

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 judgship. 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 clientele 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)

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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 (Simmons 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 Hawaiian 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 Lippen-cott (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-

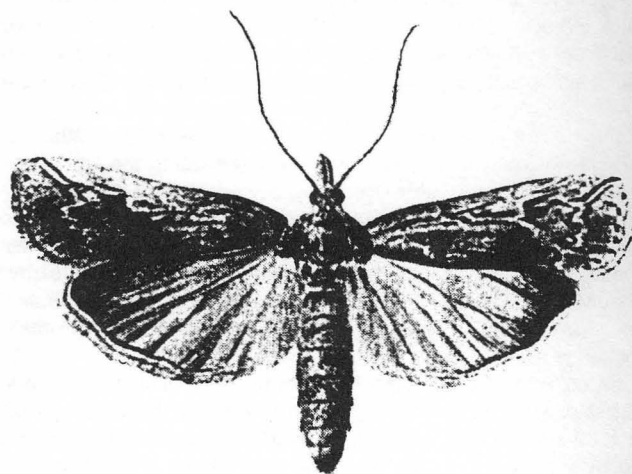


Fig. 1. *Cactoblastis cactorum* adult (after Mann, 1969) (FW = ca. 16mm).

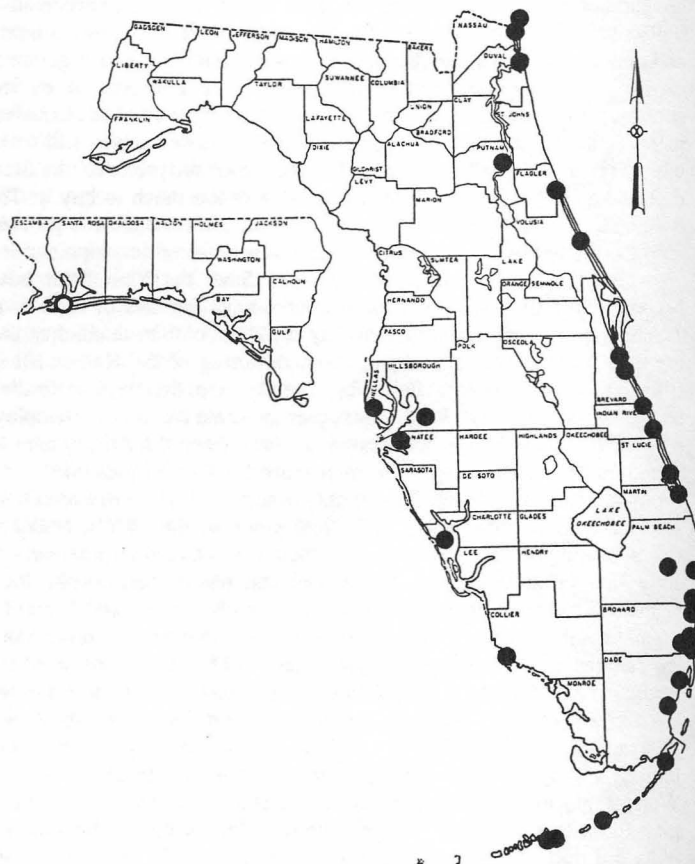


Fig. 2. Current sites for *Cactoblastis cactorum* in Florida (open circle near Pensacola is the June 2000 Gulf Breeze interception site; upper right dot is Cumberland Id., Georgia).

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

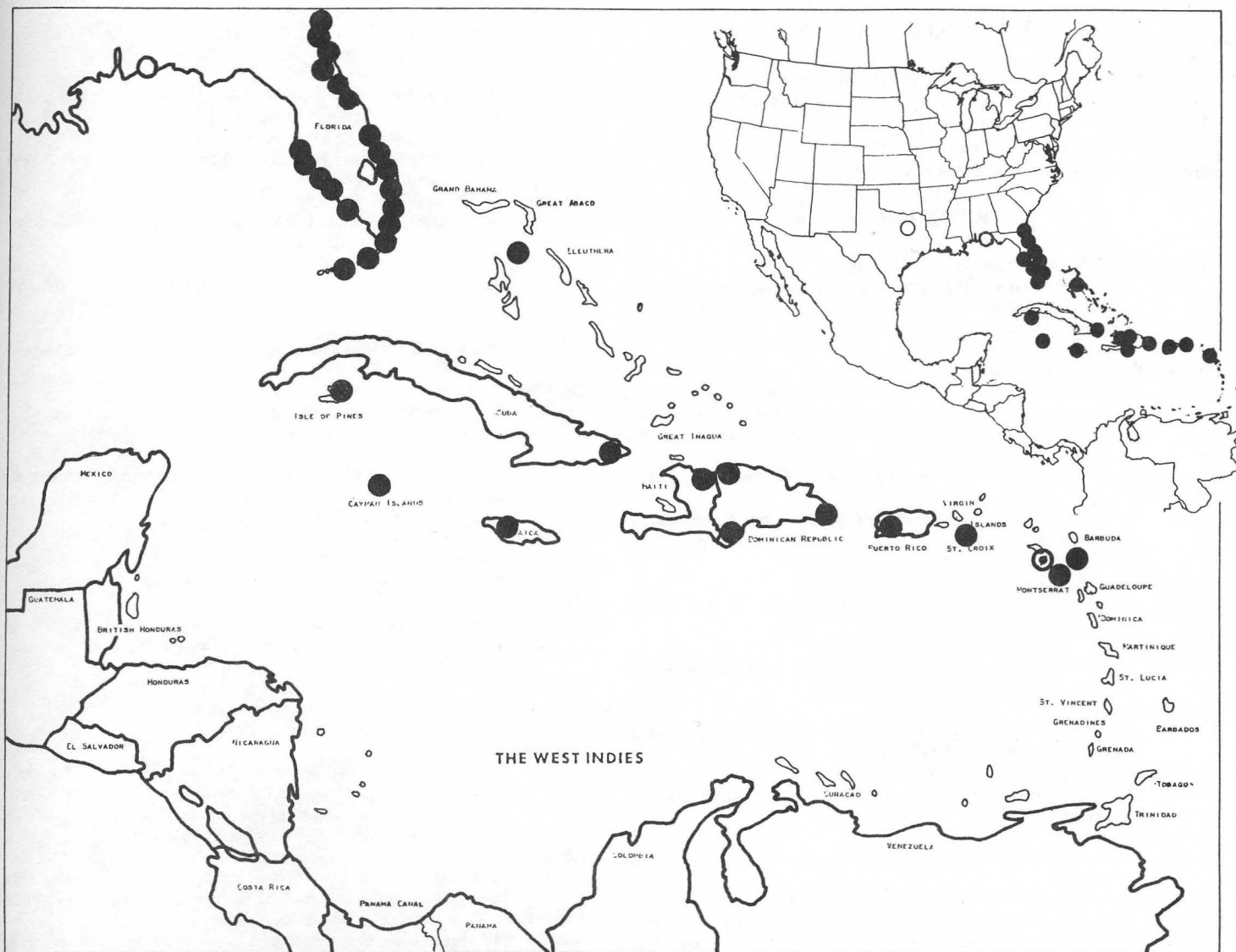


Fig. 3. Distribution of *Cactoblastis cactorum* in the Caribbean as of June 2000 (open circles are interceptions in Florida and Texas; bullet circle is on Nevis for the 1957 initial Caribbean release site; closed circles are established sites).

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 inadvertently 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.

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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.

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

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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).

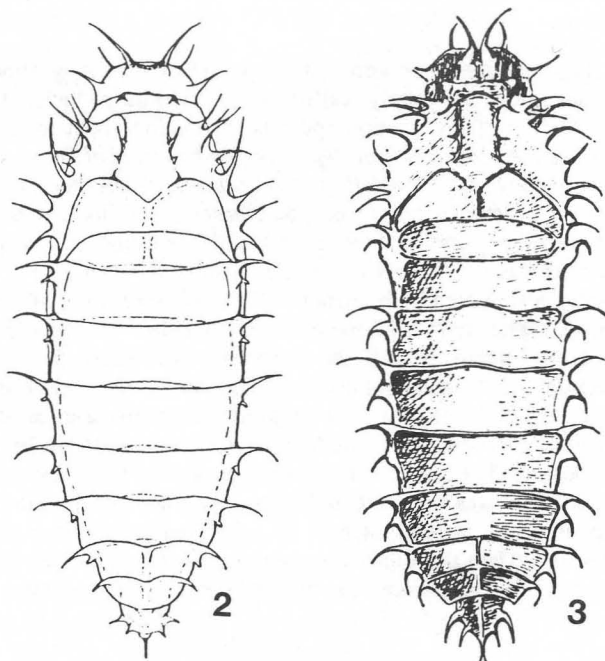


Fig. 2-3. Pupae of *Dicranoctetes*: 2) *D. brachyelytrifoliella* (after Braun, 1948). 3) *D. saccharella* (after Busck, [1934]).

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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, "Brema," 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 americanæ decem septima*."

Willis Gaylord, who wrote on the "grain-worm" in the *Cultivator*, 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 xyliana*, 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 xyliana*, 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 aphid, locust tree borer, onion fly, maple psocid, 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 xyliana*, 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 injurious 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 measure-worm, 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.

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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
DIKONOFF: 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, 118-130, 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. present); most wrappers	
*FIELD: Manual of Butterflies & Skippers of Kansas (1940)	30.00	somewhat frayed, but last issues from 1937 are in mint condition. 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)	
*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: Butterflies of Indiana (1987)	28.00c
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 (1975)	75.00Lc
KLOTS: Living Insects of the World (1956)	45.00cL	WEED: Butterflies Worth Knowing (1923)	U/D 15.00c
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)	2,500.00c

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 Edinburgh, 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 specimens of 30 species of Diptera; J. S. Hawkins, 79 specimens of 62 species of Lepidoptera; Dr. F. V. Hayden, 95 specimens of 55 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; and 124 specimens of 60 species were received from Messrs. 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, 1845, 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 Philadelphia 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.

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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.

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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 inadvertently 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 enlargement. 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 synonymy, etc., as needed. There is a species checklist, and an list of hostplant names cross-indexed to moth 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 Agrotécnicas, 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
Jul 26-30
Aug 20-26
2001 Apr 20-22
Jul 26-29

Lepidopterists' Society, Pacific Slope Section, Grants Pass, Oregon, USA
Lepidopterists' Society, Winston-Salem, North Carolina, USA
XXI International Congress of Entomology, Iguazu Falls, Brazil
Association for Tropical Lepidoptera, Gainesville, Florida, USA
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