

Nuevo Leon [3 ♂], Durango city [1 ♂, 2 ♀], Jojutla [5 ♂, 1 ♀], Cocula [1 ♀] (*Barrett, coll. P. P. C.*), Monclova in Coahuila (*Dr. Palmer, M. C. Z.*: 1 ♀), Monterey (*Rhoads*: 4 ♂, 1 ♀), Tepic (*Eisen & Vaslit*<sup>7</sup>, *coll. P. P. C.*: 10 ♂, 9 ♀; *Schumann*: 1 ♀; *Richardson*: 2 ♂), Guadalajara (*Schumann*: 8 ♂, 5 ♀), Acambaro in Guanajuato (*Rhoads*: 5 ♂, 7 ♀), Cuernavaca (*coll. Deam, Williamson det.*; *Barrett, coll. P. P. C.*: 1 ♂, 2 ♀; *coll. Adams, P. P. C. det.*), Mitla, Oaxaca<sup>4</sup>, Puente de Ixtla (*coll. Deam*), Putla (*fide Selys*<sup>4</sup>), Cordova, Potrero, Atlihuacan (*fide Hagen*<sup>11</sup>), Tepetlapa [3 ♂, 7 ♀], Chilpancingo [3 ♂], Tierra Colorada [1 ♀] (*H. H. Smith*), Tehuantepec (*coll. Deam, Williamson det.*); GUATEMALA<sup>4</sup> (*M. C. Z.*: 1 ♂).

The variation in the shape of the teeth or tubercles on the inner margin of the superior appendages of this species is quite considerable, and is illustrated on Tab. II. indeed, I have frequently noticed the right and left appendages of the same individual to differ as much as do two figures of *H. americana* on this Plate. It was on differences in these structures that Walsh chiefly relied to distinguish his supposed new species mentioned above<sup>14</sup>. The present writer has already expressed<sup>7</sup> his opinion that these are untenable, and the figures accompanying the present work seem to justify this belief. It may be stated that even in the same locality, and in the same season of the year, different individuals (males) show considerable variation in the shape of the superior appendages: thus, two dried males from Victoria, Tamaulipas, captured in April, possess appendages very similar to those shown in figs. 15 and 16 respectively; while three males, in alcohol, from Tepic, captured in October, have appendages like figs. 5, 12, and 16 respectively\*.

\* A summary of the following data shows that the variation in the male appendages of *Heterina americana* is not correlated with geographical locality nor with the extent of the red colouring on the base of the front wings, while the existence of the "intermediate" forms, mentioned below, is evidence in support of the view that all the shapes shown in figs. 1-17 really belong to one variable species. The decimals have the same meaning as in the explanation of Plate II.

Superior appendages shaped as in fig. 3 have also been observed in 3 ♂ Jojutla, .7-.67; 1 ♂ Linares, .91; 1 ♂ Guadalajara, .7.

Like fig. 4. 1 ♂ Round Mt., Texas, .85.

„ „ 5. 1 ♂ Tepic, .64.

„ „ 6. 1 ♂ Acambaro, .40.

„ „ 10. 1 ♂ San Bernardino, Calif., no pter., .64.

„ „ 12. 3 ♂ Tepic, .73-.77; 1 ♂ Round Mt., Texas, 1.0.

„ „ 14. 1 ♂ Los Angeles, Calif., no pter., .73; 1 ♂ Durango, no pter. on hind wings, very small on front wings, .64; 1 ♂ Round Mt., Texas, 1.0; 2 ♂ Bloomington, Illinois, .58-.62; 4 ♂ (near) Philadelphia, Pa., .5-.54; 4 ♂ Patcong Creek, New Jersey, .5-.64.

Like fig. 15. 1 ♂ Cuernavaca, .68; 2 ♂ Victoria, Tamaulipas, .5-.67.

„ „ 16. 1 ♂ Tepic, 1 ♂ Victoria, Tam., .64; 1 ♂ Linares, .82; 3 ♂ Monterey, .6-.68.

Superior appendages having a shape *intermediate* between those shown in figg. 1 and 4: 1 ♂ Round Mt., Texas, .75; 1 ♂ Pike's Eddy, Lancaster Co., Pennsylvania, .5. Intermediate between figg. 1 and 6: 1 ♂ Elkhart, Indiana, .61. Intermediate between figg. 1 and 10: 1 ♂ Los Angeles, no pter., .73. Intermediate