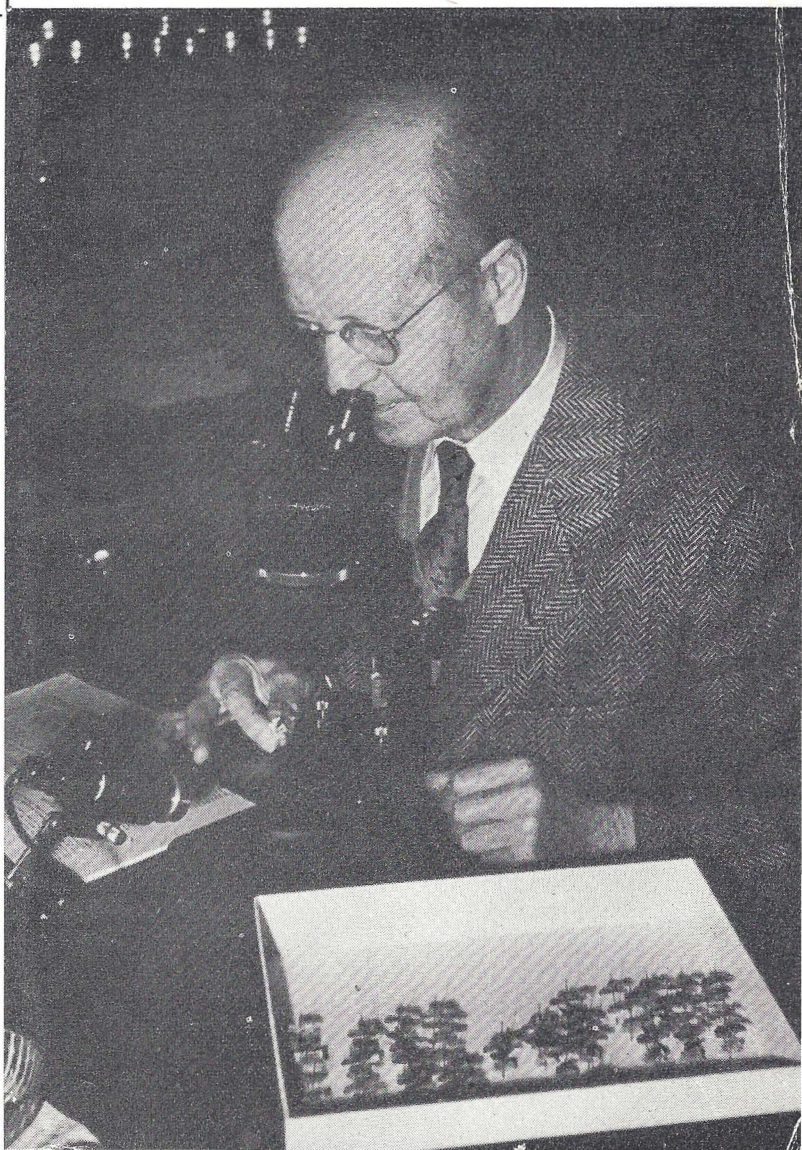
NOVA SCOTIA MUSEUM NEWSLETTER



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NOVA SCOTIA MUSEUM NEWSLETTER
HALIFAX, N. S.

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Just as a journey has its landmarks, so each of us, on looking back, can identify individuals and events which are similarly dominant.

To many, Dr. J. H. McDunnough was such an individual. He never imposed himself, and seldom raised his voice, but what he did and what he was, spoke loudly. Standards of achievement and behaviour could not but improve when he was present.

The bare listing of his accomplishments is impressive enough and would seem to require a life even longer than his, but his musical interests, spare time activities and warm friendships were allotted their full share of his time. Through them all, the character of James McDunnough, gentleman, was the same, for Dr. J. H. McDunnough could be no other than he was.

The Museum and the Museum Staff now miss him, as his chosen communities in Toronto, Berlin, Glasgow, Decatur, Ottawa and New York have missed him, in turn. Quite truthfully, "we shall not see his like again."

D. K. Crowdis
Director, Nova Scotia Museum

JAMES HALLIDAY McDUNNOUGH

by Douglas C. Ferguson

On February 23, 1962, Dr. James H. McDunnough died at the Victoria General Hospital, Halifax, Nova Scotia, at the age of 84. Dr. McDunnough had a long and varied career, and continued his taxonomic work until November, 1961, when failing health forced him to cease activity. His final paper, *Notes on the Coleophoridae of the Maritime Provinces of Canada,* was published just one week before his death.

Dr. McDunnough was born at Toronto, Ontario on May 10, 1877, and there received his early education at private schools and at Jarvis Street Collegiate. In 1897 he went to Berlin, Germany, to continue his education and was trained for a career in music. He was privileged to be a pupil of Josef Joachim, one of the most celebrated violinists of his day. McDunnough also enjoyed the rare experience of meeting other eminent musical figures such as Richard Strauss, who was one guest conductor of the Glasgow Orchestra in which Dr. Dunnough played and Alexander Glazunov, who was a familiar visitor at the house of a Russian family where McDunnough tutored languages. Following completion of his musical studies, McDunnough played one season as a professional violinist with the Symphony Orchestra of Glasgow, Scotland. This experience was the turning point in his career, for he then decided to abandon music as a vocation, although his interest remained.

In 1904 he returned to Berlin and began a course of study in zoology at the Kaiser Wilhelm Institute. At the same time, he enrolled in an extramural course at Queen's University, Kingston, Ontario. In 1909 he was granted the Ph. D. from Berlin, and the M. A. degree from Queen's. That same year he returned to North America, and on October 22 married Margaret Bertels, of Berlin. He worked a few months at the Marine Biological Laboratory, Woods Hole, Massachusetts, before becoming curator of the Barnes Collection at Decatur, Illinois, in 1910.

Dr. William Barnes, a wealthy surgeon of Decatur, had developed what was at that time the finest collection of North American Lepidoptera, and Dr. McDunnough was the first of three curators whom he employed. During the nine years that they were associated, Barnes and McDunnough published jointly a total of 67 papers. From Decatur, Dr. McDunnough made some memorable collecting trips to what were then quite remote areas, including southern Florida, Silverton, Colorado and Mt. Rainier, Washington. The great collection of Dr. Barnes, with its many types, was later sold to the Smithsonian Instution.

In 1919 Dr. McDunnough left Decatur for Ottawa where he had accepted a position as chief of the newly created Division of Systematic Entomology. "He was thus the first officer appointed (by the Dominion Government) to devote full time to the National Collection and to an identification service for field officers and others. Working without technical assistance until 1922, he undertook: (1) to sort the large accumulation of unclassified material and to combine the organized collections that had been acquired by the Entomological Branch; (2) to acquire new material from faunal surveys and from other entomologists; and (3) to build a suitable library. . . He served in Ottawa 28 years. When he was superannuated in 1946, he had developed with a small staff and from small beginnings an organized collection of pinned material that occupied approximately 3,000 drawers, as well as large collections in alcohol and on slides. The National Collection contained type material of 5,690 North American species; it had become one of the most important collections of North American insects, and it was supported by a library of approximately 4,000 bound volumes on taxonomic and general entomology, plus many thousand pamphlets and author's separates. Dr. McDunnough himself had conducted faunal surveys in all provinces except Sackatchewan (and Newfoundland) and had published (at Ottawa) 199 taxonomic papers." *

In November, 1946, Dr. McDunnough was appointed a Research Associate, Department of Insects and Spiders, American Museum of Natural History, and moved from Ottawa to New York City. The following three years were among the most productive of his career, and he enjoyed his New York associates and the fine facilities provided by the Museum. His wife died in 1950, and following this he decided to go to Nova Scotia, where in previous years, he had spent much time collecting.

In addition to a number of shorter papers, McDunnough produced three major revisions at the American Museum. It was one of these, the *Revision of the North American Species of the Genus Eupithecia* (1949), that he considered to be his finest work.

Dr. McDunnough arrived in Halifax on June 2, 1950, and lived there the remainder of his life, working as a Research Associate of both the American Museum of Natural History and of the Nova Scotia Museum of Science. The American Museum published his papers and the Nova Scotia Museum provided space and facilities for the continuation of his studies. McDunnough completed 20 papers at the Nova Scotia Museum, including the large revision of the genus Hydriomena (1954), and

* Brown, W. J. *Entomology Division Newsletter* Canada. Dept. of Agriculture. 33 (10): 2-3, 1955.

continued active collecting almost every summer about Halifax or at White Point Beach, Queen's County, N. S.

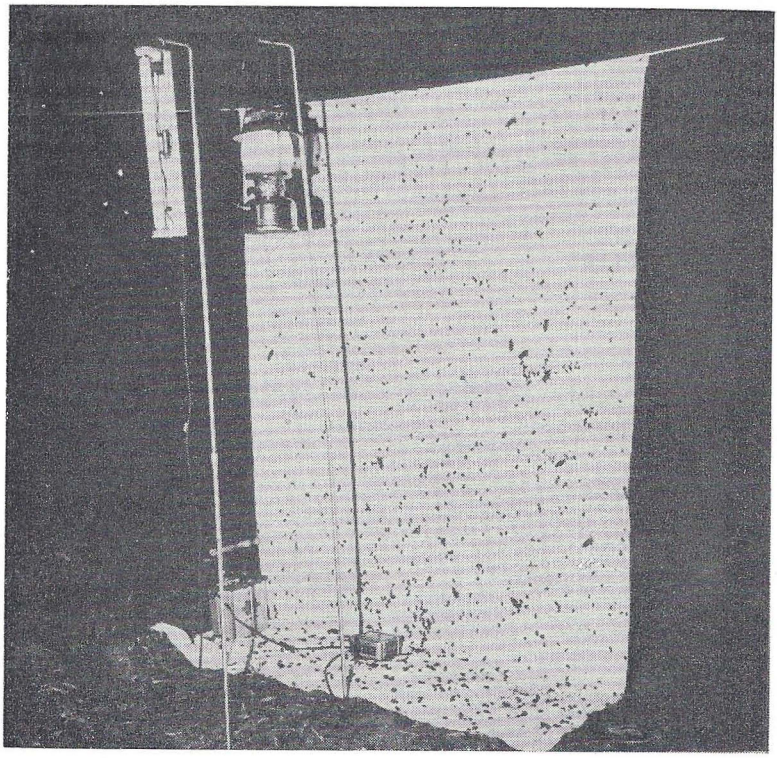
He was one of the most prominent figures in systematic entomology for half a century and for much of this period was perhaps the leading authority on this continent in two diverse orders of insects — the Lepidoptera and Ephemerida. Dr. McDunnough was a Fellow of the Royal Society of Canada and of the Entomological Society of America. He was an Honorary Member of the New York Entomological Society and one of six Honorary Members and a Past President of the Lepidopterists' Society.

FIELD WORK IN THE SOUTH

by D. C. Ferguson

Delaware, Virginia, the Carolinas, Georgia and, at last, Florida; a thousand miles of the coastal plain, and most of it was new to me. I had known something of the fauna from museum specimens, but in the study of animal distribution, taxonomy and environmental relationships, there is nothing that substitutes for actual travel and field observation. Through the combined generosity of The American Philosophical Society, the University of Florida, the Archbold Biological Station and the Nova Scotia Museum, I was privileged, in March and April, 1962, to come face to face with the rich and varied biota of the subtropics, and to experience the southern spring.

The specific object of the trip was to make investigations on the noctuoid and geometroid moths of northern Florida, and field work was carried out for four weeks at the University of Florida Conservation Reserve, a 2,500 acre tract at Welaka, on the picturesque St. Johns River, Putnam County, and for two weeks at the Archbold Biological Station, Highlands County, Florida (see also appendix). Accompanied by Charlotte and Stephanie, my wife and young daughter respectively, I drove from temperatures of near zero in New Brunswick and Maine, to 80° F. at Welaka, where we arrived on March 9th. There had still been snow even in North Carolina, but in South Carolina, Georgia and Florida, spring had really begun. Once established in our apartment at the Conservation Reserve, and outfitted with a pair of snake-proof boots purchased in the nearby city of Palatka, I set to work, and subsequently spent forty-four nights in the solitude of what was almost, but not quite, another world — the pine and palmetto flatwoods, sand scrub, and live oak hammocks of Florida. A hammock is a grove of evergreen hardwoods, in which live oak is often the dominant tree. The word is commonly used in the south.



Collecting sheet at night, near Archbold Biological Station. Insects shown are mostly Giant Water Bugs and Scarabaeid Beetles.

Welaka is a small fishing-resort community which, with some justification, calls itself 'the bass capital of the world". It lies in the lowlands of Florida's east coast, just to the north of Lake George, and about 170 miles north of the Archbold Biological Station, which is located at the southern end of the central Florida sand ridge, near Lake Placid. Thus the studies were made in two distinctive areas. The work in the St. Johns River region was of special importance, since I was trying to duplicate the results of a collecting trip to this area by Edward Doubleday, an entomologist from the British Museum who visited Florida 124 years previously. Doubleday also was a lepidopterist, and over 200 species were describd from material he collected at "St. John's Bluff, East Florida", a locality that I located and visited after some geographical investigation. This turned out to be the site of the present Fort Caroline National Memorial, which commemorates an ill-fated French

colony of 1564-65. The bluff overlooks the river and wide expanses of salt marsh about ten miles east of Jacksonville.

Anyone accustomed to the hilly landscape, the rocks and boulders, the year-round dampness, and the boreal vegetation of the northeast, must view with wonder the strangely contrasting aspect of the Florida peninsula. Most of this country looks almost perfectly flat. Beneath the surface lies a depth of over 4,000 feet of sedimentary rocks, mostly limestone, but often the only mineral matter in evidence is fine white sand. It is at times difficult to find even a pebble. The vegetation at its best is imposing and this affected me much as it did the early Philadelphia naturalist, William Bartram. In his "Travels", written over 180 years ago, Bartram refers with enthusiasm to "the stately pine" (longleaf pine), "the exalted palm" (the cabbage palmetto), and "the fragrant orange" (*Citrus*, introduced by the Spanish founders of St. Augustine, and widely

Trail through live oak grove at University of Florida Conservation Reserve, Welaka.

distributed by early colonists and by the Indians). To my snow-conditioned eyes the palmettos and yuccas, the cypresses and longleaf pines, and great oaks draped with ten foot streamers of Spanish moss seemed almost bizarre. The frequent landscapes of open savanna, relieved by scattered cabbage palmettos, pines and oaks growing in goups or as tall individuals, all receding with seeming endlessness into the blue haze of distance, left a lasting impression on my memory, more than did the vast orange groves and other lush scenes of cultivation.

We did enjoy the citrus groves, with their intensely fragrant blossoms, and ripening oranges and grapefruit hanging in such apparent quantity as to supply half of North America. Some of the choicest varieties of oranges, such as the Temples and Valencias, were being harvested at that time, and together with kumquats, pecans and fresh tomatoes these made the roadside fruit stands attractive and colorful. It did seem strange to see blossoms and ripe fruit on the trees at the same time, but oranges take a year or more to mature. Much of the uncultivated scrub and savanna country is used as range land by the many ranches, and black-skinned cowboys herding Brahman cattle in this dry brushland of palmetto, scrub oak and cactus (*Opuntia*), sometimes with attendant flocks of showy cattle egrets, so readily suggests that one is really in some more distant part of the world.

The Floridian climate did not disappoint us, and temperatures averaged close to the optimum for human comfort. They do have extremes of course; in the northern counties it can freeze at night and then become uncomfortably hot the next day. Last March and April the weather was somewhat cooler than I had anticipated, like June in Nova Scotia but much sunnier. The lowest temperatures were close to freezing and the highest was 87° F., which occurred on several days at the Archbold Station. Nights were always cool and it was dark at 7:30. There was scarcely any seasonal change in weather from early March until late April, but trees that had been leafless at the time of our arrival were in full spring foliage when we departed. Summer is the rainy season and winter is normally dry, although last spring, after a long period of severe drought, conditions were almost arid. There were only two or three showers during our entire stay.

Although there was much that looked different, it required only a few cursory observations on the Floridian flora and fauna to remind me that we were still on the same continent. On the first day I noticed some familiar vegetation. Red maple, which ranges between more degress of latitude than any other American tree, looks much the same in Florida as in

eastern Canada. Black cherry, which on the Atlantic coast reaches its northern limit in Nova Scotia, reaches its southern limit in central Florida, and at Welaka I fed one of my broods of live caterpillars on leaves of this tree.

In insects, the two regions have many genera and species in common. Certain of the large water bugs, water beetles, June beetles and ichneumon flies that regularly came to the lights looked much like those of the north. Among the 445 species of Lepidoptera that I collected in Florida, there are about 108 that have also been found in Nova Scotia. Some of these we see only as occasional "migrants" or strays from the south, but others are, like the red maple and black cherry, permanent residents in both regions.

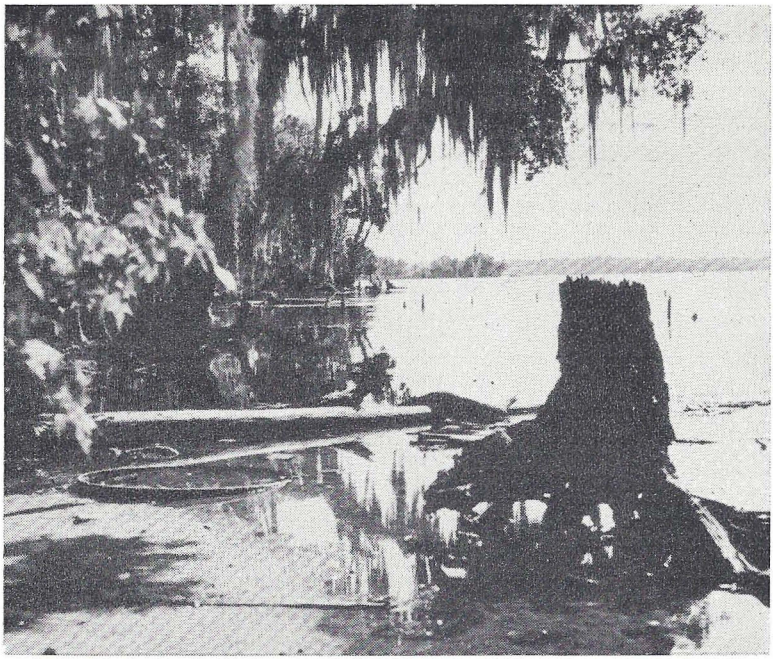
It was a strange anomaly that the three most surprising geographical records resulting from the trip happened to be primarily northern species with which I was already familiar. A specimen of *Hemaris gracilis,* one of the hummingbird clear-wing moths, taken at the Archbold Biological Station, is the first recorded south of the vicinity of Philadelphia, and thus extends the known range 1,000 miles. Three specimens of a supposedly northern Arctiid, *Spilosoma prima,* which came to

Oak-shaded street in Welaka.

my lights at Welaka, are the first reported from anywhere south of New Jersey, and a single *Sphinx gordius,* also from Welaka, is one of only three Florida records. Gordius is the commonest of the sphinx moths in Nova Scotia. The only large silk moth that appeared in numbers was not a peculiarly southern one, but the familiar *Actias luna,* flying there three months earlier than in Nova Scotia.

Although I noticed what was familiar in the Floridian fauna, I was at the time perhaps more conscious of its distinctness and diversity. As one moves closer to the equator, species increase in number while the size of individual populations appears to decrease. The results of my field trip were indicative of this. One hundred years of accumulated observations on Nova Scotian Lepidoptera provide records of only twice the number of species that I collected in Florida in six weeks! Yet at no time in Florida did I consider that moths were especially abundant; they were usually scarce. Conspicuously present at times were some groups of insects not represented in Nova Scotia at all (unless by introduction). Cockroaches of many species came to both lights and bait. Mole crickets, true katydids and mantids were novelties that I had not seen alive before. In the Neuroptera, ant lions and mantispids were usually present on the sheets, and the pit-fall traps of ant lion larvae could be found everywhere in the sand. These insects belong to predominantly tropical and warm temperate groups whose species diminish rapidly northward. I paid little attention to Arachnids, but at the Archbold Station collected three scorpions, one on the balcony of the laboratory building, and two attacking the moths on baited trees. The extreme dryness probably accounted for the scarcity of scorpions. At Welaka, I saw one of those curious Arachnids of the order Solpugida, probably attracted by the insects at the light, but it ran quickly and escaped. Ornamental azaleas and other flowers on the grounds of the research stations were often visited by many handsome butterflies, especially the Blue, Green-clouded and Palamedes Swallowtails.

The fauna of the southern swamps and woodlands, especially in Florida, has suffered greatly from the depradations of man, but vertebrate life still seems abundant by northern standards. Without really looking for them, I saw raccoons, opossums, armadillos (introduced in Fla.), deer, flying squirrels, fox squirrels, gray squirrels, cottontail rabbits, various woodrats and mice, and even a bobcat. A cougar was reported on the reserve while we were at Welaka. At the Archbold Station raccoons became a nuisance, and one especially bold individual regularly visited my mercury vapor lamp and ate the insects, while I stood watching. This raccoon, perhaps with companions,



Shore of St. Johns River, Conservation Reserve, Welaka

also dug up most of the lawn behind the cottage, looking for the large scarabaeid beetles that dropped beneath the light and tunneled into the turf.

A warm climate especially favors cold-blooded vertebrates, and in the south reptiles are plentiful. Most snakes, including all of those we encountered, are harmless, but in the woods where I worked there are known to occur no less than four species that must be regarded as extremely dangerous. The best known is the large eastern diamond-back rattlesnake. I left Florida with some regret at not having seen these snakes in the field, but must admit that I did not go out of my way to find them. Anyone entering a wilderness area in the south is advised to watch their step and stay on roads and trails, bearing in mind that there might be a rattler or coral snake anywhere beneath the undergrowth of palmetto. When disturbed, rattlesnakes coil up in their characteristic striking posture and do not willingly retreat. Thus one of the chief dangers is in accidentally kicking or stepping on one, especially where it is concealed, or at night. Coral snakes have a venom that is a neurotoxin, like that of the cobras to which they are related, but fortunately the bite of this small, unaggressive species is

extremely rare. The showy red, black and yellow pattern of the coral snake is mimicked by several harmless species, as a protective device. Another investigator at the Welaka research station, an immunologist working with oppossums, was deceived in the traditional way by the bluffing antics of a hognose snake. When approached, this harmless reptile effects a convincing display of hostility by flattening its head, inflating its body with air, and hissing loudly, but in encounters with man the intended protection too often results in the death of the snake, as it did in this case. I was afterwards shown the preserved remains and assisted in their identification.

Turtles of many species occur in the south, and lizards may turn up anywhere, even indoors. The scratching of the little "chameleons" (*Anolis carolinensis*) climbing on the window screens became a familiar sound. One afternoon, near Welaka, I met a large gopher tortoise foraging on a sandy woodroad, and found his burrow nearby. We kept him captive for a day and then took him back. I saw many of these large excavations in the sand, but only the one tortoise. Sometimes the burrows are used by rattlesnakes. Alligators hold their own in many areas, and are protected by law. Virtually all the alligator skin souvenirs displayed *ad nauseam* at roadside stands are imported from South or Central America.

There is little in the Floridian fauna as obvious as the birds. Although I had no time for systematic bird-watching and hardly used the binoculars, many distinctive southern species were difficult to overlook. At various times we saw brown pelicans, royal terns, coots and gallinules, limpkins, sandhill cranes, the native egrets and cattle egrets, wood ibises, glossy ibises, boat-tailed grackles, ground doves, scrub jays, red-bellied woodpeckers and everywhere the ubiquitous mockingbirds. The cattle egret is a remarkable bird that has recently invaded and extended its range in two continents without the direct aid of man. Crossing the Atlantic from Africa to Brazil and then spreading northward, the cattle egret has found and occupied an ecological niche in the Americas, apparently without entering into much competition with indigenous species. It is now an abundant and attractive addition to the wide grazing lands of Florida, and as a stray has even reached Nova Soctia. It was also a pleasure to meet again the red-headed woodpecker, towhee, meadowlark, wood thrush, brown thrasher, bobwhite, cardinal and turkey vulture — familiar Austral and Transition Zone birds that do not normally reach Nova Scotia.

Among the birds too there were some reminders of home. The only owls that I saw or heard were the barred and great horned owls, the same ones commonly encountered in Nova Scotia. Blue jays always seemed to be around, but to me they

appeared a trifle smaller and of a more retiring nature than those of our northern population. I saw bald eagles, high in the sky above the St. Johns River. At times the night resounded with the calls of chuck-will's-widows; their call is different, but still reminiscent of the whip-poor-wills on summer nights in my own back yard near Halifax. On the woodroads of the Welaka reserve, I often saw the ruby eye-shine of a chuck-will's-widow reflecting the lights of my car, and on foot found it possible to approach within a yard of them before they took flight. Some of the commonest birds in Florida at that season are familiar summer residents of the north. One of the first small birds to greet us at Welaka was the myrtle warbler, which was present in large numbers. Grackles were everywhere, and at the Archbold Station there was an enormous overwintering flock of red-winged blackbirds, which must certainly be among the most abundant of American birds. Starlings and house sparrows were not much in evidence. There were no robins; we saw the last of them in the Carolinas, probably on the northward migration. The everpresent dooryard birds — those that woke us every morning — were chiefly cardinals, mockingbirds, thrashers, catbirds, blue jays and, at the Archbold Station, quail and scrub jays. Although the Florida scrub jay is a noteworthy endemic of the Florida sand scrub country, it is now regarded as just a geographical race of a widespread species that includes a number of other named subspecies, such as the Texas jay, blue cheeked jay, Woodhouse's jay and California jay. This is an unbelievably fearless bird, and Charlotte and Stephanie derived much entertainment from feeding them papershell pecans. We found that pecans were cheaper than peanuts.

The handsome egrets and other herons that we began to see in roadside ditches in South Carolina became commonplace in Florida, and occasionally a small flock of wood ibises could be seen overhead — great snowy birds with black flight feathers and dark heads, against the blue sky. Groups of black and turkey vultures would often rise like crows from the roadside, reluctantly leaving the carcass of a raccoon or possum killed by a car the night before. Even in winter, turkey vultures are a familiar sight from New Jersey to Florida, soaring with a sort of aerodonetic perfection that is surely an inspiration to all who watch them. I felt regret at the thought that the king vulture, found by William Bartram in this same St. Johns River country between 1773 and 1777, is no longer there. Bartram, who calls this elegant bird the "white-tailed" or "painted vulture", mentions that the Creek Indians valued its tail feathers for the construction of their royal standard, thus suggesting that the species was not especially rare at that time.

On April 26th, we squeezed into the car among the insect boxes and bags of pecans and set off for home, visiting along the way the great Okefenokee Swamp in Georgia. Later, in North Carolina and Virginia, we were dazzled by the spring display of redbud and flowering dogwood eveywhere along the roadside.

After beginning the season in the subtropics, I again turned my attention northward, and later spent three weeks of the summer in Newfoundland. Some observations from this project will appear in another number of the *Museum Newsletter.*

APPENDIX

The field work in Florida was designed to provide specimens of as many species of moths as possible occuring in that region at that time ,and life history information on some of the more doubtful or interesting ones. Collecting was done on 44 nights out of a possible 48, using lights at three or four locations, together with a bait route of approximately 100 trees painted with a mixture of fermented peaches, molasses and sugar. The various light sources included two 15-watt ultraviolet flourescent tubes powered by portable wet-cell batteries, one 125-watt mercury vapor lamp, and four 500-candlepower Coleman gasoline pressure lanterns. Each collecting station consisted of a light or combination of lights, preferably an ultraviolet tube with a lantern beside it, in front of a white sheet suspended from a rope between two trees. The actual collecting occupied an average of six hours per night and preparing the material about six hours during the day, so little time was spent in daytime field work.

The total insect catch was approximately 5,464 specimens, divided among the various orders as follows: Lepidoptera 4,586, Coleoptera 344, Hymenoptera 104, Neuroptera 109, Hemiptera 99, Orthoptera 84, Diptera 64, Trichoptera 56, others 18. Most of the material was fully prepared in the field, except for labeling; 3,625 specimens of Lepidoptera and most Neuroptera were spread when fresh, and are now ready for study. Nine broods of larvae were reared from eggs and these provided over 400 additional specimens. Information resulting from this project will be used in the preparation of several papers on life history, distribution and taxonomy.

Cover: Dr. James Halliday McDunnough

Museum Hours

Science exhibits, office and library, Spring Garden Road, Halifax, N. S.

MONDAY to SATURDAY, inclusive .....9:00 a.m. to 5:00 p.m.

SUNDAY .....2:30 p.m. to 4:30 p.m.

OFFICE HOURS .....9:00 a.m. to 5:00 p.m.

Historical Exhibits, Citadel Hill Branch

EVERY DAY, including Saturday and Sunday
.....9:00 a.m. to 5:00 p.m.

Copies of each number of the Newsletter are available at the Museum at 10c each.