

MINUTES OF THE SIXTH ANNUAL MEETING OF THE PACIFIC SLOPE SECTION OF THE LEPIDOPTERISTS' SOCIETY, 29 and 30 AUGUST, 1959

The meeting was opened at the Santa Barbara Museum of Natural History on the morning of August 9 by Program Chairman ROBERT L. LANGSTON and OSCAR E. SETTE was chosen Secretary *pro tempore*.

The Director of the Museum, Dr. V. L. VANDERHOOF, gave a cordial and informal address of welcome, pointing out that extending hospitality for group meetings, such as this, was part of the Museum's policy of serving the community and advancing interest in the natural sciences. He was happy to put the Museum's facilities at the Society's disposal for this meeting and extended a standing invitation for future meetings. DR. J. W. TILDEN responded by expressing the membership's appreciation of this hospitality on this occasion as well as the three previous times of meeting at this Museum.

DR. EUGENE G. MUNROE wired "Congratulations and best wishes for a successful meeting of the Pacific Slope branch." His presidential address entitled "Pyraloid fauna of the western United States" was read by Dr. PAUL R. EHRLICH. It is being published elsewhere in this *Journal*.

Topic I — "Non-variable Species" — was opened by ROBERT L. LANGSTON who pointed out, and illustrated with specimens, that certain species are very constant in size, color, pattern and other characters throughout very wide ranges of latitude, longitude, elevation and distance. This is in contrast to species that exhibit variation associated with latitude, elevation, season and moisture, separately or in combination; and this is in contrast also to species displaying semi-discontinuous geographical variation, presumably of genetical origin as distant from environmental influences, and recognized by taxonomists as subspeciation. Examples were shown of non-variable and variable species from the same gamut of environments for each of the families: Danaidæ, Nymphalidæ, Lycænidæ, Pieridæ, Sphingidæ, and Geometridæ. There arise interesting questions concerning the evolution and "success" of the common non-variable species, some of which have become economic pests.

Under the title, "Variation in *Plebeius acmon* and *Nymphalis antiopa*", PAUL OPLER suggested that the non-variability of *Nymphalis antiopa* could be attributed to the wide ranges of its several food plants, which, coupled with strong flying ability, would lead to free flow of gene variation throughout the gene pool and result in homogeneity over the range of the species. By means of colored slides he illustrated the colors and patterns distinguishing the members of the *Plebeius acmon* complex, including such taxons as *cottlei*, *monticola*, *chlorina*, and *lupini*. Having found most of these occurring sympatrically with the widespread "ordinary" *acmon*, he opined that two species might be postulated; one, a non-variable species consisting of ordinary *acmon*, the other, a variable species consisting of the aggregate of the other named entities, which, according to his experience, seem either to be allopatric, or separated by food plant differences, or a combination of these. Time being available, Mr. OPLER showed and discussed colored slides of a number of members of the *Apodemia mormo* complex.

Under the title, "The distribution of *Lycæna hermes*", FRED THORNE, from the composite records of his many years' collecting graphically showed the rise and fall of numbers caught during this species' flight season, and with colored slides showed the uniformity of this insect despite its occurrence in isolated colonies confined to the immediate vicinity of its host, the Red-berry (*Rhamnus crocea*). This low shrub, requiring a certain combination of soil-type, drainage and slope exposure, occurs in small colonies often separated by tens or scores of miles. Peculiarly, although the Red-berry ranges hundreds of miles northward (to Siskiyou County), *L. hermes* has not been recorded north of San Diego County, the northern boundary of which coincides with no obvious topographical or climatological barrier.

An unusual type of apparently cryptic mimicry was illustrated by colored slide. Because the Red-berry is evergreen, its leaves mature singly. During the flight season of *L. hermes* a mature leaf appears, here and there, as a bright yellow spot against the background of dark green foliage. At a short distance such a leaf appears to the collector's eye very much like a perched *hermes* in size and color. But the yellow leaves are substantially more abundant than the butterfly and after repeated disappointments they no longer attract the frustrated collector. Thus the perched butterfly is protected against the predation of the collector, if not against that of natural enemies.

At a special session, well attended by members, their wives, and guests, Dr. JOHN A. COMSTOCK portrayed his recent sojourn for "Research and collecting at Puerto Vallarta, Mexico". His illustrated narrative conveyed a vivid impression of the climate, the flora, the physical facilities and the social amenities of this out-of-the-way tropical locale on the west coast of southern Mexico. His many arresting pictures of the often bizarre larvæ of the many Macrolepidoptera that posed for his paintings, consisting of hitherto unknown stages, were of signal interest to the members.

The members enjoyed Saturday's luncheon as guests of the Santa Barbara Museum of Natural History. At the annual banquet held that evening at El Presidio Restaurant, LLOYD MARTIN entertained with an account of Lepidoptera collecting in southern Arizona, prefaced with an explanation of the climatological basis for the quasi-tropical character of the fauna. His lecture was profusely illustrated with transparencies of living butterflies, night lighting for moths with "black light" and the apparatus involved. Not the least entertaining were some shots of a contest between a skunk and a heterocerologist, each vying to be first to snatch each visitor to the moth sheet. The audience protested the speaker's refusal to divulge the score.

Topic II — "Hesperioidea" — was opened by the moderator, Dr. J. W. TILDEN, who expressed his great pleasure that the two participants were attacking the problems presented by two of the most difficult genera in the group.

JOHN M. BURNS's paper, "Distribution and ecology of American *Erynnis*", suggested a coherent and rational arrangement of the members of this genus based on the geographical distribution and host plants in addition to the morphological characters. In this arrangement there are a number of instances where eastern and western counterparts are evident, at either the species or the subspecies level.

C. DON MACNEILL's subject, "Oviposition by the genus *Hesperia*", included pictures of feeding, sunning and ovipositing sites of *H. columbia*, *H. harpalis dodgei* and *H. lindseyi*. The habit of oviposition on arboreal substrate by the last-named introduced many interesting features, including the deposition of a number of eggs on a limited area of substrate, as for instance, in a small patch of lichen on a fence post, even though the eggs are laid singly, at different times (as evident from unequal embryonic development) and presumably by different females.

In the general session, THOMAS C. EMMEL, by colored slides, narrative, and trays of specimens, shared his experiences as "A lepidopterist in the tropics of southern Mexico". As assistant to L. IRBY DAVIS, a Cornell ornithologist who was recording bird calls and songs, he travelled over five thousand miles through tropical Mexico, principally in Chiapas, Vera Cruz, Tobasco, Campeche, Yucatan and Quintana Roo, visiting many habitats inaccessible to ordinary vehicles. His colored slides of habitats and the seven hundred-odd butterfly species he collected bear testimony to the large accomplishment achieved in four months (March to June, 1959) in an activity that was secondary to the primary mission of the trip.

In reviewing "Butterfly research: past and future" Dr. PAUL R. EHLICH discussed problems encountered in working at various systematic levels, from infraspecific taxonomy to systematic studies of higher classification. He pointed out that modern taxonomic work, more and more, requires a broad background in such abstruse fields as population genetics and biometrics, and the use of expensive optical and automatic data

processing equipment. This makes it increasingly difficult for most amateurs to work in this field. At the same time he stressed the enormous value of their contributions in supplying much of the basic data and materials used by specialists.

He suggested that collectors might enhance their contributions:

1. Toward advancing ecological studies — by carefully recording and publishing observations on habits, habitats, distribution, abundance, life histories, host plants, etc.;
2. Toward advancing studies of subspeciation and evolution — by collecting long series with detailed data and preserving them intact (choosing which specimens to retain destroys the statistical value of the sample), and where possible, by collecting year-by-year samples of the same population accompanied by data on relative abundance (numbers caught per hour is a handy index);
3. Toward advancing anatomical study essential for higher classification — specimens are needed of all stages, eggs, larvæ, pupæ, and adults, properly killed and preserved in fluid. Collecting these can best be done in consultation with a specialist engaged in such studies to advise on methods. For instance, larvæ may be killed in hot water, and all stages may be preserved in 80% ethyl alcohol, but in certain circumstances there may be other methods equal or superior to these.

At the business session, chaired by FRED THORNE, it was decided:

To thank Dr. MUNROE for his presidential address; the Director and staff of the Santa Barbara Natural History Museum for their hospitality; LEVI PHILLIPS for donating the programs; NELSON BAKER for his excellent local arrangements; and ROBERT LANGSTON for arranging the interesting program;

To maintain the registration fee at its present level and reserve the small accumulating balance for a future special good cause;

To meet next year in the San Francisco Bay region on August 27 and 28, 1960; and that Dr. J. W. TILDEN be Program Chairman and C. DON MCNEILL be Chairman for Local Arrangements for the 1960 meeting.

A number of members brought interesting exhibits. Among them was one by CHARLES L. HOGUE on the rearing and the curating of life history specimens of the Noctuidæ, largely with simple, inexpensive, make-it-yourself equipment; and another by Dr. W. H. LANGE on the life history of some members of the families Eriocraniidæ and Incurvariidæ. From Texas, EVERARD M. KINCH sent a series of colored slides showing variation in the larva and adult of *Phæbis sennæ*, which were projected during the exhibit period.

The following 26 members registered: NELSON BAKER, PETER F. BELLINGER, JOHN M. BURNS, PAUL R. EHRLICH, THOMAS EMMEL, AL HABEGGER, M. C. HABEGGER, CHAS. F. HARBIN, RICHARD HART, CHARLES L. HOGUE, WILLIAM HOVANITZ, W. H. LANGE, ROBERT L. LANGSTON, DON MACNEILL, LLOYD M. MARTIN, P. MCHENRY, JOE MCKENNEY, S. S. NICOLAY, PAUL OPLER, JERRY A. POWELL, ALLEN RUPPERT, ELTON SETTE, FRED THORNE, and J. W. TILDEN.

Respectfully,

OSCAR E. SETTE

Secretary *pro tempore*