BOWDOIN COLLEGE

BOWDOIN SCIENTIFIC STATION BRUNSWICK, MAINE 04011

1992 Annual Report

Since the Last Annual Report

President Robert Edwards made history by becoming the first Bowdoin President to set foot on Kent Island since Spike Coles made the trip in 1953. Bob's was only the third presidential visit during the field station's 57-year history. (Rumor has it that one of President Cole's successors consented to visit Kent Island only if a golf course were built there....) Despite the brevity of their stay, Bob and his wife, Blythe, managed to survive a hair-raising crossing in the whaler, down a pizza topped with orache and softshell clams, handle nestling Savannah Sparrows and Leach's Storm-Petrels, and witness a spectacular sunset.

The Bowdoin Scientific Station was featured in various media this year. Halfway through the American Radio Company's May broadcast from Portland, Maine, Garrison Keillor picked up a note scribbled on a torn corner of the program and read over the air, "To Corey, all alone on Kent Island, from Nat and Marko." As luck would have it, Corey Freeman, who had been on the island since late April and had not seen a soul for several weeks (except for fleeting glimpses of John Kent's ghost), happened to be listening to the radio at the time. This unexpected contact with civilization allegedly inspired him to dance out by the rain gauge. Stay tuned to National Public Radio for more news from Kent Island. Interviews with Chuck Huntington and me are scheduled to be broadcast on the Cornell Lab of Ornithology's "Bird Watch" on February 23 and March 5.

Too much of my time during the past year was devoted to a quixotic battle with the U.S. Fish and Wildlife Service over what many ornithologists feel is the agency's biologically out-of-date and overzealous enforcement of the provisions of the 1918 Migratory Bird Treaty Act. My particular involvement, described in detail in Science (Jan. 24, 1992; see also Oct. 16, 1992) and American Birds (Fall, 1992), began after contesting a fine for a technical flaw in my importation of museum specimens prepared by students at Kent Island. Although annoying and wasteful, the incident has had the positive effect of prompting the American Ornithologists' Union to establish a new Committee on Ornithology and the Law to lobby for easing the regulatory burden on scientists.

For the second year in a row, the Bowdoin Scientific Station obtained funding from the New England Consortium for Undergraduate Science Education (NECUSE) to support undergraduate research. Samara Walbohm (Brown University) was selected to conduct a study of the distribution of marine algae in the intertidal zone. Corrie Detweiller was granted a National Science Foundation Graduate Fellowship, the fourth Kent Island graduate to receive the prestigious award in the last two years.

The Summer of 1992

Mark Murray and Russell Ingalls, caretakers of the Bowdoin Scientific Station, put in another good year, opening the station in late April and closing it on October 6. Half of the dorm's southern wall, which had gradually been exfoliating, was torn off and replaced. Mark's most ambitious project was saving the Captain Gillett from its gradual slide into the basin. After jacking up the leaning building, Mark, his apprentice Bob Ornstein ('92), and a crew of volunteers constructed a new foundation of rock-filled cribs, replaced the supporting timbers with weir stakes scavenged from the beach, completed the floor, and rebuilt one wall. Corey Freeman immediately staked his claim on the new second floor living quarters, and hosted a house-warming sleep-over attended by all of the students. Russell kept himself busy carrying people and supplies back and forth, maintaining radio contact during the summer, and watching over the station during the off-season. On several occasions he invited us to "help" fish (sorry about that lost anchor and those tangled fishing lines...). The most memorable expedition in the *Fundy Girl* was off Old Proprietor's shoal in late July, when, surrounded by a pod of minke whales, we bugged for pollock, hooked a cod and squeezed its liver to chum a swirling flock of Wilson's Storm-Petrels and Greater Shearwaters. Russell's uncle Howard filled in one day to take 13 of us to

Machias Seal Island to observe nesting puffins and Razorbills.

In addition to those conducting summer research, three other groups of Bowdoin students took field trips to the Bowdoin Scientific Station in 1992, including a dozen first-year students on a preorientation trip in late August. In early May, after seeing Snowy Owls, Bald Eagles, Ospreys, and four other raptor species, a group of introductory ecology students woke up to a snow-covered Kent Island. Students from my advanced ecology class mounted an expedition to Kent Island in mid-September, lured by the prospect of glimpsing whales. As it turned out, we got a better view than expected: a 40-foot right whale, recognized from callosities on her head as Delilah, a female first identified in Florida in 1981, had washed up dead on the beach at Deep Cove on Grand Manan.

The mystery of the dreaded Kent Island hand rash may have been solved. Every summer since 1987 several of us have suffered a maddeningly itchy, lumpy rash on the back of our hands between the wrist and knuckles. Oddly, it has mainly plagued those studying Savannah Sparrows, especially early in the season. In all his years on the Three Islands, Myron Tate had never seen such a thing... although, now that he thought of it, there was one year he did get a bit of a rash while picking gull eggs. Dan Bradford, a Brunswick physician, suggested the possibility that the rash is a type of "swimmer's itch," caused by larval schistosomes (flukes) which penetrate the skin and cause an infection after dying. As adults, the parasites are found in the blood vessels of migratory shorebirds. The parasites' eggs are passed in the birds' feces and, after hatching, a free-swimming stage searches for their secondary hosts, snails. It seems likely that Savannah Sparrows, foraging in the intertidal zone, accidentally collect parasites on their feathers and pass them to our hands when we remove the birds from mistnets. Treatment: "antihistimines and antipruritic topical medications."

For perhaps the first time in more than a century, there were no "eggers" at Kent Island in 1992, a far cry from the 1920s when parties scavenging gulls' eggs could "rent" the island for a day. The reason to celebrate the end egging at Kent Island is not so much its impact on the Herring Gull population, which is probably slight, or any special compassion for the birds, who seem to have little compassion for ornithologists, or a distaste for gulls' eggs, which, I'm told, are delicious. Rather, we've tried gently to discourage egging because it potentially disrupts long-term studies of gulls and undermines Canadian wildlife protection efforts.

Research in 1992

- Leach's Storm-Petrel

Working with Katherine Gill ('95), Bob Mauck (Ohio State University) continued his PhD dissertation research, quantifying reproductive effort in Leach's Storm-Petrels during the incubation period. Until the chick hatches, parents alternate incubation shifts, spending 2-7 days fasting while on the egg. By looking at pairs incubating inviable eggs or eggs whose hatching had been experimentally delayed, Bob tested the hypothesis that reproductive effort differs between the sexes. In 10 of 11 burrows, it was the female who first abandoned the egg, suggesting that males are more willing than females to invest in reproduction late in the breeding season. Bob also continued his study of age-specific parental effort using measures of chick growth and ptilochronology, a technique that relates feather growth patterns to a bird's nutritional condition. Results so far make it clear that the rate of chick growth does not depend on the age of the parents. Electronic burrow monitors, employing infrared light detectors and magnetic sensors, and connected to a datalogger, were used to determine the exact time of arrival and departure of each parent at the nest. While still in the burrow, storm-petrel chicks gain as much as twice the weight of an adult until the week before they fledge, at which point they lose weight until they are light enough to fly. Is the weight loss due to a reduction in parental care at the end of the chick stage or a physiological response of the chick? Bob and his advisor, Tom Grubb, discovered that chicks simply stop eating and begin to lose weight at approximately 60 days of age, even when adults still deliver food to the nest. An experiment involving the exchange of nestlings of different ages showed that parents will continue to deliver food to the nest long after the time when their chick would normally have fledged, so long as a hungry nestling is there. "It appears that storm-petrel chicks dictate how long their parents will support them," Bob concludes. "Sound familiar?"

Katherine also assisted Chuck Huntington in the 39th year of his demographic study of storm-

petrels. Once again, his research established a new longevity record for the species with the reappearance of Ishmael, a male known to be at least 36 years old. In collaboration with Bob and Ron Butler (U. Maine-Farmington), Chuck is hard at work putting the finishing touches on a monograph on the life history of Leach's Storm-Petrel as part of the American Ornithologists' Union's series, "The Birds of North America."

Nev Garrity (Canadian Wildlife Service) returned in 1992 to collect Leach's Storm-Petrel and Herring Gull eggs which will be analyzed for organochlorine residues. Since 1977 the Canadian Wildlife Service has used seabird populations at Kent Island to monitor levels of environmental pollutants and assess their effect on the birds' physiology, behavior, and reproductive success.

• Savannah Sparrows

Corey Freeman ('91), now a graduate student at Cornell, began his PhD dissertation research on the effect of paternal care on fitness and the evolution of mixed reproductive strategies. After establishing a color-banded population in the southern half of the island, Corey and his field assistant, Susan Weirich ('94), logged numerous hours observing the behavior of males and females as they fed nestlings and fledglings. Despite considerable variation between individuals, they found that males show fed nestlings at high rates also invested heavily in fledglings. As expected, male feeding rate proved to be an important determinant of nestling success, but it had no effect on the proportion of fledglings that survived to independence, as determined by recaptures in August. By temporarily removing males from their territory, Corey showed that female Savannah Sparrows can raise nestlings unaided. (The birds adjust readily to captivity; one captive male sang constantly in the aviary next to the laboratory, much to the frustration of the neighboring territorial male.) The hormone levels of several free-living males were altered by implanting them with testosterone or testosterone-blockers, but the manipulation produced little measurable effect on their success in attracting additional mates or on levels of parental investment.

Josh Lawler ('93) and I studied Savannah Sparrows in the north and central fields. After six years of research, various life history patterns are becoming clear. Mortality is constant until the age of five, after which it increases sharply. Populations fluctuate between years; there were only eight adults in the north field this year, down from a high of 29 in 1989. The major focus of our work in 1992 was a series of experiments on the birds' responses to potential predators. Based on earlier observations, Herring Gulls and Common Crows are the major predators of Savannah Sparrow eggs, nestlings, and fledglings. Still, many sparrows nest within a meter of gull nests. Curiously, though, their reproductive success is slightly higher than birds nesting away from the gull colony. Using plastic models of gulls and crows, we tested the hypothesis that, for sparrows, crows are more dangerous predators than gulls. In fact, Savannah Sparrows react much more strongly to the presence of crows than gulls. Moreover, crows (which prey on gull eggs as well as sparrow eggs) are chased from the gull colony by nesting gulls. In this case, the "enemy of my enemy," while not exactly "my friend," is at least a lesser enemy whose behavior as literal "scarecrows" may shield the sparrows from even greater dangers.

• Tree Swallows

Justin Schuetz ('94) monitored the Tree Swallow population in 1992, banding all adults and nestlings, and collecting data on laying, hatching, and fledging dates, clutch sizes, nestling growth rates, reproductive success, mate fidelity, and adult return rates. Once again, the number of pairs breeding on Kent Island declined slightly (from 53 to 51), despite the fact that Justin erected about 50 new nest boxes and replaced numerous rotten posts. Interestingly, the severe cold front that swept across the northeastern U.S. and the Canadian maritime provinces in late June, causing devastating nestling mortality in Tree Swallow colonies from New York, Ontario, and even Grand Manan, had no obvious effect on the hardy Kent Island population. About 71% of the nests on Kent Island fledged young; most of the mortality, in fact, occurred in nests that were laid, and hence hatched, late in the season, not during the cold front. By repeatedly checking nests during the egg-laying period, Justin established that females lay one egg per day between 6 and 8 AM.

• Bird Populations

The fourth annual census of songbirds in an 11-hectare plot of spruce-fir forest once again turned up no Black-capped Chickadees. Other species were absent (Eastern Peewees, White-crowned Sparrows) or unusually scarce (Winter Wrens, Golden-crowned Kinglets, Parula Warblers) The dramatic shorebird migrations of July and August never materialized, apparently because of late snows and widespread reproductive failure on the Arctic breeding grounds. On the other hand, American Robins, Catbirds, and American Redstarts were more numerous than ever, and a pair of Common Grackles bred on the island for the first time since at least 1986. A pair of Great-blue Herons, typically restricted to a small colony on Hay Island, nested in a white spruce on the north end of Kent Island. Merlins and Bald Eagles were seen almost daily. Common Terns were also fairly common, although they failed again to nest on Sheep Island as they have at times in the past.

A number of aberrant birds appeared on Kent Island in 1992. An Orchard Oriole and a Dickcissel, both yearling males and well outside their normal range, passed through in late May and mid-June, respectively. A male Prairie Warbler established a territory for four days in late June. The most notable visitor was an American Avocet -- only the second record for the Grand Manan archipelago -- who spent more than two weeks in the basin in August.

• Insects

Building on the collection of Kent Island butterflies started by Peter Cannell ('76) and David Maddox in 1979 and expanded by Rick Todhunter ('93) in 1990, Justin assembled a meticulous reference collection of the island's insects, especially species important in pollination of understory herbs. The flies (Diptera) proved to be surprisingly diverse, with representatives from more than 17 families. The richest group and perhaps the most effective pollinators are the flower flies (Family Syrphidae), some of which are dead-ringer mimics of bumblebees, honeybees, and wasps. The specimens are currently being identified at the U.S.D.A. Systematic Entomology Laboratory. As for butterflies, painted ladies were unusually abundant in 1992, whereas we spotted few sulphurs and just a single monarch.

• Marine Biology

Caroline Campbell (Mount Holyoke College, '93) and Samara Walbohm (Brown University, '93) studied the distribution and abundance of marine organisms in the intertidal zone. More than 60 species of marine algae have been described at Kent Island, although only about 30 species dominate the flora. Samara established an herbarium collection and measured the percent cover of each species of algae at four tidal heights (3-20 feet) along five transects differing in wave exposure and located at various sites around the island. Caroline conducted a parallel study examining the density of marine invertebrates along the transects, and assembled a reference collection of common species for display in the Club Dingleberry.

• Mosses and Liverworts

Two taxa that have received little attention on Kent Island, despite their abundance, are the mosses and liverworts. Don McAlpine, Curator of the New Brunswick Museum, collected samples on June 24, 1992, and brought them to the Museum, where they were identified by Bruce Bagnell. The lichens of Kent Island are currently being analyzed at the Museum.

Mosses: Aulacomnium androgynum (Hedw.) Schwaegr., Brachythecium salebrosum (Web. & Mohr) B.S.G., B. rutabulum (Hedw.) B.S.G., Brotherella recurvans (Mx.) Fleisch., Ceratodon purpureus (Hedw.) Brid., Dicranum flagellare Hedw., D. polysetum Sw., D. scoparium Hedw., Funaria hygrometrica Hedw., Pleurozium schreberi (Brid.) Mitt., Polytrichum juniperinum Hedw., P. ohioense Ren. & Card., Rhytidiadelphus triquetris (Hedw.) Warnst., Sanionia uncinata (Hedw.) Loeske, Sphagnum fimbriatum Wils. in Wils. & Hook. f., S. squarrosum Crome, S. palustre L. , Mnium hornum Hedw., Tetraphis pellucida Hedw., Ulota crispa (Hedw.) Brid.

Liverworts: Chiloscyphus pallescens (Ehrh. ex Hoffm.) Dum. var. pallescens,

Lepidozia reptans (L.) Dum., Lophocolea heterophylla (Schrad.) Dum.

• Plant ecology

Armistead Edmunds ('94) took on the challenge of collecting and keying out the sedges of Kent Island. She also worked with Bob Ornstein to establish five permanent forest quadrats in which they determined the density and species composition of trees, diameter distributions, and ages. The oldest trees on the island appear to be the yellow birches of the north end, some of which are about 100 years old. It was a banner year for fruits, with record crops of cranberries and blueberries in particular.

Peter Marks, a plant ecologist from Cornell, spent several days pondering the peculiarities of plant succession on Kent Island. In the central fields, which were last mowed in 1949, the rate of colonization by trees and shrubs has been anomalously slow, apparently due to the severity of the local climate. Salt spray, nutrient-poor acidic soils, cool growing-season temperatures, and harsh winter winds create a "tree-line" effect at sea level. Indicators of these factors are Kent Island's sparse understory, the existence of flag trees, and the slow decomposition of organic matter in the soil. In places the accumulated organic matter forms a 20-cm thick mat, impenetrable to young seedlings. Under such stressful conditions, long-lasting impacts on forest structure can result from disturbances such as fire, logging, agriculture, or grazing by sheep or snowshoe hares -- all of which have occurred at Kent Island. Thanks to Leslie Mullen of Grand Manan, 125 snowshoe hares were trapped last winter. Our hope is that the temporary reduction in the hare population will allow a cohort of birch and fir seedlings to escape grazing until they outgrow their herbivores.

• Meteorology

Bob Cunningham's analysis of the 1992 weather data (a task he has down to an art after 56 years of practice) demonstrated that it was cooler than normal on Kent Island this year, but only by 0.3° C on average; the temperature exceeded 21° C (70° F) just two days all summer, compared to a 30-year average of six times. Precipitation (28.9 cm) and the number of days with fog (39) were typical for the summer, although June was exceptionally sunny. Of note was the absence of thunderstorms in 1992. The datalogger and associated environmental sensors did double-duty in Bob's weather shack, Fog Heaven. Temperature probes were placed in nests of Savannah Sparrows and Tree Swallows to determine the precise timing of incubation shifts. For the first time we were able to download and analyze the data at the station. In October the corroded anemometer/wind vane mast on the peak of the Warden's house was retired after more than 50 years of service. For the next half-century, Bob has ordered a removable mast so he won't have to perch 20 feet above the ground on the slender pole to assemble the anemometer each spring.

Kent Island Life

Physical fitness was a theme of 1992, with Samara leading the troops in nightly calisthenics on the lawn and jogs to the gull colony. Some of us restricted our athletic activities to volleyball, soccer, basketball (nailing on the shop an oil drum rim as a hoop), and baseball (Bob Ornstein set a new home run derby record by blasting a tennis ball from the Warden's house over the dorm's widow watch and into the woods). The July 4th beach cleanup covered the entire island with the exception of the stretch between the basin and north end. No real treasures this year other than a tin of rations from a Russian fishing vessel; mostly we scavenged plastic fuel oil containers, buckets, fish tubs, Chlorox jugs, Coke cans, and Pepsi bottles. However, in August Frank Pierson discovered a fiberglass dinghy at the south end. If its rightful owner does not appear soon to claim it, it will be the perfect replacement for our current moribund dinghy. Other visitors in 1992 included Al Pooley, who appeared in his 30-foot boat, "Alcedo," after sailing from Nova Scotia; Ruth Fogler ('77), Tory Stevens, Liz and Jan Pierson and their families; Ken and Sue Campbell, Peter and Lisa Cunningham, Grace and Frank Henry,

Bill and Louise Huntington, a grade school group from Toronto, birding tours led by Field Guides and Victor Emanuel Nature Tours; plus the usual swarm of Murray, Wheelwright, Ingalls, and Mauck children. One night (fortunately only one night) there were 27 of us at the dinner table. A reminder to Bowdoin Scientific Station alumni who wish to visit Kent Island: day visits are always welcome, but overnight visits should ideally be timed to avoid the busy research months of June and July. Daily station fees are $10 for students and children, $15 for researchers without grants, and $25 for reseachers with grants, Bowdoin staff, alumni, and their families.

Our chef in 1992 was Armistead, master of the quiche and the shag. She cooked with talent, creativity, and unflagging cheer. The major student exodus in late July was commemorated by an original composition, "In the misty morning fog" (performed to the tune of "Brown-eyed girl").

Miscellania

The supply of Bowdoin Scientific Station T-shirts is nearly exhausted except for a few white ones with a black silhouette of a storm-petrel flying across an outline of the island. If there is enough demand, additional shirts in navy or other colors can be ordered. For those of you who purchased shirts, sent donations to the Kent Island Fund, or contributed in many other ways to the program, your support came at an important time and has been much appreciated. A group that deserves special acknowledgement for their help in gaining grant support are the members of the Bowdoin Scientific Station Site Advisory Committee: Drs. Dee Boersma, Peter Cannell, Tom Eisner, Si Levin, Ed Minot, Gordon Orians, Lou Pitelka, Bob Ricklefs, and Haven Wiley.

The original Annual Reports preserved a valuable historical and biological record of the early years of the Bowdoin Scientific Station, and I hope that the information in these reports may someday prove equally useful. To that end, I should set the record straight and correct two mistakes from the 1990 Annual Report. First, during the cold summer of 1990, the first complete Tree Swallow clutch (not the first egg) was found on May 31. Second, the new research laboratory, finished that spring, was the second building constructed on the island in 50 years; the first was the Caretaker's cottage erected by Myron Tate in the 1960s. Please let me know if you find other errata.

List of Publications from the Bowdoin Scientific Station

The 1987 Annual Report of the Bowdoin Scientific Station listed all of the publications of which I was aware at the time. Counting articles that I'd overlooked plus more recent publications, 109 articles have been published in peer-reviewed journals based on research on Kent Island. At least 38 of them were authored by students, as indicated by asterisks. Numbers in parentheses represent Contribution Numbers from the Bowdoin Scientific Station.

* Gross, W.A.O. 1935. The life history cycle of Leach's Petrel (Oceanodroma leucorhoa leucorhoa) on the outer sea islands of the Bay of Fundy Auk 52: 382-399. (1)
* Gross, W.A.O. 1936. Kent's Island -- Outpost of Science. Natural History 37: 195-210.
Gross, A.O. 1937. Birds of the Bowdoin-MacMillan Arctic Expedition. Auk 54: 12-42. (2)
* Gross, T.A. 1937. Designing the first stage of the speech amplifier. Q.S.T. 21: 33-100.
Gross, A.O. 1938. Eider Ducks of Kent's Island. Auk 55: 387-400. (3)
* Gross, T.A. 1938. Operation of zero-bias modulators. Radio 230: 21-23.
Pettingill, O.S., Jr. 1939. The bird life of the Grand Manan Archipelago. Proceedings of the Nova Scotia Institute of Science 19: 293-327. (5)
Griffin, D.R. 1940. Homing experiments with Leach's Petrels. Auk 57: 61-74. (6)
Gross, A.O. 1940. The migration of Kent Island Herring Gulls. Bird-Banding 11: 129-155. (7)
* Cunningham, R.M. 1941. Chloride content of fog water in relation to air trajectory. Bulletin of the American Meterological Society 22: 17-20. (8)
Gross, A.O. 1944. Food of the Snowy Owl. Auk 61: 1-18. (9)
* Poor, H.H. 1944. Color-banded adult Herring Gulls. Bird-Banding 15: 112-114.
Gross, A.O. 1944. The present status of the American Eider on the Maine coast. Wilson Bulletin 56: 15-26 (10)
Gross, A.O. 1945. The present status of the Double-crested Cormorant on the coast of Maine. Auk 61: 513-537. (12)
Gross, A.O. 1945. The present status of the Great Black-Backed Gull on the coast of Maine. Auk 62: 241-256 (13)

Gross, A.O. 1945. The Laughing Gull on the coast of Maine. Bird-Banding 16: 53-57. (14)

Gross, A.O. 1945. The Black duck nesting on the outer coastal islands of Maine. Auk 62: 620-622. (15)

Gross, A.O. 1947. Recoveries of banded Leach's Petrels. Bird-Banding 18: 117-126. (16)

* Paynter, R.A.1947. The fate of banded Kent Island Herring Gulls. Bird-Banding 18: 156-170. (17)

Gross, A.O. 1947. Cyclic invasions of the Snowy Owl and the migration of 1945-1946. Auk 64: 584-601. (18)

* Winn, H.E. 1947. The Black Guillemots of Kent Island. Bulletin of the Massachusetts Audubon Society 31. (19)

Gross, A.O. 1948. Gulls of Muskeget Island. Bulletin of the Massachusetts Audubon Society 32: 43-46. (20)

* Paynter, R.A. 1949. Clutch-size and the egg and chick mortality of Kent Island Herring Gulls. Ecology 30: 146-166. (21)

Folk, G.E., Jr. 1949. Body temperature of Leach's Petrel. Anatomical Record 105: 110.

* Winn, H.E. 1950. The Black Guillemot of Kent Island, Bay of Fundy. Auk 67: 477-485. (22)

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* Paynter, R.A. 1951. Clutch-size and egg mortality of Kent Island Eiders. Ecology 32: 497-507. (23)

* Paynter, R.A. 1954. Interrelations between clutch-size, brood-size, prefledging survival, and weight in Kent Island Tree Swallows. Bird Banding 25: 35-38, 102-110, 136-148. (24)

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* Billings, S.M., 1968. Homing in Leach's Petrel. Auk 85: 36-43. (33)

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* Gobeil, R.E. 1968. The double scratch in the genus Passerculus. Wilson Bulletin 80: 334-335.

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Grubb, T.C., Jr. 1970. Burrow digging techniques of Leach's Petrel. Auk 87: 587-588. (35)

* Gill, D.E., W.J.L. Sladen, and C.E. Huntington. 1970. A technique for capturing petrels and shearwaters at sea. Bird-Banding 41: 111-113. (36)

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* McCain, J., Pike, R.B., and Hodgdon, A.R. 1973. The vascular flora of Kent Island, Grand Manan, New Brunswick. Rhodora 75: 311-322. (40)

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* McCain, J.W. 1975. A vegetational survey of the vascular plants of the Kent Island Group, Grand Manan, New Brunswick. Rhodora 77: 810. (43)

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Beginning in 1993, the Maine Naturalist (a reincarnation of the Maine Field Naturalist) will publish scientific articles and notes on the natural history of Maine, New England, and the Canadian Maritime Provinces. Contributions by students are particularly welcome. Consider polishing that unpublished summer independent research project or writing up that peculiar observation from Kent Island. For more information, write Maine Naturalist, P.C. Box 99, Steuben, ME 04680. The Razorbill, the bimonthly newsletter of the Grand Manan Field Naturalists (GMFN), was launched in 1992. It presents detailed notes about the archipelago's weather, geology, invertebrates, mammals, birds, reptiles, amphibians, and wildflowers. To become a member of the GMFN and receive the newsletter, send $10 (Canadian) to Brian Dalzell, P.O. Box 145, Castalia, NB E0G 1L0.

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