

# THE IMPLICATION IN LEPIDOPTERA RESEARCH

by Prof. Julian N. Zumalón

THE EXULTANT joy of a youthful nymrod who holds in his tremulous hand a pulsating beauty such as a swallowtail butterfly, will remain a lasting impression thru life, and perhaps, this love of chase and outdoor will be carried to later years as a fascinating hobby which may eventually turn into a career. The same excitement is present when a lad or lass stumbles into an ancient drawer to vandalize grandma's heary file, and come out with strange-looking stamps which can bring sunshine into any rickety album. The hunter, the fisherman, the conchologist, and even the herpetologist who deals with deadly vipers, each has his thrilling moment at one time or another in connection with the adding of a trophy to one's collection or record. Insignificant as these small "scoops" may appear to the non-hobbyists, the lasting impression or inspiration it brings to the triumphant discoverer may provide the germ of a future career that helps advance our culture.

Although lepidopterology has been going on hereabout in its "loincloth" stage for over two decades, it was not until the University of San Carlos had entered the scene that this branch of the biological science began receiving serious attention and coddling, and finally found its proper perch upon the pedestal of serious scientific research. Thus, thru the University of San Carlos and under the kind help and cooperation of farsighted Divine Word Fathers, together with continuous encouragement from fellow-researchers at the different universities and museums abroad, we are able to undertake several projects at the same time, and these are beginning to show result, something which, only five years ago appeared impossible. The challenge posed by this infant science will send us scudding to all

directions to hurdle innumerable barriers, but we cannot wait any longer as we are now on the threshold of the new and scientific Philippines where university people must contribute much of the know-how and efforts.

It is often hinted that time is fast approaching when a university will no longer be recognized as such unless it identifies itself with scientific researches in their multiple nature, and its faculty, of their own volition, will engage in research projects. Such is feasible since more and more, facilities for scientific investigation in different fields are being steadily installed in large universities. This trend will soon envelope the whole country. What's important is that, we should possess the courage and desire to engage in scientific research. The University of San Carlos has taken such step in initiating research in lepidoptera despite the non-existence within our immediate environment of similar projects from which to draw ideas and inspiration. It is heartening to note that more and more budding lepidopterists are sprouting in our area, and thru these helpful enthusiasts, we find it more *effective* in pushing forward the frontiers of lepidopterology.

The instituting here of the lepidoptera research is not without implication. That some of the immediate problems cannot be readily solved is inconsequential. This country is much behind in science. We have to progress gradually. It is the innumerable rewards that the pioneers will enjoy that inspires contemplation. The brutal abundance of biological subjects awaiting the intelligent investigation by our vast university population can compel these responsible young men and women to do something about it. Concentrating on a particular subject may appear boring or mono-

tonous to them, but this is not so. For example, the collection and study of butterflies and moths, a matter apparently simple, involves several other studies. Without appreciable understanding of related fields of the biological science, our idea of the lepidoptera will be superficial.

The main problem in our case is first the accumulation of study materials. We cannot study from mere pictures and a handful of specimens. A collection containing a long series of specimens of both sexes has to be developed. Hence, the series of expeditions and field trips by personnel of the Biology Department. The reward of these field activities came manifold in form of mastery of field or collecting techniques, enrichment of our local and national collections at the Biology Department, experience in portage and quartering, mountaineering, valuable ecological notes and many other experiences valuable to the world of science. One tough problem in the field is transportation. In many remote interior it is haphazard and costly, and oftentimes totally absent.

One of the fascinations incidental to expeditions is one's often being thrown amidst non-Christians, especially in Mindanao, Mindoro and Palawan. The babel of tongues, at first, inspires frozen interest in moving about and dealing with these differently clothed and strangely-mannered minorities. After the dazing impact of first impression, the real adventure begins, and one discovers that, with a little command of Tagalog or Visayan, he can communicate with any of these interesting pagan brothers. In Mindoro and Palawan almost all the tribes having contact with lowland settlers speak from halting to perfect Tagalog. In Mindanao, the Cebu Visayan is understandable to

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almost all tribes. Strangely enough, while working with fellow-biologists in the midst of these non-christians, our teams have never carried firearms. Good public relations, which to us, is simply common sense, was our only weapon. What we understand of public relations is not academic, so this article shies away from elaboration. Truly, there's pageantry and that certain feeling of self-confidence in penetrating jungles and forests "armed to the teeth", and the arsenal flagrantly displayed with a rakish and brigandish effect. This sort of show we missed. And of course, we have knowledge that many of such dashing adventurers failed to return to civilization, or if they did, they may have left bad seeds behind, making it oftentimes dangerous for the next party visiting the area.

Poking one's nose into the butterfly's business is not merely drawing a bead upon the quarry, but also incursions into the realm of botany, geology, geography, climate, seasons and even economics and medication. Since the lepidoptera, from ova to imago enjoy relationship to plants, knowledge of flora is essential. As a rule, with few exceptions, the larva and adult of the lepidoptera are vegetarian. In this study foodplant specificity for each species and genus has to be established, making it important to work out individual life history. In our area, we have yet to determine the evolutionary interrelationships of butterflies and the foodplants of their larvae. Our group is waiting in vain for another group to do life history studies on the Philippine Rhopalocera. We are enjoying better cooperation from amateurs who are active in their crude way. To date, we have nearly fifty life histories partly and completely determined. This is nearly 20% of Cebu's Rhopalocera and less than 5% of the country's recorded number. Abroad, this kind of work is carried out in collaboration with a botanist.

To push further our understanding of our lepidoptera, their habitat or collecting areas have to be divided into Biotic Provinces. These are geographical areas, of life belts, patterned after the concept originated by Vestals (1914) and developed by Dice (1943). A more subtle ecologic division than the above one can be had by a sys-

tem where plant communities in a particular landscape (area) are recognized. Also, the geologic background of such area has to be studied as this has an important bearing on the vegetation and climate of the area. So much have filtered into the disciplines of lepidopterology, such that it is essential as well to possess a workable knowledge of the lepidoptera of the various faunal regions of the world. In this connection, we are steadily improving our collection of foreign butterflies and moths.

The lad who, with his net, has broken sprint records and came back with long-sought trophies, had enjoyed only half the adventure if he didn't possess multiple "eyes" to record other observations, and returned loaded with informations which can help us understand the what, why, how and when about butterflies and moths. Of course all these cannot be accomplished overnight. Experience is necessary. The impressive array of specimens or the vastness of a collection is not as important as what are in the collection and what we know about them. A monograph or publication in other forms may later summarize our accomplishments and findings.

Incidental to our efforts in this field is the necessary contact with institutions and experts abroad doing allied work. Most of these researchers are connected with universities and museums. Collaboration in certain phases of current studies on genetics, evolution, taxonomy and revisions serve to broaden our grasp of this science. For instance, in his cross-breeding work on allied species and genera between Japanese and Philippine Papilionids, Dr. Albert Ao of the Nanzan University (S.V.D.) at Nagoya, Japan, is enjoying our cooperation. In the past two years, Dr. Kent Wilson of the Kansas University had our full cooperation in his revisional work on the Family Papilionidae of the world. In return for generous contributions of valuable materials from our area to help fill many gaps in the famous British Museum of Natural History's Lepidoptera Collection of the World, Dr. G. T. Howarth and Col. Elliot are helping us update our classification of local materials. Several other kinds of mutual help between researchers abroad and the Biology Department has to be undertaken

to keep us abreast of new trends in lepidoptera research.

Since the University of San Carlos is presently looked upon in our area as a possible source of information on lepidoptera, it has become incumbent upon us to disseminate only the correct information. This is further enhanced by the utter scarcity of literature on Philippine lepidoptera, or if available, such is already obsolete. Perhaps in a couple of years more the updating of the local lepidoptera's taxonomy will attain near completion, leaving only insignificant gaps which can be filled afterward in a staggering fashion while more ambitious projects are being tackled. There is indeed a fast growing interest in the collecting and study of lepidoptera, such that it has become necessary to gather these enthusiasts into a formal group. The first society of Filipino lepidopterists was organized in the University of San Carlos premises last November, 1963. The Philippine Lepidopterists' Society is divided in three zones, the Visayas, Luzon and Mindanao. For its outlet of informations, it runs a mimeographed NEWS which comes out once a month or once every two months. It counts on the membership of Priests, Doctors, Entomologists, Zoologists, Lawyers, Taxidermist, Teachers, Photographer, Professors and students of science and technology. All these members are depending upon the university for the classification of their specimens. Like the "associates" abroad connected with museums without salaries, they extend to us their valuable cooperation especially in solving life histories, providing information on distribution, seasonal catch and the discovery here of as yet unrecorded species occurring within the provincial boundary of Cebu.

Although our efforts here is but a drop in the bucket which is the broad Pacific area, where, it is said, there are still about 100,000 unclassified insects needing attention, we are grateful to the Divine Word Fathers (SVD) for initiating this study. What with the rapid disappearance of the habitats of our wild life in the name of industrialization and progress, our immediate objective is salvaging. This has been the urgent call dur-

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ing the last two congresses of science held in Japan and Hawaii. We are located in a very rich region where we are literally wallowing in brutal abundance of natural history materials for our study. In past decades, we may be right in leaving the task to foreigners since we were yet in the process of producing professionals with university training. Now we have them in abundance — fine young men and women highly qualified to undertake scientific assignments. In our particular field of investigation alone, we need scores of similar groups doing their own investigations in various parts of the Islands. In the United States for instance, there are nearly ten thousand butterfly collectors. Their combined experience and collections made available to scientists for study have greatly contributed to the solving of numerous problems in lepidopterology and other branches of the biological science. In our country we scarcely have three dozen collectors, many of them amateurs, and the more advance ones are concentrated in Cebu.

I have cited but a few of the implications which are directly and indirectly the offshoot of the research project on lepidoptera. No one, not even a genius perhaps, can go on with tedious and, at times, insipid work, unless he enjoys the moral support of friends, the material help of benefactors and inspiration from one or more sources. Lepidoptera research, though full of fascinating contacts with nature thru field trips to forest, jungles, mountain and streams, is not immune to other influences and impressions. Personally, I love to go hurdling one barrier after another despite my utterly limited faculty, because there are always kind and thoughtful people who help fan the embers when otherwise favorably breezes are blowing elsewhere.

Many otherwise drab jungle interludes were made bearable be-

cause a thoughtful lady loaded us with gift items for our minority brethren whose only reaction upon receiving presents of cloths was a desire to see the angel behind all these blessings. Mrs. Rosario de Veyra had added meaning to our expeditions to Palawan, Mindanao and Mindoro, by sending us cartoons of cloths which she personally collected thru students and friends. In the past many months, Fr. Watzlawik, S.V.D., Acting Dean of College of Liberal Arts and Sciences, kept bringing in butterflies collected by him within the university premises. His contribution of crepuscular Satyrids enabled the writer to learn more about the flight habit of these butterflies which are identified with ground level in their twilight activities. That he took a number of these from ground level to the seventh floor or higher is a revelation. The very fatherly attitude and endless encouragement from Fr. Rigney, S.V.D., our Rector, the reassuring letters from Fr. Schoenig, S.V.D., and an ever ac-

commodating smile from Brother Willibrord, S.V.D., made it possible for the writer to carry on especially with the vital field works pertinent to the CEBUANA Rhopalocera project.

I would end this article by recommending to colleagues and fellow science-diggers a jungle where the chasing of knowledge is less exhaustive, physically speaking. Fr. Baumgartner, S.V.D., the king of this jungle, has provided us with a maze of literature where one can hunt a whole year and find no end to the adventure. Thru his foresight, we now have the best reference literature on lepidoptera in the whole Islands. Without these books, it would be impossible to enjoy a footing from which to take one's bearing. The Filipiniana section alone is the richest area in our library. We have yet to invent the "net" with which to "collect" all these rich treasures in Fr. Baumgartner's jungle, but there is always a way to do it. And the sooner we try it the better.

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