The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY

c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.

Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

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OFFICIAL REGULATIONS FOR SHIPPING LIVE INSECTS

Since the first issue of the Lepidopterists' News we have made efforts through the News to promote studies of immature stages of Lepidoptera, including rearing, exchanging, and even buying and selling eggs, larvae, and pupae. Consequently we feel it is our duty to inform the News readers in North America on the governmental regulations which concern shipment of living insects, both to protect lepidopterists and to facilitate their compliance with the legal requirements. We are grateful to Mr. C.F.W. Muesebeck, of the U.S.Department of Agriculture, to Dr.T.N. Freeman of the Canadian Department of Agriculture, and to Mr. Fred T. Thorne, of California, for aiding in assembling this information.

For shipments to Canada, the statement is as follows: "The regulations under Destructive Insect and Pest Act require a permit to import living insects into Canada. Applications for permits should be addressed to the Secretary, Destructive Insect and Pest Act Advisory Board, Department of Agriculture, Ottawa, Ontario, Canada."

For the U.S.A., the following official statement has been provided us: "The shipment of living insects is governed by the Insect Pest Act of 1905, ... Persons contemplating the importation or interstate shipment of living insects should, therefore, make application to the Division of Foreign Plant Quarantine, U.S. Department of Agriculture, Washington, D.C. , for permits authorizing the movement of the material. The Act refers specifically to insects notoriously injurious to cultivated crops in cluding vegetables, field crops, bush fruits, orchard trees, forest trees, or shade trees. Although it does not refer to beneficial and non-economic forms, postal officials, transportation employees, and others concerned can not be expected to differentiate between those insects which are harmless or beneficial and those which are of economic importance. These agencies are cooperating in the enforcement of the Act, and it has been found that movement of even those forms which are not considered as restricted by the Act is facilitated when the shipment is accompanied by a permit."

Many States have regulations, but California is most concerned with restriction of shipments. The law reads as follows: "It is unlawful to import into or ship or transport within the State, any live insect, except honey bees... unless such shipment or transportation is authorized prior to shipment under written permit...of the California director or the United States Department of Agriculture."

"THE NEARCTIC BUTTERFLIES"

Current Developments

Hereafter the Society's proposed series of studies of the "Butterflies North of Mexico" will be referred to as THE NEARCTIC BUTTERFLIES. This is a better definition of the scope of the project since the political boundary between the U.S.A. and Mexico is not biological, parting faunae that are basically the same - southwestern U.S.A. and northern Mexico.

Progress is being made in getting the cooperation of Society members. (See page 20.) In February some seventy-odd collaborators received the data sheets for information about species in the genus Danaus in their collections. This information will be used by Dr. Fox in his study. If there are other members who wish to contribute information, they should get in touch with the undersigned.

The present editorial staff is almost complete. Changes will be made as they become necessary through the years of publication.

Editor-in-Chief - F. Martin Brown

Section Editors

Danaidae	- Richard M. Fox
Satyridae	- Ralph L. Chermock
Nymphalidae	- (not yet confirmed)
Lycaenidae,etc.	- William D. Field
Papilionidae	- F. Martin Brown (temporary)
Pieridae	- Alexander B. Klots
Hesperioidea	- (open)

Consultants

Biogeography	- F. Martin Brown
Botany	- William T. Penland
Immature Forms	- Charles L. Remington

The work will be published in the form of generic monographs. Each genus or group of small closely related genera will form a single publication. Each will be complete in itself yet each will constitute a definite part of a collected work on the Nearctic Butterflies. The format will measure 4 5/8 by 7 inches, printed on a 6 3/4 by 10 inch page.

A style manual has been prepared and will soon be issued to the various editors and authors. Other members of the Society may get copies from the project Editor-in-Chief or the Society office at cost.

F.M. Brown

WHAT IS SYSTEMATICS?

by Sergius G. Kiriakoff
Ghent State University, Ghent, Belgium

The readers of the Lep. News have no doubt much appreciated the substantial articles by Dr. Remington on Taxonomy. The object of this note is to give a short account of a more general aspect of the question of the scope of Systematics. There exists a tendency, more distinct on the American side of the ocean, to consider Systematics as a synonym of Taxonomy (see Remington, Lep. News, vol.2: p.26) which actually corresponds to the most restricted meaning of the first term. Some authors, mostly European, think that these terms are not synonymous and that in fact the first of them has a much broader meaning than the second which it includes. There are a few scattered indications of this point of view in the literature, but only one complete discussion of the subject exists, that by the Soviet dipterist Paramonov ("Gegenwärtige Systematik, ihre Methoden und Aufgaben", Trav. Mus. Zool. Aca. Sci. Ukraine,vol.4: pp.3-25. 1934). I have only recently read Paramonov's paper and was struck by the great similarity, not to say identity, of his views with my own. Here follows a summary of Paramonov's proposed definitions, slightly amended so as to bring them in complete concordance with my own views.

SYSTEMATICS is a biological science with usually two aspects, viz. the theoretical side and the practical side. With regard to zoological Systematics, in which we are primarily interested, these two aspects are: a) Zoonomy and b) Zoography.

ZOONOMY or theoretical Systematics is the study of the biological laws under which the present animal kingdom has developed and taken on the aspects which it now has. Most of the biological rules we are acquainted with (irreversibility law of Dollo, law of the homologous series of Vavilov, climatic rules of Gloger, Allen and Bergmann, etc.) must be considered to belong here. Phylogeny (which also has its own practical aspect) cannot be better placed than as a branch of Zoonomy. Even Mendel's law and thus certain aspects of Genetics are so intimately connected with Zoonomy that one is entitled to ask himself whether Genetics cannot be included in the great science of Systematics; this, however, is open to too much controversy, so that temporarily we may as well leave it out of consideration.

ZOOGRAPHY or practical Systematics comprises the following sections:

1. Taxonomy or the science of the hierarchy of systematic unities or categories (see 3, below);
2. Diagnostics or the description of the known animal forms with their characteristics;
3. Classification or grouping of the known animal forms into categories according to their mutual relationships. An example will show the difference between Taxonomy and Classification:if some species are placed partly in the genus Speyeria and partly in Boloria, this is classifying; if we try to establish whether Speyeria and Boloria are entitled to generic or to subgeneric rank, this is taxonomy.
4. Nomenclature or the doctrine of the rational scientific names.

Taken in this broad meaning, Systematics forms, in its turn, part of a complex of several very nearly related sciences, viz. Zoogeography, Faunistics, and Ecology. Systematics is deeply indebted to these various sciences without the help of which it hardly could claim any progress. On the other hand, Systematics forms as it were the backbone of zoogeographical, faunistical and ecological work, which could not have any practical value if not aided by Systematics.

PROCEDURE IN TAXONOMY - VI. TYPES OF GENERA

In order to achieve a uniform system of applying generic names during revisions of classification, the concept of the type of a genus was devised. The type of a genus is one species and the generic name must always be applied to the genus of the type species. For example, Libythea was long considered to include several species such as celtis, bachmanii, motya, etc.; recently the Old World species were found to be generically different from the New World species; since celtis is the type species, the name Libythea had to be used for celtis and the other Old World species, and a new generic name was proposed for the New World Snout Butterflies.

The name for the type species of a genus has regrettably been "genotype" for many years. This is not a valid term etymologically, since the combining form derived from "genus" must be "gener-". Thus, THE CORRECT TERM IS "GENEROTYPE". The only possibly valid use of "genotype" for a generic type would be its devious derivation from the Greek equivalent of genus, "genos". In spite of the long usage of "genotype" in taxonomy, the correction of the old error has become imperative because the same term is used universally in genetics for an entirely different meaning. Geneticists formed the word by deriving it correctly from "gene", the coined word for the unit in living cells which controls heredity. Genetics is a science on an equal footing with taxonomy; the term "genotype" is far more important in genetics than in taxonomy; in genetics it is correctly formed; and genetics and taxonomy are becoming more and more interrelated and thus the term would tend to become used increasingly for two meanings in the same papers - four compelling reasons why taxonomy must abandon this term for the type of a genus. In fact, numerous modern taxonomists have already adopted "generotype". This has long been the editorial policy of the News.

Modern taxonomists who name new genera clearly designate the generotypes. However, it has been necessary to select types for most of the old genera in which more than one species was originally placed. The four terms for generotypes proposed by O.F. Cook in 1914 (Amer. Nat., vol.48: p.314) and commonly used by entomologists are:

ORTHOTYPE - type designated in original description of genus;
HAPLOTYPE - only species in genus originally;
LOGOTYPE - type selected after original description of genus;
PSEUDOTYPE - type incorrectly selected after original publication.

C.L. Remington

REGIONAL LISTS

by Harry K. Clench
Willow Run Village, Michigan

Publications dealing with Lepidoptera tend, in general, to divide themselves into several fairly discrete types. Descriptions of new species or subspecies, group revisions or monographs, descriptions of early stages are among the commonest. There also exists one other very frequently encountered type of paper, unfortunately rarer now than in former years, THE REGIONAL LIST. It is the aim of this discussion, not only to present a few pointers on the preparation of such lists, but also to make a plea for their increase in numbers.

Broadly speaking, any work which treats all the members of any taxonomic category from any defined geographical area might logically be termed a "regional list". Since this definition, however, includes such widely differing types of treatment as Holland's Butterfly Book, the McDunnough 1938 Check List or a (hypothetical) list of the Strymon of the Cincinnati region, it is necessary to restrict the use of the term a good deal. For the purposes of this paper a regional list may be described as being an annotated list of the species, subspecies, etc., of a category of family level or higher (usually no higher than Order, however), of a defined area of dimensions less than continental in size. The dimensions usually adopted are political, though they in no sense need be. Those most frequently employed are state or province, city environs, national parks, islands. When the size of the area concerned becomes large (say United States; Canada; North America) it ceases to be a regional list and becomes (or should become, under a conscientious and careful pen) a faunal treatise, with problems and purposes quite different; or else a check-list, which is, too, a different matter. When the category is less than family level, and even that strains the matter, it is either revisional (i.e., taxonomic or systematic) or else a special subject study.

The regional list, adequately prepared, is a tool of many varied uses. First is its service to the visiting collector. A good list will enable him to plan a visit to the region, knowing what to expect and able to take advantage of emergence dates. Another, more important, use of a regional list is that made by the specialist revising a group. Much of his distributional data will come from such lists. Further, the amount and detail of observations on the biology of the species in the list will help him more in other phases of his revisional work, even to the point of furnishing leads on new directions of investigation.

The additional uses are important indeed, but less easily described. They all stem from the fact that A WELL-WRITTEN LIST IS AN ACCURATE RECORD OF CONDITIONS AT SPECIFIED TIMES IN A SPECIFIED PLACE. The study, even the awareness, of changes in these conditions either with respect to time or to place, are immeasurably facilitated by such records. We may cite such changes as population size or area; migration records; foodplant variability of a species over different areas.

Since any conscientious student writes a paper with a purpose, it is evident that the composition of a regional list must be made with its future use constantly in mind. This automatically brings up the subject of what should be included, and what excluded, from consideration.

First and by far the most important is the CORRECT IDENTIFICATION of all names employed. This is so self-apparent that it may verge on the foolish even to mention it. The fact remains, however, that all too many lists in the past have lost considerably in usefulness, even to the point of being confusing or actually misleading, by the inclusion of inaccurately determined species. The writer himself may be unfamiliar with many of the groups, at least to render expert decisions on critical taxonomic points. That is a job for a specialist, requiring large collections and library facilities hardly possible for all. The Board of Specialists established by the Lepidopterists' Society was designed to take care of just such a condition. Its members are recognized authorities in their particular groups, quite abreast of recent taxonomic changes and familiar with the species of their group far more than most others. Their help should be enlisted for the determination of any doubtful species. A good plan in this connection is to send to the specialist a list of the species of his group proposed for inclusion in the regional list. From this he can request for examination any that he suspects are misidentified, subject to possible racial variation, etc., and can at the same time revise the nomenclature to bring it up to date. It is essential that the authorities who made the identifications be clearly stated in the regional list.

Second only to correct identification is the DISTRIBUTIONAL INFORMATION. Brief general remarks on the entire range of the species may be desirable, especially if the list is to have a large local consumption, but in any case as much information as possible should be given concerning the distribution within the area treated. This should include as a minimum a listing of all localities in which the species has been taken. In lists of areas of state size, especially where these have a relatively unvarying topography, countries may be sufficient. In areas of varied topography altitudinal ranges are a necessity. Too much detail cannot be given: space limitations may require some condensation, however. An excellent example of detailed distributional treatment is "The Butterflies of Yosemite National Park" by J.S. Garth (1935, Bull. So. Calif. Acad. Sci. 34: 37 et seq.). Garth presents detailed locality data, altitude, and life-zone restrictions, all in condensed, space-saving form, yet not cryptic.

Whether or not to include REFERENCES under the species depends on individual circumstances. If the list treats a region where the fauna is poorly known, the nomenclature rather unstable, the species poorly represented in collections, then references are almost a necessity. Lists that are destined to

be used in large part by people possessing little or no detailed knowledge of the Lepidoptera (such as university-sponsored state or local lists, which are often used by students or entomology as aids to identification) should contain references, at least to some generally available or easily obtained illustrated work, noting such changes in nomenclature as may have been made. Leighton's "Butterflies of Washington" (1946, Univ. Washington Publ. in Biol.9: 47 et seq.) illustrates this nicely. The nomenclature and sequence of species and groups usually follows a recent check list. Such a fact should be noted, as well as any deviations from that check list as a result of recent group revisions.

Notes on the LIFE HISTORIES are very valuable and important, especially the food plant or plants of the particular species. It should be emphasized, however, that for any such information given, its source should be marked. Lepidoptera often vary from place to place in their choice of food plants, a fact that is easily obscured if a plant be cited from some other work without reference. The important facts to be noted are: 1) Is the information quoted from another source and where? 2) Is the information locally observed and if so, in what manner: female observed to oviposit on the plant; species raised on the plant; individuals observed in vicinity; or a predilection to visit or remain nearby? These may be important differences. Many species show predilections for plants that are not their larval food. Often females will oviposit on plants that are not proper larval food (thus causing sterility or death). Seasonal or brood variation in choice of food plant has been noted for several species (notably Lycaenopsis argiolus of Europe, and probably pseudargiolus of North America), a fact that should be kept in mind, as such a sequence might vary from place to place. The correct identification of the host plant is as important as for the insect itself. Samples of host plants should be submitted to a competent botanist for identification (see Lep. News, 3: 2). It is no longer acceptable for a writer to state for the host plant: "grasses" or "pines" or "ferns". The name of the botanist who makes the identifications should of course be given. It is also significant to give all biological notes on larvae, such as the exact species of parasites found (see Lep. News 3: 2), whether it is tended by ants, which birds and lizards feed on it, and so on. Larval color, too, may change from one place to another, and is important.

DATES OF EMERGENCE should be carefully noted, giving where possible not only dates of earliest appearance, but also period of greatest abundance and approximate disappearance. Where there are several broods per season these should each be noted, and whether or not the broods are discrete.

The above constitute the minimal requirements (not necessarily in such fine detail; observations of that precision are often only possible after many years of residence in an area). What other information should be included depends on the observative powers of the writer. Locally observed migrations, yearly fluctuations in abundance, and similar things are all valuable and properly included in such a list.

In the introduction to the list a few additional features should find inclusion: an account of the topography is valuable; summary of climatic information-- temperature and precipitation data; an outline map is very advisable. It goes almost without saying that if the region has been covered previously in whole or in part, reference to such previous coverage should be made. An historical sketch of collecting in the area, important collections of its fauna and similar data are valuable and interesting.

The "don'ts" in writing a regional list have been broadly covered, either directly or by inference, above. There remain a few, however, that should be brought up at this point. The most important is the inclusion of descriptive text. Unless a new species or subspecies is involved, the most that is ever required in a regional list is a few words concisely comparing the subject with possibly confusing relatives that occur with it. Far better than consuming space, type, and ink with such verbiage - which is usually overlooked anyway - is to select those confusing, interesting or poorly known species or races and illustrate them-- half-tones are usually satisfactory, the more so since color reproduction is almost prohibitive in cost.

A second "don't" should be mentioned, though the failing is much less frequent now than formerly. This is the inclusion of taxonomic or systematic changes. A regional list is no place to insert such material, as it is thus very easily lost to compilers and researchers who depend on the titles as guides to the contents of the papers. If such changes are unavoidable, and for a variety of reasons they may be, they should be indicated in the title. Descriptions of new species or subspecies are a special case of taxonomic inclusion and are properly admissable in a regional list, IF they are from the region covered and THE FACT IS NOTED IN THE TITLE.

In conclusion, it should be stressed again that the need for regional lists is great, that their usefulness is enduring, and that a properly, carefully prepared list will be a mine of information for many years, a genuine contribution to the science.

The Coleopterists' Bulletin is no longer a mimeographed monthly journal, but "is issued at irregular intervals depending on the amount of manuscript material at hand", and is now regularly printed. Its attractive format and valuable contents are a credit to its publisher and editor, Dr. Ross H. Arnett, Jr. Lepidopterists' Society members also interested in beetles will find the Bulletin of considerable utility. The subscription fee is $1.25 per volume and should be sent to Dr. Arnett at: 2826 N. Fairfax Drive, Arlington, Va., U.S.A.

TECHNIQUE NOTE

Dr. S.L. de la Torre y Callejas, of Matanzas, Cuba, writes that he now finds ether sulphuric with carbolic acid superior to salicylic alcohol to suppress mildew in his collection. (See his earlier note in the Lep. News, vol.2: p.86).

THE MIGRATION OF BUTTERFLIES IN NORTH AMERICA

by C.B. Williams, Sc.D.
Rothamsted Experimental Station
Harpenden, England

I have been interested in the migration of butterflies for over thirty years, and have been fortunate enough to see definite flights in South and Central America, in the West Indies, in Egypt and East Africa, at sea in the Atlantic and the Mediterranean, and here at my home in England. I have noted with pleasure the increasing interest in the subject in North America and welcome this opportunity to draw your attention to some of the problems confronting the student in that area.

In the British Isles we have only 68 species of butterflies(of which at least one is extinct), and of these 17, or one quarter, are known to migrate; and about 11 are dependent on immigration for their continued occurrence within our shores. In North America you have I believe nearly 700 species, but of these my list of recorded migrants only contains about 30 names. I am sure that the true number is over 100 species and perhaps double this. My list is as follows:

PAPILIONIDAE:- Papilio cresphontes; P. troilus; P. philenor.
PIERIDAE:- Ascia monuste; Eurema lisa; E. nicippe; Phoebis eubule (sennae); Kricogonia lyside; Colias philodice; C. eurytheme; Pieris napi.
NYMPHALIDAE:- Vanessa cardui; V. atalanta; V. virginiensis (huntera); Nymphalis californica; N. j-album; Agraulis vanillae; Precis lavinia coenia; Polygonia interrogationis; Asterocampa celtis; Limenitis archippus; Anaea andria.
LIBYTHEIDAE:- Libytheana bachmanii.
DANAIDAE:- Danaus plexippus; D. berenice.
LYCAENIDAE:- Strymon melinus.
HESPERIIDAE:- Urbanus proteus; Achalarus lycidas; Hylephila phylaeus; Hesperia attalus; Calpodes ethlius.

Part of the immediate work of the members of the Lepidopterists' Society should be to amend and extend this list, if possible sorting the species between regular migrants and irregular wanderers.

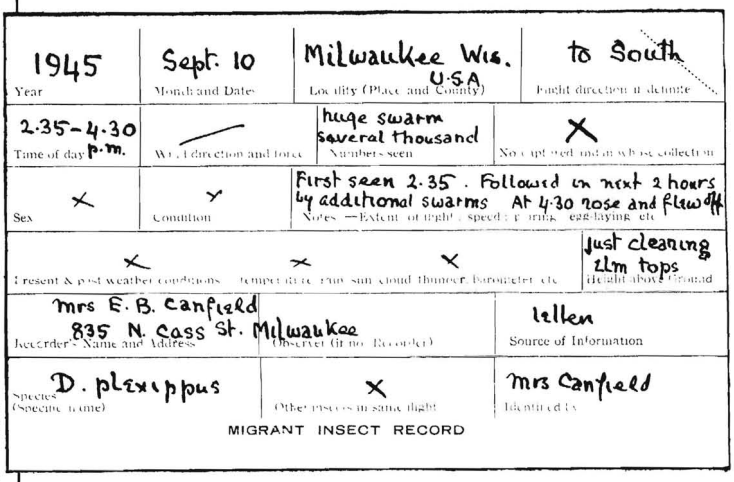
In the publications listed at the end I have summarised at intervals what is known of the movements of most of these species, and there is not space here to repeat all this. The following notes therefore relate to special outstanding problems.

First, general problems:- It is important to find the origin or winter homes of your immigrants. Do they survive the winter in your own sub-tropical states? Do they fly across the Caribbean Sea or do they come through or from Mexico? Just before the War we started a campaign to get records of butterflies from ships at sea. Could something similar be done from the Gulf of Mexico?

Is there a return flight? The more we study the migrations of butterflies (and moths) the more evidence we find of flights in opposite directions at different seasons; they are usually to the north in the spring and to the south in the autumn. Often these two flights are very different in intensity: the flight in one direction may be large, and gregarious, and so conspicuous and frequently recorded; the flight in the opposite direction may be very thin and only seen by careful watching. Students of migration should always be on the lookout for thin directional movements, or the evidence will be biased in favour of large flights. D. plexippus definitely has a return flight and the evidence also strongly supports similar movements in P. eubule (see below), A. vanillae and others. It is curious that the majority of well established movements in Europe are towards the north in the Spring, while in North America they are (with the exception of V. cardui) towards the south in the autumn.

How do the insects keep their direction? We don't know!, but more careful observations in the field cannot fail to be helpful. Carry a compass and if you see a directional flight, record carefully the bearings of flight and wind, and any change in the direction and intensity of either. If the flight lasts a long time (I have seen one that continued for sixteen weeks), take frequent observations and a number of specimens at intervals. These will help to check up on identifications. Many flights are known to consist of several species moving simultaneously. A hundred or more is not too many, as they can be used for statistical measurements and possibly fat extraction (see 1).

FILING RECORDS. We use a standard 3 x 5 inch card for filing and extracting information. A reproduction is shown. Usually many of the squares are blank, but they serve as a reminder to both observer and student.



MARKING. Before the War some hundreds of butterflies were marked in England (see 6: p.222), but without any recovery at a distance. The mark should enable the finder to know where to communicate the discovery, and should enable the marker to identify the actual individual. Here we used a registration number and 'LONDON ZOO'. The latter was considered

to convey the most definite information in the fewest letters. Our Zoo agreed to forward any information - but the War came instead!

Now as to species:-

Danaus plexippus (see particularly 2:pp.141-156 and 6: pp.155-184). Both sexes migrate regularly from southern Canada to the southern states in the autumn, and back again to the north in the spring. There are many records of the autumn flights, but few observations on the spring movement. Information is needed on the dates of first and last appearances in different latitudes and different localities. In the south the butterflies hibernate in masses on trees. Such localities are known in southern California and in Florida, usually very close to the sea. What other areas are there? Are there hibernating areas along the Gulf coast in Alabama, Mississippi, Louisiana or Texas? Are there any inland localities? What happens to the butterflies that fly south through Texas in the fall? Do they go onto Mexico? If so, do they hibernate there,or remain active, or breed? Beall (see 1)has recently studied the fat content of the bodies of 'Monarchs' before and after migration, but his available material from the south was small. Can anyone help him?

I am writing a book on 'The Migration and Dispersal of Insects' and very much want a good colour photograph of hibernating D. plexippus. Can anyone help me?

Vanessa cardui. The 'Painted Lady' is a regular migrant both in Europe and in North America. In some years it is abundant in the summer as far north as Canada, and as far to the northeast as Newfoundland. The only records of immigration in the spring appear to be from western Mexico, where at times enormous swarms fly to the north. There were big immigrations in 1924, 1926, 1931, 1935, 1941, and 1945. In some of the intervening years scarcely a single individual was seen (see 4). Is there any other source of immigration? Do flights come through Florida? From climatic conditions this is unlikely as V. cardui multiplies most rapidly in arid climates and none exist south of Florida. Most of the Vanessa that I have seen from Florida have been V. virginiensis (huntera). Do any 'Painted Ladies' survive the winter in the U.S.A.? If none survive the winter and if there is no other origin than western Mexico, then the Newfoundland butterflies must have had a flight of nearly 3000 miles, something even for a staunch believer in butterfly migration to swallow!

One of the most interesting discoveries that we have made recently is that in the past 60 years the years of big immigrations have tended to be the same both in Europe and North America(see 6: p.252). Please collect all records of cardui in any part of the U.S.A. - and also records of known absence - both past and present and future - so that this theory can be tested more fully in a few years' time.

Is there any evidence for a return flight to the south in the fall? It will require VERY careful observation. Here in Europe we have such evidence, but scanty.

Ascia monuste. According to the observations of Mr. and Mrs. Hodges (see 6: p.143) this species flies to the south along parts of the Atlantic coast of Florida from about March to May, sometimes in great numbers, and then suddenly the direction changes and the movement for the next few weeks is towards the north. From the relative abundance of the grey variety, which becomes more abundant as the season advances, it would seem that the population that flies north is not the same as that that previously flew south. More information and more observations are required - both in Florida and elsewhere.

Phoebis eubule. P.H. Smyth (see 4: p.227) made a remarkable series of observations, lasting for seventeen years, on this species in Alabama. He established a definite movement in large numbers towards the southeast from August to November, and a very thin return flight to the northwest in March and April. Where do the butterflies go in the north, and where is the breeding area? In Florida on the contrary Mr. and Mrs. Hodges recorded them as flying south along the east coast nearly all the year. Do they cross the ocean to the Antilles? Do they cross the Caribbean to South America? The species is common in South America and is a regular migrant there, but the two areas have not yet been linked up.

In England both the V. atalanta and N. antiopa (which we call the Camberwell Beauty and you call the Mourning Cloak) are regular immigrants. There are suggestions of movements of V. atalanta in the U.S.A., but what about N. antiopa?

There are a thousand other questions that I could mention but space is limited. The Editor has however kindly offered to publish a second note on migration of butterflies in Europe and other parts of the world in a later number of the Lep. News.

REFERENCES

(1) Beall, G. 1948. "The Fat Content of a Butterfly, Danaus plexippus, as affected by migration." Ecology, vol.29: pp.80-94.

(2) Williams, C.B. 1930. "The Migration of Butterflies." pp.xi, 473. Oliver & Boyd, Edinburgh & London. (Includes Bibliography of about 800 references).

(3) ----------1937. "Butterfly Travellers." Nat. Geog. Mag., vol.71: pp.568-585.

(4) ----------1938. "Recent Progress in the Study of some North American Migrant Butterflies." Ann. Ent. Soc. America, vol.31: pp.211-239. (Includes 50 references to N. American migrations).

(5) ----------1939. "Some Records of Butterfly Migration in America." Proc. R. Ent. Soc. London (A), vol.14: pp.139-144.

(6) Williams, C.B., Cockbill, G.F., Gibbs, M.E., and Downes, J.A. 1942. "Studies in the Migration of Lepidoptera." Trans. R. Ent. Soc. London, vol.92: pp.101-280. (Includes about 550 references not included in Williams 1930).

A LETTER TO THE EDITOR

Mendham, New Jersey
February 26, 1949

To the Editor:

In the December issue of the Lepidopterists' News (vol.2, p.103), you report Dr. Curtis W. Sabrosky at the 1948 annual meeting of the Entomological Society of America as having spoken "forcefully about the recent activities of the International Congress of Zoology in completely revising the International Rules of Zoological Nomenclature" and state that he "criticized severely the apparently dictatorial and unannounced actions of Mr. Hemming, secretary of the International Commission" at its 13th meeting at Paris last summer. This Congress consisted only of those individuals who attended the meeting, and all its members, especially the Commissioners and those who attended the section on Nomenclature, as well as the Secretary of the Commission must be deemed to be the objects of these criticisms.

Dr. Sabrosky was not present at the Paris meeting, so his remarks as reported concerning what took place there are but conclusions based on hearsay. On the other hand, I did attend the Congress as a delegate, and devoted my time to the meetings of the section on Nomenclature, which section was responsible primarily for the changes in the Rules. I was present at about two-thirds of those meetings which were held in the mornings, afternoons and evenings. Consequently, I appear to be in a somewhat better position to describe the procedure followed and comment on the results attained.

Before the Congress was held, Mr. Hemming flew to this country and within the very limited time at his disposal consulted the Joint American Committee on Entomological Nomenclature, and as many zoologists as possible in Chicago, New York, Ottawa, Washington, and possibly elsewhere, about the matters that might come before the meeting. Naturally this visit did not permit Mr. Hemming to confer with everyone, everywhere about everything, nor could he agree upon the precise language of any proposed amendments to the Rules that might be adopted by the Congress, nor even determine the matters that might be brought up, since the latter subjects were obviously beyond his control. It was for the meeting to pass upon all these matters. Therefore, how could every action to be taken by the Congress be announced in advance, and to whom, when, and how?

The meetings of the section on Nomenclature consisted of joint sessions of the Commissioners, their alternates, and members of the Congress who desired to attend. This was most democratic. Previously, I believe, the Commissioners had always met by themselves. The meetings were conducted by Mr. Hemming as Chairman, who brought with him from London a mimeographed dossier divided into thirteen parts and consisting of about one hundred and twenty pages, larger than legal size, covering in minute detail various matters that were expected to come before the meetings. Copies of this file were furnished the Commissioners, and so far as available, loaned to the other members of the section. In addition, six other lengthy parts were prepared during the meetings and furnished to those attending, and finally a report was prepared for submission to the plenary session of the Congress. This imposed a tremendous amount of work upon Mr. Hemming.

At the meetings each proposition upon which action was proposed was distinctly stated and explained. It was then discussed by those who wished to be heard. In many cases the wording of the propositions was changed or redrafted, after which each proposition was put to a vote. While most proposals were adopted, some were rejected. All voting was practically unanimous, but, of course, a majority vote was sufficient to carry any proposition. All of this was strictly in accordance with parliamentary law. It is fair to assume that the meetings I was unable to attend followed the same general pattern. It is sheer nonsense to say that Mr. Hemming indulged in any "dictatorial" action, or that anything was "forced through". The majority of those attending the section meetings, where the spade work was done, were Englishmen and Americans. Can anyone believe that every single American present would sit silently by while amendments were being "forced through" under the "dictatorial" influence of the Secretary? All differences of views, and such admittedly occur at every large gathering, were ironed out by discussions, and those not thus disposed of were settled by a majority vote. Democracies act through majorities, even though the majorities at times be in fact minorities of those interested.

The final plenary session of the Congress unanimously approved the report of the section on Nomenclature. Thus the Rules were amended, and in many, many respects made ever so much better than they were. When the final vote was called for, can anyone believe that there was not a single American with sufficient courage to rise and denounce any improper procedure at the meetings, if it had occurred? Were they all so cowed that they had to wait until they were three thousand miles away from Paris to regain their composure and then voice a belated protest? To ask the foregoing questions is but to answer them. No power can suspend or restrict the operation of the amendments until the next Congress convenes. The assumption of such power by anyone would indeed be "dictatorial".

Of course, no Rules of Nomenclature ever had or ever will have any legal standing. The Rules do have the highest moral and ethical standing and will be observed by all zoologists of intelligence, cooperativeness, and good will. The soundness of the Rules, as they existed before the recent meeting, had been proved by experience, but they were very fragmentary, as everyone knows. Their value will be greatly enhanced by the amendments adopted at Paris. Strictly speaking, it is not accurate and may give rise to false impressions to say that the Rules were "completely" revised. It should be made clear that the fundamental provisions have not been altered. It would be more accurate to say that the Rules were corrected, amended, and annotated by incorporating the opinions of the Commission under the provisions

to which they relate. The former skeleton, after changing some slight defects in its anatomy, has been covered with flesh and clothed in a modern costume. Still, the fundamentals remain the same.

Mr. Hemming, who for many years has given his spare time to the work of the International Commission on Zoological Nomenclature without receiving any compensation whatsoever, deserves the highest praise and the most generous thanks of all zoologists throughout the world for the meticulous care with which he prepared for the recent Congress, and the invaluable results obtained thereat, largely as the direct consequences of his preparatory work. When the amended Rules can be seen in black and white, I feel sure that the vast majority of zoologists in America will be completely satisfied with them. It will be time enough then for constructive criticisms.

Yours very truly,

(signed) Cyril F. dos Passos

Editor's note: It may be of aid to give those Lep. News readers who have never had occasion to use the International Rules of Zoological Nomenclature a brief explanation of the background of the controversy of which Mr. dos Passos' letter is a part. The movement toward a stabilized system of Latin names for animals got its greatest momentum when an International Zoological Congress, near the beginning of the present century, appointed a committee to prepare a set of international "rules" which would try to harmonize the contrasting views on the proper choice of names to be used. To some degree the procedures had varied according to nationality, but also some acrid personal disagreements had appeared in print. While relative objectivity was achieved by the drafting committee, and a set of rules was adopted, some of the then irreconcilable differences of opinion were glossed over by shrouding verbiage and others were left out entirely.

For several years there has been especially strong agitation to amend the Rules, adjust the conflicts which had arisen from contradictory Opinions (interpretive rulings by the permanent Commission), and incorporate rules for the omitted points. Dr. Sabrosky has been one of the leaders in this endeavor and has been regarded as notably objective in his labors. It is worth reiterating that the "Rules" must depend on general acclamation for their support. It seems obvious to me that this general acceptance must PRECEDE final adoption. If this is so, the present Congress system, with action taken by a small, unrepresentative, and in some cases insufficiently informed group of individuals, is not the right way to revise the Rules. How unsound it is to confront the world's systematic zoologists with a fait accompli and hope that general acclamation will result! We admire Mr. Hemming's devotion to his duties on the Commission and shall undoubtedly be in hearty accord with most of the changes in the Rules, but we are convinced that Dr. Sabrosky has a sound case against the procedures surrounding the action at the 1948 Congress. It is necessary to state this here, since Dr. Sabrosky and his coworkers will publish their exposition in a journal which may be seen by few News readers.

C.L.R.

COOPERATORS WITH "THE NEARCTIC BUTTERFLIES"

With the October, 1948, issue of the Lep. News cards were sent to the North American members of the Society. These cards were to be returned to the Coordinating Editor to indicate the degree to which each member was interested in cooperating with the project outlined in the News (vol.2: pp.77-78). Most of those who wish to cooperate have now returned their cards. The summary of the cards received is:

75 favorable 8 unfavorable

The tally by States is given in the following table. The first number shows how many in the 1948 "List of Members" are interested in "RHOP." or "LEPID."; the second number is for favorable replies.

CANADA	9 - 7	Missouri	4 - 2
Alabama	1 - 1	New Hampshire	2 - 2
Arizona	1 - 0	New Jersey	5 - 1
California	39 - 9	New Mexico	1 - 1
Colorado	7 - 4	New York	27 - 7
Connecticut	5 - 2	North Carolina	1 - 0
Dist.of Col.	3 - 2	North Dakota	1 - 0
Florida	4 - 1	Ohio	11 - 8
Georgia	4 - 1	Oregon	4 - 1
Illinois	16 - 4	Pennsylvania	11 - 1
Idaho	1 - 1	Rhode Island	1 - 0
Kansas	1 - 0	South Dakota	1 - 0
Kentucky	2 - 1	Texas	9 - 1
Maine	2 - 1	Utah	2 - 0
Maryland	4 - 2	Virginia	3 - 0
Massachusetts	8 - 3	Washington	5 - 2
Michigan	8 - 3	Wisconsin	6 - 4
Minnesota	2 - 0	Wyoming	2 - 2
Mississippi	1 - 1		

F.M. Brown

LEPIDOPTERA PERIODICALS FOR SALE

In November, 1916, the Boston Entomological Club (actually lepidopterological only) began to publish a small periodical called The Lepidopterist. After 1 volume of 13 numbers the editor, S.E. Cassino, withdrew it from the Club, copyrighted the name, and continued publishing it. In all, 4 more volumes were published from 1918-1931, each with 12 numbers, except the last, with only 3 numbers. When Cassino removed the title from the Boston Club, the Club continued their journal as Lepidoptera, beginning with "Vol.II". Both periodicals contained descriptions of new species and forms as well as field notes. There is much of interest and importance in both.

The Museum of Comparative Zoology at Harvard University has unearthed a large stock of copies of these periodicals and is offering them at reasonable prices. A few sets of The Lepidopterist, complete except for Vol.3, no.8, are available for $3.00. Single copies of all issues (except Vol.1: no.4; Vol.2: nos.9,10; Vol.3: no.8; and Vol.4: no.1) are offered for $0.10 each if text only; $0.15 if text and plates. Of Lepidoptera only Vol.2 (minus nos.4, 9) is available, nos.1-3,5-8,10 offered for the same price as single numbers of The Lepidopterist. Please mention your Lep. Soc. membership when ordering these from: Robt. L. Work, Librarian, Museum of Comp. Zoology, Harvard University, Cambridge 38, Mass.

C.L.R.

RECENT LITERATURE ON LEPIDOPTERA

17. Bell, Ernest L., "Two new species of Telemiades and notes on some others (Lepidoptera, Rhopalocera)." Am. Museum Nov.,no.1385: 10 pp.,7 figs. 3 Jan.1949. Describes as new T. fides (Balboa, Canal Zone), T. brazus (Neudorf,Brazil); lifts T. antiope from synonymy as distinct from T. amphion; shows T.misitheus, marpesus, pehakia to be races of T. amphion. Male genitalia of all but pehakia figured.
18. Berger, Lucien A., "Apropos de Pieridae." (In French). Bull. & Ann. Soc. Ent. Belgique, vol.84: pp.28-32. 28 Feb. 1948. Discusses Dufrane's paper (see our review in Lep. News, vol.2: p.96). Shows many nomenclatural errors; criticizes some new infrasubspecific naming; sinks Colotis mathieui Dufrane under C. evenina sypilus Swinh., C. paradoxa Dufrane under C. evippe mediata Falb., and C. vreuricki Dufrane under C.subfasciatus ducissa Dogn.; sinks Colias minuscula f. peruviensis Duf. under C. dimera f. semperi Stkr.;corrects two wrong generic placements.
19. Breland, Osmond P. & Lucille Hagan Schmitt, "The Biology of Two Sunflower Gall Makers (Diptera: Cecidomyiidae; Lepidoptera: Lyonetiidae)." Ent. News vol.59: pp.225-234,3 pls. Nov. 1948. The lyonetiid was Bucculatrix fusicola,found in Helianthus annuus. Biology described, galls figured. 42% of gall parasitized, by 3 spp. of parasites.
20. Caspari, Ernst, & Josephine Richards,"On the proteins of a^+a^+ and aa in Ephestia". Proc. Nat. Acad. Sci., vol.34: pp.587-594, 2 figs. Dec. 1948. A suggested mechanism for the inhibition of eye pigment formation in aa moths. (P.B.)
21. Cazal, P.,"Les glandes endocrines rétro-cérébrales des insectes (étude morphologique)." (In French). Bull. Biol. France & Belg. Suppl. no.32: 227 pp., 186 figs. 1948. A very important survey of the morphology of the "retro-cerebral endocrine glands" of insects, based on Prof. Cazal's own studies of 27 out of 33 orders. These hormone-secreting glands are the corpora allata and corpora paracardiaca. The Lepidoptera are covered in pp.123-129 and figs. 117-123, considering glands of Pieris brassicae, Aporia crataegi, Bombyx mori,Macroglossa stellatarum, Hylocius ligustri, Deilephila euphorbiae, Zygaena sp., Ephestia kuhniella. Lepidoptera much like Trichoptera (caddis-flies) in having 2 prs. paracard. nerves, lateralized corpora paracardiaca and allata, and no hypocerebral ganglion. Finds evidence of close relationship of Lepidoptera with Trichoptera,Neuroptera, Diptera, Aphaniptera, Mecoptera, Hymenoptera. Suggests a superorder "Trichoptéroïdes" for Lepidoptera and Trichoptera.
22. Chermock, F.H. & D.P. Frechin, "A New Race of Incisalia eryphon from Washington." Pan-Pacific Ent., vol.24: p.212. Oct.1948. Describes race sheltonensis (Shelton, Wash.). Types in Carnegie Mus. No figs.
23. Collenette, C.L.,"The Lymantriidae of Java." Ann. & Mag. Nat. Hist. (Ser.12), vol.1: pp.685-744, 3 pls. 4 Feb. 1949. Lists 146 forms, giving the location of the types and locality records of specimens examined, as well as notes on distribution, classification, etc. The following are described as new: Euproctis tanystola; E. conisalea; E. camellia; E. ochacantha; E. dichthyas; E. epichrysa; E. enochra; E. tjikorei; E. conistrae; E. tina; E. casta; E. pollux; E. eclipes, E. exitela; E. trettes; E. tjikopo; E. azela; E. perplexa schistocarpa; Lymantria rhabdota; Dura helicta; Aroa abalia; Neorgyia javensis. All new species and a few others are illustrated; the male genitalia of some species are figured. (P.B.)
24. Corbet, A. Steven,"Papers on Malaysian Rhopalocera. VII.The Skeat Expedition to the Siamese Malay States in 1899-1900 and the Faunal Boundary in North Malaya" Entomologist, vol.82: pp. 8-15, 1 map. Jan. 1949. List of species collected; the faunal boundary is drawn as determined by the occurrence of indicator species of butterflies. (P.B.)
25. dos Passos, Cyril Franklin, "New Butterflies from Mount McKinley National Park, Alaska, with a review of Erebia rossii (Rhopalocera, Satyridae)." Amer. Mus. Nov., No. 1389: 17 pp., 28 figs. 6 Jan. 1949. Describes as new in great detail: Oeneis mckinleyensis and E. rossii gabrieli; 12 fine photos of each and 4 of E. rossii ornata. Records and synonymies of above 3 and races rossii and kuskoquima of E. rossii.
26. dos Passos, Cyril Franklin, "The distribution of Oeneis taygete Geyer in North America with descriptions of new subspecies (Lepidoptera, Satyridae)." Amer. Mus. Nov., No.1399: 21 pp., 16 figs. 26 Jan. 1949. Describes as new races of O. taygete: gaspeensis(Mt. Albert,Que.); fordi(Kuskokwim River, Alaska); edwardsi (San Juan Mts., Colo.). Selects neotype of O. t. taygete in Carnegie Mus. (Hopedale, Labrador.) Clear photos of neotype of taygete, type of O. bootes, and types of all new races, but no genitalia. Extremely detailed descriptions and synonymies for all 4 races of taygete. A remarkably thorough paper!
27. Ferrel, Carol M., Howard Twining, & Norman B. Herkenham, "Food habits of the Ring-necked Pheasant (Phasianus colchicus) in the Sacramento Valley, California." Calif. Fish & Game, vol.35: pp.51-69, figs.9-14. Jan. 1949. Crop contents examined from 179 adults and over 50 chicks included larvae of Pieris, Sphingidae, Noctuidae, Geometridae.
28. Freeman, T.N., "The Correction of a Genotypic Citation for the Genus Choristoneura Led." Can. Ent., vol.81: p.10. Jan. 1949. Corrects his former lapsus calami by citing Tortrix diversana as correct generotype.
29. Good, P.M., & A.W. Johnson, "Paper chromatography of pterins." Nature, vol.163: p.31. 1 Jan. 1949. A method for determination of these characteristic pierid pigments from very small samples (single butterfly wings). (P.B.)
30. Haggett, G., "Notes on Lepidoptera in West Sussex in 1948." Entomologist, vol.82: pp.25-32. Feb. 1949. (P.B.)
31. Harrison, J.W. Heslop, "A contribution to our knowledge of the Lepidoptera of the Isles of Lewis and Harris." Entomologist, vol.83: pp.16-19. Jan. 1949. Annotated list from two of the Outer Hebrides. (P.B.)
32. Hessel, S.A., "New Jersey Rhopalocera - Strymon cecrops Fabr." Journ. N.Y. Ent. Soc., vol.56: pp.243-244. Dec. 1948. Records capture of S. cecrops near Reed's Beach on northwestern part of Cape May Peninsula on September 7,(1947) and August 26, 1948, in a small swamp of about one acre in area. The author believes the insect breeds there and describes its flight and habits. A valuable contribution to field observations. (C. dP.)
33. Lempke, B.J., "Trekvlinders in 1947." (In Dutch). Entomol. Berichten, vol.12: pp.305-311, 316-325, 7 figs. Dec. 1948, Jan. 1949. Eighth annual report on Lepidoptera migrations in Holland. Records and graphs given for 9 species of butterflies, 15 species of moths. Unusually numerous in 1947 were: Pontia daplidice; Colias hyale; Issoria lathonia; and Macroglossum stellatarum. Conclusion: "On the whole a very good year for migrants."
34. Lempke, B.J., "The Ortholitha Problem (Lep. Geometridae)." Entomologist, vol.82: pp.1-7. Jan. 1949. Reviews the forms of the two west European species of Ortholitha. (P.B.)

35. McDunnough, J., "A new race of Pseudohazis hera from southern Colorado." Jour. N.Y. Ent. Soc., vol. 56: pp.249-250. Dec. 1948. The author of the paper credits the name "Pseudohazis hera ssps. magnifica" to Reverend Bernard Rotger of Capulin, Colorado, who captured the specimens and drew the original description. The holotype male and allotype female from three miles east of Mesita, Costilla Co., Colorado, in the sagebrush country were taken on August 13, 1943, and are in the collection of Reverend Rotger. There are eleven "topoparatypes", one of which is in the American Museum of Natural History. It is unfortunate that the holotype, at least, was not deposited in a museum. (C.F. dP.)

36. McDunnough, James H., "Critical notes on certain Pero species (Lepidoptera, Geometridae)." Amer. Mus. Nov., no.1393: 11 pp. 18 Jan. 1949. Detailed information given on Grossbeck's specimens used for his 1910 Pero revision. Ten spp. considered.

37. McDunnough, James H., "Notes on Phalaeninae (Lepidoptera)." Amer. Mus. Nov., no.1394: 14 pp., 7 figs. 18 Jan. 1949. Describes as new Abagrotis baueri (Lake Co., Calif.). Gives key to female genitalia of 21 spp. of Euxoa; suggests E.misturata should be synonym of E. orbicularis; shows "E. redimicula" is really 2 spp.: redimicula Morr. of N. Atlantic states and servita Sm. of the prairie and Rocky Mts. Records Feltia repleta from Florida. Designates lectotype of Agrotis dentilinea. Figures ads. and female genitalia of E. redimicula and E.servita; also of A. dentilinea and A. semiclarata.

38. Morrison-Godfrey, P.W., "Butterflies of South Bihar." Journ. Bombay Nat. Hist. Soc., vol.47:pp.644-651, 1 map. Aug. 1948. An annotated list. (P.B.)

39. Nieuwenhuis, E.J., "Lepidoptera van den Banggai-Archipel II." (In Dutch). Tijdschr. voor Entom., vol.89(1946): pp.139-148, pl.XII, figs.1-3. 1948. 49 spp. and subspp. of families Arctiidae(22),Lymantriidae (7), Lasiocampidae (1), Bombycidae (1), Eupterotidae (2), Saturniidae(3), Brahmeidae(1), Sphingidae (12) are recorded from the Banggai Archipelago. New are: Asure snelleni subsp. duplicata,Asota brunnescena, Pericallia distinguenda subsp. bangaiensis, Nyctemera vandenbergi (all Arctiidae), Pseudojana roepkei(Eupterotidae). Furthermore, photographs are given of P. roepkei and of Dasychira bipunctata Ns. and of Euproctis collenettei Ns. It is deplorable that as late as 1948 descriptions of new species are being published in such a little known language as Dutch, instead of in one of the internationally accepted European languages. (A.D.)

40. Roepke, W., "Lepidoptera Heterocera from the summit of Mt. Tanggamus, 2100 m., in Southern Sumatra". Tijdschr. voor Entomol., vol.89: pp.209-232, pls. XIII-XIV. 1948. 62 spp. and subspp. are recorded, including 2 Zygaenidae, 9 Lithosiidae, 2 Drepanidae, 2 Cossidae, 27 Agrotidae (Phalaenidae), and others. New genera are: ALLODREPANA, PARAMOCIS, ACYGONIA. New spp. are: Celama sumatrana, C.vicina, C. indefinita, Roesalia montivola, Argylla culminicola, Mustilia lieftincki, Allodrepana siccifolia, A.sumatrana, Chloroplaga javana, Tortriciforma viridissima, Paramocis maculata, Acygonia difformis, Arthisma rectilinea, Hydrillodes nebeculalis, H.subtruncata, Hypena calligraphalis. New subspp. are: Eterusia costimacula lampongana, Euplexia albovittata culminis. All above figured, and a few known spp. (A.D.)

41. Satterthwaite, A.F., "Important Sunflower Insects and Their Insect Enemies." Journ.Econ.Ent., vol.41: pp.725-731. Oct. 1948. Records habits, parasites, descriptions of: Suleima helianthana and Stibadium spumosum.

42. Scholten, L.H., "Celerio euphorbiae L. en de zomer van 1947." (In Dutch). Entomol. Berichten, vol. 12: pp.267-270. 1 Sept. 1948. A record of the occurrence of this Sphingid throughout the extremely warm and sunny summer of 1947 in Holland. (A.D.)

43. Sevastopulo, D.G., "Local Lists of Lepidoptera from the Punjab and U.P." Journ. Bombay Nat. Hist. Soc., vol.47: pp.586-593. Aug. 1948. 4 incomplete lists, taken from the author's collections. (P.B.)

44. Smith, P. Siviter, "How Many Broods are There of Lycaena phlaeas L.?" Ent. Rec. & Journ. Var., vol. 61: pp.1-3. Jan. 1949. From 2 to 3 in Britain. (P.B.)

45. Steinhaus, Edward A., "Polyhedrosis,("Wilt Disease") of the Alfalfa Caterpillar." Journ. Econ. Ent., vol. 41: pp.859-865, 3 figs. Dec. 1948. Describes and figures symptoms and histology of this virus disease which is an important enemy of Colias eurytheme.

46. Swezey, Otto H., "Insect Invaders in Hawaii During and Since World War II." Journ. Econ. Ent., vol.41: pp.669-672. Oct. 1948. Records as new lepidopterous "invaders" of Hawaii: Anacamptodes fragilaria; Achaea janata; Amyna natalis; Polydesma umbricola; Elaphria nucicolora; Trichochlea postica; Stictoptera subobliqua.

47. Tjeder, Bo, "Insekter från södra Bohuslän 1946." (In Swedish). Ent. Tidskr., vol.69: pp.215-224, 2 figs. 20 Dec. 1948. Records of insects taken at Bohuslän include moths of 16 spp. in 9 families.

48. Viette, P., "Lépidoptères" in "Croisiere du Bougainville aux iles australes françaises." (In French). Mém. Mus. Nat. Hist. Nat., vol.27(n.s.): pp.1-27, pls.I, II. 1948. Redescribes in detail and figures genus Pringleophaga and adult, larva, pupa of P. kerguelensis, genus Embryonopsis and in morphological detail E. halticella, the two remarkable flightless, brachypterous species from the Kerguelen Is. M. Viette places Pringleophaga in the subfamily Tineinae and Embryonopsis in the family Hyponomeutidae. Also redescribes and figures Exala strassenella and its larva (Lyonetiidae). A very important paper.

49. Viette, P., "Une nouvelle espèce de Metzneria (Lep. Gelechiidae)." (In French). Bull. Soc. Ent. France, 1948: pp.51-53, 5 figs. 1948. Describes as new and figures M. portieri (Abyssinia).

50. Viette, P., "Morphologie des génitalia mâles des Lépidoptères." (In French). Rev. franç. Ent., vol. 15: pp.141-161, 10 figs. 1948. Discusses and figures the general structures of male genitalia of Lepidoptera and their homologies. Concludes that TEGUMEN is 9th tergite, VINCULUM is sternite or subcoxosternite, VALVE is coxopodite or coxa, UNCUS and GNATHOS are the tergite and sternite or a tergal or sternal process of the 10th segment. Bibliography gives 95 references.

51. Wright, Sewall, "On the Roles of Directed and Random Changes in Gene Frequency in the Genetics of Populations." Evolution, vol.2: pp.279-294, 7 figs. Dec. 1948. Of lepidopterological importance because of stated disagreement of Prof. Wright with generalizations on population genetics of moth Panaxia dominula by Fisher & Ford (1947) and reanalysis of their data. Questions whether Panaxia situation is due to shifts in selection or to accidents of sampling or both (Fisher & Ford had considered variations in selection as the factor).

52. Zikán, Walter, & Petr Wygodzinsky, "Catálogo dos tipos de insetos do Instituto de Ecologia e Experimentação Agricolas." (In Portuguese). Bol. Serv. Nac. Pesq. Agr., no.4: 93 pp. May 1948. Catalogue, giving full data, of all type specimens in collection of the Institute. Included are following species and forms of Lepidoptera: Saturniidae - 2; Hesperiidae - 5; Papilionidae - 4; Satyridae - 5; Danaidae - 2. 17 of the 18 are types of Zikán's names. A valuable reference paper.

NOTICES BY MEMBERS

Wanted immediately for generic revision, all species of genus Annaphila Grt. EXCEPTING A. divinula Grt., A. decia Grt., A. depicta Grt., and A. diva Grt. Material from Arizona, New Mexico, and Texas especially needed. Distributional, ecological, and biological data desired. Offer in exchange Rhopalocera and Heterocera of So. and Central Calif. C.I. Smith, Dept. of Entomology & Parasitology, Agriculture Hall, Room 112, University of California, Berkeley 4, Calif.

WANTED: Copies of the data from specimens of the following species and races of PAPILIO:

P. bairdii hollandii, P. b. brucei
P. nitra, P. n. kahlii
P. machaon aliaska, P. m. hudsonianus, P. m. dodi

Will be glad to supply data from any species of Rhopalocera to be found in the collection of the American Museum of Natural History in return.
Paul R. Ehrlich, 538 Academy St., Maplewood, N. J.

Subscriptions to Entomologisches Nachrichtenblatt, a German language mimeographed monthly periodical devoted largely to Lepidoptera, are offered by its editor in exchange for butterfly and moth pupae or for Lepidoptera literature. Write: Adrian Lüthi, Inneres Sommerhaus, Burgdorf, SWITZERLAND.

Wanted for cash or exchange: EUPHYDRYAS of the world in series. Also Nearctic MITOURA in series.
D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

For sale: European races of PARNASSIIDAE in papers or mounted with exact data and in good condition. P. apollo L. var brittingeri R. a. R. ♂♂ (= chetus Fruhst.), P. mnemosyne L. var. hartmanni Stdfs. ♂♀ and ab. melaina Honr. ♀ and ab. umbratilis Fruhst. ♀ (extremely melanistic forms). Supply limited, order early.
Dr. W.J. Reinthal, Dept. of Zool. Sciences, University of Oklahoma, Norman, Okla.

Wanted to buy: The Moth Book, by W. J. Holland (1937), in good condition.
Mrs. Emily Henricksen, Orcas Island, East Sound, Wash.

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For sale: "The MACROLEPIDOPTERA OF THE WORLD" by A. Seitz. Volume 5 in 4 vols. (2 of text, 2 of plates) bound in buckram. Volume 9 in 2 vols. (1 of text, 1 of plates) bound in calf and buckram. All plates and text intact, good condition. Both Vol. 5 and Vol. 9 for $250.00, shipping charges extra.
M. Spelman, 2751 Grand Concourse, New York 58, N. Y.

Will collect in any group in exchange for LEPIDOPTERA, excluding Trichoptera and Orthoptera (contracted). Would especially like to collect Arachnida and Myriapoda for taxonomists.
D.P. Frechin, 1504 Lafayette, Bremerton, Wash.

Wanted for cash: SPEYERIA DIANA and S. LETO, female specimens with full data. J.A. Evey, Benson, Illinois.

4,000 GEOMETRIDAE, ARCTIIDAE, NOCTUIDAE, BOMBYCIDAE, HEPIALIDAE OF AUSTRIAN ALPS pinned but unspread need to be sold to provide space for 1949 collecting. Especially Acronicta, Euxoa, Rhyacia, Dianthoecia, Cosmia, Anarta, Acidalia, Ortholita, Boarmia, Biston, Gnophos, and many others. Each for 15¢, including the very good species. 25% discount for orders over 1000 specimens. Speciments perfect and with full data.
Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

Offer FRENCH BUTTERFLIES and MOTHS in papers in exchange for exotic ones except Microlepidoptera.
F. Gaillard, 5 Cité du Midi, Paris 18, FRANCE.

JAPANESE BUTTERFLIES offered in exchange for American species, esp. Lycaenidae, Satyridae, Nymphalidae.
S. Murayama, Shinjocho 744, Ibaraki-shi, Osaka, JAPAN.

For sale: over 500 Strymon from all over North America collected over 17 yrs., at 6¢ each; other groups, such as Catocala, skippers, and 100 mostly So. Florida specimens at 8¢ each. D.F. Berry, Box 146, Orlando, Fla.

WISH TO PURCHASE for my library:

Proc. Ent. Soc. Philadelphia: vols.1-6
Proc. California Academy of Sciences: vols.1-7
Bull. Buffalo Soc. Nat. Sciences: vols.2,3
Psyche: vols.11,13,15 (pref. unbound)
Proc. Acad. Nat. Sci. Philadelphia: vols.1-20
Trans. Am. Ent. Soc.: vols.1-10
The Entomologist: vol.1

C.F. dos Passos, Washington Corners, Mendham, N.J.

LIVING MATERIAL

The News will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupae, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages. Contributors are urged to include accurate locality data with all material sent.

For sale: PUPAE and papered or pinned adults of So.Calif Lepidoptera. Order single specimens, or quantity at special rates; or sign up for "Butterfly & Moth of the Month" or "Chrysalis of the Month" plan.
W.H. Evans, 8711 La Tuna Canyon Rd., Sun Valley, Calif.

Will exchange a quantity of cocoons of Telea polyphemus and Philosamia cynthia with any members for papered specimens of Papilio or what have you?
A. Glanz, 289 East 98th Street, Brooklyn 12, N. Y.

Contacts desired to obtain live pupae of Sphingidae and Saturniidae, and eggs of Catocalinae. Dr. v. Froreich, Postschiesfach 431, Aachen, GERMANY (British Zone).

Eggs of Actias luna for sale in season by the 100 or 1000. M. Eugene Smith, Rt. #2, Newman, Georgia.

Desire to purchase or exchange living Saturniid pupae of the world. Have limited number Rothschildia forbesi and/or orizaba pupae for sale or preferably in exchange.
R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Wish to purchase, exchange, or sell living Lepidoptera ova for rearing.
Mrs. Hazel Chase, 272 N. Union St., Galion, Ohio.

Q. "Is there a set of distinguishing marks to tell all moths from all butterflies, and are the butterflies really a suborder? One of my friends says butterflies are only one small branch of Lepidoptera."

A. Not quite. The combination of no frenulum with more or less swollen (clubbed) antennae will distinguish practically all butterflies from almost all moths. Many other characters separate most butterflies from most moths: the upright egg, the seta-pattern of the caterpillar (setae iv and v low and separate, and many fine secondary setae present), trachea R_{4+5} of the pupa crossing the cell (I think separates all butterflies from all moths except a few of the more delicate "micros"); loss of upper spurs of hind legs (except skippers), two rows or patches of bristles on the front (Chaetosema: fails in many butterflies, but I have not seen it in moths); etc. "Suborders" are partly a matter of opinion: in any case the butterflies are a group higher than a superfamily, homogeneous and easily recognized and very rich in species and individuals, - certainly not "one small branch".

Q. "Why do some of my moths and butterflies get greasy or wet-looking and what can be done to prevent it? I use Riker mounts - would that cause it?"

A. After the specimens dry, the natural storage fat in the body gradually works to the surface and may spread to the wings also. Certain preservatives, especially the phenols (carbolic and creosote) and P.D.B., tend to make it spread faster. It can be washed out with any chemically inactive dry-cleaning solvent, such as benzol, chloroform, unleaded gasoline (if on test it proves to evaporate without leaving a stain). Even white kerosene will serve though not so well. Immerse large specimens in it; surround smaller ones with pads of cellucotton and saturate with it, leaving it to evaporate slowly. Papered specimens that are likely to go greasy are best washed papers and all before spreading. The worst kinds are borers, long-lived kinds like the angle-wings, and the skippers. Males are worse than females. Riker mounts are as safe as anything else.

W.T.M. Forbes

REPRINTS AVAILABLE

Supplies of reprints of several recent papers by Society members have kindly been sent for gratis distribution to those members requesting them. The following are available until the stock is exhausted: "The Distribution of Oeneis taygete Geyer in North America with Descriptions of New Subspecies" and "New Butterflies from Mount McKinley National Park, Alaska, with a Review of Erebia rossii" by C.F. dos Passos; "Sôbre a Genitalia das Fêmeas de Hepialidae", "Revisão dos Nomes Genéricos de Família Sphingidae Pt.1", and "Sôbre a Morfologia do Penis em Lepidoptera" by J. Oiticica Fº; and "The Rothamsted Light Trap" by C.B. Williams. There are still a few copies of dos Passos' "The Eye Colors of Some Colias Collected in New Jersey." U.S.A. members requesting reprints please send 5¢ to 15¢ (depending on number) in stamps for postage; all other members will be provided postage gratis.

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ADDITIONS TO THE MEMBERSHIP LIST

Blevins, T.B. (Dr.), Tilden Lane, R.F.D. #5, c/o T.H. Briggs, Rockville, Maryland. RHOP: Papilionoidea, esp. Nymphalidae.

Eyer, John R. (Dr.), New Mexico Agric. Exper. Sta., State College, N.M. MICRO: esp. Lyonetiidae, Hepialidae, Micropterygidae. Morphology, Life History. Coll. Ex.

Forsyth, Marguerite S. (Mrs.), P.O. Box 96, Florida City, Florida. RHOP. MACRO. Coll. Sell.

Hesselbarth, Gerhard, (23) Diepholz (Hann.), Hindenburgstr. 13, GERMANY. Palaearctic RHOP. & MACRO: esp. Papilionidae, Pieridae, Bombyces, Arctiidae. Coll. Ex.

Perkins, Owen A., 1605 Crooks Road, Royal Oak, Mich. LEPID. Distribution. Coll. Ex. Buy.

Smith, P. Siviter, 21 Melville Hall, Holly Road, Edgbaston, Birmingham 16, ENGLAND.

Ziegler, J. Benjamin (Dr.), 18 Baltusrol Place, Summit, N.J.

CHANGES OF ADDRESS

Friday, F.W., Box 72, Palm Desert, Calif.
Johnston, W.M., 383 South St., Jamaica Plain, Mass.

Numerous members did not return their membership cards when sending 1949 dues. It will greatly simplify the already heavy task of keeping the Society records, if these cards are sent to the Associate Editor as soon as possible.

A much regretted erratum crept into Dr. Munroe's paper, "Some Remarks on the Genus Concept in Rhopalocera" (Lep. News, vol.3: pp.3-4). Please make a correction in the second paragraph as follows: delete lines 16-17; substitute lines 18-19 for lines 16-17; for lines 18-19 substitute:

"usefulness of the genera to the non-specialist for purposes of routine identification or general de-"

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Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.