The Lepidopterists' News

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SOME ORIGINAL PAINTINGS BY JOHN ABBOT*

by Bryan P. Beirne

The discovery of 38 apparently unpublished original water-color paintings of life-histories of Lepidoptera by John Abbot is of some interest. The paintings are bound in a folio volume that was advertised for sale by a bookseller in Bristol, England, some years before the Second World War and that was bought by Mr. Seumas O'Sullivan, of Dublin, Ireland, from whom I obtained it in 1943. In that year I sent it to Mr. T. Bainbrigge Fletcher, who identified the paintings as the work of Abbot and suggested that he retain the volume for safekeeping during the War. At the end of the War Mr. Fletcher became seriously ill and was unable to receive or answer letters. In 1949 his library was dispersed and the volume came into the possession of Mr. Eric W. Classey, natural history bookseller of Feltham, Middlesex, England, who kindly returned it to me.

The volume is bound in soft leather, dark maroon in color, with gilt lines near the margins of the covers and on the spine, and with gilt-edged pages. It measures 10 by 13 inches. The fly-leaves are black. There are four blank leaves at the front and two at the back. These are of different paper from that of the leaves with the paintings. The 38 paintings are on stiff white paper with the watermark "1794 J. Whatman". The volume is not titled, nor are the paintings signed. It is in good condition and the paintings are clean and unmarked except for the inscriptions described below.

Some pages bear numbers in ink on the top left-hand corners; in others these numbers have been mutilated, presumably when the leaves were trimmed by the binders. The numbers are absent from most of the leaves. Some leaves had inscriptions in pencil at the bottom, but these have been trimmed off almost completely and it is impossible to make them out. Inside the cover is a bookseller's sticker: "William George's Sons Ltd. Booksellers. 89 Park Street, Bristol". The paintings are numbered lightly in pencil from 1 to 38 on the bottom right-hand corners. Some have the letter "A" written in pencil on the back. No.38 has the words "orange footman" in pencil under the painting. This is the common name of a British Lithosiid moth that resembles in size and color the Hesperiid butterfly of the figure. It may indicate that the volume had been owned by somebody with a slight knowledge of the British Lepidoptera.

There can be no doubt that the paintings are by Abbot. Some of the species depicted are also figured in James E. Smith's The Natural History of the rarer Lepidopterous Insects of Georgia (1797); but in all instances different paintings are reproduced in that work, different food plants often being shown, and sometimes different color-forms of the larvae. The original paintings are much superior to the reproductions. The coloring, both of the insects and plants, is far more accurate and life-like, and often greater detail is shown. Two of the species are also figured in Boisduval and Leconte's Histoire des Lépidoptères d'Amérique (1833) from paintings by Abbot, but the reproductions are of different figures.

The following is a brief description of the paintings. I am indebted to Dr. Eugene Munroe and to Mr. D.F. Hardwick, Division of Entomology, Ottawa, for identifying the Lepidoptera and to Dr. H.A. Senn, Division of Botany and Plant Pathology, Ottawa, for identifying the plants. In each instance a flowering or fruiting branch of the food plant is shown.

1. Paonias astylus Dru.; larva on Kalmia latifolia; pupa.

2. Numbered 211+. Phoebis sennae eubule L., ♂, ♀, and an underside; larva on Cassia (Chamaecrista) sp., probably C. nictitans; pupa on stem of food plant. This species is figured by Smith, Tab.V, but on a different food plant. In the original the specimen showing the underside is resting on the food plant with its wings folded.

3. Prodenia sp. resembling praefica Grote, ♂ and ♀; larva on Sabatia gracilis; pupa.

4. Numbered 60+. Xanthotype urticaria Swett or one of the related species, ♂ and ♀; larva feeding on Salix sp.; pupa.

5. Lerema accius J.E.Sm. (?), ♂, ♀, and an underside; larva feeding on a grass, Paspalum or Panicum sp.; pupa. This species is figured by Smith, Tab. XXIII, but on a different food plant and the male without the sex marking on the forewing which is

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distinct in the original painting. In the original the specimen showing the underside is in the resting position on the food plant.

6. Erynnis brizo Boisd., ♂, ♀, and an underside; larva feeding on possibly Tephrosia or Indigophera sp.; pupa. This species is figured by Boisduval and Leconte, Pl.66, but on a different food plant.

7. An unidentified noctuid; larva on Pinguicula lutea; pupa.

8. Numbered 223+ or 225+. Ectropis crepuscularia Dup., ♂ and ♀; larva feeding on Lupinus sp.; pupa.

9. Halisidota tessellaris J.E.Sm., ♂ and ♀; larva feeding on Carpinus caroliniana; pupa. This species is figured by Smith, Tab.LXXV, but on a different food plant and with the cocoon.

10. Megalopyge or Lagoa sp., ♂ and ♀; larva on Nyssa sylvatica; pupa.

11. ♂ possibly Protoboarmia porcelaria Gn., ♀ possibly a related species; larva on Verbena sp., possibly V. canadensis; pupa.

12. Numbered 151+. Pyrausta futilalis Led., ♂ and ♀; larva on Apocynum androsaemifolium; pupa.

13. Besma quercivoraria Gn., ♂ and ♀; larva feeding on Quercus sp., possibly Q. phellos; pupa.

14. Safia anella Gn.; larva feeding on Quercus borealis; pupa.

15. Heterocampa sp., possibly guttivitta Walk.; larva on Pinchneya pubens; pupa.

16. Euchlea delphinii Boisd., ♂ and ♀; larva on Cornus florida; pupa; cocoon.

17. Numbered 221+. Cosymbia sp., possibly packardi Prout, ♂ and ♀; larva on possibly Bidens sp.; pupa on stem of food plant.

18. Heterocampa sp., ♂ and ♀; larva on Quamoclis coccinea; pupa.

19. Acronycta sp., possibly americana Harr.; larva on Dasystoma pectinata (?); pupa.

20. Phobetron pithecium J.E.Sm., ♀; larva feeding on Ilex sp., possibly I. cassine; pupa. This species is figured by Smith, Tab.LXXIV, but on a different food plant, with an imaginary male and with the cocoon.

21. Anicla infecta Ochs., ♂ and ♀; larva feeding on Gentiana sp.; pupa.

22. Numbered 149+. Abagrotis alternata Grote, ♂ and ♀; larva feeding on Rhus copallina; pupa.

23. Numbered 220+. Prodenia eridania Cram., ♂ and ♀; larva feeding on a composite, possibly Petasites sp.; pupa.

24. Ethmia sp., possibly fuscipedella Wals.; larva feeding on Pentstemon sp.; pupa.

25. Numbered 133+(?). Leucania unipuncta Haw.; larva on Senecio sp.; pupa.

26. Heterocampa sp. close to astarte Dbl., ♂ and ♀; larva feeding on Quercus sp.; pupa.

27. Thorybes bathyllus J.E.Sm., ♂, ♀, and an underside; larva feeding on Crotalaria sp.; pupa. This species is figured by Smith, Tab.XXII, but in the original the specimen showing the underside is in a resting position on the food plant. Boisduval and Leconte also figure the species, but on a different food plant.

28. Hemerocampa leucostigma J.E.Sm., ♂ and ♀; larva feeding on Halesia sp.; ♂ and ♀ pupa. This species is figured by Smith, Tab.LXXIX, but on a different food plant.

29. Heliothis virescens Fab., ♂ and ♀; larva feeding on Rhexia sp., probably R. mariana; pupa. This species is figured by Smith, Tab.C., but with a differently colored larva.

30. Numbered 184+. Apatelodes angelica Grote; larva feeding on Fraxinus sp.; pupa.

31. Olene leucophaea J.E.Sm., ♂ and ♀; larva feeding on a species of Euphorbiaceae, possibly Croton sp.; pupa. This species is figured by Smith, Tab. LXXVIII, but on a different food plant.

32. Numbered 85+. Amblyscirtes samoset Scudder, ♂, ♀, and an underside; larva on Sorghastrum sp.; pupa.

33. Schizura unicornis J.E.Sm., ♂ and ♀; larva feeding on Aronia sp., possibly A. arbutifolia; pupa. This species is figured by Smith, Tab. LXXXVI.

34. Apantesis phyllira Dru. (?), ♂ and ♀; larva on Oenothera sp.; pupa.

35. Feniseca tarquinius Fab., ♂ and ♀, and an underside; larva feeding on Viburnum dentatum; pupa on stem of food plant.

36. Ceratomia undulosa Walk.; larva feeding on Fraxinus sp.; pupa.

37. An unidentified species (a small, dark, bronzy-green moth with orange-tipped abdomen), ♂ and ♀; larva feeding on Spigelia marilandica; pupa.

38. Atrytone arogos Boisd. and Lec., ♂ and ♀, and an underside; larva feeding on Panicum sp.; pupa.

[Ed. Note: Previous articles in the Lep. News on John Abbot, including his autobiography, have appeared as follows: vol.2: pp.28-30, 43, 108; 1948. C.L.R.]

LEPIDOPTERA OF THE PRIBILOF ISLANDS, ALASKA

by Edward C. Johnston
Seattle, Washington

The Pribilof Islands are situated in the Bering Sea 200 miles northwest of Dutch Harbor. The nearest point on the mainland is 300 miles or more distant. It is to these islands that the great Alaska Fur-seal herd comes each summer for breeding purposes and to rear their young. Only two of the five islands in the group, St. Paul and St. George, are suitable for occupation by man. Forty miles of open sea, safe for ocean going vessels only, separate them. Usually, when the Bering Sea is mentioned, people immediately picture ice fields and barren, windswept terrain away up towards the North Pole. The Pribilof Islands, however, lie in 57 degrees North latitude, which is approximately the same as that of Petersburg in southeastern Alaska. A branch of the Japanese current helps to keep the climate mild but causes foggy and overcast conditions during the summer months. During the month of July the temperature ranges between 48° and 40° F. and the sun is seldom seen. It is a curious fact that I have been out when the sun was not in sight all day and sunburned enough to peel. Winter temperatures are comparable to those in Nebraska and only occasionally drop below zero. Rainfall is light, but heavy dews and mists help to maintain numerous boggy lakes. There are no running streams.

TOPOGRAPHY

Of the two islands St. George is the more rugged. It is roughly triangular with a maximum length of 12 miles and a width of 4 1/2 miles. The uplands are either rocky or, in a few localities, composed of disintegrating scoria, a red or black volcanic cinder. With the exception of three slight indentations of the beach line the island is surrounded by vertical rocky cliffs 300 to 1012 feet in height. These cliffs contain the nesting places for the largest bird rookery in the Northern Hemisphere. The valleys between the hills are covered with heavy vegetation overlying ridged "niggerheads" which are exceedingly difficult to walk over. Sphagnum bogs surround many small lakes on the flat areas of the lower ground.

About one-half of St. Paul Island is similar to St. George. The other half has sandy soil and along the coast line there are long stretches of wind-drifted sand dunes partly covered by moss and grasses. A number of dead volcanic cones, which are not found on St. George, are scattered over the island. The craters usually contain shallow lakes. The outline of St. Paul is more irregular than that of St. George, making the area about the same. The greatest length is 13.5 miles and the width 7.5 miles. The highest point is a volcanic peak 690 feet in height.

FLORA

There are no erect trees although creeping willows are found all over both islands. Five species have been listed, the most common being Salix arctica Pall. Other shrubs, more or less common, are: Black Crowberry, Empetrum nigrum L.; Trailing Azalea, Loiseleuria procumbens Desv. (rare on St. Paul); Northern Dwarf Cornel, Cornus suecica L.; Raspberry, 3 species of Rubus; and Mountain Cranberry, Vaccinium vitis-idaea L. Many of the rocky areas are densely covered with Crowberry, making an excellent carpet over which to collect Epipsiliamorpha alaskae Grt., Psychophora sabini Kirby, P. phocata Moesch. and Parasemia subnebulosa Dyar. Among the sand dunes near the beaches large areas are densely carpeted with the Beach Pea, Lathyrus maritimus Bigel. The predominant grass on the sand is Downy Lymegrass, Elymus mollis Trin. Polemonium occidentale Green, Jacob's Ladder, is generally distributed about the margins of the drifting sand areas. Many Lasiestra have been taken while feeding on blossoms of P. lanatum. With the exception of the grasses the Northern Lupine, Lupinus nootkatensis D. Don, is probably the plant occurring in greatest abundance. When it is in bloom the landscape takes on a bluish tinge. A little later the Louseworts, Pedicularis, with their pink and red spikes contribute to the color scheme. The Arctic Poppy, Papaver nudicaule L., also occurs all over the islands except in the areas of dense grass. The largest annual found on the islands is what the natives call "Poochka", a species of Wild Celery, probably Heracleum lanatum Michx. The stalks and root are edible and used by the natives for greens. The blossoms are large umbels, sometimes six inches in diameter, which are densely covered with flies when in full bloom. On the uplands Saxifrage is found growing on bare scoria patches where no other plant will live. In all, about 200 forms of plant life have been credited to the Pribilof Islands.

FAUNA

Of the sea mammals visiting the islands regularly the fur seal is by far the most important. They begin to arrive at the rookeries late in April and remain through the breeding season until November when the pups have learned to swim and secure food. In 1910 when the United States Government took over control of the herd, pelagic sealing had reduced its numbers to 125,000 animals. A policy of conservation was established and only the surplus males killed. At present the herd numbers about 3,000,000 animals and a net profit of about $1,000,000 is turned into the United States Treasury annually. It is an excellent case of economic conservation. Besides the fur seals, the Steller Sea Lion and the Pribilof Harbor Seal breed on the islands. Land mammals include the Reindeer (introduced in 1911), the House Mouse, the Pribilof Lemming on St. George only, the Pribilof Shrew on St. Paul only, and the Blue Fox. The herds of foxes on both islands are managed by the United States Government.

Land birds remaining on the islands the year round are the Aleutian Rosy Finch, Leucosticte griseonucha Brandt; Pribilof Snow Bunting, Plectrophenax nivalis townsendi Ridgeway; Alaska Longspur, Calcar-

ius lapponicus alascensis Ridgeway; Alaska Wren, Troglodytes troglodytes alascensis Baird; and the Snowy Owl, Nyctea nyctea L. The wren is called "Limmershin" meaning "chew of tobacco" by the natives. The Pribilof Sandpiper, Arquatella maritima ptilocnemis Coues, breeds on the islands. The Pribilof Islands are especially noted for the migrants and accidental visitors. On the enormous nesting rookeries on all cliffs of both islands are found the Pallas Murre, California Murre, Horned Puffin, Tufted Puffin, Paroquet, Crested, and Least Auklets, Pacific and Red-legged Kittiwakes, Gulls and many others. The Least Auklet is one of the earlier arrivals in the spring and they come in unbelievable numbers. About the size of a robin they are highly prized as an addition to the food supply. The native name is "Choochkie". The Kittiwakes are also favored by the natives as food. With a fox herd large enough to produce 1,000 skins annually it seems strange that birds could successfully maintain nesting grounds. The Golden Plover, in its great migration southward in the fall, lands to feed on Crowberry berries.

The Pribilof Islands are particularly rich in insect life. They are fortunate, however, in being entirely free of mosquitoes. The Head Louse, Pediculus capitis De Geer, and the Clothes Moth, Tineola biselliella Hum., are the only two forms of insects noxious to human beings. Even flies although they sometimes cover the warm or sunny sides of buildings do not enter the houses except by accident. The large "blue bottle" fly whose larva makes short work of a seal carcass was nearly exterminated in 1942 when the islands were evacuated and no seal killings made on account of the war. As all seal carcasses are now handled by a rendering plant, the flies will probably never regain their former numbers. Unusually large bumblebees are found on the islands. The beetle Cicindela truncaticollis Esch. is common on both islands. Its variation in color from a bright metallic green to copper makes it a beautiful and showy insect. In 1923, the Department of Agriculture published a Biological Survey of the Pribilof Islands listing the known fauna. In it 8 species of Lepidoptera were listed by Wm. T.M.Forbes of the Department of Entomology at Cornell University (Forbes, 1923). E.P. Van Duzee published a list of Pribilof Lepidoptera in 1921.

RHOPALOCERA

There is no record of a butterfly having been caught on the Pribilof Islands. The writer has collected there every summer 1939 to 1947 except in 1942 and has never seen one. At King Cove, a village near the tip of the Alaska Peninsula, a few specimens of a small form of Pieris napi L. have been taken. It would be interesting to know why butterflies have not become established on the Pribilof Islands. The climate does not differ greatly from that of the nearest mainland and food plants are plentiful.

HETEROCERA

ARCTIIDAE

1. Parasemia subnebulosa Dyar. Exceedingly hard to net due to its swift flight in fairly straight lines. On cool days a few specimens can be found resting on lupine or clumps of moss. Most of my specimens were taken by first locating a colony of larvae, which feed on lupine, and then watching that area for the emerging insects. On June 26, 1946, I picked up 125 of the most mature larvae I could find, hoping to rear them for some good specimens. By August 9, 111 had pupated and the balance had died. August 15, every cocoon as far as I could see was filled with smaller cocoons which shortly produced small Hymenoptera (?). On August 26 one female specimen of subnebulosa emerged. It was not a profitable experiment. It may be that if I had collected the youngest larvae instead of the oldest, the results would have been different. Pupation occurs in a light, thin, moss-covered cocoon on the surface of the carpet of moss. This moth is found on both islands.

NOCTUIDAE

2. Epipsiliamorpha alaskae Grt. Collected on both islands over Crowberry beds. The wings of the female are so reduced in size that they cannot fly. Pupation occurs 3 or 4 inches under the Crowberry. On July 18, 1943, while walking over a patch of Crowberry I noticed several moths hovering over and landing at a certain spot. They paid no attention to my approach. I suspected that a female was responsible for the commotion but could not locate her. So I sat down and caught the males including several new arrivals. As this was much more comfortable collecting than running after moths on the wing I stayed there for an hour securing over 30 specimens. The wind was light, about 12 miles per hour. I saw several males flying across a line extending down wind from where I was at least 100 feet distant (I stepped it off). As soon as the flyers hit this line or beam they immediately changed course to fly straight to the spot which had interested the others. It was late in the afternoon and rapidly getting cooler so I started looking for the female. About 3 inches under the Crowberry in decaying leaves I found a pupa from which a female emerged next day. Apparently the males while flying can detect and locate a female pupa underneath its natural cover from a distance of at least 100 feet. The extreme variation in color common in so many northern species is also found in alaskae. I have specimens ranging from light cream to dark brown.

3. Lasiestra sp. Collected on St. Paul Island where it was found in considerable numbers at the top of the slope to the beach of English Bay opposite Telegraph Hill. Practically all my specimens were taken while the moths were feeding on the blossoms of P. lanatum. The moths seemed to become drugged by the nectar and in that condition were easy to capture. Dr. J. McDunnough's comment on this species follows (in litt. 1940): "1794. What you have doubtfully under this number is not Anarta richardsoni but a Lasiestra sp., possibly close to staudingeri (which I do not know) or undescribed. The genitalia seem quite distinct from richardsoni and the vestiture is more hairy...". This is probably the same species listed by Forbes (1923) as Anarta richardsoni Curtis.

4. Crymodes murrayi race? Collected on St. Paul Island at various places but most common among the

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sand dunes on both sides of Big Lake. Its food plant is L. maritimus. McDunnough (in litt. 1942) states: "Your long series was most interesting and showed the great variability occurring in the species. This same variability is found in the closely allied Crymodes exulis Lef. from the eastern Arctic region (Labrador, Greenland, Iceland, etc.), and you can get an idea of all the names involved by consulting Hampson, Vol.VII, p.423. I have checked carefully on these names and find your specimens in general match most closely Herrich-Schaeffer's figure of borea from Iceland and said to occur (according to Guenée) in Boreal America and Lapland. The pale-lined veins are well-defined in H.-S. figure, but my few Iceland specimens give a rather different impression from your St. Paul series and in consequence I am doubtful if these latter can be called borea H.-S. None of your specimens matches very well with our type of Crymodes murrayi Gibs. to which I was inclined to assign your previous specimens; murrayi is a dull gray thing with no pale veins, your No. 957 being closest. After making several genitalic slides I find the Iceland borea matches up well with the Labrador exulis and both show slight (possibly merely racial and not specific) differences from your St. Paul Is. thing, which fits, however, very closely with murrayi Gibs. I would suggest ... that the St. Paul specimens be named as a race of murrayi, differing in the darker color and white-lined veins. This would be then the counterpart in the Northwest of the race borea of exulis."

GEOMETRIDAE

5. Psychophora sabini Kirby. Collected over the Crowberry beds of both islands.

6. Psychophora phocata Moesch. These two species are always found flying together and can be separated by the pectinations on the male antennae. In sabini the pectinations are short and claviform while in phocata they are longer showing less obvious thickening terminally. Both species show an extraordinary degree of variation. I have specimens almost pure black and others cream colored. In fact, in over 200 specimens it is hard to find two alike.

PYRALIDAE

7. Diasemia alaskalis Gibs. Collected on St. Paul Island but not common in any locality. McDunnough thinks this may be misplaced generically but the specimens agree with the holotype of D. alaskalis.

8. Titanio sp. Forbes (1923) reports this from St. Paul Island but I was unable to find it.

9. Phlyctaenia washingtonalis Grt. Common on both islands in all localities, especially in the grassy valleys.

10. Ephestiodes sp. I have one specimen from St. Paul Island which is referable to this genus.

PTEROPHORIDAE

11. Platyptilia johnstoni Lange. Collected at several localities on both islands but not common.

OLETHREUTIDAE

12. Aphania frigidana Pack. Collected on St. Paul on the east slope of the Polovina volcanic cone. Maculation ranges from dark immaculate specimens to those with white apical areas.

13. Olethreutes schulziana Fabr. Collected on St. Paul Island at Kaminista, a deep volcanic dash formed when large boulders were piled high on each side.

14. Eucosma dodana Kft. ? Collected on the slopes of various volcanic cinder cones on St. Paul Island. McDunnough states (in litt. 1940): "Slides of male genitalia agree pretty closely with Heinrich's figure of this species. There is only a single female in our collection for comparison and it is much larger, but the maculation is quite similar. A slide of the male of your two unicolorous smoky specimens shows the same genitalia so I suppose these represent a suffused melanic form. Dodana occurs in Colorado and Albertan Rockies so I imagine it might be found at sea level in the far north. My identification is, however, rather tentative and will have to be checked when the males of Albertan dodana are available."

TORTRICIDAE

15. Tortrix moeschleriana Wocke. Common on St. Paul Island around the volcanic cones. Single specimens collected elsewhere were probably scattered by the wind. The species is very variable as to color and maculation ranging from pale immaculate yellow through yellow and brown heavily marked with brown bars to a dark brown without markings. The genitalia are similar in all forms.

GELECHIIDAE

16. Gnorimoschema sp. Collected on bare sand and under moss on the slope above the beach of English Bay opposite Telegraph Hill. McDunnough places this close to contraria Brn. found in western Alberta.

17. _____. I have four specimens collected on St. Paul Island belonging to the family Gelechiidae. Determination of the genus and species has not been made.

OECOPHORIDAE

18. Borkhausenia pseudospretella Staint. Van Duzee (1921) lists this species but I have not found it.

TINEIDAE

19. Tineola biselliella Hum. This moth has ruined many carpets and clothes on St. Paul Island and should be found on St. George.

INCURVARIIDAE

20. Greya sp. Occurs on both islands. St. Paul Island specimens were collected at Kaminista. They were found on the sides of the large lichen-covered

boulders. Both McDunnough and Heinrich agree on the genus and that it is undescribed. St. George specimens were found along the edge of a sphagnum bog roosting on the blades of a small species of Carex. The maculation of specimens caught on St. George is, in all cases, quite different from those caught on St. Paul.

My collecting on St. Paul Island has been limited to the period June 20 to August 1 each year and on St. George Island to the last week of July only. Consequently, it is quite possible that more extended collecting on both islands would produce additional forms of Lepidoptera.

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FRANK JOHNSON AS A LEPIDOPTERIST

Never given to much conversation, - a listener rather, as I knew him, - Frank Johnson once told me that his pursuit of butterflies started as a way of interesting his oldest daughter in the out-of-doors; it offered an incentive for a walk in country byways and fields. The creatures, however, fascinated him and this interest became a relaxing avocation, the antithesis of an active and highly successful business life.

As I recollect, I first met Frank Johnson some twenty years ago at a meeting of the New York Entomolcgical Society. It was some years later that I became acquainted with his collection and came to understand his particular interests and approach to entomolcgy. He had a very keen eye for differences and knew the species in his collection. He mastered the names and was quick to recognize a species which was new to his collection. He depended upon the late Dr. William Schaus for determinations that proved difficult and as a result of his friendship for Schaus enriched the collection of the U.S. National Museum by generous gifts of specimens.

For the preservation of his collection Mr. Johnson designed a strong glass-topped drawer, the bottom of which was formed by a sheet of balsa wood one quarter inch thick. This drawer had an ingeniously designed, tight-fitting cover and was very light to handle. He used three hundred drawers closely stowed in metal racks and this set a limit to the size of his collection. The technique of preparation was a pleasure and relaxation for Mr. Johnson and he spread a large number of the specimens in his collection rapidly and neatly.

Always interested in large, brilliant species, one of his early specialties was the genus Papilio. After having realized his ambition by acquiring a large collection of species from all parts of the world, he disposed of them and turned to Morpho. This Morpho collection, as painstakingly assembled as had been the Papilio collection, he presented to the American Museum of Natural History some years ago. In it there were about ninety per cent of the named forms, represented by about 600 specimens. Mr. Johnson told me that this collection represented a choice selection of the most perfect specimens out of an original aggregate of 10,000 examples. His interest in Morpho waned when he could no longer get new varieties easily and he disposed of it to make room for other things. He had also fine collections of Brassolidae and many genera of Nymphalidae. Among the latter his collection of Anaea was outstanding, represented by about 6,000 specimens, probably the largest single private collection of this genus. It contained almost all of the named species and many undescribed species. The series was large, representing localities of wide distribution in Central and South America.

The Saturniidae were also a fascination for him. Mr. Johnson acquired them in huge quantities, leading to the discovery of many new species and subspecies.

Mr. Johnson made some short collecting trips in the Antilles, Central and South America, but he mainly relied on the collectors he employed to supply the material. At one time or another he had collectors working in every country of Central and South America, sending great supplies of butterflies and moths.

A patron of the American Museum of Natural History, he aided the Department of Entomology by financing expeditions to Central and South America and in the employment of tropical collectors. Through his contributions more than 300,000 specimens in all orders were added to the museum collections during the last ten years. Mr. Johnson also supported research leading to the preparation of several monographs, one on the genus Anaea of the Nymphalidae and several on genera of the Saturniidae. As yet these papers have not been published.

Frank Johnson was born in Kansas City, Missouri, the son of Andrew M. and Mary Bernard Johnson. He apparently started work for Burdett-Rowntree Mfg.Co. in Chicago, about 1900. He was with General Pneumatic Co., producer of railroad equipment, about 1910. This firm later became the National Pneumatic Co. and he became its president, retiring in 1946. He was head of Canadian Elevator Equipment Co. and director of other companies. Living in the Middle West for some years, he later made his home in Glen Ridge, New Jersey, and finally established himself at Lespedeza Farm in Griffin, Georgia. He died in New York City on October 19, 1949, at the age of 71 years.

His entire collection and library were left to the American Museum of Natural History.

- William P. Comstock

PERSONALIA

Harvard College, of Cambridge, Massachusetts, has just announced the appointment, effective July, 1950, of Dr. JAMES H. McDUNNOUGH to the staff of the Department of Insects of the Museum of Comparative Zoology. Dr. McDunnough is now in the Dept. of Insects and Spiders of the American Museum of Natural History in New York. The M.C.Z. is most fortunate in having secured Dr. McDunnough, the dean of American lepidopterists. His long list of important papers may have obscured the substantial curatorial role he has had in developing and organizing collections of North American Lepidoptera in Washington (the Barnes Collection), Ottawa, and New York. The Andrew Gray Weeks Room of Lepidoptera at the M.C.Z. contains the Scudder collection, much of Packard's material, the poorly described and numerous Cassino and Swett Geometridae types, the large world-wide Weeks collection, and many more, but there has been no general lepidopterist in charge of the room for many years. Thus there now exists a state of disorganization which can be expected to give way to order under Dr. McDunnough's care. He will also continue his revisions of difficult groups of North American noctuids.

C.A. ANDERSON, 3209 Centenary, Dallas 5, Texas, is releasing large numbers of reared and marked specimens of the Monarch Butterfly (Danaus plexippus) in the attempt to obtain definite information on Monarch movements. In 1949 he released 681 specimens and in spite of extensive nation-wide publicity he received only one report which could possibly relate to his Monarchs. We also know of three other Society members who systematically marked Monarchs in the fall of 1949. Lep. News readers are urged to examine carefully all Monarchs and to capture all specimens with numbers, letters, or man-made holes and send them to us. We will immediately send reports to the original markers and arrange to have the recoverer notified of the origin of his specimens. In another year we hope to launch an extensive coordinated program of marking of the Monarch and other Lepidoptera.

We regret having to report the passing of DEAN F. BERRY on 10 May 1949 at Orlando, Florida. Mr. Berry was disabled as a soldier in World War I and devoted his remarkable energies to the pursuit of Florida Lepidoptera. In spite of being seriously incapacitated he became one of the most distinguished collectors in Florida history. Atrytone berryi Bell, among others, attests to his field success. Mr. Berry discovered the haunts of the fabulously rare Catocala sappho and over the years distributed scores of superb specimens to the museums and private collections of North America. His special interests were with the Sphingidae, Catocala, Hesperiidae, and Lycaenidae. As far as we know, he published no papers himself, but he was a contributor to the Field Season Summary for 1947. He was a Charter Member of the Lepidopterists' Society.

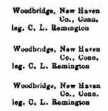
PLEASE NOTIFY THE NEWS OFFICE PROMPTLY OF CHANGES OF ADDRESS

LABELS AND PINS

While we cannot make a practice of endorsing products in the Lep. News, it should be of considerable value to many readers to report two commercial firms which produce important products for insect collectors outstandingly well.

Disliking photographically produced data labels and having tried a number of printers of these labels (to go on insect pins under mounted specimens), we have finally found one which does a perfect job, prints the labels in the most time-saving form, and is low in price. After dealing with them for several years we can recommend them highly. They print 2, 3, or 4 line labels, in either 3 1/2 or 4 point type, in strips of about 40 labels trimmed closely at the sides and ready to have the date (or other data) written in. The collector merely clips the needed labels from the strip, one cut per label. The prices are 50¢ per 500 of one exact label, 75¢ per 1000, and 50¢ for each additional 1000 of the same label. Collectors usually want a good supply for each important locality they visit often so that strips can be sent along with specimens being exchanged and correspondents saved a tremendous amount of labor. The company is:

The Nature Company
P.O. Box 403
Covington, Louisiana



Samples are provided on request and one is shown here of labels in 3 1/2-point type. It is reduced by one-half in printing the News.

The second dealer produces the first insect pins of really top quality and reasonable price which we have seen offered since before the war. A great stir of pin-producing followed the long wartime shortages and millions of very bad European pins were bought, at least in the U.S.A. We recently purchased from Germany several thousand pins after seeing samples and we find them excellent with the single defect that an occasional head comes off a pin shaft under stress. This dealer offers the standard black steel pins, sizes 00-8, postpaid at $0.90 (U.S.) per 1000; anti-corrosive white steel pins, sizes 00-7, at $1.35 per 1000; and black steel minuten nadeln (for tiny micros, etc.) at $0.40 per 1000. The address is:

Insektennadelerzeugung
Solaristrasse 14
Salzburg, AUSTRIA

C.L.R.

The founding of a new German-language lepidopterological periodical has just been announced. Its title is Zeitschrift für Lepidopterologie. The editors are: Dr. Max Cretschmar, Albert Grabe, and Georg Warnecke. The first volume will include 192 pages when complete. The subscription price is 16 German Marks per year and should be sent to: Goecke and Evers, (22a) Krefeld, von Beckerrathplatz 9, Germany. We extend our best wishes for the success of this new periodical and urge all lepidopterists who read German easily to subscribe now to the Zeitschrift. The first volume will doubtless quickly become scarce.

176. Anonymous, "The Yellow Maize Moth (Dichocrocis punctiferalis)." Agr. Gaz. N. S. Wales, vol.58: p. 428. 1 Aug. 1947.

177. Anonymous, "The Army Worm (Cirphis unipuncta)." Agr. Gaz. N. S. Wales, vol.58: pp.428-429. 1 Aug. 1947.

178. Balli, Antonio, "Su la morfologia e la biologia di Saturnia pavonia L." [In Italian]. Atti Soc. Nat. Mat. Modena, vol.78: pp.131-146. 1947. Includes descriptions of all stages and summary of range. [P.B.]

179. Balli, A., and C. Moscardini, "I Lepidotteri del modenese. Contributo alla loro conoscenza sistematicobiologica (Nota II)" [In Italian]. Atti Soc. Nat. Mat. Modena, vol.78: pp.149-172. 1947. Describes biology of 10 spp. [P.B.]

180. Beacher, John H., "Studies of Pistol Case-Bearer Parasites". Ann. Ent. Soc. Amer., vol.40: pp.530-544. Sept. 1947. 16 spp. attacking Coleophora malivorella are discussed. [P.B.]

181. Beck, Stanley D. and J.F. Stauffer, "An Aseptic Method for Rearing European Corn Borer Larvae." Journ. Econ. Ent., vol.43: pp.4-6, 1 fig. Feb. 1950. Artificial rearing medium of agar, glucose, casein, yeast, etc. described in detail. [C.R.]

182. Bennett, N.H., "Revision of the Echerius group of the genus Abisara Felder (Rhop. Riodinidae)." Entomologist, vol.83: pp.1-9, 34-42, 21 figs. Jan., Feb. 1950. Describes as new: A. echerius lisa (Hainan); A. e. notha (Tonkin, Annam); A. e. clara (Bangai); A. geza sura (E. Sumatra); A. kausambi daphne (Nias); A. k. asoka (Borneo); A. saturata baraka (Manipur); A. s. maya (S. Burma); A. s. corbeti (Mindanao). Genitalia of both sexes figured for each of the 6 spp., and described for the 44 subspp. Keys to spp. by pattern and by ♂ genitalia. [P.B.]

183. Blair, K.G., "Notes on the Life History of Sedina buettneri Hering (Lep., Caradrinidae)." Ent. Monthly Mag.,vol.86: pp.47-49. Feb.1950. Describes egg and larval stages. Foodplants: Carex,Glyceria.[P.B.]

184. Boné, G.J., "Regulation of the Sodium-Potassium Ratio in Insects." Nature, vol.160: pp.679-680. 15 Nov. 1947. Larvae of Ephestia kühniella, Pieris rapae, Vanessa urticae, and other insects, raised on diets containing abnormal Na/K ratios showed no major changes in hemolymph Na/K ratio, showing that this proportion is specific for each species and regulated by the organism. [P.B.]

185. Boyce, H.R., "Long term trends in parasitism of twig-infesting Oriental fruit moth larvae." Ann. Rep. Ent. Soc. Ontario, no.77: pp.21-34. 1947.

186. Chermock, Ralph L., "Subspeciation in Neophasia menapia Behr [sic] (Lepidoptera, Pieridae)." Proc. Ent. Soc. Wash., vol.52: pp.44-45. Feb. 1950. Restricts N. m. menapia (Felder) to Utah, Colorado, New Mexico, northern Arizona, and southern Wyoming, and removes N. m. tau (Scudder) from the synonymy for the subspecies occurring in California northward to British Columbia, and eastward to Idaho and Montana, giving the characters that separate the two subspecies. [C.dP.]

187. Collenette, C.L., "The Identity of Phalaena chrysorrhoea, Linnaeus, 1758." Bull. Ent. Res., vol.38: pp.259-261. 21 Aug. 1947. Concludes that chrysorrhoea should apply to the brown-tail. The matter still seems ambiguous, and should probably be decided by the International Commission. [P.B.]

188. Collenette, C.L., "The Lymantriidae of Celebes." Ann. Mag. Nat. Hist. (ser.11), vol.14: pp.1-60, 5 pl. 19 Nov. 1947. Locality records for specimens of 124 spp. and subspp. Describes as new: Leucoma loda, Redoa tossa, Kanchia dinawa gymnoteca, Cispia dipyrena, Euproctis euphlebodes, E. varians tiamba, E. docima, E. parthena, E. polytoca, E. thysanocyma, E. acompsa, E. xanthopoda, E. coniortodes, E.phaulia, E. aeola, E. abythosticta, E. tompoe, E. acosmeta, E. cupeperata, E. icoinnotata, E. maros, E. rectifascia, E. rhabdoides, E. copha, E. acmaea, E. metatropa, E. chionobola, E. ochrias, E. paraleuca, E. udenosura, E. hyalogenys, E. loda, E. pedolepida, E. paloe, E. melanoxutha, E. lindoe, E. climax, E. dine, E. lithorrina, E. psolarga, E. p. melanarga, E. bolinoides, E. parentheta, E. hypopyra, E. epiperca, E. dolichoptera, E. acroptera, E. todiamboe, E. kalisi, Lymantria demotes, L. celebesa, L. chroma, Dura leptodes, D. passonyx, D. isabella, D. centama Laelia nebrodes, L. rhodea, Dasychira euryptila, D. dolichoscia, Lucharna strigipennis epiperca. The ♂ genitalia of some of these are described or figured. Almost all new entities, and some other species, are figured. [P.B.]

189. Collier, A.E., "A Note on the Genetics of Aphantopus hyperantus ab. crassipuncta and Maniola jurtina ab. semialba." Entomologist, vol.83: pp.25-26. Feb. 1950.

190. Dathe, H., "Samia cynthia Wlk. in Venetien" [In German]. Ent. Zeitschr., vol.59: pp.161-162. 1 Feb. 1950. Records of the wild occurrence of S. cynthia in northern Italy. [G.dL.]

191. Dexter, Ralph W., "A Checker-spot Butterfly with Three Antennae." Turtox News, vol.25: p.145, 1 fig. Aug. 1947.

192. Doucette, Charles F., "Stem Borer Attacking Lilies." Journ. Econ. Ent., vol.40: p.918, 1 fig. Dec. 1947. Borer is Emboloecia. [P.B.]

193. Dumbleton, L.J., "Transportation of Insects on the Exterior of Aircraft." Nature, vol.165: p.452. 18 March 1950. Lepidopterous eggs found. [P.B.]

194. Eliot, Nevill, "More on Continental Drift, Precis lavinia Hbn. and P. villida F.: a Postscript." Entomologist, vol.80: p.283. Dec. 1947.

195. Evans, William H., "Life History Notes on Incita aurantiaca Hy.Edw." Pan-Pacific Ent., vol.26: p.21. Jan. 1950. Describes habits and mature larva. Host - Gilia virgata. [C.R.]

196. Finney, Glenn L., Stanley E. Flanders, and Harry B. Smith, "Mass culture of Macrocentrus ancylivorus and its host, the potato tuber moth." Hilgardia, vol.17: pp.437-482, 22 figs. Aug. 1947.

197. Fraenkel, G., and M. Blewett, "The Importance of Folic Acid and Unidentified Members of the Vitamin B Complex in the Nutrition of Certain Insects." Biochem. Journ., vol.41: pp.469-475. 1947. Ephestia and other insects. [P.B.]

198. Fraenkel, G., and M. Blewett, "Linoleic Acid in the Metabolism of Two Insects, Ephestia kuehniella (Lep.) and Tenebrio molitor (Col.)." Biochem. Journ., vol.41: pp.475-478. 1947.

199. Franclemont, John G., "The Linnaean subgeneric names of Phalaena (Lepidoptera, Heterocera)." Journ. N.Y. Ent. Soc., vol.58: pp.41-53. Mar. 1950. This interesting paper gives an historical sketch of the problem and concludes that in view of the uncertainty about the choice of the work from which to date the names discussed, and to maintain the names in the same sense as that in which all the pertinent literature has been built up, the International Commission on Zool. Nomenclature will be requested to suspend the Rules and validate certain names as of 1758, suppress another, validate another as of 1767, and designate certain types. This is a wise move and one it is to be hoped other specialists will follow. [C.dP.]

200. Gibson-Hill, C.A., "Lepidoptera (Heterocera) (Christmas Island)." Bull. Raffles Museum, no.18: pp. 74-80. Oct. 1947. Lists, with notes, 1 possible and 9 certain residents and 4 migrants. [P.B.]

201. Greer, Thomas, "Lepidoptera Around a Moorland Bungalow in East Tyrone." Entomologist, vol.80: pp.183-186. August 1947.

RECENT LITERATURE ON LEPIDOPTERA - cont.

202. Grison, Pierre, "Développement sans diapause des chenilles de Euproctis phaeorrhoea L. (Lep. Liparides)" [In French]. C. R. Acad. Sci., vol.225: pp. 1089-1090. 1 Dec. 1947. Fed young apple leaves and kept at 25° C. and 100 °/o humidity. [P.B.]

203. Heinänen, V.L., "Beobachtungen über die Makrolepidopterenfauna der Gegend von Lahti in Sudfinnland" [In Finnish, German summary]. Acta Ent. Fennica, no.2: 72 pp., 8 figs. 17 Sept. 1947. Discussion of faunal zones, with annotated list of spp. [P.B.]

204. Heller, Josef, "Investigations on Insect Metamorphosis. Part XIV. The Regulation of the Metabolism during Pupal Stage. The Role of Tyrosinase" [In Polish, English summary]. Acta Biol. Exp., vol.14: pp. 229-237. 1947. Study of the respiratory enzyme system of Deilephila euphorbiae pupae. [P.B.]

205. Heqvist, Karl-Johan, "Bidrag till kännedom om fjärilsfaunan inom Muddus nationalpark" [In Swedish]. Ent. Tidskr., vol.68: pp.193-195, 1 fig. 25 Oct. 1947. Annotated list of Lepidoptera. [P.B.]

206. Herms, William B., "Some problems in the use of artificial light in crop protection." Hilgardia, vol.17: pp.359-375. Apr. 1947. Discussion of light traps. Data on effects of intensity and wave length on the insects attracted. [P.B.]

207. Hrbek, J., "Lepidopterologický průzkum Olomoucka" [In Czech]. Acta Soc. Ent. Čechosloveniae, vol.44: pp.133-135, 1 fig. 1 Dec. 1947.

208. Javillier, Maurice, "Sur les pigments ptériniques d l'aile et de l'oeuf de Bombyx mori L." [In French]. C. R. Acad. Sci., vol.230: pp.585-587. 6 Feb. 1950. Reports similar blue-fluorescing pterins in egg and wing. Suggests that pterins are used as precursors of riboflavin. [P.B.]

209. Kauffman, Guido, "Remarques concernant deux aberrations de Pyrgus carlinae Rbr. (Lep. Hesperiidae)" [In French]. Mitt. Schweiz. Ent. Ges., vol.23: pp. 67-69, 2 figs. 15 Feb. 1950.

210. Korringa, P., "Waarnemingen en overpeinzingen betreffende Macrothylacia rubi L." [In Dutch]. Tijdschr. Ent., vol.88: pp.493-498. 1 Oct. 1947.

211. Le Clercq, Jean, "Mise en évidence de réactions au gradient d'humidité chez plusieurs Insectes" [In French]. Arch. Internat. Physiol., vol. 55: pp.93-116. Dec. 1947. Reports tests on insects of 7 orders to determine humidity preferences. Results entirely negative for Pieris larvae, which ignored humidity gradient. [P.B.]

212. van Leeuwen, E.R., "Increasing Production of Codling Moth Eggs in an Oviposition Chamber." Journ. Econ. Ent., vol.40: pp.744-745. Oct. 1947.

213. Lempke, B.J., "The Variation of Lymantria monacha, L." Ent. Rec. Journ. Var., vol.59: pp.81-86. July/Aug. 1947. Attempts to correlate described aberrations with Goldschmidt's carefully analyzed mutant forms, which he summarizes briefly. Also names 5 'forms', apparently from Goldschmidt's descriptions. There is NO evidence that the naturally occurring mutants are genetically similar to Goldschmidt's stocks. This paper appears to be neither good taxonomy nor good genetics. [P.B.]

214. Lempke, B.J., "Some Remarks on Biston betularia." Ent. Rec. Journ. Var., vol.59: pp.88-89. July/Aug. 1947. Quote: "f. mixtus Voss is not a synonym of insularia, but a perfectly valid name, indicating the heterozygotes of carbonaria. That it is distinguished by a name is fully justified by the fact that its genetic constitution is different from f. carbonaria." This doctrine reduces taxonomy to absurdity, since in all probability no two individuals are genetically identical. [P.B.]

215. Lingonblad, Birger, "Forteckning över Muonio och Enontekiö socknars storfjärilfauna. (Macrolepidoptera)" [In Swedish]. Mem. Soc. Fauna Flora Fennica, vol.23: pp.121-137. 1947. Records of 241 spp. in parts of Finland. [P.B.]

216. Manunta, Carmela, "Comportamento differenziale, nel metabolismo dei pigmenti, di varie razze ed incroce - bianchi recessivi, bianchi dominante e gialli - di Bombyx mori" [In Italian, summaries in Latin, English and German]. Scientia Genet., vol.3: pp.33-42. 1 Dec. 1947. White dominant larvae cannot maintain carotenoid pigments in blood. [P.B.]

217. Manunta, Carmela, "Nuovo contributo allo studio del bianco dominante nei bachi da seta" [In Italian, summaries in Latin, English and German]. Scientia Genet., vol.3: pp.43-47. 1 Dec. 1947. Yellow color of blood dependent on ability to absorb carotenoids and release them from blood cells. [P.B.]

218. Manunta, Carmela, "Sul metabolismo dell' azoto nelle varie razze di bachi da seta. 1. L'acido allantoinico nella razza bivoltina giapponese Awojiku" [In Italian, summaries in Latin, English and German]. Scientia Genet., vol.3: pp.48-55. 1 Dec. 1947. Studies of uric acid formation in 'opaque' and 'transparent skin' races of B. mori. [P.B.]

219. Manunta, Carmela, "Sul metabolismo dell' azoto nelle varie razze di bachi da seta. 2. Acido allantoinico ed acido urico durante la maturazione nel sangue di varie razze ed incroci" [In Italian, summaries in Latin, English and German]. Scientia Genet., vol.3: pp.56-66. 1 Dec. 1947. Correlation between allantoic and uric acid content. [P.B.]

220. Mariani, Mario, and Mario de Stefani, "Fauna Lepidopterorum Italiae. Parte II.- Larve dei Lepidotteri d'Italia ordinate secondo le piante nutrici" [In Italian]. Giorn.Sci.Nat.Econ.Palermo, vol.43,no.5: 152 pp. 1947. Lists over 4100 spp. arranged by foodplant (502 spp.); designed to simplify identification of larvae, and should be invaluable for this purpose. [P.B.]

221. Marion, H., "Tube 'Newman' pour les micros" [In French]. Rev. franç. Lépid., vol.11: pp.174-175, 1 fig. 22 Oct. 1947.

222. Maude, E.W., "An aberrant form of Neptis hylas astola." Journ. Bombay Nat. Hist. Soc., vol.46: p.738, 1 pl. April 1947.

223. Michener, Charles D., "A Northern Subspecies of Eacles imperialis (Lepidoptera, Saturniidae)." Journ. Kansas Ent. Soc., vol.23: pp.17-21, 5 figs. Jan. 1950. Describes as new: E. imperialis pini (Cheboygan Co., Mich.); with figures of types and distribution map. Host is pine. [C.R.]

224. Michener, Charles D., "New Genera and Subgenera of Saturniidae (Lepidoptera): a Correction." Journ. Kansas Ent. Soc., vol.23: p.26. Jan. 1950. Corrects printer's error on new subgenus Ptiloscola in earlier paper (see Lep. News 3: p.111). [C.R.]

225. Miklazewska, A., "Experiments on the plasticity of instinct in caterpillars of Nymphula nymphaeata L. (Lepidoptera- Pyralidae)." Bull. Int. Acad. Polonaise, Cl. Sci. Math. Nat. BII 1947: pp.279-297, 6 figs. 1947. Describes natural case-making in this species and experiments in which substitutes for Nymphaea leaves must be used. [P.B.]

226. Morley, A.M., "Aplasta ononaria in 1946." Entomologist, vol.80: pp.168-169. July 1947.

227. Munro, H.A.U., "The Durra Stem Borer Sesamia cretica Led. A New Problem in Imported European Broom Corn." Can. Ent., vol.79: pp.180-184, 2 figs. Sept.-Oct. 1947.

228. Newton, J., "Macrolepidoptera in Tetbury, Gloucestershire, 1949." Entomologist, vol.83: pp.28-30. Feb. 1950.

229. Oiticica F°, José, and Charles D. Michener, "New species of Bathyphlebia from Ecuador and Peru (Lepidoptera, Saturniidae)." Am. Mus. Novitates, no.1446: 13 pp., 15 figs. 5 Jan. 1950. Describes as new: B. johnsoni (Peru); B. johnsoni flavior (Peru); B. rufescens (Ecuador). [P.B.]

230. Oiticica F°, José, and Charles D. Michener, "A new species of Eacles from Colombia (Lepidoptera, Saturniidae)." Am. Mus. Novitates, no.1447: 5 pp., 7 figs. 5 Jan. 1950. Describe as new E. johnsoniella. [P.B.]

231. Paclt, Jiří, "La révision de la nomenclature des familles lépidoptérologiques de la faune Tchécoslovaque" [In Czech, French summary]. Acta Soc. Ent. Čechosloveniae, vol.44: pp.37-43, 96-102. 1 June, 1 Dec. 1947. Lists families and type genera, with bibliography and explanation. Changes 3 family names: Heliodinidae to Chrysoesthidae and Cochlidiidae to Apodidae on principle of naming families after first described genus, and Aptychiidae to Bradypodidae because of preoccupation of Aptychia. [P.B.]

232. Padmanabhan, S.Y., "Fusarium sp. Parasitic on Epipyrops, a Lepidopterous Parasite of the Sugarcane Pyrilla." Proc. Indian Acad. Sci., vol.26B: pp.77-92, 1 fig. Sept. 1947.

233. dos Passos, Cyril Franklin, and Lionel Paul Grey, "Systematic Catalogue of Speyeria (Lepidoptera, Nymphalidae) with Designations of Types and Fixations of Type Localities." Am. Mus. Novitates, no.1370: 30 pp. 12 Dec. 1947. [See review in Lep. News, vol.2: p.5.]

234. Petersen, Björn, "Die Geographische Variation einiger Fennoskandischer Lepidopteren" [In German, English summary]. Zool. Bidrag Uppsala, vol.26: pp.329-531, 6 pl., 43 maps, 13 figs. 1947. Statistical analysis of geographical variation of 16 spp. of Pieridae and Nymphalidae in Scandinavia, including many holarctic spp.; an extensive theoretical section deals with genetic and ecological control of variation, and racial evolution. An essential reference for students of butterfly geographical subspeciation. Important list of references given. [P.B.]

235. Pettey, F.W., "The Biological Control of Prickly Pears in South Africa." U. So. Africa Sci. Bull.271: 163 pp., 3 pls., 31 figs. 1947. Very detailed description of all stages and biology of Cactoblastis cactorum. Colored plate shows full view and details of all stages (including the 6 instars). Moth, imported successfully into Australia from South America to control cactus, also used in South Africa for good control. [C.R.]

236. Rymar, J., "Un nouveau groupe de composés organiques modifiant le dessin des ailes des Lépidoptères d'après la méthode d'injection de Zaćwilichowski" [In French]. Bull. Int. Acad. Polonaise, Cl. Sci. Math. Nat. BII 1947: pp.347-3 9, 2 pls. 1947. Effectiveness of injections of various substances in altering wing pattern in Vanessa urticae and some other Lepidoptera. [P.B.]

237. Schaffner, J.V., Jr., "Butterflies and Moths. Order Lepidoptera", pp.343-505, figs.69-127, in Craighead, F.C., "Insect Enemies of Eastern Forests", U.S. Dept. Agr. Misc. Publ., no.657. 1950. Includes key to larvae of very large number of spp. of Lepidoptera feeding on forest trees. Text gives, in phylogenetic sequence, brief descriptions and notes on food plants, habits, range, seasons of scores of spp., illustrated by good original photos, largely of larvae. [C.R.]

238. Sevastopulo, D.G., "Cage Birds and Insects." Entomologist, vol.80: pp.188-193. July 1947. Records of insects, mostly Lepidoptera, accepted and refused by the birds. [P.B.]

239. Simmonds, F.J., "The biology of Phytodietus pulcherrimus (Cress.) (Ichneumonidae, Triphoninae) Parasitic on Loxostege sticticalis L. in North America." Parasitol., vol.38:pp.150-156,16 figs. 24 July 1947.

240. Simmonds, F.J., "The Biology of the Parasites of Loxostege sticticalis, L., in North America - Meteorus loxostegei, Vier. (Braconidae, Meteorinae)." Bull. Ent. Res., vol.38: pp.373-379, 6 figs. 21 Aug. 1947.

241. Slabý, Otto, "Les éspèces du genre Erebia Dalm. dans les Hautes Tatras. (Lep, Satyridae)." [In Czech and French]. Acta Soc. Ent. Čechosloveniae, vol.44: pp.102-119. 1 Dec. 1947. Describes as new E. pharte silbernageli; records 7 other forms. [P.B.]

242. Sotavalta, Olavi, "The Flight Tone (Wing-Stroke Frequency) of Insects." Acta Ent. Fennica, no.4: 117 pp., 18 figs. 8 Aug. 1947. Study includes normal frequencies and the effects of temperature and other factors. Frequency records are given for 136 spp. of Lepidoptera and many other insects. [P.B.]

243. Stehr, Gotthard, "Beziehungen zwischen der Blutzirkulation im Puppenflügel und dem Zeichnungsmuster von Ephestia kühniella" [In German]. Rev. Suisse Zool., vol.54: pp.573-608, 16 figs. Dec. 1947. Describes pattern of blood circulation in pupal wings. Attempts to demonstrate presence of active substances in the hemolymph affecting the wing pattern at specific times were not successful; concludes that substances in the wing epithelium are most important in pattern formation. Colchicine injections (used in an attempt to halt mitoses) had no effect. [P.B.]

244. Sutton, G.P., "Notes on Breeding Leucania vitellina (Lep. Agrotidae) in a Widely Fluctuating Temperature." Entomologist, vol.80: pp.159-160. July 1947. No apparent effect. [P.B.]

245. Webb, Damian, "A moth like a humming-bird." Country Life, vol.102: pp.876-877, 6 figs. 31 Oct. 1947. Fine figures of Macroglossum feeding. [P.B.]

246. Wojtusiak, Roman J., and Halina Wojtusiak, "Contributions to the knowledge of the lepidopterological fauna of Eastern Lithuania" [In Polish, English summary). Frag. Faun. Mus. Zool. Polonici, vol.5: pp. 159-183, 1 fig. 18 Dec. 1947. Brief ecological description of area studied, and annotated list of 299 spp. collected. [P.B.]

247. Tindale, Norman B., "A New Race of Tisiphone abeona Donovan (Lepidoptera Rhopalocera) from South Australia." Records S. Australian Mus., vol.8: pp. 613-617. 10 Dec. 1947. Describes as new T. a. antoni. [P.B.]

248. Travassos, Lauro, "Contribução ao Conhecimento dos 'Arctiidae' XIII. (Lepidoptera, Heterocera)" [In Spanish]. Rev. Brasil. Biol., vol.7: pp.335-340, 4 figs. Sept. 1947. Reviews Xanthophaeina (only sp. X. levis); both sexes, venation, genitalia and some other details are figured. [P.B.]

249. Travassos, Lauro, "Contribução ao Conhecimento dos 'Arctiidae' XIV. Gênero 'Euchlaenidia' Hampson, 1901" [In Spanish]. Rev. Brasil. Biol., vol.7: pp. 465-470, 6 figs. Dec. 1947. Discusses the genus and the Brazilian species E. transcisa; gives range of, and references to, the other two spp. [P.B.]

250. Tronîček, Edvard, "Contribution à la connaissance de l'éspèce Sterrhopteryx standfussi H.Schäf. (Lep. Psych.)" [In Czech, French summary]. Acta Soc. Ent. Čechosloveniae, vol.44: pp.135-143. 1 Dec. 1947. Systematics, range, biology and ecology. [P.B.]

251. Tweedie, M.W.F., "Back-to-front Butterflies." Pacific Discovery, vol.2: pp.18-19, 8 figs. Nov.-Dec. 1947. Well illustrated account of some Malaysian lycaenids whose long tails and eyespots simulate a head at the wrong end. [P.B.]

252. Tykač, Jaroslav, "Pieris brassicae L. gen aest. lepidii Rob. ab. obenbergeri n. ab." [In Czech, French summary]. Acta Soc. Ent. Čechosloveniae, vol.44: pp.119-120. 1 Dec. 1947.

253. Wolsky, Alexander, "Changes in the Response of Silkworm Eggs to Rotational Force during Cleavage." Nature, vol.165: pp.119-120. 21 Jan. 1950.

NOTICES BY MEMBERS

Disposing of periodicals in my private library. Journ.N.Y.Ent.Soc., vols.1-57 (complete, 1893-1949)-$100; Bull. Brooklyn Ent. Soc., vols.8-28 (1912-28)-$20; Papilio (all 4 vols., complete, bound) - $10; Psyche, vols.18-20 - $3; Can. Ent., vols.36-45(1906-13, 1 issue missing) - $7. W.P. Comstock, American Museum of Natural History, New York 24, N.Y.

Twenty thousand CALIFORNIA BUTTERFLIES for sale. Ten for $1.00; $5.00 per hundred. Perfect condition, named. Largest of all Morphos, the Amothonte, $1.00 ea. Price list free. Ben Karp, 3148 Foothill Blvd., La Crescenta, Calif.

SPEYERIA DIANA: Have a dozen males and three females for sale or trade. What do you have to offer? Stephen B. Smalley, 6129 Glade Ave., Cincinnati 30, Ohio.

Arizona species needed? Planning collecting trip this summer; will collect on order all families of Lepid. Prepared as desired: alive, pinned, papered.

* * *

Can also supply many southwestern species of Lepidoptera,(Rhopalocera, Heterocera),papered or pinned. Also LIVING MATERIAL. Inquiry invited. Frank P. Sala, 1764 Colorado Blvd., Los Angeles 41, Calif.

For sale: 4000 Unit Pinning Trays, balsa pinning bottom, white paper lined throughout, heavy caliber cardboard. Slightly defective. Standard sizes for Cornell or California Drawers. $1.00/dz. Free sample on request. Cornell and California Academy drawers now available with cabinets. Bio Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Wish to exchange about 200 Manitoba moths, about 50 species, half named, full data. Desire exotic Rhopalocera, particularly Morpho. What offers for the lot? C.S. Quelch, Transcona, Manitoba, CANADA.

Lepidoptera from FLORIDA and WISCONSIN, a lot of over 2000 specimens, about 300 species, pinned and in papers. Want to sell the lot at bargain price. Send for list. Alex K. Wyatt, 5842 N. Kirby Ave., Chicago 30, Ill.

For exchange: Northwestern WASHINGTON MOTHS and BUTTERFLIES collected last season. Desire AUSTRALIAN or any tropical Lepidoptera. Mrs. Emily Henriksen, Orcas Island, East Sound, Washington.

For sale: Japanese Papilionidae, Pieridae, Nymphalidae, and Sphingidae with all correct data supplied. Listings sent on request. M.W. Osborne, 2100 Price St., Rahway, New Jersey.

Will exchange good used copy of Holland's MOTH BOOK for copy of revised ed. of BUTTERFLY BOOK in good used condition. L.H. Bridwell, Forestburg, Texas.

For exchange: The Spider Book, revised ed. Comstock; Hand Book of Frogs and Toads, Wright and Wright; The Grasshopper Book, Bronson; also Pennsylvania fossils. Desire Speyeria diana ♀♀ or Papilio ponceana ♀ or ♂ with data. J.A. Evey, Benson, Illinois.

Wanted: ENTOMOLOGICAL NEWS, vol.2: no.10; will purchase or will give other literature in exchange. Dr. C.L. Remington, Yale Univ., New Haven 11, Conn.

Wanted: Papered specimens of Pieris napi, P. bryoniae, and Papilio machaon from all parts of the world, esp. America and Asia, with full data and in perfect condition. Offered in exchange: Papered Macro-Lepidoptera from Germany, and if possible, breeding material. Gerhard Hesselbarth, Hindenburgstr. 13, (23) Diepholz/Hann., GERMANY.

European PARNASSIIDAE in papers (named, full data, Perfect condition) for sale or in exchange for North American Papilionidae and Parnassiidae in papers. Dr. W.J. Reinthal, University of Okla., Norman, Okla.

LIVING MATERIAL

Wish to arrange to obtain living ova, pupae, or cocoons of American Rhopalocera, Saturniidae, Sphingidae, Catocala. Offer in exchange similar material from Czechoslovakia, including Saturnia pyri, Thais polyxena, etc. in season, or papered butterflies. V.B. Poláček, ul. Komenského, 601/I., Brandýs nad Labem, CZECHOSLOVAKIA.

Would like to correspond in English or German with collectors interested in exchanging living Lepidoptera material -- eggs and pupae. Johannes Reichel, Koenigsberg Krs. Wetzlar (16), GERMANY

New northern subspecies Eacles imperialis pini for sale, either hibernating pupae or male adults. Price of pupae or specimens: 3 for $1.00 postpaid. Elwyn Lewis, 384 E. Warren St., Flint, Michigan.

Have cocoons of wild Connecticut Samia walkeri ("Cynthia") to exchange for those of other Saturniidae. R.W. Pease, 57 Yale Station, New Haven 11, Conn.

Wanted to buy: rearing material in season - cocoons, pupae or eggs of Rhopalocera, Saturnioidea, Sphingidae, Arctiidae and Catocala. Write first quoting prices and naming food plants. Have Austrian pins for sale, best make (Trade Mark "Elephant"), rustproof, $4.00 per thousand. Eugene Dluhy, 3912 N. Hamilton Ave., Chicago 18, Ill.

Wanted: chrysalids of any North American Papilio in exchange for good European butterflies of Parnassiidae in papers (full data, exact names). Dr. W.J. Reinthal, University of Okla., Norman, Okla.

Cocoons or eggs of all species of American Saturniidae required. Will exchange living or preserved material of British Lepidoptera and/or Indian Saturniidae. Also willing to obtain books or other requirements of American supplier. C.F. Rivers, 250 Shepherds Lane, Dartford, Kent, ENGLAND.

Wanted for cash or exchange: living ova or pupae of Papilio machaon (Palaearctic), P. glaucus, Platysamia columbia nokomis, for hybridization and sterility experiments. Also need egg masses of Catocala relicta, and 200 living cocoons of Platysamia cecropia. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

QUESTIONS AND ANSWERS

Q. "Where can I go for original papers on subfamily and tribe classification for the Geometridae and Phalaenidae (Noctuidae), and why are Agrotidae and Plusiidae, used by some recent Europeans, considered families?"

A. Original of our present system of subfamilies in Noctuidae is Hampson's "Catalogue of the Lepidoptera Phalaenae" vol.4, p.3, 1903; the system for the Geometridae was developed gradually by Meyrick in papers on the Australasian region, and especially Trans. Ent. Soc. London, 1892: 53 ff. No system of tribes has been developed for the Noctuidae, and the only recent attempt for the Geometridae is my "Lepidoptera of New York" part 2, Cornell Memoir 274; 1948. Older divisions of these two groups into "families" (corresponding very roughly to modern tribes) are by Guenée in the "Hist. Nat. Ins. Lépid." (Suites à Buffon) 1852 - 7. The use of such names as Agrotidae and Plusiidae in place of Noctuidae is based on recent interpretations of the "Code of Nomenclature" extending its rules to groups above the genus. The general question of validity, meaning and application of the code is too large to discuss here. Personally I consider it to have never been validly established.

Q. "Can you give any advice for finding Callosamia angulifera? I live where promethea is very common and in the range of angulifera but have never found it."

A. C. angulifera feeds chiefly or only on tulip tree. The cocoon has no formed stem and so falls to the ground like polyphemus and may be found by raking and examining leaves, which is a tedious process.

Q. "Is it possible to identify the subfamily of noctuid caterpillars? I have looked at the book by Fracker and it does not divide noctuids by subfamilies."

A. Not with any precision. The only papers classifying Noctuid larvae as a whole are the series by Gardner in Trans. R. Ent. Soc. London, 96: pp.61-72; 97: pp.237-252; 98: pp.59-90; 99: pp.291-318; 1946-1948. They give subfamily characters so far as they can be recognized in the larvae, but our so-called "subfamilies" are probably largely arbitrary anyway. They apply to the Indian fauna, but the characters hold fairly well in our own so far as we have the same groups represented.

W.T.M. Forbes

An index to all the species of Lepidoptera mentioned in the first three volumes of the Lep. News is in preparation, with the initial compilation by D.T. McCabe. This index is intended to provide rapid reference to any species and should significantly increase the availability of material in the News. Of course, the "Recent Literature on Lepidoptera" and "Notices by Members" will not be included.

TABLE OF CONTENTS

ADDITIONS TO THE LIST OF MEMBERS

Amsel, H.G. (Dr.), (17b) Buchenberg bei Peterzell/ Baden, GERMANY.
Gertsch, W.J. (Dr.), Dept. of Insects and Spiders, American Museum of Nat. Hist., New York 24, N.Y.
Hayes, Joseph B., 1905 N. Pulaski Rd., Chicago 39, Illinois.
Merriam, Elsey E. (Miss), 4520 Clarendon Ave., Chicago 40, Illinois.
Napier, Arthur H., 503 E. Willow Grove Ave., Chestnut Hill, Philadelphia 18, Pennsylvania.
Poláček, V.B., ul. Komenského, 601/I., Brandýs nad Labem, CZECHOSLOVAKIA.
Schwartz, Abel M., 6426 N. Campbell, Chicago 45, Ill.
Seydel, Charles, B.P. #712, Elisabethville, Belgian Congo, AFRICA.

CHANGES OF ADDRESS

Glick, P.A., Box 143, College Station, Texas.
Schryver, C.D., 4561 Wolff St., Denver 12, Colorado.

DECEASED

Berry, Dean F. Florida.

There is an urgent need for certain back numbers of The Lepidopterists' News to complete sets for sale to institutional libraries. Especially needed are:

Vol.I: nos.1,2,3,4,5
Vol.II: nos. 2,4,6
Vol.III: no.1

Members who are not preserving a complete file of the News and have no need for the above issues or any others in vols.I and II will be aiding in making the News better available for reference by presenting their copies to the Society. We gratefully acknowledge the gifts of early News issues already received.

THE LEPIDOPTERISTS' NEWS
Monthly periodical of The Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1950 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 for Sustaining Membership. Please make remittances payable to: C.L. Remington.