

There is sufficient evidence to indicate a fault between the Talladega formation and the Erin shale in this area. The evidence also justifies the suggestion that the Talladega formation has been thrust over the Erin shale along a fault plane that dips slightly eastward (3° – 5° as determined by differences in altitude along the contracts). The Erin shale is thought to have been exposed by erosion of the thin overthrust plate, thus forming a window. The faulting along the line of outcrop of the Hillabee schist is considered a complementary thrust fault in the overthrust block. The mineralization along the fault in the Hillabee schist is therefore thought to be post-Erin shale. The assignment of part of the Talladega slate and other crystalline rocks in eastern Alabama to an age as recent as the Carboniferous, on the supposition that the Erin shale is a lenticular mass originally deposited in the Talladega, is believed to be unwarranted by the field relations here described.

ENTOMOLOGY.—*Three new reared parasitic Hymenoptera, with some notes on synonymy.*¹ C. F. W. MUESEBECK, Bureau of Entomology and Plant Quarantine. (Communicated by HAROLD MORRISON.)

The new species described below have been reared in the course of studies in economic entomology. In order to make the names available for use the descriptions are published at this time.

SERPHOIDEA

SCELIONIDAE

Telenomus catalpae, new species

In the female sex very similar to *sphingis* Ashmead, but distinguished by having the occipital carina only very narrowly interrupted at the middle, by the yellowish mouth region, and by the somewhat stouter thorax. In the male sex at once distinguished from all related species by the entirely red-dish-yellow head and thorax.

Female.—Length, 1 mm. Head transverse, more than twice as broad as long; viewed from in front much broader than long; eyes finely hairy, rather strongly divergent below; frons smooth, delicately reticulated laterally below middle of eyes; malar space half as long as scape; vertex finely reticulate, punctate and subopaque; ocelli in a low triangle, the lateral ones touching the eyes; temples flat, polished except for a narrow reticulated border along the eyes; antennae 11-segmented; scape not reaching summit of vertex; pedicel at least one-third as long as scape; first segment of funicle distinctly a little shorter than pedicel; second and third segments of funicle subequal, shorter than first and barely or not longer than broad; fourth shorter than second or third and about as wide as these; fifth to ninth seg-

¹ Received March 20, 1935.

ments forming a distinct club, the fifth much the smallest, strongly transverse and somewhat narrower than the following; sixth, seventh and eighth subequal, distinctly somewhat broader than long, the apical segment conical.

Thorax narrower than head; mesoscutum evenly convex, minutely reticulate punctate, finely hairy and subopaque; scutellum smooth and polished; metanotum finely sculptured and opaque at the middle; propodeum with a prominent oblique carina on each side from near middle of base of propodeum to a point beyond middle of lateral margin; stigmal vein more than twice as long as marginal and about half as long as postmarginal; submarginal vein with about 10 long setae.

Abdomen hardly shorter than thorax and nearly as broad, more or less truncate at apex; first tergite four times as broad as long at the middle, smooth and polished except for a row of elongate pits bordering the basal margin; second tergite about one and one-half times as long as broad, smooth and polished except for a row of foveae at the base and a few weak short striulae medially at base; remaining tergites very short; ovipositor sheath slightly exerted.

Black; mandibles, clypeus, and a spot between bases of antennae yellowish; scape black, pale at apex; remainder of antenna dark brown; all coxae and femora blackish; anterior tibiae pale, the middle and posterior pairs more or less infuscated; tarsi brownish yellow, the apical segment black; wings hyaline.

Male.—Essentially like the female except in the structure of the antennae and in color. Antennae 12-segmented; pedicel and basal three flagellar segments subequal, slightly longer than broad, fourth to ninth flagellar segments shorter, moniliform; the apical segment conical. Reddish yellow; antennae and legs a little paler; apical half of abdomen more or less blackish.

Type locality.—Takoma Park, Md.

Type.—U. S. National Museum No. 50795.

Host.—Eggs of *Ceratomia catalpae* Bdv.

Described from 32 females and 51 males (type, allotype, and paratypes) reared by J. W. Bulger at the type locality September 27, 1932; and 2 females and 3 males, likewise reared from eggs of *C. catalpae*, by W. J. Baerg, August 5, 1933, at Fayetteville, Ark.

ICHNEUMONOIDEA

BRACONIDAE

Apanteles epiblemae, new species

This species is exceedingly similar to *epinotiae* Viereck, with which it is easily confused. It may be distinguished from that species, however, by its complete and strong propodeal costulae, by its relatively longer intercubitus, by its more definitely punctate face, mesoscutum, and mesopleurum, by the prominence of the posterior lateral angles of the propodeum, and by its longer ovipositor.

Female.—Length, 2.5 mm. Head strongly transverse, temples narrow; face flat, definitely closely punctate and subopaque; malar space equal to basal width of mandible; eyes long; vertex minutely punctate, opaque; ocellocular line and postocellar line subequal, twice the diameter of an ocellus, antennae slightly shorter than body.

Thorax, stout, broader than head; mesoscutum finely confluent punctate, minutely longitudinally rugulose posteriorly; disk of scutellum longer than broad at base, smooth and polished; polished areas on lateral face of

scutellum very large, triangular, extending nearly to the base; propodeum finely rugulose, with a large, sharply margined median areola which is open at the base and is traversed by several low transverse rugae, and with strong, complete costulae; posterior lateral angles of propodeum very prominent; mesopleurum anteriorly confluent punctate and opaque; first abscissa of radius about one and one-half times as long as transverse cubitus; metacarpus distinctly longer than stigma; nervellus strongly curved; posterior coxae smooth; inner calcarium of posterior tibia hardly half as long as basitarsus.

Abdomen a little narrower than thorax; first tergite considerably longer than broad, nearly parallel sided, truncate at apex, closely rugulose; plate of second tergite strongly transverse, longest at the middle, its median length about one-fourth its apical width, very weakly, indefinitely sculptured; third and following tergites polished, the third much longer than the second; ovipositor sheath slender, fully as long as the abdomen and as long as posterior tarsus.

Black; palpi pale; anterior legs beyond trochanters testaceous; middle femora apically, middle tibiae and posterior tibiae, except at apex, and middle tarsi, except apical segment, reddish-yellow; tegulae yellowish-white; wings whitish hyaline; stigma hyaline margined with brown; veins mostly hyaline; costa whitish; metacarpus brown.

Male.—Like the female in all essential respects; however, the second tergite is smoother, the legs, especially the middle and posterior tibiae, are darker; and the antennae are longer than the body.

Type locality.—Meade County, Kans.

Type.—U. S. National Museum No. 50796.

Host.—*Epiplema strenuana* Walker.

Described from 7 females and 6 males. The type, allotype, and one male and one female paratype reared in February 1933 from the above-named host at the type locality by Sam G. Kelly; three males and one female from Clark County, Kans., likewise reared by Mr. Kelly in February 1933; one male from Riley County, Kans., and one female from Manhattan, Kans., reared by Mr. Kelly in August 1933; one female from Bridgeville, Del., reared from *E. strenuana* by A. O. Baker, August 10, 1933; one female reared from the same host by William Rau Haden at Camden, Del., August 14, 1933; and one female reared from *Grapholitha molesta* Busck by O. I. Snapp, of the Bureau of Entomology and Plant Quarantine, at Fort Valley, Ga., June 16, 1925, under Quaintance No. 21938. In the female paratypes the color of the legs ranges from almost entirely testaceous beyond trochanters to mostly black.

Apanteles thujae, new species

In my key to the Nearctic species of *Apanteles*² this species runs directly to *monticola* Ashmead, which it very closely resembles. It may be distinguished from that species, however, by its somewhat depressed thorax, shorter malar space, punctate scutellum, and the rugulose punctate, rather than more or less striate, sculpture of the basal two abdominal tergites.

Female.—Length, 1.8 mm. Head slightly narrower than thorax; eyes a little convergent below; malar space shorter than basal width of mandible; face smooth and shining, with only indistinct setiferous punctures; temples narrow but convex; ocell-ocular line twice diameter of an ocellus; antennae about as long as body.

² Proc. U. S. Nat. Mus. 58: 487. 1920.

Thorax stout, distinctly somewhat depressed; mesoscutum broader than long, opaque, evenly, minutely, and shallowly punctate; suture at base of scutellum very narrow, minutely foveolate; scutellum flat, subopaque, sculptured like mesoscutum though more weakly; propodeum convex, more than twice as broad as long, without a median areola, smooth and shining, with only a little weak rugulosity along posterior margin; mesopleurum smooth and polished except anteriorly, where there are some shallow punctures; inner calcarium of posterior tibia not longer than outer and not quite half as long as metatarsus; stigma slightly shorter than metacarpus; radius issuing from middle of stigma, perpendicular to anterior margin of wing and slightly longer than intercubitus.

Abdomen narrower than thorax; chitinized plate of first tergite narrowing a little toward apex, twice as long as broad at apex, gently excavated at base, where it is smooth and polished, the apical two-thirds finely rugulose punctate, and with a more or less distinct, though very narrow and shallow, median longitudinal groove on posterior half; lateral membranous margins of first tergite very broad on apical half; plate of second tergite strongly transverse, more than three times as broad on posterior margin as long, defined laterally by indistinct oblique grooves, more weakly sculptured than first tergite, its posterior margin straight; following tergites smooth and shining; ovipositor sheath at least as long as posterior femur but hardly as long as posterior tibia, rather strongly broadened toward apex; ovipositor a little decurved at apex.

Black; antennae entirely black, also tegulae; apex of anterior femur, more or less of anterior tibia, the anterior and middle tarsi, and posterior tibia at extreme base, yellowish brown; calcaria of tibiae whitish; wings clear hyaline, stigma and veins brown.

Male.—Essentially like female, but having antennae considerably longer than body.

Type locality.—Bar Harbor, Maine.

Type.—U. S. National Museum No. 50797.

Host.—*Recurvaria thujaella* Kearfott.

Described from seventeen females and one male (Type, allotype, and 16 paratypes) reared by A. E. Brower at type locality July 15–19, 1933, and two females, likewise reared by Dr. Brower, July 8, 1933, at Mt. Desert Island, Maine.

(*Macrocentrus laspeyresiae* Mues.) = *Macrocentrus instabilis* Mues.

Macrocentrus instabilis Muesebeck, Proc. U. S. Nat. Mus. 80: 34. 1932.

Macrocentrus laspeyresiae Muesebeck, loc. cit., p. 37 (new synonymy).

Since the publication of the paper in which *instabilis* and *laspeyresiae* were described I have seen a large number of additional specimens, reared from *Grapholitha molesta* Busck and *Carpocapsa pomonella* L. This material exhibits complete intergradations between typical *instabilis* and typical *laspeyresiae*, and has convinced me that the two are merely variants of an extremely variable species.

(*Aneurobracon* Brues) = *Mesocoelus* Schulz

Coelothorax Ashmead (not *Coelothorax* Anceys). Proc. Ent. Soc. Wash. 4: 165. 1898.

Mesocoelus Schulz, Zool. Ann. 4: 88. 1911.

Aneurobracon Brues, The African Republic of Liberia and the Belgian Congo, based on the Harvard African Expedition, 2: 1002 (new synonymy).

Mesocoelus Muesebeck, Proc. Biol. Soc. Wash. 45: 227. 1932.

At the time of my brief discussion of this genus I had not seen the paper by Brues in which *Aneurobracon* was described. His description and figures leave no doubt that the genotypic species, *Aneurobracon bequaerti*, is congeneric with the genotype of *Mesocoelus*. It appears to be very similar to *philippinensis* Mues., but differs in the complete absence of a medius and the slightly longer antennae.

ENTOMOMOLOGY.—*An undescribed rubber tingitid from Brazil (Hemiptera)*.¹ C. J. DRAKE and M. E. POOR, Iowa State College.
(Communicated by HAROLD MORRISON.)

Through the kindness of Mr. H. G. Barber of the U. S. Bureau of Entomology, the writers have received a series of 40 specimens of an undescribed species of lace bug from Brazil. The insect was taken in large numbers on the leaves of the rubber tree, *Hevea brasiliensis* Muell. Arg.

Leptopharsa heveae, sp. nov.

Fig. 1.

Elongate, moderately broad, whitish. Antennae very long, dark brown to brownish black, clothed with numerous fine, short, pale hairs; segment I long, moderately stout, almost straight, nearly six times as long as II, the latter very short; III very long, slender, nearly straight, two and a half times the length of one; IV very long, slender, scarcely stouter than three, clothed with longer hairs, one and one-half times the length of one. Head brown, largely covered with whitish exudation, armed with five long, pale testaceous spines; frontal spines sub-parallel, blunt, the tips contiguous; median and lateral spines more or less resting on the surface of the head. Bucculae whitish, reticulate, closed in front. Rostral laminae widely separated on meso- and metanotum; rostrum extending on the basal portion of mesosternum. Orifice distinct.

Body beneath ferruginous, more or less covered with whitish exudation. Legs long, slender, testaceous, the tarsi darker. Pronotum moderately tumid, deeply and closely pitted, reticulate on triangular portion, tricarinate; median carina thicker and more strongly elevated, without distinct areolae; lateral carinae distinct, sub-parallel, faintly converging posteriorly. Paranaota moderately broad, biseriate, moderately reflexed, the lateral margin rounded and finely serrate. Collum distinct, raised at the middle, reticulate. Calli black, often covered with white exudation. Elytra widening posteriorly, finely serrate along the costal margin, extending considerably beyond tip of abdomen, the areolae not very large and clear; costal area broad, mostly quadriseriate, with five rows at widest part, the areolae not arranged in very regular rows; subcostal area narrow, biseriate; discoidal area moderately

¹ Received March 22, 1935.