

The Lepidopterists' News

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FIELD NOTES

NEW LOCALITY FOR OENEIS DAURA.- This last June I had the opportunity to do some collecting on San Francisco Peaks just north of Flagstaff, Ariz., and collected along with other things a species of Oeneis. I had taken a few specimens of this Oeneis in 1946, but not enough to make a determination certain. So I was very glad to increase my series. During the Christmas holidays I had the opportunity to be in Los Angeles, and took my entire series over to Lloyd Martin for determination. After comparing them with the Museum's long series of O. daura Str. from the White Mts. we were forced to conclude that they were identical, since we could find no essential differences. This gives us a locality approximately 100 miles to the west of their previously known range in the White Mts. of eastern Arizona. Also it is a much more accessible locality since it is only a few miles north of U.S. highway 66, and there is an old road that enables one to drive to within easy hiking distance of the locality. The specimens were taken at between 9,000 and 10,000 ft. elevation on the southern slope.

D.L. Bauer
Yuma, Arizona

ON PAPILIO "FLYWAYS".- Mr. Ehrlich's recent note (Lep. News, vol.2: p.92) on the use by P. glaucus L. of a regular route, one way in the morning and the other way toward evening, is very interesting. I, as well as others, have noted P. palamedes Dru. doing this in the South, and roosting in tall palm-trees. Several months apart, Mr. Otto Buchholz and I observed the use by P. troilus ilioneus Smith of a very restricted route to roost in the interior of a hammock at Royal Palm State Park, Fla. Actual communal roosting in other butterflies (such as Heliconius charithonia L.) has been observed; but specific notes on the actual roosts are lacking for Papilio. Such data would be very valuable.

Alexander B. Klots
American Museum of Natural History

COLLECTING IN FLORIDA FOR TOURISTS.- A few notes from a recent (February) trip to Florida may interest some northern lepidopterists who might take a similar vacation trip in the future. The prior part of the trip took us to many points of "rubber-neck" interest. Butterflies were common in all, but the warning signs and tourists prevented any collecting. I took a couple of species by hand but had no chance for more. Some of the striking ones seen were Heliconius charithonia L., Agraulis vanillae L., Anartia jatrophae L., Athena petreus Cram.

and numerous Pieridae. However, the only opportunity to use a net occurred at the end of the Orange Blossom Trail, at Ravine Gardens, a few miles from St. Augustine. This privately-owned park has flowers in profusion and opportunities for collecting. In spite of rain, we found these species: Zerene caesonia Stoll, Phoebis seanae L., Papilio cressphontes Cram., P. philenor L., Eurema daira Godt., a Hairstreak, Euptychia sosybia (?), Eudamus proteus L., and others. Undoubtedly the collector can find good unrestricted spots if he has plenty of time, but the masses of flowers in the gardens concentrate the insects best.

H.E. Woodcock
Chicago, Illinois

OBSERVATIONS FROM BUTTERFLY REARING.- The summer past was interesting to me entomologically because in my rearing I ran into some things I had not known before. For example, of the hundreds of Papilio glaucus L. I had reared from eggs, all went through 5 instars, but two eggs I picked up on tulip poplar (Liriodendron) went through 6 instars. Then I tried Calephelis borealis G.&R. again - my third season - and found nothing different from the other times, but some differences from the description in Canadian Entomologist, the greatest difference being that all of the 43 went through their instars as regularly as any Papilio - like clockwork - and they emerged in the same order as they pupated; each one spent the same time in each instar as all the others. THERE ARE ONLY 6 INSTARS in my 3 experiences - from egg to pupation. In each of these 3 experiences the adults emerged in September. In nature they emerge in June. I have taken the larva May 31 in its last instar and had it pupate and emerge exactly on time - June 30. I have never failed since 1937 to take the imago fresh on June 20.

Of the 25 species I raised there was another interesting observation; probably someone has written the story but I have never read it. With a larva of Limenitis astyanax Fabr. I had always thought the tip of the leaf was the mid-rib with the green on each side eaten away. But most of that stick protruding beyond the tip of the leaf is dung, carefully placed and secured by silk, one piece at a time in a line until long enough to support the larva. This is only in the 1st instar. I found many eggs on Japanese quince, but could never get a larva through the 3rd instar on the stuff, and never found a larva on it. Perhaps it is too tough. But the females kept laying eggs on it.

S.B. Smalley
Cincinnati, Ohio

TECHNIQUE NOTES

BAITING FOR MOTHS

There are many methods for making lures to capture moths. There are those who swear by the "sugar trickling method", others who won't do without the "bole smearing" patent, etc. Of all these methods and concoctions of baits for the capture of moths, I have found the following one best:

1. Buy a pound of desiccated sliced apples, or whole small dry pears. Take a string of two feet length and tie on this 4-5 pieces of the fruit. Make a loop at the end of the string. Make a dozen such strings.

2. Now, make the following juice: Heat a liter of beer. During heating put in, in spoonfuls, always stirring, a pound of honey, and then a pound of sugar. Let it brew for ten minutes. Do not put in anything else! There are people who recommend adding rum, alcohol, liqueur essences, and other ghastly things, but I have found that it has too strong a smell and is more repellent than otherwise for the moths.

3. Now you have to have two containers. One strong enough to contain the juice, which you must open every 2-3 hours for a few days, as the brew effervesces readily, and I have known cases when my friends had the container explode on them (do not use glass containers!) during the trip, as it was shaken up too much. Into the second can you put the dozen strings; and that is the container you bring along to the collecting place. First: you immerse the strings with the pears in this juice for half an hour to let them soak up enough juice but not to become spongy (they are likely to fall to pieces); second: you put the strings in the second can with some juice at the bottom, and start for the collecting place.

4. Choose the bordering trees of any forest, and hang the strings on the down-hanging branches, one string 10 paces from the next. Posts and bushes are also good for collecting in open, woodless spaces or deserts (even the dead stalks of Verbascum, etc.); in swamps you can loop them on a bundle of reed. Be careful: choose a path that can also be trodden in complete darkness; do not let strings hang down to touch the ground (ants), or too high up so that you cannot reach them comfortably with your killing bottles. Always use the edge of the forest facing West or South, else you won't get any results. Hang out the strings half an hour before darkness. When collecting, use an electric torch with a green light (any green paper pasted on the glass will do) in your left hand. This light will not repel the moths as sometimes white or yellow light does (Catocala, etc.).

To make the strings and the juice does not involve more than an hour; it looks long only in script. Good hunting!



Dr. L.A. Gozmány
Budapest, Hungary

AN INEXPENSIVE BREEDING CAGE

One of the reasons why more breeding and rearing of specimens is not carried on is that many collectors cannot afford the cash outlay necessary for the proper equipment in the line of breeding cages. Such being my case, I decided to experiment last year with glass substitutes. This experiment was hastened by the capture of a female Oeneis uhleri which laid approximately 65 eggs for me.

At any hardware store, or through Montgomery Ward or Sears, Roebuck & Co., it is possible to obtain a glass substitute that is merely two sheets of transparent Butarate plastic film or cellulose acetate fused on both sides of a reinforcing cord mesh. Thin and pliable, it is quite transparent, although not to the degree of glass, and easily shaped to almost any form. In my case, I planted the food plant in an ordinary flower pot, then formed a cylinder of this "Vi-O-Phane" by measuring the circumference of the flower pot and cutting a piece that length. It usually comes in 36" widths and you can cut it to stand whatever height you wish. In the first crude attempt I stuck the edges of the material together first with scotch tape, and later (to my sorrow) with adhesive tape. This cylinder was then fitted over the flower pot and held in place either with a string tied tightly around the pot, or by a heavy rubber band. All that remains is to drape a piece of cheese cloth over the top and there is the breeding cage.

This may sound rather crude, but it was the first attempt and other ideas on improvements have formed since then. This season, time permitting, I intend to increase the number of cages and to try to solve the problem of forming the cylinder, which is the major task, by cutting the glass substitute slightly short of the circumference of the pot so it will not quite meet. Then to form the cylinder I intend to sew a strip of elastic the length of the material, thereby making a cylinder which will be slightly smaller, but will readily stretch over the pot and be held in place by the elastic. The transparent sides permit easy observation, or the piece of cheese cloth or other material over the top is quickly removed to permit closer study, and the cylinder itself may be quickly removed for any changing of plants, etc. that may be necessary. The food plant may be watered, if the bottom of the pot is filled with gravel before planting the food plant, by simply placing it in a pan of water. Most important to me is that in this way it is possible to make a good breeding cage for as little as 35¢ in comparison with the \$6 to \$10 it costs to buy one ready made.

Donald Eff
Boulder, Colo.



A METHOD FOR KILLING BUTTERFLIES

I kill all of my specimens by a gentle pressure on the thorax with my forceps. This does not damage the specimen at all if done properly. It obviates the necessity for the use of cyanide, which I prefer not to use around my family who accompany me on my collecting trips. This method does not work on moths! It "scalps" them.

T.B. Elevins
Washington, D.C.



PREPARATIONS FOR THE 1949 SEASON SUMMARY

The annual Field Season Summary of North American Lepidoptera for 1948 was mailed out to 1948 members with the preceding issues of the Lep. News. * Much increased participation is needed for 1949. Each member who gets out in the field fairly often will find new pleasure in his collecting if he will keep regular records permitting comparisons from year to year. These findings can then be permanently preserved for reference by being submitted each year for the published Summary.

A regular system for recording observations throughout the season will probably become essential for sound season summarizing. Bryant Mather, of Clinton, Mississippi, uses the following method:

"For 1948 I took a sheet of cross-section paper (Dietzgen No. 375) which is divided into squares 80 x 100 on an 8 1/2" x 11" sheet. Holding it longways I listed in a vertical column at the left the names of about 70 species that I expected to see and be able to identify, then across the top I indicated periods of time in successive 5-day intervals. By filling in squares I now have a diagram-chart that records all of the species I observed during each successive 5-day period for the year. Should I eventually have such a chart for each of a good many years, I might be in a position to discuss variation in season of flight, etc."

In my own detailed observations for four years at Principia College at Elsau, Illinois, I kept a 3" x 5" file card for every species of local Rhopalocera and recorded my data every 3 days during the entire flight period. For example, the card on Anthracaris midea states: "IV-3-42 (♂ fresh); IV-4 (♂); IV-14 (♂♂ fresh); IV-17; IV-23 (♂♂ & ♀♀); IV-27 (num. eggs on Lepidium densiflorum); IV-30 (♂♂ & ♀♀); V-3 (eggs hatched); V-5 (♂♂ & ♀♀); V-12 (1st larva pupated)..." The abundance might be stated as "very num.", "num.", "few", "rare", "one", etc. The number of specimens ACTUALLY COLLECTED often has little significance in abundance records, since collectors tend to ignore common species but to catch every specimen of a rarer species.

As before, the most important observations are:

1. Flight periods for each species compared with other years.
2. Effects on Lepidoptera from unusual climatic events (floods, heat, hurricanes, etc.)
3. Significant effects from human or biological agencies (parasites, birds, fires, diseases).
4. Unusual population changes (rare species suddenly common, common species absent, etc.)
5. All records of migrations (see News, vol. 3: p. 17 for list of known migrant butterflies).
6. All new state records.

Individual reports for 1949 are DUE IN THE HANDS OF THE AREA COORDINATORS BY 1 DECEMBER 1949. A reminder will appear in a fall issue of the News. Please submit separate reports for collecting in different Areas.

C. L. R.

* Available separately for 25¢ per copy; the 1947 and 1948 summaries may be obtained together post-paid for 50¢.

"THE NEARCTIC BUTTERFLIES"

Progress Report - The Distribution of Danaus

To date 33 collaborators have sent in locality data on their specimens of Danaus. The material reported is from 30 States and 5 provinces. No specimens have been reported for many areas where plexippus L. is known to fly. I suppose this is to be expected for a common species. We're always "going to collect some day"! To show how commonness affects collecting, about 350 plexippus were reported, but the number of eresimus Hb. reported is nearer to 375! About 250 berenice Gram. were listed.

This first call for cooperation from the membership has indicated several things: first, a good many members are ready to contribute what they have learned about the Nearctic Butterflies to make this project a success; second, the system set up works fairly well, and it will be improved; third, very few sight records are made; fourth, it might be well to have various members volunteer to dig up the distributional data for particular States - volunteers will be welcomed; fifth, very few negative reports (absence of a species in an area) were received, but these are as important as positive catches.

There follows a tabulation of reports received, arranged by States. The first line of figures for each State always represents plexippus; if more lines are present, the second is for berenice and the third for eresimus. (For Florida there are 8 localities for plexippus, 20 for berenice, and 1 for eresimus.) With each species the first figure shows the number of localities from which the species has been reported. The fraction in parentheses denotes the number of counties represented by these localities, over the number of counties or parishes in the State or province.

F. Martin Brown
Coordinating Editor

B.C.	1 (1/9)	Ont.	2 (2/50?)
Man.	4 (1/12)	Que.	4 (4/67?)
N.S.	5 (3/17)	CANADA	(11/228?)
Ala.	1 (1/67)	Md.	1 (1/24)
	1 (1/67)	Mass.	3 (2/14)
Ariz.	7 (4/14)		1 (2/14)
	26 (7/14)	Mich.	5 (5/73)
	1 (1/14)	Mo.	2 (2/115)
Ark.	4 (3/75)	N.H.	3 (2/10)
	1 (1/75)	N.J.	2 (1/21)
Calif.	13 (7/58)	N.Y.	2 (1/62)
	14 (4/58)	N.C.	1 (1/100)
Colo.	8 (8/63)	Ohio	6 (6/88)
	3 (3/63)	Ore.	2 (2/36)
Conn.	1 (1/8)	Pa.	3 (2/67)
Fla.	8 (2/67)	S.D.	1 (1/68)
	20 (8/67)	Tex.	5 (4/254)
	1 (1/67)		19 (18/254)
Ga.	1 (1/159)		5 (4/254)
	1 (1/159)	Vt.	1 (1/14)
Ida.	1 (1/44)	Wash.	1 (1/39)
Ill.	5 (4/102)	Wis.	9 (9/71)
Kans.	2 (2/105)	Wyo.	2 (2/24)
	1 (1/105)	U.S.A.	(80/3069)
Ky.	2 (2/120)		(45/3069)
Me.	1 (1/16)		(6/3069)



by George W. Rawson
Summit, New Jersey

Mass (one way) migratory flights and peak periods of abundance of certain species of butterflies have been reported in the literature from time to time. As the causes or factors influencing the unusual abundance of butterflies are not thoroughly understood, reports on the occurrence of such natural phenomena may help to solve or at least to throw more light on the subject. The following information is therefore presented with the hope that it may be of interest.

Influenced by the results of previous collecting trips made by Dr. John A. Comstock and Mr. Lloyd Martin of the Los Angeles Museum, the writer spent five days collecting in Arizona in the Madera Canyon, Santa Rita Mountains, in the neighborhood of Continental, and in the Santa Catalina Mountains a few miles northeast of Tucson, during August 29th to September 4th, 1948. The first stop on the State Highway route No. 84 going southeast was made near Picacho which is approximately 45 miles northwest of Tucson. It was here on "patches" of a species of flowering willow growing along the highway that I first observed the Snout Butterfly, Libytheana bachmanii, feeding on the blossoms in fair numbers. Having lived in the Midwest - southeastern Michigan - for over twenty years where this species of butterfly is quite a rarity, I was naturally thrilled at having the opportunity to take a nice series within a few minutes. A large number was not taken at this time because I presumed I would have an opportunity to take more later, little realizing to what extent this wish was to be realized.

On the morning of August 29th, I left Tucson presumably on the road toward Continental, but after driving for about ten miles, I found I was going north instead of south. This mistake, however, turned out to be an advantage because before turning around on the highway to "retrace my steps", I noticed a species of butterfly on the wing which was so abundant as to form two waves of insects on either side of the car. This reminded me of a similar experience while driving through swarms of Mayflies (Ephemera) in the Great Lakes area. Naturally being curious as to the species occurring in such unusual numbers, I parked the car and was able to make a determination merely by examining hundreds of specimens caught on the radiator grill. The species was Libytheana bachmanii race larvata (Strecker) which, according to a recent letter from Professor W.T.M. Forbes of Cornell University, differs from the eastern race by lacking the glossy sheen on the under surface of the wings and by being less distinctly marked.

Further collecting during August 29th to September 4th emphasized the abnormal abundance of this species. Every flowering bush or plant attractive to butterflies contained such quantities of bachmanii that the blossoms were often partially or completely obscured. Because of this, choice specimens both in regard to freshness and aberrant forms

could be collected by simply flicking them into a cyanide bottle by means of a finger or by holding the mouth of the bottle over or under them. Everywhere these butterflies were abundant, from the low-lying desert areas all the way to the highest parts of the mountains (8,000 feet in the Santa Catalina Mts.); altitude apparently made little difference as to numbers.

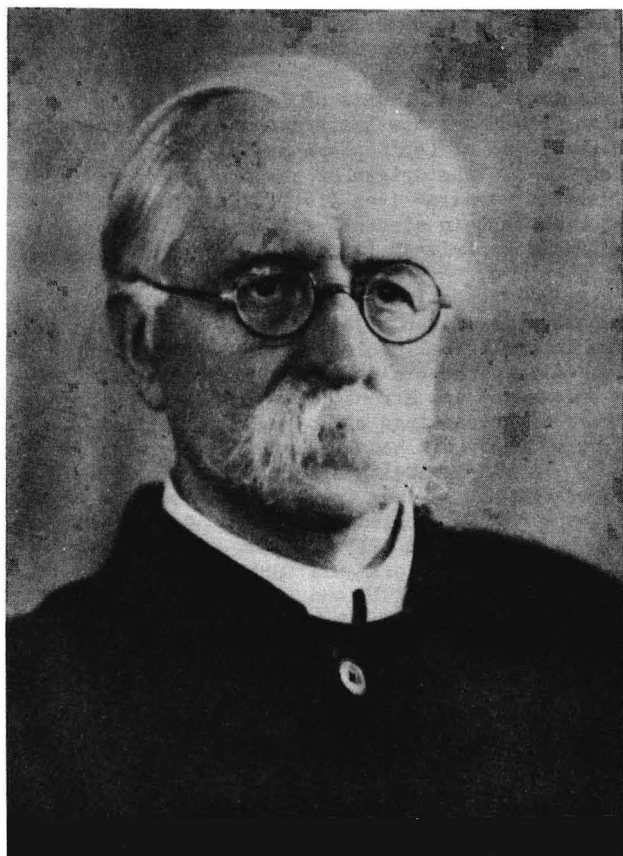
The abundance of L. bachmanii seemed to center more or less within a radius of about twenty to thirty miles around the Tucson area - that is to say, they appeared to become much less numerous outside this particular area.

As Libytheana bachmanii is known to be a migratory species, I tried to observe whether those occurring in and around Tucson were flying in any particular direction. As far as I could observe, there was no direction to their flight. Neither was there any apparent evidence as to the cause or nature of their abundance. The known food plant - hackberry (Celtis sp.) - was not plentiful, at least the only trees or bushes I noticed were in or on the sides of washes in the dry desert areas. The species of hackberry which I presume was Celtis laevigata var. brevipes Sarg. gave no evidence of the presence of larvae or their depredations on the foliage, which is rather unusual considering the vast quantities of adult insects. Unfortunately, the short time I spent in the Tucson area was not long enough to enable me to determine when bachmanii first appeared, how long they were on the wing, or from which direction (if any), they first appeared and disappeared. If, by chance, any lepidopterist living in the Tucson area or collecting in this or other parts of the country during the 1948 season reads this article, it would be extremely interesting if they would publish their experience, particularly if they noted the time when bachmanii was becoming numerous, how long it remained, or any data that might be helpful in solving the problem of butterfly abundance.

Only on one other occasion - in 1908 - have I seen bachmanii in large numbers. This happened while I was fording a small river crossing a dirt highway in a "horse and buggy" near the village of Raccoon Ford in eastern Virginia. In this particular spot numerous hackberry trees, Celtis occidentalis L., were on both sides of the road. This was, of course, the typical race Libytheana b. bachmanii (Kirtland). They were present in very large numbers but only within a radius of a few hundred feet or so and represented such a meager quantity as compared to the numbers I saw in southeastern Arizona that any attempt to make a comparison would be ridiculous. Ordinarily, this species of butterfly is comparatively rare or local in its distribution in the eastern and midwestern States so that it is more or less of a prize to collectors in these sections of the country. In the West, the race larvata is apparently much more plentiful, but rarely, I believe, in such quantities as described above.



NICHOLAS J. KUSNEZOV (1873-1948)



N. J. Kusnezov

N. J. Kusnezov

To the long list of Russian scientists of the old school recently deceased, one more unfortunately must be added. On April 8th, 1948, in Russia, passed away Professor N. J. Kusnezov, 75, known to the world as an eminent lepidopterist. In his own country, he was known also as museum worker, professor, physiologist, faunist, bibliographer, author, editor of textbooks and scientific journals, and translator; also as a very active member of the Russian Entomological Society. He left about 102 scientific papers, including 10 books (translations and textbooks), 22 faunistic lists, 300 articles in three different encyclopedias and dictionaries, several hundred reviews, references, annotations, obituaries, and notes in the journal Revue Russe d'Entomologie, and 11 unpublished manuscripts.

In a self-characterization, Kusnezov labeled himself as a scientific worker in two main fields,

namely: (a) Comparative physiology; (b) Morphology, anatomy, and geographical distribution of insects. He omitted entirely taxonomy of Lepidoptera, where he was very active. That which is very characteristic of him is that in spite of his passion for Lepidoptera and taxonomy, he often cited paradoxically an opinion against what was called by the Germans "Namengeberei", which means a passion to give new names.

In this biographical sketch of Prof. Kusnezov, we will limit the field primarily to his achievements in lepidopterology. Analysing his list of publications, sent to the author May 30, 1941, we find that about half of his contributions are on the subject of taxonomy, geographical distribution, and morphology of Lepidoptera.

Born in a family of a railroad employee May 11, 1873, he accomplished Classical Gymnasium Studies in Pskov (1896) with honors. After graduation from the Physico-Mathematical Faculty of St. Petersburg Imperial University (1895), he became a member of the faculty in the chair of Zoology, Comparative Anatomy, and Physiology. Being elected Junior Zoologist by the Academy of Science (1905) he obtained an opportunity to concentrate on the Lepidoptera in the world famous Zoological Museum. The Zoological Museum became his permanent life-long headquarters. From this time to 1917, Kusnezov was deep in scientific work without deviation.

He spent the long Russian winters in the capital among his books, manuscripts, colleagues, and students; the summers in expeditions and excursions in the Biological Station at Sebastopol or abroad attending scientific congresses. This included the VIII International Congress of Zoology held in Boston, Massachusetts, in 1907, when he visited also New York, Philadelphia, Washington, and Toronto.

In 1908 he was in France and Austria; in 1911 in Germany and Austria. Through his contact with foreign scientists he became a member of scientific societies of London and Berlin and was elected a member of the Permanent Bureau of International Entomological Congresses. He spoke English, German, and French.

Between 1917 and 1925, a lapse of nine years, he published only one paper, as a result of the revolution, civil war, scarcity of paper, and the necessity to work just to make a living. In this dark period, he spent part of his time not far from the abandoned capital of the Tsars in a little farm belonging to his devoted wife's family, who did not choose to cut their ties with the land, and were the fortunate owners of a cow.

The situation improved somehow in 1920 when he was elected assistant professor at his university. In 1922, Kusnezov obtained a still better chance to make a living, entering as instructor in the Institute of Applied Zoology and Phytopathology. He lectured there on physiology and applied entomology until 1941. So since 1922, he became active in applied science; this culminated by his accepting a professorship in the Agricultural Institute in 1934. The number of pupils he left as a result is enormous.

His entry into a new field of applied science is reflected by the appearance of textbooks on subjects dealing with physiology and toxicology including his course of lectures in lithographed form (1923, 1928). His second textbook appeared under the title "Physiology and Toxicology of Insects" (in General Entomology, Moscow, Pt. II, secs. 3-4, 1931, 1935). The physiological studies of Kusnezov were not limited to insects alone. His "Fundamentals of Insect Physiology" (publ. Acad. Sci. URSS) did not appear until after his death. Vol. 1 (1948; 380 pp.) and Vol. 2 (in print 1949) were completed, but Vol. 3 was never finished even in manuscript form. In spite of that Kusnezov received more than one offer to have anything available translated into English.

In 1942, when Leningrad was encircled by the invading armies, not all the scientists were fortunate enough to be evacuated. As a result, many perished during the siege. Kusnezov was evacuated. No doubt his numerous pupils, then in uniform, did help him to escape the horrors of starvation. From July 1942 to August 1944, he lived "in evacuation" beyond the Urals in a resort, Borovoe (Akmolinsk Region), returning to the half empty ex-metropolis to spend there his last four years of life. To the last days, he held two positions, as Senior Zoologist in the Museum and Professor of his University.

As a lepidopterist Kusnezov touched both Microlepidoptera and Macrolepidoptera, and owing to the fact that there were not too many Micro specialists in Russia at the time, he was flooded with parcels and requests for identifications. His studies in Microlepidoptera were stimulated by acquisition of the collection of M. Wocke in perfect shape by the Zoological Museum. He described at least seven new living species of Lepidoptera and established three new living genera.

His first new fossil species was Oligamatites martynovi sp.n. and gen.n. (1929). The specimen was collected in the Oligocene beds of the Semipalatinsk region. About the rest of his fossil insect discoveries and studies, see Lep. News, vol. 2: p. 104, Dec. 1948. His studies in classification of "Danaidae" (= Pieridae), systematic position of the genus Davidiana Obth., and Papilionidae are well-known and took considerable time. He was interested in Sphingidae and Cossidae as well. To improve taxonomic technique he entered the field of venation of wings and published papers on this subject. For the same purpose he studied in detail the morphology of the genitalia of Noctuidae resulting in seven papers on the subject, one of which was published in Woods Hole, Massachusetts.

In Macros, at the time the author of this article first met Kusnezov, he was deep in the studies of the genus Catocala. He had at his disposal a world-wide collection almost complete but accepted with thanks Catocala lupina from Ural Region. He had not less than four papers dealing with this interesting genus.

Geographical distribution of insects, faunas, and regional lists of insects comprise the second largest field of Kusnezov's studies. He identified and compiled the results of his own expeditions and excursions and the materials collected by others especially for the Academy of Science. To this field

belong not less than 22 papers. The more comprehensive are contributions to the Fauna of Russia. The areas covered by lists are: Pskov, Kertch, Crimea, Himalayas, north shore of Aral Sea region, Palearctica, polar Europe, Russia in general. Some papers are sharp and critical analyses of certain foreign elements in local faunas of Lepidoptera. To those belong his "Some new Eastern and American elements in the fauna of Lepidoptera of Polar Europe" (see list 1925), "The Origin of the Lepidopterous fauna of Arctic Eurasia" (see list 1935a), and "On the absence of certain elements from the Lepidopterous fauna of the Crimea" (see list 1930b).

From 1904 to 1910 and later from 1922 to 1933 Kusnezov was editor of all publications of the Russian Entomological Society. From 1901 to 1906 he was also editing the biological section of a dictionary by Brockhouse and Efron. From 1934 to 1937 he was editor of Proceedings of Zoological Institute. A large encyclopedia had his articles from 1928 to 1941. In the Agricultural Encyclopedia 1935 to 1941 the editorial work was that of Kusnezov. He reviewed the works in applied entomology of Russia covering the period from 1917 to 1937. His translation of D. Sharp's "Insects" was published, in installments from 1902 to 1910 and purchased by subscription. It was impatiently awaited by enthusiasts and was immediately out of print. Lempert's Atlas of Microlepidoptera was not only translated and edited by Kusnezov, but it was also enlarged and the title changed as a result (1912-1913). The 4th edition of Kholodkovsky's Textbook of theoretical and applied Entomology, with Lepidoptera by Kusnezov in Vol. 3, was published in 1931. This book is the pride of Russian entomologists, many of them joining in the post mortem glorification of Kholodkovsky. In his last letter to the author of this article, dated June 20, 1947, Kusnezov mentioned his illness that pinned him to his bed as chronic cholecystitis. He promised to send his Physiology of Insects when published. In his previous letter of February 16, 1947, he asked to be sent several views of New York. He wanted to compare "what mankind in the Western Hemisphere accomplished during half a century". "My personal impression of America", he wrote, "was very favorable, but I was also half a century younger. My life here is all the same in the same environment. I do not know if it is what one may call happiness?" The photograph given above Kusnezov sent earlier, inscribing it on the back with the date, 18 June 1947. To commemorate Kusnezov's death, a joint meeting of 4 scientific bodies took place on May 10, 1948. The big four were: Zoological Institute of the Academy of Science, All Union Entomological Society, Biological Faculty of the University, and Society of Naturalists. The speakers were Academician E.N. Pavlovsky, Prof. M.N. Rimsky-Korsakoff, A.S. Danilevsky, and Dr. I.V. Kozhanchikoff. A special issue of a journal or a pamphlet devoted to the memory of the late Professor was offered and accepted.

On the following page is a short list of scientific publications of Professor Kusnezov. The complete life list comprises 102 entries. Various translations and textbooks considered above are omitted. Most of Kusnezov's papers on any aspect of Lepidoptera are included.

D.N. Borodin
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PARTIAL LIFE BIBLIOGRAPHY OF N.J. KUSNEZOV

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- 1902b. "On two new species of *Biston* Leach (*Amphidasis* Tr.) from Amoorland." (In Russ.) *Ibid.*, vol.35: pp.42-48.
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- 1904a. "*Malacodea regelaria* Tengstr. in the environs of St. Petersburg." (In Russ.) *Ibid.*, vol.4.
- 1904b. "Gynandromorphous specimen of *Porhetria dispar* L." (In Russ.) *Ibid.*, vol.4.
- 1904c. "On the development of eye-like spots on caterpillars of *Deilephila nerii* L. and *Porgesa porcellus* L." (In Russ.) *Ibid.*, vol.4: pp.154-161.
- 1904d. "Beitrag zur Kenntniss der Grossschmetterlinge des Gouvernements Pskov (Pleskau). Erster nachtrag." *Horae Soc. Ent. Ross.*, vol.37: pp.17-70.
- 1905a. "New data on occurrence of *Malacodea regelaria* Tengstr. in outskirts of St. Petersburg." (In Russ.) *Rev. Russe d'Ent.*, vol.5.
- 1905b. "On the question of the significance of the coloration of the hind wings in *Catocala* species." (In Russ.) *Ibid.*, vol.5.
- 1906a. "Zur Frage über die Licht-Experimente mit Lepidopteren." (In German.) *Zeits. Wiss.Insektenbiol.*, vol.2: pp.43-44.
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- 1908b. "Nouveau genre paléarctique de Noctuidae." (In Russ.) *Ibid.*, vol.13: pp.65-68.
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- 1912-1913. Transl. of Lampert's Atlas of Microlepidoptera. (In Russ.) St. Petersburg.
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- 1913b. "On schematization of the wing venation pattern of Lepidoptera." (In Russ.) *Ibid.*, vol.13.
1914. "On the Morphology of the genital apparatus of the Lepidoptera." (In Russ.) *Ibid.*, vol.14: pp. xiii-xv.
- 1915a. "On the chaetotaxy of the Hepialid larvae." (In Russ. & English.) *Ibid.*, vol.14: pp.449-459.
- 1915b. "Certains éléments de la faune des Lépidoptères de la région paléarctique." (In Russ.) *Ibid.*, vol.15: pp.liii-lv.
- 1915c. "On several cases of gynandromorphism among the Lepidoptera." (In Russ.) *Ibid.*, vol.15: pp.lvii-lx.
- 1915d. "Description of *Parametriotes* these gen.n., sp.n., a new enemy of tea bush on Transcaucasia." (In Russ. & English.) *Ibid.*, vol.15: pp.626-652, pls.v-ix.
- 1915e, 1929. "Insectes Lépidoptères (Insecta Lepidoptera)" in "Faune de la Russie". (In Russ.) *Mus. Zool. Acad. Sci.* (Leningrad): vol.1: pp.i-cccxxvi, 1915; vol.2: pp.cccxxvii-dxcix, 1-64, 233 figs., 1929.
- 1916a. "Lepidoptera in Nasonov's Zoological Collection of Hydrographic Expedition to the Arctic Ocean." (In Russ.) *Ann. Mus. Zool. St. Petersburg*.
- 1916b. "On caterpillar of *Amorpha tremulae* Tr." (In Russ.) *Rev. Russe d'Ent.*, vol.16.
- 1917a. "Contributions to the morphology of the genital apparatus in Lepidoptera. Some cases of gynandromorphism." (In Russ.) *Ibid.*, vol.16: pp.151-191, 19 figs.
- 1917b. "On the classification of the family Danaidae (Pieridae auct.)." (In Russ.) *Ibid.*, vol.17.
1921. "On taxonomic conceptions and efforts for their use on the basis of morphological data." (In Russ. & English.) *Ibid.*, vol.17: pp.53-80.
1925. "Some new Eastern and American elements in the fauna of Lepidoptera of Polar Europe." *Compt. Rend. Acad. Sci. U.R.S.S.* (A), 1925: pp.119-122.
1926. "The morphology of copulatory structures in some cases of gynandromorphism in Lepidoptera." *Biol. Bull.* vol.51: pp.245-256, 10 figs.
1928. "*Oligamatites martynovi*, gen. et sp.n., a fossil Amatid Lepidopteron from the Oligocene beds of Central Asia." (In English.) *Compt. Rend. Acad. Sci. U.R.S.S.* (A), 1928: pp.431-436, 1 fig.
- 1929a. "The cycle of development and morphology of *Malacodea regelaria* Tengstr. in comparison with European species of *Operophtera* Hb. on the question of micropterism." (In Russ.) *Rev. Russe d'Ent.*, vol.23: pp.11-31, 4 pls., 3 figs.
- 1929b. "Sur le manque de quelques éléments dans la faune des Lépidoptères de la Crimée." (In Russ.) *Compt. Rend. Acad. Sci. U.R.S.S.*, 1929: pp.321-326.
- 1930a. "Dépendance entre la distribution géographique des Asciidae (Lepidoptera) et la distribution ainsi que la constitution chimique de leur plantes nourricières." (In Russ.) *Ann. Mus. Zool. Acad. Leningrad*, vol.31: pp.49-63.
- 1930b. "On the absence of certain elements from the Lepidopterous fauna of the Crimea." *Entomologist*, vol.63: pp.103-106, 128-132.
- 1930c. "Abhängigkeit der geographischen Verbreitung der Weisslinge, Asciidae, von der Verbreitung ihre Futterpflanzen und der chemischen Zusammensetzung der letzteren." (In German.) *Zeitschr. Morph. Oekol. Tiere*, vol.17: pp.778-794.
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- 1935a. "The origin of the Lepidopterous fauna of Arctic Eurasia (Prelim. note)." *Arctica*, vol.3: pp.115-136.
- 1935b. Transl. of Wigglesworth, V.B., *The Principles of Insect Physiology*. (In Russ.)
1938. "The Arctic fauna of Eurasia and its origin." (In Russ.) *Bull. Acad. Sci. U.R.S.S., Ser. Biol.*, 1938: pp.105-115; *Trav. Inst. Zool. Acad. Sci. U.R.S.S.*, vol.5: pp.1-85.
1941. "A Revision of the Amber Lepidoptera." (In Russ. & English.) *Edition Acad. Sci. U.R.S.S.* (Moscow): 135 pp., 31 pls.



13. The Migration of Butterflies by C.B. Williams*

Readers of the Lep. News who had not already known of Dr. Williams as the leading world authority on butterfly migration met him through his article in the preceding issue of the News (pp.17-18). The following issue will contain his second article.

In the introduction to his book, Dr. Williams states the objects as follows (pp.2-3):

"Firstly, to establish by force of evidence, the reality and especially the wilful nature of the unidirectional flights.

"Secondly, by collecting all available records of such flights, to try and discover the actual facts of the case with regard to as many species as possible.

"Thirdly, to trace the connection between these flights and the periodic changes in distribution area.

"Fourthly, to compare the combined phenomena, for which I believe the world 'migration' can be used without any undue misapplication, with the somewhat similar habits found in other insects, birds, fishes and some mammals and to see to what extent they resemble or differ from each other.

"And finally, to discuss the possible causes, both original and immediate, and the meaning and results of these phenomena."

Conclusions are developed convincingly on each of these points except the third, for which the information available seems to be insufficient.

Migrations are classed as: (a) those with a return flight, which may occur on the same day (see Ehrlich, Lep. News 2: p.92 - Papilio glaucus), later in the same flight (Catopsilia spp.), or at a different season (Danaus plexippus); (b) those without a return flight, with one migration season in a year (Pieris brassicae) or with two (Papilio polytes).

All known published records of butterfly migration in all parts of the world are set forth systematically and geographically in eleven chapters, with 1272 records of 214 species. Records and species are overwhelmingly most numerous for Pieridae and Nymphalidae, with Papilionidae, Lycaenidae, and Hesperidae weakly represented. Pieris brassicae, Danaus plexippus, and Vanessa cardui are the champion migrants. The migration of moths is considered in one chapter. The last seven chapters are devoted to general discussions. A valuable bibliography occupies 27 pages.

Every butterfly collector who is interested in the meaning of field observations will find this a frequently consulted volume for his bookshelf.

----- C.L. Remington

* Pp. 473; 71 figs. 1930. Edinburgh and London (Oliver & Boyd). U.S.A. agents: Stechert-Hafner, Inc., 31 East 10th St., New York 3, N.Y. Price, new, about \$3.75 net.



ON THE PRIORITY OF CTENUCHIDAE KIRBY, 1837

In vol.2: p.103, of The Lepidopterists' News (1948), S.G. Kiriakoff tries to justify the validity of AMATIDAE over CTENUCHIDAE, quoting several of the Rules in support of his opinion. It is true the Rules do not mention the chronological priority of family names, but for quite a long time, entomologists, not to mention zoologists in other fields, have adopted certain provisional rules based on common sense as a working basis for their research in Systematics. The general trend seems to be the retaining of the name first used, as long as its formation was correct, thus extending the concept used in genera and species.

In our case, we have the following historical outlay:

1) Snellen, 1867, proposed the family name SYNTOMIDAE with Syntomis as its type genus. Syntomis, however, became a synonym of Amata, and on this account the name AMATIDAE was proposed by Jansen, 1917, as a substitute to SYNTOMIDAE.

2) Before Jansen, however, Neumoegen & Dyar, 1893, had proposed the name EUCHROMIIDAE, having Euchromia as the type genus. This name of course could not prevail in relation to SYNTOMIDAE, but certainly had priority on AMATIDAE.

3) But before all other authors, Kirby, 1837, had published the name CTENUCHIDAE having Ctenucha as its type genus.

Thus, we have three genera in the same family, originating three family names, all of them constructed in accordance to Rule 4 of the Code.

Ctenucha -- CTENUCHIDAE Kirby, 1837

Euchromia -- EUCHROMIIDAE Neumoegen & Dyar, 1893

Amata (= Syntomis) -- AMATIDAE Jansen, 1917

(= SYNTOMIDAE Snellen, 1867)

On a priority basis, no valid reason supports AMATIDAE as the name for this family. In the case of Ctenucha being split from the group, EUCHROMIIDAE would be considered as the following available name, and only the remote possibility of Euchromia also being split from the group would leave AMATIDAE as the remaining available name, as desired by Kiriakoff.

Supposing these genera had originated three distinct families, in their subsequent lumping no zoologist would for a moment think of using any but the oldest name.

I would recommend, on this subject, the very useful paper by R.F. d'Almeida- "Sobre a nomenclatura de alguns grupos superiores da ordem Lepidoptera. 2a. Nota: Familias Lasiocampidae, Lymantriidae, Mimallonidae e Uraniidae e superfamilia Arctioidea." Arquiv. Mus. Paranaense, Curitiba, Brasil, vol.3: pp.131-143, 1943 - where this question is very thoroughly examined, and based on a quite extensive bibliography. Most probably this work has been overlooked by Kiriakoff.

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RECENT LITERATURE ON LEPIDOPTERA

53. Alibert, H., "Note sur un nouvel insecte vivant sur goyavier en Côte d'Ivoire." *Agron. Trop.*, vol.2: pp.69-71, 3 figs. 1947. [Abstract in *Rev. App. Ent.* (A), vol.36: pp.389-390.] *Pesmeocraera varia* (Notodont.): all stages described; notes on habits. (F.B.)
54. Bentick, G.A., "Bijzondere vangsten van Lepidoptera." (Captures of rare Lepidoptera.) (In Dutch.) *Tijdschr. v. Ent.*, vol.90; Verslag: pp.43-44. 1 Nov. 1948. 10 rare species captured in Holland in 1947, of which *Lithocolletis padella* and true *Caloptilia elongella* (formerly *C. betulicola* has been erroneously recorded under latter name) are new for the fauna of Holland. (A.D.)
55. Berger, L.A., "Remarques sur la faune belge." (In French.) *Lambillionea*, vol.49: pp.15-18. Feb. 1949. Notes on several butterflies and moths in Belgium.
56. Berger, L.A. & M. Fontaine, "Une espèce méconnue du genre *Colias* F." (In French.) *Lambillionea*, vol.47: pp.91-98; vol.48: pp.12-15, 21-24, 90-110, 1 pl. Dec. 1947, Feb., Apr., Dec. 1948. For very many years two distinct spp. have gone under name of *Colias hyale*. This remarkable paper contrasts crisply and clearly the new species with *hyale* on basis of adult color and pattern of wings and body, adult odor, environment, host plants (always *Hippocrepis comosa* for n.sp., many legumes for *C. hyale*), ovum, larva, pupa. N.sp. known from N.W. France and S. England to Ural Mts. and Persia. *C. hyale* does not occur as far south, but reaches eastern Siberia. Name selected for n.sp. is *C. alfacariensis* Ribbe, 1905, presumably used for local form. The 1948 revision of the International Rules may make possible another name. Excellent photos of n.sp. and *hyale*. One of the most thorough, interesting papers on butterflies in many years.
57. Berthet, H., "Note sur *Parastichtis* (*Orthosia* auct.) *suspecta* Hbn. (iners Germ.)." (In French.) *Rev. franç. Lépid.*, vol.11: pp.334-335. June 1948. Records specimens from Barlelonnette and Étages-en-Oisans.
58. Betz, J.-T., "Assiste-t-on, actuellement à une extension de l'aire de dispersion d'*Araschnia levana*, L.?" (In French.) *Rev. franç. Lépid.*, vol.11: pp.330-334. June 1948. Evidence of northward extension of range of *A. levana* in N. France.
59. Cleu, H., "*Oxycesta serratae* Zerny. Noctuidae nouvelle pour la faune de France." (In French.) *Rev. franç. Lépid.*, vol.11: pp.329-330. June 1948.
60. Dufrane, Abel, "Lépidoptères du Kivu." (In French.) *Bull. & Ann. Soc. Ent. Belgique*, vol.84: pp.160-168. 1948. 4th of a series on Kivu (Africa). Gives names to 5 variants. Describes briefly as new (races?): *Anapheis calypso dentigera* f. *tsangerensis* (sic!); *Appias phaola* r. *intermedia*, *Mylothris* r. *rhodope r. manuanensis* (sic!); no figures. Uses extensive footnotes to reply to criticisms of Berger (see *Lep. News* 3: p.21, #18) and there names new form.
61. Dufrane, Abel, "Zygènes de la faune belge." (In French.) *Lambillionea*, vol.49: pp.5-7. Feb. 1949. Describes as new [*Zygaena*] *filipendulae* ssp. *jotrandi* (Harmignies, Belgium); no figs. New records: *Z. filipendulae* ssp. *limnica*.
62. Hering, M., "Les mines de *Lithocolletis* des *Alnus*." (In French.) *Rev. franç. Lépid.*, vol.11: pp.318-323, 5 figs. June 1948. Describes and gives key to leaf mines of *L. stettinensis*, *strigulatella*, *suaveolentis*, *alpina* and *hauderella*, *froelichiella*, *klemannel-la*, *rajella*, with figs. of last 3. All feed on Alder (*Alnus*); lists 10 spp. of *Alnus*, with *Lithocolletis* known on each. A great aid to field microlepidopterists!
63. Hovanitz, William, "Ecological Segregation of Inter-Fertile Species of *Colias*." *Ecology*, vol.29: pp.461-469, 1 fig. Oct. 1948. Found in S. Ohio, S. Michigan, N. Illinois: *C. philodice* commonest in red clover fields and *C. gurytheme* commonest in alfalfa fields, with males being more selective than females. Cutting an alfalfa field changed proportions of species.
64. Janmouille, E., "Espèces nouvelles pour la faune belge." (In French.) *Lambillionea*, vol.48: pp.50, 82-83. Aug., Dec. 1948. Records: *Conchylis vectisana*, *Grapholitha microgrammana*, *Teleia saltuum*, *Tinea ditella*.
65. Kiriakoff, S.G., "Recherches sur les organes tympaniques des Lépidoptères en rapport avec la classification." (In French.) *Bull. & Ann. Soc. Ent. Belgique*, vol.84: pp.231-276, 3 pls. 1948. Investigation of phylogenetic significance of tympanic organs in family Ctenuchidae. 130 spp. of 62 genera studied by dissection, following technique of A.G. Richards (technique given); organs of 75 spp. described in some detail and 15 figured. Latin terminology proposed for 11 common structures of tympanum. Three distinct groupings of tympanal structures reported: 1) rudimentary type - Old World genera plus *Chrysocale*; 2) well-developed organs of "noctuide" type - New World genera plus *Euchromia*; 3) well-developed organs with a vibrating membrane ("tympan du type à timbale") - African genera. Latter type is so different from first two and so uniform for latter genera that new family THYRETIDAE (type - *Thyretes*) is erected. New genus *ASTRIDIA* (type - *A. angustata* Moschler) based on specialized tympanum (in type 2, above). A significant paper!
66. Legras, L., "Au jardin des Hespérides." (In French.) *Rev. franç. Lépid.*, vol.11: pp.315-317. June 1948. Notes on Lepidoptera collecting at Compe, S. France.
67. Lempke, B.J., "Bestrijding van schimmel bij kweek-en." (Control of mould in breeding experiments.) (In Dutch.) *Entom. Berichten*, vol.12: pp.291-292. 1 Nov. 1948. The author recommends a method published by R.L.S. Ford, *Proc. Roy. Ent. Soc. Lond.* (A) vol.22: pp.86-88, 1947, and also demonstrated to him by Dr. H.B.D. Kettlewell, England; this method is especially useful in breeding on a large scale, e.g., in experiments with genetics of Lepidoptera. Larvae on a branch of the food plant are covered with a bag of mosquito netting and placed in a jar with water on the bottom of a wooden vessel which has been sprayed with a 3% common salt solution; this prevents development of mould and reduced mortality of larvae considerably. (A.D.) (See *Lep. News* 2: p.19, no.54).
68. MacGillavry, D., "Insecten op Amerikaanse eik" (Insects of American oak - *Quercus borealis* Mign. v. *maxima* Sarg.) (In Dutch.) *Entom. Berichten*, vol.12: pp.289-291. 1 Nov. 1948. *Phalaena bucephala* and *Orthosia incerta* recorded on this food plant in Holland. (A.D.)
69. Meer Mohr, J.C. van der, "Some notes on the life history of the Maize Borer." *Chronica Naturae*, vol.105: pp.74-78. March 1949. *Pyrausta nubilalis* (Pyralidae) is a serious pest of maize at the E. coast of Sumatra. Development covers 1½ months, occurrence is continuous throughout the year. List of wild food plants is given. Parasites are of very minor importance. (A.D.)
70. Meer Mohr, J.C. van der, "A note on the Green Rice Moth, *Dolocessa viridis* Zell." *Chronica Naturae*, vol.105: pp.79-80. D. v. (= *Thagora figurana* Walk.) is a pest of stored rice and maize at the E. coast of Sumatra. A short description of stages and remarks on feeding habits and development. (A.D.)

71. Munroe, Eugene, "A new genus of Nymphalidae and its affinities (Lepidoptera, Rhopalocera)." Journ. N.Y. Ent. Soc., vol.57: pp.67-78. Mar. 1949. Reviews the genera Ergolis, Laringa, Eurytela, Byblis, Neptidopsis, Mesoxantha, Mestra, Vila, and Biblis, and gives their generic synonymies. The author erects a new genus, Archimestra, with genotype Argynnis teleboas Menetries, (1832). Query as to whether Cystineura can be considered a synonym of Mestra, since they are both monotypical and their genotypes are not conspecific. (G.d.P.)
72. Nabokov, V., "A New Species of Cyclargus Nabokov (Lycaenidae, Lepidoptera)." Entomologist, vol.81: pp.273-280, 11 figs. Dec. 1948. Describes as new C. erembis (Little Cayman Is.). Wing pattern, genitalia, scales figured in detail. Predicts erembis will be found in Cuba sympatrically with C. ammon.
73. Nabokov, V., "The Nearctic Members of the Genus Lycaeides Hübner (Lycaenidae, Lepidoptera)." Bull. Mus. Comp. Zool., vol.101: pp.479-541, 9 pls. Feb. 1949. Lycaeides, in restricted sense, limited to 3 spp. (nowhere clearly distinguished): argyrognomen - Holarctic; ismenias - Palearctic; melissa - Nearctic. Describes in great detail, with photos, Nearctic races of argyrognomen as follows: anna, ricei, lotis, alaskensis, scudderi, aster, ferniensis, atraxipretectus, sublivens (subsp. nov. - Telluride, Colo.), longinus (subsp. nov. - Jackson Hole, Wyo.); of melissa as follows: melissa, pseudosammelis (subsp. nov. - Pitkin Co., Colo.), invoensis, annetta, sammelis. Very detailed synonymies. Also photos of imm. Palearctic races of ismenias and argyrognomen. Clearly the result of patient painstaking work, but difficult or impossible to understand completely because of lack of yes-or-no summaries or keys.
74. Picard, J., "Nouvelles races d'Hesperidae françaises." (In French.) Rev. franç. Lépid., vol.11: pp.324-328. June 1948. Describes as new skippers from France: Carcharodus alceas race corsicus (Calvi, Corsica), Reverdinus lavatherae r. pyrenaicus (Gêdre), Pyrgus alveus r. lutetianus (Forêt de Saint-Germain), P. bellieri r. adkini (Bagnol-les-Bains), Heteropterus morpheus r. vasconiae (Biarritz). No figures.
75. Poivre, R., "Notes sur quelques espèces capturées au plateau d'Assy (Haute-Savoie)." (In French) Rev. franç. Lépid., vol.11: pp.344-347. Sept. 1948. Records of 6 spp. of moths.
76. Praviel, G., "Angiades sylvanus Esper ssp. nicaeensis nov." (In French.) Rev. franç. Lépid., vol. 11: p.324. June 1948. Describes Maritime Alps sylvanus as new race nicaeensis (Nice). No figure.
77. Rupert, Laurence R., "A revision of the North American species of the genus Plagodis (Lepidoptera, Geometridae, Ennominae)." Journ. N.Y. Ent. Soc., vol.57: pp.19-48, pls.1-5. Mar. 1949. Discusses and figures, including the male and female genitalia and some preparatory stages, P. serinaria, P. kuetsingi, P. purpuraria, P. phlogosaria, P. fervidaria, P. alcoolaria, and some subspecific and seasonal forms. P. phlogosaria iris is proposed as a new race (subspecies) from Armdale, Nova Scotia. Holotype and allotype in the U.S.N.M. (G.d.P.)
78. Rüttimeyer, E., "Mise au point au sujet de mon article sur Coenonympha leander var. gallica m. et report de cette variété à Coenonympha iphis." (In French.) Rev. franç. Lépid., vol.11: pp.312-315. June 1948. Agrees that his race gallica should belong to C. iphis instead of C. leander, gives table for distinguishing the 2 spp.
79. Sarlet, L., "Un cas d'atavisme intéressant chez la femelle d'Erannis leucophaearia Schiff." (In French.) Lambillionea, vol.48: pp.78-79. Oct. 1948. Remarkable specimen of (normally wingless) female of this species, showing much more wing rudiment than usual.
80. Sevastopulo, D.G., "The colour relationship between certain pupae and their surroundings." Proc. Roy. Ent. Soc. London (A), vol.23: pp.93-95. 28 Dec. 1948. Reports tests on Papilio polytes, P. demoleus and Danaus chrysippus, to determine effect, if any, of background color on pupal color. Results negative. (P.B.)
81. Storace, L., "Quelques observations sur l'exerge antinorii Oberthür de Papilio dardanus Brown." (In French.) Lambillionea, vol.48: pp.65-73. Oct. 1948. Discussion of this African Papilio.
82. Toxopeus, L.J., "Notes on Lymantriidae, with a partial revision of the genus Redoa Wlk. (Results of the Third Archbold Expedition 1938-1939)." (In English). Treubia, vol.19: pp.429-481. 1948. Divided in 8 chapters as follows. 1. Notes on the family name Lymantria. 2. An annotated list of the species of Lymantria from Java: 16 spp. recorded of which 4 for the first time from this island; new are: L. capnodes bisextilis, L. vasatrix; L. marginalis harimda Roepke is redescribed. 3. Synonymy of Lymantria minor Van Eecke; synonyms are Dura panthera v. Eecke and L. pendelburyi Coll. 4. Notes on the genus Imaus Moore and related genera; new PSILOCHIRA g.n., P. lineata nycthemera subsp. n., (Borneo) Imaus mundus collenettei subsp. n. (Java). 5. A tabular review of Leucoma group of genera; a key for 13 genera, new is CANDIDATA (Amboina). 6. A provisional tabular review of the oriental species of the genus Redoa Walk. 57 spp. and 1 subsp. are reviewed, of which are new: from Sumatra: R. diatreta, byssina; from Borneo: isabella, clavigera, flaminea, sparsa, linteola, arborchristi, prasioneura, rhopica, salebrosa, corrugata, adusta, satinata, erasmia; from Java: salsa, phrika, gedea, galene, galanthina, velutina; from New Guinea: flaccida, palea. 7. Nygmia icilia (Stoll.) and allied forms: distribution of 9 Indo-Malayan subspp. 8. Five new genera of the Nygmia group: FRONYGMIA (India, Java) with P. xanthopora punctata subsp. n., (Java); MICCOTROGIA (Malaya, Java); MICRONYGMIA (Malaya, Sumatra, Borneo), with M. oreolinta sp. n. (Java); XANTHONYGMIA (Borneo) with X. oculata sp. n. (Borneo); BRADYTERA (Java, Sumatra). Photographs are given of Imaida sinuata sp. n., Imaus mundus collenettei subsp. n., Lymantria vasatrix sp. n., L. ossea sp. n., L. minor v. Eecke, neallotype ♀. Neurations of Psilochira lineata nycthemera and of Imaida sinuata are figured. (A.D.)
83. Travassos, Lauro, "Contribuição ao Conhecimento dos 'Arctiidae'. XVI. (Lepidoptera, Heterocera)." Rev. Brasil. Biol., vol.8: pp.493-504, 6 figs. Dec. 1948. Deals with the genus Phegoptera. A review of the taxonomic history of the genus is given. The genus itself, and the typical species, P. histrionica, are described in great detail, with figures of wing pattern, adults of both sexes, venation, genitalia, tarsi, and palpi. (P.B.)
84. Viète, P., "Contribution à l'étude des Micropterygidae (2^e note). Descriptions des genitalia mâles de quelques espèces de Micropteryx." (In French.) Rev. franç. Lépid., vol.11: pp.340-344, 6 figs. Describes and figures ♂ genitalia of M. aureoviridella, imperfectella, islamella, myrtella, octopunctella.
85. Wellington, E.F., "Artificial Medium for Larval Rearing." Forest Insect Investigations Bi-mon. Prog. Rept., vol.5: p.2. Jan.-Feb. 1949. Medium for rearing Choristoneura fumiferana and 3 other spp. with similar habits. Thrive on hardened slabs of foliage-water suspension mixed in Waring Blender with hot agar and "Mycoban" (micro-organism inhibitor). Lepidoptera feeding externally on foliage will not take the medium. A most significant technique for large-scale rearing work, such as genetics!



NOTICES BY MEMBERS

All members may use this column to advertise their offerings and needs in Lepidoptera. There is no cost for this service. Unless withdrawn sooner by the member, each notice will appear in TWO consecutive issues.

Wanted: information on the distribution of Utah LYCAENIDAE in various collections. Please send notices of availability of material. John C. Downey, Biology Dept., Univ. of Utah, Salt Lake City 1, Utah.

AGENT WANTED IN U.S.A. who can sell our whole 1949 catch, to be collected in faunistically rich Khasi and Naga Hills of northern India: including butterflies and many other orders of insects. Total will be about 1,000,000 specimens. Please contact us for our terms. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Have a quantity of Urania riphaeus from Madagascar, first-quality papered specimens, for exchange by 100 or 1000. Also have Morpho amathonte, menelaus, aega, etc. by one or a dozen, and thousands of other butterflies for exchange, for what have you? Butterfly World Supply House, 289 E. 98th St., Brooklyn 12, N.Y.

All sizes of black steel insect pins from Czechoslovakia for sale at \$3.00 per 1000 or \$25.00 for 10,000. Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

For sale: "THE MACROLEPIDOPTERA OF THE WORLD" by A. Seitz. Vol. 5, the North & South American butterflies in four volumes; bound in buckram. Vol. 9, the Indo-Australian butterflies in two volumes; bound in buckram and calf. Both sets complete, all plates intact, in GOOD condition. Price \$250.00. M. Spelman, 2781 Grand Concourse, New York 58, N.Y.

Wanted immediately for generic revision, all species of genus Annaphila Grt. EXCEPTING A. divimula 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.

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.

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.

THE NEW BIO METAL STANDARD redwood box, with screw-on hinges and mitered corners at shoulders. 9 x 13 x 2½ inches. \$2.10 each, \$24.00 dozen.

Bio Metal Associates announces its new COMSTOCK BOX. White pine frame, birch veneer top and bottom, finest composition white paper lined. Hand-rubbed lacquer finish; hinges inside and hidden; 13 x 9 x 2½ inches. \$3.85 each, quantity discounts. Bio Metal Associates, Box 346, Beverly Hills, 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.

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

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. Specimens perfect and with full data. Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

Wanted to buy: THE MOTH BOOK, by W.J. Holland (1937), in good condition.

Mrs. Emily Henriksen, Orcas Island, East Sound, Wash.



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.

Living OVA for sale or exchange (in season): Citheronia regalis, Eacles imperialis, Samia gloveri, hybrid cecropia-gloveri, Actias luna, Automeris io, Telesia polyphe-mus. Duke Downey, 51 W. 4th St., Sheridan Wyo.

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.

Contacts desired to obtain live pupae of Sphingidae and Saturniidae, and eggs of Catocalinae. Dr. v. Frosch, 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.



MAX MINOR PEET

Dr. Max Minor Peet, world famous surgeon, died suddenly at Ann Arbor, Mich., Mar. 25, 1949. Between assignments in medicine he found time to do much creditable work in zoology, being especially widely known as an ornithologist. His collections of Lepidoptera in the University of Michigan Museum add much to our knowledge of the fauna of some of the little-known parts of the State.

Ralph Beebe
Ecorse, Michigan

Edward Coher has recently left Massachusetts to spend a year on entomological research in Brazil, centering his activities at São Paulo.

Q. "Are there any collection records of Megathymus ursus since the types were collected almost 50 years ago?" (Ed. Note: Prof. Forbes referred this question to Mr. E.L. Bell.)

A. As far as I know there are no published records of further captures of Megathymus ursus Poling since the original description in 1902, other than the mention by Barnes & McDunnough (1912. Contributions, 1 (3), pp.36 and 43) in the collection of Mr. O.C. Poling. However there are three specimens in the collection of the United States National Museum, Washington, D.C., all of them females, and Mr. W.D. Field of that Museum has kindly sent to me the data accompanying them. The type specimen upon which Poling based his description of ursus bears the locality label "So. Arizona Poling" without date of capture; another specimen bears the locality label "Redington Ariz.", also without date of capture; the third specimen bears the locality label "Santa Catalina Mts. Ariz. Pinal Co." and the date of capture label "Aug. 16-23". Barnes & McDunnough state that as far as they knew then, approximately ten years after the description of ursus, there were only two specimens in existence, the type in the Barnes collection and another specimen in the collection of Mr. O.C. Poling and that no individuals had been observed since 1903. They also say that between 1901 and 1903 some 8 or 10 individuals were observed in the beginning of September and that of these but two were captured, the type in the Barnes collection and the specimen in the Poling collection. Thus the third specimen mentioned above having been captured in August may have been taken subsequent to the publication of the Barnes & McDunnough paper in 1912, at any rate apparently it was not known to them at the time.

Ernest L. Bell

Q. "For some time I have tried to find Lepidoptera larvae feeding on "Club Mosses" (Lycopodium) without any luck. Are any species known to feed on these plants?"

A. I know only Sparganthis lycopodiana Kft. which is not structurally separable from S. sulfureana Clem., and may be merely a color form. Probably a few other caterpillars of the groups reported as feeding on "mosses and lichens" might be found occasionally.

W.T.M. Forbes



The biographical notes and list of publications of Professor Kusnezov presented by Mr. Borodin on pp. 29-31 were given an unusually large portion of this issue of the Lep. News because scientific publications of Russia, which may contain an account of Kusnezov, have a very small world distribution and in recent years have been almost entirely in the Russian language, probably not understood by most News readers. In the interests of international lepidopterology we consider a proper account of Kusnezov important. (See vol.2: p.110).

C.L.R.



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ADDITIONS TO THE MEMBERSHIP LIST

- Beebe, William (Dr.), Zoological Park, New York 60, N.Y. RHOP. MACRO. Ecology, Life History. Coll.
- FROEMEL, E.A., Columbus, Nebraska. RHOP. MACRO: esp. Catocala. Coll. Ex. Buy.
- Gatti, Arthur, 63 W. Seventh St., Mt. Vernon, N.Y. RHOP: esp. Papilionidae, Morphidae, Brassolidae, Nymphalidae, Amathusidae. Coll. Ex. Buy. Sell.
- Jones, Frank Morton (Dr.), 2000 Riverview Ave., Wilmington, Dela. LEPID: esp. Psychidae. Coll. Ex. Buy.
- Kessler, Francis D., 333 Elmwood Ave., Buffalo 9, N.Y. MACRO: esp. Saturniidae. Life History. Buy.
- Leuschner, Ronald, 1172 S. Wenonah Ave., Oak Park, Ill. RHOP: esp. Speyeria, Brenthis, Melitaea. Coll. Ex. MACRO.
- Sicher, Harry (Dr.), Loyola Univ. School of Dentistry, 1757 W. Harrison St., Chicago 12, Ill.
- Stein, George L., c/o Laue, 706 Greythorne Rd., Wynnewood, Pa. RHOP: esp. Papilionidae, Morphidae, Nymphalidae. MACRO: esp. Castniidae, Saturniidae, Sphingidae. Life History. Coll. Ex. Buy. Sell.

CHANGES OF ADDRESS

- Adelpe, Rev. Brother, École Supérieure Richard, 200 Rue Galt, Verdun, P.Q., CANADA.
- Crystal, Bruce W., 7955 "F" St., Dexter, Mich.
- Lewallen, L.L., 3530 Myers St., Arlington, Calif.
- McElvare, R.R., 26 Bogart Ave., Fort Washington, N.Y.
- Robinson, P.F., 115 Union St., Westfield, Mass.
- Smalley, S.B., 1079 Asbury Rd., Cincinnati 30, Ohio.
- Sweetman, H.E., 300 N. Dakota Ave., Sioux Falls, S.D.

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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.