

RECENT LITERATURE ON LEPIDOPTERA

Under this heading are listed publications on Lepidoptera from all scientific periodicals available to our cooperating abstractors. It is intended that every paper and book related to Lepidoptera and published in any part of the world after 1946 will be included. *Abstracts give all new species, subspecies, genera, and higher categories, with type localities and generotypes, but varieties, aberrations, etc. are omitted.* Papers from *The Lepidopterists' News* are listed but not abstracted. Initials of cooperating abstractors are as follows: [P.B.] — P. F. BELLINGER; [A.D.] — A. DIAKONOFF; [W.H.] — WALTER HACKMAN; [N.O.] — NICHOLAS OBRAZTSOV; [C.R.] — C. L. REMINGTON; [J.T.] — J. W. TILDEN; [P.V.] — PIERRE E. L. VIETTE.

E. DISTRIBUTION AND PHENOLOGY

- Bauer, David L., "A survey of the butterflies of the Verde Valley." *Plateau, Mus. No. Arizona*, vol. 26: pp. 95-102. Jan. 1954. Discusses general faunistics of Verde Valley. Gives checklist of 134 species found there. [C.R.]
- Burmann, Karl, "Eigenartiges Höhenvorkommen zweier Mikrolepidopteren" [in German]. *Nachrbl. Bayer. Ent.*, vol. 1: pp. 38-39. 15 May 1952. Vertical distribution of *Dioryctria abietella* and *Steganoptycha dinana* in N. Tirol. [N.O.]
- Chiaromonte, A., "Occurrence of the Cotton Pink Bollworm in Eritrea." *Plant Prot. Bull.*, vol. 2: pp. 41-42. Dec. 1953. *Platyedra gossypiella*; new record.
- de Lucca, C., "New additions to the Lepidoptera of Malta." *Entomologist*, vol. 84: pp. 258-259. Nov. 1951. 4 noctuids, 1 geometer, 3 pyralids, 17 micros. [P.B.]
- Owen, D. F., "Bombed site Lepidoptera." *Entomologist*, vol. 84: pp. 265-272. Dec. 1951. Fauna of devastated parts of London. [P.B.]
- Picard, J., "Hesperiidae du Liberia collectés par P. L. Dekeysar et B. Holas" [in French]. *Bull. Inst. Franc. Afr. Noire*, vol. 12: pp. 625-628. "July" [Sept.] 1950. List of spp. collected, and of spp. recorded from Liberia by Evans; zoogeographical notes. [P.B.]
- Remington, P. S., "Collecting along the Alaska highway." *Lepid. News*, vol. 6: pp. 103-106. 19 Feb. 1953.
- Rindge, Frederick H., "The butterflies of the Bahama Islands, British West Indies (Lepidoptera)." *Amer. Mus. Novit.*, no. 1563: 18 pp. 12 May 1952. Annotated list of 54 spp.
- Ross, Herbert H., "On the origin and composition of the nearctic insect fauna." *Evolution*, vol. 7: pp. 145-158, 7 figs. June 1953. Discussion of a few groups for which biogeographical information is reasonably complete, including Saturniidae (based on Michener's revision). [P.B.]
- Thomas, Edward S., "A European skipper, *Adopæa lineola*, at Columbus, Ohio." *Lepid. News*, vol. 6: pp. 92-93. 19 Feb. 1953.
- Tucker, R. W. E., "The insects of Barbados." *Journ. Agric. Univ. Puerto Rico*, vol. 36: pp. 330-363. Oct. 1952. Partial list, recording food habits in most cases; lists 98 Lepidoptera in 19 families. [P.B.]
- Various authors, "The field season summary of North American Lepidoptera for 1952." *Lepid. News*, vol. 7: pp. 66-118, 1 map. 5 Nov. 1953.
- Warnecke, Georg, "Neue und bemerkungswerte Grossschmetterlinge in Schleswig- und dem nördlichen Gebiet von Hamburg" [in German]. *Mitt. Faun. Arbeitsgem. Schleswig-Holstein*, vol. 5: pp. 18-22, 42-44; vol. 6: pp. 6-7. 1952-1953. Annotated lists: 15 spp. new to the area in the last 10 years, 13 which have only recently become common, and 34 others (mostly butterflies, Noctuidæ, Geometridæ). [P.B.]
- Warnecke, Georg, "Die Verbreitung des Eulenfalters *Eugnorisma (Rhyacia Agrotis) depuncta* L. in Schleswig-Holstein" [in German]. *Mitt. Faun. Arbeitsgem. Schleswig-Holstein*, vol. 5: pp. 39-42, 1 map. 1952. All records in this area are east of the terminal moraine of the last glaciation. [P.B.]
- Williams, C. B., "The relative abundance of different species in a wild animal population." *Journ. Anim. Ecol.*, vol. 22: pp. 14-31, 9 figs. May 1953. Relation between number of individuals and number of species, based mainly on light-trap captures of Macrolepidoptera. [P.B.]

Willstedt, H., "Witterungseinflüsse auf das Falterleben des Regnitztales im Jahre 1947" [in German]. *Zeits. Wiener Ent. Ges.*, vol. 34: pp. 134-139. 15 Sept. 1949. Reports favorable effects of hot, dry summer on some Lepidoptera, and other phenological observations. [P.B.]

F. BIOLOGY AND IMMATURE STAGES

- Bergold, G. H., & E. F. Wellington, "Isolation and chemical properties of the membranes of an insect virus and their relation to the virus and polyhedral bodies." *Journ. Bact.*, vol. 67: pp. 210-216, 4 figs. Feb. 1954. Pathogen of *Bombyx mori*.
- Blais, J. R., "The recurrence of Spruce Budworm infestations in the past century in the Lac Seul area of northwestern Ontario." *Ecology*, vol. 35: pp. 62-71, 6 figs. Jan. 1954. Concludes that budworm outbreaks are associated with arrival at maturity of balsam fir stands; the mature trees are killed by repeated defoliation. The last outbreak cycle occurred some 85 years ago, judging from growth ring studies. [P.B.]
- Brandt, Herbert, "Über die Einfluss der Kopulation auf die Eiproduktion und Eiablage von Schmetterlingsweibchen" [in German]. *Zeitschr. Naturforsch.*, vol. 2b: pp. 301-308. 1947. Reports specific effect of mating in increasing number of mature eggs and number of eggs laid in ♀♀ of *Bupalus piniarius* and *Ephestia kübniella*. [P.B.]
- Breese, Michael H., "The maize stalk borer." *Nyasaland Agric. Quart. Journ.*, vol. 8: pp. 31-37. "Apr." Sept. 1949. Biology and control of *Busseola fusca*.
- Brown, E. S., "Mimicry as illustrated in the British fauna." *New Biology*, no. 10: pp. 72-94, 6 pls. 1951. Popular account of mimics of bees and wasps, including *Hemaris* and *Ægeriidae*. [P.B.]
- Burmman, Karl, "*Crambus maculalis* Zett. (Microlepidoptera, Pyralidae)" [in German]. *Wiener Ent. Ges.*, vol. 32: pp. 69-75, 6 figs. 10 May 1948. Describes early stages, biology, and variation; names 2 aberrations. [P.B.]
- Burmman, Karl, "Aus dem Leben von *Symmoca signella* Hb. (Microlepidoptera, Gelechiidae)" [in German]. *Zeitschr. Wiener Ent. Ges.*, vol. 32: pp. 81-90, 7 figs. 30 June 1948. Early stages & biology.
- Butcher, R. W., "Biological flora of the British Isles. *Atropa* L. *Atropa belladonna* L." *Journ. Ecol.*, vol. 34: pp. 345-353, 2 figs. Aug. 1947. Larvæ of *Pieris brassicae* and *Mamestra* have been found on the plant. [P.B.]
- Casey, Jewell, "The life of the Cecropia Moth - story in pictures." *Frontiers*, vol. 16: pp. 144-145, 9 figs. June 1952.
- Chace, Lynwood M., "The picture story of the Cecropia Moth." *Frontiers*, vol. 15: pp. 16-17, 7 figs. Oct. 1950.
- Chapman, V. J., "Biological flora of the British Isles. *Suaeda maritima* (L.). *Suaeda fruticosa* Forsk." *Journ. Ecol.*, vol. 35: pp. 293-310, 9 figs. Dec. 1947. Larvæ of *Coleophora suaëdivora*, *C. atriplicis*, *Phthorimæa suædella*, *P. salicorniæ* reported feeding on spp. of *Suaeda*. [P.B.]
- Chapman, V. J., "Biological flora of the British Isles. *Halimione portulacoides* (L.) Aell." *Journ. Ecol.*, vol. 38: pp. 214-222, 2 figs. July 1950. Larval food plant of *Coleophora atriplicis*, *C. salinella*, *Aristotelia stipella*, *Phthorimæa instabilella*. [P.B.]
- Chernoponevskina, S. M., "A new insect attacking lucerne: a moth of the genus *Phasiane* (Lepidopt., Geometridæ); control methods." [in Russian]. *Dokl. Vses. Akad. Selsk. Nauk im. Lenina*, vol. 13 no. 1: pp. 37-38. 1948. [Not seen.]
- Clements, A. N., "On the urticating properties of adult Lymantriidæ." *Proc. Roy. Ent. Soc. London (A)*, vol. 26: pp. 104-108, 1 fig. 15 Sept. 1951. In some genera the female collects urticating larval hairs from the cocoon and sheds them with her own hair for the protection of the egg. [P.B.]
- Clawson, J. R., "The bug in the built-in bungalow." *Nat. Hist.*, vol. 61: p. 279, 1 fig. June 1952. Larva of *Thyridopteryx ephæmeriformis*.
- Dowden, Philip B., H. A. Jaynes, & V. M. Carolin, "The role of birds in a Spruce Budworm outbreak in Maine." *Journ. Econ. Ent.*, vol. 46: pp. 307-312. April 1953. Predation by birds on larvæ of *Choristoneura fumiferana* measured by comparing two sites, on one of which all birds were shot. [P.B.]
- Ektivishvili, Z. S., "Materials pertaining to the biology of the platanus moth *Lithocolletis platanii* Stgr." [in Russian]. *Soobshch. Akad. Nauk Gruzinskoi SSR*, vol. 13: pp. 469-476. 1952. [Not seen.]
- Emme, A. M., "Certain problems in the theory of the diapause in insects" [in Russian]. *Usp. Sovrem. Biol.*, vol. 35: pp. 395-424. May/June 1953. [Not seen.]

- Löberbauer, Rudolf, "Eine interessante Beobachtung bei *Colias edusa* F." [in German]. *Zeits. Wiener Ent. Ges.*, vol. 34: pp. 123-124. 15 Sept. 1949. Second generation of local population consisted only of ♂♂ and one ♀ parasitized by a nematode which had consumed the ovaries. Absence of ♀♀ perhaps caused by selective effects of unfavorable weather on larvæ. [P.B.]
- Loibl, Hans, "Schmetterlinge in Hamburgs Gärten und Parks. Schmetterlinge als Kulturfolger" [in German]. *Mitt. Faun. Arbeitsgem. Schleswig-Holstein*, vol. 6: pp. 38-45. 1953. Discussion and annotated list of Macrolepidoptera which find optimum conditions in settled areas and cities. [P.B.]
- Parrott, Arthur W., "A systematic catalogue of Australian Braconidæ." *Pacific Sci.*, vol. 7: pp. 193-218. Apr. 1953. Records hosts when known; with host index, including 23 Lepidoptera. [P.B.]
- Paulian, R., "Observations sur les Boroceras de Madagascar, papillons sérécigènes (Lep. Lasiocampidæ)" [in French]. *Naturaliste Malgache*, vol. 5: pp. 69-86, 8 figs. 1953. Important study on the nomenclature and the biology of two silkworms from Madagascar: *B. madagascarensis* and *B. marginepunctatus*; with figures of the larvæ. [P.V.]
- Synys'kyi, M. M., "Feeding the Oak Silkworm on willows" [in Russian]. *Dopovidi Akad. Nauk URSS*, no. 1: pp. 41-46. 1951. [Not seen].
- Tsao, Ching-Hsi, "Quantitative effects of diet, age, temperature and humidity on the fecundity of five representative species of insects." *Diss. Abs.*, vol. 12: p. 236. 1952. Abstract only; including *Galleria*.
- Waldner, Franz, "Das Vorkommen der Zackeneule (*Scoliopteryx libatrix* L.) in Höhlen" [in German]. *Zeits. Wiener Ent. Ges.*, vol. 37: pp. 176-182, 1 pl., 1 fig. Brief description of moth, early stages, and biology. Lists numerous records of occurrence in caves in Europe and U. S. A. [P.B.]
- Walker, Robert L., "Spiny Bollworm of cotton in Iraq." *Plant Prot. Bull.*, vol. 1: p. 42. Dec. 1952. *Earias insulana*; lists alternative foodplants. [P.B.]
- Wellington, W. G., J. J. Fettes, K. B. Turner, & R. M. Belyea, "Physical and biological indicators of the development of outbreaks of the Spruce Budworm, *Choristoneura fumiferana* (Clem.) (Lepidoptera: Tortricidæ)." *Canad. Journ. Res., Sect. D*, vol. 28: pp. 308-331, 1 pl., 10 figs. Dec. 1950. Describes consistent association of budworm outbreaks with particular preceding meteorological conditions and with outbreaks of *Malacosoma disstria*. P.B.
- Williams, J. R., "The larvæ and pupæ of some important Lepidoptera." *Bull. Ent. Res.*, vol. 43: pp. 691-701, 5 figs. Jan. 1953. Detailed descriptions, well illustrated, of early stages of pest species from Mauritius: *Sesamia calamistis*, *S. inferens*, *S. unifornis*, *Proceras sacchariphagus*, *P. indicus*, *Argyroplote schistaceana*, *A. leucotreta*, *Cryptophrisia williamsi*, *O. peltastica*. Key to larvæ of the last 4. [P.B.]
- Wittstadt, H., "Über den Geschlechtsduft der Schmetterlinge" [in German]. *Zeits. Wiener Ent. Ges.*, vol. 35: pp. 81-87. 1 June 1950. Discussion of sexual odors of Lepidoptera, and results of some experiments on the distances at which they are effective: up to 4 km. for ♀ scent (*Lemonia dumi*), only a few meters for ♂ scent (Sphingidæ, *Endromis*). [P.B.]

G. PHYSIOLOGY AND BEHAVIOR

- Agrell, Ivar, "Occurrence and metabolism of free amino acids during insect metamorphosis." *Acta Physiol. Scand.*, vol. 18: pp. 247-258, 5 figs. 15 Aug. 1949. Study on pupæ of *Phalera bucephala* and *Calliphora*. [P.B.]
- Alleget, Paul, "Conditionnement précoce de la métamorphose chez *Galleria mellonella* L." [in French]. *C. R. Acad. Sci. Paris*, vol. 234: pp. 1641-1643. 16 Apr. 1952. Young larvæ fed on pure wax may molt once and then pupate, or molt repeatedly and then die; difference correlated to some extent with weight, but not strictly with instar. [P.B.]
- Andrewartha, H. G., "Diapause in relation to the ecology of insects." *Biol. Revs.*, vol. 27: pp. 50-107, 5 figs. Feb. 1952. Review article, with numerous examples from the Lepidoptera and their parasites; extensive bibliography. [P.B.]
- von Buddenbrock, W., & I. Moller-Racke, "Neue Beobachtungen über den farbensinn der Insekten" [in German, English summary]. *Experientia*, vol. 8: pp. 62-63. 15 Feb. 1952. Tests of 'Luminosity' of certain colors to 22 spp. of butterflies, of 5 families. Suggests separate perceptors for yellow, green-blue, and orange-red. Order of brightness similar for members of same family. [P.B.]

- Bückmann, Detlef, "Die Umfärbung von Schmetterlingsraupen vor der Verpuppung (Untersuchungen an *Cerura vinula*)" [in German]. *Naturwiss.*, vol. 39: pp. 213-214. 1952. Prepupal color change of larva is under control of pupation hormone. [P.B.]
- Goodwin, T. W., "The pigments in colour phases of the larvæ of *Plusia gamma* L. (the Silver-Y Moth)." *Biochem. Journ.*, vol. 55: pp. 834-838, 2 figs. Dec. 1953. Study of carotenoids and melanins in hemolymph and integument of normal and dark phase (crowded) larvæ; the former lack melanin in integument. [P.B.]
- Hadorn, Ernst, & Alfred Kühn, "Chromatographische und fluorometrische Untersuchungen zur biochemischen Polyphänie von Augenfarb-Genen bei *Ephestia kuehniella*" [in German]. *Zeits. Naturf.*, vol. 8b, pp. 582-589, 4 figs. Oct. 1953. Demonstrates differences in concentrations of some fluorescing substances in imaginal heads of normal and eye-color mutant stocks of *Ephestia*, *Plodia*, and *Ptychopoda*. [P.B.]
- Jones, Jack Colvard, "On the heart in relation to circulation of hemocytes in insects." *Ann. Ent. Soc. Amer.*, vol. 46: pp. 366-372, 4 figs. Sept. 1953. Blood cells circulate through the heart in *Galleria*, *Pieris*, and *Heterocampa*, but not in all insects. [P.B.]
- Kursanov, A. L., & E. I. Vyskrebentseva, "Exchange of gases in the hemolymph of the silkworm during the development of the chrysalis" [in Russian]. *Biokhimiia*, vol. 18: pp. 363-370. May/June 1953. [Not seen].
- Leppik, E. E., "The ability of insects to distinguish number." *Amer. Nat.*, vol. 87: pp. 229-236, 4 figs. July/Aug. 1953. Reports certain insects, including some butterflies and moths, can distinguish numbers of petals on a flower. [P.B.]
- Magnus, Dietrich, "Über optische 'Schlüsselreize' beim Paarungsverhalten des Kaisermantels *Argynnis paphia* L. (Lep. Nymph.)" [in German]. *Naturwiss.*, vol. 23: pp. 610-611. Dec. 1953. Reports that color and pattern movement are key factors for sexual attraction of ♂ *A. paphia*; stimulus created by rotating cylinder with black and colored stripes is as effective as moving model or living female. [P.B.]

H. MIGRATION

- [Anonymous], "Monarch man." *Life*, vol.36: pp. 61-62, 4 photos. 24 May 1954. Photographic story about C. A. Anderson and his studies of migration of *Danaus plexippus*. [C.R.]
- Bretherton, R. F., "Early immigrants in north-west Surrey." *Entomologist*, vol. 85: p. 96. Apr. 1952. *Nomophila* and *Noctuidæ*.
- Briscoe, Margaret Villiers, "Butterfly migration in the Nilgiris." *Journ. Bombay Nat. Hist. Soc.*, vol. 50: pp. 417-418. Dec. 1951. *Danaus* and *Catopsilia*.
- Burmman, Karl, "Einige Beobachtungen über *Pyrameis cardui* L. aus Nordtirol (Lepidoptera, Nymphalidæ)" [in German]. *Ent. Nachrbl.*, vol. 3: pp. 181-183. Oct./Nov. 1951. Lists occurrence in 4 years, and instances in which directional flight (always south to north) was observed. [P.B.]
- Burmman, Karl, "Spätherbstliche Wanderfalterbeobachtungen im Stadtgebiet von Innsbruck" [in German]. *Nachrbl. Bayer. Ent.*, vol. 1: pp. 81-83. 15 Nov. 1952. Records 35 immigrant spp. [N.O.]
- Burmman, Karl, "War 1951 ein Wanderjahr für *Codonia pupillaria* Hb? (Lepidoptera, Geometridæ)" [in German]. *Ent. Nachrbl.*, vol. 5: pp. 26-28. March/April 1953. Appearance of the species, new to north Tyrol, with many immigrants from the south, suggests that 1951 was an outbreak year for it. [P.B.]
- Clark, Austin H., "The first record of a butterfly migration in America." *Lepid. News*, vol. 6: p. 42. 8 Aug. 1952.
- Cockbill, G. F., "Records of migrations of *Catopsilia florella* F. (Pieridæ) from Southern Rhodesia, 1922-1950." *Proc. Roy. Ent. Soc. London (A)*, vol. 26: pp. 113-128, 4 figs. 17 Dec. 1951.
- Common, I. F. B., "Migration and gregarious aestivation in the Bogong Moth, *Agrotis infusa*." *Nature*, vol. 170: pp. 981-982. 6 Dec. 1952. Australian species passes summer in large colonies on rocks at high altitude; unidirectional flights to and from aestivation site recorded. [P.B.]
- Darlow, H. M., "Observations on migrant Lepidoptera in the Mediterranean." *Entomologist*, vol. 84: pp. 246-254. Nov. 1951. Migratory swarms near land; captures at sea; captures of butterflies at light. [P.B.]
- Ekholm, Svante, "On mass appearance of *Phytometra gamma* L. (Lep., Noctuidæ) in 1946." *Notul. Ent.*, vol. 26: pp. 85-87, 1 map. Feb. 1947. Deals with a mass appearance and migration of this species in Finland. Lists 4 parasites. [W.H.]

- Ekholm, Svante, "Om en begränsad vandring av *Phytometra gamma* L. år 1949 vid Finska vikens kust" [in Swedish, English summary]. *Notul. Ent.*, vol. 30: pp. 127-128. Dec. 1950. Records a limited migration of *P. gamma* along the south coast of Finland. [W.H.]
- Ekholm, Svante, "Migrations of the Painted Lady, *Vanessa cardui* L. (Lep., Nymphalidæ) in 1948 in Finland." *Notul. Ent.*, vol. 31: pp. 2-15, 1 fig., 1 table, 2 diagr. May 1951.
- Fager, E. W., "Migration notes from Mexico." *Lepid. News*, vol. 6: p. 44. 8 Aug. 1952.
- Farner, D. S., "The 1952 invasion of California Tortoise Shell butterflies". *Crater Lake Nature Notes* 18: 24. 1952. Describes immigration of *Nymphalis californica*, with citations of notes on early invasions at Crater Lake, Oregon. [R. H. Whittaker.]
- Fender, Kenneth M., & James H. Baker, "Notes on the migration of *Nymphalis californica*." *Lepid. News*, vol. 7: p. 15. 20 Apr. 1953.
- Freund, A., "Beobachtungen über die Gattung *Yponomeuta* L. (Yponomeutidæ, Lep.)" [in German]. *Nachrbl. Bayer. Ent.*, vol. 2: pp. 4-6. 15 Jan. 1953. Discusses a migration in the Alps. [N.O.]
- Fulton, MacDonald, "Migration of the Monarch Butterfly through Chicago." *Lepid. News*, vol. 7: p. 28. 20 Apr. 1953.
- Harz, Kurt, "Wanderschmetterlinge und ihre Erforschung" [in German]. *Natur und Volk*, vol. 82: pp. 236-237. 1 July 1953. General remarks on migrations of Lepidoptera; reports formation of "Deutsche Forschungszentrale für Schmetterlingswanderungen". [P.B.]
- Hayward, Kenneth J., "Migration of butterflies in Argentina during the spring and summer of 1951-52." *Proc. Roy. Ent. Soc. London (A)*, vol. 28: pp. 63-73. Observations on *Ascia monuste* and *Libytheana carinenta*. [P.B.]
- Huggins, H. C., "Migrants in 1951." *Entomologist*, vol. 85: pp. 42-43. Feb. 1952. Notes on several spp. in Britain. [P.B.]
- Lempke, B. J., "Trekvlinders in 1949, 10^e jaarverslag, slot" [in Dutch: Migratory Lepidoptera in 1949, 10th annual report finished; with English summary]. *Ent. Berichten*, vol. 13: pp. 147-153, 2 figs. 1 Oct. 1950. 15 spp. discussed, 2 graphs on *Plusia gamma* given. [A.D.]
- Lempke, B. J., "Trekvlinders in 1952. 13^e jaarverslag (slot)" [in Dutch, English summary]. *Ent. Berichten*, vol. 14: pp. 339-345, 2 figs. 1 Sept. 1953.
- Maclaren, P. I. R., "Migration of butterflies." *Nigerian Field*, vol. 17: p. 191. Oct. 1952. Records migration of *Libythea labdacæ*. [P.B.]
- Marchant, S., "Notes on a migration of the butterfly *Libythea labdacæ*. *Nigerian Field*, vol. 15: pp. 88-90. Apr. 1950. Near Owerri, Nigeria, flying north. [P.B.]
- Mather, Bryant, "A migration of *Ascia monuste* in Mississippi." *Lepid. News*, vol. 7: pp. 13-14. 20 Apr. 1953.
- Muspratt, Vera Molesworth, "Southward migration of Rhopalocera in the South of France." *Entomologist*, vol. 84: pp. 226-229. Oct. 1951. Mainly Pieridæ.
- Muspratt, V. M., "Observations sur quatre migrations de Lépidoptères" [in French]. *Rev. franc. Lépid.*, vol. 13: pp. 125-127. "Sept./Oct." [28 Dec.] 1951. *Abraxas pantaria*, *Hæmorrhagia fuciformis*, *Catocala elocata*, *Pieris brassicæ*, *Leucochloe daphidice*.
- Mazzucco, Karl, "Falterwanderwellen aus dem Süden" [in German]. *Zeits. Wiener Ent. Ges.*, vol. 38: pp. 81-87, 1 fig. 30 April 1953. Study of migrations of *Pyrameis cardui*; thinks immigrants in Austria are usually of the 3rd generation, the capacity for flight of the first two sufficing only to bring the migrant population across the Mediterranean from the North African winter breeding range. [P.B.]
- Nabokov, Vladimir, "Migratory species observed in Wyoming, 1952." *Lepid. News*, vol. 7: pp. 51-52. 29 July 1953.
- Nielsen, Eric Tetens & Astrid Tetens, "Contributions towards the knowledge of the migration of butterflies." *Amer. Mus. Novit.*, no. 1471: 29 pp., 10 figs. 27 Oct. 1950. Study based on Florida migrations of *Ascia monuste*. Describes and figures all stages and records foodplants. The prerequisites for a migratory movement is a mass emergence of adults - that is, a population which produces adults in one or more "waves" rather than continuously. Discusses range and direction of observed migrations, and factors affecting them. During migration the butterflies lack the normal instincts of sedentary adults; the flight may be regarded as a goal in itself, not a purposeful movement. [P.B.]
- Nordman, Adolf, "Vaeltavista perhosistamme" [in Finnish]. *Luonnon Tutkija*, vol. 51: pp. 73-79, 3 figs. 1947. On migrating Lepidoptera in Finland. [W.H.]

- Riley, N. D., "Immigrants of *Vanessa cardui* in March." *Entomologist*, vol. 85: pp. 95-96. Apr. 1952.
- Sicher, Harry, "Migration of *Vanessa carye*." *Lepid. News*, vol. 7: p. 53. 29 July 1953.

I. TECHNIQUE

- Belkin, John N., & William A. McDonald, "Preparing Lepidoptera for class study." *Lepid. News*, vol. 6: pp. 61-63, 1 fig. 1952.
- Bellinger, Peter F., "Salmon's fluid, a new mounting medium for slides of small larvæ and larval pelts of Lepidoptera." *Lepid. News*, vol. 7: pp. 170-171. 12 Feb. 1954.
- Crane, Jocelyn, "Housekeeping for butterflies." *Animal Kingdom*, vol. 57: pp. 138-143, 5 photos. Oct. 1954. Describes the large "butterfly houses" built for study of butterfly behavior at Simla, Trinidad, by William Beebe, Henry Fleming, and author. [C.R.]
- Daniel, Franz, "Praxis des Nachtfangs mit Licht" [in German]. *Nachrbl. Bayer. Ent.*, vol. 1: pp. 44-46, 51-54, 61-63, 67-68. 15 June, 15 July, 15 Aug., 15 Sept. 1952. Discusses methods and problems of collecting moths by the aid of light. [N.O.]
- Dickson, R. C., M. M. Barnes, & C. L. Turzan, "Continuous rearing of the Codling Moth." *Journ. Econ. Ent.*, vol. 45: pp. 66-68; 2 figs. Feb. 1952. Describes technique for laboratory culture of *Carpocapsa pomonella* and *Grapholitha molesta*. [P.B.]
- van Dintner, J. B. M., "An apparatus for breeding insects" [in Dutch, English summary]. *Tijdschr. Plantenziekten*, vol. 59: p. 200, 1 fig. 1953.
- Evans, William H., "Luring *Anthracis sara* into the net." *Lepid. News*, vol. 6: pp. 101-102. 19 Feb. 1953.
- Foltin, Hans, "Der Lichtfang, Erfahrungen und Beobachtungen" [in German]. *Ent. Nachrbl.*, vol. 3: pp. 201-206. Dec. 1951. Observations on factors involved in collecting at light. [P.B.]
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