

be found subject to very gradual modifications, but I do not think we can afford to reject any of them, because of their relative want of stability. Indeed the neurulation in the Lepidoptera seems to be as useful as in the Diptera, although there are certain cases (as I long ago pointed out with regard to *Thyridopteryx*) where it varies not only in the species, but in the opposite wings of the same specimen. I think that we must regard as generically distinct from *Pempelia* the North American species *Pravella*, which has 8, instead of 7 veins to the hind wings (see Bull. U. S. Geol. Surv. 4, 694). For this species, the structure of which I have quite fully described, I propose the generic name *Meroptera*. I also find that our two species, found in Texas and Colorado, and which probably mine the Agave, viz., *Bollii* and *Dentata*, are distinct from the European types of *Zophodia*, to which Prof. Zeller referred *Bollii*, the type of the new genus *Megaphycis*. In the structure of the palpi, shape of the wings, greater size and length of body, our two large species differ strongly.

I have also here to correct a mistake of mine in the use of the term "porrect" in this group as applied to the labial palpi (e. g. in *Pinipestis*). I meant by it *ascending*, whereas it appears that it is equivalent to *extended forwards*. The term appears inconvenient to use, and perhaps I am not alone in mistaking its sense.

A NEW APPLE TREE PEST.

BY CHARLES R. DODGE, WASHINGTON, D. C.

As if the apple tree with its sixty or more insect enemies were not sufficiently afflicted, a distant relative of the Canker-worm has been making itself so notorious in Georgia, as to give apprehension of the total destruction of apple orchards in the locality infested. The insect complained of is *Eugonia subsignaria* Pack., a measuring worm which at times has been a veritable nuisance upon shade trees in New York and Philadelphia.

In pursuance of my duties as a Special Agent of the Census Office (in the fruit interest), and through subsequent correspondence, the following facts were obtained from Mr. Adam Davenport, of Fannin County, in the State named. In his first communication, received some months since, it is stated that the worm made its appearance upon Rich Mountain, a spur of the Blue Ridge, about four years ago, attacking forest and fruit trees ;

and that it had since spread over a large area, doing great damage. Apple trees in June last were as destitute of leaves as in mid-winter, the fruit growing to the size of marbles and falling off.

A late communication—with replies to a series of questions—shows the destruction to be even worse than at first reported. I give Mr. Davenport's own words :

“The insect made its appearance four years ago upon Rich Mountain, since which time it has been spreading in a northern semicircle at the rate of about fifteen miles a year. It is by far the most interesting insect that has plagued this country since the first white settlement. So wonderfully prolific, that in two years it literally covered every tree, bush and shrub, and with the exception of a few varieties, stripped them of their leaves.

“The egg hatches about the first of May, and the caterpillar, which is dark brown, lives about forty days, transforms to a chrysalis, lives in this state about ten days, and emerges a milk-white miller. For two weeks before their first transformation the fall of their excreta, in the woods, resembles a gentle shower of rain, and from its abundance tinges the streams a dark green hue. I have seen trees that had been stripped of their foliage, entirely wrapped up in their silken webs, resembling, when covered with dew, a wrapping of canvas. They constitute a great feast for all insectivorous birds and animals ; it is said that even cattle and sheep eat them with great greed. They have an instinctive way of protecting themselves by losing their hold upon the limb, at the slightest touch, and swinging by their web in the air. For this reason they are easily shaken off into sheets and destroyed ; however, they are so numerous, this remedy is worth nothing except in keeping them off very small trees. This instinct is not lost after leaving the caterpillar state, for if a bird alights upon a tree above the millers, they suddenly drop like a shower of snow to the ground for protection.”

In the *Practical Entomologist*, volume 1, page 57, an anonymous writer gives an account of this insect's attacks on elms in Philadelphia. Dr. Packard, in his *Monograph of the Geometrid Moths*, page 528, mentions only elm as a food plant, but Prof. Thomas, in his *Second Illinois Report*, page 243, says : “I have not noticed them feeding upon that tree, but have twice found them feeding upon apple, upon the leaves of which I have reared them to the perfect insect. In neither case were they numerous.” Prof. Comstock makes brief mention of the insect in his

recent report as United States Entomologist, quoting Mr. Davenport, as above, to the effect that the worms were destroying forests of hickory and chestnut, and were damaging fruit trees. This statement doubtless refers to the season of 1880.

The infested district in Georgia is not less than 60 miles long by 40 wide, and embraces Union County on the east, Gilmer on the west, and Polk County, Tennessee, on the north. They have been injurious two years, but in the summer of 1881 they were most destructive.

It is stated in the Practical Entomologist that the eggs are deposited in masses of fifty upon the limbs of the tree. A piece of apple bark before me presents an irregular patch over three inches long, and $\frac{1}{4}$ to $\frac{1}{2}$ inch broad, the eggs closely crowding upon each other. As there are many hundreds, they have doubtless been deposited by a number of moths, which attests the truth of Mr. Davenport's statement regarding their falling in showers like snow.

They are deposited for the most part on the under side of the limbs on the tops of the trees, and not only upon the bark, but the tufts of moss are covered by clusters of them. The eggs are smooth, dull, irregularly ovoid, slightly flattened upon the sides, rounded at the bottom, while the top is depressed, with a whitish rim or edge, forming a perfect oval ring. Color yellowish brown, resembling brown glue. Length of examples before me, .04 inch; width, lying upon the flattened side, .03 inch; thickness, or smallest diameter, .02 inch. They are deposited in curved or straight rows of a dozen or more (or less), these lines forming masses often of many hundreds.

The name, *Eugonia subsignaria*, is given on the authority of Mr. Davenport, supported by his descriptions in answer to my questions, as I have had no means of determining the species. There is no doubt in my mind, however, of the insect's identity.

NOTE ON THE GENUS TRIPUDIA AND ON THE SPECIES OF SPRAGUEIA.

BY A. R. GROTE.

On pages 231 to 238 of the CANADIAN ENTOMOLOGIST for 1879, I gave a list of the species of *Spragueia* and allied genera. I am still in doubt of the position of *Apicella*, from want of material to examine. It may belong to *Fruva*, which can be readily ascertained. The genus *Tri-*