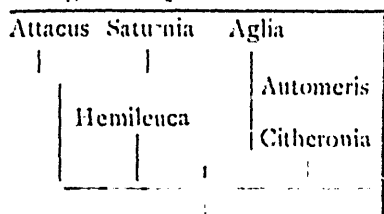


NOTES ON THE PHYLOGENY OF THE SATURNIANS.

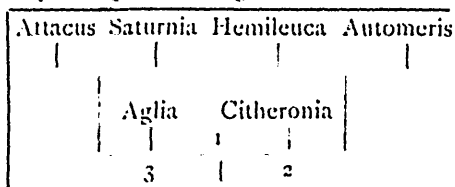
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Mr. Grote's remark (CAN. ENT., XXVIII, p. 294) that the stinging spines of *Hemileuca* and *Automeris* may have been separately evolved is not in accordance with my views, and I wish to compare his genealogical tree of the Saturnians with the larval characters more at length than was possible in the review of his paper, "Die Saturniiden." I reproduce first his tree: At 1 there is a dichotomous division, the genera on the right having vein IV_2 in the middle of the cell or but slightly moved (generalized);



those on the left with vein IV_2 considerably moved toward IV_1 . It is not proved that this movement of IV_2 took place only once in the Saturnians, but it is so assumed, and the construction of the tree depends upon the assumption.

Next I present a tree founded on larval characters, using the same generic types. At 1 is a dichotomous division, the larvae on the right retaining the unpaired tubercle on joint 13 and losing those on the anal plate; on the left losing the unpaired tubercle and retaining the pair on the anal plate. At 2 is another division, the two genera above acquiring stinging spines, while *Citheronia* remains without them. At 3 the stem of *Attacus-Saturnia* acquires many haired, reduced tubercles, while *Aglia* retains the single haired primitive condition and degenerates.



A comparison shows that these two trees are contradictory, the position assigned to *Aglia* and *Hemileuca* being almost exactly transposed. Yet, if rightly interpreted, there should be no contradiction between larval and imaginal characters.

If Mr. Grote's tree is correct, *Aglia* must have reacquired tubercles on the anal plate, because it is derived from the stem of *Citheronia* after *Automeris* was thrown off, and neither of these genera possess these tubercles. Likewise, *Hemileuca* has independently lost these tubercles, unless we suppose that originally they were not present, but were acquired separately by *Attacus-Saturnia* and *Aglia*. This can not be, however, as