

cone was more regular on the latter. I have observed the same difference between those found on willows and those found on silver-leaf poplars and cottonwoods. I attribute it to the size and stiffness of the poplar leaves. I have never met with the larva on the weeping willow. But to return to its life history.

On the morning of Saturday, July 10, I found on a leaf of cottonwood (*Populus monilifera*) a narrow white line about one-half inch long, which was at once recognized as that of this species in a very early stage. On holding the leaf up in the sunlight the larva was visible in the mine; it was flat, had membraneous, unarticulated and unarmed thoracic legs and mouth parts of the "first form," with the head and thoracic segments a little wider than the abdominal segments, and looked very much like a *Lithocolletis* larva of the flat group in the same stage. (Nevertheless a practiced eye will distinguish a *Lithocolletis* from a *Gracilaria* larva even in this stage.) It was less than 8 m. m. long, and as I infer from many observations on these small larvæ and their mines, it was but a few hours, probably about twelve hours from the egg. It extended the mine until it was about 1.9 m. m. in length, and scarcely wider than the body of the larva, and the mine looked like a portion of a *Phyllocnistis* mine; then it made a few digitate lateral branches, and the mine resembled a young mine of *Gracilaria robiniella* in locust leaves; then it connected these branches so that the mine became an irregular parallelogram about 1.9 m. m. long and 6 m. m. wide; and now, as stated by Mr. Stainton, the mine was not unlike a young *Lithocolletis* mine, or a white blister on the leaf. Like all larvæ with trophi of the first form, it ate only a layer of cells beneath the cuticle, not burrowing down into the pareuchyma. On Tuesday evening, July 13th, about three to three and one-half days after it left the egg, I found that it had very recently moulted whilst still in the mine and that the body was now nearly cylindrical, that it had trophi of the second form, and articulated thoracic legs each armed with a claw. On Friday evening, July 16th (the larva now being about seven days, within a very few hours, more or less, old) it was still in the mine, but not feeding, and I think it had just moulted (2nd moult); but at an early hour the next morning it had left the mine and was found on the leaf near to the mine, and not feeding. I think it had very recently quitted the mine. Three hours afterwards I found that it had gone to the tip of the leaf which it had rolled up and was feeding in the roll; and on opening the mine two exuvæ were found in it, one of which had the head and