

LEPIDOPTERA NEWS

June 2000

No. 2

THE BUTTERFLIES OF SHEK KWU CHAU ISLAND, HONG KONG, CHINA

by Richard Lutman

Close up, Hong Kong is a jumble of brightly colored signs, most of which are written in Chinese, streets that are always full of rushing people, and the sound of jackhammers tearing down and building up. It is a noisy, congested city, always in motion and always exciting. The crowded tenements and concrete canyons bustle with life and the urgent need to make money. It is hard to imagine that this ultimate capitalistic society is home to some rare and unique animal species, many of which have been found on the outlying islands with their unspoiled beauty. One such place, although with much regrowth of vegetation, is Shek Kwu Chau (Stone Drum Island), a granitoid outcropping located about 18 km south of Hong Kong Island (Fig. 1).



Fig. 1. Map of Hong Kong showing 1) Hei Ling Chau, 2) Shek Kwu Chau, and 3) Hong Kong Island; New Territories is at top and has considerably more land area off the map scale, north to the next Chinese province (after Lazell and Lu, 1990).

Shek Kwu Chau is a small island, about 1 by 1-1/2 km in size, and 185m at its highest point. It is steep and hot, much like many of the scrub islands in the area. From a distance, Shek Kwu Chau looks barren and uninhabitable, not at all like the collector's paradise it is. It is also a scientific anomaly. In 1961, the island was completely burned over so construction could begin for a private drug rehabilitation center: the Society for the Aid and Rehabilitation of Drug Addicts (SARDA). The recovery of life from this event has been remarkable. Records for butterflies show over 70 species, some of which are well established on the island. Snakes number 17 species, two of which do not occur anywhere else in the world (*Ahaetulla* and *Dendrelaphis*; Lazell and Lu, 1991). There also are several good whip scorpions (*Thelyphonida*; Lazell, 1996), and many large centipedes, for which the island is famous. A possible explanation for the island's rebound could be the deep boulder ravines in which life sustaining conditions could have been maintained during the massive burn over.

The best time to collect on Shek Kwu Chau is from about 7-11 AM, before it gets too hot. The temperature can easily reach 32°C, and the humidity often exceeds 90% during the summer months, from May to October. The most productive area so far has been the southern part of the contoured trail, which partially rings the island (Fig. 2). The flora along the trail is a mix of grass, shrubs, shade and exposed areas. In the early morning, one can smell the spicy odors of food being cooked wafting upward from the buildings below. Loud music sometimes blares through the island's many loudspeakers, which do not seem to bother the butterflies. In fact, there are times I think they may be secretly dancing to the sounds.

The afternoon collecting begins at about 3:30 PM, when the temperature and humidity are less. Although the numbers of visible butterflies are less in the afternoon, it does not make any difference because the beauty of the island constantly changes and there are always new specimens to catch. If you are lucky, you may even see a sea eagle flying below the cliffs at the island's northern end.

George Walthew, of Hong Kong University, has recorded 225 species of butterflies for Hong Kong. Most of the butterflies fly all year round and can have many different seasonal markings, which makes their identification challenging.

The number of species caught on Shek Kwu Chau is dependent upon the amount of time that was spent on the island and the weather conditions. It should also be taken into consideration that adults may be fast-flying, far-ranging and may be seen in areas other than those of host plants. As more information is gathered about the environment of this island, a list of plants will be compiled and examined in relation to the butterflies that have been caught. For several years, the fauna has been intensely investigated by an American and Chinese team: Dr. Lu Wenhua, from The Conservation Agency, and professors Chen Dingru and Li Zhen Chang, from the Department of Biology, South China Normal University, Guangzhou. Their findings indicate that the major vegetation types on the island are grassland, secondary forest, shrubs, and tree plantation. They [cont. on p. 7]

LEPIDOPTERA NEWS

Editor: J. B. Heppner Assoc. Editor: Thomas C. Emmel

Published by the Association for Tropical Lepidoptera, Inc. P. O. Box 141210 Gainesville, FL 32614-1210, USA

Tel: (352) 392-5894 FAX: (352) 392-0479 www.troplep.org Frequency: Quarterly (March, June, September, December) e-mail: jbhatl@aol.com ISSN: 1062-6581 The Association for Tropical Lepidoptera, Inc., is a non-profit corporation for the study and conservation of tropical and subtropical Lepidoptera of the world. Contributions are tax-deductible. Advertising is accepted.

ASSOCIATION FOR TROPICAL LEPIDOPTERA

BOARD OF DIRECTORS

Vitor O. Becker (Brazil) Don R. Davis (USA) Boyce A. Drummond, III (USA) Peter J. Eliazar (USA) Thomas C. Emmel (USA) Gerardo Lamas (Peru) Olaf H. H. Mielke (Brazil) Eugene G. Munroe (Canada) Jon D. Turner (USA)

Chairman and Executive Director: J. B. Heppner

ADVISORY COUNCIL

Andrés O. Angulo (Chile) Yutaka Arita (Japan) George T. Austin (USA) Manuel A. Balcázar L. (Mexico) Henry S. Barlow (Malaysia) Dubi Benyamini (Israel) Ronald Boender (USA) Keith S. Brown Jr. (Brazil) José A. Clavijo A. (Venezuela) Charles V. Covell Jr. (USA) U. Dall'Asta (Belgium) Philip J. DeVries (USA) Edward W. Diehl (Indonesia) Julian P. Donahue (USA) Ulf Eitschberger (Germany) Eric Garraway (Jamaica) Dale H. Habeck (USA) Christoph Häuser (Germany) Lowell N. Harris (USA) Hiroshi Inoue (Japan) Daniel H. Janzen (USA) Kurt Johnson (USA) R. L. Kitching (Australia) George O. Krizek (USA) Tosio Kumata (Japan)

Jean-Francois Landry (Canada) Torben B. Larsen (England) Claude Lemaire (France) Jorge Llorente B. (Mexico) Martin Lödl (Austria) Wolfram Mey (Germany) Kauri Mikkola (Finland) Scott E. Miller (USA) Joël Minet (France) W. M. Neukirchen (Germany) K. T. Park (South Korea) Rod E. Parrott (Canada) Amnuay Pinratana (Thailand) Dalibor Povolný (Czech Rep.) Jozef Razowski (Poland) M. Alma Solis (USA) Dieter Stüning (Germany) Gerhard Tarmann (Austria) Paul Thiaucourt (France) Jürgen H. R. Thiele (Germany) Antonio Vives M. (Spain) András Vojnits (Hungary) Hsiau-Yue Wang (Taiwan) Per O. Wickman (Sweden) Allen M. Young (USA)

JOURNALS: separates (1990-95 only), \$1 first page, 25ϕ each added page (specify author and citation). Past journal issues: \$22.50 each (1990-98) (1994 *HL* double issue: \$45). *Lepid. News*: \$10 per year. **CONTENTS** for the journals are issued every two years.

TO OUR READERS

The results of the 1999 election are in and we congratulate Dr. Paul R. Ehrlich as our new President for 2000. Hopefully, more members will participate in voting this year.

This issue of the *News* has some interesting articles, including a guest essay by Dr. Maureen E. Mulvihill, who has been researching long unknown pseudononymous English poems from the 17th century, resulting in her deciphering of the true identity of the poet, Lady Mary Villiers Stuart. Lady Villier's nickname was "Papillon" or "Butterfly," besides her "Ephelia" pseudonym.

The "Ephelia" essay, plus some other articles herein, continue the development of *Lepidoptera News* as an outlet for scientific papers, as well as member news. There are no page charges for publishing articles in the *News*. We cannot take color illustrations, but halftones and line art are acceptable. *Lepidoptera News* is sent to BIOSIS (for *Zoological Record*) and to the Library of Congress, as well as all ATL members; so members can publish articles in the *News* with as much impact as in the journals and at no cost (only more than 20 reprints requires a charge).

J. B. HEPPNER Executive Director

NOTES

1. 2001 Annual Meeting: April 20-22 in Gainesville.

2. 2001 Annual Photo Contest: deadline is March 15, 2001. Note that the prize awards include a Grand Prize winner (award may be cash or a book).
 3. Cover Photos: members can note that color photos for journal covers are always sought. ATL does not pay photo fees, but you do have the gratification of having your photo selected for one of the front or back covers. Photos should be exceptionally sharp and in our page proportion.

4. **ATL Debentures:** a number of ATL members have already taken advantage of our interest rates and invested in ATL debentures. Please let us know what you can do to help! Returns of principal (at end of period) and interest (paid annually) are guaranteed.

5. ATL Home Page: see it at http://www.troplep.org. Coming in 2000 (hopefully): color photo files of worldwide butterflies and moths!

6. **2000 Journals**: the 2000 issues are in preparation and probably will be issued together as a group, or close together.

7. **ATL Photo Archives**: Do not forget to consider ATL as the ultimate depository for your valued color slides of moths and butterflies and larvae. Do not let your investment of time and effort go to relatives who may not appreciate photographs of Lepidoptera; donate them to the ATL Photo Archives. You are also welcome to send listings of your holdings to add to the ATL Photofile database: let others know what species you have recorded on film. You may have unique life history photos never seen before.

8. Life memberships: the Directors have voted to increase life member dues (note enclosed information sheet), so beginning June 1, the ATL life membership will cost \$2,000 (or \$400 per year for 5 years).

9. **Membership List**: the new membership list is being compiled and should be out this year as an isue of the *News* (if it takes too long to complete, then in early 2001).

ELECTIONS

Results of the 1999 vote gave Dr. Paul R. Ehrlich the election as President for 2000:

Dr. Paul R. Ehrlich, Palo Alto, California, USA 25 Dr. Zsolt Bálint, Budapest, Hungary 13

Candidates for other offices were re-elected for another year of service. Voting was a new low in participation by the membership (39 out of 1247 members), but hopefully more will vote this year.

LETTERS

THE TRILINGUAL NABOKOV

In the excellent article about Vladimir Nabokov by Stephen Jay Gould, in the March 2000 issue of *Lepidoptera News*, there are some minor errors, most probably because the author of the essay does not speak Russian, as well as because he perhaps has not read the majority of Nabokov's books, but rather relied on secondhand information. There is no doubt about the fact that Nabokov was (at least) trilingual. However, *not* English, but Russian was the second tongue for Nabokov.

In the families of the Russian aristocracy, Russian was the language good for communicating with the servants, but not spoken "at the table." In this connection Nabokov himself says: "This was in the beginning of 1905 [(Nabokov was 6 years old at that time)] . . . my brother and I could read and write English but not Russian (except *kakao* and *mama*)." (from *Speak Memory*, p. 20. 1966. Pyramid Books, New York). Nabokov later overcompensated for this situation. However, when he translated his book *Speak Memory* into English in 1953, he did it with the help of his wife Verá.

Nabokov's personality is a museum of various very interesting psychological phenomena. "I have been subject to mild hallucinations. Some are aural, others are optical, and by none have I profited much" (from *Speak Memory*, p. 24). Nabokov describes so-called "hypnagogical hallucinations," rather a common phenomenon, which the subject experiences before falling asleep: "slow, steady development of the visions that pass before my closed eyes." And, "on the top of all this I present a fine case of 'colored hearing'" (from *Speak Memory*, p. 25). This phenomenon is professionally known as "synaesthesia": each letter of the English alphabet, when being pronounced by Nabokov, was connected with the experience of a different color.

His interesting book *Speak Memory*, a *sine qua non* for any lepidopterist, was originally to be called "Speak Mnemosyne." A 15 year old Nabokov was collecting *Parnassius mnemosyne* (Linnaeus) in the vicinity of St. Petersburg in Russia (and also the author of these lines collected it more than half a century ago in central Bohemia (Czech Republic), before it was extinct). However, Nabokov was told, that if he called it "Speak Mnemosyne" (for the Greek Goddess of Memory), "little old ladies would not want to ask for a book whose title they could not pronounce."

At the age of 7, Nabokov saw his first butterfly, a *Papilio machaon*. He did catch it, but it escaped him, and Nabokov *followed* it for the next 40 years before he could capture it again (at least the American subspecies), "on an immigrant dandelion under an endemic aspen near Boulder [Colorado]." It is of interest to cite verbatim, how Nabokov emotionally perceived the first butterfly in his life:

"... a rare visitor, a splendid, pale-yellow creature with black blotches, blue crenels, and a cinnabar eyespot above each chrome-rimmed black tail. As it probed the inclined flower from which it hung, its powdery body slightly bent, it kept restlessly jerking its great wings, and my desire for it was one of the most intense I have ever experienced ..." (from Speak Memory).

To try to better understand Nabokov's personality with his cathartic experiences and pantheistic ecstatic feelings, we have to cite him again. (Interestingly, his keen sense of smell already recorded the butterfly pheromones!):

"Through the smells of the bog, I caught the subtle perfume of butterfly wings on my fingers, a perfume which varies with the species — vanilla, or lemon, or musk, or a musty, sweetish odor difficult to define I confess I do not believe in time. I like to fold my magic carpet, after use, in such a way as to superimpose one part of the pattern upon another. Let visitors trip. And the highest enjoyment of timelessness — in a landscape selected at random — is when I stand among rare butterflies and their food plants. This is ecstacy and behind the ecstacy is something else, which is hard to explain. It is like a momentary vacuum into which rushes all that I love. A sense of oneness with sun and stone. A thrill of gratitude to whom it may concern — to the contrapuntal genius of human fate or to tender ghosts humoring a lucky mortal." (from *Speak Memory*).

As a psychiatrist, who experiences the same as Nabokov when on an alpine meadow with flowers and butterflies, I could say, that these ecstatic experiences are a classic example of an ontogenetic mental regression to the level of polytheistic and/or pantheistic emotional experiences.*

> GEORGE KRIZEK Washington, DC

* pantheistic (Greek for all (pan) and God (*theos*)) = a viewpoint that God is not a personality but that all manifestations of the self-existing universe are God; polytheistic (Greek for many (*poly*) and God (*theos*)) = many Gods.

BOOK REVIEW: Fluttering Encounters in the Amazing Archipelago, by Jan Pasternak 2000. 135pp (incl. 204 color fig.) (23 x 30 cm). Jan Pasternak, Cesky Tesin, Czech Republic. \$70 cloth.

Ostensibly a butterfly book — more importantly this book — is about passion and a man who followed his dreams. With a love of butterflies and nature in his youth in his native Czech Republic, an incredible odyssey was to unfold for my friend and author, Jan Pasternak. Into the wilds of New Guinea in search of the mystical *Ornithoptera*, exploring some of the last remnants of Java's once extensive rain forests, magical Sulawesi and other exotic lands, Jan has spent a good part of the last 30 years in his beloved 'amazing archipelago.' Steadfast work led to his discovery of two *Ornithoptera* life histories, the life history of *Atrophaneura luchti*, and much field work with nearly all the *Ornithoptera* species.

This beautiful book, written and illustrated by Jan Pasternak, attests to his labor of love. Never having been to the British Museum of Natural History, I have never even seen a museum specimen of Ornithoptera meridionalis, but being perhaps the author's favorite butterfly, his book includes several photos of this exquisite creature in the wild, including the West Irian subspecies, O. m. tarunggarensis! The main chapter of the book, "Focus on New Guinea," includes ecological and detailed life history information on nearly all of New Guinea's birdwings. Along with valuable information in the text, are numerous beautiful color photographs of both adults and early stages. As an added bonus, the end of the chapter includes a number of beautiful photos of butterflies and rain forest habitats on Japen Island, West Irian. Part of the Schouten Island group, Japen was largely unexplored for Lepidoptera until Jan undertook a number of expeditions into Japen's rugged interior. Photos of Java's remnant rain forests, volcanoes, *Atrophaneura*, *Troides*, and their early stages — this is the crux of "Focus on Java." Near the beginning of the chapter, in an excellent bit of descriptive writing, Jan paints a vivid account of his and a fellow traveler's visit to fiery Mt. Bromo at sunrise. His descriptive, narrative style compliments very well his 200 color photographs, and adds to the beauty of the book. One passage where Jan relates his travail while searching for *O. chimaera* in Papua's Owen Stanley Range, is too vicarious for me, since some 15 years later, I myself spent a night standing under a tree in the rain in the same area!

To those narrow-minded individuals who might say this is a 'pretty' book, but it is not science, I counter that any work that adds to our cumulative knowledge of the world around us certainly is science. This book certainly will be on my bookshelf, along with mor technical books. Jan's book will, hopefully, fire the passions of many an ardent naturalist.

A few photographs are not of the same quality as the majority, some syntax and punctuation errors from a native Czech who is quite fluent in English, one page (p. 64) where the text should have been reversed around the two photos: these are minor faults when compared to the greater good of the book. Gracing the book, is an exquisite cover collage of birdwings superimposed over a relief map of the great archipelago. As the author states, "let us embark on an exciting journey through the unforgettable archipelago," and the butterfly wealth of beauty that enrichs and enlightens!

STEVEN FRATELLO West Islip, New York

2000 ATL Annual Meeting

The 2000 annual ATL Lepidoptera Symposium and Annual Meeting was held in Gainesville, Florida, April 14-16, organized this year by Dr. John B. Heppner, Florida State Collection of Arthropods, DPI, FDACS. All meetings were held at the Division of Plant Industry, Florida Dept. of Agriculture & Consumer Services, home of the Florida State Collection of Arthropods. Contributions included the following:

Ronald Boender (Butterfly World, Ft. Lauderdale, FL)

Life cycles of tropical butterflies

Jennifer L. Donovan and Aram Stamp (Michigan State Univ., East Lansing, MI)

Population dynamics of southcentral Florida Papilio species

Thomas C. Emmel (Univ. of Florida, Gainesville, FL)

Endangered butterflies and conservation implications

Eric Runquist

The clash of ecoregions: butterfly surveys in the Soda Mountain region of southern Oregon

Leroy Simon (Belleview, FL)

Moths of the Neotropical region

Keith R. Willmott (Univ. of Florida, Gainesville, FL)

Origins of Andean butterfly faunas

In addition to the program of speakers, photo contest exhibition and prize awards for the winners, and banquet, there were award presentations for the ATL Henry Bates Award and the ATL Jacob Hübner Award. Meeting attendance came to about 20 registered members and guests.

The 2000 ATL Photo Contest had winners in 3 categories (adult butterflies, adult moths, and immatures), plus a \$100 Grand Prize for the overall top point winner. Winners of the 2000 ATL Photo Contest were as follows (scores are shown at right, totaled from 3 judges; there were two ties):

2000 ATL PHOTO CONTEST

BUTTERF	LIES	
1st Place	Andrei Sourakov, Gainesville, Florida, USA	
	Dircenna loreta acreana (Nymphalidae), Brazil	285
2nd Place	Leroy Simon, Belleview, Florida, USA	
	Euristrymon favonius (Lycaenidae), USA (Florida)	275
3rd Place	Andrei Sourakov, Gainesville, Florida, USA	
	Bungalotis midas (Hesperiidae), Brazil	272
IMMATU	RES	
1st Place	Leroy Simon, Belleview, Florida, USA	
	Automeris banus (Saturniidae), Honduras	286
2nd Place	Chris Conlan, San Diego, California, USA	
	Dirphia tarquinia (Saturniidae), French Guiana	280
	Chris Conlan, San Diego, California, USA	
	Antherina suraka (Saturniidae), Madagascar	280
3rd Place	Leroy Simon, Belleview, Florida, USA	
	Melanocera menippe (Saturniidae), Central Africa	279
MOTHS		
1st Place	Leroy Simon, Belleview, Florida, USA	
	Rosema apollinairei (Notodontidae), Ecuador	279
2nd Place	Kirby L. Wolfe, Escondido, California, USA	
	Gamelia rindgei (Saturniidae), Ecuador	277
	Kirby L. Wolfe, Escondido, California, USA	
	Graellsia isabellae (Saturniidae), Spain	277
3rd Place	Chris Conlan, San Diego, California, USA	
	Eacles penelope (Saturniidae), French Guiana	276
GRAND P	RIZE WINNER	
	T O' Dellesien ET	

Leroy Simon, Belleview, FL Automeris banus (Saturniidae), Honduras



2000 ATL Annual Meeting participants in front of the Division of Plant Industry, home to the Florida State Collecion of Arthropods.

286

Association for Tropical Lepidoptera

2000 HENRY BATES AWARD

In Recognition of Outstanding and Extraordinary Efforts Toward the Knowledge and Conservation of Tropical Lepidoptera

Dr. Lincoln P. Brower

The ATL Henry Bates Award for 2000, for outstanding original research and noteworthy contributions to the study and conservation of tropical Lepidoptera, is presented to Dr. Lincoln Pierson Brower, of Sweet Briar College, in Sweet Briar, Virginia. This years' Bates Award honors Dr. Brower for his many contributions to the international conservation efforts to preserve the monarch butterfly and its migratory behavior, as well as a lifetime of distinguished achievement in conservation and research with butterfly biology.

Lincoln Brower was born on 10 September 1931, in New Jersey. He received his B.S. in biology from Princeton University in 1953, and his Ph.D. in zoology from Yale University in 1957 under the guidance of Charles Remington. Lincoln employed a wide spectrum of field observations, behavioral experimentation, and laboratory analysis in his study of the systematics and hybridization of the complicated Papilio glaucus group of species of the western United States. His multi-pronged approach would become standard for his future studies of other species and for his conservation efforts. After a postdoctoral year as a Fulbright Scholar at Oxford University, England, where he worked on butterfly genetics with the late E. B. Ford, he returned to the USA to teach at Amherst University, in Massachusetts. He stayed at Amherst for the next 23 years, being named Stone Professor of Biology before coming to the University of Florida in 1980 as an eminent scholar. In 1995, shortly before he retired from the University of Florida to take his current post as a research professor in zoology at Sweet Briar College, Virginia, he was named Distinguished Service Professor. Over the years he has guided countless students on the path to accurate scientific research, a number of whom now also study Lepidoptera.

Lincoln Brower has received a number of other awards during his career: Linnaean Gold Medal for Zoology (Linnaean Soc. of London, 1993), Outstanding Lifetime Achievement Award (Animal Behavior Soc., 1996), Honorary Life Member (Lepidopterists' Soc., 1991), and a Guggenheim Fellowship (Oxford Univ., 1963). He even was Scientific Guide for HRH Prince Philip, Duke of Edinburgh, when the Prince visited monarch sites in Mexico in 1988. He has been President of the Soc. for the Study of Evolution (1979), the International Soc. of Chemical Ecology (1984), and the Lepidopterists' Soc. (1981).

His research on the monarch butterfly and its conservation has produced over 200 papers and reports, and this is only one phase of his many research activities over the years. For over 40 years he has simultaneously studied the interactions of the insects, their hostplants, predators, and relevant factors in the inorganic world, such as geography and climate. His study of monarch migrations and their overwintering biology has involved many specialized techniques, including ecological chemistry, and analyses of mimicry and life history. He has done much in recent years to save the monarch in its overwintering sites in Mexico, actively involving the Mexican government and thousands of local and other interested persons in this effort.

Like Henry Bates over 150 years ago in the Amazon, Lincoln Brower has persevered through obstacles which would daunt lesser mortals. Today we honor this lepidopterist for his devotion, dedication, and renaissance range of research accomplishments, all centered in a warm, friendly and engaging personality. We wish him many more years of research on the monarch and other butterflies, and their conservation. Association for Tropical Lepidoptera

2000 JACOB HÜBNER AWARD

In Recognition of Significant Contributions for the Advancement of the Systematics of Lepidoptera

Dr. Lázló Gozmány

The ATL Hübner Award for 2000, for significant contributions on the systematics of Lepidoptera, is presented to Dr. László Gozmány, of the Hungarian National Museum of Natural History, Budapest, Hungary.

In presenting this award to Dr. Gozmány we recognize a lifetime of research and publication on Lepidoptera, primarily on Gelechioidea micro-moths. Among specialists of moths, Dr. Gozmány has been well known worldwide for many years. He was Lepidoptera curator at the Hungarian Natural History Museum, in Budapest, for more than 20 years before his retirement a few years ago. Since then he has continued his research on micro-moths, particularly in the groups he calls the families Symmocidae and Holcopogonidae. He has written numerous papers on these and other moths, for the Hungarian and the central European faunas, as well as from many other regions of the world. Among the more notable of his works also is the monographic revision of the Tineidae for tropical Africa (written in 1973 together with the late Dr. Vári of South Africa). He also completed the monograph on the Palearctic Lecithoceridae, published as volume 5 in 1978 in the Microlepidoptera Palaearctica series, and has finished another monograph on his family Symmocidae for publication this year in the same series. Most recently, in late 1999 he was awarded the Eötvös Wreath of the Hungarian Academy of Sciences for his long-term scientific researchs.

Among his many scientific interests, he also is author of the encyclopedic scientific dictionary, entitled *Vocabularium Nominum Animalium Europae Septem Linguis Redactum*, published in 1979, which is a name dictionary of all European animals in seven languages. He has also been active in conservation efforts in Hungary, using moths as ecological indicators from his faunal surveys, particularly for the fragile and increasingly remnant salt-flat steppes so characteristic of the Hungarian lowlands, or puszta as they call it.

Dr. Gozmány turns 79 in 2000 but remains active, continuing his research on gelechioid micro-moths.

ANNUAL REPORT 1999

MEMBERSHIP (December 31, 1999)

		Total	USA	Other Nations (76)	
Life I	Members	99	39	60	
Benef	factors	2	2	<u></u>	
Patron	ns	6	5	1	
Sustai	ining Members	9	5	4	
Regul	lar Members	906	456	450	
Basic	Members	145	95	50	
Excha	anges	80	8	72	
TOTA	AL	1247	610	637	
Members in	n Arrears	416	217	199	
Members r	esigned (removed)	2 (102)	1 (53)	1 (49)	
Died		1	1	11	

FINANCIAL SUMMARY

ASSETS		1999	DECEIDIS
Current Assets			Cash (from previous year)
Net Funds (cash Dec 31)	5,442		Member Dues
Foreign Currency Dues	1,036		Life Membershins
Publications Stock ¹	472,400		Newsletter Dues (Basic only)
Endowments	37,900		Foreign Currency Dues
Book Reserves	16,250		Grants
Computer/Office Equipment	10,804		ATL Expeditions
Grant remainders	28,819		Contributions
Total Current Assets		572,651	Conservation Denations
Other Assets			Dublication Salas
Memberships Due	68,880		Program Services (name chart
Life Memberships Due	2,250		Interest
Page Charges Due	34,124		Annual Masting
Total Other Assets		105,254	Advertising
Total Assets		\$ 677,905	Miss (includes air mail posts
			Debentures
LIABILITIES			TOTAL DECEIDTS
Current Liabilities			IOTAL RECEIPTS
Printing Invoices	14,666		EVDENDITUDES
Supplies/misc.	369		Concernation Projects
Total Current Liabilities		15,035	Passarah Projects
Other Liabilities			Research Grants (grant suppo
Notes Due	3,000		ATL Expeditions
Debentures	18,000		ATE Expeditions
Total Other Liabilities		21,000	Newsletter Printing ²
Total Liabilities		36,035	Photographic Costs
BALANCE		\$ 641,870	Book Stocks

The 1999 Annual Report is presented herewith. Membership growth of 42 new members in 1999 was offset by reductions due to 2 resignations, plus the removal of 102 members in arrears more than 5 years. Conservation donations were large, and about 80% of these were expended in 1999, primarily as special funds dedicated for conservation projects in Brazil (Rondônia) and Ecuador. Small and larger donations, mainly for conservation aims of the society, continue to be made.

The Society considerably reduced its printing bills during the year and is expecting to maintain a shorter payment schedule in 2000. Members in arrears continue to plague the society, but did go down from 457 members in arrears in 1998 to the current level of 416 members, but more of these are expected to be removed as their 5-year absence occurs by year's end in 2000.

The overall balance of ATL assets is very high, but members are reminded that this is primarily in unsold back stocks of books and journals, not cash. Members are encouraged to subscribe to all ATL books and series.

J.B.H

LEPIDOPTERA NEWS

6

	456	450	
	95	50	
	8	72	
	610	637	
	217	199	
	1 (53)	(49)	
	1		
	RECEIPTS AND E	XPENDIT	URES
	RECEIPTS		1999
	Cash (from previous year)	12,189.00	
	Member Dues	33,294.50	
	Life Memberships	3,500.00	
	Newsletter Dues (Basic only)	548.00	
	Foreign Currency Dues	362.00	
	Grants		
	ATL Expeditions	500.00	
	Contributions	2 440 27	
	Concernation Depations	2,440.27	
	Dublication Salas	5 577 01	
	Publication Sales	3,377.01	
	Program Services (page charges)	8,518.52	
	Interest	2,844.53	
ŀ	Annual Meeting	518.50	
5	Advertising	150.00	
	Misc. (includes air mail postage)	708.15	
	Debentures	13,000.00	
	TOTAL RECEIPTS		\$ 167,684.91
	EXPENDITURES		
	Conservation Projects	68,797.75	
)	Research Projects		
	Research Grants (grant supported)		
	ATL Expeditions	500.00	
	Journal Printing ²	37,595.03	
)	Newsletter Printing ²	2,773.76	
5	Photographic Costs	766.41	
	Book Stocks	6,148,60	
)	Postage ³	10.660.59	
-	Fees	940.25	
V	Office Equipment	917.84	
1	Supplies	4 265 60	
,	Bassarah Equipment/Supplies (grou	+,200.00	
S	Advertising	806.80	
t	Interest (notes/debts)	200.00	
	Annual Masting	1 111 06	
s	Annual Meeting	1,111.90	
s	IVIISC.		

\$ 135,584.59 \$ 32,100.32

1. Book value of back stock (reduced as issues are sent to members).

2. Includes invoices carried over from previous year as received from printer.

3. Includes postage for advertising.

TOTAL EXPENDITURES

BALANCE

SHEK KWU CHAU BUTTERFLIES [cont. from p. 1]

have also recorded a total of 275 indigenous vascular plants and determined that widespread tropical and subtropical elements are dominant (Chen *et al.*, 1996).

What follows is a brief summary of these beautiful and fascinating butterfly species that have been caught on Shek Kwu Chau. The primary identification sources used for this study are Io (1994), Johnston and Johnston (1980), and Bascombe *et al.* (1999). In the 6 years that I have been actively collecting in this environment, over 400 butterfly specimens have been caught, all of which have been sent to the Allyn Museum in Sarasota, Florida. Other specimens caught in 1990 have also been sent to the museum.



Fig. 2. Detail map of Shek Kwu Chau.

A number of the species on Shek Kwu Chau are very localized in distribution, while others are not. The catch records for 1997 were remarkable because of the extremely rainy conditions, which were the worst I have seen since I have been visiting the island.

The status and species breakdown for the tabulation of my butterfly records, as tabulated in Table 1, was determined using Walthew (1997). His frequency of occurrence parameters are as follows:

"was determined by using 170 one-kilometer grid squares from the New Territories, Hong Kong Island, Lantau Island, Lamma Island and Peng Chau Island (the latter three islands are within a few miles of Shek Kwu Chau). These were surveyed between 1989 and 1996. If the species was found in more than 33% of the squares, then it is described as being very common; if found in 11% to 33%, then common; if found in 1% to 3%, then rare; and if found in less than 1% then very rare."

On 16 September 1999, Hong Kong was hit by the biggest typhoon in 16 years, which caused much devastation and appeared to have significantly impacted the butterfly population on three of the other islands I visited. For specific information on the damage this typhoon caused, see the January 2000 issue of *Porcupine!*, the Newsletter of the Department of Ecology and Biodiversity, Hong Kong University. The numbers of very common species, such as *Euploea* and *Ideopsis similis*, were hard to find. Yet in spite of the devastation, 5 species were added to the Shek Kwu Chau checklist and 30 species were recorded in June and July of 2000.

THE DUFFER AND THE FAUN (Amathusiidae)

Only two members of this large family occur in Hong Kong. The Great Duffer, *Discophora sondaica* (Boisduval), is a very timid butterfly living amid bamboo thickets. It is considered to be uncommon. Although only one specimen has been caught on Shek Kwu Chau, a caterpillar was photographed in 1997 feeding on Hedge bamboo, *Bambusa multiplex* (Gramineae). The slow flying Common Faun, *Faunis eumeus* (Drury), is found everywhere, lives in wooded areas, settles frequently and is very easy to catch. It is fond of rotting fruit and tree sap. It is not unusual to find several of these handsome

brown and yellow butterflies in a group on the ground where they look like they are falling over. They seem to be particularly drawn to a damp shady area below the Big Bungalow where I stay with the other field associates from The Conservation Agency of Jamestown, Rhode Island. They are always easy to catch and are rarely seen in the same numbers north of the soccer field, which marks the approximate center of the island.

TIGERS AND CROWS (Danaidae)

These are large butterflies, resilient and very tough, with a slow gliding flight which can change rapidly when pursued. Hong Kong has 14 species recorded.

The Tigers (*Danaus*) are handsome butterflies which are divided into two groups. Dark Veined and Plain Tigers, which look very much like Monarchs, are mainly orange and have triangular darker patches at the forewing tips on which there are distinct white markings. So far, I have yet to see any of these beauties on Shek Kwu Chau. Glassy Tigers, *Ideopsis similis* (Linnaeus), have bluish markings and are everywhere throughout the island. It is a common sight to see several of these butterflies pushing and shoving for position on the same flower. A Golden Dewdrops bush, *Duranta repens* (Verbenaceae), by the radio station is usually full of these lovely specimens. On many occasions I have been able to net as many as six at once.

The Crows (Euploea): these striking butterflies are velvety blackish brown in color with white or blue spots. The Blue-Spotted Crow, Euploea midamus midamus (Linnaeus), has a beautiful blue sheen on its forewings. The males have a fluffy feather like organ called the hair pencil which is pushed out from the tail when they are caught. E. midamus is nearly as common as Ideopsis similis. A favorite spot for them is the windy flower patch by the helicopter pad near the top of the island. Again, it is not uncommon to find several crowded together on one flower where they rock back and forth in the strong wind that sweeps the northern end of the island.

SKIPPERS (Hesperiidae)

Hong Kong has 49 species, active mainly at dusk and dawn. They like basking in the sun. A lot of them are very rare. The southern end of the island was home to a strong localized population of *Astictopterus jama chinensis* (Leech), a small velvety black species. Although common, I have not seen them elsewhere in the same numbers, nor have I yet to catch one of these anywhere north of the soccer field. This once very common skipper has only been caught once since 1997. The dominant skipper now appears to be *Saustus gremius gremius* (Fabricius), which has been caught throughout much of the same habitat, but is more widespread throughout the island than *A. j. chinensis*. The highlight of the 1995 expedition was the recording of the rare *Bibasis oedipodea* (Swainson), a plump pink-colored skipper. It was caught in the mixed shrubland at the top of the stairs above the bungalow in mixed shrub.

BLUES (Lycaenidae)

Hong Kong has 52 species recorded. Some are common, while others are classified as being very rare. Many have delicate little tails. Some are sun lovers, while others exist in undergrowth. These butterflies are small or very small and fly along the ground. Most of the males have blue on the upper surface of their wings and dark borders around the edges. But of the males, two have large orange patches instead of blue. *Pseudozizeeria maha serica* (C. Felder) is another very common butterfly. Large numbers of them are visible in the morning with the greatest concentrations once again on the southern end of the island. Sometimes they are so thick along the first part of the contoured trail they look like swirling blue snow flakes.

NYMPHS (Nymphalidae)

Hong Kong has 63 species. The flight pattern of many of these butterflies is fast and jerky, flying forward with 3 or 4 brisk flaps,



then coasting. The fastest is the Tawny Rajah which soars over the tops of trees, then dives steeply toward ground. The slower fliers like the Pansies (*Precis*) usually stay close to the ground, settling frequently. The family is generally striking, attractive and of medium size. They love to bask in the sun with their wings outstretched oblivious to my presence and their surroundings. None of these species have been seen or caught on Shek Kwu Chau. My favorite is the Angled Castor, *Ariadne ariadne alternus* (Moore), a deep salmon-colored beauty so far found nectaring only on the flowers around the soccer field in the center of the island. Although no specimens were recorded in 1996, 1997, or 2000, a caterpillar was photographed feeding on the castor-oil plant (*Ricinus communis*) in 1997.

SWALLOWTAILS (Papilionidae)

The 19 Hong Kong species of this family include the largest. most beautiful and most conspicuous of the butterflies. They move swiftly and with sudden turns down patches of wooded areas or dive down to drink from flowers, their upper wings quivering rapidly for support. They are hard to catch, zooming off at the slightest disturbance. Sometimes called Kite Swallowtails, they have wingspans from 37-140mm. The birdwing, Troides helena (Linnaeus), is the most striking and is not often seen because it frequents isolated places, particularly in the New Territories where it is protected. Although I have recorded one near the Po Lin monastery on Lantau, a neighboring island, none have yet been seen on Shek Kwu Chau. The Common Mormon, Papilio polytes polytes Linnaeus, is most in evidence and is distributed evenly throughout the island. The Red Helen, Papilio helenus helenus Linnaeus, is another common swallowtail with much the same distribution as Papilio p. polytes. The Paris Peacock, Papilio paris paris Linnaeus, has spectacular blue markings on its lower wings. In the last 3 years this butterfly has become more visible than ever during my visits, and has several distinct flight paths throughout the island. Another papilio, Papilio demoleus Linnaeus, prefers the higher, more open areas of the island. The papilios here seem to be fun loving. I have spent many an hour watching one or more ride the wind currents outside the bungalow. All of these butterflies are common or very common.

WHITES AND YELLOWS (Pieridae)

Hong Kong has 23 species of pierids. These butterflies are small or medium in size and love the sun. Some fly very fast, others flutter just above the grass. The commonest is the Grass Yellow, *Eurema hecabe* (Linnaeus). The strongest flier is the Great Orange Tip, *Hebomoia glaucippe* (Linnaeus), which zooms along at tree top level, and even when close is hard to catch. Although it is sighted frequently, only 5 have been caught. The Grass Yellow appears to be evenly dispersed throughout the island and in greater abundance than I have seen on other islands I have been on.

The commonest white is the cabbage white, *Pieris rapae* (Linnaeus), yet it is not at all common or as widely distributed on Shek Kwu Chau as *Eurema hecabe* (Linnaeus). One of the most attractive is the Black Jezebel, *Delias pasithoe pasithoe* (Linnaeus), which has red patches on the underside of its wings where they meet the body. This species is becoming more common than in prior years when none was sighted or caught on the island. All the specimens that have been caught were nectaring on the Golden Dewdrops.

JUDYS AND PUNCHES (Riodinidae)

These butterflies have wet and dry season forms. Only 3 fly in Hong Kong, of which 2, the Plum Judy, *Abisara e. echerius* (Stoll), and the Punchinello, *Zemeros flegyas* (Cramer), are very common on the edges of woodland. The wet season form of the Punchinello features prominent pale spots on upperside, while in the dry season form the pale patches are on the upper wing near its apex. *Abisara e. echerius* is quite common on the southern part of the contoured trail, but less so elsewhere on the island. They seldom sun, preferring to flit from leaf to leaf executing a hop, skip, and pirouette much like a skipper. When at rest, they mimic the skipper's dorsal basking, by spreading their hindwings more forward than their forewings.

BROWNS AND SATYRS (Satyridae)

Hong Kong has 17 of these attractive butterflies. They have an odd hopalong flight, seldom rising much above level of grass at edges of woodland they inhabit. There are 5 species of ring butter-flies (*Ypthima*), but only 2, the Straight Six Ring, *Ypthima lisandra* (Cramer), and Common Six Ring, *Ypthima baldus* (Fabricius), are common. A third, the Four Ring, *Ypthima praenubila* (Leech), is common in localized areas both in the New Territories and on the Hong Kong islands. This species is most prevalent from the end of May to the end of June, but none has yet been caught on Shek Kwu Chau. These common English names come from the number of rings or eyes on the underside of the hindwings.

Two of the Bush Browns, *Mycalesis mineus* (Linnaeus) and *Mycalesis zonata* (Matsumura), fly almost everywhere. Although recorded throughout Shek Kwu Chau, the majority have been caught at the southern end of the island. The third Bush Brown, *Mycalesis perseus* (Fabricius), is rare. It has the same habitat as the *Ypthima*, but is larger. It also has a wet and dry from. The wet season markings are characterized by distinctive eye spots and a vertical cream band on its underside. The dry form has none. A member of the *Lethe* genus, called the Bamboo Brown, lives in wooded areas and seldom comes into sun.

The two Evening Browns, *Melanitis leda* (Linnaeus) and *Melanitis phedimal* (Cramer), are common in wooded areas. The females seem to rest with wings up. Although not present in large numbers, specimens of *Ypthima lisandra*, *Y. baldus, Melanitis leda*, *Mycalesis mineus*, and *Lethe confusa* (Aurivillius), have all been caught on Shek Kwu Chau in about the same distribution as other common species.

SUMMARY

The most common species that have been caught on Shek Kwu Chau are: Astictopterus jama chinesis (Hesperiidae), Ariadne ariadne altera (Nymphalidae), Cepora n. nerissa (Pieridae), Ideopsis similis (Danaidae), Eurema hecabe (Pieridae), Euploea midamus (Danaidae), Faunis eumeus (Amathusiidae), Papilio polytes (Papilionidae), and Pseudozizeeria maha serica (Lycaenidae). Rare specimens include: Bibasis oedipodea, Telicota ancilla horisha, Deudorix epijarbas, Hybolimnas bolina kezia, Mahathala ameria, and Eurema blanda.

A complete list of the specimens caught on Shek Kwu Chau with their abundance is provided in Table I. The table also includes the abundance of the species based on George Walthew's (1997) survey.

About 30% of the known species of Hong Kong butterflies have been caught on Shek Kwu Chau, which is a much higher number than on other islands I have studied in the Hong Kong group.

There are about 200,000 species of Lepidoptera in the world. Although there have been species that have been lost forever due to habitat destruction, pollution, or intrusion by exotic species, for many there may still be hope for survival on islands such as Shek Kwu Chau. We hold their future in our hands.

ACKNOWLEDGEMENTS

The following are thanked for all their help: the Allyn Museum of Entomology (Sarasota, Florida), The Conservation Agency (Jamestown, Rhode Island) and Peter Lynch (Shorham, Vermont), and in Hong Kong, Dr. Barry Hollinrake, Dr. Jacqueline Lee, Dr. Michael Bascombe, and my friends, Anja and Alexa Pearson, Walter Ochs, Adam Young, Jonathan Kolby, Shannon Corliss, and the others who on occasion grabbed a net. LITERATURE CITED

- Bascombe, M. J., G. Johnston, and F. S. Bascombe
- 1999. The Butterflies of Hong Kong. London: Academic Press. 422pp.
- Chen D.-G., Zhuang X.-Y., Li Z.-C., and Lu W.-H. 1996.
- Vegetation and biodiversity of Shek Kwu Chau, Hong Kong. J. S. China Normal Univ. (Nat. Sci.) (Canton), 1996: 68-73.
- Io, C. (ed.)
- Monograhia Rhopalocerorum Sinensium (Monograph of Chinese 1994. Butterflies). Zhingzhou: China Scientific Tech. Publ. House. 2 vol. Johnston, G., and B. Johnston
- 1980. This is Hong Kong: Butterflies. Hong Kong: Hong Kong Govt. Publ. 224pp.

Lazell, J.

1996. Hong Kong's thelyphonid: what is it? Porcupine (Hong Kong), Mar 1996 (14):30.

Lazell, J., and W. Lu

- Four remarkable reptiles from South China Sea Islands, Hong Kong 1990. Territory. Asiatic Herpetol. Res. (Hong Kong), 3:64-66.
- Richard C., L. Chau, B. Hau, and K. So
- 1999. Typhoon York scores direct hit. Porcupine (Hong Kong), Jan 1999 (20):1-32.

Walthew, G.

1997. The status and flight periods of Hong Kong butterflies. Porcupine (Hong Kong), Jul 1997 (16):34-37.

Table 1. Total Butterflies Caught on Shek Kwu Chau 1990-2000

(VC-very common; C-common; U-uncommon; R-rare)

	1990	1992	1994	1995	1996	1997	2000	Abundance
AMATHUSIDAE								
Discophora sondaica Boisduval	-	-		1	1.12	, ka _ 12	_	U
Faunis e. eumeus (Drury)	5		7	2	2	2	-	C
DANAIDAE								
Euploea core amymone (Godart)	1	1 - L - I	1	2 Q (A	1	7	5	VC
Euploea m. midamus (Linnaeus)	-	- 5	17	1	3	2	1	VC
Ideopsis s. similis (Linnaeus)	2	-	22	2	1	11	3	VC
HESPERIIDAE								
Astictopterus jama chinensis (Leech)	-	5	12	4	se _edr	ಟ್ಟಿಕ್ಕೆ ಗಳ	1	С
Bibasis g. gomata (Moore) -	-	1.1		1.1.1.1.1	1	1.0	U	
Bibasis oedipodea (Swainson)	-		́́.	1	1996	1002.00	1.1	R
Hyarotis adrastus praba (Moore)	-	26.4	-	i i Ligano	1994 <u>-</u> -2014	1	್ಷ	U
Matapa aria (Moore) -	- 1	-	6	 () () () () () () () () () ()	1	-	U	
Notocrypta c. curvifascia (Feld. & Feld.)	-	- 7	1	100		이 같다.	1	U
Odontoptilium a. angulatam (Felder)	-	1.1	5	1	adel ange	1	3	U
Parnara guttata (Bremer & Grey)	-	-	1	3	1	1	1	С
Pelopidas c. conjuncta (Herrich-Schäffer)	- (-		1.11	1.7.9	1	· · ·	U
Saustus g. gremius (Fabricius)	1	2	1	6. COM	1	9	2	U
Tagiades litigiosa (Möschler)	-	-			Service and	<u>-</u>	1	С
Telicota ancilla horisha Evans	1		2	-		-	1	R
LYCAENIDAE								
Artipe e. eryx (Linnaeus)	- · · .		2	-		-	1	U
Chilades lajus leucofasciatus (Röber)	6	2	1	1	1	1 . L	1	VC
Deudorix epijarbas (Moore)	-	-		-	1	· · · ·	-	R
Jamides bochus (Stoll)	-	- 1		1	-	-	-	С
Mahathala ameria (Hewitson)	-	- 1	· •	-	-	2		R
Nacadaba kurava (Moore)	-	-	-		-	-	1	С
Pseudozizeeria maha serica (C. Felder)	3	1	20	4	1	1	4	С
Zizina otis (Fabricius)	-	-	12 H ()	-	1		-	С
NYMPHALIDAE								
Ariadne ariadne alterna (Moore)	1	-	7	1	-	-	-	С
Athyma nefte seitzi (Fruhstorfer)	-	-	2	4	1	3	-	U
Athyma selenophora leucophryne (Fruh.)	1	-	-	-	-	2	-	С
Cethosia biblis (Drury)	-	-	-	-	-	-	1	U
Cyrestis thyodamas (Doyère)	-	-	-	1	-	-	2	U
Cupha erymanthis (Drury)	-	-	2	1		-	-	VC
Hypolimnas bolina kezia (Butler)	-	-	1	2	-	1	4	R
Neptis h. hylas (Linnaeus)	-		1	2	-	1	2	VC
Precis a. atlites (Linnaeus)	-	1	-	-	-	-	-	С
Pantoporia hordonia (Stoll)	-	-	-	1	-	-	-	VC
Parathyma sulpitia (Cramer)			1	2		1 A A		C

	1990	1992	1994	1995	1996	1997	2000	Abundance
Phaedyma c. columella (Cramer)	-	-	1	1		9		С
Polyura athamas (Drury)	-	-	-	-	-	1	-	VC
Rohana parisatis staurakius (Fruhstorfer)	-	_	-	-	_	3	1	С
Symbrenthia lilaea (Hewiston)	-	-	-	2	-	5	<u>_</u> -	С
PAPILIONIDAE								
Chilasa c. clytia (Linnaeus)	2	-	1	1		-	-	C
Graphium antiphates (Cramer)	-	-	-	-		-	2	C
Graphium sarpedon (Linnaeus)	-	-	-	-	1	-	2	C
Papilio d. demoleus Linnaeus	-	-	1	1		-	4	C
Papilio h. helenus Linnaeus	1	100 100	1	1	1	1	1	С
Papilio memnon Linnaeus		2	1	-	2	-	С	
Papilio memnon f. agenor Linnaeus	2	1	-	-	-	5		VC
Papilio p. paris Linnaeus		1	1	2	-	3	1	VC
Papilio p. polytes Linnaeus	5	2	1	2	-	5	5	VC
Papilio p. polytes f. mandane Linnaeus	1	-	-		-	3	-	VC
Papilio protenor protenor Cramer	-	1		-	-	5	1	VC
Papilio x. xuthus Linnaeus	1	-	1	<u>.</u> .	1			С
PIERIDAE								
Cepora n. nerissa (Fabricius)	1	- 17	5	2	-	1	4	С
Delias pasithoe pasithoe (Linnaeus)	1		-	-	2	-	C & C + -	С
Catopsilia pyranthe (Linnaeus)	-	1	1	1	-	-	1.00	С
Catopsilia pomona pomona (Fabricius)	-	1	2	-	-	-	-	С
Eurema blanda (Boisduval)	-		-	-	-	-	1	R
Eurema brigitta (Stoll)		-	-	1	-	-	-	U
Eurema h. hecabe (Linnaeus)	5	1	27	3	2	6	4	VC
Hebomoia g. glaucippe (Linnaeus)	1	-	1	2	-	1	2	С
Ixias pyrene (Linnaeus)		S	1	-	-	-	-	U
Pieris canidia canidia (Linnaeus)	-	1	-	-	·	-	-	С
Pieris rapae (Linnaeus)	-	5. C + 1	1	2	-	-	-	С
RIODINIDAE								
Abisara e. echerius (Stoll)	- 1	2 -	1	-	1	4	1	VC
SATYRIDAE								
Elymnias h. hypermnestra (Linneaus)	1	. · · .	-	-	-	-	-	С
Lethe confusa Aurivillius		-	-	1	-	-	-	С
Melanitis 1. leda (Linnaeus)	1	· · · ·	-	2		2	-	C
Mycalesis mineus (Linnaeus)	-	1	2	3	1	2	-	VC
Mycalesis zonata Matsumura	-	Sec 1	1	-	-	3	-	С
Ypthima baldus (Fabricius)		2.12	2	-	1	-	-	С
Ypthima lisandra (Cramer)	-	1	3	-	-	1	-	VC

RICHARD LUTMAN Jamestown, RI

Butterfly in My Net: Lepidoptera, Literature, and the 'Ephelia' Poet

MAUREEN E. MULVIHILL

Princeton Research Forum, Princeton, New Jersey mulvihill@bway.net

Special to Lepidoptera News (Association for Tropical Lepidoptera)

It is the Glory of God to hide a thing; It is the Glory of Kings to search things out. Proverbs 5:2



ntomologists study Lepidoptera for their exquisite beauty and variety, and for all that they disclose about the natural world. Writers of poetry and fiction are drawn to the butterfly and moth for their seductive symbolic power. Because of their morphic or transformative character, these fascinating creatures offer themselves to the literary artist as the perfect

image of change and reinvented identity. In the last century, Vladimir Nabokov, perhaps more so than other literary writers, masterfully deployed lepidopterological images in constructing narrative and transmitting character. A recent collection of his butterfly writings took the lead review in the annual Natural History issue of the London *Times Literary Supplement* (4 August 2000).

But only recently have students of literature been introduced to a much earlier practitioner of butterfly artifice: the intriguing Mary ("Mall") Villiers, later Stuart, Duchess of Richmond & Lennox (London, 1622-1685), daughter of the legendary George Villiers, first Duke of Buckingham, and one of the great beauties of 17th-century English court history (Fig. 1). Known among her exclusive coterie as "The Butterfly," Mary Villiers vexed and baffled the scholarly community these three centuries as the pseudonymous poet-playwright-songwriter, "Ephelia." Long considered an impenetrable case in the annals of pseudonymous literature, the "Ephelia" poet of 17thcentury Stuart London has proved to be the best research subject ever, in my experience; and my recent delvings into the entomological features of this complex case offer a model of interdisciplinary investigative methodology for literary sleuths and entomologists.

This guest essay for the Association for Tropical Lepidoptera fufills a dual purpose. First, it sends out word of the naming of a new subspecies of Taiwan moth of elegant beauty in honor of the "Ephelia" poet. This new patronym for the "Ephelia" poet was first announced in my letter, "Ephelia, Butterfly Poet," in the September 1, 2000, issue of the London Times Literary Supplement. An "Ephelia" patronym among British butterflies is also being sought, namely for the orange tip subspecies of England, as "Ephelia's Orange Tip." Second, this piece offers an abridged summary of the researches I undertook from 1995 to 1999 at two of New York City's most bountiful archives: the library of the American Museum of Natural History, on Central Park West; and the New York Public Library Research Facility, on Fifth Avenue at 42nd Street. My goal, as I tested the patience of many a reference librarian and resident specialist, was to educate myself in the early scholarship on butterflies and moths which my 17th-century English poet might have known; and then to scour that early body of work for potential origins or variants of the name "Ephelia" and the many fictitious names she assigns her coterie in Female Poems On several Occa-



Fig. 1. "Lady Mary Villiers with her Dwarf, Anne Gibson," by Sir Anthony Van Dyck, c. 1636-1640 (Larsen, 1980). With the kind permission of Lord Pembroke, Wilton House, Wiltshire.

sions. Written by Ephelia, one of the rarest and most elegant poetry books of 17th-century London.

While I was not always successful in my digs — indeed in some respects I was far afield — this entomological leg of my research produced useful results which ultimately allowed me to build a persuasive case for "Ephelia"'s authorship in Mary Villiers.

THE ENIGMA OF THE "EPHELIA" POET



s many women writers of her age and certainly well before, Mary Villiers shielded herself from sneering ridicule and salacious lampoons by concealing her identity. When she bravely took her poems public in 1678, her credit line, which nonetheless disclosed both gender and high social class, read, "Written by a Gentlewoman"; in early 1679, her credit line read,

"Written by a Lady of Quality." After testing the waters of public reception and finding them hospitable, she then released her principal work in the spring of 1679, under the original and euphonious pseudonym, "Ephelia." The inclusion of some of her verse, identified as "Ephelia"'s, in popular poetry miscellanies published prior to 1679, tells us that Mary Villiers had been employing this pseudonym prior to 1679 in privately circulated manuscript copies of her poems. A few of these evidently traveled beyond her primary (court) orbit into the quick hands of enterprising scribal copyists about the town. Surely, several of her coterie and a few privileged writers closely associated with the Stuart court, such as Aphra Behn and Lord Rochester, knew the identity of this bold and (sometimes) amusing writer. A small circle of friends evidently was in on the caprice, and we can imagine their delight in its witty evolution.

As I was to discover, thanks to the expert guidance of several friends of The Ephelia Project, Mary Villiers was called "The Butterfly" by her kin and close circle of royals and nobles resulting from a playful prank of hers *circa* 1636 on the future Charles II in the royal fruit gardens. This amusing joke from Lady Mary's girlhood is reconstructed in the Baroness D'Aulnoy's *Mémoires* (Paris, 1695) and in most modern studies of the Villiers family, such as the Baroness Burghclere's *Villiers* (1903) and Charles Cammell's *Buckingham* (1939; 1984, 4th ed.). But as I also discovered, owing entirely from my own formulations, my poet's pretty *nom de plume* was itself a kind of butterfly language and but one component of an integrated butterfly persona constructed by this sly Stuart duchess.

According to my published researches, Mary Villiers produced a body of writings - poems, songs, and a pre-empted satiric play on Charles II and his brother, James, Duke of York - under the pseudonym "Ephelia." She ingeniously created the legend of "Ephelia" by devising an (heretofore) intractable case in the history of concealed authorship, one dense enough to elude the most skilled literary detective. Unable to draw back "Ephelia"'s veil, most scholars unfairly judged the poet to be either a man or a thoroughly invented poet — a sporting hoax — created by a cabal of 17th-century writers. Now this sort of blithe deauthentication of early women writers is an old tradition in academic scholarship. As Katharina M. Wilson at the University of Georgia has shown, the writings of the 10th-century Saxon writer, Hrotsvit of the Abbey of Gandersheim, were long considered clever forgeries, contrived by a small group of male German humanists. Only in the last century were Hrotsvit's texts authenticated and her canon fully restored. The tiresome tradition of "Ephelia"'s deauthentication was revived as late as 1995 by Warren Chernaik at the University of London, who concludes an otherwise excellent essay on "Ephelia"'s poetic voice with a (comic) flourish of deconstructionist abandon: "It is possible that several authors, male and female, contributed to a collaborative enterprise [in 'Ephelia's book of 1679]; it is possible that the volume is the work of a single female author or a single male author. 'Ephelia' does not exist, except as embodied in the poems" (Philological Quarterly, Spring, 1995, p. 167). Elaine Hobby at Loughborough University in England hears a decidedly female voice in "Ephelia"'s work; but unable to find' "Ephelia" herself in the 1980s, Hobby bows to historical indeterminacy, judging the poet's identity both unknowable and improvable (*A Virtue of Necessity*, 1988). I and not a few adventurous others think differently.

As I know her story, "Mall" Villiers lived a full and turbulent life. This child of fortune and toy of fate was the most highly placed woman writer at the Stuart court. But in spite of vast entitlement, her long life (63 years) was marked by relentless personal crises. Thrice a bride and thrice widowed, her full name after 1664 was Mary Villiers Herbert Stuart Howard, this last deriving from a clandestine marriage in her forty-second year to Colonel Thomas Howard, a dashing young libertine and courtier of lesser rank. Hers is a lengthy catalogue of titles and names. We find her mentioned in contemporary writings as "the Lady Mary," "young Mall," "Mary, Lady Herbert," "Mary, Lady Stuart," "Richmond," and, as she is listed in the forthcoming New Dictionary of National Biography, "Mary, Lady Howard." Clearly, identity was the burden of her long life; self-reinvention, the signature of her art. Whereas Chernaik and others understandably complain of the "many confusing voices" in "Ephelia"'s verse, my case sets out a reasonable explanation of those voices in Lady Mary's multivocal persona and divisible personality. Morphing from one identity to another in her clever poetry book of 1679, she skillfully ventrilloquizes or, better, mimics (as butterflies are wont to do) the voices of various courtiers and courtesans of her circle. Adopting the voice of her good friend, "Celadon" (possibly George Porter), she versifies some of his amorous advice in the otherwise problematic verse-epistle, "The Reply. Written by a Friend," which is even signed "Celadon." And in her most famous and best lyric, "Ephelia's Lamentation," which begins, "How far are they deceiv'd, that hope in vain / A lasting Lease of Joys from Love t' obtain?", she voices Lady Mary Kirke, a discarded mistress of that unamiable libertine, John (Sheffield), Earl of Mulgrave ("Bajazet"). In a masterstroke of double masquerade, the tricksy "Mall" Villiers audaciously pens a self-dedication in her book of 1679 in the voice of a literary ingénue ("Ephelia"), who seeks patronal protection from her high and mighty ducal other: Mary Villiers. Ingeniously adopting many butterfly behaviors and characteristics, this splendid woman appears to have assembled an entire aesthetic around the pet-name given her in girlhood by the future Charles II, beginning with her self-reinvention as the "Ephelia" poet, the name itself but a kind of butterfly language, as I discovered.

BUTTERFLY ON THE WHEEL OF SCHOLARSHIP



he linchpin in my case for "Ephelia"'s identity had to be the origin and meaning of my writer's *nom-de-plume*. Yet, try as I may, I could not make sense of this pseudonym as an acronym, a palindrome, an anagram, a logogriph, or a trick-word comprised of other words. Nor did it seem to be, as others had suggested, a mere variant of Shakespeare's "Ophelia."

Flitting from my habitat on Central Park West down to Fifth Avenue and 42nd Street, I learned from 17th-century dictionaries in the collection of the New York Public Library that my poet's literary name was richly resonant in meaning. Its apparent stems, *phelia* and *helio* (*helia*), suggested Greco-Latin forms for "friendship" and "sun." But closer to the mark, I discovered that "Ephelia" could be a variant of the Classical *ephelis*, meaning sun-spots or marks. While this meaning was suggested in 1989 by the capable editorial team of *Kissing the Rod: an Anthology of Seventeenth-Century Women's Verse*, these feminist scholars translated *ephelis* narrowly to mean (exclusively) "freckles"; but they did find two related fragments of anecdotal evidence, in the work of John Dunton in 1697 and Delarivier [e] Manley in 1709, which valuably identified "Ephelia" as a red-haired woman writer.

Examining ephelis through an entomological lens and against the new information of Mary Villiers' pet name "Butterfly," the pseudonym's root word, ephelis, came into focus as a different kind of "spots"; namely, the decorative marks or eyespots on butterfly wings. The Classical ephelis was a plausible source, then, for the pseudonym; and not because it exclusively meant "freckles" and not because Mary Villiers happened to have (dark) auburn-red hair, as her many portraits show. As John Harold Wilson documents in his classic study, Court Satires of the Restoration (1976), red hair was judged a serious flaw at this time; indeed, red-haired women at court were often tagged with offensive nicknames because of their coloration. Had Mary Villiers been, in truth, a freckled redhead, she would not have been mentioned in contemporary writings as one of the great English beauties of the 17th-century. Yet this important link between the name "Ephelia" and red-haired women writers, supplied appreciatively in Kissing the Rod, is highly probative, and would appear to support my case for Mary Villiers' authorship of the Ephelia texts. Certainly, Lady Mary shows us the volatile temperament and high color often associated with red-haired women. In her revealing poem, "To a Proud Beauty," she gives her cousin, Barbara Villiers, Charles II's chief mistress, a taste of her pen:

"If you at me cast a disdainful Eye, In biting Satire I shall Rage so high, Thunder shall pleasant be to what I'll write, And you shall Tremble at my very Sight; Warned by your Danger, none shall dare again, Provoke my Pen to write in such a strain." ("To a Proud Beauty," *Female Poems . . . by Ephelia* [1679], 54-55)

Mary's quick temper is also displayed in "To Damon," a hot rebuke to the young town spark, Jack Howe, who falsely boasted of sexual favors from Mary's young niece, Frances Stuart (the "Beauteous Marina" in *Female Poems*). All this from the pen of a woman who, according to the Baroness Burghclere, was rumored to have dueled a female rival. And more about that duel a bit later.

Did Mary Villiers, this "Butterfly" of the Stuart court, know enough Latin to have constructed the unusual "Ephelia" pseudonym? Considering her class, rearing, and immediate family, the answer must be yes. As the daughter of a Catholic mother and schooled in the Classical education of a noblewoman, Lady Mary would have had a rudimentary knowledge of the Classical languages; and certainly she knew Latin by the 1670s, by which time she also had been a practicing Catholic convert and, moreover, the wife of a Catholic, Colonel Thomas Howard, for some years. I, therefore, adopted the Classical "*ephelis*" as a plausible root of the "Ephelia" pseudonym because it corresponded to butterfly language and to my candidate's pet name.

While I did not find variants of "*ephelis*" in 17th-century entomological sources, such as Sir Thomas Mouffet's *Theatrum Insectorum* (1634; English edition, 1658) and the interesting butterfly commentary of Jan Swammerdam and Ulysses Androvandi — Maria Sybilla Marian's spectacular work on insects (Amsterdam, 1705) was too late for my survey — I importantly found clinching evidence of the appropriateness of the name "Ephelia" to entomological language and taxonomy in the work of J. Max Schiner, who named a decorative species of Diptera in the new genus *Ephelia* in 1864 (*Catalogus systematicus dipterorum Europae*, p. 19, type 106; see also S. A. Neave (ed.), *Nomenclator Zoologicus*, 4 vol. (1936-49), 2:236).

If, as her contemporaries recorded, "Butterfly" was one of Mary Villiers' many names, it certainly followed that Sir Anthony Van Dyck's many portraits of her were likely to yield allusions of a lepidopterological nature. We know that she sat to Van Dyck on many occasions, as Erik Larsen's authoritative work has documented (2 vol., Milan, 1980); and we know that she was among the Flemish master's favorite female sitters. But students of his portraits of Mary Villiers have yet to fully appreciate their rich iconographic character. For example, the portrait of her at Petworth House, Sussex, seat of the Wyndham family (Larsen A279), includes, as background detail, the powerful trope of Mary's ducal coronet. Not only does this portrait closely mimic Van Dyck's portrait of Queen Henrietta Maria with her crown (circa 1638; Wilton House, Wiltshire), but it apparently was occasioned by some personal crisis in the life of the sitter. In addition to the elegiac tone of the picture, one is drawn to the position of Mary's right hand, placed fully over her lower abdomen. The portrait, as I read it, may commemorate her sorrowful response to the premature death of her first child and her husband's heir, the young Esmé Stuart, whose death abruptly ended this particular branch of the ducal Richmond line. (The date of Esmé's death and of this portrait have been variously recorded.) Similarly, the double portrait of Mary Villiers and her faithful dwarf and page, Anne Gibson, who is delivering to her mistress a pair of long gloves, one of which Lady Mary holds up for the spectator (Fig. 1, above), may wittily encode her poems' mode of conveyance at the court.



Fig. 2. "Lady Mary Villiers with Lord Arran, as Cupid," by Sir Anthony Van Dyck, c. 1636 (perhaps 1637). With kind permission of the North Carolina Museum of Art, Raleigh, North Carolina.

My butterfly search in Lady Mary's portraits seemed successful when I examined details in Van Dyck's most poetic portrait of Mary Villiers: the double portrait of her and the young Lord Arran (Fig. 2). The most interesting detail in her elaborate costume, to my eye, is the gold fastener of her floral headpiece, which appears to be in the shape of a butterfly. A small (even tenuous) detail? Perhaps not. The date of this portrait, listed as "circa 1636" in most catalogues, could have been slightly later, say 1637, thus dating the painting to the early months of her second marriage to Richmond, by which time she certainly was known as "The Butterfly." Supporting such a reading is a second detail in the portrait, the sitter's short ermine-trimmed cape, which could allude to her new ducal class and title. We know that her father, the powerful first Duke of Buckingham, evidently favored his ermine ducal cape in which he is depicted in death by Hubert Le Suer, who cast the family's black marble sarcophagus in Henry VIIth Chapel, Westminster Abbey (Lockyer, Buckingham [1981], 458).

The eureka! piece in the "Ephelia" puzzle, as I wrote in 1995, 1996, and 1999, is the striking, oversized ornament or vignette on the title-page of Mary's book, Female Poems . . . by Ephelia (1679) (Fig. 3). The specialists who worked with me on this leg of the project are appreciatively acknowledged in my two recent essays in American Notes & Queries (Fall, 1996; Summer, 1999). As I demonstrated in 1999, the typographical mark in this lovely octavo originates in the book ornament stock of the Mathys firm of Leiden, a firm specializing in imitation Elzevier books and imitation Elzevier book ornaments. Édouard Rahir's great illustrated bibliography of Elzevier imprints and devices (Paris, 1898) suggested to me that this particular class of *cul-de-lampe* book ornament on the title-page of Mary's octavo had become associated by 1679 with a special class of outré book, which included anonymous, pseudonymous, clandestine, and controversial texts, by, for example, Spinoza, the editors of the Port Royal Bible, and Claude de Saumaise ("Claudius"), whose bold apologetics in support of the Stuart monarchy stirred the pen of John Milton. Many of these books, some bearing false or surreptitious imprints, were published by the liberal Elzevier book firm. I suggest that Mary Villiers was drawn to the Mathys ornament, which she could have seen in books by Spanheim and Causubon, both on the London market around this time, because it resembled, to her eye, a butterfly.

But the piece of research which galvanized my work on her book's title-page mark, however, were the lateral fleurs-de-lys which flank the butterfly image. These two design details may represent the handles and hilts of swords, thus alluding to Mary Villiers' rumored duel with a romantic rival, as reported by Winifred (Gardner), Baroness Burghclere, one of the earliest (1903) of reliable Villiers biographers. Mary's rival, according to my upcoming "Key to Female Poems" in the new scholarly e-journal. (Re) Soundings, appears to have been Lady Catherine Crofts, the "thin and ugly Mopsa" of Female Poems by Ephelia. Lady Catherine, evidently a bitter rival of Mary Villiers, was the longstanding mistress of Henry (Jermyn or German), first Earl of St Albans ("J.G."), who evidently maintained a tormented four-year liaison with Mary Villiers, circa late 1640searly 1650s, an affair abruptly ended by his clandestine marriage to the newly widowed Queen Henrietta Maria, Mary's surrogate mother and the "excellent," "Commanding Eugenia" in Mary's poetry book of 1679. The large title-page device in Mary's book, therefore, is an ingenious logogram for the author herself. In this witty graphic conceit, Mary Villiers hid in plain sight on the very title-page of her own book these three centuries. Appropriately, this emblem of her authorship and identity is placed directly under the book's credit line, "Written by Ephelia."



Fig. 3. Title-page of *Female Poems*... by *Ephelia* (1679), with butterfly-andswords ornament used as a logogram for the author, Mary Villiers. This calligraphic line device of the *cul-de-lampe* variety (Rahir catalogue 203) emanated from the Mathys firm of Leiden. It is styled on a popular design associated with many unusual and controversial books printed and/or published by the great House of Elzevier, Holland (Author's copy, purchased from James Cummins-Bookseller, New York City, 1986).

Called "The Butterfly" since the mid-1630s, Lady Mary Villiers devised an entire repertoire of tricks and devices related to her pet name. As a former friend of the project pointed out to me, she even presents herself as a night butterfly in one of her pastoral songs: "Ranging the Plain, one Summer's Night, / To pass a vacant hour, / I fortunately chanc'd to light / On lovely Phillis' bower" (Female Poems, 27). Mary masterfully exploited a pet name from girlhood as a flexible persona, one which could embrace multiple identities and multiple voices. She mimicked the decorative beauty and transformative magic of the butterfly in her portraits, in her poetry, and in her multiple lives. My case, set out in full in (Re)Soundings, is an integrated case which can explain almost all of the longstanding complexities of the "Ephelia" subject. As a measure of the success of this bold hypothesis, my updated edition of "Ephelia"'s writings will be available from Scolar/Ashgate in about 2003; a first multimedia virtual archive of the "Ephelia" project will be available shortly on the (Re)Soundings website; and this elusive papillon of 17thcentury Stuart London shall soon be honored with her first patronym.

SELECTED BIBLIOGRAPHY

Recorded writings of the "Ephelia" Poet, to date:

- 22 November 1678. A Poem To His Sacred Majesty, On the Plot. Written by a Gentlewoman. London: Henry Brome. Dual-column broadside. Licensed by Charles II's censor, Roger L'Estrange. 50 lines.
- 1679. A Poem as it was Presented To His Sacred Majesty, On the Discovery of the Plott. Written by a Lady of Quality. Printed in the year 1679. [London]: s.n. A later text of the 1678 poem (above), with a few significant variants. Dual-column broadside, with a decorative woodcut initial, depicting Charles II and, I suggest, his good friend from childhood, Mary Villiers, wearing her ducal coronet. This poem, a new title in the Ephelia canon, is now linked to its parent-text of 1678 in the Eighteenth-Century Short-Title Catalogue.
- Easter-Term, 1679. Female Poems On Several Occasions. Written by Ephelia. London: James Courtney. Title-page vignette from the Mathys firm, Leiden (see Rahir, Elzevier, Fleuron 203). This collection reprints the poet's Popish Plot broadside of 1679, cited above. 112 pages. The fictitious author frontispiece, unsigned, may playfully mimic Lely's series, "The Windsor Beauties," as well as Vander Gucht's "Orinda" (Katherine Philips), engraved by Faithorne.
- [June, 1681]. Advice to His Grace. Subscribed, "Ephelia." London: s.n.. A cautionary poem to James, Duke of Monmouth. A single column, slip format broadside. 50 lines. Privately printed; privately circulated to a selected readership.
- [August, 1681]. "A funerall Elegie on Sir Thomas Isham Baronet." Signed "Ephelia." Autograph MS., University of Nottingham Library, Portland MS PwV 336. One folio sheet, folded, 40 lines, with armorial watermark (cf. Heawood 821). A fair working draft, with authorial revisions, catchword, and marginal brackets (all in the same hand).
- 1682 [1684?]. Female Poems On Several Occasions. Written by Ephelia. The Second Edition, with Large Additions. London: James Courtney [possibly not released on the market until after Mary Villiers's death in 1684, Old Style]. Printed without the large title-page ornament since "The Butterfly" had 'dropped' by this date. This second edition of the book may have been a posthumous release, assembled by the author's younger brother, George Villiers, second Duke of Buckingham, who may have collaborated with his older sister on their literary projects. The Huntington Library copy of this rare book displays a crude manual cancel to the title-page imprint: the publication date is changed from "1682" to "1684."

Published research on the "Ephelia" subject by Maureen E. Mulvihill:

- 1985. "Ephelia." In A Dictionary of British & American Women Writers, J. Todd (ed.). New Jersey, pp. 115-116. This first extended profile of the poet, in a modern feminist reference work, supersedes Myra Reynolds' profile in her classic, The Learned Lady in England, 1650-1760 (1920; rpt., 1964), pp. 138-139.
- 1988. "Ephelia." In British-Women Writers, J. Todd (ed.). New York, pp. 227-228. Updates the 1985 profile.
- 1992. Poems by Ephelia: The Premier Facsimile Edition of the Manuscript & Published Poems. With a Critical Essay & Apparatus. New York & Switzerland. (2nd printing, 1993). Identifies Anne Phillips Proud of the Phillips-Milton-Proud line as a possible speculative candidate for "Ephelia." With 19 ills., 88-page Critical Essay, and apparatus of six appendices.
- 1995. "Mary Villiers ... the New Candidate for Ephelia." Women's Writing, Vol. 2, no. 3, pp. 309-311. < http://www.triangle.co.uk>. First published note announcing the new candidate, superseding the 1992 candidate, Anne Phillips Proud. Similar note in Restoration (Fall, 1995).
- 1996. "'Butterfly' of the Restoration Court: A Preview of Mary Villiers . . . American Notes and Queries, Fall, pp. 25-40. 4 illus. A detailed essay on the life and times of Mary Villiers, with readings of the poems against the new evidence. Overturns the old attribution of "Ephelia's Lamentation" to Sir George Etherege.

- 1996.. "Ephelia Setting on CD," with soprano, Georgina Colwell (Hersham, Surrey). Restoration, Fall. A recording of Colwell's performance on her CD. This Scepter'd Isle (1995), of Dr. Cecil Armstrong Gibbs' "Why Do I Love?,' being his setting of Ephelia's poem, "To One that ask'd me why I lov'd J.G." Gibbs' setting was published by Boosev & Hawkes, London, in 1937.
- 1998. "Ephelia." In An Encyclopedia of British Women Writers, P. Schlueter and J. Schlueter (eds.). 2nd edition, New Jersey, pp. 231-233. With a (cropped) cover photo of Van Dyck's Mary Villiers & Her Dwarf. The authoritative and most recent treatment of the subject, superseding all earlier profiles, with detailed apparatus (primary and secondary bibliography).
- 1999. "The Eureka! Piece in the Ephelia Puzzle: Book Ornaments, Attribution Research, and a New Location for Rahir Fleuron 203." American Notes and Oueries, Summer, pp. 23-34. Illus. Identifies the precise source of the title-page typographical mark of Female Poems . . . by Ephelia (1679).
- 2000. "Ephelia, Butterfly Poet." Times Literary Supplement, September 1, p. 17. Announces the naming of a new subspecies of Taiwan moth after the "Ephelia" poet (details forthcoming from Dr. J. B. Heppner).
- Forthcoming, 2001. "Thumbprints of Ephelia': The End of an Enigma in Restoration Attribution - Text, Image, Sound - With a Key to Female Poems . . . by Ephelia (1679) and a New Title in the Ephelia Canon." (Re)Soundings, <www.millersv.edu/~resound>. A complete archive on the project, including all of the essential research and criticism, by several scholars.
- Forthcoming, 2001. "Sly Stuart Duchess: the Masks of Mary Villiers, Duchess of Richmond & Lennox (1622-1685)." In The Female Spectator (Chawton House Centre for the Study of Women Writers, Chawton, Hampshire, England). Fall issue. Illustrated.
- Forthcoming, ca. 2003. Ephelia. In the new series from Scolar/Ashgate, The Early Modern English Woman: A Facsimile Library. This edition updates and supersedes my first edition of the texts from Scholars' Facsimiles & Reprints (1992; 2nd printing, 1993).

Ancillary references:

Burghclere, W., Baroness

- 1903. George Villiers, Second Duke of Buckingham. London.
- Cammel, C. R.
- 1939. The Great Duke of Buckingham. London.
- Chernaik, W.
- 1995. "Ephelia's Voice." Philolog. Qtr., Spring, pp. 151-167.
- D'Aulnoy, M. C. J. de Berneville
- 1695. Mémoires de la Cour d'Angleterre en 1675. Paris. (1913 reprint: G. D. Gilbert and L. Henry (eds.). New York).

Greer, G. et al. (eds.)

1988. Kissing the Rod: an Anthology of Seventeenth-Century Women's Verse. London.

Hobby, E. 1988. A Virtue of Necessity. London.

Larsen, E.

- 1980. L'Opera Completa di Van Dyck, 1626-1641. Milan. 2 vol.
- Lockyer, R.
- 1981. Buckingham: the Life and Political Career of George Villiers, first Duke of Buckingham. London.

Mouffet, T.

1634. Theatrum Insectorum. London. (1658 English edition).

Pembroke, S., Earl of

- 1968. Wilton House: a Catalogue of the Paintings & Drawings. London. Schiner, J. M.
- 1864. Catalogus Systematicus Dipterorum Europae. Soc. Zool.-Bot., Vienna. Rahir, É.
- 1896. Catalogue d'une Collection Unique de Volumes Imprimés par les Elzevier. Paris.

Wilson, J. H.

- 1976. Court Satires of the Restoration. Ohio.
- Wilson, K. M. 1997. Review: Poems by Ephelia, circa 1679, ed. M. E. Mulvihill. Amer. Notes
- & Queries, Winter 1997: 49-52.

Decorative initials (A and T) and endplate, from Thomas Harriot (1590, de Bry edition), A Briefe and True Report of the New Found Land of Virginia.



SHALL MARY VILLIERS, DUCHESS OF RICHMOND, HAVE A BUTTERFLY PATRONYM?

A famous English poet of 17th-century London, publishing under the pseudonym "Ephelia," is proposed to be honored with a patronym of a common name for a British butterfly, the British subspecies of the orange tip, *Anthocharis cardamines britannica* Verity.

The idea for an Ephelia patronym was first brought about by correspondence with Dr. Maureen E. Mulvihill of The Princeton Research Forum, Princeton, New Jersey, an expert in the "Ephelia" identity question and who long has studied the matter, concluding that it was Lady Mary ("Mall") Villiers (later Stuart), Duchess of Richmond & Lennox (1622-1684), who was the mysterious "Ephelia." Inasmuch as Mary Villiers was called "The Butterfly" and "Papillon" by the Stuart inner ring, and apparently even favored orange colors, it seems fitting that the British subspecies of the European orange tip could honor her memory by being called "Ephelia's Orange Tip," especially since the British populations of this species do not now have any particular British common name.



Fig. 1. Orange tip in Britain (Anthocharis cardamines britannica), dorsal and ventral sides (females do not have the orange wingtips); enlarged (after Newman, 1871. An Illustrated Natural History of British Butterflies).

Here are some notes from Dr. Mulvihill about Lady Mary: "'Ephelia' was the pen-name of a great beauty of the Stuart court: the witty Lady Mary Villiers, later Stuart, Duchess of Richmond & Lennox (1622-1684). "Mall" Villiers was the celebrated daughter of George Villiers, first Duke of Buckingham, who effectively ran the courts of James I and Charles I. Lady Mary was raised with the royal Stuarts after her father was assassinated in 1628. Her bold broadside poems and her elegant book, *Female Poems . . . by Ephelia* (1679, 1682), include passionate declarations of Stuart loyalty and bitter words for enemies of the state." "Van Dyck captured her great decorative beauty on several canvases; and we see from these portraits that orange was indeed one of her favored colors. As we know from the *Mémoires* (Paris, 1695) of the Countess D'Aulnoy, she was called "The Butterfly" by Charles II, her childhood playmate, resulting from an amusing prank of hers in the royal gardens. Her *nom-de-plume* derives from the classical *ephelis* (sun spots, marks), suggesting the decorative eyespots on butterfly wings. Fond of pranks and intrigue all of her long life, Lady Mary 'hid' in plain sight these three centuries on the very title-page of her own pseudonymous book of 1679, which displays a large butterfly-shaped decorative ornament."

Dr. Mulvihill has written extensively on the "Ephelia" subject since 1985. Her first book came out in 1992, Poems by Ephelia, circa 1679; and a second book is being readied for inclusion in the successful new series, The Early Modern English Woman, to be published by the English publisher, Scolar Press, in 2003. She also has written numerous articles about the case for Lady Mary Villiers being "Ephelia"; for example, in the journal American Notes & Queries (Fall, 1996; Summer, 1999); an authoritative profile on "Ephelia" in the new second edition of An Encyclopedia of British Women Writers (1998); and an upcoming feature article in The Female Spectator, the newsletter of the Chawton House Centre for the Study of Early Women Writers (Hampshire, England), entitled "The Masks of Mary Villiers: Sly Stuart Duchess." She also has an ambitious multimedia essay coming out in the new e-journal, (Re)Soundings, of the Millersville University, Department of English, entitled, "Thumbprints of 'Ephelia': The End of an Enigma in Restoration Attribution." Dr. Mulvihill recently had a letter-to-theeditor published by the London Times Literary Supplement about honoring Mary Villiers with a butterfly name (September 1, 2000, p. 17.). Dr. Mulvihill can be reached at mulvihill@bway.net.

If British lepidopterists favor honoring Lady "Ephelia" Villiers with a butterfly name, then adopting the new common name of Ephelia's Orange Tip for *Anthocharis cardamines britannica* seems a fitting patronym.

> JOHN B. HEPPNER Florida State Collection of Arthropods Gainesville, Florida

A JOURNEY TO NABOKOV'S KARNER, NEW YORK: A CONSERVATION DILEMMA

KURT JOHNSON

Environmental Affairs, Ethical Cultural Society, 53 Prospect Park West, Brooklyn, New York 11215, USA



Fig. 1. Pitch pine habitat (©2000 J. Wolcott), with inset showing male Karner blue (Lycaeides melissa samuelis) at Karner, NY (©2000 R. Dirig).

A recent date to speak about Nabokov's blues in Albany, New York — the state's capital — afforded me a chance to visit what is left of old "Karner," New York. Karner is the little hamlet that, in common parlance, has attached its name to Nabokov's famous endangered species *Lycaeides melissa samuelis*, the "Karner Blue". Karner got the nod for *samuelis*'s common name because Nabokov chose specimens of *samuelis* from Karner for his type series (the specimens he used to define his name and thus considered the definitive series by modern taxonomic rules). My visit turned up some fascinating trivia about Karner, Nabokov, and *samuelis*. But, along with the trivia, it also turned up some pretty frightening specters regarding the chances for the Karner Blue's long term survival in New York.

My host in Albany was Save the Pine Bush ["SPB"], an activist organization which has been fighting for the preservation of *samuelis*'s Pine Bush habitats for more than two decades. I was met at the Albany-Rensselaer Amtrak station by Lynne Jackson, the current secretary of SPB — who was holding a copy of *Nabokov's Blues* in her hand so that I could easily recognize her. My comment to her as I got off the train mirrored what an old religious superior of mine used to say about the Bible. I said to Lynne, "You've been reading that scary book?"

Piling through about a foot of snow, Lynne took me in her 4-wheel drive Geo Tracker to meet John Wolcott, a founder and vice-president of SPB. Already the experience was becoming Nabokovesque (yes, a term recently coined by literati seemed destined to take its place alongside "Kafkaesque" in literary jargon). John Wolcott, in a rather strange Nabokovian mirror reflection, actually looks like a slightly gray and gnarled version of Cornell University's Robert Dirig (the long-term student of Nabokov's legacy at Cornell and author of several articles on Nabokov's butterflies, with whom I had shot pieces for a documentary film on Nabokov for French Cineteve about two years ago). Was I going back in time?

John is not just an aficionado of Albany area history but a true expert on the changes that region has undergone in the last decades. His expertise, in fact, now seems to annoy some of the local politicos because he has had a tendency over the years, in editors' letters and other venues, to correct the errors in many of their public statements concerning "what used to stand where," "how old something is," and so on. Perhaps out of fear of embarrassment, local politicians and press don't contact John much anymore, a fact that caught me as somewhat reminiscent of Nabokov's own isolation in the decades following his departure from Harvard University. Nabokov had had to stand by, knowing quite well by the simplest of dissections that his Caribbean genera *Cyclargus* and *Hemiargus* were two very different groups of butterflies, while the "experts" in charge of lepidoptery at the time continued to lump them all back into Jacob Hübner's 1818 name *Hemiargus*, well into the 1990's (and some still do today!).

Over the more than 20 years that Save the Pine Bush has been working on behalf of the Karner Blue, the nucleus of its some 1000 members has welded into a community, if not a mutual support group, meeting as often as once a week. Theirs has been a legacy of lawsuit after lawsuit, invoking the endangered species status of Nabokov's *L. samuelis* to continually fight the never-ending attempts at commercial incursion into the remaining areas of dwindling Pine Bush habitat. In their most recent lawsuit, against expansion of the Crossgates Mall (called "The Maul" by SPB members), the Karner Blue itself was a plaintiff, along with Save the Pine Bush.

Save the Pine Bush is not exactly a popular organization in the Albany region — an anathema to government agencies and developers, yet a hero to other local activists. School children and college students make up a large part of its year-to-year cheering section. The sad fact is that many residents of the state's capital couldn't care less about what a local judge recently called the "Blue Flies" that still survive among the scattered stands of pitch pines in and around the city limits.

Members of SPB joke that the "players" in the fight to save or destroy the Karner Blue haven't changed much over the years. Indeed, it's become a cast of "the usual suspects", the same people appearing in the court room year after year — the same conservationists, the same developers, the same lawyers, the same expert witnesses, and, until recently, the same judges. There is also a more recent entry to the cast — officials of the state's "Albany Pine Bush Preserve Commission," a quasi-governmental organization the New York state government set up to handle the results of the never-ending lawsuits over Pine Bush terrain and also handle the management of those areas that have, after protracted legal battles, been set aside.

I met the present Executive Director of the Commission, Willie Janeway. With a background from the Nature Conservancy, Mr. Janeway, who introduces himself simply as "Willie," seems quite aware of the precariousness of his position as the "in between" man amongst the developers on one side and the Save the Pine Bush activists on the other. Willie, on cross-country skis, met us at the "Apollo Drive" Karner Blue site. Originally, a developer proposed that a go-cart/miniature golf course be built here. This site is in between two sites of Karner Blues. Though the site is only 6 acres in size — probably the smallest development SPB ever sued over — it is extremely important. Also, when this site was bought by the developer, it was 4 acres of asphalt and 2 acres of sand dunes. Save the Pine Bush sued and the developer could

not build that first season. Eventually, the site was bought for Karner Blue preserve. The developer agreed to remove the asphalt and the Commission has embarked on taking a parking lot and making it into Karner Blue habitat. I understand things are going fairly well. Willie has taken to calling this site "bulldozing for butterflies".

In a space between the roads and a hill, the Commission has bulldozed the land in hopes of removing the invading species and encouraging the return of Karner Blues. I think that's why Willie wanted to meet us there — to show where the Commission is turning asphalt into Karner homeland (hopefully). Tracking through the foot or two of snow covering the site, Willie explained how the pine-covered dunes at the preserve date back to the old dried-up lakebed of "Lake Albany" which receded 10,000 years ago, after the the last Ice Age to form the sand dunes and the Pine Bush. These ancient dunes afforded the original habitat into which the pitch pines, lupine and the Karner Blue eventually moved.

But the preserves are mostly surrounded now by a 20th century landscape of cement, steel and glass; the remaining plots of pitch pine a weak mosaic, unevenly forested, irregular, and disjunctive — a perilous situation when trying to preserve what is essentially both a nomadic butterfly with a nomadic foodplant. Today, there are even new enemies — domestic invader plants from the citified areas nearby that, previously in evolutionary history, were never a threat to Pine Bush habitat. Indeed, not only is the Karner Blue disappearing, the pitch pine themselves are disappearing as well.

Recent political changes have brought in a more conservative judgeship. SPB's directors comment that while it was relatively easy in the 1980's to win their cases on the merits alone, the same merits today seldom bring victories for Karner — the difference being the political appointee background of the particular judge. In the old days too, the developers used to at least talk to members of SPB. Back then, they considered SPB members innocuous enough - local hacks perhaps, troublemakers, hippee throwbacks, or an annoying regional version of Greenpeace. But, over the years, and after losing millions of speculative dollars to SPB's pesky lawsuits, the developers have lost their cordiality and no longer speak to members of the conservation group. Litigation is carried out under the formal but uneasy truce lines drawn by the courtrooms and court procedures, in which the "usual cast" of characters meets contentiously again and again. Actually, the developers still make money since, eventually, if the land is purchased for preserve, the State or The Nature Conservancy has to spend way too much to buy it. The developer still makes money from the land sale, but is unable to proceed onto the really big bucks of a commercial or housing development.

After 22 years together, members of Save the Pine Bush have become like a family — and, most do not have families of their own. The married members explain that they could not both have children and the time to carry on their day-to-day monitoring of the Karner Blue's situation. Some have lost their jobs, directly or indirectly, due to their advocacy for the Karner Blue. Consequently, some are now self-employed — with clienteles for their businesses far outside the Albany area or retired. But, resources or not, their work for Karner goes on.

In speaking of Karner, New York, in a *New York Times* review of Alexander Klots' famous butterfly field guide of the 1950's, Nabokov wrote "I visit the place every time I happen to drive (as I do yearly in early June) from Ithaca to Boston and can report that, despite local picnickers and the hideous garbage they leave, the lupines and *Lycaeides samuelis* Nab. are still doing as fine under those old gnarled pines along the railroad as they did ninety years ago". Little now remains of the landscape of Karner, NY, that Nabokov remembered fondly in his notes. Even "Karner" seems an inappropriate name for his beloved blue. Mr. Theodore Karner, the founder of Karner, New York, was a developer himself and an old 19th century map of the hamlet, pulled from John Wolcott's pocket while we lunched at a local diner, showed Mr. Karner's plan for selling off all of Karner Blue territory lot by lot. Luckily, the plots did not sell or *L. samuelis* would have been extirpated in New York long before Nabokov encountered it there.

Today, only two old houses from the original Karner village are left, separated by a grassed gap that used to be a street. The old railroad which Nabokov fondly remembered is also gone, its only semblance being an eroded embankment that used to hold up the tracks. The railway station, where Nabokov would have disembarked if he had come to visit by train, is now part of a rickety old storage building for what appears to be a junkyard or parking lot for worn- out heavy machinery.

Karner, New York, is as good as gone, and perhaps the Karner Blues at these preserves may soon share its fate. Even Mr. Janeway, who might have reason to present a more glowing picture of the situation on the preserve, estimated that last year's number of adults butterflies was perhaps only 500. Save the Pine Bush members say that in Nabokov's day, the numbers must have been "millions."

The Karner Blue in New York, and Save the Pine Bush, are in constant need of help. SPB members confided in me they've often given up hope for the "big donations" that might keep the coffers for their lawsuits at adequate capacity. They now hope that a wider range of smaller donations, even the 10's and 15's of dollars, or the "singles and change" that local high school student allies raise yearly, may help them continue to stem the tide of Pine Bush incursion.

The address for Save the Pine Bush donations (make checks to "Save the Pine Bush") is Lucy Clark, at Save the Pine Bush, Treasurer; 2348 Cayuga Road, Niskayuna, New York. In addition, copies of the book *Nabokov's Blues*, ordered by a letter to Lucy at the retail price (\$27.00) (make checks to Brooklyn Society for Ethical Culture Environmental Affairs) will net SPB 25% profit; and a catchy Karner Blue cartoon, colored by framed by cartoonist Thomas McAnany (yes, you've seen him in the *New Yorker* magazine) and ordered by a letter to Lucy (make checks to Creative Services Corporation, and, lower left write "Karner Blue Cartoon") at \$30.00 nets SPB 25%. If you have questions, inquire of SPB via e-mail at pinebush@aol.com.

As I returned to Lynne and her husband Dan's home on the outskirts of Albany (a frame house whose narrow winding back stairs reminded me of my family's old farm house in Iowa), things "Nabobovesque" set in once again. This time, it was a cupboard filled with chess trophies the playing of the game being Dan's other love. I mentioned Nabokov's enchantment with chess and Dan told me he "had heard about that." But what struck me was the parallel of the chess trophies and the long saga of moves and countermoves (but far from a game) played by Save the Pine Bush for decades on behalf of Nabokov's little Karner Blue. It remains unresolved who will ultimately win that match.

POSTSCRIPT: End Time for the Karner Blue?

Lynne Jackson, Secretary of Save the Pine Bush wrote (31 Oct 2000):

"I have only bad news from here in Albany. The decision came down on Friday with our landfill case and Save the Pine Bush lost. The judge ruled that it's OK to build landfill on an aquifer, thus making all that pine bush land available to development. We want to appeal, but just to copy the record may cost \$10,000.

"We brought suit against the City for violations of the State Environmental Quality Review Act on a 12-acre office complex proposal. We lost on the Supreme Court level, and a couple of weeks before we were able to file our appeal, the developer began construction. We tried to get a stop-work-order, but, though the judge liked our affidavits and briefs, he did not give us one."

NOTE: reprinted in modified form from the same title in News of the Lepidopterists' Society, Summer 2000 (42(2):45-47).

TROPICAL CACTUS BORER, CACTOBLASTIS CACTORUM, INTERCEPTED IN WEST FLORIDA (LEPIDOPTERA: PYRALIDAE: PHYCITINAE)

J. B. HEPPNER 1

Florida State Collection of Arthropods FDACS, DPI, P. O. Box 147100, Gainesville, Florida 32614, USA

The tropical cactus borer, *Cactoblastis cactorum* (Berg), originally from Argentina (Heinrich, 1939), and established in Florida at least since 1989, has been intercepted in nursery stock in the West Florida panhandle for the first time, at Gulf Breeze, Santa Rosa Co., 23 Jun 2000, in the Pensacola Bay area.

The moth was introduced to Australia in 1913 and again in 1925, as a biological control agent for unwanted *Opuntia* cacti (Dodd, 1940); this was later repeated in South Africa in 1932 (Annecke *et al.*, 1976; Petty, 1948), in Hawaii in 1950 (Fullaway, 1954), and also in Mauritius (Pemberton, 1995). It was also brought to the Caribbean to control cacti in the Leeward Islands (Simmons and Bennett, 1966). In South America, it occurs naturally in northern Argentina, Uruguay, Paraguay, and southern Brazil (Heinrich, 1939, 1956; Mann, 1969).

There are 4 described species in the genus *Cactoblastis* (Heinrich, 1939, 1956), all from the same region of South America (some range to Bolivia and southeastern Peru). However, McFadyen (1985) differentiated 5 additional biotypes in his study of *Cactoblastis* larvae among populations collectively called "*C. cactorum*," possibly all distinct species, and each with different host preferences. Most *Cactoblastis* species feed on *Opuntia* cacti, yet at least one feeds on *Eriocereus* and other cacti (McFadyen, 1980, 1985). McFadyen (1985) noted further that all introductions worldwide since 1925 for the control of *Opuntia* cacti originated from the same strain of *C. cactorum* originally brought to Australia from Uruguay.

Previous introductions of Cactoblastis for control of cacti had been far away from Argentina and for introduced cacti, but in the 1950s an ill-advised introduction scheme was planned for the Caribbean for native cacti considered weeds. The Leeward Islands had a problem of unwanted native cacti, so in 1957 Cactoblastis was brought to Nevis for control of Opuntia. After the success on Nevis, the moth was introduced to Montserrat and Antigua in 1960 (Simmonds and Bennett, 1966), and also to Grand Cayman in 1970 (Bennett et al., 1985; Habeck and Bennett, 1990). Shortly thereafter, in 1963, the moth had already spread naturally to the nearby Virgin Islands. By 1963, the moth was also reported in Puerto Rico (García et al., 1971), and by 1983 it was present in the Bahamas, Haiti and the Dominican Republic (Starmer et al., 1987). In 1988, it was first reported for Cuba at Guantanamo Bay, and also confirmed for the Isles of Pines, Cuba, in 1992 (Hernández and Emmel, 1993). The moth is robust and a strong flier, so its spread throughout the Caribbean could have easily been foretold. In Hawaii, after introduction on the main island of Hawaii in 1950, the moth spread to all the major Hawijan islands within 7 years.

In October 1989, the first collections were made of the moth in the Florida Keys by T. S. Dickel (1991) and also by Carol Lippencott (Simberloff, 1992). By early 1990, several more collections were made in the Keys (Habeck and Bennett, 1990). Yet, Pemberton (1995) provides evidence that the moth may already have been established in the Miami area through the importation of *Opuntia* for nursery sales rather than flight north from Cuba: he presents records of USDA Miami interceptions of the larvae on *Opuntia* imports as early as 1981 and also has notes from local nurserymen who claim-



Fig. 1. Cactoblastis cactorum adult (after Mann, 1969) (FW = ca. 16mm).



Fig. 2. Current sites for *Cactoblastis cactorum* in Florida (open circle near Pensacola is the June 2000 Gulf Breeze interception site; upper right dot is Cumberland Id., Georgia).

¹ Contribution No. 896, Entomology Section, Bur. Ent. Nema. Plant Path., Div. Plant Industry, Florida Dept. Agric. & Consumer Serv., Gainesville, Florida.



Fig. 3. Distribution of *Cactoblastis cactorum* in the Caribbean as of June 2000 (open circles are interceptions in Florida and Texas; bullet circle is on Nevis for the 1957 initial Caribbean release site; closed circles are established sites).

ed caterpillar damage on imported *Opuntia* already for several years prior to 1991. Caribbean species of *Opuntia* are frequently brought to Miami by the container full for nursery sales (Frank and McCoy, 1995).

Cactoblastis has steadily moved northwards on the Florida peninsula, mainly along the two coasts, getting to Tampa Bay on the Gulf Coast in 1991 (Bennett and Habeck, 1996; Center *et al.*, 1995). The moth is now well established in coastal areas of southern Florida and as far north as Nassau Co. on the Atlantic Coast. As of late 1999, it was also reported from Cumberland Island, near the Florida border on the southern coast of Georgia. The 23 June 2000 finding of the species in the Pensacola area marks a 350 mile extension westward.

While the movement of *Cactoblastis* in the Caribbean has often been a natural expansion since its introduction to the Leeward Islands, transfer to Florida by 1989 and current movement to West Florida may have been inadvertantly aided by man. The Gulf Breeze finding was at a nursery, where infested *Opuntia* plants were discovered, undoubtedly brought in for sale from a wholesaler in south Florida.

The caterpillars are devastating to *Opuntia* cacti (Moran, 1984; Starmer *et al.*, 1987). Due to the gregarious feeding of the larvae, cacti infested by *Cactoblastis* can be reduced to ground level within a short time (McFadyen, 1985). Any establishment of the moth in West Florida will be a great impetus for the species to move on along the Gulf Coast to Texas, and eventually to the fertile *Opuntia* lands of the desert Southwest. There has more recently been an airport interception of *Cactoblastis* on cacti brought in by tourists, in Dallas, Texas (USDA, APHIS report). Should the moth get to Mexico and other desert areas of the Southwest, it may spell the doom of many species of native *Opuntia* in these regions. In Australia, *Cactoblastis* completely eliminated dense stands of introduced cacti from 30 million acres within 12 years of its introduction, and another 30 million acres of scattered cacti were also under control (Mann, 1969).

Biological control has been a very successful tool against unwanted insect and plant invaders, but the unnatural movement of species to new faunal regions can spell disaster if not carefully considered. The example of *Cactoblastis* is one case of biological control having mixed results and one of the rare cases of trying to control a native plant with introduced herbivores. It could have easily been foretold that any introduction of *Cactoblastis* into any New World region like the Caribbean – unlike far away Australia or South Africa – would have produced the results we have today.

Given the probable spread of *Cactoblastis* westwards along the Gulf Coast, there may be a major disaster for western North American *Opuntia* cacti within the next few years.

ACKNOWLEDGMENTS

Records of *Cactoblastis* in Florida are from the Florida State Collection of Arthropods, Division of Plant Industry, Florida Dept. of Agriculture and Consumer Services records, with the most recent one by inspector Laura Ooms. Tad Dobbs (USDA, APHIS, Miami, FL) kindly checked for *Cactoblastis* interception records.

REFERENCES

Annecke, D. P., W. A. Burger, and H. Coetzee

- 1976. Pest status of Cactoblastis cactorum (Berg) (Lepidoptera: Phycitidae) and Dactylopius opuntiae (Cockerell) (Coccoidea: Dactylopiidae) in spineless Opuntia plantations in South Africa. J. Ent. Soc. S. Afr. (Pretoria), 39:111-116.
- Bennett, F. D., and D. H. Habeck
- 1996. Cactoblastis cactorum: a successful weed control agent in the Caribbean, now a pest in Florida? In E. S. Delfosse and R. R. Scott (eds.), Proc. 8th Internatl. Symp. Biol. Contr. Weeds, Canterbury, New Zealand, 21-26. CSIRO, Canberra.
- Bennett, F. D., M. J. W. Cock, I. W. Hughes, F. J. S. Simmonds, and M. Yaseen
- 1985. A review of biological control of pests in the Commonwealth Caribbean and Bermuda up to 1982. Commonwealth Inst. Biol. Contr. Tech, Comm. (London), 9:112.
- Center, T. D., J. D. Frank, and F. A. Dray
- 1995. Biological invasions: stemming the tide in Florida. *Fla. Ent.* (Gaines-ville), 78:45-55.
- Dickel, T. S.
- Cactoblastis cactorum in Florida (Lepidoptera: Pyralidae: Phycitinae). Trop. Lepid. (Gainesville), 2:117-118.
- Dodd, A. P.
- 1940. The Biological Campaign against Prickly-Pear. Brisbane: Commonwealth Prickly Pear Board. 177pp.
- Frank, J. H., and E. D. McCoy
- 1995. Invasive adventive insects and other organisms in Florida. *Fla. Ent.* (Gainesville), 78:1-15.
- Fullaway, D. T.
- 1954. Biological control of cactus in Hawaii. J. Econ. Ent. (Lanham), 47:696-700.
- García-Tudurí, J. C., L. F. Martorell, and S. M. Medina-Gaud
- 1971. Geographical distribution and host plants of the cactus moth *Cactoblastis cactorum* (Berg) in Puerto Rico and the United States Virgin Islands. J. Agr., Univ. Puerto Rico (Mayaguez), 55:130-134.
- Habeck, D. H., and F. D. Bennett
- 1990. Cactoblastis cactorum Berg (Lepidoptera: Pyralidae), a phycitine new

to Florida. Fla. Dept. Agric. Consumer Serv., Div. Plant Indust., Ent. Circ. (Gainesville), 333:1-4.

Heinrich, C.

- 1939. The cactus-feeding Phycitinae: a contribution toward a revision of the American pyralidoid moths of the family Phycitidae. *Proc. U. S. Natl. Mus.* (Washington), 86:331-413, pl. 23-51.
- 1956. American moths of the subfamily Phycitinae. Bull. U. S. Natl. Mus. (Washington), 207:1-581.

Hernández, L. R., and T. C. Emmel

1993. Cactoblastis cactorum in Cuba (Lepidoptera: Pyralidae: Phycitinae). Trop. Lepid. (Gainesville), 4:45-46.

Kass, H.

1990. Once a savior, moth is now a scourge. *Plant Conserv. Bull.* (Howrah, India), 5:3.

1969. Cactus-feeding insects and mites. Bull. U. S. Natl. Mus. (Washington), 256:1-158, 8 pl.

McFadyen, R. E.

- 1980. A Cactoblastis (Lep.: Phycitidae) for the biological control of Eriocereus martinii (Cactaceae) in Australia. Entomophaga (Paris), 25:37-42.
- 1985. Larval characteristics of *Cactoblastis* spp. (Lepidoptera: Pyralidae) and the selection of species for biological control of prickly pears (*Opuntia* spp.). *Bull. Ent. Res.* (London), 75:159-168.

Moran, V. C.

1984. The biological control of cactus weeds: achievements and prospects. *Biocontr. News Inform.* (Wallingford), 5:297-320.

Pemberton, R. W.

- 1995. *Cactoblastis cactorum* (Lepidoptera: Pyralidae) in the United States: an immigrant biological control agent or an introduction of the nursery industry? *Amer. Ent.* (Lanham), 41:230-232.
- Petty, F. W.
- 1948. The biological control of prickly pear in South Africa. Union S. Afr., Dept. Agric., Ent. Ser. (Pretoria), 22:1-163.
- Simberloff, D.
 - 1992. Conservation of pristine habitats and unintended effects of biological control. In W. C. Kauffman abd J. E. Nechols (eds.), Selection Criteria and Ecological Consequences of Imported Natural Enemies, 102-117. Lanham: Ent. Soc. Amer. (T. Say Found Publ. Ent.).
- Simmons, F. J., and F. D. Bennett
- 1966. Biological control of *Opuntia* spp. By *Cactoblastis cactorum* in the Leeward Islands (West Indies). *Entomophaga* (Paris), 11:183-189.
- Starmer, W. T., V. Aberdeen, and M. A. Lachance
- 1987. The yeast community associated with decaying *Opuntia stricta* (Haworth) in Florida with regard to the moth, *Cactoblastis cactorum* (Berg). *Fla. Sci.* (Lakeland), 51:7-11.

30th ANNIVERSARY FOR MONA PROJECT

The 30th anniversary notice for the MONA (*Moths of America North of America*) has appeared in numerous Lepidoptera-oriented newsletters over the past few months. To summarize, the MONA project started in 1970, with the impetus of Dr. Richard B. Dominick and Charles R. Edwards, of Charleston, South Carolina. The untimely death of Dr. Dominick in 1976 was a great loss, but his vision for the project — to describe and illustrate all the moths in North America — continues.

The goals of the series certainly have been well maintained, now under the excellent guidance of the series editor, Dr. Ronald W. Hodges, formerly with the USNM (USDA) and now in Oregon, but not "retired." The MONA project initially was published in London, by E. W. Classey Ltd. Later, publication was under the oversight of a foundation set up for the series: the Wedge Entomological Research Foundation, headquartered in Washington, DC.

The MONA anniversary notice states that 2,381 species (ca. 20% of the Nearctic fauna) have been treated thus far in the 19 parts published since 1971. The latest (1999) issue is on *Chionodes* (Gelechiidae), by R. W. Hodges. In 1983, a new North American checklist was also published, although not formally part of the series. The series has superb color plates; part of the appeal of the series. Upcoming issues include a revision of *Semiothisa* geometer moths (now in the tribe Macariini) and of *Catocala* (Noctuidae), among others.



Richard B. Dominick, founder of the MONA series.

Mann, J.

DICRANOCTETES BRACHYELYTRIFOLIELLA, A LEAFMINER ON COGONGRASS IN FLORIDA (LEPIDOPTERA: ELACHISTIDAE)

J. B. HEPPNER ¹

Florida State Collection of Arthropods FDACS, DPI, P. O. Box 147100, Gainesville, Florida 32614, USA

The leafminer moth, *Dicranoctetes brachyelytrifoliella* (Clemens), was described from Pennsylvania, feeding on the grass, *Brachyelytrum erectum* (Gramineae) (Clemens, 1863). The species is now known for all the southeastern United States (Braun, 1948), from Pennsylvania to Florida. Braun (1948) records it westward as far as Michigan, Kentucky and Arkansas, but it probably occurs west as far as southern Illinois and eastern Texas. Braun (1918) described another species from Maryland in the new genus *Dicranoctetes*, but this species is now a synonym of *D. brachyelytrifoliella* (Braun, 1948). Specimens Braun (1935) had from Kentucky were reared off another grass, *Muhlenbergia tenuiflora* (Gramineae). Later, Braun (1948) also recorded *Uniola latifolia* (Gramineae) as a hostplant (now in *Chasmanthium*).

A new Florida hostplant record has been discovered for *D. brachyelytrifoliella* by Marc Minno, rearing the moth from cogongrass, *Imperator cylindrica* (Gramineae), an introduced Asian grass. The north Florida record is for Marion Co. The phenology of the adults is Jan, Apr, Aug, and Nov-Dec, based on available records. The most detailed biological information on *D. brachyelytrifoliella* has been published by Braun (1948).

Our native species is related to the Cuban D. saccharella (Busck), the sugarcane leafminer, known also from Florida since 1982 (Hall, 1983 [noted as an undescribed species of Dicranoctetes]) and Peru since 1956 (Risco, 1956). Busck ([1934]) described the sugarcane leafminer in the new genus Donacivola, but Braun (1935) placed this genus in synonymy with Dicranoctetes. The wing pattern shown in Fig. 1 is of D. saccharella, which is almost identical with that of D. brachyelytrifoliella, where the light marks are white on a black field, and the basal patch is silvery. The pupae are similar (Fig. 2-3) in both species, with lateral spines. A related sugarcane leafminer was described by Bradley (1974) from Papua New Guinea, but in the new genus Eupneusta: this species has bizarre spine-like extensions of 2 pairs of pupal spiracles (likewise on the abdomen of the larva). Amaya (1966) published more biological information on the D. saccharella populations found in Peru; other notes are in Risco (1956).



Fig. 1. Wing pattern in *Dicranoctetes* (forewing of *D. saccharella*) (after Brusk, [1934]) (FW = ca. 2mm).

¹ Contribution No. 897, Entomology Section, Bur. Ent. Nema. Plant Path., Div. Plant Industry, Florida Dept. Agric. & Consumer Serv., Gainesville, Florida.



Fig. 2-3. Pupae of *Dicranoctetes*: 2) *D. brachyelytrifoliella* (after Braun, 1948). 3) *D. saccharella* (after Busck, [1934]).

LITERATURE CITED

Amaya, Q. J.

- Estudio de Donacivola saccharella Busck, minador de las hojas de caña de azúcar. Revta. Fac. Cienc. Biol. Univ. Nac. Trujillo, 1:62-80 (1994).
 Bradley, J. D.
- 1974. A new genus and species of elachistid moth (Lepidoptera, Elachistidae) reared on sugar-cane in Papua New Guinea. Bull. Ent. Res. (London), 64:73-79.

Braun, A. F.

- 1918. New genera and species of Lyonetiidae (Microlepidoptera). Ent. News
- (Philadelphia), 29:245-251.
 1935. Notes and new species of Microlepiodptera, *Trans. Amer. Ent. Soc.* (Philadelphia), 61:45-52.
- 1948. Elachistidae of North America (Microlepidoptera). Mem. Amer. Ent. Soc. (Philadelphia), 13:1-110, 26 pl.

Busck, A.

[1934]. Microlepidoptera of Cuba. Ent. Amer. (New York), 13:151-202, pl. 30-36 (1933).

Clemens, B.

1864. North American Micro-Lepidoptera. Proc. Acad. Nat. Sci. Philadelphia, 2:415-430.

Hall, D. G.

1983. A leaf miner, *Dicranoctetes* sp. (Lepidoptera: Elachistidae), infesting sugarcane in South Florida. *Fla. Ent.* (Gainesville), 66:521.

Risco, S. H.

1956. Principales insectos que atacan a la caña de azúcar en el Perú. Azúcar (Lima), 3:41-55.

THE PIONEER CENTURY OF AMERICAN ENTOMOLOGY

by H. B. Weiss

Continued from Chapter VIII (see Lepidoptera News, September 1999) J. B. Heppner, Editor

CHAPTER IX

THE ENTOMOLOGY IN AGRICULTURAL PERIODICALS BEFORE 1865

Farm journals, or agricultural periodicals as they should be perhaps more accurately called, were favorite vehicles for the transmission of information and misinformation about insects. The Massachusetts Agricultural Repository and Journal of the Massachusetts Society for Promoting Agriculture, established in 1793, frequently carried papers on economic insects. This journal, however, was only an occasional periodical and according to our present standard was not a farm paper. The history of farm papers in this country is supposed to date from 1819, when, on April 2 of that year, John S. Skinner, of Baltimore, established the American Farmer. About two months later, in the same year, The Plough Boy appeared in Albany, N.Y., and continued twenty years or more. In Boston on August 3, 1822, the first New England Farmer made its appearance and continued until 1846. The New York Farmer started in New York City about 1827 and ran, for several years. In 1828, the Southern Agriculturist was born at Charleston, S. C., and lived until 1842 or later. In 1831, at Rochester, N. Y., the Genesee Farmer was first published. Then the Cultivator came out in Albany, N.Y., in 1834, by Jesse Buel, and continued until 1839, when it was united with the Genesee Farmer. At Newport, N.H., the Northern Farmer, was established July 7, 1832. The Kennebec Farmer, later the Maine Farmer, was edited by Ezekiel Holmes from its beginning in 1833. The Farmer's Cabinet was established in Philadelphia, Pa., in 1836; the Western Farmer in Cincinnati, September, 1839; the Southern Planter in Richmond in 1841; and the first Southern Cultivator at Columbia, Tenn., in 1839. One could continue in this way and fill several pages with additional names and dates of journals.

A number of farm journals, including the *Rural New Yorker*, were established in 1850, and from then on the development of farm journalism was accelerated. The history of the entire movement is difficult to follow, as various journals used the same name at different times. Sometimes a journal was dated back to a former publication of the same name, with which it had nothing to do. And at other times the periodicals changed their names.

In the present account, the entomology of farm journals will be considered generally. It does not appear necessary to be specific concerning the numerous popular articles, some of little importance, that were written by various authors for our agricultural press, especially as exact references to dates of publication may easily be obtained from the bibliographies of economic entomology. Practically all the insects written about in our farm press were the common ones of the orchard and garden.

1819 to 1833

During this period, Mr. T. W. Harris was the most prolific contributor to farm journals. However, from 1819 to 1845, Mr. J. E. Muse contributed four articles on the control of such insects as the plum curculio, army worm, Hessian fly, cut worms and wireworms. According to experiments reported by him in the *American Quarterly Journal of Agriculture and Science* for July, 1845, liquors were not effective in protecting seeds from insect attacks, nor were electric currents efficacious.

In the American Farmer, in 1820, Mr. J. H. Cocke said that the female of the peach tree borer was prevented from depositing eggs by a covering of tobacco about the base of the tree. And Mr. H. A. S. Dearborn, from 1821 to 1830, wrote on locust borers and the canker worm. From 1822 to 1829, Mr. R. Greene supplied five articles on the Hessian fly, the "rose-bug," and cut worms, mainly to the New England Farmer, although for Adams' Medical & Agricultural Register, in 1806, he wrote a paper on the horse-bot. Lime was found to be ineffective against the "wheat-fly" and smut, according to C. Birnie writing in the New England Farmer in 1824.

From 1826 to 1855, T. W. Harris supplied sound entomology to the New England Farmer, Boston Cultivator, American Agriculturist, New Orleans Picayune, Salem Observer, Middlesex Farmer, Albany Cultivator, Raleigh Register, Yankee Farmer, Massachusetts Ploughman, Hovey's Magazine of Horticulture, Farmer's Cabinet, Downing's Horticulturist, especially to the first named, on such different subjects as the salt-marsh caterpillar, peach tree borer, larder beetle, Tremex columba, plum curculio, bark lice, turnip butterfly, worms in seed corn, canker worms, wheat insects, squash borer, sycamore lace-bug, apple borers, termites, the cranberry worm, raspberry sawfly, potato beetle, chinch bug, joint worm, bark beetles, oak pruner, palmer worm, grape insects, osage orange insects, rose bug, measure worm, etc.

In the south, C. W. Capers wrote "On the Cotton Caterpillar," in 1828 for the *Southern Agriculturist*; O. Fiske supplied a paper on pear tree insects for the *New England Farmer* in 1830; and P. G. Robbins furnished two papers on canker worms for the *New England Farmer* in 1830 and 1831, in one of which he tells of the successful use of troughs, with liquids.

People in various walks of life contributed to the entomology of the farm journals. Only rarely were the contributors recognized entomologists. In fact, professional entomologists were scarce. Ezekiel Holmes, who edited the *Kennebec Farmer*, was a physician who graduated from the medical school of Bowdoin College in 1824. He was fond of botany, mineralogy, entomology and other branches of natural history, and among other things he had a collection of insects. He taught natural history in the Gardiner Lyceum. He was best known, however, as the editor of the *Maine Farmer*. In addition, he was an assemblyman and senator in the Maine legislature, secretary of the board of agriculture in 1852, and naturalist of the scientific survey authorized by the Maine legislature in 1861.

Jesse Buel, who founded the *Cultivator* under the auspices of the New York State Agricultural Society, was for many years judge of the court of common pleas of Ulster County, New York. As a boy he was apprenticed to a printer and later he started various newspapers. He bought a small barren farm near Albany and by means of subsoil plowing and the use of fertilizers, brought it to a high state of production. His *Farmer's Companion, or Essays on the Principles* and Practice of American Husbandry was published in 1839.

Joseph Ennals Muse was a Maryland physician who died near

Cambridge, Md., on July 25, 1852, at the age of 76. John Hartwell Cocke was a soldier and reformer who was born in Surrey County, Virginia, September 19, 1780. He graduated from William and Mary College in 1793, and in 1812 and 1813 he was general commander of the Virginia troops at Camp Carter and Camp Holly. Later he became an active temperance and anti-slavery advocate, and promoted Bible and tract societies. He died on his estate, "Bremo," Fluvanna County, Virginia, June 24, 1866.

Oliver Fiske, who was born in Brookfield, Mass., September 2, 1762, was a soldier in the patriot army in 1780 and in Shay's Rebellion, both enlistments having interrupted his studies at Harvard, from which he graduated in 1787. He was active in organizing county medical societies, and in 1824 Harvard conferred upon him an honorary M.D. He was the author of many papers on current political happenings, a good orator, and in 1803 a special justice of the court of common pleas in Worcester. The last fifteen years of his life were devoted to farming and horticulture.

General Henry Alexander Scamwell Dearborn was a lawyer, congressman, and author. He was born at Exeter, N.H., March 3. 1783, and was educated at William and Mary College. In 1796, he lived at Portsmouth, N.H., and in 1812 he succeeded his father as collector of the port of Boston, and as brigadier-general of militia he commanded the defences of the harbor. He held various political offices in Massachusetts and was one of the originators of the plan to build Bunker Hill monument. In addition, he was intensely interested in agriculture and horticulture and published a volume of papers upon the latter subject. In the *Massachusetts Agricultural Repository and Journal* (Vol. 6, p. 272), he wrote of a boring beetle. His death occurred at Portland, Maine, July 29, 1851.

Some of the observations made by contributors to the farm journals were remarkably good, as for instance those on wheat insects by James Worth, referred to in a previous chapter. And sometimes the contributors had good powers of observation. Many of the common pests which were later studied and presumably discovered by entomologists, were noted previously by some of the contributors to farm papers.

1834 to 1848

During this period, the number of popular articles on economic insects in the farm journals increased. Nathan Ruggles, in 1834, recommended in *Goodsell's Farmer* and in the *New England Farmer*, the use of bands of chestnut burrs around trees to protect them against canker worms. Joseph Bradshaw wrote on the army worm in Ohio, in the *Farmer's Register* of Virginia (1835). J. A. W. Pleasant noted the ravages of the army worm, chinch bug and the Hessian fly in the *Cultivator* of May, 1836. Grain insects, especially the Hessian fly and the army worm, were favorite topics. Henry Green wrote on the Hessian fly for the *New England Farmer* in 1836; Asa Carter, on the same insect, for the same journal in 1837; and J. Gerrish, on the same insect for the *Cultivator* in 1838. In 1837, J. R. Porter supplied the *Cultivator* with an account of army worm ravages. During the same year the *Cultivator* contained a paper by N. Blatchley in which wood ashes were recommended against *Agrotis* and other species.

The seventeen-year locust came in for some attention from Nathaniel Potter, who described its history and habits in a 27-page pamphlet, with 1 plate, published in Baltimore, Md., by J. Robinson, 1839. The title was "Notes on the *Locusta septentrionalis americanae decem septima*."

Willis Gaylord, who wrote on the "grain-worm" in the *Cultiva*tor, 1839, was the author of "A treatise on insects injurious to field crops, fruit orchards, vegetable gardens, and domestic animals," etc., etc., that was published in the *Transactions of the New York State Agricultural Society*, in 1843 (vol. 3, pp. 127-174).

In 1840, writing in the New England Farmer, Mr. J. W. Proctor said that Dennis's leaden oil-troughs did more harm than good. This trough, supposed to be effective against the canker worm, was described in the New England Farmer in July and December, 1840, by Mr. Jonathan Dennis, and also in the Cultivator for 1842. The work of the armyworm, Aletia xylina, in Louisiana, was described by Stephen Henderson in the Farmer's Register (Va.) in 1840. J. Barratt, in his descriptive paper on the canker worm and its ravages (N. E. Farmer, 1840), stated that it first appeared in New England in 1666. J. M. Gourgas wrote about the canker worm in 1841, in the Boston Cultivator and said that tanbark and other loose materials were effective when placed about the trees. In the same year, Garrett Bergen wrote about the Hessian fly.

David Haggerston was a great believer in the efficacy of whale oil soap against *Monostegia rosae* and other insects — so much so that in 1841 he supplied the *Boston Courier*, the *Union Agriculturist*, and the *Boston Cultivator* all with the same information. W. S. Wait and Joseph Bradshaw both wrote about the army worm in 1842, the former in the *Missouri Reporter* and the latter in the *Union Agriculturist*.

Ammonia was used in rubbing off the nests of *Clisiocampa* sp., according to B. G. Boswell in the *American Agriculturist* in 1844. In the *Prairie Farmer*, in 1846, the work of the chinch bug was written about by Daniel Newson; in the *New Orleans Commercial Times*, in 1846, the ravages of *Aletia xylina*, the cotton worm, were outlined by C. G. Forsley; and, in the *Cultivator*, in 1846, no less a person than Richard Owen wrote on *Sitotroga cerealella*.

In the *Woodville Republican* (Miss.) of May 17, 1845, Dr. D. L. Phares, then of Woodville, Miss., announced his discovery of the 13-year period for southern broods of the periodical cicada. Because of its appearance in a local newspaper, the discovery never came to the attention of naturalists, and it was not until Walsh and Riley, in 1868, published their independent conclusion of the same kind that the fact was generally accepted. Doctor Phares was a frequent contributor to newspapers and periodicals published in Mississippi between 1840 and 1880, and many of his observations were keen and useful.

Asa Fitch, whose contributions to entomology have been treated in a previous chapter, wrote ninety some articles for farm journals from 1846 to 1865. Many appeared in the *Country Gentleman*. Others appeared in the *American Agriculturist*, *American Farmer*, *Ohio Cultivator*, *Cultivator*, and the *Genesee Farmer*. His range of subjects was extensive and included such insects as the wheat fly, chinch bug, Hessian fly, grain moth, joint worm, apple plant louse, plant lice enemies, wheat thrips, cut worms, apple borers, rose chafer, grasshoppers, seed infesting insects, fall webworm, wheat midge, hop aphis, locust tree borer, onion fly, maple psocus, asparagus beetle, buffalo tree hopper, tortoise beetle, grape beetles, maple leaf cutter, periodical cicada, quince tingis, army worm, blister beetles, etc.

De Bow's Review in 1846 published an article on the cotton caterpillar by Wheelock S. Upton; Horace Collamore in the same year wrote in the Massachusetts Ploughman, about the use of soapsuds and sulphur in killing borers in apple trees; and J. B. Manlove wrote on the chinch bug for the Prairie Farmer. Thomas Affleck apparently was much interested in the cotton caterpillar, Noctua xylina, as in 1846, his articles on this insect appeared In the New Orleans Commercial Times, the American Agriculturist and in Affleck's Southern Rural Almanac & Plantation and Garden Calendar for 1851. In the latter, he quoted a letter from Harris, described and figured the early stages, and had something to say about parasites. In 1867 and 1868, he wrote papers on other insects for the American Agriculturist, Cultivator, Country Gentleman, and the Southern Ruralist.

D. B. Gorham also wrote on the cotton caterpillar for *DeBow's Commercial Review* and for the *Southern Cultivator*, in 1847, giving its natural history, an account of previous visitations, the migration theory, and describing a species of *Pimpla*, which was parasitic upon *Aletia*. In the same year, DeBow's *Review* published an article by P. Winfree arguing against the migration theory of Gorham. Thomas Spaulding, in 1847, in the Savannah Republican and in the American Farmer, advocated the destruction of refuse in the spring in order to destroy the adults of Aletia argillacea, before oviposition took place; and W. S. Seabrook discussed the hibernation of the adult in the Charleston Mercury and in the American Farmer. Still another paper on the cotton caterpillar, giving characters of the larva and pupa, came from M. W. Philips in 1848 and was printed in the Southern Cultivator.

In 1847, the economic entomology of *Sitotroga cerealella* was covered by Edmund Ruffin (noted further below) in the *American Agriculturist*; the ravages of the plum curculio and the codling moth, by N. S. Davis in the *American Journal of Agriculture and Science*; and in 1848, the application of dry ashes applied on dewy mornings was recommended by R. Newton in both the *American Farmer* and the *Horticulturist*.

Thomas Affleck was a business man and agricultural writer. He came to this country from Dumfries, Scotland, in 1832. After spending some time in Pennsylvania and New York, he went to Indiana, and in 1840 he became junior editor of the Western Farmer and Gardener, in Cincinnati. He married in 1842, Mrs. Anna (Dunbar) Smith of Washington, Miss., and lived at Ingleside, near Washington, where he established one of the earliest commercial nurseries in the south and where he set himself up as a large scale planter. He gave up his editorship, imported plants from Europe, carried on experiments, sold out his Mississippi interests, moved to Texas, erected saw mills, grist mills, cotton mills, etc., established a nursery, made wheel barrows for the Confederate Army and tried to establish a beef-packing plant. He was one of the early advocates of diversified farming in the south, and through his writings and business activity he did considerable for the advancement of southern agriculture. He wrote several books including one on Bee Breeding in the West (1841).

It is an unusual pleasure to record here that one of the contributors of entomological papers to the farm journals was suspended from William and Mary, because he neglected his studies. This was Edmund Ruffin, agriculturist who was born in Prince Georges County, Virginia, in 1794, who served in the War of 1812, who used marl as a fertilizer, who wrote *Calcareous Manures* in 1832, who was a state senator and secretary of the board of agriculture of Virginia, who was an ardent secessionist, who as the oldest member of General Beauregard's company fired the first shot at Fort Sumter, on April 12, 1861, of which he boasted much, and who, at the home of his son near Dansville, Va., on June 17, 1865, blew his brains out with a gun, saying, "I cannot survive the liberty of my country."

Whitemarsh Benjamin Seabrook, who took a little flier into entomology via the farm journal, probably did so because of his large cotton planting interests on Edisto Island, South Carolina, where he was also born on June 30, 1792. He was a College of New Jersey graduate, once a member of the state legislature, president of the State Agricultural Society, governor of South Carolina and he wrote a *History of the Cotton Plant*. He died in 1855.

1849 to 1865

The same type of economic entomology appeared in the farm journals during this period as before, with the number of articles from professional entomologists increasing. In the American Agriculturist, in 1849, A. B. and R. L. Allen wrote jointly on the ravages of the armyworm in southern Illinois and Missouri. Anthony Benezet Allen was a farmer, manufacturer, writer and dealer in farm machinery. He was born in Massachusetts, educated in New York schools, and farmed and bred livestock near Buffalo, N.Y. With his brother, Richard Lamb Allen, and with financial help from another brother, Lewis F. Allen, he founded the American Agriculturist, in New York City in 1842, and was owner and editor for fourteen years. In 1856, he sold the paper to Orange Judd and devoted himself to the manufacture and sale of farm machinery. Between 1840 and 1892, he wrote many papers on rural subjects.

Up to 1865, William LeBaron contributed three or four papers on the chinch bug, fruit insects and apple bark lice to the *Prairie Farmer*, but after 1865 he was a frequent contributor to farm journals on economic entomology, especially to the *Prairie Farmer*.

In 1852, in the *Southern Planter*, there were several articles by Cabell and Harris relative to the relationships of the joint-worm, also a paragraph in which it was stated that Doctor Fitch was going to ask that his expenses to Virginia be paid so that he could make a study of the insect. There was also a suggestion that Professor Cabell, of the University of Virginia, and Harris have a conference in order to settle the dispute about the jointworm. The results of the joint-worm convention as reported by the *Southern Planter* (1854, p. 246) are quoted as follows:

JOINT WORM CONVENTION

"At a Convention of farmers held at Warrenton, Fauquier County, Virginia, on Tuesday the 13th of July, for the purpose of taking some action with regard to the ravages of the joint worm, James K. Marshall, Esq. was chosen President, and R. W. N. Noland, Esq, appointed Secretary.

"On motion, a committee of twelve was appointed, to draught resolutions expressive of the views of the Convention. After due consultation, a set of resolutions were reported to the Convention, by the Chairman, Dr. R. E. Peyton. As amended, they read as follows:

"1. *Resolved*, that, in the opinion of this Convention, the successful culture of the wheat crop is of the greatest importance to the prosperity of the Piedmont and Valley sections of Virginia, whether we view it as it respects the interests of the farmer, or of our commercial towns, or of our rail roads.

"2. *Resolved*, that the injury done to the wheat in the sections of the State, above named, by the ravages of the joint worm, is so serious and extensive that it may well excite the deep concern of all interested; and that from past experience we have reason to fear that unless something be done to destroy or check the progress of said insect, we shall in a few years be. compelled to abandon, for a time at least, the culture of wheat altogether.

"3. *Resolved*, that in view of the heavy loss that would be sustained by the abandonment of said crop, and the impossibility of immediately adopting any substitute in its place, we deem it of the utmost importance to ascertain some effectual remedy for the evil above named; and that if one can be found we consider it the duty of every man in the community zealously to carry it into practice.

"4. *Resolved*, that, in our opinion, the following course is the best adapted to prevent the immediate ravages of said worm, and ultimately to destroy it altogether:

"1. To prepare well the land intended for wheat, and to sow it early in the earliest and most thrifty and hardy varieties, and do nothing calculated to retard the ripening.

"2. To use guano, or some other fertilizer, liberally; and to use it always when seeding corn land or stubble.

"3. To burn the stubble on every field of wheat, rye or oats, and all thickets and other harbors of vegetable growth contiguous to the crop; and we furthermore recommend our farmers to sow their crops in as large bodies and in compact forms as is practicable; and, if possible, that neighbors arrange amongst themselves to sow adjoining fields in wheat the same year.

"4. To feed all the wheat straw or other that may be infested, in racks or pens, or on confined spots, and in April to burn all the remains. Also, on or before the first day of May, to burn carefully all the straw that has not been fed.

"5. *Resolved*, that we will, all of us here present, exert ourselves to have this plan carried into operation in our respective neighborhoods.

"6. *Resolved*, that whilst we deem it our duty to use all the means in our power to rid the country of this pest, we do so with a sincere acknowledgment of our dependence upon Divine Providence, with an humble petition for his blessing, and with submission to his will.

"Mr. Carter offered the following resolution, which was unanimously adopted:

"*Resolved*, that a committee be appointed in each magisterial district, with power to add to their number, whose duty it shall be to visit the farmers in said district, and to persuade all residing therein to consent to adopt the plan of burning the stubble, &c. and to superintend the process,

"The Convention then adjourned."

James K, Marshall, President. R. W. N. Noland, Secretary

"Among the speakers on the occasion were Messrs. John Hill Carter, R. W. N. Noland, R. E. Peyton, James F. Jones, Richard Payne, J. Q. Marr, Winter Payne, and others. A good deal of debate arose upon the question of the recommendation of guano as an anti-joint worm fertilizer. Mr. Lane, of Rappahannock, stated that he had found Mapes' fertilizer equal to Peruvian guano, on his farm."

In 1854 and 1855, the *Prairie Farmer* printed articles on the chinch bug by William Vawter and M. E. Stratton, and E. C. Smith wrote on the same subject in the *Cultivator* (1855).

From 1859 to 1865, Cyrus Thomas contributed to the *Prairie* Farmer about a dozen articles on the chinch bug, elaterid larvae, army worm and the relation of insects to plants. In 1859, George Pettys wrote under the title "Rats and the chinch bug in the fields," for the *Prairie Farmer*. About this time P. R. Uhler wrote on insects injurious to vegetation for the American Farmer and for the agricultural part of the Report of the Commissioner on Patents for 1860. Jacob Stauffer, previously mentioned, supplied the Horticulturist (1859) and the Gardeners Monthly (1865) with articles on the bag worm, and a new grape enemy, Myochrous villosus.

In 1860, Mr. Klippart wrote *The Wheat Plant, its origin, culture, growth, development, varieties, diseases, animal parasites, etc.,* which was published in Cincinnati. Salt as a means against *Calandra oryza,* was recommended by John Coble in the *Cultivator,* in 1861; I. C. Allen supplied notes on the army worm to the *Prairie Farmer,* in 1861, as did Benjamin F. Wiley, G. W. Ferrill, and J. C. King. John Crookshanks King was a Scotch sculptor who came to this country in 1829. He was employed in New Orleans, Cincinnati and Louisville and at one time he made busts and medallions of Webster, John Quincy Adams, etc. He was unusually fond of animals, particularly birds. His death occurred in Boston, Mass., in 1882.

In the Valley Farmer, 1862, Mr. E. S. Washington mistook parasitic larvae for the young of the armyworm, and as a result he believed *Leucania unipuncta* to be viviparous. Mr. S. Dorman, in the *Prairie Farmer* (1862), said that the larvae of *Leucania unipuncta* moved from the southwest to the northeast and that they did not always start from cultivated meadows. In the same year Wilson Phelps recommended the sowing of rye and wheat together to save the wheat from the chinch bug, and W. D. Wilson in 1863 described the ravages of chinch bugs.

To the Prairie Farmer, from 1863 to 1865, C. V. Riley contributed about twenty-five articles on the house fly, May beetles, squash bug, cut worm, apple borer, peach tree borer, flea beetles, army worm, currant worm, insect collecting, periodical cicada, apple lice, tobacco worm, chinch bug, lice on calves, sheep gad-fly, etc. In 1863, in the Country Gentleman, Mr. D. Street suggested the use of gas tar on seed corn to protect it from cut worms. This journal in 1865 published Mr. J. H. Charnock's plan of using rape cake as a means against wire worms. In the Prairie Farmer, 1865, H. D. Emery said that burning the meadows reduced the number of army worms, and Jared P. Kirtland wrote on pear tree blight. Cankerworms and the use of an oil trough were discussed by W. Guild in the New England Farmer and the Western Rural, in 1865. Returning to the Prairie Farmer, George R. Laughton in 1865 told of the effect of salt and quick lime on the chinch bug, and H. B. Norton of the use of pine boards, coal tar, and deep holes, against the same species.

In the *Practical Entomologist*, numerous articles on economic insects were written by Walsh, who supplied over 300 of them

during its brief period of existence.

During this period, economic entomology also appeared in the reports of agricultural societies, in the reports of state boards of agriculture and occasionally in special publications. In 1849, Daniel Lee wrote for the *Report of the United States Commissioner of Patents* a paper entitled "The Ravages of Insects," in which he dwelt upon the losses due to injurious insects and the need for counteracting such losses.

John Delafield, in the Transactions of the New York State Agricultural Society for 1850 (Vol. 10, pp. 522-526), wrote on "Insects (in a general view and agricultural survey of the county of Seneca)" in which he outlined the injuries, habits and means of control of such species as the wheat fly (Diplosis tritici), Hessian fly, wireworms, cut worms, May beetles and plant lice. Mr. Delafield was a banker. He was born in New York City, January 22, 1786, and died near Geneva, N.Y., October 22, 1853. Graduating from Columbia College in 1802, he entered the shipping business and later entered banking in New York City. He was instrumental in founding the University of New York, through his efforts in soliciting subscriptions, and he also helped to revive the New York Historical Society. In 1842 he moved to his place, Oaklands, near Geneva, N. Y., and made it into a model farm. Drainage and the chemical analysis of soil interested him, and in addition to being president of the New York Agricultural Society for several years, he was the first presiding officer elected by the State Agricultural College.

Another entomological contributor to the *Transactions of the New York State Agricultural Society* was Gurdon Evans. The title of his work was "Insects Injurious to Vegetation (in a general view and agricultural survey of the county of Madison, N.Y.)" (*Trans.*, 1851, Vol. 11, pp. 741-751). His paper covered May beetles, cut worms, wheat fly, plum curculio, armyworm, slug worms, and the periodical cicada. Sometimes one wonders if all these accounts would have been written if Harris had not written his *Treatise*.

In Philadelphia, in 1852, there was published an octavo pamphlet of 24 pages entitled *Remarks on Entomology, chiefly in Reference to an Agricultural Benefit.* This was by William D. Brinckle, a physician and pomologist, who graduated from Princeton in 1816 and who received his M.D. from the University of Pennsylvania. Doctor Brinckle's pamphlet gave the characters and transformations of insects and a brief sketch of insect anatomy. Then it became specific about the insect enemies of grain and then general on several groups of insects, their enemies, and remedies against injurious ones. Doctor Brinckle too was familiar with Harris' *Treatise*.

Doctor Brinckle was born at St. Jones' Neck, Kent County, Delaware, February 9, 1798, and died at Groveville, N.J., December 16, 1862. He began to practice in Wilmington, but settled in Philadelphia in 1825 and was active there for more than thirty years. From 1827 until 1839 he was physician to the City Hospital for contagious diseases. During the cholera epidemic of 1832 he distinguished himself by his efficient services. In addition to his practice he originated many fruits and introduced others to public notice. Downing's *Horticulturist* contains many of his papers. He also helped to found the American Pomological Society.

The tent caterpillar, canker worms, borers, aphids, squash bug, pear psylla and plum curculio, their injuries and means against them, formed the subject of a paper by F. B. Eaton, in the *Transactions of the New Hampshire State Agricultural Society* for 1854 (Vol. 3, pp. 199-207), entitled "Insects Injurious to Vegetation. And in the *Fourth Annual Report of the Secretary of the Massachusetts Board of Agriculture for 1856* (pp. 438-51), under the title, "Destruction of insects injurious to vegetation," Mr. S. P. Fowler wrote about the usefulness of birds, reptiles and lady-bird beetles, including also the habits of and means against *Anisopteryx vernata*, *Hyphantria textor*, *Chaetochilus pometellus*, *Saperda bivittata*, *Aphis mali*, *Conotrachelus nenuphar*, and *Carpooapsa pomonella*.

In the Transactions of the New York State Agricultural Society

for 1858, Mr. B. P. Johnson gave the replies to a circular letter concerning the ravages of *Diplosis tritici*, *Cecidomyia destructor* and other insects injurlous to wheat.

In the 5th, 10th and 12th Annual Reports of the Secretary of the Massachusetts Board of Agriculture, Francis Gregory Sanborn wrote about the habits of many of our injurious and beneficial insects; L. L. French wrote on the Hessian fly, in the Transactions of the New York State Agricultural Society for 1858; and Henry L. Ordwa, on canker worms, in the Bulletin of the Essex Institute, in 1864.

In Brooklyn, N.Y., in 1861, there was published a 19-page pamphlet by J. B. Jones, the title being "Report on the measureworm, or the *Geometra niveosericearia*, which infest the trees of Brooklyn; suggesting remedies for their extermination."

Notes on Anisopteryx vernata in Michigan, its habits, ravages, distribution, seasons, enemies and remedies, together with brief notes on Doryphora 10-lineata and Leucania unipuncta, all under the title "Injurious Insects" by Sanford Howard, appeared in the 4th Annual Report of the Secretary of the State Board of Agriculture of Michigan, in 1865.

Addison Emory Verrill, pupil of Louis Agassiz, professor of zoology at Yale, author of many papers and text books, and whose interests embraced corals, mollusca, anellids, echinoderms, anthozoa, tunicata, bryozoa, and the gigantic cephalopods of the Newfoundland coast, wrote also upon entomological subjects. In the *Practical Entomologist* (1865, Vol. 1. p. 21), appeared his paper on, "The woolly apple-tree blight, *Eriosana lanigera* Harris;" and in the reports of the Secretary of the Connecticut Board of Agriculture may be found his papers on insects injurious to man and animals.

Another contributor to the *Practical Entomologist* was John Aston Warder, physician and naturalist. He was born near Philadelphia, Pa., January 19, 1812, and early associated with William Bartram, John J. Audubon and other naturalists, who frequented his father's home. He graduated from Jefferson Medical College in 1836 and settled in Cincinnati, Ohio, where he practiced medicine for nearly twenty years and devoted much time to natural history. In 1850, he established the *Western Horticultural Review*. After four years, he discontinued it and with James W. Ward started the *Botanical Magazine and Horticultural Review*. In 1875, he founded the American Forestry Association and was its first president. He was a member of the Ohio Board of Agriculture and of various scientific societies, and he wrote many magazine articles and medical and horticultural books. He died at North Bend, Ohio, July 14, 1883.

SPECIAL ANTIOUARIAN & ESTATE SALE

FLORA & FAUNA BOOKS, P. O. Box 15718, Ga	inesville, FL 32604	e-mail: ffbks@aol.com	www.ffbooks.com
Books are in good condition, often like-new, paper binding ex	cept as noted.		
U = used books somewhat worn; c = cloth cover; L = large; * = rare;	D = damaged books (u	sable but considerably worn or covers damaged)	
Always 10% off! Take the listed prices and deduct 10%, then add ship	ping (\$2 first book, \$1	each added book; add \$1 for large; \$2 foreign shipments).	
BREWER/WINTER: Butterflies & Moths (1986)	20.00	MILLER/BROWN: Catalog of Butterflies of America (1981)	20.00
*COMSTOCK: Butterflies of California (1927)	U 600.00Lc	MONA: 20.1 Mimallonoidea/Bombycoidea (1973)	U 25.00
COMSTOCK: Butterflies of California (1989 reprint)	25.00c	MONA: 20.2 Saturniidae (1971-72)	U 50.00
d'ABRERA: Butterflies of the Afrotropical Region (1980)	200.00Lc	MONA: 21. Sphingoidea (1971)	U 30.00
d'ABRERA: Butterflies of the Australian Region (1971)	95.00Lc	MONA: 25.1 Noctuoidea (part) (1991)	55.00
d'ABRERA: Butterflies of the Neotropical Region, 2 (1984)	200.00Lc	MONA: 26.1. Noctuoidea (part) (1995)	70.00
d'ABRERA: Butterflies of the Oriental Region, 1 (1982)	250.00Lc	MONA: 27.2 Noctuoidea (part) (1987)	65.00
d'ABRERA: Butterflies of the Oriental Region, 2 (1985)	200.00Lc	MONA: Checklist (1983)	U 15.00
d'ABRERA: Butterflies of the Oriental Region, 3 (1986)	200.00Lc	*PACKARD: Bombycine Moths. 1. Notodontidae (1895)	U 95.00Lc
DIAKONOFF: Microlepidoptera of Philippine Islands (1968)	25.00	ROOD: How & Why Wonder Book of Insects (1973)	3.00
dos PASSOS: Synonymic List of Nearctic Rhopalocera (1964)	U/D 5.00	ROYER: Butterflies of North Dakota (1988)	U 20.00
EHRLICH: How to Know the Butterflies (1961) (spiral ed.)	U 5.00	*SEITZ: Macrolepidoptera of the World (English edition)	
EICHLIN: Plusiinae of North America (1978)	5.00	6. American Bombyces (lacking Sphinges) (1913-37)	U 2100.00
*FABRE: Social Life in the Insect World (1912/15)	U 27.00c	Pp. 1-632, 641-832, 897-1088, 1113-1296 (orig. wrappers)	
FELTWELL: Natural History of Butterflies (1986)	25.00c	Plates 1-74, 76-89, 99-111, 111A, 112-117, 117A-D, 11	8-130, 130A, 131-134,
FERRIS: Butterflies of Rocky Mtn. States (1980)	18.00	138-141, 143-158, 180-182, 185.	
FERRIS: Suppl. to Catalog of Butterflies (1989)	10.00	All in original wrappers as issued in parts (82 pts. p	resent); most wrappers
*FIELD: Manual of Butterflies & Skippers of Kansas (1940)	30.00	somewhat frayed, but last issues from 1937 are in mint co	ndition. Text and plates
*FORBES: Lepidoptera of New York. Pt. 1-4 (1923-60) set	120.00	are good but with some frayed edges (some sections are	not cut on top edge, as
GARTH: California Butterflies (1986)	28.00c	originally issued by the publisher)	
GERBERG: Florida Butterflies (1989)	7.50	10. Indo-Australian Bombyces (1912-17)	U 300.00
*HAMPSON: Cat. Lepid. Phalaenae (1898-1920), 15 vol.	\$75 each text vol.	Pp. 1-92, 105-120. Plates 1-8, 10-12, 14-24 (orig. wrappers	S)
*HARRIS: Butterflies of Georgia (1972)	85.00c	11. Indo-Australian Noctuae (1912-17)	U 475.00
HOLLAND: Butterfly Book (1898/1903)	U/D 45.00Lc	Pp. 1-216. Plates 1-25 (orig. wrappers)	
HOLLAND: Butterfly Book (1898/1922)	U/D 25.00Lc	SHAPIRO: Butterflies of the Delaware Valley (1966)	U 15.00
HOLLAND: The Moth Book (1903/08)	U/D 5.00Lc	SHULL: Butterfies of Indiana (1987)	28.000
HOLLAND: The Moth Book (1903/68 Dover reprint)	U 20.00	STEHR: Rev. of Malacosoma (Lasiocampidae) (1968)	U 30.00
*HOWARD: The Insect Book (1901/23)	65.00Lc	STILING: Butterflies/insects of Eastern Caribbean (1986)	10.00
KIMBALL: Lepidoptera of Florida (1965)	U/D 3.00	TYLER: Swallowtail Butterflies of N. Amer. (1975)	10.00
KLOTS: FG to Butterflies east of the Gt. Plains (1951)	8.50	WATSON/WHALLEY: Dictionary of Butterflies & Moths (19	75) 75.00Lc
KLOTS: Living Insects of the World (1956)	45.00cL	WEED: Butterflies Worth Knowing (1923)	U/D 15.00d
MALLIS: American Entomologists (1971)	55.00c	*WESTWOOD: Observations on Uraniidae (1879)	U/D 85.00
*McDUNNOUGH: Checklist of Lepidoptera. Pt. 1 (1938)	U/D 15.00	*WRIGHT: Butterflies of the West Coast (1906)	2,500.000

CHAPTER X

SCIENTIFIC SOCIETIES, SCIENTIFIC JOURNALS, AND EXPLORING EXPEDITIONS CONTRIBUTING TO THE PROGRESS OF AMERICAN ENTOMOLOGY

The importance of scientific societies and their journals in contributing to the rise of entomology in this country, and in fact all science, cannot be overemphasized. Although early entomology in America took the form of travelers' descriptions of insect injury and the sending of specimens to Europe, there were several Americans who, during Colonial times, made independent observations in natural science and who were honored by election to the Royal Society of London. Two of these Americans so honored happened to make entomological observations, but of course their election to the Royal Society was for other activities. These men were William Byrd II, elected in 1696, and Paul Dudley, elected in 1721, both of whom have been mentioned previously in this account. Byrd had little or no scientific training, but he collected plants, roots and seeds, and sent them to Sir Hans Sloane, who described and classified them and outlined their medical properties. Byrd's only published paper, in the Philosophical Transactions of the Royal Society, was entitled "An Account of a Negro-Boy that is dappel'd in several places of his body with white spots" (Phil. Trans. Roy. Soc., Vol. 19, p. 781, 1697). Byrd was interested in the further colonization of the colonies and his large land holdings, his importation of slaves, sugar and other commodities, scientific instruments, books, pictures, music, etc., contributed to the economic and intellectual life of the colony. He died at Westover, on the James River, December 4, 1744. Paul Dudley was much more active as a contributor to the Transactions and his papers dealt with a wide range of subjects, such as the making of maple sugar, the manufacture of molasses from apples, the orchards of New England, the location of beehives in a forest, rattlesnakes, whales and earthquakes. His last years were devoted to the practice of law.

SOCIETIES AND JOURNALS

Among the men who loved knowledge and who were possessed of a desire to promote it, was Benjamin Franklin, In the autumn of 1727, he formed his philosophical and thinking acquaintances into a club called the "Junto." It met on Friday evenings, and morals, politics and natural philosophy were discussed. Sometimes essays were read. The Junto was really a debating society, a secret debating society, because the organization did not want improper and unsympathetic persons to apply for admittance. The Junto existed for about forty years. However, on May 14, 1743 O.S., Franklin distributed a proposal for the establishment in the colonies of a society, to be called the American Philosophical Society, which was to concern itself with advancing investigations in botany, medicine, mining, chemistry, mathematics, arts, trades, agriculture, etc., to keep in touch with foreign organizations, and to print, at the end of every year, the results of inventions and discoveries that were of public advantage. This was the origin of the American Philosophical Society.

In 1766, The American Society for Promoting and Propagating Useful Knowledge was organized in Philadelphia. This one, and the American Philosophical Society, were small associations. On January 2, 1769, these two organizations were united by the name, the American Philosophical Society, held at Philadelphia for Promoting Useful Knowledge. In 1771, its membership numbered almost 300, and on March 15, 1780, it was incorporated by the legislature of Pennsylvania. Many distinguished men belonged to it and served as its officers. Its first president was Benjamin Franklin, who served from 1769 to 1791. In its *Transactions* and *Proceedings* appeared many papers on natural history, including entomology. With the founding of the Academy of Natural Sciences of Philadelphia, in 1812, the American Philosophical Society devoted less and less attention to natural history, as most of its naturalists were active members of the Academy.

The American Academy of Arts and Sciences was organized in Boston in 1779 and incorporated May 4, 1780. Its purpose was "to cultivate every art and science, which may tend to advance the interest, honor, dignity, and happiness of a free, independent and virtuous people." Its *Memoirs* began in 1785, and earlier a cabinet of natural history was started. Its *Proceedings* were first published in 1848. Haldeman, Burnett, and Wright took advantage of its publication facilities for entomological papers. With the formation of the Boston Society of Natural History, in 1830, its natural history activities declined, but revived in the 1850s and 1860s.

The Society for the Promotion of Agriculture, Arts and Manufactures was organized in New York City, February 26, 1791, and incorporated March 12, 1793. At the time of its organization, New York City was the capital of the state. In 1798, the headquarters of the society were moved to Albany. When its charter expired in 1804, it was reorganized as the Society for the Promotion of Useful Arts. To its single volume of *Transactions*, issued in four parts, 1792-99, J. N. Havens, S. L. Mitchill and Andrew Billings contributed articles on entomology.

The Medical Repository, which existed from 1797 to 1824 (23 volumes), contained a few articles on insects, but many on other branches of natural history. This was due to the interests of Samuel Latham Mitchill, its senior editor. It was the first strictly scientific periodical in the United States and was primarily devoted to medicine and allied sciences. It was highly regarded at home and abroad and was really the parent of a numerous brood of medical journals that followed.

The Philadelphia Medical and Physical Journal, which published articles on the periodical cicada, silkworms, fireflies, etc., made its appearance in 1804 and was issued every six months for the three years of its existence. Benjamin Smith Barton, a leading naturalist of the day, was its editor. During the life of this journal, three supplements, devoted especially to natural history, were issued.

The Academy of Natural Sciences of Philadelphia had its origin in a very modest way in 1812. On the evening of January 12 of that year, several young naturalists of that city met at the house of Mr. John Speakman, on the northwest corner of Second and Market streets, and agreed to the formation of a society whose exclusive object would be the cultivation of the natural sciences. The group was small and included in addition to Speakman, Dr. Gerard Troost, Dr. C. M. Mann, Jacob Gilliams, John Shinn, Jr., and Nicholas S. Parmentier. The next several meetings were held at a public house, and at the meeting of March 21, 1812, the title "Academy of Natural Sciences" was used for the first time in the minutes. At this meeting, Thomas Say was chosen a member and enrolled as a founder, although he had not attended the initial meetings. Speakman was an apothecary; Mr. Gilliams, a leading dentist of Philadelphia; Mr. Shinn, Jr., a native of New Jersey and a manufacturing chemist; Mr. Parmentier, a distiller and manufacturer of spermaceti oil; Dr. Troost, a pharmacist and chemist; and Dr. C. M. Mann, an Irishman who sought refuge in this country and who later edited a paper in Baltimore. In June, 1812, William Maclure was elected to membership, and with his help the Academy developed. He was a generous friend and his time and funds were shared largely with the Academy. Dr. Troost was the first president of the institution, and he was succeeded by Mr. Maclure in 1817. The first recording secretary was C. M. Mann. At the instance largely of Mr. Maclure, a *Journal* was published, the first number of which appeared in May, 1817. Operating under difficulties, this publication was suspended until 1821, when it was resumed under fewer financial difficulties. In March, 1841, the publication of its *Proceedings* was started. Many contributions to entomology appeared in the pages of this publication. Both Maclure and Dr. Thomas B. Wilson were benefactors of the Academy and had much to do with its early growth and successes.

According to the Notice of the Academy of Natural Sciences of Philadelphia, published in Philadelphia in 1836, it is stated,

"Of the many thousand species of insects possessed by the Academy, a very large proportion is formed by the entire collection of the late Mr. Thomas Say, who left it by verbal bequest through his lady, in 1834. It gives us much pleasure to add, that another collection of upwards of 4,000 species (two-thirds of which are American), chiefly collected by one of our members, will be presented to the society as soon as more effectual measures can be devised for their preservation. With the collections of Dr. Hering, already mentioned, were 400 species of insects, in fine order, from the province of Surinam. The collection of Lepidoptera has been chiefly derived from, Mr. T. R. Peale."

The Hering collection which included the 400 species of insects was one of serpents, lacerta and other reptiles from the northeastern regions of South America.

The Say collection, which was received in bad shape by the Academy, was shipped to Dr. T. W. Harris in 1836 for examination and arrangement. He received it during July of that year and was much discouraged over its deplorable condition, due to dermestids and transportation. In February, 1842, the Say collection was back in the Academy, "in such a state of ruin and dilapidation as to be almost useless."

In Dr. W. S. W. Ruschenberger's "A Notice of the Origin, Progress, and Present Condition of the Academy of Natural Sciences of Philadelphia," printed in 1860, the insect collections are referred to as follows:

"The principal contributors to the entomological cabinet from 1846 till 1851, were Mr. Robert Kilvington, Henry Bond Dewey, Esq., Dr. D. B. McCartee, Mr. Wm. Hobson, Mr. Edward Doubleday, Dr. T. B. Wilson, Rev. T. S. Savage, M.D., Mr. Hagedorn, Dr. Gavin Watson, Dr. A. L. Heermann, Dr. Gambel, Mr. Cassin, Dr. John Neill, Mr. George B. Wood, Jr., Mr. Isaac Lea, and others. The donations made are all recorded in the published volumes of the *Proceedings of the Academy*.

"Messrs. A. L. Heermann, H. G. Dalton, S. S. Haldeman, and others, in the year 1852, presented 600 specimens of various genera. "In 1853, collections from Africa were received from Dr. Ford and Dr. Hays, and a few from Texas were presented by Dr. Engelmann.

"John A. Guex, Esq., presented, in 1854, his entire cabinet, consisting of 1800 specimens of American and European Lepidoptera, and 17,000 species of Coleoptera, arranged and nearly all catalogued. Other persons presented about 20 species.

"Mr. Guex, in 1855, presented 2300 specimens of about 1300 species of Coleoptera from Italy, Russia, Siberia, Caucasus, Sitka, East Indies, and Australia; Mr. Andrew Murray, of Edinborough, 50 specimens of African Coleoptera, and others were received from various members.

"In 1856, Dr. T. B. Wilson presented 2400 specimens of 900 species of Coleoptera; Mr. Guex 1500 specimens of 356 species of the same, and J. G. Barret, 100 specimens of 80 species. Several small collections of Coleoptera, Neuroptera, and Lepidoptera, were also received.

"In 1857, the principal contributors were Drs. Leidy, Wilson, Hammond, LeConte, Ruschenberger, and Messrs. W. L. Cassin and W. P. Chandler. There were received Coleoptera, 635 specimens of 280 species; Hemiptera, 189 specimens of 90 species; Orthoptera, 203 specimens of 100 species; Hymenoptera, 114 specimens of 60 species; Diptera, 102 specimens of 50 species; Neuroptera, 19 specimens of 15 species.

"F. Schafhirt, in 1858, presented 2129 specimens of 709 species of Coleoptera, and 280 of 75 species of Lepidoptera; Dr. Leidy, 1484 specimens of 500 species of Lepidoptera, Hymenoptera, Orthoptera, Diptera, Neuroptera, and Coleoptera; Dr. J. C. Fisher, 614 specimens of 193 species; S. Powel, 295 specimens of 90 species; C. C. Abbott, 167 specimens of 129 species; Dr. J. L. LeConte, 140 specimens of 65 species; E. T. Cresson, 511 specimens of 400 species; Dr. Bridges, 90 of 36 species; James Ridings, 50 species of Lepidoptera; Dr. F. V. Hayden, 95 specimens of 62 species of Crthoptera, Diptera; J. S. Hawkins, 79 specimens of 62 species of Orthoptera, Diptera, Hemiptera. Hymenoptera; Samuel Powel, Jr., and J. Hare Powel, Jr., 415 specimens of 215 species; E. Tilghman, 50 specimens of 20 species; J. D. Sergeant, 32 specimens of 20 species; A. Henderson, Drexler and Remont."

Organized interest in the entomological collections of the Academy, apparently did not take place until the formation of the American Entomological Society in 1859.

In May 1817, the first number of the American Monthly Magazine and Critical Review, appeared. Only four volumes were published, each containing six numbers. Of a section named "The Museum of Natural Sciences," C. S. Rafinesque was editor and to it he contributed many of its articles on natural history, including a few on entomology.

In the Annals and Proceedings of the Lyceum of Natural History of New York, papers on entomology appeared from the pens of S. L. Mitchill, John Torrey, J. P. Brace, James Clements, C. S. Rafinesque, J. E. DeKay, John LeConte, Thomas Say, John L. LeConte, and others. The Lyceum was first developed on January 29, 1817, in the hall of the College of Physicians and Surgeons, in Barclay Street, New York City. After seven more preliminary meetings, all within a month, the Lyceum held its first formal meeting on February 24, 1817. Dr. Mitchill was its first president, and the Lyceum was devoted to the study of natural history. Its Annals began in 1824 and abstracts of its proceedings were published in the American Monthly Magazine and Critical Review (1817-1819) and in the American Journal of Science (1819 through 1834). In 1876, the name was changed to The New York Academy of Sciences.

Many entomological papers appeared in the pages of the *American Journal of Science and Arts*," founded and edited by Benjamin Silliman, although its chief contents were devoted to mineralogy, botany, zoology, chemistry, natural philosophy, mathematics, and to the arts in its broadest sense. Through its pages may be traced the progress of science and invention for many years. The first number was published at New York, July, 1818. Much could be written about Silliman and his *Journal* but it would not be appropriate, however interesting, here.

The Western Quarterly Reporter of Medical Surgical and Natural Science," to which Say contributed descriptions of new species of Hymenoptera and Neuroptera, was founded and edited by John D. Godman, at Cincinnati, early in 1822. Only two volumes of this first active attempt to found a scientific journal west of the Alleghanies were published.

The Boston Journal of Philosophy and the Arts was a short-lived publication also, a bi-monthly, of which only three volumes appeared, the first number having been issued in May 1823. To its pages T. W. Harris contributed two papers dealing with descriptions of new species. Its contents consisted primarily of articles reprinted from foreign scientific journals.

In May 1826, the Maclurian Lyceum of Philadelphia was established, for the promotion of all the natural and physical sciences. A library and a museum were commenced. Its proceedings were published in the *Contributions of the Maclurian Lyceum*, of which three numbers appeared between 1827 and 1829. Thomas Say was president during its brief career; C. L. Bonaparte and Jacob Gilliams were vice-presidents. Botanical courses and general lectures were given. Say furnished two papers for its *Contributions* and J. T. Sharpless' paper on the silk-worm, read before the Lyceum, was published in the *Franklin Institute Journal* (Vol. 2, pp. 22-29; 94-100; 139-44, 1826).

On February 9, 1830, the first meeting of the Boston Society of Natural History was held at the home of Dr. Walter Channing. After the appointment of the necessary committee, the following officers were elected: President, Thomas Nuttall; First Vice-President, George Hayward; Second Vice-President, John Ware; Corresponding Secretary, Gamaliel Bradford; Recording Secretary, Theophilus Parsons; Treasurer, Simon E. Greene; and Librarian, Seth Bass. In addition, eight curators were selected.

In 1834, the Society owned about 4,000 species of insects, of which 2,000 were numbered per catalogue. At this time, it was thought that their insect collection would soon surpass all in America. In 1850, the curator of entomology reported that their cabinet contained 14,000 specimens, comprising about 4,000 species. About this time, a committee of three was appointed, "to check the ravages of insects with power to notify the various Curators of their presence in the specimens under their charge, and if need be, to adopt measures to free the cases from them." Apparently, the dermestids were getting ahead of the curators.

At the annual meeting in 1857, the curator of entomology referred to the destruction of specimens in past years and said that the specimens which had escaped injury were entitled to care and attention. These had been subjected to a temperature of about 200 degrees and the drawers had had a constant supply of camphor. At this time Dr. Silas Durkee was curator of entomology, having been preceded by Dr. H. K. Oliver.

In 1859, the curator of entomology reported upon the great increase to the collection by the addition of Dr. T. W. Harris' specimens, which included many typical specimens described by Harris, Say, and others. Harris' collection was said to contain 4,838 specimens of 2,241 species of Coleoptera, 181 specimens of 76 species of Orthoptera, 620 specimens of about 300 species of Hemiptera, 267 specimens of 146 species of Neuroptera, 1,125 specimens of 602 species of Hymenoptera, 1,931 specimens of 900 species of Lepidoptera, 796 specimens of 395 species of Diptera, in all, 9,758 specimens of 4,660 species in addition to a number not yet classified.

In the Report of the Custodian of the Boston Society of Natural History for 1864-5, it is stated that plans were being made for the exhibit of much of their insect collections, previously arranged in drawers and boxes. At that time the insects of the Society belonged to four different collections, the old one rich in exotic diurnal Lepidoptera and Coleoptera, and including many Orthoptera, and Hymenoptera, all brought together principally by the exertions of Dr. Gould and Dr. Harris; the Hentz collection; the Harris Cabinet; and the collection bequeathed by Mr. C. A. Shurtleff. The Hentz collection was purchased for \$550 by friends of the Society in response to a circular letter request sent out by Dr. Harris in 1835. It consisted of about 1,500 species, being rich in Coleoptera from all parts of the United States. It was also rich in American Hymenoptera and it was well arranged and catalogued and accompanied by dissections, notes and drawings. Of the old collection and of the Hentz collection, only about one fiftieth was in a condition fit for comparison and identification. The remainder had been damaged by dermestids, exposure and baking.

The Harris Cabinet was bought in 1858 and had been looked over carefully by Prof. Agassiz, who selected the worthwhile portion. This comprised from 12,000 to 14,000 specimens and about half that number of species, nearly all from North America. The Shurtleff bequest consisted of between 5,000 to 6,000 pinned specimens from the United States, mostly from Massachusetts, a small collection of Chinese and Japanese species, over 700 dry chrysalids and insect products, and over 2,000 insects, mostly early stages, in alcohol. The Shurtleff and Harris collections formed the basis of the Society's New England collection.

Dr. T. W. Harris was the first curator of insects in 1838. He was also one of the founders of the Society and gave lectures on entomology as early as 1831, in which year the Society was incorporated. From 1859 to 1870, Dr. Samuel H. Scudder served as curator of insects.

The first number of the Society's Journal was issued in 1834. This was entitled the Boston Journal of Natural History, containing Papers and Communications read to the Boston Society of Natural History and published by their direction." Seven volumes were published from 1834 to 1863. The first volume of the Proceedings appeared in 1844 and contained papers delivered before the Society from 1841 to 1844. After 1865, other publications were started, such as Memoirs, Occasional Papers, etc. Entomology has always figured prominently in the Society's activities.

Say, Haldeman and Fitch, especially the latter, contributed. to the *Transactions of the New York State Agricultural Society*, so far as natural history was concerned. The society was organized at Albany in 1832. The first volume of its *Transactions*, for 1841, was published in 1842.

To the *Journal* of the Essex County Natural History Society, T. W. Harris contributed one article in 1839. This society was organized December 14, 1833, at Salem, Massachusetts, and between 1836 and 1852 it issued three numbers of its journal. In 1848, it was merged with the Essex County Historical Society to form the Essex Institute. During the winter of 1853-54, the Rev. L. Russell devoted several meetings to lectures on insects, and F. Putnam gave five lectures on insects during March, 1865, all under the auspices of the Institute.

In January 1835, the first number of the American Gardener's Magazine made its appearance, published by C. M. Hovey and B. P. Hovey, Jr. This was a monthly devoted to agriculture and horticulture. In January 1837, it was renamed *The Magazine of Horticulture and Botany*. The few entomological articles it contained were contributed by M. H. Simpson, T. W. Harris, A. R. Pope, and Wilson Flagg.

Reference has already been made to the Entomological Society of Pennsylvania, organized about August 23, 1842. The first meeting was held in York, Pa., and a constitution was adopted. Dr. F. E. Melsheimer, of Dover, Pennsylvania, was president; S. S. Haldeman, vice-president; Rev. D. Ziegler, recording secretary, and Rev. J. G. Morris, corresponding secretary. During its brief existence, the papers read at its meetings were published mainly in the *Proceedings of the Academy of Natural Sciences of Philadelphia*.

The Linnaean Association of Pennsylvania College was organized in June 1844, for the object of promoting the study of natural science in the institution. Different sections were formed, including one on entomology. Thirty members joined at the first meeting, including some from the Theological Seminary attached to Pennsylvania College. The first of officers were J. G. Morris, president; J. M. Morris, recording secretary; and B. Jadler, corresponding secretary. Later, the officers included F. A. Melsheimer, S. S. Haldeman, and T. R. Peale. From November 1844 to October 1848, the Society published the *Literary Record*, and among its papers on natural history were many on entomology by Haldeman and Morris. The success of the organization was due to Dr. J. G. Morris, who was a professor at the college.

The American Quarterly Journal of Agriculture & Science, to which Asa Fitch contributed papers on insects, was first issued on January 1, 1345, under the editorship of Ebenezer Emmons and A. J. Prime. Six volumes were issued and with volume 5 the Journal became a monthly. The last number, volume 6, No. 12, appeared in

December 1847.

About seventeen papers on entomology were published previous to 1866 by the Smithsonian Institution, which was created by Congress under the act signed by President J. K. Polk, on August 10, 1846, at which time Congress accepted the property left in trust by James Smithson, Esq. of England, to found at Washington an institution bearing his name and having for its purpose the "increase and diffusion of knowledge among men." Joseph Henry, physicist of the College of New Jersey, was selected as secretary. The wranglings relative to the use to which the \$508,318.46, which Mr. Smithson had left, should be put, and the subsequent growth and development of the Institution are all matters of record which may easily be consulted elsewhere.

The organization of the California Academy of Natural Sciences was first considered at a meeting held in San Francisco, April 4, 1853. Following several more organization meetings, the Academy was legally incorporated on June 27, 1853. At a meeting on January 13, 1868, the name was changed to California Academy of Sciences. To its *Proceedings* previous to 1866, H. Behr was the only entomological contributor, with his papers on Lepidoptera. Doctor Behr was also, at one period, curator of entomology.

On February 14, 1859, James Ridings, George Newman and Ezra T. Cresson, met at Mr. Cresson's home, 728 Erie Street, Philadelphia, Pa., for the purpose of forming a society for the advancement of entomology. On February 15, notices were sent to sixteen persons inviting them to attend an organization meeting at Mr. Cresson's home on February 22, and on the appointed time fifteen were present: namely, Dr. Thomas B. Wilson, Robert Jack, James Ridings, Thomas B. Ashton, George Newman, Charles Wilt, E. T. Cresson, Louis Schneider, James H. B. Bland, William Wolter, James W. McAllister, Henry Feldman, George Hill, Thomas Cox, and John Pearsall. Mr. Newman acted as chairman and Mr. Cresson as secretary, and after discussion it was decided to form a society. A committee was appointed to draft a constitution and by-laws and to propose a satisfactory name.

At a meeting on March 1, 1859, this committee reported and nominations were made for officers to be elected at a following meeting. At the meeting of March 1, the name, "The Entomological Society of Philadelphia," was adopted and four persons, Dr. John L. LeConte, William S. Wood, Charles J. Wood, and John Meichel, became members by signing the obligation which had been signed by the others at the February 22 meeting.

On March 14, at a meeting held at the home of Dr. LeConte and at which Baron Osten-Sacken was present as a visitor, the following officers were elected; President, Dr. John L. LeConte; Vice-President, James Ridings; Secretary, E. T. Cresson; Treasurer, Charles Wilt.

At first, the meetings were held at the homes of Cresson and Dr. LeConte. These were succeeded by several locations in Philadelphia, and finally culminated on February 14, 1876, in the Hall of the Academy of Natural Sciences, where they continue to this day. On November 28, 1859, it was resolved to establish a Society Cabinet, on December 12, 1859, a Society Library, and on February 25, 1861, a Publication Fund. The first contribution to the cabinet consisted of 100 specimens of beetles collected in the Rocky Mountain region. This donation was made by Dr. Wilson. Dr. S. S. Haldeman was the first contributor to the library, with a copy of Melsheimer's Catalogue of the Coleoptera of North America. On February 25, 1861, John Meichel offered his services as a compositor and pressman if the Society would furnish a hand printing press and equipment. A press was purchased and the publication committee, consisting of Dr. Wilson, E. T. Cresson and John Meichel, was soon at work. Dr. Wilson was generous in the matter of his contribution toward the cost of the press.

In 1860, Mr. E. T. Cresson gave his entire collection of Coleoptera to the Society. In 1863, Mr. W. H. Edwards donated a collection of European moths. In 1864, Dr. Wilson gave the original

collections of Prof. Felipe Poey, consisting of Coleoptera, Hymenoptera, and Hemiptera.

The first member elected to the Society is said to have been Henry Ulke, an artist and coleopterist, who was born in Germany. Mr. Ulke was intimate with LeConte, Horn, Ridings, Bland, Cresson, Wenzel, Wilt, and Feldman, and collected particularly the smaller Coleoptera such as the Pselaphidae, Scydmaenidae, etc. References to his specimens are found in the writings of Cresson, LeConte, Horn, and others. He frequently donated specimens to the Society. He painted more than 100 portraits, including those of some of the members of Lincoln's cabinet, and that of President Grant. He died at Washington, D.C., February 18, 1910, at the age of eighty-nine.

In April 1862, the Society was incorporated by the legislature of Pennsylvania. In 1861, the first numbers of the Society's *Proceedings* were published, and included therein were papers by Cresson, Uhler, and Horn. As already noted, many important contributions appeared in its subsequent issues. By December 1862, according to the report of the recording secretary, the cabinet contained 5,192 species, in all orders, and the library, 473 volumes. By the end of 1864, the insect collection had grown to over 12,000 species, the library contained 1,083 volumes and pamphlets, and the membership numbered 71 residents and 84 correspondents. In addition to its *Proceedings*, the Society in 1865 began the publication of *The Practical Entomologist*, referred to in more detail elsewhere. On February 23, 1867, the name of the Society was legally changed to the *American Entomological Society*, and beginning with the June, 1867, issue, the title of its publication was changed from *Proceedings* to *Transactions*.

During its early days, the great patron of the Entomological Society of Philadephia and of the Academy of Natural Sciences, as well, was Dr. Thomas Bellerby Wilson. He purchased new and rare specimens for the collection, he financed collecting trips to Virginia and Ohio, he contributed liberally to the cost of publishing the Proceedings, he presented numerous volumes to the library, he employed Mr. Cresson as his secretary and allowed him to devote most of his time to the Society, he was unsparing of his time and encouragement for all its undertakings. At the January 9, 1865, meeting, Dr. Wilson gave the Society 100 shares of the stock of the Pennsylvania Railroad Company, having a par value of \$5,000, with the understanding that the income was to be applied to the Proceedings. After his death, Rathmel Wilson, his brother and executor, presented the Society with Dr. Wilson's entire entomological collection of 18,873 species and his library. Dr. Wilson was particularly interested in the Diptera and he had an extensive collection and practically everything written about this order.

Dr. Wilson was born in Philadelphia, January 17, 1807, of English parents who came to America previous to 1802 and who were married in 1802. Dr. Wilson was educated at a Friends' School in Philadelphia, at a school in England and in the medical department of the University of Pennsylvania, from which he graduated in 1830. Geology, chemistry and natural history interested him and his knowledge was broadened by foreign travel. He neglected the practice of medicine, and all his talents, his time and most of his income were devoted to the promotion of science. He died March 15, 1865, in Philadelphia.

EXPLORATIONS

Various Federal exploring expeditions added extensively to the knowledge of the natural history of the country, especially the botanical, geological, and zoological knowledge, but the zoology of the expeditions did not, as a rule, include entomology. However, there were some exceptions. Due to the efforts of Thomas Say, entomology was not neglected during the Long Expedition to the Rocky Mountains in 1819 and 1820, under the command of Major S. H. Long. Say was the zoologist of the expedition, and his descriptions of the new insects collected appeared in the *Journal of the Academy of Natural Sciences of Philadelphia* and in the Western

Quarterly Reporter of Medical, Surgical and Natural Science. A large number of zoological specimens collected during the trip was deposited in Peale's Philadelphia Museum, due principally to Titian R. Peale, a member of the expedition and son of the proprietor of the Museum, and to the efforts of Thomas Say. In 1823, the second Long Expedition took place, this time to the source of St. Peter's River. On this trip, Say was botanist, zoologist and antiquarian. The insects of this expedition were described by Say in the report of the expedition, published in Philadelphia in 1824.

The survey of the boundary between Mexico and the United States took place between 1848 and 1854. It was known as the United States and Mexican Boundary Survey, and the Coleoptera collected by the expedition were described by J. L. LeConte in various issues of the *Proceedings of the Academy of Natural Sciences of Philadelphia*. A "Catalogue of the Coleoptera of the regions adjacent to the boundary line between the United States and Mexico" was published in the *Journal* of the Academy in 1858.

In the report of Stansbury's exploration of the Salt Lake Valley, in 1849, published in Philadelphia in 1852, S. S. Haldeman, in the Appendix C, covered the insects collected, and T. R. Peale had a letter upon insect larvae found in the Great Salt Lake. There were no regular naturalists connected with this expedition and the collections were submitted to specialists.

On the Sitgreave's expedition down the Zuni and Colorado rivers, in 1851, S. W. Woodhouse was the surgeon and naturalist. In the *Proceedings of the Academy of Natural Sciences of Philadelphia* (Vol. 6, pp. 65-68), Dr. J. L. LeConte had some remarks on the Coleoptera collected by Woodhouse. In Marcey's *Report on the Red River of Louisiana*, published in 1853, Charles Girard covered the orthopterous insects, spiders and myriapods.

In Isaac Ingalls Stevens's Supplementary Report of Explorations for a Route for a Pacific Railroad near the Fortyseventh and Fortyninth Parallels of North Latitude from St. Paul to Puget Sound: 1853-55, Washington, 1859, J. L. LeConte, in part 3, devoted 72 pages to the insects collected on the survey, chiefly Coleoptera, and previously, in 1854, had described new Coleoptera from Oregon, collected by Dr. J. G. Cooper of the Northern Pacific Railroad Expedition under Stevens, published in the Proceedings of the Academy of Natural Sciences of Philadelphia (Vol. 7, pp. 16-20).

The North Pacific Exploring Expedition, under Captains Rodgers and Ringgold, in 1853,

"for prosecuting a survey and reconnaissance, for naval and commercial purposes of such parts of Bering Straits of the North Pacific Ocean and the China Seas, as are frequented by American whale ships, and by trading vessels in their routes between the United States and China,"

brought back 400 species of insects, and the Neuroptera, Hemiptera and Homoptera were described by P. R. Uhler in the *Proceedings*. Uhler also described in the same *Proceedings* some Hemiptera collected by the Northwest Boundary Survey of 1857, and J. L. LeConte reported on the Coleoptera.

FLORA & FAUNA BOOKS

P. O. Box 15718, Gainesville, FL 32604 FAX: (352) 373-3249 Tel: (352) 335-5011	NATURE WORLD e-mail: ffbks@aol.com
Always 10% off! Take the listed prices, then deduct 10%.	Prices are in US Dollars.
Complete catalog at our website: www.ffbooks.com.	
ALBERTA BUTTERFLIES (Bird) (1995)	44.95c
ATTACIDAE OF AMERICA [Saturnidae] (Lemaire) 3 vol.	245.00L
BIOLOGY OF AUSTRALIAN BUTTERFLIES (Kitching et al.) (1999) BUTTERFLIES (Emmel) (1975) 9 x 12 in (color)	165.00Lc *75.00Lc
BUTTERFLIES OF ALBERTA (Acorn) (1993)	13.95
BUTTERFLIES OF AUSTRALIA (Braby) (2000) 2 vol.	195.00Lc
BUTTERFLIES OF BAJA CALIFORNIA (Brown etal.) (1992)	25.00
BUTTERFLIES OF BRITAIN/EUROPE (Higgins/Riley) (1970)	*40.00c
BUTTERFLIES OF CALIFORNIA (Comstock) (1927) Deluxe edition	*650.00Lc
BUTTERFLIES OF CANADA (Layberry et al.) (1989)	100 001 c/29 95
BUTTERFLIES OF CHILE (Peña/Ugarte) (1998)	45.00
BUTTERFLIES OF COSTA RICA. 1. Papil., Pieridae, Nymph. (DeVr	ies) (1987) 95.00c/35.00
2. Riodinidae (1997)	90.00c/29.50
BUTTERFLIES OF EGYPT (Larsen) (1990)	49.50c
BUTTERFLIES OF THE FLORIDA KEYS (Minno/Emmel) (1993)	31.50c/18.95
BUTTERFLIES OF GEORGIA (Hams) (1972) BUTTERFLIES OF CREECE (Pamperis) (1907)	*85.00c/45.00
BUTTERFLIES OF HONG KONG (Bascombe et al.) (1999)	239.95L c
BUTTERFLIES OF HOUSTON/SE TEXAS (Tveten) (1996)	45.00c/19.95
BUTTERFLIES OF INDIANA (Shull) (1987)	30.00c
BUTTERFLIES OF KENYA (Larsen) (1996) [2nd ed.]	80.00
BUTTERFLIES OF MALAY PENINSULA (Corbet etal.) (1992)	75.00Lc
BUTTERFLIES OF MANITOBA (Klassen) (1989)	21.95
BUTTERFLIES OF MOROCCO, ALGERIA & TUNISIA (Tennant) (199	76) 100.00Lc
BUTTERFLIES OF NEW JERSEY (GOCHIEId/Burger) (1997)	55.00c/20.00 85.00c/20/05
BUTTERFLIES OF NORTH AMERICA (Scott) (1980)	75 000
BUTTERFLIES OF PAPUA NEW GUINEA (Parsons) ([1998])	295.00Lc
BUTTERFLIES OF THE ROCKY MOUNTAINS (Ferris) (1981)	42.50c/22.95
BUTTERFLIES OF TURKMENISTAN (Tshikolovets) (1998)	78.00c
BUTTERFLIES OF VENEZUELA. Part 1 (Neild) (1996)	120.00Lc
BUTTERFLIES OF THE WEST COAST (Wright) (1906)	*2,500.00c
BUTTERFLIES OF THE WEST INDIES & SOUTH FLORIDA (Smith/M	iller) (1994) 150.00Lc
BUTTERFLIES OF THE WORLD (Lawis) (1997)	*49.50c/22.95
BUTTERFLIES & MOTHS OF MISSOURI (Heitzman) (1987)	13 50
BUTTERFLIES & MOTHS OF THE WORLD (Eid/Viard) (1997)	24.50Lc
BUTTERFLY BOOK (Holland) (1898) 1st ed.	*225.00Lc
1931 (Revised ed.) (with dust jacket: *150.00)	(used for 95.00) *125.00Lc
CHECKLIST OF THE LEPIDOPTERA OF AUSTRALIA (1996)	120.00c
COLOUR ID GUIDE TO CATERPILLARS OF THE BRITISH ISLES (Por	rter) (1997) 72.00c
DICTIONARY OF BUTTERFLIES & MOTHS (Watson/Whalley) (197.	5) color *75.00Lc
FLORIDA BUTTERFLIES (GEIDEIG/AIneu) (1909)	34.95
FLORIDA'S FABULOUS BUTTERFLIES (Emmel) (1997)	14.95
FLORISSANT BUTTERFLIES [Colo] (Emmel/etal) (1992)	35.00c/14.95
GEOMETER MOTHS OF TAIWAN (Wang) (1997-98) 2 v.	90.00Lc
GEOMETRID MOTHS OF THE WORLD (Scoble) (1999) 2 v.	295.00Lc
GUIDE BOOK TO INSECTS IN TAIWAN (Wang) (Chinese/Latin) - fu	all color (many parts)
GUIDE TO BUTTERFLIES OF PALEARCTC REGION. 1. Lethini (Boz	zano) (1999) 50.00
HANDBOOK OF ZOOLOGY, LEPIDOPTEKA, I (1999)	249.00Lc
ILLUS BUTTERFLIES OF TAIWAN 1.2 (Lee/Chang) (1988-90)	52.000
ILLUS, BUTTERFLIES OF TAIWAN, 3-4 (Lee/Wang) (1995-97)	55.00
ILLUSTRATED ENCYCLOPEDIA OF THE BUTTERFLY WORLD (Sma	rt) (1987) *39.95Lc
LARVEN DER EUROPAISCHEN NOCTUIDAE (Beck) (1999) 2 v.	329.00Lc
LEPID. OF CHINA: BUTTERFLIES IN SICHUAN (Chao/Wang) (1996	i-96) 3 v. 70.00L
LIVING BUTTERFLIES OF SOUTHERN AFRICA. 1 (Henning et al.)	(1997) 129.00Lc
METAMORPHOSIS INSECTORUM SURINAMENSIUM (Merian) (1705	5/1994 reprint) 35.00c
MILKWEED BUTTERFLIES (ACKERY/vane-wright) (1984)	/5.00Lc *150.00Lc
MOTH BOOK (Hohand) (1905/hater printing) MOTHS OF AMERICA NORTH OF MEXICO (1971-99) 19 vol	1 273 00
MOTHS OF AUSTRALIA (Common) (1990)	125.00c
MOTHS OF TAIWAN (Chang) (1989-91) (Chinese/Latin) 5 vol.	189.00
MOTHS OF THAILAND. 1. Saturniidae (1990)	25.00c
2. Sphingidae (1997)	35.00c
NABOKOV'S BLUES (Johnson/Coates) (1999)	27.00c
NATURAL HISTORY OF MOTHS (Young) (1997)	49.950
PORTRAITS OF SOUTH AUSTRALIAN GEOMETRID MOTHS (MCFar	land) (1988) 75.00L
RAKE BUTTERFLIES OF CHINA (Pal/wang) (1990) 5 VOL	32.50
SCHMETTERLINGE UND IHRE LEBENSRÄUME. 1. Tagfalter (1987)	80.00Lc
2. Hesperiidae, Psychidae - Sphingidae (1997)	80.00Lc
SEDGE MOTHS OF NORTH AMERICA (Heppner) (1985)	24.95
70 COMMON BUTTERFLIES OF THE SOUTHWEST (Bailowitz/Danf	forth) (1997) 6.95
SWALLOWTAIL BUTTERFLIES (Scriber/et al.) (1995)	65.00Lc
SWALLOWTAIL BUTTERFLIES IN CHINA (Pai/Wang) (1998) (Chir	nese/Latin) 22.50Lc
SWALLOWTAIL BUTTERFLIES OF THE AMERICAS (Tyler/Brown/	(1994) 49.50Lc
SYSTEMATICS OF WESTERN NORTH AMERICAN BUTTERFLIES (E	1111101 et al.) (1998) 95.00Lc
WILD SILK MOTHS OF N AMERICA (Tuskes etal.) (1996)	75 00L c
WINGS OF PARADISE (Cody) [Saturniidae] (1996)	60.00Lc
We accept MC, VISA, and AmExp. Florida residents add 6% sa	les tax. Shipping: \$2, plus \$1
each added book (outside of USA, add \$1 extra per book); large	e books, add another \$1 each.
* antiquarian (condition: good to like new) c = cloth edition	L large (heavy)

ATL SERIES (in cooperation with Scientific Publishers)

* Orders: ATL Series, P. O. Box 141210, Gainesville, FL 32614-1210 FAX: (352) 373-3249 e-mail: jbhatl@aol.com

ATLAS OF NEOTROPICAL LEPIDOPTERA

SERIES EDITOR: Dr. J. B. Heppner Plan: 125 vol., including color synopsis and LSDS species pages Checklist, Part 1: Micropterigoidea - Immoidea. 1984. xxvii + 112 pp. ISBN: 90-6193-038-3 \$18.50 (non-ATL: \$35.00) Checklist, Part 2: Hyblaeoidea - Pyraloidea - Tortricoidea. 1995. liv+243 pp. ISBN: 0-945417-26-8 \$19.95 (non-ATL: \$37.95) Checklist, Part 3: Uranioidea - Geometroidea In prep. Checklist, Part 4A: Papilionoidea (Lamas) 2001. In prep. Checklist, Part 4B: Drepanoidea - Bombycoidea - Sphingoidea. 1996. 1+87 pp. ISBN: 0-945417-32-2\$14.95 (non-ATL: \$29.95) Checklist, Part 5A: Noctuoidea (Notodontidae - Arctiidae) In prep. Checklist, Part 5B: Noctuoidea (Noctiidae) In prep. **Checklist, Part 6: General Index** In prep. Vol. 124. Bibliography of Butterflies and Skippers. 1995. xiv + 463 pp. ISBN: 0-945417-31-4 \$32.50 (non-ATL: \$62.95)

ATLAS OF NORTH AMERICAN LEPIDOPTERA

SERIES EDITOR: Dr. J. B. Heppner Plan: 26 vol., including color synopsis and LSDS species pages Checklist of North American Butterflies. In prep. ca. 120 pp. ISBN: 0-945417-24-1 \$10.95 (non-ATL: 19.95) Fasc. 95. Papilionidae

ATLAS OF PALEARCTIC LEPIDOPTERA

SERIES EDITOR: Dr. J. B. Heppner Plan: 30 vol., including color synopsis and LSDS species pages Future series to illustrate and catalog all Eurasian Lepidoptera, including temperate regions of Japan. A new catalog (replacing the Staudinger/Rebel catalog of 1901) will be produced first, following the LSDS numbering format.

LEPIDOPTERA OF TAIWAN

SERIES EDITORS: Dr. J. B. Heppner & Dr. Hiroshi Inoue Plan: 10 vol., includes color synopsis; LSDS species pages Vol. 1. Part 1: Introduction and Color Synopsis \$81.50 (non-ATL: \$125.50) 2001. ca. 200 pp (including 60 color pl). (81/2 x 11 in). ISBN: 0-945417-76-4

Vol. 1. Part 2: Checklist. 1992. xlix + 276 pp. (81/2 x 11 in). ISBN: 0-945417-77-2

LEPIDOPTERORUM CATALOGUS (NEW SERIES)

SERIES EDITOR: Dr. J. B. Heppner Plan: 125 parts Fasc. 7. Neopseustidae (Davis) 1997. viii + 8pp. ISBN: 0-945417-51-9 (Fasc. 7) \$1.50 (non-ATL: \$4.50) Fasc. 9. Neotheoridae (Kristensen). viii + 8pp. ISBN: 0-945417-51-9 (Fasc. 9) in prep. Fasc. 11. Prototheoridae (Davis). In prep. viii + 8pp. ISBN: 0-945417-51-9 (Fasc. 11) \$1.50 (non-ATL: \$4.50) Fasc. 28. Amphitheridae (Heppner). In prep. viii + 12pp. ISBN: 0-945417-52-7 (Fasc. 29) \$2.00 (non-ATL: \$6.00) Fasc. 29. Schreckensteiniidae (Heppner) In prep. viii + 8pp. ISBN: 0-945417-52-7 (Fasc. 29) \$1.50 (non-ATL: \$4.50) Fasc. [47] 48. Epermeniidae (Gaedike) 1996. viii + 16pp. ISBN: 0-945417-54-3 (Fasc. 47) \$2.50 (non-ATL: \$7.50) Fasc. 48. Ochsenheimeriidae (Davis) 1998. viii + 8pp. ISBN: 0-945417-55-1 (Fasc. 48) \$1.50 (non-ATL: \$4.50) Fasc. 49. Glyphipterigidae (Heppner). viii + 48pp. ISBN: 0-945417-55-1 (Fasc. 49) in prep. Fasc. 55. Acrolepiidae (Gaedike) 1997. viii + 16pp. ISBN: 0-945417-55-1 (Fasc. 55) \$2.50 (non-ATL: \$7.50) Fasc. 61. Tineodidae (Heppner) 1998. viii + 8pp. ISBN: 0-945417-58-6 (Fasc. 61) \$1.50 (non-ATL: \$4.50) Fasc. 62. Oxychirotidae (Heppner) 1997. viii + 8pp. ISBN: 0-945417-58-6 (Fasc. 62) \$1.50 (non-ATL: \$4.50) Fasc. 64. Brachodidae (Heppner). In prep. viii + 24pp. ISBN: 0-945417-58-6 (Fasc. 64) \$3.50 (non-ATL: \$9.50) Fasc. 66. Urodidae (Heppner). In prep. viii + 28pp. ISBN: 0-945417-59-4 (Fasc. 66) \$2.50 (non-ATL: \$7.50) Fasc. 71. Lacturidae (Heppner). In prep. viii + 32pp. ISBN: 0-945417-60-8 (Fasc. 71) \$4.50 (non-ATL: \$12.50) Fasc. 72. Somabrachyridae (Heppner). In prep. viii + 8pp. ISBN: 0-945417-60-8 (Fasc. 72) \$1.50 (non-ATL: \$4.50) Fasc. 84. Ratardidae (Owada). In prep. viii + 8pp. ISBN: 0-945417-64-0 (Fasc. 84) \$1.50 (non-ATL: \$4.50) Fasc. 93. Hedylidae (Scoble) 1998. viii + 16pp. ISBN: 0-945417-66-7 (Fasc. 93) \$2.50 (non-ATL: \$7.50) Fasc. 99. Libythaeidae (Heppner). In prep. viii + 8pp. ISBN: 0-945417-67-5 (Fasc. 99) \$1.50 (non-ATL: \$4.50) Fasc. 105. Carthaeidae (Heppner). In prep. viii + 8pp. ISBN: 0-945417-69-1 (Fasc. 105) \$1.50 (non-ATL: \$4.50) \$1.50 (non-ATL: \$4.50) Fasc. 115. Oxytenidae (Heppner). In prep. viii + 8pp. ISBN: 0-945417-69-1 (Fasc. 115) Fasc. 116. Cercophanidae (Heppner). In prep. viii + 8pp. ISBN: 0-945417-69-1 (Fasc. 116) \$1.50 (non-ATL: \$4.50) Fasc. 117. Saturniidae (Lemaire/Peigler). viii + 120pp. ISBN: 0-945417-69-1 (Fasc. 117) in prep. Fasc. 118. Sphingidae (Heppner). viii + 120pp. ISBN: 0-945417-70-5 (Fasc. 118) in prep. Fasc. [124] 118. Noctuidae (Poole) 1989. 3 pts., 1314pp. ISBN: 0-916846-45-8 \$50.00 (non-ATL: \$150.00) Fasc. 124A. Noctuidae: Introduction (Heppner). ca. 260 pp. (81/2 x 11 in). ISBN: 0-945417-99-3 in prep. SHIPPING HANDLING: \$2 first book, \$1 each added book (outside USA, add another \$1 for each book). Lepidopterorum Catalogus only: \$2 for first 80 pages (e.g., 5 parts each with viii+8 pp. = 80pp), \$1 each added 40 pages (outside USA, add \$1 for first 80pp and

another \$1 for each added 250pp) [NOTE: Fasc. 124 ships at bookrate of \$7 in the USA, for 3 volumes].

\$21.50 (non-ATL: \$39.95)

Series ISBN: 0-945417-50-0

Series ISBN: 0-945417-75-6

Series ISBN: 0-945417-96-9

In prep.

Home Page: www.troplep.org

Series ISBN: 0-945417-25-X

Series ISBN: 0-945417-00-4

ATL SUPPLEMENTS

NOTE: Supplements are sent free to ATL members who are current in their yearly dues; extra copies may be purchased at the member or non-member prices as noted below. Not all volumes have supplements. Non-members, add \$2 shipping for each supplement ordered (outside of the USA, non-members must add another \$1 per supplement ordered).

TROPICAL LEPIDOPTERA

1991 – Volume 2	
1 FAUNAL REGIONS AND THE DIVERSITY OF LEPIDOPTERA	
by John B. Heppner 85 pp (16 Dec 1991)	\$ 10.00 (\$18.00 non-members)
1992 – Volume 3	
1 BUTTERFLY FARMING AND TROPICAL FOREST CONSERVATION IN THE INDO	D-AUSTRALIAN REGION
by Michael J. Parsons 62 pp (29 Jun 1992)	\$ 10.00 (\$18.00 non-members)
2 SEDGE MOTHS OF TAIWAN (Lepidoptera: Glyphipterigidae)	
by Yutaka Arita and John B. Heppner 40 pp (28 Dec 1992)	\$ 10.00 (\$18.00 non-members)
1993 – Volume 4	
1 THE COPAXA OF MEXICO AND THEIR IMMATURE STAGES (Lepidoptera: Saturn	iidae)
by Kirby L. Wolfe 26 pp (1 Jun 1993)	\$ 10.00 (\$18.00 non-members)
2 NOTES ON NEOTROPICAL SKIPPERS (Lepidoptera: Hesperiidae)	,,
by G. T. Austin, J. R. Brock, O. H. H. Mielke, and S. R. Steinhauser 36 pp (30 Aug 1993)	\$ 8.00 (\$15.00 non-members)
3 KEYS TO FAMILIES OF LEPIDOPTERA	+ (+,
by John B. Heppner 28 pp (Sep 1993 [26 Nov 1996])	\$ 7.50 (\$13.50 non-members)
4 THE CLEARWING BORERS OF FLORIDA (Lepidoptera: Sesiidae)	
by Larry N. Brown and Russell F. Mizell, III 22 pp (28 Sep 1993)	\$ 8.50 (\$16.00 non-members)
1994 – Volume 5	
1 CATALOCO DE LA FAMILIA SATUDNUDAE DE MEVICO	
by Carlos R. Beutelspacher-B. and Manuel A. Balcázar-L. 28 pp (23 Dec 1994)	\$ 7.50 (\$13.50 non-members)
1007 Volume 8	
1 CLASSICAL BIOLOGICAL CONTROL OF THE CITRUS LEAFMINER PHYLLOCNI	STIS CITRELLA STAINTON
(Lepidoptera: Gracillariidae): Theory, Practice, Art and Science	
by Marjorie A. Hoy and Ru Nguyen 20pp (25 Jun 1997)	\$ 7.50 (\$13.50 non-members)
2 CLADISTICS OF THE CERATOCAMPINAE (Lepidoptera: Saturnidae)	
by Manuel A. Balcazar-L. and Kirby L. Wolfe 53 pp (23 Dec 1997)	\$ 8.00 (\$16.00 non-members)
3 CONTRIBUTIONS TO STUDIES OF WEST AFRICAN BUTTERFLIES	A 10 00 (A00 00
by Andrei Sourakov, with Thomas C. Emmel and Torben B. Larsen 44 pp (23 Dec 1997)	\$ 12.00 (\$22.00 non-members)
1998 – Volume 9	
1 A CONTRIBUTION TO RIODINID SYSTEMATICS (Lepidoptera: Riodinidae)	
by Jason P. W. Hall, with K. R. Willmott and D. J. Harvey 48 pp (Dec 1998)	\$ 10.00 (\$18.00 non-members)
2 NOTES ON NEOTROPICAL SKIPPERS. 2 (Lepidoptera: Hesperiidae)	
by George T. Austin et al. 52 pp (Dec 1998)	\$ 10.00 (\$18.00 non-members)
1999 – Volume 10	
1 LEPIDOPTERA OF BELIZE	
1. Catalog of Butterflies	
2. Catalog of the Emperor Moths and Hawk Moths	
by Jan Meerman 60 pp (1999)	\$ 7.50 (\$13.50 non-members)
HOLARCTIC LEPIDOPTERA	

1998 - Volume 5

CLASSIFICATION OF LEPIDOPTERA. Part 1. Introduction 1 by John B. Heppner 148 pp

\$18.00 (\$36.00 non-members)

BOOK NEWS

MARIPOSAS BONAERENSES

Butterflies of Buenos Aires

by Gustavo R. Canals

2000. Edición L.O.L.A., Buenos Aires, Argentina. 347pp (12 x 19cm). \$38.00 paper. ISBN 950-9725-36-6.

The first modern field guide to butterflies from Argentina, this new booklet gives notes and color photographs of about 200 butterflies and skippers from Buenos Aires Province, thus most of northeastern Argentina. The entire text is dual-language: Spanish and English. There is an introduction about butterfly morphology and biology, keys to groups, bibliography and index. Each species is illustrated from museum specimens in enlarged views, often showing both sides, plus occasional photographs taken in nature. Identifications with this guide should be easy now for most species from this region of Argentina. The author uses local Spanish names for the species, as well as English common names.

A WORLD FOR BUTTERFLIES: their Lives, Behavior and Future by Phil Schappert

2000. Key Porter Books, Toronto, Ontario, Canada. 320pp (21 x 28cm). \$45.00 cloth. ISBN 1-55263-073-0.

A colorful new addition to the "coffee table" type butterfly book but more useful in the added text information and sections on butterfly conservation. Over 300 color photographs complement the text covering life cycles, conservation, biodiversity worldwide, taxonomy, distributions, and biological features. There are a glossary, bibliography and index.

AMERICAN INSECTS (2nd ed.)

A Handbook of the Insects of America North of Mexico

by Ross H. Arnett, Jr.

2000. CRC Press, Boca Raton, FL. 1002pp (21 x 28cm). Price \$99.95 (paper). ISBN 0-8493-0212-9.

This 2nd edition of the well-received American Insects (1985) includes 152 more pages and updated information for all families. The text covers all insect genera of North America (12,357), for the over 87,000 species involved, and provides keys to all insect families, and includes illustrations of typical species for most families and almost all economic species. The chapters for each insect order have been revised, including some with the help of specialists. The largest chapter is on Lepidoptera, completely revised by J. B. Heppner, on pages 631-827. In Lepidoptera, one evident error from the 1989 text was inadvertantly missed (p. 754): the figure for the California Sister butterfly, Adelpha bredowii, is still labelled with the name of Lorquin's Admiral, Limenitis lorquini. The redone index is very inadequate compared to the 1985 edition, listing only names of families and higher taxa, genera that are highlighted, and species that are figured; thus, many generic names will not be easily found (the 1985 edition had all names indexed). Only a paper version is available.

DIE PALPENMOTTEN (Lepidoptera, Gelechiidae) MITTEL-EUROPAS: Bestimmung – Verbreitung – Flugstandort, Lebensweise der Raupen

by G. Elsner, P. Heumer, and Z. Tokár

1999. F. Slamka, Bratislava, Slovakia. 208pp (15 x 21cm), 28 pl. Cloth. ISBN 80-967540-5-X.

This new work treats all species of Gelechiidae found in central Europe, primarily Germany and Poland, south to the northern parts of Italy and Serbia. There are 28 color plates and another 85 plates of genitalia drawings, thus enabling the user to identify most European gelechiid moths with certainty. The color plates show museum specimens in fine detail, all at about 4x enlargment. All figures on the plates have a species number that corresponds to the species numbers in the text, so figures are easily associated with the text for each species. The text for each species with details of hostplants, habitat, distribution and occasional taxonomic notes on synyonymy, etc., as needed. There is a species.

DAY-FLYING MOTHS: Chalcosiinae - Epicopeia

by Toshitsugu Endo and Yasunori Kishida

1999. Endless Science Information, Tokyo, Japan (Endless Collection Series, 8). 119pp (18 x 26cm), 87 pl. ¥9000 (ca. \$90) cloth. ISBN 03-3810-1822.

This book treats the chalcosiine Zygaenidae and Epicopeidae of Asia, all day-flying species. The text is restricted to a checklist of species known for Asia and discussion of each genus, although for *Epicopeia* the 4 known species are discussed individually. Text is in English and Japanese. The 87 color plates form the main part of the book, all excellent and showing museum specimens at full size.

ENTOMOLOGÍA AGROFORESTAL

edited by C. de Liñán-Vicente

1998. Ediciones Agroténicas, Madrid, Spain. 1309pp (17 x 24cm). Pts. 9,800 (ca. \$65.00) cloth. ISBN 84-87480-54-3.

This hefty new book on forestry insects of Spain is subtitled on the cover, "Insectos y Ácaros que Dañan Montes, Cultivos y Jardines," thus covering insects and mites of the mountains, farms, and gardens (subtitle is not on the official title page). The treatment for Lepidoptera is 178 pages long, by P. del Estal-Padillo, J. Esteban-Durán, and J. L. Yela-García. Text is in Spanish. The first part of the book details all the main morphology, physiology, and biology of insects in general, much like any textbook in entomology, amounting to almost 300 pages. The coverage for pest insects deals with species that are to be found in Spain. Each species is given a diagnostic description, including immature stages, followed by biological notes and hostplant data, and recommended control methods. The detailed information for the pest species in Spain makes this a very useful book for anyone interested in this fauna, particularly for Lepidoptera.

MEETINGS

2000	Jun 23-25	Lepidopterists' Society, Pacific Slope Section, Grants Pass, Oregon, USA	
	Jul 26-30	Lepidopterists' Society, Winston-Salem, North Carolina, USA	
	Aug 20-26	XXI International Congress of Entomology, Iguazu Falls, Brazil	
2001	Apr 20-22	Association for Tropical Lepidoptera, Gainesville, Florida, USA	
	Jul 26-29	Lepidopterists' Society, Corvallis, Oregon, USA	
	Jul 26-29	Lepidopterists' Society, Corvallis, Oregon, USA	

CONTENTS

1 - Lutman: The Butterflies of Shek Kwu Chau Island, Hong Kong

3 - Letters

- 4 2000 ATL Annual Meeting and Annual Report
- 7 Lutman: Butterflies of Shek Kwu Chau (cont.)
- 12 Mulvihill: Butterfly in My Net / the 'Ephelia' Poet
- 17 Heppner: Shall Mary Villiers have a Butterfly Patronym?
- 18 Johnson: A Journey to Nabokov's Karner, New York
- 20 Heppner: Tropical Cactus Borer, Cactoblastis cactorum, in West Florida
- 23 Heppner: Dicranoctetes brachyelytrifoliella, a Leafminer on Cogongrass
- 24 Weiss: Pioneer Century of American Entomology, Chap. 9
 29 Weiss: Pioneer Century of American Entomology, Chap. 10
- 36 Book News