In spite of his busy professional duties, Dr. Berger found time to be intensely interested in the liberal political life of his country.

He will be sorely missed in the meetings of our Society and those of the State Horticultural Society, both of which meetings, he seldom missed.

ADDITIONS TO THE LACHNINI OF FLORIDA
(Homoptera: Aphididae)\(^1\)

A. N. TISSOT

In August 1939, the writer published some notes on the lachnids of Florida.\(^2\) An attempt was then made to bring together all records and information pertaining to the occurrence, distribution and host plants of these insects in Florida. Since the publication of that paper, 78 collections of lachnids have been recorded from the state. Two species were taken which had not been known to occur here and two apparently undescribed species were discovered. Some additional plants have been added to the list of known hosts of these aphids and other new host relationships have been found. Unless otherwise indicated, all collections of aphids here recorded, were made by the writer.

**Essigella pini Wilson**


**Eulachnus rileyi** (Williams)

The discovery of this aphid at Gainesville in December, 1943, raises some interesting and puzzling questions. Apparently, specimens of this species had never been seen or taken in Florida before that time. For a few weeks during the last half of December and the first half of January, 1944, it was extremely abundant in this vicinity. It was found on all species of pines growing here and practically every tree examined was found

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\(^1\) Contribution from the Entomology Department, Florida Agricultural Experiment Station, Gainesville, Florida. Published January 15, 1945.

to be infested. Hundreds of alate and apterous viviparous females and nymphs could be taken by thrusting the tips of a few branches into an insect net and shaking them vigorously. A very few males were taken but no oviparous females were found. By the middle of January a decrease in their numbers became apparent and by the end of February no more could be found. Whence came these vast hordes and what factors enabled them to multiply so rapidly? The following collections were made: on slash pine, Gainesville (Univ. of Fla. Campus), 12/13/1943, F-2402-43; on loblolly pine, Gainesville (Agri. Exp. Sta.), 1/5/1944, F-2421-44; on spruce pine, *Pinus glabra* Walt., Gainesville (Agri. Exp. Sta.) 1/5/1944, F-2423-44; and on longleaf pine, *P. australis* Michx. f., Gainesville (Univ. of Fla. Campus), 1/5/1944, F-2424-44.

*Cinara carolina* Tissot


*Cinara juniperivora* (Wilson)


*Cinara longispinosa* Tissot

This large lachnid with the peculiar, laterally expanded head was taken only on the spruce pine. Collections were as follows:
Cinara osborni new species
Alate Viviparous Female Figs. 1-7

COLOR.—Living aphids were used for making the following notes: Prevailing color brown. Head dark shining brown, eyes and ocelli black; a narrow band of white pruinose material between the antennal bases. First two antennal segments slightly lighter than the head, segments III to V pale yellowish-brown with apices dark brown, VI entirely dark brown. Thorax concolorous with the head except for the dorsal lobes which are dull black; the dorsal lobes and the scutellum more or less covered with pruinose material. Wings hyaline, stigma and anterior veins black, median vein grayish, cubital and anal veins pale at base getting gradually darker toward the apex. Femora of all the legs very pale yellow on basal half, mid portion light brown, apical portion very dark brown to black. Tibiae of all legs shining black at base and apex, mid-portions pale yellowish-brown, the pale area being smaller in the hind tibiae than in the others. Tarsi dark brown to black. Abdomen somewhat lighter than the thorax, with small oval or circular darker brown spots between and posterior to the cornicles. Cornicles black. Cauda and anal plate very dark brown. The white pruinose material forms a longitudinal row of spots on the dorsum, a patch anterior to each cornicle, and it practically covers the entire area between the cornicles and the cauda. It completely covers the ventral surfaces of the head, thorax and abdomen.

HEAD AND APPENDAGES.—Width of head across the eyes, .688 to .755, ave. .717. Head about twice as wide as long, with rather prominent lateral projections supporting the eyes, the median suture distinct. Eyes large, with large circular ommatidia and prominent ocular tubercles. Ocelli large, the median one situated far down on the front of head. Head armed with numerous long, fairly heavy, slightly curved hairs which are situated on raised bulbous bases. Antennal segments III to VI somewhat uneven in profile; the antennal hairs reclinate and generally less heavy than those on the head; the sixth

*Measurements given in this paper are mm.
segment definitely imbricated, the others only slightly so. Sensoria slightly raised, varying greatly in size, the primary ones on V and VI always much larger than the others. Segment III with two to four sensoria on the apical half, IV with one or two situated near the apex, V with one smaller sensorium in addition to the large primary one, VI with four small sensoria grouped on one side of the primary one. Lengths of antennal segments as follows: III, .555 to .622, ave. .584; IV, .222 to .266, ave. .235; V, .266 to .311, ave. .286; VI, .166 to .200, ave. .175. Beak long, slender, sharply pointed, extending well beyond the hind coxae.

THORAX AND APPENDAGES.—Prothorax with a pair of prominent lateral tubercles situated far back, almost at the posterior margin. Fore wings with subcostal vein heavy and prominent; medial vein twice forked and very faint; stigma parallel-sided, its outer margin extending beyond the base of the radial sector. Legs armed with prominent hairs which are reclinate on all the segments, those near the middle of the hind tibia about twice as long as its diameter; length of hind tibia, 2.70 to 2.90, ave. 2.75. Hind tibia strongly curved, tibiae of the other legs less so. Length of hind tarsus exclusive of the claws, .311 to .366, ave. .331.

ABDOMEN.—Dorsum of the abdomen rather thickly set with slightly curved hairs which are generally shorter and finer than those of the legs; some of these hairs with dark areas surrounding their bases. Cornicles on very steep sided conical bases whose height is about half their greatest diameter at the base. Height of cornicle cones, .222 to .288, ave. .264; diameter at the base, .377 to .466, ave. .437. Cornicle bases armed with slightly curved hairs which are about as long, but somewhat less heavy than those at the middle of the hind tibia. Cauda and anal plate with curved hairs, longer and heavier than those on any other part of the body.

Apterus Viviparous Female Figs. 8-11

COLOR.—Prevailing color brown. Head dark, shining brown; eyes black. First antennal segment concolorous with the head, second somewhat lighter, third segment pale with apical one-fourth dark brown, fourth and fifth pale with about the apical third dark brown, sixth entirely dark brown. Thorax and abdomen brown, lighter than the head. Metathorax and all the abdominal segments with dark irregular broken patches on the dorsum, those on the thorax, the first abdominal segment,
and the segment between the cornicles largest and most compact. An irregular median white line partially divides the dark patches in the middle. Dark lateral patches on the metathorax and the first two abdominal segments. A patch of grayish waxy material anterior to the cornicles, and on each side of the metathorax. Femora of all legs with basal portion pale and apex dark brown. Fore and middle tibiae light brown with base and apex dark brown; hind tibiae with a smaller light portion on basal half. Tarsi dark brown. Cornicles black. Cauda and anal plate dark brown.

**Head and Appendages.**—Width of head across the eyes, .711 to .755, ave. .717. Front of head broadly rounded, dorsum convex, the median longitudinal suture distinct. Eyes large, situated on slight lateral projections; ocular tubercles less prominent than in the alate. Antennal segments III to V rather irregular in profile. Segment VI rather definitely imbricated, the apices of III to V slightly so. Segment III with one to three (usually one) sensoria near the apex; IV with one sensorium near the apex; V with one secondary sensorium, always smaller than the primary one; VI with a group of four to six small secondary sensoria on one side of the large primary one. Measurements of antennal segments as follows: III, .555 to .599, ave. .568; IV, .222 to .244, ave. .232; V, .266 to .277, ave. .268; VI, .155 to .177, ave. .167. Hairs on the head and antennae as in the alate, except that those on the antennae are somewhat shorter in proportion to the diameter of the joints than in the alate. Beak as in the alate, reaching well beyond the hind coxae.

**Thorax, Abdomen and Appendages.**—Legs as in the alate. Length of hind tibia 2.61 to 2.82, ave. 2.67. Length of hind tarsus exclusive of the claws, .311 to .355, ave. .333. Cornicle bases with sides somewhat less steep and with the outer margin more irregular than in the alate. Height of cornicles, .266 to .311, ave. .291; width at the base, .422 to .555, ave. .482.

**Types.**—The material of this species available for study consists of 46 microscope slides bearing 26 alate viviparous females, 24 apterous females and 7 immature specimens. An alate viviparous female taken on *Pinus taeda* L., on the Agricultural Experiment Station farm, 4/10/1941, F 2152-41 and an apterous viviparous female from the same colony, are designated as holotype and morphotype respectively. All of the remaining specimens arc designated paratypes. The collection records of the paratypes are as follows: Gainesville, 3/22/1937,
on *P. taeda*, Geo. R. Swank, coll., F-1474-37 (this collection was misidentified and listed under *C. carolina* in the previous paper); Gainesville (Agr. Exp. Sta.), 4/10/1941, on *P. taeda*, F-2152-41; Gainesville (Agr. Exp. Sta.), 4/6/1943, on *P. taeda*, F-2385-43; Gainesville (Univ. of Fla. Campus), on *P. palustris* Mill., 1/5/1944, F-2425-44 and 1/18/1944, F-2428-44.

The holotype and morphotype deposited in the U. S. National Museum (Cat. No. 57186). The paratype material in the collection of the writer and in the collection of the Entomology Department, Florida Agricultural Experiment Station.

**TYPE LOCALITY.**—Gainesville, Florida.

**TAXONOMY.**—This aphid seems to be most closely related to *C. carolina* Tisot but the shape of the cornicle bases and the sensoria on the antennae serve to separate them easily. In *carolina* the cornicle bases are much broader and flatter and the sensoria are more numerous and more prominent than in this species.

This species is named for my former teacher, Dr. Herbert Osborn, whose help and guidance have been an inspiration to the many students who were fortunate enough to be associated with him.

**Cinara salina** (Gmelin)

The synonymy of this large willow-feeding species with the prominent dorsal abdominal tubercle is considerably confused. Since having been described as *Aphis salina* by Gmelin in 1788, it has gone under the generic names *Lachnus*, *Pterochlorus* and *Tuberolachmus* and the specific names *dentatus*, *punctatus*, *salina* and *viminalis*. Various combinations of these names occur in literature. Miller, (The American Midland Naturalist, 19: 658-672, 1938) sinks *Tuberolachmus* Mordvilko, the genus under which this aphid has been most generally placed, under *Cinara*, and as the validity of the specific name *salina* appears to be pretty certainly established, the name as used above seems the best now available for the species. The Florida records are: St. Petersburg, 2/13/1941, on *Salix* sp., B. C. Neeld, coll., F-1972-41; Bradenton, 3/24/1941, on *Salix longipes* Anders., F-2062-41; Rochelle, 4/4/1941, on *S. longipes*, F-2113-41; and Gainesville (Devils Millhopper), 5/13/1941, on *S. longipes*, F-2224-41.
Cinara wacassae new species
Alate Viviparous Female Figs. 12-18

COLOR.—Living aphids were used for making the observations on color. This aphid is predominantly brown though the color is partly obscured by the waxy secretion which covers portions of the body. Head, medium brown; eyes black; ocelli very dark brown. First antennal segment concolorous with the head, second lighter than the first, the remaining segments pale to slightly dusky with apices dark brown. Thorax about same color as the head, except for the dorsal lobes which are shining blackish-brown. Wings hyaline with venation pale. Femora of all legs with basal two-fifths pale (practically hyaline), apical three-fifths very dark brown. Tibiae of fore and middle legs rather uniform blackish-brown, the hind tibiae somewhat lighter toward the base, but with the extreme base very dark brown. Tarsi of all the legs pale except for the extreme apex and the claws which are dark brown. Abdomen slightly lighter than head and thorax with a large dark brown area around each cornicle. Cornicles black. Cauda and anal plate concolorous with abdomen. The waxy secretion commonly assumes the following pattern on the abdomen; three more or less interrupted transverse bands on the dorsum near the base, a narrow transverse stripe between the cornicles, another behind the cornicles, the sides of the abdomen rather completely covered.

HEAD AND APPENDAGES.—Width of head across the eyes, .688 to .777, ave., .714. Head broadly rounded in front, nearly semi-circular in outline when viewed from above. Eyes large, globular, with circular ommatidia, ocular tubercles prominent. Lateral ocelli situated close to the eyes. Dorsum of the head with numerous long, fine hairs. Antennae short and rather thick, segments III to VI faintly imbricated. The unguis of VI arising abruptly, slender and finger-like. Sensoria large, rather irregular in shape, and strongly tuberculate. Segment III with 5 to 8 sensoria arranged in a fairly straight row, the basal one-third of the segment always free of them; IV with 2 or 3 sensoria; V with a secondary sensorium in addition to the larger primary one; VI with about 6 small secondary or accessory sensoria which are widely scattered and often at some distance from the primary sensorium. Antennal hairs long, fine, standing at an angle of 45 to 60 degrees. Length of antennal segments as follows: III, .377 to .466, ave., .421; IV,
.155 to .222, ave., .180; V, .177 to .222, ave., .199; VI, .133 to .177; .033 to .055, ave., .155 + .042. Total antenna, 1.13 to 1.31, ave., 1.19. Beak reaching well beyond the hind coxae, the fifth segment long and acute.

**Thorax and Appendages.**—Subcosta of the fore wing strongly developed, the other veins rather weak, the median vein very faintly indicated, twice branched. Stigma with sides nearly parallel, its outer apical margin extending well beyond the base of the radial sector. Legs rather short, thickly beset with long slender hairs which are mostly reclinate, but inclined to be more erect on the outer side of the fore and hind tibiae and the bases of the femora; the longest hairs near the middle of the hind tibia measuring .254. Length of hind tibia, 1.55 to 2.11, ave., 1.98; length of hind tarsus exclusive of the claws, .290 to .317, ave., .307.

**Abdomen.**—Surface of the abdomen thickly beset with long slightly curved hairs, some of the longest on the dorsum measuring .185. Cornicles situated on rather flat conical bases which have very irregular outer margins. Hairs on cornicle cones varying in length from .053 to .133, the longest situated on the base of the cones and the shortest at their apex. Cauda broadly and evenly rounded, both it and the anal plate with long, slightly curved hairs measuring up to .215 in length.

*apterous Viviparous Female Figs. 19-21*

**Color.**—Prevailing color brown; in life, a pruinose covering gives portions of the body a silvery-grey appearance. Head very dark brown; eyes black; first antennal segment concolorous with the head, second lighter brown, the remaining segments pale, with light brown apices. Beak dark brown at base and apex with lighter middle portion. Thorax brown, somewhat lighter than the head, dorsum with two broad diverging black bands which extend back to the second abdominal segment and form a very conspicuous inverted V. In cleared specimens these diverging bands are seen as closely placed, paired, dark, quadrangular patches on the thoracic segments and smaller more irregular ones on the first two abdominal segments. Aside from these bands the thorax is rather densely covered with pruinose material. Femora with basal halves pale and apical halves dark brown, tibiae light at base and shading darker toward the apex; tarsi dark brown. Abdomen dark bronyz-brown, with the pruinose covering less dense than on the thorax.
Cornicle cones black, each surrounded by a large black or dark brown area, in some individuals these areas joined by a band of similar color. Cauda and anal plate concolorous with abdomen.

**Head and Appendages.**—Width of head across the eyes .711 to .755, ave., .729. Front of head broadly rounded, the median suture distinct. Eyes large, with large, circular ommatidia and prominent ocular tubercles. Antennae rather short and thick, armed with long fine hairs which are generally more erect than in the alate. Segment III without sensoria, IV with one to three small sensoria, V with one or two small secondary sensoria in addition to the larger primary one, VI with about six small accessory sensoria which are widely scattered as in the alate. Length of antennal segments as follows: III, .377 to .444, ave. .414; IV, .155 to .222, ave. .192; V, .200 to .222, ave. .211; VI, .133 to .177 + .044 to .055, ave. .155 + .046; total antenna, 1.11 to 1.29, ave. 1.21. Beak as in the alate, reaching well beyond the hind coxae.

**Thorax, Abdomen and Appendages.**—Form and length of the legs as in the alate. Length of hind tibia 1.46 to 1.68, ave., 1.61; length of hind tarsus exclusive of the claws, .290 to .317, ave., .308. Surface of the abdomen thickly beset with long slightly curved hairs, some of which have irregular dark areas around their bases. Cornicle bascs with very irregular margins as in the alate. Hairs on these bases measuring .026 to .132, the shortest being at the apex of the cone and the longest near the base. Cauda and anal plate as in the alate.

**Types.**—Two collections of this species have been made. The specimens taken, consisting of seven alate viviparous females and 42 apterous females are mounted on 25 microscope slides. The collection records are as follows: Wacasassa River, Levy County, Florida, 4/15/1942, on southern redcedar, *Juniperus silicicola* (Small) Bailey; A. N. Tissot and Erdman West, colls., F-2254-42 and Gainesville, 4/25/1942, on *J. silicicola*, A.N.T., coll., F-2342-42. An alate viviparous female and an apterous viviparous female (F-2254-42) are designated as holotype and morphotype respectively, the remaining specimens being designated paratypes. The two slides bearing the holotype and morphotype (each bearing a paratype specimen) are deposited in the U. S. National Museum (Cat. No. 57187). The paratype material in the collections of the Entomology Depart-
ment, Florida Agricultural Experiment Station and of the writer.

TYPE LOCALITY.—Wacasassa River, Levy County, Florida.

TAXONOMY.—This species appears to be closely related to *C. juniperi* (DeGeer) and *C. sibiricae* (Gillette and Palmer) and more extensive collecting and study may prove them to be identical. However, certain morphological and biological features indicate that this species is distinct from the others and it is so considered here. In the apterous female, the cornicle base is much broader in *sibiricae* than in *wacasassae* (.55 and .35 respectively). The hairs on the body and appendages are considerably longer in *wacasassae* than in *sibiricae*. Swain (Ent. News, 32: 213, 1921) gives measurements of *C. juniperi* based on specimens in the British Museum, which indicate an appreciable difference in the relative lengths of the antennal segments in that species and *wacasassae*. Average lengths are as follows: *juniperi*—III, .364; IV, .168; V, .224; VI, .238; *wacasassae*—III, .421; IV, .180; V, .199; VI, .197. The widely spaced accessory sensoria on antennal segment VI appear to be a characteristic feature of *wacasassae*. All specimens of this species have been taken in colonies on fairly large branches, beneath “ant sheds” constructed by the large brown carpenter ant, *Camponotus abdominalis floridanus* (Buckley). Gillette and Palmer state that *sibiricae* is solitary on the bark of twigs.

*Cinara tujafilina* (Del Guercio)

Only one collection of the arborvitae aphid was made during the past five years though it could no doubt have been taken on numerous occasions. The record is as follows: Gainesville (Univ. of Fla. Campus) 4/7/1943, on arborvitae F-2389-43.

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EXPLANATION OF PLATE II

*Cinara osborni* n. sp. Figs. 1-11
- 1-7, alate viviparous female: 1, head; 2, antenna; 3, antennal segment VI; 4, beak; 5, cornicle; 6, basal portion of hind tibia; 7, hind tarsus.
- 8-11, apterous viviparous female: 8, head; 9, antenna; 10, antennal segment VI; 11, cornicle.

*Cinara wacasassae* n. sp. Figs. 12-21
- 12-18, alate viviparous female: 12, head; 13, antenna; 14, antennal segment VI; 15, beak; 16, cornicle; 17, basal portion of hind tibia; 18, hind tarsus.
- 19-21, apterous viviparous female: 19, head; 20, antenna; 21, cornicle.

Figs. 3, 10, and 14 are 75X, all others are 45X.
Cinara watsoni Tissot

Only a few individuals of this large species have ever been found together and apparently it never forms large colonies. Collections were made as follows: on loblolly pine, Gainesville (Sugarfoot), 5/20/1940, F-1938-40; (Agr. Exp. Sta.), 4/10/1941, F-2150-41; Gainesville, 5/4/1942, F-2349-42; 5/21/1942, F-2359-42; (Agr. Exp. Sta.), 4/6/1943, F-2384-43; on pond pine, Micanopy, 4/14/1941, F-2162-41; on slash pine, Gainesville (Univ. of Fla. Campus), 4/7/1943, F-2388-43; 12/13/1943, F-2417-43; 1/5/1944, F-2426-44; and on spruce pine, Gainesville, 4/21/1941, F-2183-41.

Unilachnus parvus (Wilson)


Longistigma caryae (Harris)