoenus calliandros*, new subspecies

Types

Holotype.—♀, "Fort Myers, Florida, U.S.A., 27.V.1967". C.G.H. II.

Allotype.—♂, same data. C.G.H. II.

Paratypes.—1 ♀, 11 ♂, type locality, 25.–29.VI.1967 and 7.–25.III.1968; 7 ♀, 36 ♂, Archbold Biological Station, near Lake Placid, Florida, 6.–28.V.1967 and 7.–25.III.1968; 4 ♀, 1 ♂, Highlands Hammock, near Sebring, Florida, 4.–31.-VIII.1969; 2 ♀, 1 ♂, same locality, 1.–30.X.1970. All in C.G.H. II.

Distribution

Florida, from Gainesville and Keystone Heights south to Fort Myers.

Preamble

Females of this form differ from *peramoenus peramoenus* Heinrich only slightly in color (mainly by lack of black apices of femora III and of tibiae III) and not at all in structure; they apparently replace *peramoenus peramoenus* in Florida; the form is therefore treated here as a subspecies of *peramoenus*, although the associated males are chromatically strikingly differentiated from the males of the nominate form.

Females are rather similar to *soror* Cresson and *sorex* Heinrich, differing from these two species mainly in structure of head and flagellum, the temple profile being more narrowed behind eyes (with almost straight outline), the flagellum tapering more distinctly toward the apex.

Female

Ferruginous; in contrast to nominate form, apices of femora III and of tibiae III not infuscated; the following ivory: vertical orbits, sometimes also frontal orbits narrowly, base of mandibles, collare, extreme end of pronotal ridge (rarely pronotal ridge more extensively), subalarum, apical and usually also lateral margins of scutellum, rarely postscutellum, trochanters I and II, coxae I extensively to predominantly, and apices of coxae II; flagellum with white annulus; length 7-8 mm.

Structural characters as in *peramoenus peramoenus*.

Male

Males differ from *peramoenus peramoenus* strikingly, not only by lack of black pattern on legs III but also by complete absence of black bandings on abdomen; they are at once recognizable from all other *Barichneumon* species occuring in Florida by the combination of the following three characters: (1) flagellum with white annulus; (2) tarsi III partially white; (3) mesoscutum black with white longitudinal lines.

Head white, middle of frons, ocellar and occipital regions black; thorax ventrally white, dorsally predominantly black, with rich white markings: the following white: 4 short, longitudinal lines on mesoscutum, prescutellar carinae, scutella, tegulae in part, subalarum, collare, pronotal ridge and base broadly, propodeum (except black three central areae, areae superoexternae, and most of areae metapleurales and coxales), mesopleura (except upper part); legs and abdomen ferruginous-red, with the following white parts: coxae I and II, all trochanters (trochanters III often basally ferruginous or black), all tarsi extensively to predominantly, usually a basal mark on tibiae III, apical bands on at least tergite 1 (with rare exceptions), or 1 and 2, often on tergites 1-4, exceptionally 1-5, sides of usually the first tergite, sometimes also the 2nd, coxae III ventrally and a large mark on their dorsal side: black on pleura and propodeum often partially replaced by red; flagellum with complete white annulus; length 7-10 mm.

7. *Barichneumon sphageti* Heinrich

Barichneumon sphageti Heinrich, 1971, SNIS, Suppl. 2, Entom. can., p. 1008-9, ♀.

Melanichneumon (Barichneumon) libens Heinrich, 1962, SNIS, p. 617, ♀.

Holotype.—♀. Chesterville, Maine. C.G.H. II.

Distribution

Maine (Chesterville and Mt. Blue, near Weld); New York (Lake Mohonk); Mississippi (Water Valley).

Preamble

I am now convinced that the female originally associated with *libens* Cresson ♂ (see treatment of that species above) represents a small specimen of *sphageti*.

If *sorex* Heinrich, ♀, now suspected to be either a synonym or a subspecies of *libens*, will be conclusively proven to be one or the other, the male originally associated with *sorex* would, also definitely, not belong to that species but instead, in all probability, to *sphageti*.

The final solution of this complicated case must be postponed until conclusive evidence will turn up.

Female

One of the few American species of the genus which display a white mark on the 7th tergite; in this character similar to *soror* Cresson and *flaviscuta* Heinrich; easily to distinguish from the latter species by complete lack of white on scutellum, postscutellum, and orbits; from the former species by the considerably more narrowed temple profile and cheek profile and by the longer malar space, as well as by the slenderer, not widened byond middle, flagellum. In general appearance deceivingly similar to *Rubicundiella perturbans* Heinrich; the character best distinguishing *sphageti* from that species is the densely and regularly punctured postpetiole without indication of a median field.

9. *Barichneumon neosorex*, new species

Types

Holotype.—♂. "Orange River, Ft. Myers, Lee Co., Florida, 7.IV.1968." C.G.H. II.

Allotype.—♀. same locality, 8.V.1968. C.G.H. II.

Paratypes.—2 ♀, 1 ♂, type locality, 27.V.–7.VIII.1967; 1 ♀, 1 ♂, type locality, 17.III.–17.IV.1968; 1 ♀, 6 ♂, Torreya State Park, Liberty Co., Florida, 11.–13.V.1968. All in C.G.H. II.

Distribution

Florida, Georgia, Mississippi, Louisiana. The most common species of the genus throughout the Southeastern States.

Male

The male of this species is prominently distinguished from all similar species of the genus (particularly from *sorex* Heinrich and *archboldi*, new species) by the shape of the tyloids; the tyloids are elongate-elliptic, almost parallel-sided, and unusually wide; they reach, on segments 5-11, almost from bases to apices and cover the entire length of segments.

Chromatically superficially resembling *peramoenus calliandros* Heinrich and rather closely *archboldi*; at once distinguishable from the former species by black tarsi III and lack of flagellar annulus; it shares these chromatic characters with *archboldi*, from which it can be distinguished only by structural features, mainly by the shape of tyloids as described above and also by the cheek profile, which is considerably more narrowed toward mandible base than in *archboldi*.

Head white, with middle of frons, ocellar, and occipital regions, and constantly also a mark on malar space, black; thorax ventrally white, dorsally predominantly black; mesoscutum always with two median, longitudinal white lines, sometimes also with two, more or less distinct, lateral white lines; scutella always white, prescutellar carinae never white-marked; legs and abdomen ferruginous, the tibiae III often apically very slightly infuscated, tarsi III black or blackish, coxae and trochanters I and II uniformly white, coxae III more or less extensively to predominantly white; petiole extensively black; postpetiole with apical ivory band or lateroapical ivory marks, usually also the 2nd tergite, sometimes the 3rd, rarely even the 4th with apical ivory band; flagellum black, without annulus; length 7-9 mm.

Flagellum.—With 27-28 segments and with tyloids of striking shape and size (as described above) on segments 4-12, the longest on segments 5-11 covering the whole length of segments. Black, ventrally brownish, without annulus; scape ventrally white.

Female

Less strikingly characterized than the male and therefore less easily disting-

uishable from a number of similar species in Florida, particularly from *peramoenus calliandros* with which it shares the weak lateral carinae of scutellum, the carinae, however, are less extended in *neosorex* than in *peramoenus*.

Best to be recognized by the following characters : (1) orbits broadly ivory almost all around eyes (except only area of malar space) ; (2) flagellum filiform, not widened beyond middle, and not tangibly tapering toward apex ; (3) scutellum weakly carinate laterally at the base to nearly the middle.

Ferruginous, with restricted white and practically without black markings, except sometimes black medio-basal area of prepectus ; the following white : orbits broadly around eyes (except only on malar space), collare, extreme apex of pronotal ridge, and subalarum ; flagellum with dorsal white annulus ; length 7-8 mm.

10. *Barichneumon archboldi*, new species

Types

Holotype.— ♂ , "Archbold Biological Station, Lake Placid, Florida, U.S.A., 11. Mai 1967." C.G.H. II.

Allotype.— ♀ , Orange River, Fort Myers, Lee Co., Florida, 12.IV.1968. C.G.H. II.

Paratypes.—8 ♂ , type locality, 17.II.–8.VI.1968 ; 2 ♂ , type locality, 18.II.1961 and 3.VII.1967 (leg. S.W. Frost in light trap) ; 6 ♂ , allotype locality, 22.–28.-IV.1967, 7.III.1967, and 7.–14.IV.1968. All in C.G.H. II.

Distribution

Central Florida.

Preamble

This species is somewhat larger than all other, sympatric forms of the genus ; particularly distinguished in both sexes by structure of the head : cheek profile in front view very broad and barely narrowed toward mandible base, the malar space extremely short. The female is chromatically well distinguished by the combination of (for the entire length) broadly white pronotal ridge with entirely white scutellum and postscutellum. The male is rather similar in color to *neosorex* Heinrich, but distinguishable at once by normally-shaped, narrow tyloids and by much wider cheek profile.

Male

Head white, with middle of frons, ocellar and occipital regions, and with a mark on malar space black ; thorax ventrally white, dorsally predominantly black ; mesoscutum always with two median, longitudinal, white lines (often apically confluent), usually also with two short lateral white lines ; scutella always white, prescutellar carinae never white-marked ; legs and abdomen ferruginous, apices of femora III and of tibiae III, and the tarsi III black ; coxae and trochanters I and II uniformly white, coxae and trochanters III usually partially, sometimes predominantly white ; tibiae III basally not white marked ; petiole more or less extensively black ; postpetiole usually, tergites 2 and 3 often with apical ivory band ; flagellum black, without annulus ; length 9-11 mm.

Flagellum.—With 31-33 segments and with long and narrow tyloids on segments 5-12 or 13. Black, ventrally light brown, without annulus ; scape ventrally white.

Female

Ferruginous-red, with rich white markings on head and thorax and with restricted black pattern on the latter ; the following white : orbits broadly around eyes (except only on malar space), collare, pronotal base, pronotal ridge broadly for entire length, scutellum, postcutellum, subalarum, extreme apices of areae dentiparae together with areae posteroexternae, coxae I and II apically, apical margin of first trochanters I and II dorsally, and long, dorsal mark on interior side of coxae III ; the following black : base of prosternum, entire prepectus, longitudinal median band on mesosternum, middle of pronotum behind collare, narrow band below subalarum, exterior margin narrowly all around mesoscutum, axillary troughs, basal furrow of propodeum narrowly all around, apical mark on area posteromedia, base of petiole, and base of first trochanters III ; flagellum with dorsal white annulus ; length 10 mm.

Flagellum.—Subfiliform, slightly widened beyond middle, only a trifle narrowed toward apex, with 30 segments, the first fully twice as long as apically wide, in lateral view the 6th square, the widest on the flat side about 1.5 times as wide as long. Black, with dorsal white annulus on segments 6-13 ; scape ventrally ferruginous.

11. *Barichneumon fuscosignatus*, new species

Types

Holotype.— ♂ , "Archbold Biological Station, Lake Placid, Florida, 16.III.-1968." C.G.H. II.

Allotype.— ♀ , "Highlands Hammock State Park, Highlands Co., 28.VIII.-1969". C.G.H. II.

Paratypes.—1 ♂ , type locality, 27.-II.1968 ; 1 ♂ , allotype locality, 24.–30.-IX.1969 ; 6 ♂ , allotype locality, 7.–29.-VIII, 15.–22.IX., and 1.–15.X.1969 ; 1 ♂ , allotype locality, 30.XII.1969.–19.-I.1970 ; 3 ♂ and 2 ♀ , Athens, Georgia, 8.–15.VII.1969. All in C.G.H. II.

Distribution

Florida, Georgia, Mississippi, Louisiana.

Preamble

In both sexes of this species the scutellum is laterally distinctly carinate nearly for its entire length. In this character *fuscosignatus* approaches *neosorex* Heinrich and particularly *peramoenus* Heinrich, however, the lateral carinae of the scutellum are more distinct and more extensive than in the former species, and the scutellum is less completely depressed and flattened than in the latter. The male is chromatically well distinguished from *peramoenus* by lack of white antennal annulus and by uniformly ivory metapleura. It shares with *peramoenus, neosorex, and archboldi* Heinrich the black mesoscutum with its white markings (consisting of two median and two shorter lateral, longitudinal lines, the prescutellar carinae, and scutella), but differs from these three species, and all others of the genus, by a large, black mark covering the surface of the postpetiole (except an apical, ivory band). Usually the 2nd tergite bears also a black, often bipartite mark (in exceptional variations most tergites may be marked with black). The basic color is markedly lighter all over than in most other species, it is a pale, partially ivory-tinged orange on abdomen and legs, ivory on sterna, pleura and propodeum.

The female can be easily mistaken for *peramoenus calliandros* from Florida, but may be recognized by complete lack of white pattern on orbits and, in direct comparison, by the temple profile behind the eyes somewhat less narrowed and by slightly more elongate basal segments of flagellum. Besides, the lateral carinae of the scutellum are more pronounced and extend closer to the end of the scutellum.

Male

Head ivory, including malar space ; middle of frons, ocellar and occipital regions black ; thorax ventrally and la-

terally (including the entire metapleura), ivory, dorsally predominantly black; mesoscutum always with two longitudinal median, and two shorter, longitudinal lateral ivory lines; scutella and prescutellar carinae always ivory; propodeum ivory, only the areae superoexternae and the three median areae black, as are also a median, narrow band on pronotum and a narrow band below subalarum on mesopleura; legs and abdomen pale orange; dorsal surface of postpetiole black, except narrow apical ivory band; 2nd tergite often also with a (usually bipartite) black mark, exceptionally also the following tergites marked with black; femora III and tibiae III apically not infuscated; the tarsi III black, in somewhat lesser extent also the dorsal side of tarsi II blackish-infuscated; all coxae and trochanters ivory, the coxae III usually black-marked on exterior side; flagellum without annulus; length 8 mm.

Flagellum.—With 30 segments and with small, elliptic tyloids on segments 4-18, the longest, on segments 7-14 covering approximately the median half of the length of segments. Black, ventrally pale ochreous, scape ventrally white.

Female

Almost uniformly pale orange-ferruginous, without distinct ivory or white markings, only collare whitish; apex of pronotal ridge and of scutellum, and the coxae and trochanters I and II faintly yellowish-tinged; sterna a shade paler than dorsal side of thorax; only the following blackish: axillary troughs, a small mark below subalarum and usually very narrowly the lateral margins of mesoscutum and the extreme base of its median lobe behind collare; flagellum with white annulus; length 8 mm.

Flagellum.—Subfiliform, fairly slender, ventrally flattened beyond middle but not widened, a trifle tapering toward apex, with 26-27 segments, the first more than twice as long as apically wide, in lateral view the 6th or 7th square, the widest on the flat side also approximately square. Black, with dorsal white annulus on segments 6-13, the segments before annulus on dorsal side apically, on ventral side predominantly brown; scape ferruginous.

12. *Barichneumon floridanus*, new species

Types

Holotype.— ♂, "Highlands Hammock State Park, 28.IV.1968." C.G.H. II.

Allotype.— ♀, "Archb. Biol. Sta., Lake Placid, Fla., U.S.A., 17 May 1967." C.G.H. II.

Paratypes.—1 ♀, allotype locality, 14.V.1967; 4 ♂, type locality, 22.IV.-1970; 1 ♂, type locality, 28.VI.1971. All in C.G.H. II.

Distribution

Central Florida; so far only from Sebring (Highland Hammock State Park) and from Lake Placid (Archbold Biological Station).

Preamble

The males of this, and the following, species differ chromatically strongly from the 4 species treated above by uniformly bright orange-ferruginous mesoscutum. The *floridanus* male is, in addition, distinguished from all other species with likewise colored mesoscutum by a white flagellar annulus; from *carolinensis*, new species in addition by lack of white on prescutellar carinae.

The female is rather unobtrusive in color and morphology, and in appearance most similar to *peramoenus calliandros* Heinrich from Florida. It is distinguished mainly by (1) complete lack of lateral carinae of the scutellum, (2) structure

of areae dentiparae with long, drawn-out, gradually narrowed and markedly slanting apices, (3) comparatively fine puncturation of anterior tergites, and (4) structure of flagellum (see below). Besides, the basic color is a shade paler than in *peramoenus* and most of the other species.

Male

Head white, middle of frons, ocellar and occipital regions black, often variegated with ferruginous; thorax ventrally ivory, the mesoscutum uniformly orange-ferruginous, sometimes with faint indication of two longitudinal ivorish lines; ivory are: collare, pronotal base and ridge, subalarum, tegulae in part, scutella, a not clearly defined, large area on each side of the propodeum, and mesopleura extensively; the following black: prepectus predominantly, mark below subalarum, basal furrow of scutellum, axillary troughs, usually extreme end of area posteromedia and lower margin of areae coxales; the rest of pleura and propodeum ferruginous-orange.

Flagellum.—With 30 segments and with bacilliform, moderately long tyloids on segments 4-12, the longest not reaching bases and apices of segments but being comparatively longer than in the following, chromatically very similar species *carolinensis*. Black, ventrally orange-tinged ferruginous, with complete white annulus on segments 11-17 (base); scape dorsally black, ventrally ivory, laterally orange.

Female

Pale orange-ferruginous (head and mesoscutum a shade darker than the rest), with very restricted ivory markings; ivory are only: a short and narrow band on vertical orbits, collare, extreme end of pronotal ridge, and subalarum; scutellum, coxae I and II, all trochanters, and 7th tergite yellowish-orange; extreme apex of tibiae III a trifle infuscated dorsally; flagellum with white annulus; length 8 mm.

Flagellum.—Filiform, not attenuated toward apex, a trifle widened beyond middle and a trifle narrowed toward base, with 26-27 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. Black, with dorsal white annulus on segments 7-12 or 13, ventrally dull brownish; scape ferruginous, dorsally toward apex infuscated.

13. *Barichneumon carolinensis*, new species

Types

Holotype.— ♂, Raleigh, North Carolina, 10.VI.1951. C.G.H. II.

Allotype.— ♀, Athens, Georgia, 1.VI.-1969. C.G.H. II.

Paratypes.—1 ♂, Archbold Biological Station, Highlands Co., Florida, 10.IV.-1968; 1 ♀, 1 ♂, Orange River, Ft. Myers, Florida, 13–17.IV.1968; 1 ♂, Athens, Georgia, leg. R. Duffield, 15.-XI.1969; 1 ♀, Gainesville, Florida, 3.-V.1968. All in C.G.H. II.

Distribution

North Carolina south to southern Florida and west to Louisiana.

Preamble

One of the smallest and most common species of the southeast. Males share with *floridanus* Heinrich the uniformly orange-ferruginous mesoscutum but not the white flagellar annulus. They are distinguished in color particularly by constantly white-marked prescutellar carinae.

Females are well distinguished by combination of three structural characters: (1) flagellum exactly filiform, short, apically blunt, slightly tapering toward base; (2) areae dentiparae ab-

breviated, the carina dentipara exterior, as a rule, shorter than exterior carina of area superoexterna; (3) scutellum laterally not carinate except at the extreme base.

Male

Head white, middle of frons, ocellar and occipital regions black, more or less variegated with ferruginous; thorax ventrally ivory; mesoscutum orange-ferruginous; ivory are: collare, pronotal base and ridge, subalarum, tegulae, prescutellar carinae, scutella, declivity of propodeum except area posteromedia, all pleura extensively to predominantly, usually orange-tinged in parts; the following black: usually short, median band on pronotum, exterior margin of mesoscutum narrowly, mark below subalarum, basal furrow of scutellum, axillary troughs, basal furrow of propodeum medially on horizontal part; legs orange-ferruginous, the following ivory: coxae and trochanters I and II and coxae III dorsally on interior side and ventrally on interior side; tarsi III a trifle infuscated; abdomen usually uniformly orange-ferruginous, rarely anterior tergites apically ivory-tinged; flagellum without annulus; length 6-8 mm.

Flagellum.—With 28-29 segments and with small, bacilliform tyloids on segments 4-14 or 15, the longest (on segments 5-10) covering only about median third of segments. Black, ventrally ochreous, without annulus; scape ferruginous, ventrally whitish, dorsally blackish-infuscated toward apex.

Female

Orange-ferruginous, with very restricted ivory markings; ivory are only: a more or less distinct, short and narrow band on vertical orbits, collare, extreme end of pronotal ridge, and subalarum in part; sometimes scutellum apically and/or apico-laterally faintly yellow-tinged; coxae and trochanters I and II faintly orange-tinged yellow; the following black: central part of prepectus, small mark below subalarum, narrowly exterior margin of mesoscutum, basal furrow of scutellum, and axillary troughs; flagellum with white annulus; lenght 5-6 mm.

Flagellum.—Filiform, short, apically thick and blunt, slightly narrowed toward base, with 24 segments, the first about 1.3 times 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 dorsal white annulus on segments 6 or 7 to 11, 12 or 13, brownish toward base; scape ferruginous, dorsally blackish toward apex.

14. *Barichneumon danieli*, new species

Types

Holotype.— ♂, "Lake Mohonk, New Paltz (New York), 30.VIII.1966." Leg. G. Smiley. C.G.H. II.

Paratypes.—7 ♂, same locality, 12.–30.VIII.1966. C.G.H. II.

Distribution

New York (Catskill Mountains).

Preamble

The eight types, all collected during August 1966 at the same locality, are congruent in color and structure and distinctly different from all other species of the genus. The peculiar structure of the tyloids, as described below, is only paralleled by the southeastern species *neosorex* Heinrich. Chromatically characteristic is the large, white mark on mesopleura.

Tyloids on segments 3-11, elongate, the longest on segments 5-10 parallel-sided, and reaching from bases to apices of segments.

Male

Head black, with white markings: the following white: mandibles except teeth, clypeus, face, orbits broadly around eyes, the white expanding downward on outer orbits gradually over the entire width of cheeks but not quite reaching to the mandible; malar space black; thorax black, the following white: collare, pronotal ridge and base, subalarum, tegulae in part, scutellum, postcutellum, two marks on propodeum (covering the ends of areae dentiparae and of areae spiraculiferae together with the areae posteroexternae), a large mark on lower half of mesopleura, and the coxae and trochanters I and II; all femora, tibiae and tarsi ferruginous, except only the tarsi III black; coxae III and trochanters III dark ferruginous, extensively blackish infuscated, the coxae III rarely with dorsal white mark; abdomen uniformly ferruginous; flagellum black, ventrally brownish, without annulus; length 6-8 mm.

Flagellum.—With 23-25 segments; tyloids as described in preamble. Scape ventrally dull orange-ferruginous.

Structural characters

Temple profile not narrowed behind eyes, strongly curved; head in front view with approximately circular outline; malar space slightly more than half as long as width of mandible base; median field of face tangibly protruding; lateral fields and clypeus somewhat convex.

Mesoscutum moderately convex, without notauli, densely punctured, shiny; sternauli on the mesosternum distinct; scutellum slightly convex; area posteromedia considerably longer than horizontal part of propodeum medially; area superomedia with the very oblique costulae far beyond middle, strongly narrowed from costulae toward area basalis, the latter confluent with basal furrow of propodeum.

Petiole gradually widened into postpetiole, the latter with indicated median field, densely punctured; gastrocoeli fairly distinct, about as long as wide.

Note

Named in honor of Mr. Daniel Smiley who collected for many years the ichneumonids caught on the windows of Lake Mohonk Mountain House, and who made in this way many valuable contributions to our knowledge of this group.

Genus *Melanichneumon* Thomson

(Continued from Supplement 2, Naturaliste canadien, 98, 1971.)

Key to the species and subspecies of the genus *Melanichneumon* Thomson (sensu stricto), of the Southeastern Nearctic Region

Females

1. Tergites 6 and 7 without apical white marks. (Femora III never infuscated apically; basic color of mesoscutum entirely or partially black.) ..... (*honestus* Cresson) 2

— Tergite 7 or 6 and 7 with apical white mark. (Femora III often apically infuscated; basic color of mesoscutum ferruginous.) 3

2. Mesopleura ivory, except black uppermost section; basic color of mesoscutum black, except in rare variations red median lobe. (Length 10–12 mm.) .... 6 b. *honestus milleri*, new subspecies, Florida, Georgia, Mississippi, Louisiana

— Mesopleura partially orange or ferruginous; basic color of mesoscutum at least medially, sometimes predominantly red. (Length 9–11 mm.) ..... (6). *honestus honestus* Cresson Northern Mississippi, the Carolinas, Virginia

3. Ivory band around orbits on temples interrupted, or at least narrowed to a thin line. (Tip of femora III usually infuscated; length 9-10 mm.) ..... 3 b. *disparilis flavidops*, new subspecies, Northern Florida, Georgia, Mississippi, Louisiana

— Ivory band around orbits not interrupted or markedly narrowed on temples. 4

4. Mesopleura and mesosternum ferruginous-red, at the most with small, irregular ivory markings; temple profile somewhat narrower than in alternative species. (Mesoscutum only exceptionally with ivory longitudinal lines; length 10–13 mm.) ..... (9). *heiligbrodtii* Cresson, Florida, southern Texas, Mexico

— Mesopleura and mesosternum predominantly yellowish; temple profile somewhat wider than in alternative species. (Mesoscutum with two long median and two short lateral longitudinal ivory lines; length 11 mm.) ..... 15. *mystificans*, new species (tentative) Georgia

Males

1. Basic color of mesopleura ferruginous-red, at the most with small, irregular ivory markings. (Hypopygium never white; basic color of body close to chestnut-red, with very variable ivory and black markings; sometimes anterior tergites with black basal bands; length 10–14 mm.) ..... (9). *heiligbrodtii* Cresson, Florida, southern Texas, Mexico

— Mesopleura extensively to predominantly ivory. 2

2. Basic color of abdomen orange-ferruginous; anterior tergites with apical ivory bands, basally not black, except rarely first and second tergite restrictedly. 3

— Basic color of abdomen chestnut-red or pale yellow; extensive basal black bands on tergites 1-3 or 4 or 5. 4

3. Hypopygium white, tergites 1-4 with continuous apical ivory bands; femora III never apically infuscated. (Length 12–13 mm.) ..... (6). *honestus honestus* Cresson Northern Mississippi, the Carolinas, Virginia; occurs as rare variation also in Georgia and northern Florida

— Hypopygium ferruginous, as the rest of the sternites; only tergites 1-3 with continuous apical ivory bands, the 4thh tergite often with latero-apical ivory marks; tip of femora III usually infuscated. (Length 12–13 mm.) ..... 3 b. *disparilis flavidops*, new subspecies, Northern Florida, Georgia, Mississippi, Louisiana

4. Basic color of abdomen chestnut-red; hypopygium ferruginous as the rest of sternites; femora III apically distinctly black; tyloids obtrusive, being light-colored, short-oval, and somewhat larger than in alternative species. (Area superomedia much wider than medially long, its posterior bordering carina angularly projecting toward its middle; length 11–12 mm.) ..... 15. *mystificans*, new species Georgia

— Basic color of abdomen pale yellowish, posterior tergites ferruginous; hypopygium white; femora III never apically infuscated; tyloids black and very unobtrusive, short-oval and somewhat smaller than in alternative species. (Area superomedia not, or slightly wider than medially long, its posterior bordering carina not angularly projecting toward its middle; length 11–13 mm.) ..... 6 b. *honestus milleri*, new subspecies, Florida, Georgia, Mississippi, Louisiana

3 b. *Melanichneumon disparilis flavidops*, new subspecies

Types

Holotype.— ♂, "Gainesville, Alachua Co., Florida, 3.V." C.G.H. II.

Allotype.— ♀, Forsyth, Monroe Co., Georgia, 20.–30.V.1968, leg. G. Heinrich. C.G.H. II.

Paratypes.—2 ♂, Torreya State Park, Liberty Co., Florida, 11.V.1968; 3 ♂, Gold Head Branch State Park, Clay Co., Florida, 27.IV.–5.V.1971; 1 ♀, 1 ♂, Athen, Georgia, 1.VI.1969 and 16.–28.V.1969; 6 ♀, 20.IV.–10.VI. and 3 ♂, 12.–15.VI.1971, Forsyth, Monroe Co., Georgia; 1 ♀, 15.–22.V. 1971, 1 ♀, 11.–16.X.1970, 4 ♂, 28.VII.–9.XI.1970, Water Valley, Yalobusha Co., Mississippi; 1 ♀, Powhatan, Natchitoches Parish, Louisiana, 19.VI.1971; 1 ♀, 18.–25.VIII.1971, Bayou Chicot, Evangeline Parish, Louisiana. All in C.G.H. II.

Distribution

Northern Florida (type locality), Georgia, Mississippi, Louisiana.

Preamble

This form replaces *heiligbrodtii* Cresson from northern Florida on, northward and westward in Georgia, Mississippi, and Louisiana. It is sympatric with *honestus* Cresson over this entire range of distribution. As all the species involved display an extraordinary high degree of individual variability and sexual dichroism, the taxonomic puzzle appeared at first unsolavable. The evidence gathered by collecting very broad series of specimens from many different localities over a period of 5 years, has at last led to the following conclusions, which are, in all probability, correct: females of *disparilis flavidops* are very similar to *heilig-*

brodtii, while the associated males are strikingly different from *heiligbrodtii* males but resemble very strongly the erythristic phase of the sympatric *honestus* males: the *honestus* females, on the other hand, are strikingly different chromatically from both, *heiligbrodtii* and *disparilis flavidops* females as well.

Male

Distinguishable from *honestus* ♂ (everythristic phase) by the combination of 3 chromatic characters: (1) hypopygium ferruginous (instead of white), (2) fourth tergite without continuous, apical ivory band (though often with latero-apical ivory marks), (3) in most specimens tip of femora III more or less blackish-infuscated.

Light orange-ferruginous, with ivory and black markings; basic color of mesoscutum usually black, with two long, median and two short lateral longitudinal ivory lines, the basic black color sometimes varying to, medially or entirely, ferruginous; prescutellar carinae rarely white-marked; black on propleura restricted to anterior part, on mesopleura to a short band below subalarum; posterior part of propleura and mark on upper posterior part of mesopleura ferruginous; black are also: antennal cavity, ocellar and occipital regions, sometimes band along middle of frons, prepectus (except ivory exterior belt), small mark on mesopleura at base of coxae II, axillary troughs, basal furrow of propodeum with base of horizontal part, areae coxales, usually part of area posteromedia, often extreme base of prosternum, always an apico-dorsal mark on coxae III, often base of first trochanters III; in majority of specimens the apex of femora III, often also tip of tibiae III, more or less distinctly infuscated; the following ivory: head (except black markings mentioned above), collare, pronotal ridge and base broadly, subalarum, mark on tegulae, markings on mesoscutum (already described), scutellum, postscutellum, carinal triangle, areae posteroexternae, extreme end of metapleura, prosternum entirely or predominantly, mesosternum, mesopleura extensively or (usually) predominantly, exterior belt of prepectus, all trochanters, coxae I and II entirely, coaxe III dorsally on inner side and ventrally (rest of coxae III ferruginous with black dorsal mark), apical, laterally widened bands on tergites 1-3, often latero-apical marks (but never a continuous apical band) on 4th tergite, usually the 6th tergite apically in the middle, always the 7th tergite predominantly and all tarsi predominantly: hypopygium never ivory; basic color of entire abdomen and of femora and tibiae orange-ferruginous, the femora and tibiae I and II pale yellowish-tinged on anterior side; flagellum with white annulus; length 12-13 mm.

Flagellum.—With 32-33 segments and with very small, short, bacilliform tyloids on segments 7 or 8 to 15. Black, ventrally brown, with complete white annulus on segments 11-19 or 20; scape ventrally ivory.

Female

Distinguishable from *heiligbrodtii* ♀ (Florida populations) in color only by the ivory band around orbits being constantly interrupted (or at least reduced to a narrow line) on temples; furthermore mesoscutum, particularly the lateral lobes, markedly denser punctured than in *heiligbrodtii* and lateral edges of scutellum never prominent.

Strongly different in color from the northern subspecies *disparilis disparilis* by reduction of black on head, thorax, and legs (as described below), and also by much more extensive yellow markings on head and thorax.

Ferruginous, mesosternum, mesopleura, and declivity of propodeum a shade paler than the rest; ivory are: broad band around orbits (interrupted or almost interrupted on temples and on malar space, widened on outer orbits gradually over entire width of cheeks and reaching downward to mandible base), mandible base, collare, pronotal ridge, subalarum, scutellum, postscutellum, areae posteroexternae more or less distinctly, usually all first trochanters partially or entirely, usually a dorsal mark on coxae III on inner side, coxae I and II apically or more extensively, laterally widened apico-lateral marks on tergites 1-3 (varying in size, sometimes lacking on postpetiole), and apical marks on tergites 6 and 7; segments 2-4 of tarsi II and III ivory-tinged; apices of femora III more often than not blackish-infuscated; the following black: short band on propleura behind collare, base of prosternum, base of prepectus medially, short band below subalarum, exterior margin of lateral lobes of mesoscutum, basal furrow of scutellum, axillary troughs, and basal furrow of propodeum; flagellum with white annulus; length 9-10 mm.

Flagellum.—Lanceolate, with 34 segments, the first nearly twice as long as wide, the 6th in lateral view square, the widest on the flat side about 3 times as wide as long. Black, with dorsal white annulus on segments 6-15, the basal segments apically on dorsal side, ventrally more extensively, brownish; scape ventrally ferruginous.

6 b. *Melanichneumon honestus milleri*, new subspecies

Types

Holotype.—♀, "Highlands Hammock, Highlands Co., Florida, U.S.A., 15.–28.X.1969;" C.G.H. II.

Allotype.—♂, same locality, 27.IV.1968. C.G.H. II.

Paratypes.—2 ♀, type locality, 5.–22.XI.1969, leg. R.W. Miller; 1 ♀, 1 ♂, Gold Head Branch State Park, Clay Co., Florida, 25.–29.IV.1971; 8 ♀, 4 ♂, Bayou Chicot, Evangeline Co., Louisiana, 11.VIII.–13.X.1971. All in C.G.H. II.

Distribution

Florida, Georgia, Mississippi, Louisiana.

Preamble

For a long time I believed that individuals of this striking form represented a species. However, the evidence found through examination of hundreds of specimens collected during the past years, in different southeastern States, suggests strongly a subspecific association with *honestus* Cresson.

Typical females of *honestus milleri* are distinguished by constant lack of apical white marks on segments 6 and 7 and of tangible black infuscations on apices of femora and tibiae III; the mesosternum and most of mesopleura are white and the mesoscutum is black with two longitudinal median and usually two short lateral white lines and white prescutellar carinae.

The color of the male is even more striking and quite different from the type of *honestus* (a male). Tergites 1-5 are basally extensively black, with ivory apical bands, the apical part of the 5th tergite and the entire 6th tergite are ferruginous, the 7th together with valvae and hypopygium white. The pattern of mesoscutum agrees with the female; the *honestus* male differs by uniformly light orange-ferruginous basic color of the entire abdomen, with apical ivory bands on tergites 1-4; the last tergite, valvae, and hypopygium are white, as in *honestus milleri*, and the pattern of the mesoscutum also agrees with this subspecies.

In central Florida males with orange-ferruginous basic color of abdomen do not occur. The only specimen of this color type, found so far in Florida comes from the northern part of the state (Gainesville). In central Louisiana (Evangeline Parish) the *honestus*– colored males are likewise lacking; but, in northern Mississippi (Yalobusha and Lafayette Co.'s) the number of *honestus* and *honestus milleri* – type males is about equal, and intermediate specimens occur. The ratio of the two phases is about the same in northern Georgia.

Doubtlessly associated with the male populations of northern Mississippi and Georgia mentioned above are females which display an increase of red color as compared with typical *honestus milleri*, particularly in northern Mississippi where, in the great majority of specimens, either the median lobe of the mesoscutum or also parts of the lateral lobes are red. These females are clearly approaching the neallotype of *honestus* as described by Heinrich, 1962, SNIS, p. 593.

Female

Head white, with middle of frons, ocellar and occipital regions, sometimes also antennal cavity black, and with face and clypeus more or less extensively and more or less intensively ferruginous-tinged; mesoscutum black, the median lobe varying occasionally to red, always with two long median and usually also two short lateral ivory lines; ivory are also: prescutellar carinae, scutellum, postscutellum, subalarum, collare, pronotal ridge and base, apex of prosternum, exterior belt of prepectus, entire mesosternum, most of mesopleura, usually parts of metapleura and declivity of propodeum; the following black: base of prosternum, most of prepectus, propleura, uppermost section of mesopleura, and horizontal part of propodeum basally to entirely; black on prosternum, propleura, and horizontal part of propodeum often varying to partially ferruginous; abdomen orange-ferruginous, often the first tergite, sometimes also the base of the second black; apical band on postpetiole and apico-lateral marks on 2nd and 3rd tergites yellowish-white; tergites 5-7 often extensively (except laterally) yellow-tinged orange, but never with distinct apical white marks; legs orange-ferruginous, all coxae and trochanters white, the coxae III laterally orange-ferruginous and with black dorso-apical mark; flagellum with white annulus; length 10-12 mm.

Flagellum.—Lanceolate, with 35-37 segments, the first less than twice as long as apically wide, in lateral view the 7th approximately square, the widest on the flat side about 3½ times as wide as long. Black, with complete white annulus on segments 6-15 or to 16; scape ventrally ferruginous.

Male

Head as in female, but face and clypeus always clearly white; thorax as in female, but prosternum uniformly ivory, the lateral ivory lines on mesoscutum always distinct, the declivity of propodeum (including area posteromedia) entirely, the metapleura nearly entirely, ivory, the latter with only the base and the areae coxales black; first tergite black, with broad apical ivory band, tergites 2-5 basally broadly black, the second to beyond middle (excluding gastrocoeli), tergites 2-4 ivory beyond black section, the 5th ferruginous beyond black part, the 6th entirely ferruginous; the 7th tergites and the hypopygium white; all coxae and trochanters ivory, the coxae III black on exterior side; all tarsi ivory, the femora and tibiae pale orange-ferruginous with yellowish ventral sides and partially yellowish interior sides; flagellum with white annulus; length 11-13 mm.

Flagellum.—With 35 segments and with unobtrusive, very small and short tyloids on segments 7 to 15 or 16, the basal ones close to bacilliform, the apical ones short-oval, the first and last punctiform. Black, ventrally brown, with complete white annulus on segments 11 or 12 to 20 or 21; scape ventrally white.

Note 1

Throughout the range of distribution (except Florida south of Gainesville) of *honestus milleri*, another, sympatric *Melanichneumon* form occurs, the males of which share with *honestus honestus* the light orange-ferruginous basic color of the color of the abdomen and are also otherwise deceivingly similar to the latter form. The distinguishing characteristics are treated under the subspecies *disparilis flavidops*, described above.

Note 2

Named in honor of Mr. R. W. Miller, Highlands Hammock State Park, who's assistance, especially the running of a Malaise trap for a number of months, lead to the discovery of the first female of this subspecies.

15. *Melanichneumon mystificans*, new species

Types

Holotype.—♂, "Forsyth, Monroe Co., Georgia, U.S.A., 10.–20.VII.1970." C.-G.H. II.

Allotype.—(Tentative), ♀, Forsyth, Georgia, 5.–10.VI.1971. C.G.H. II.

Paratypes.—7 ♂, type locality, July and August, one from May 23rd, 1970 and 1971. C.G.H. II.

Distribution

Georgia, Forsyth, Monroe Co.

Preamble

All eight male type specimens are strikingly, and almost congruently distinguished in color by a tricolored, banded abdomen: black, chestnut-red and ivory (similar to some specimens of *heiligbrodtii*), combined with distinctly black apex of femora III and black mesoscutum with four longitudinal white lines. They also show a few structural characters of importance: (1) a fairly long row of rather obtrusive (though not large) short-oval, orange-colored tyloids; (2) a peculiar shape of the area superomedia, which is much wider than long, the area posteromedia usually projecting angularly into the area superomedia; (3) comparatively narrow, nearly parallel-sided tergites 2 and 3.

The structure of the tyloids combined with ferruginous hypopygium, black-tipped femora III, and the above-mentioned type of carination distinguishes this form sufficiently from *honestus* Cresson (including subspecies *milleri* Heinrich. The structure of tyloids and the constantly different type of carination of the propodeum seem to rule out the possibility of treating the series as a chromatic mutation of *disparilis flavidops* Heinrich. These two characters, however, agree well with the Florida population of *heiligbrodtii*, and the black, red and ivory-banded abdomen occurs also as a variation in the latter species. But, among more than 100 males of *heiligbrodtii*, not one specimen with predominantly white mesopleura and white mesosternum has been found, a character which distinguishes the form treated here. Different from *heiligbrodtii* (Florida population) is also the markedly greater extent of black, which color covers, in all specimens, almost the entire horizontal part of propodeum (excluding only the tips of areae dentiparae), the pronotum (except white ridge and base), the mesoscutum (except white lines), the upper third of mesopleura, the areae spiraculiferae, part of metapleura, and exterior side of coxae III.

It appears doubtless that this is a distinct form. The question whether it represents a full species or a subspecies of *heiligbrodtii* remains, until further populations from outside Florida are available.

Male

Head ivory, with antennal cavity, broad middle of frons, ocellar and occipital regions black; thorax black and white; white are: collare, pronotal ridge and base, two long median and two short lateral lines on mesoscutum, prescutellar carinae, scutellum, postscutellum, subalarum, tegulae predominantly, prosternum except base, mesosternum entirely or predominantly, mesopleura except black upper third, declivity of propodeum, tips of areae dentiparae, end of areae spiraculiferae, areae metapleurales apically to predominantly, carinal triangle; first tergite black with apical ivory band, often ferruginous between ivory band and black petiolus, tergites 2-4 or to 5 basally extensively black, 2-4 with apical ivory bands, chestnut-red between both colors, the following tergites chestnut-red, the 7th, rarely also the 6th tergite with apical white marks; legs ferruginous, apex of femora III black, usually also apex of tibiae III slightly infuscated; all trochanters and coxae ivory, exterior side of coxae III extensively, often entirely black, as is also base of first trochanters III dorsally; tarsi I and II, segments 3-5 of tarsi III, and inner side of femora and of tibiae I and II yellowish-tinged; flagellum with white annulus; length 11-12 mm.

Flagellum.—With 33-34 segments, with rather distinct, short-oval, orange-colored tyloids on segments 7-17 (often also a punctiform tyloid on the 6th and 18th segment recognizable). Black, ventrally brown or black-brown, with white annulus on segments 10 or 11 or 12 to usually 16, sometimes 18; scape ventrally ivory.

Female

The female collected at the type locality and tentatively associated with the holotype shares the white apical marks on tergites 6 and 7, the broad ivory band on orbits, including the temple region, and the ferruginous basic color of the mesoscutum with *heiligbrodtii*. It differs from the latter species by broader, more curved temple-profile and in color by four longitudinal ivory lines on the mesoscutum, by yellow-tinged mesosternum and mesopleura, and by continuous, apical ivory bands on tergites 1-3.

Light ferruginous; face, clypeus, mesosternum, and mesopleura extensively yellow-tinged; the following ivory: broad band all around orbits, collare, pronotal ridge and base, two long median and two short lateral longitudinal lines on mesoscutum, prescutellar carinae, subalarum, scutella, areae posteroexternae, apical part of areae metapleurales, continuous apical bands on tergites 1-3, small apical mark on tergite 6, a large apical mark on the 7th, coxae I and II almost entirely, large dorsal mark on interior side of coxae III and their ventral side, and all trochanters partially; black are: marks on bases of propleura, exterior margin of mesoscutum narrowly, mark below subalarum, basal furrow of scutellum, axillary troughs, and basal furrow of propodeum medially; flagellum with white annulus; length 11 mm.

Flagellum.—Lanceolate, with 40 segments, the first slightly less than twice as long as apically wide, in lateral view the 6th square, the widest on the flat side more than 3 times as wide as long. Black, with dorsal white annulus on segments 7-15; scape ventrally ferruginous.

Genus *Vulgichneumon* Heinrich

(Continued from Suppl. 2, *Naturaliste can.*, 98, 1971).

3. *Vulgichneumon phaeogenops*, new species

Types

Holotype.—♀, "Torreyo State Park, Liberty Co., Florida, 11.V.1968", C.G.H. II.

Allotype.—♂, Archbold Biological Station, Lake Placid, Florida, 22.VI.1967, C.G.H. II.

Paratypes.—1 ♀, allotype locality, 11.IV.1968; 1 ♀, Water Valley, Yalobusha Co., Mississippi, 21.–31.X.1970, leg. M. Horan, C.G.H. II.; 1 ♀, Clinton, North Carolina, 24.V.1951 and 2 ♂, Elisabethtown, North Carolina; leg. H. and M. Townes, C.H.T.

Distribution

North Carolina south to Florida, west to Mississippi.

Preamble

One of the smallest species of the subfamily. The spiracles of the propodeum are very small and only a trifle longer than wide, suggesting a relationship to the tribe *Phaeogenini*, while all other structural characters rather agree with the tribe *Ichneumonini*. The species is tentatively attributed to the genus *Vulgichneumon*, although the head structure is markedly different from the type species, *brevicintor* Say.

Female

Uppermost part of face bearing the antennal sockets, in lateral view, strongly protruding, the face and clypeus gradually receding from this culminating point toward the apical margin of clypeus; cheeks broad, convex, and slightly receding toward carina genalis.

Light orange-ferruginous, tergites 5-7 predominantly black, the 7th with apical white mark, sometimes also the 6th apically white; apices of femora III and of tibiae III somewhat infuscated; flagellum with white annulus; length 5 mm.

Flagellum.—Short, filiform, not at all attenuated toward apex, slightly narrowed toward base, not distinctly flattened ventrally beyond middle, with 20 segments, the first nearly 1.5 times as long as apically wide, in lateral view about the 5th square, none wider than long. Ferruginous, with dorsal white annulus on segments 8 or 9 to 10; section beyond annulus blackish-infuscated; scape ferruginous.

Male

Light orange-ferruginous, only tergites 6 and 7 predominantly, the 5th not at all or restrictedly, black; 7th tergite with apical white mark; apices of femora III and of tibiae III more extensively and intesively infuscated than in female, tibiae III sometimes blackish on dorsal side close to their bases; tarsi III more or less extensively, sometimes entirely (except only extreme bases of segments) blackish-infuscated; the following white: face, clypeus, collare, subalarum, tegulae in part, all trochanters, coxae I and II, and apical mark on 7th tergite; scutellum indistinctly ivory-tinged, particularly apically and laterally; flagellum without annulus; length 6 mm.

Flagellum.—With 25 or 26 segments, slightly nodose beyond middle by transverse bristle-ridges on ventral side of segments, without clearly recognizable tyloids. Dorsally blackish-brown, ventrally ferruginous or brownish, scape ventrally pale orange–ferruginous.

V. Tribe *Platylabini*

Genus *Neolynicus* Heinrich

(Continued from Supplement 2, *Naturaliste can.*, 98, 1971).

1. *Neolynicus michaelis* Heinrich

Neolynicus michaelis Heinrich, 1971, Naturaliste can., Suppl. 2, p. 1025-1026.

Holotype.— ♀, Water Valley, Mississippi, C.G.H. II.

Neallotype.— ♂, Powhatan, Natchitoches Co., Louisiana, 11.VI.1971, C.G.H. II.

Distribution

Northern Mississippi (type locality); new record: northern Louisiana (neallotype locality).

Preamble

The neallotype and another male from the same locality differ rather strongly in color of the thorax from the holotype. I suppose that this is a matter of normal sexual dichroism rather than an indication of subspecific differentiation.

A second female, recently collected in Georgia, however, is chromatically so strikingly different from the holotype (of the same sex) that I suppose it represents another subspecies, which is described below.

Male

Head white, a transverse band on antennal cavity, ocellar and occipital regions, and a narrow stripe all along carina genalis, black; thorax orange and white with some black markings: orange are: median lobe of mesoscutum, exterior belt of lateral lobes, horizontal part of propodeum predominantly (including more than anterior half of areae spiraculiferae), and a patch on and around speculum; the following black: lateral lobes of mesoscutum predominantly, basal furrow of scutellum broadly, a mark on posterior part of propleura, a mark below subalarum, axillary troughs, and basal furrow of propodeum; the rest of thorax white, including two longitudinal median lines on mesoscutum, the prescutellar carinae, and scutella; legs orange, the coxae and trochanters I and II, coxae III dorsally and ventrally, extensively trochanters III ventrally in part, white; abdomen orange, petiole basally black, postpetiole with apical white band, sometimes also tergites 2 – 5 with blackish-infuscated basal bands; flagellum with white annulus; length 6 mm.

Flagellum.—With 32 segments, without (at 60 times magnification) recognizable tyloids. Black, with almost complete white annulus on segments 9 or 10 to 14 or 15, ventrally sometimes brownish; scape ventrally white.

Neolynicus michaelis georgianus, new subspecies

Types

Holotype.— ♀, "Forsyth, Monroe Co., Georgia, USA., 7.–28.VIII.1971"; leg. F. Naumann, C.G.H. II.

Distribution

Georgia.

Female

Agrees in structure with *michaelis michaelis*, except that the tibiae III and fefora III are, in dorsal view, slenderer. Chromatically strikingly different, particularly by color of mesoscutum and pleuron.

Basic color of mesoscutum uniformly deep black, with two longitudinal median white lines reaching to the anterior border of the mesoscutum; all pleura orange, without white parts, except a white mark in lower apical corner of mesopleuron; prescutellar carinae white; otherwise as michaelis michaelis.

VII. Tribe *Phaeogenini* Ashmead

Phaeogenini Townes, 1944, Mem. Ent. Soc., 11:298.

Alomyini Townes, 1951, Hym. of Am. N. of Mexico, p. 276 (and all following publications).

Phaeogenini Perkins, 1959, Royal Ent. Soc. London, VII, p. 68-71.

Phaeogenini Walkley, 1967, Hym. of Am. N. of Mexico, 2nd Suppl. p. 130.

Type genus.—*Phaeogenes* Wesmael.

Preamble

This tribe, often separated from the rest of the subfamily under the name "Ichneumoninae cyclopneusticae", was not included in the SNIS. It is planned to treat the tribe comprehensively in a later supplement and only a new genus and species are described here. *Terebraella*, new genus, is placed, tentatively, in the tribe Phaeogenini on account of the small, circular spiracles of the propodeum, although the other structural characters are quite different from the type-genus, *Phaeogenes*.

Genus *Terebraella*, new genus

Type species.—*Terebraella culiciops*, new species.

Distribution

Florida.

Preamble

The genus is particularly distinguished by the following characters: (1) ovipositor strongly projecting; (2) gastrocoeli and thyridia obsolete; (3) sculpture of head and body densely and finely coriaceous, subopaque; (4) malar space very long.

The type species is a small and very slender, nearly uniformly pale ochreous-orange colored insect. Females resemble, by their slender appearance and especially in structure of their long, extremely slender flagellum with very elongate basal segments, the genus *Rhexidermus* Foerster; they differ clearly generically, by normal structure of mandibles, far more projecting ovipositor, by character (2) as given above, and by abbreviated radial cell. The genus *Thyraella* Gravenhorst may be even more closely related. It differs by not considerably projecting ovipositor, by structure of head (malar space much shorter, temple profile wide and bulging), and by coarse puncturation of face and frons (finely coriaceous in *Terebraella*).

Terebraella culiciops, new species

Types

Holotype.— ♀, "Archb. Biol. St., Lake Placid, Fla., U.S.A., 22.6.67." C.G.H. II.

Allotype.— ♂, same locality, 24.VI. 1967, C.G.H. II.

Paratypes.—1 ♀, 2 ♂, same data as holotype; 1 ♂, same locality, 21.VI. 1967; 1 ♀, Gainesville, 2.V.1968; 1 ♀, Highlands Hammock State Park, Highlands Co., Florida, 29.IX.1969; 2 ♀, same locality, 22.–30.XI.1969. All in C.G.H. II.

Distribution

Florida.

Female

Pale ochreous-orange, without white markings; apex of femora III, the tibiae III, tarsi III, and usually tergites 5 or 6 to 7, slightly infuscated; flagellum with white annulus; length 6 mm.

Flagellum.—Bristle-shaped, long and very slender, with 22 segments, the first about 6 times as long as wide, all segments distinctly longer than wide. Black, with complete white annulus on segments 7-10 or 11 (base); the first, and less distinctly the second segment ferruginous-tinged; scape ochreous-orange.

Male

Ventral side of thorax with coxae and trochanters somewhat paler than in female; flagellum without white annulus; otherwise as female; length 4-6 mm.

Flagellum.—With 22 segments and with moderately distinct, broadly-bacilliform tyloids on segments 9-12. Black, without annulus, the scape and first segment (the latter at least ventrally) ochreous-orange, the following segments ventrally more or less distinctly brownish.