

fourth joint, joints regularly subequal, last joint being longer than penultimate; thorax black, smooth and shining, parapsidal grooves distinct, converging towards scutellum and separated from it by a slight ridge; scutellum punctate; abdomen longer and wider than thorax, black, smooth and shining; legs reddish-yellow, tibiæ to feet paler, basal half of coxæ black; wings hyaline, radial area open, areolet distinct, veins black.

♂.—Length .08 inch. Mouth parts brownish, scutellum coarsely rugoso-punctate, peduncle long; legs yellowish-brown, coxæ yellowish, feet black.

Described from numerous specimens raised in March.

THE GALLS OF THE WILLOW OAK, *Quercus laurifolia*.

This particular species of oak is classified by botanists as a variety of *Quercus phellos*, and from it I have obtained nine distinct species of galls.

The Cherry Stone Leaf Gall.

This popularly designates a unique gall that appears early in February and March, on the tender new leaves—frequently three on a leaf. It may possibly be the one referred to by Prof. Westwood as described by Bosc, from Georgia, vide Intro. Entom. vol. 2, p. 131, ed. 1840. He says:

“Another gall of the size of a pea, found on another species of oak has the outer surface very thin, and encloses in the interior a small ball the size of a grain of millet which rolls about, and within which the larva is lodged. M. Bosc opened hundreds of these galls without being able to learn the true nature of this production.”

Baron Osten Sacken, loc. cit. p. 62, discovered a similar gall *Cynips q. palustris* on *Quercus palustris*. My species is at once distinguished from it by having 14-jointed antennæ in ♀, in punctuation, coloration, by the veins of wings being black, and by the long bent peduncle in the ♂. It evidently belongs to Hartig's genus *Spathogaster*.

***Spathogaster q. laurifolia* n. sp.**

Galls.—Green, globular, hollow galls, growing through the leafy expansion of the newly formed leaf, projecting about equally from the upper and on the under surface of the leaf, the size of a cherry stone and when removed not unlike it in shape, containing a yellowish, slightly elongated kernel, which rolls freely about. Length .20 to .25 inch, .15 or more through.

Gall-Fly.—♀.—Length .10 inch. Black, head slightly but faintly punctured, mouth parts reddish, palpi yellowish; antennæ 14-jointed, joints one and two yellowish, others dark reddish-brown, pubescent, third joint nearly thrice as long as second; thorax smooth but appearing microscopically punctate with a high power, parapsidal grooves moderately distinct, longitudinal furrows distinct; scutellum deeply rugoso-punctate, opaque and slightly hairy; abdomen globose, smooth, black and highly polished; wings hyaline, veins black; legs yellowish-red, posterior coxæ excepting apex and feet black.

♂.—Length .08 inch. Antennæ 15-jointed; elevated and projecting posteriorly,

wings very long reaching way beyond tip of abdomen; abdomen small triangular, compressed, with a very long peduncle, slightly bent downwards before the middle; otherwise as in female.

Described from over one hundred specimens bred in March.

On a ♂ cynips, clinging to the long curved peduncle, I detected a curious gamasid mite but 0.2 mm. long. It was of a reddish-brown color, oval, coriaceous and pubescent; with eight remarkably long hairy legs, the posterior pair being longest, and the cephalothorax separated from the abdomen by a transverse suture and with the head rather pointed. It evidently belongs to the genus *Sejus* and may be known as *Sejus cynipidis*.

Another curious gall, constructed on the same principle as above but smaller and not projecting through the leaf, was detected the middle of April.

Cynips q. confusa n. sp.

Galls.—Small, globular, slightly elongate, greenish-yellow, succulent galls, attached to the principal vein on the under surface of the leaf, hollow inside with a pupa-like kernel; fly escaping by perforating a hole through the upper surface of the leaf. Diameter transversely .06; vertically .10 inch.

Gall-Fly.—♀.—Length .07 inch. Black, head finely and evenly punctate; antennæ reddish-yellow, 14-jointed, third joint longest, joints to eighth subequal, others short and equal, terminal twice as long as penultimate; thorax rugoso-punctate, parapsidal grooves distinct, two longitudinal grooves converging posteriorly; scutellum deeply rugoso-punctate, slightly elevated posteriorly and depressed and with a large deep fovea at base, not pubescent; pleuræ deeply aciculate; wings hyaline, veins reddish-brown, areolet nearly closed, radial area open; abdomen black and highly polished, last ventral valve projecting; legs reddish-yellow, coxæ black.

Described from 2 ♀ specimens bred the last of April.

Another gall found on the under surface of the leaves, produces a very roughly punctured cynips which may be known as

Cynips q. rugosa n. sp.

Galls.—Semispherical, greenish-yellow, smooth, hard galls, attached to the under surface of the leaf, slightly contracting the leaf on the upper surface, but not projecting, either flat or slightly concave; internally consisting of a hard fibrous substance in the centre of which the larva is transversely placed; fly escaping by perforating a hole through the upper surface of the leaf. Diameter transversely .20 inch; through or vertically .08 to .10.

Gall-Fly.—♀.—Length .14 inch. Head and thorax dark reddish-brown, very coarsely rugoso-punctate. Head, longitudinally narrow, ocelli almost in a straight line, vertex free from pubescence, face covered with short whitish pubescence.

a depression extending from base of each antennæ to mandibles, the latter black, pubescent back of eyes, palpi yellowish; antennæ 14-jointed, uniformly reddish-yellow, terminal joint longer than penultimate; thorax convex, rounded anteriorly almost free from pubescence, parapsidal grooves distinct, longitudinal furrows almost obsolete, mesothorax much broader than long, a ridge separating it from scutellum; pleuræ rugoso-punctate; scutellum round, bifoveolate, rugoso-punctate, thickly pubescent; wings hyaline, areolet distinct, petiolated, radial area open, costal and subcostal veins yellowish, becoming thick and brownish piceous at areolet; abdomen large, globose, bright shining reddish-yellow, peduncle short, it and second segment at base slightly pubescent; tips of ventral sheath yellowish, pubescent; legs reddish-yellow, coxæ brownish-black, punctate, pubescent, feet and claws black.

♂.—Length .10 inch. Head and thorax black, coarsely rugoso-punctate, vertex free from pubescence; antennæ reddish-brown, 15-jointed, filiform, joints subequal; thorax, parapsidal grooves distinct, longitudinal furrows obsolete; scutellum coarsely rugoso-punctate and almost free from pubescence; abdomen black, smooth and shining, peduncle short; wings hyaline, veins black, areolet almost closed, slightly clouded at base of areolet, radial area open; legs—middle and anterior pair yellowish, coxæ black, hind femora and tibiæ dark.

Described from 23 bred ♀♀ and 4 ♂, which issued between 25th and 30th of April.

THE GALLS OF THE UPLAND WILLOW OAK, *Quercus cinerea*.

There are several galls found on this tree, but by far the most important is a large spherical gall, which may popularly be termed

The Upland Willow Oak Apple Gall.

Cynips q. cinerea n. sp.

Galls.—Large, perfectly spherical galls attached to the twigs and limbs, of a dark crimson color mottled with small spots of a lighter color. A single kernel in the centre held in place by dense, brownish, spongy filaments. Diameter one and one-fourth to one and one-half inch.

Gall-Fly.—♀.—Length .20 inch. Robust .07 inch across the mesothorax, length of wing .20 inch. Head and thorax brown, deeply, very coarsely rugoso-punctate. Head small, on vertex slightly pubescent, thicker back of the eyes, almost free on face; eyes dark brown; mandibles black; antennæ 13-jointed, short not reaching to back of scutellum; thorax broad, robust, convex, parapsidal grooves almost obsolete, longitudinal furrows wide apart and almost parallel, indicated by coarse punctures, a deep transverse furrow dividing mesothorax from scutellum, a few microscopical whitish pubescence towards head, disk free; scutellum round, elevated, deeply irregularly rugoso-punctate, free from pubescence, excepting a few microscopical whitish hairs more perceptible at posterior margin, two deep round foveæ not quite separated by the pointed process of the scutellum, which does not reach the margin, pleuræ rugoso-punctate, pubescent, as well as the triangular piece beneath the wing and the metathorax; abdomen bright, smooth, reddish-brown, globular and regularly rounded posteriorly, a high ridge at base of second segment, slightly pubescent, more noticeable at sides and beneath, a high power show the segments are finely punctate, ventral sheath not projecting, venter hairy

the whole length; wings hyaline, rather hairy, veins reddish, areolet closed, radial area open, a large brown blotch occupying basal half of radial area and apical third of areolet, also extending slightly along the cubitus; basal vein thick and clouded with brown; anal vein brown from opposite tip of areolet; tip of radial vein pale, subcostal vein becomes brown as it approaches basal vein and becomes pale again just before joining the large brown blotch; legs reddish-brown, pubescent.

This no doubt will prove to be related to the dimorphic group of *Cynips*—*spongifica*, *aciculata*, etc.

I noticed smaller galls on the trees during the winter, but all were empty and have produced nothing but Chalcid flies—*Callimeme*, *Pteromalus*, &c.

The summer galls will probably produce the two gendered form.

The following additions to the Library of the American Entomological Society were announced:—

Second Report of the U. S. Entomological Commission for the years 1878 and 1879, relating to the Rocky Mountain Locust and the Western Cricket. From the Commission.

Report on Insects injurious to Sugar Cane, by J. Henry Comstock. From the Author.

List of Orthoptera collected by Dr. A. S. Packard Jr., in the Western United States, in the summer of 1877, by S. H. Scudder. From the Author.

Notes on North American Microgasters, with descriptions of new species, by C. V. Riley. From the Author.

Canadian Entomologist, vol. xiii, No. 4. From the Editor.

Entomologist's Monthly Magazine, Nos. 203 and 204. From the Conductors.

Psyche, vol. iii, No. 80, December, 1880. From the Editors.

Annual Report of the Entomological Society of the Province of Ontario, for 1880. From the Society.

Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien, vol. xxx. From the Society.

Mittheilungen der Schweizerischen Entomologischen Gesellschaft, vol. vi, No. 3. From the Society.

Species des Hyménoptères d'Europe and d'Algerie, par Ed. Andre, vol. i, No. 9. From the Author.

Jahres-Bericht des Naturhistorischen Vereins von Wisconsin, for 1880—81. From the Society.

Sitzungs-Berichte der naturwissenschaftlichen Gesellschaft Isis in Dresden, von Carl Bley, 1880. From the Author.