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PRESIDENTIAL ADDRESS TO THE PITTSBURGH MEETING OF THE LEPIDOPTERISTS' SOCIETY

Ladies and Gentlemen; my dear fellow Lepidopterists:

I am extremely happy to be able to address you personally today. Although you did me great honour by selecting me to be your President for this year, I hardly could have hoped to be able to attend this meeting, because my country is so far away. And though large distances are no barrier for making friends and exchanging ideas, nothing surpasses a personal contact. I am very grateful to my Government and to the Entomological Uyttenboogaart-Eliasen Fund that made my trip possible by awarding me a grant.

When Dr. REMINGTON wrote to me for the first time about the Lepidopterists' Society that was very young at that time, as long ago as 1947, I at once became very enthusiastic, and tried to make myself as useful as I could (which was by the way, not easy because Holland is such a small country and the number of its lepidopterists limited). The need for a society dedicated to lepidopterology, and especially of a society with an international scope, was evident. Its quick and prolific growth that still continues clearly proved this. Most of the members are Americans and Canadians, which is natural, owing to the great number of lepidopterists in these countries. Still the amount of members from elsewhere disappoints me a little. I expected an even more unanimous response to our plan from everywhere. The reason for this is without doubt the fact that a great percentage of lepidopterists are interested only in faunistics; they collect or breed, often exclusively, the Lepidoptera of their respective countries.

However, there is not the slightest reason for pessimism. Time is needed for the propagation of our ideas, and besides, two more things. First it is very important to have at least one active member of the Society in every country, who could abstract literature and recruit more members in that country. And second, we must always try to make our literature reviews as complete as possible. Mankind is ambitious, lepidopterists not excepted. As soon as anybody reads a review of his own paper in our *News,* the Society naturally acquires a new interest for him.

Ladies and gentlemen, I am sure that our Society meets a long-felt need. Although still in a juvenile stage, it certainly will continue to grow and will mature. Terrific organizational work has already been done. We possess

an excellently edited periodical. We can be proud of that and of the people who achieved these results. Especially I wish to bring tribute to the founders of our Society for the international character they gave it, because what we all need most is free exchange of ideas and cultivation of friendship and goodwill, on as wide a scale as possible.

I wish to discuss with you in broad lines the aspects of Microlepidopterology. Although this is, of course, not a special science, and does not basically differ from other branches of the study of Lepidoptera, still it has specific aspects that are worthwhile to consider.

There is no fundamental difference between the so-called "micros" and "macros", because these groups do not represent taxonomic units or "taxa" but are products of an arbitrary separation. However, this separation is instructive, as it has historical origin; to micros are attributed families of Lepidoptera that generally were and still are regarded by many collectors as too tiresome to handle or not showy enough, owing to their small size, and therefore less desirable for cabinets or not worth collecting at all.

The unavoidable but deplorable consequence of this sentiment in former years was that micros were collected so sporadically and incidentally — at least when compared with the masses of macros collected all over the world during the last 150 years — that they still are very insufficiently known, and in the tropical countries are only beginning to be studied properly. And yet, there must be more micros than macros, as we learn from the lists of faunas that are known best, namely those of the West and Central European countries. For example, in Holland occur more than 1100 micros as against 700 macros. I think that in the tropics this ratio will be still more in favour of the micros; the number of their species there is simply astonishing. An exceedingly fertile and almost inexhaustible field for activity awaits lepidopterists there, and it is remarkable that relatively so few are attracted by the study of the tropical Microlepidoptera. It is this study that has occupied me during the past 20 years and that I have now in mind when discussing with you the aspects of Microlepidopterology.

Once the late Professor G. D. HALE CARPENTER remarked to me that microlepidopterists must be courageous people. I doubt very much whether my colleagues and myself deserve this flattery. To master the taxonomy of any group of Lepidoptera one necessarily must acquire as complete a knowledge of the existing literature as possible, but this is much easier with tropical micros, than with many other groups of Lepidoptera, since the literature on them is so scanty. Perhaps the only courage required is for facing the menacingly large number of all those genera and species that await description!

I had the great privilege to collect and to study Microlepidoptera of one of the most interesting tropical faunas in the world, namely, the Malay Archipelago. Illustrious classical naturalists, such as ALFRED RUSSEL WALLACE, FRUHSTORFFER, the SARASIN brothers, MAX WEBER, and many others collected there, and due to their work the remarkable fauna of this region became famous. The

geology and the paleontology bear proof of a complicated history of this area that is subject to heavy tectonic forces, being pinched between two continents, having numberless extinct and active volcanos, having been inundated and dried again several times due to the activity of glacial periods. In this region two rich and entirely different faunas meet, *viz.,* the Asiatic and the Australian, in circumstances that at present are optimal for the flourishing of one of the richest faunas in the world. The zoogeography of this region served as the subject of many classical studies. Macrolepidoptera, especially butterflies, were successfully used, *e. g.,* by WALLACE, and later by my lamented friend, the late TOXOPEUS (who was a specialist in the Lycænidæ) and by ZEUNER, who recently wrote an excellent essay on the distribution of the large Papilios.

It was tempting to try to use Microlepidoptera for zoogeographical research, but this aspect of the study of tropical micros has appeared to be less promising thus far. In spite of the fact that micros seem to be well-suited for this research, judging from their being unable to disperse actively over great distances, across seas, straits, and mountain ridges, their distribution cannot, so far, be very well used for zoogeographic purposes in this region, first, because our data on their distribution are too scanty, and second, because the data of former authors appear to be worthless in the light of our present knowledge of taxonomy based upon modern methods. For example, the distribution of many of MEYRICK'S species as recorded by himself does not teach us anything, as fundamental restudy of all his species, using the characters of genitalia, is necessary first. Every time, this rechecking turns out to become a whole revision, extremely interesting without doubt, but also highly time-consuming. With gratitude and respect I think now of the awe-inspiring enterprise of Dr. J. F. GATES CLARKE, of Washington, who spent two years investigating several thousands of MEYRICK'S types at the British Museum. I hope that his work will appear soon; it will be a very great help for every student of the "micros".

Another aspect of tropical Microlepidopterology, their ecology, on the contrary, represents an extremely fertile field, as variations of their life-habits, choice of food, mimicry, symbiosis, etc., present almost an inexhaustible material for study. There are species preying on lac insects, on cicadas, on ants, or even, alternately, on cicadas **and** ants! Many live in diverse and mostly intriguing modes of symbiosis with ants. The ecology of mining species alone, however rich and interesting in the temperate regions, as we learn from the monumental studies of Professor HERING of Berlin, a member of our Society, seems to be still more diverse and more intriguing in the tropics, as was recorded by the late T. B. FLETCHER from India, and experienced by myself in Java. My friend L. VARI, of Pretoria, is equally enthusiastic about the mining micros in South Africa; they serve as the subject for his thesis which he is preparing at present.

Some tropical Tineidæ (*Monopis*) present a simply baffling biology: they are the only Lepidoptera known that are obligately viviparous (and apparently parthenogenetic), and it even seems likely to me that their eggs must

mature and numerous larvæ hatch inside a spacious uterus during pre-adult stages of the mother insect (during the pupal or perhaps the late larval stage?). This subject alone offers a rich field for research not only of biology, but also of anatomy and cytology.

However, perhaps the richest field for study is the taxonomy of tropical Microlepidoptera. I need not go into the already generally recognized conception of taxonomy as the fundamental doctrine bearing the ramifications of other zoological sciences. Taxonomic study necessarily precedes anything else, also here, and is urgently needed to open this field to other branches of research. So rich is the tropical fauna and at the same time so little investigated, that great taxonomic discoveries might easily be expected here, discoveries that might greatly contribute to our conception of the relationships of the whole order Lepidoptera.

My above remark on the lack of data on tropical Microlepidoptera is not quite true, of course, for excellent work has already been done and is being done at the present time. It certainly would be very unfair not to mention the work of the classical authors, and its merits. WALSINGHAM, MEYRICK, SNELLEN, CLEMENS, and many others provided the rough groundwork upon which our system stands. Each of them has done an enormous amount of work, such as is hardly possible for anyone in our day. MEYRICK, for example, must have described during his long life not less than 20,000 new genera and species! It is an extensive base they left us, but their work needs considerable remolding to fit our changed standards.

It is a great consolation that those comparatively few students of Microlepidoptera we possess at present do splendid and outstanding research. Of these modern workers I wish to mention the names of the late AUGUST BUSCK and CARL HEINRICH, who studied the micros of the New World; Professor JANSE of Pretoria, who in spite of his advanced age is preparing monographs of the Heterocera of South Africa, including micros; as I said already, L. VARI is preparing a monograph of leaf-miners of South Africa; I am sure that he soon will present many new facts on their ecology and taxonomy. DR. J. F. GATES CLARKE of Washington, apart from his revision of MEYRICK'S types, carries on with his studies of the Neotropical fauna. Dr. T. N. FREEMAN and ROBERT LAMBERT of Ottawa are preparing revisions of the Canadian Tortricinæ and Sparganothidinæ. Mr. IAN F. B. COMMON of Canberra, Australia, is preparing a thorough revision of the Australian Tortricidæ. Students of the Palearctic micros are somewhat more numerous. I already mentioned the eminent studies of Professor HERING on leaf-miners. My friend Dr. N. S. OBRAZTSOV recently finished an impressive 500-page manuscript on the classification of the Palearctic Tortricidæ and hopes to begin soon with a corresponding monograph on the Nearctic fauna; these studies will be of the greatest importance for further study of this family. Furthermore, I wish to mention two recent studies that impressed me very much, *viz.,* a monograph on the Palearctic Eupistidæ by Dr. S. TOLL (1952) and another on the Palearctic species of *Depressaria* by Dr. H. J. HANNEMANN (1953).

As to myself, I brought together in Leiden extensive materials of South Asiatic micros. I hope to bring their study to some proper end before I die, although I am still chiefly occupied with the first superfamily, the Tortricoidea. I expect that I will meet the same fate as most of us and as my friend Professor ROEPKE of Wageningen, Holland, who says that when he dies he will be short not much more time than a hundred years!

Ladies and gentlemen, I am coming to the end of my rough and superficial sketch of some aspects of the Microlepidopterology. And since I am your President I wish to use my fatherly right and privilege to finish this address with a sermon! I wish to formulate a few suggestions that refer to most important points. Partially they come from my taxonomic creed.

In taxonomy one should never neglect classification of higher taxa (*e. g.,* from superfamiles to tribes) for the classification of lower taxa, as *e. g.,* genera and species. The latter are usually much easier to define than the former, with the result that our taxonomy often is a top-heavy structure, with bulky upper stories upon an inadequate basement.

When describing a taxon one should try to use as many characters as are available. This is almost a platitude; however, there still are taxonomists who neglect this rule. It is also preferable in most cases to give a complete diagnosis of a new taxon, instead of referring to a related taxon, saying; "similar to so and so, only differing by . . . "; such a diagnosis is not practical as it cannot be used independently, without knowing the diagnosis referred to by heart.

When describing a new genus, sketches of the head and of neuration, and in case of a new species, detailed figures of genitalia of both sexes should be added. One never should forget to indicate and label types and paratypes. Finally, taxonomists should be economical with new terms for structures of genitalia, and try to come together to a uniform terminology of these parts.

And herewith I open the meeting in the hope that it will be a great success.

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