



ALFRED OTTO GROSS, 1883–1970

(At his desk in 1953)

IN MEMORIAM: ALFRED OTTO GROSS

RAYMOND A. PAYNTER, JR.

AFTER he had taught at Bowdoin College for fourteen years, Alfred Gross was offered a position at one of the country's most respected universities. Four years earlier Bowdoin had promoted him to a full professorship, he had several research projects well underway, and he thoroughly enjoyed teaching at this small but excellent liberal arts college in a village close to the ocean in rural Maine. Seeing that the man they sought was content and would be difficult to entice, the selection committee pointed out that a position at their university carried far greater prestige than one at Bowdoin. Forty years later, in writing of this event in an unpublished autobiography prepared for his family, Gross stated, "I would never lean on any institution for prestige. My status was dependent on my own accomplishments. I was pleased to have the offer but I am glad I never was tempted to leave Bowdoin."

This episode was characteristic of Alfred Gross. Throughout his long life he made his way independently, propelled by a strong inner drive and maintained by a liberal measure of self-discipline. These attributes manifested themselves early in Gross' life and did not diminish, even in mid-career when for many men, particularly in small colleges, the security of academic tenure erodes much of one's youthful motivation. Quietly, unobtrusively, he pursued his research, published carefully prepared papers, and built a distinguished reputation.

Alfred Otto Gross was born on 8 April 1883 in Mackville, a village close to the town of Atwood in east-central Illinois. He was the ninth child of Henry Gross and Sophia Gross Gross who had emigrated from Kadelburg, Germany, thirty years earlier. Henry Gross ran a mercantile business in Atwood but maintained an extensive farm at Mackville, where Alfred, seven years younger than the next youngest child, grew up enjoying the attention of older siblings and the indulgence of parents who were well into middle age when he was born.

Life on a farm, a father whose agricultural pursuits ranged beyond those necessary to make a living, and a devoted older brother who taught Alfred to hunt, doubtless all fostered his interests in natural history. But he did not like farm work and, after graduating from high school as valedictorian in 1900, he wanted to continue his education. He could expect no help from his father, who was now seventy-one, because of financial stringencies, and perhaps a self-made man's belief that his son, at seventeen, should be beginning life's work.

As Atwood High School was unaccredited, its students could not be admitted directly to the University of Illinois. Therefore this ambitious farm boy had first to attend the University of Illinois Academy, a post-graduate school. Taking an examination, he won admittance with a full scholarship. Alfred still had the problem of obtaining money for living expenses in Urbana, but this proved less of an obstacle than expected when he accompanied a cousin to an agricultural meeting at the university and spent his time at the Natural History Museum. There he met Joseph H. Ridgway, a taxidermist and brother of the ornithologist Robert Ridgway, who was soon leaving for another position. After watching Alfred mount several birds, Ridgway suggested to Frank Smith, professor of zoology and curator of the museum, that he be hired as a replacement. Soon Gross was employed as a taxidermist and living in Urbana. He entered University of Illinois Academy in the fall of 1902, continuing part time as a taxidermist in the museum. The following year he began college.

One of the most important events in Gross' career occurred when he was a junior at the university in 1905. Stephen A. Forbes, director of the Illinois Natural History Laboratory, the forerunner of the Illinois Natural History Survey, having heard of this eager, industrious student, offered him the job of directing the Illinois Statistical Ornithological Survey. This new venture was to be the first attempt at statewide censusing of bird populations. In the summer of 1905, working with an assistant at the university's experimental farm, Gross devised and tested techniques that finally resulted in a project for two walking observers to cross the state and count all birds seen in a strip 150 feet wide and 300 feet deep.

The census began in late August 1906 and continued for a full year, with additional work in the summers of 1908 and 1909. In all Gross and his assistant walked 3,000 miles, traversing the breadth and length of the state several times. Ten publications authored by either Forbes or Gross, or by them jointly, resulted from this survey, and a half-century later it served as the basis for a comparative study (Graber and Graber, *A comparative study of bird populations in Illinois, 1906-1909 and 1956-1958*. *Bull. Illinois State Nat. Hist. Surv.*, 28: 383-528, 1963).

In the spring of 1908, Gross was awarded the B.A. degree with Honors and with Special Honors in Zoology. After a year of working part time on the bird survey, as an assistant in the zoology courses, as a taxidermist, and as a public lecturer, he had sufficient funds to begin graduate work.

He entered Harvard in the fall of 1909 and lamented that no courses were offered in field biology or ornithology. But he soon found a fellow bird enthusiast in James L. Peters, a Harvard sophomore who later became Curator of Birds at Harvard's Museum of Comparative Zoology.

Gross decided to take his degree under the renowned physiologist George H. Parker. This meant that he would have to work in an area outside field ornithology, but here was a chance to study with the best, and the eager young man from the country was not going to lose such an opportunity. Parker had a strong influence; even in his later years Gross expressed pride in having been one of Parker's students.

Finances worried him most of the first year at Harvard, and he was uncertain that he could continue graduate work. But in the spring he was awarded a fellowship for the following year and also was given a fellowship for summer research at the Bermuda Biological Station.

With the problems of sustenance now behind him, in June 1910 he arrived in Bermuda enthusiastic and prepared to work under the direction of another Harvard luminary, E. L. Mark, on a problem concerned with measuring the ciliary activity of sponges. As a research project this proved unprofitable and, probably with few regrets, Gross turned to birds and began a study of the Yellow-billed (now the White-tailed) Tropicbird, *Phaethon lepturus*.

The following summer was again spent in Bermuda, where he completed research on the tropicbird, which was to be the first in a long series of life history studies. That summer was also noteworthy in that Alfred Gross met another visitor to Bermuda, Edna Grace Gross, a schoolteacher and amateur botanist from Reading, Pennsylvania. Though having the same surname, she was not related to the Illinois Grosses until she became Alfred's bride two years later. Curiously, Alfred's father and paternal grandfather also had each married an unrelated Gross.

The academic year of 1911-12 was particularly busy. He passed final examinations for his Ph.D., completed the manuscript for the tropicbird study, finished a thesis entitled "The reactions of arthropods to monochromatic lights of equal intensities" (*J. Exp. Zool.*, 14: 467-514, 1913), and made a decision about his future. An opportunity for postdoctoral study in Russia was available and Gross was counseled to accept it, but he planned to be married the following year and, as he was approaching the age of thirty, was anxious to begin his teaching career. He was offered teaching positions in South Dakota and Ohio and the directorship of a western museum, but these he rejected in favor of an instructorship at Bowdoin College in Brunswick, Maine. In the fall of 1912 Alfred Gross began an association with Bowdoin that was to last nearly sixty years. At first he taught embryology and comparative anatomy in the Maine Medical School, then affiliated with Bowdoin. When the school was abandoned in 1920 he became a member of the regular Bowdoin faculty, rising to a full professorship in 1922 and to be the Josiah Little Pro-

fessor of Natural Science in 1950. This latter honor doubtless would have been bestowed much earlier had the chair been vacant.

In the summers of 1915 and 1916 he worked at the Marine Biological Station at Woods Hole, Massachusetts, investigating the feeding habits and chemical sense of the sea worm, *Nereis virens* (J. Exp. Zool., 32: 427-442, 1921). Gross did not enjoy the confinement of the laboratory, and the summer of 1916 marked the last time he was to engage in such experimental work.

Major life history studies of the Dickcissel (*Spiza americana*), the Black-crowned Night Heron (*Nycticorax nycticorax*), and the Common Nighthawk (*Chordeiles minor*) occupied his research time during the next few years. Then began nearly a decade of particularly intense scientific activity and productivity, which was acknowledged by his elevation in the American Ornithologists' Union to the status of Member (now Elective Member) in 1922 and to Fellow in 1930.

In 1923 Gross started what he felt was his most interesting and challenging undertaking, a study on the island of Martha's Vineyard of the Heath Hen (*Tympanuchus c. cupido*) and an attempt to save it from extinction. This work continued until 1932 when, in spite of all efforts, the last Heath Hen disappeared.

Concurrent with much of the Heath Hen investigation was a study of the fluctuations in populations of the Ruffed Grouse (*Bonasa umbellus*) in New England. This was a cooperative study, directed by Gross, which besides field work included the laboratory examination of over two thousand fresh specimens of grouse, as well as many of owls and hawks. Also during the same period he found time for an intensive study of the Prairie Chicken (*Tympanuchus cupido pinnatus*) in Wisconsin and for two long field trips to Panama and nearby countries.

In 1931 accompanied by his son William and Thornton W. Burgess, the popular writer of nature stories for children, he visited Labrador. This trip may have caused his shift of interest from upland game birds to marine species. He made a second trip the following year, and in 1934 a voyage with Commander (later Rear Admiral) Donald B. MacMillan took him as far north as Hudson Strait. Ten years later MacMillan named Gross Island in Frobisher Bay, Baffin Island, in his honor, a tribute that delighted this modest man.

In the early 1930s the fishing industry of New England was becoming increasingly concerned over the burgeoning populations of Herring Gulls (*Larus argentatus*) and Double-crested Cormorants (*Phalacrocorax auritus*). The U. S. Fish and Wildlife Service asked Gross to study these two species and to devise and execute methods to control their numbers. He held the position of part-time Biologist from 1933 to 1952, during

which time he made numerous survey trips along the coast. To prevent the hatching of eggs he developed a spray of emulsified oil and formalin that considerably reduced the populations of gulls and cormorants before the project was discontinued.

At the mouth of the Bay of Fundy, to the east of Grand Manan, lies Kent Island, which had a significant role in Gross's later career. The island was bought by J. Sterling Rockefeller in 1930 to preserve its population of breeding Common Eiders (*Somateria mollissima*). At Rockefeller's request, Gross made a brief study of these eiders in 1932. Two years later his son William Gross, who was a Bowdoin undergraduate, together with a small party of fellow students, spent the summer on the island studying its large colonies of Herring Gulls (*Larus argentatus*) and Leach's Petrels (*Oceanodroma leucorhoa*). At the urging of both Grosses, Rockefeller gave Kent Island to Bowdoin for use as a research facility. Much of Gross' future work on eiders, gulls, and petrels was done at the Bowdoin Scientific Station, of which he was director. Here, also, several of his students who went on to careers in biology had their introduction to field work.

During the years of the Second World War Gross's visits to Kent Island and his field work in general were curtailed by the burden of summer teaching. But during this period he wrote a number of species accounts for A. C. Bent's "Life histories of North American birds" and completed several papers on the marine birds he had studied while on the continuing Fish and Wildlife Service gull control project.

With the end of the war he was able to take a sabbatical in 1947-48. Part of this time he spent in Cuba studying the Least Grebe (*Podiceps dominicus*) and part in Arizona at work on the Mexican Jay (*Aphelocoma ultramarina*). He made a third and final trip to Panama during the summer of 1949, that allowed him to complete three life history studies begun in 1927.

Alfred Gross retired in 1953, after 41 years on the Bowdoin faculty. For most students he was rather a remote figure, even on a campus as small as Bowdoin's. A man of medium build with an ever-present pipe and a somewhat rumpled professorial appearance, he arrived shortly before class time, trudged the long flight of stairs to his third-floor office, and immediately after class left for his comfortable study at home. His lectures were carefully prepared and thorough, but a student could appreciate little of his personality from these brief and formal encounters. In the field or in his gracious home students found him a warm, considerate person with a streak of gentle humor. Mornings before field trips his class assembled at his nearby home for coffee and doughnuts. A sleepy latecomer, arriving after the doughnuts were nearly depleted,

might discover himself biting into a carefully sugar-dusted rubber replica. At a Sunday luncheon for a few students one might hear him good-naturedly tease Mrs. Gross, who pretended outrage, by recounting how he supposedly proposed marriage to Miss Gross by asking if she would care to avoid the confusion of giving up her maiden name by marrying him. A student leaving after a pleasant evening at the Gross home gained a little insight into his professor when he saw elderly "Shorty," the rotund dachshund, being carefully covered by a blanket in his basket in the hall.

For a professor in a small liberal arts college, Gross had an impressive number of students who became professional biologists. These students, as well as younger colleagues at Bowdoin, found him a good listener and a friendly advisor. There was a strong bond of affection and admiration between student and mentor. When he said, as he often did, "Your success is mine," it was with genuine sincerity and honest pride.

Although Alfred Gross was a good teacher and enjoyed teaching, he was devoted to research, as his impressive bibliography of over 200 titles testifies. For 28 years he served as Milk Inspector for the town of Brunswick, and he used the small supplementary income from this position to support his field work. As a man strongly dedicated to making his way independently, it is doubtful that he would have utilized grants to finance his research or to pay a summer stipend, had they then been available. He believed that research was an integral part of teaching, even outside the large universities, and frequently advised his students: "Never neglect your research. It and the publications deriving from it are the most important things you will accomplish as a teacher and a scholar."

For a decade after 1953 Alfred and Edna Gross had what can only be described as the ideal retirement. In good health, they traveled extensively throughout the world, taking the opportunity to attend international meetings, to visit old friends and former students, and to meet ornithologists previously known only through publications and correspondence. Each summer they returned to Maine to enjoy the company of their three children and many grandchildren, who came to the Grosses' cottage on the coast near Brunswick. Alfred Gross also found time to write scientific papers as well as popular articles in prolific numbers, to report new observations with enthusiasm, and to undertake long-thought-about projects.

In 1959, in his characteristically considerate manner, Alfred Gross presented to Bowdoin his large ornithological library, as well as extensive files, notes, photographs, and movie films. He and members of his family also established a fund to assist students doing special work in biology.

Travel became less pleasurable as the years passed and he spent more time at home in Brunswick. He kept busy putting old files in order, preparing an autobiography for his descendants, and continuing his research, although at a reduced rate. In an ordered, careful manner everything was prepared for the end of a long and productive life. Mrs. Gross died suddenly on Christmas Day, 1968. Alfred Otto Gross died on 9 May 1970 at the age of 87.

PRINCIPAL ORNITHOLOGICAL PUBLICATIONS

(The 25 studies written for Bent's "Life histories of North American birds" are not included. A complete bibliography is in the Alfred O. Gross Library of Ornithology, Bowdoin College.)

1912. Observations on the Yellow-billed Tropic-bird (*Phaëthon americanus* Grant) of the Bermuda Islands. *Auk*, 29: 49-71.
1921. The Dickcissel (*Spiza americana*) of the Illinois prairies. *Ibid.*, 38: 1-26, 163-184.
1923. (with S. A. Forbes). On the numbers and local distribution of Illinois land birds of the open country in winter, spring, and summer. *Bull. Illinois Nat. Hist. Surv.*, 14: 397-453.
- The Black-crowned Night Heron (*Nycticorax nycticorax naevius*) of Sandy Neck. *Auk*, 40: 1-30, 191-214.
1928. The Heath Hen. *Mem. Boston Soc. Nat. Hist.*, 6: 491-588.
1930. Progress report of the Wisconsin Prairie Chicken investigation. *Wisconsin Conserv. Comm.*, 112 pp.
1931. Snowy Owl migration—1930-1931. *Auk*, 48: 501-511.
1937. Birds of the Bowdoin-MacMillan Arctic Expedition 1934. *Ibid.*, 54: 12-42.
1938. Eider Ducks of Kent's Island. *Ibid.*, 55: 387-400.
1940. Migration of Kent Island Herring Gulls. *Bird-Banding*, 11: 129-155.
1944. Food of the Snowy Owl. *Auk*, 61: 1-18.
- The present status of the American Eider on the Maine coast. *Wilson Bull.*, 65: 15-26.
- The present status of the Double-crested Cormorant on the coast of Maine. *Auk*, 61: 513-537.
1945. The present status of the Great Black-backed Gull on the coast of Maine. *Ibid.*, 62: 241-256.
1947. Recoveries of banded Leach's Petrels. *Bird-Banding*, 18: 117-126.
- Cyclic invasions of the Snowy Owl and the migration of 1945-1946. *Auk*, 64: 584-601.
1949. The Antillean Grebe at Central Soledad, Cuba. *Ibid.*, 66: 42-52.
1950. Nesting of the Streaked Flycatcher in Panama. *Wilson Bull.*, 62: 183-193.
1952. Nesting of Hicks' Seedeater at Barro Colorado, Canal Zone. *Auk*, 69: 433-446.
1958. Life history of the Bananaquit of Tobago Island. *Wilson Bull.*, 70: 257-279.
1964. Nesting of the Black-tailed Flycatcher on Barro Colorado Island. *Ibid.*, 78: 248-256.

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