Geographically, *L. carinenta* must be considered a rare find in the United States and is not commonly encountered until well below the Tropic of Cancer. *L. bachmanii* broadly overlaps its distribution along the western side of the Gulf of Mexico and is found as far south as the Rio Tehuantepec in Oaxaca, Mexico.

One can only guess as to the function of the terminal spines of males of these butterflies. Detailed observations of the mating behavior of snout butterflies might provide the answer. Comparative studies of other members of the genus and family of both morphology and behavior need to be done as part of a revision of this interesting group.

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COMMUNAL ROOST FIDELITY IN *HELICONIUS CHARITONIA*: COMMENTS ON A PAPER BY DRS. D. A. WALLER AND L. E. GILBERT

In the recent paper by Waller and Gilbert appearing on the pages of this journal (J. Lepid. Soc. 36:178–184), the authors failed to include other substantial data sets on communal roosting in *Heliconius charitonia* and related aspects of this butterfly's population biology which have significant bearing on their conclusions and comments (Young & Thomason, 1975, J. Lepid. Soc. 29:243–255; Cook, Thomason & Young, 1976, J. Anim. Ecol. 45:851–863).

Waller and Gilbert imply that at least a portion of the daily instability in roost membership observed for two other studies of *H. charitonia* in Costa Rica (Young & Carolan, 1976, J. Kansas Entomol. Soc. 49:346–359; Young, 1978, Entomol. News 89:235–243) was due to disturbance of butterflies for marking, something they apparently avoided in their study. This is a serious accusation, one that is not merited as seen by the examination of Young and Thomason (op. cit.) and Cook et al. (op. cit.), two additional Costa Rican studies of the same organism not cited by Waller and Gilbert, and ones that report a significant amount of both population cohesiveness and fidelity to communal roosts.

There is no doubt that butterflies are disturbed to some extent by the handling effects associated with marking, a condition that I seriously doubt even Waller and Gilbert could have avoided entirely in their study. The same techniques associated with marking, however, were used in **all** of the Costa Rican studies cited above, and therefore, any handling effects causing roost disturbance would have been the same for all data sets. Yet Young and Thomason (op. cit.) reported for Roost A in that study, that of 69 butterflies marked, 36 were seen again at least once, and 23 seen from one to three times on subsequent days of observation. We concluded that roost fidelity can be high in *H. charitonia,* but that the spatial distribution of multiple roosts within the same home range area used by the butterflies on any one roost results in considerabe "exchanges" among roosts on a day-to-day basis. Admittedly, this level of roost fidelity is still somewhat lower than the findings of Waller and Gilbert in Mexico, yet higher than observed for other roosts in Costa Rica (Young & Carolan, op. cit.). Furthermore, the study of Cook et al. (op. cit.) on *H. charitonia* population dynamics spanned a period of 155 days and involved the marking of 586 butterflies and concluded that the movement of individual

butterflies is regulated largely by the locations of communal roosts and adult and larval food resources. That study also revealed a fractionation of the population into several subpopulations but with considerable interchanges of marked butterflies between areas of habitat occupied by different subpopulations. The obvious inference from such results is the shifting dependency of individual butterflies among several communal roost sites within a relatively small area of habitat. Waller and Gilbert (op. cit.) did not mention the occurrence of other roosts within the vicinity of those adult pollen-source plants visited principally by unmarked individuals of *H. charitonia*. Given the results of Cook et al. (op. cit.), other roosts most likely existed in the general vicinity of the home range area occupied by these unmarked butterflies.

The results of Young and Thomason (op. cit.) indicated that there can sometimes occur considerable **individual** variation in the tenacity of *H. charitonia* to a particular roost site. Genotypic differences among individual butterflies may ultimately explain such patterns (Young and Thomason, op. cit.). In the absence of such data, however, it is safe to conclude tentatively that in some tropical regions occupied by *H. charitonia*, the degree of fidelity to a particular roost site is highly dependent upon (1) the availability of multiple roosts within the area, (2) the positioning of different home ranges occupied by different subpopulations relative to one another, and (3) the abundance and spatial distribution of adult and larval food resources within home range areas. Given the findings of Young and Thomason (op. cit.) and Cook et al. (op. cit.), I believe that it is erroneous on the part of Waller and Gilbert (op. cit.) to suggest that the patterns of roost instability reported in Young and Carolan (op. cit.) and Young (op. cit.) as being due to disturbance incurred while marking butterflies. Waller and Gilbert did not discuss the results of Young and Thomason (op. cit.) relative to their interesting data. Had they done so, they might have been able to suggest that the observed high fidelity of butterflies to the single roost they studied was possibly due to the absence of a second roost within the same home range or at the periphery of a contiguous home range associated with the unmarked butterflies they saw at patches of adult pollen-sources far removed from the vicinity of the roost in question (a projected spatial arrangement of home ranges and roosts that would probably preclude frequent exchanges of marked butterflies among different roosts). In doing so, they would have justifiably assigned an equal weight or error factor to disturbance of butterflies during marking in both their study and the Costa Rican studies discussed here.

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RAINSTORM BEHAVIOR OF PIPEVINE SWALLOWTAILS, *BATTUS PHILENOR* (L.)

While collecting near Laredo, Texas in mid-afternoon, 12 June 1981, we took shelter in our car in advance of a rainstorm approaching from the southeast. The car was parked among mesquite trees, *Prosopis glandulosa* Torr., and we watched as six pipevine swallowtails, *Battus philenor* (L.), buffeted by a brisk wind, came together in a little group on one of the trees from the otherwise sparse population of this butterfly in the area. With the sun in the opposite direction from the storm, no darkening of skies had occurred at the time the assembly was initiated. Individuals were all about 12 feet from the ground,