

1992

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Recommended Citation

Shrimper, George D. (1992) "The University of Iowa Museum of Natural History: An Historical Perspective," *Journal of the Iowa Academy of Science: JIAS*, 99(4), 86-97.

Available at: <https://scholarworks.uni.edu/jias/vol99/iss4/8>

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The University of Iowa Museum of Natural History An Historical Perspective

GEORGE D. SCHRIMPER

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The 132-year record of UIMNH essentially mirrors historical and on-going trends in related institutions. As scholarship grew in the natural sciences during the 19th century, natural history museums became centers for scientific research. A "Golden Age" of museum-based expeditionary work and taxonomic research was marked at UI by the careers of curator/naturalists Calvin, Nutting, Macbride, and Shimek. Systematic biology and paleontology thrived with the accumulation of extensive collections. De-emphasis of "natural history" studies followed after 1920-30 with a concomitant growth in cellular and molecular biology. In seeking new directions and financial support, many museums, including UIMNH, shifted emphasis to public education through exhibition and outreach programs (Iowa Hall project). Now, new emphases on collection-based research due to world-wide environmental concerns prove the relevance and resilience of museums.

INDEX DESCRIPTORS: Museum history, early naturalists, expeditions, exhibits, collections.

Each year the University of Iowa Museum of Natural History hosts an estimated 60,000 visitors who are drawn to the campus by natural history exhibits that are as diverse as nature itself. A 48-foot long skeleton of an Atlantic right whale; a group of walrus collected in 1897 by noted Arctic explorer Robert E. Peary; a reconstruction of a Devonian Age coral reef; and a multitude of North American birds are just some of the public displays located in Macbride Hall.

Unseen by public visitors are extensive repository collections in excess of one million specimens that support research projects of resident faculty and visiting scholars (Semken and Schrimper, 1978). These have been systematically curated for over a century and now provide a pre-modern data base for both systematic and molecular studies of environmental change.

THE BEGINNINGS

The 132-year record of the Museum of Natural History generally mirrors historical and on-going trends in the museum field. Its history is also conjoined with the careers of four distinguished early teacher/naturalists — Samuel Calvin, Thomas Macbride, Charles Nutting, and Bohumil Shimek. They, with other pioneer Iowa scientists, ventured into the field to obtain specimens at a time when travel was slow and often hazardous. Their collections provided the beginnings of the Museum; their research provided the foundation for much of our present knowledge of Iowa's natural history.

The Museum, second oldest¹ in the U.S. west of the Mississippi River, was established in 1858 when the Iowa General Assembly directed the University to house specimens from the State Natural History and Geological Surveys in a "cabinet" of natural history to be located in the Old Capitol building (Dill, 1952; Kohler, 1944). The directive was in response to a faculty petition requesting funding for specimens and space to support teaching in the natural sciences. The appeal compared Iowa's paucity in such resources to the abundant collections managed by several leading eastern universities in the U.S. as well as the British Museum:

Another source of expense arises in the collection of the various and valuable cabinets of natural history, including agriculture, geological, mineralogical, botanical, paleontological, and zoological cabinets, with collections in science and art, and cabinets of historical relics, and the antiquities of our own and other countries. Our deficiency might be shown by a reference to the collections of Williams, Amherst, and Yale Colleges, to Howard University, and especially to the magnificent cabinets of the British Museum of London...

(Memorial of the Faculty of the State University to the General Assembly of the State of Iowa, December, 1857)

Out of this wide-ranging request came the legislative resolution establishing the Museum:

Be it enacted by the General Assembly of the State of Iowa, that there be and hereby is appropriated out of any money in the State Treasury not otherwise appropriated the sum of three thousand dollars for repairing and modifying the building now occupied by the State University of Iowa, and for fitting up one or more rooms thereof for a cabinet to receive the specimens collected and to be collected by the State Geologist.

(Acts and Resolutions Passed at the Regular Session of the Seventh General Assembly of the State of Iowa, 1858.)

The "building" referenced in the legislative charge was the Old Capitol, the University's only building in 1858.

EARLY CURATORS — DEVELOPING THE COLLECTIONS

James Hall was appointed State Geologist and professor of Natural History in 1855, the University's first year of operation (Stromsten, 1950). In 1858 he was appointed as the first curator of the Cabinet of Natural History but failed to appear when it was time to assume his duties. The University went bankrupt during his 1855 appointment, an event which doubtless influenced his later decision.

Theodore S. Parvin succeeded Hall in 1859, serving as Curator of the Cabinet, Professor of Natural History, and University Librarian (Morcombe, 1906). In addition to his curatorial duties, Parvin taught courses in botany, zoology, meteorology, physical geography, mineralogy, geology, and physiology. Adding to his burdens, in 1865, Parvin's teaching duties were extended to include five more courses within the Department of History and Political Economy.

In 1866, Parvin was instrumental in inviting the great Harvard scientist, Louis Agassiz, to Iowa City to examine fossil crinoid specimens from Devonian outcrops along the Iowa River (Stromsten, 1950). Under Agassiz, the Harvard Museum of Comparative Zoology had been elevated to international preeminence, and his utilization of natural history collections for laboratory teaching exercises helped establish a fundamental appreciation of their academic value ["Go to Nature; take the facts into your own hands; look and see for yourself"]. Parvin was pleased when his renowned guest supported the expansion of his scientific teaching collections in conversations with the University President Oliver Spencer.

The general status of the Cabinet of Natural History collections under Parvin is noted in The University Catalogue for 1867-68:

The Cabinet of the University contains a large collection of valuable specimens especially adapted to the illustration of the Geological Formations and the Natural History of Iowa. Through the labors of Dr. C.A. White, the State Geologist, it has been very largely increased during the past year, and contains a complete set of rocks and fossils thus far noticed in the

¹The California Academy of Science, San Francisco, was founded in 1853.

Geological Survey of the State.

(Catalogue of the State University of Iowa, 1867-68.)

The primary emphasis on geological collecting during this early period stemmed from the legislative enactment linking the Cabinet to the activities of the State Geologist — the State Geologist also serving the University as Professor of Natural History. The earliest geological surveys of Iowa were undertaken in approximately 1848 and were concluded by 1872. Three formal surveys were conducted during this period, the first by David Dale Owen, United States Geologist; the second by James Hall, and the third by Charles A. White (Furnish, et al., 1982). That Hall and White served as curators of the Cabinet, and curator Parvin was closely associated with the work of the Iowa Geological Survey, provides context for the early accumulation of geological specimens.

Charles A. White, Parvin's successor as curator in 1871, seized upon Agazziz's "laboratory method" of teaching to enhance his arguments to then University President Thacher for an expansion of the Cabinet's limited collections: "The method of object teaching is now adopted in the zoology classes of the best schools of the country — a moderate expenditure would enable me to introduce this method into my classes which is now impossible for want of suitable collections." This, combined with a deficiency of representative zoological materials, provided the basis of White's appeal to President Thacher for greater support:

Our own State, and even our vicinity would furnish much of value if means were provided for collecting and preserving the specimens. This is especially true respecting birds and mammals... Many of our indigenous animals have already passed beyond the borders of our State, never to return, and others are fast following them. Unless something is soon done to secure specimens of these for the Cabinet, our students must go to the institutions of other states, or to foreign countries to gain a knowledge of our aboriginal fauna.

(Report of Professor C.A. White to Rev. George Thacher, President of Iowa State University, 1871.)

Frustrated by what he perceived to be a lack of support, Prof. White left the University in 1873 for a similar position at Bowdoin College, Brunswick, Maine, taking with him many specimens from the Cabinet which he had personally collected or purchased. This action apparently was more effective than his words, as the beleaguered President Thacher subsequently reported to the Board of Regents: "The removal of Dr. White's private cabinet has so far diminished our means of illustrating the several branches of science...as to give the hall in which they are kept a melancholy look of poverty. To say nothing of the very great need of a large supply of these means for the instruction of our classes, mere respectability demands at least that our now empty showcases be quickly filled again with valuable specimens" (Report of the President of the State University to the Board of Regents, 1873).

Charles White was succeeded by Samuel Calvin (Thornton, 1947) who was hired in 1873 as Acting Professor of Natural Science and Curator of the Cabinet of Natural History. The following year he was appointed full professor and given responsibility for instruction in geology, zoology, botany, and physiology.

As teacher and curator, Calvin also noted the shortcomings of the Cabinet of Natural History. In a notably succinct statement, he reported to the Board of Regents in 1875: "The pressing wants of this chair of Natural Science may be briefly summarized in two words, *more specimens...*" (Report of Professor Samuel Calvin to the Board of Regents, 1875).

Specifically, Calvin requested of the Board a total of \$2,000 for support of his instruction in the natural sciences. This included \$600 to be spent over two years for mounted specimens of birds and mammals, and \$1,000 for purchase of fossils typical of localities beyond Iowa. His objective, like predecessors Parvin and White, was to expand the collections to a size to which they could effectively

illustrate and support his lectures. Calvin's request was granted.

Calvin also focused on the inadequate representation of Iowa's famed fossil crinoids in the University Cabinet:

I have heretofore called attention to the poverty of the Cabinet in a group of fossils of which our state has furnished more and more perfect specimens than any other similar area in the world. I refer to the crinoids of which the bluffs around Burlington alone have furnished hundreds of species and thousands of specimens to geological cabinets and yet in the University Cabinet there is not above a score of specimens altogether in a condition perfect enough for study.

(Appendix to the Report of the Board of Regents of the State University of Iowa, 1875.)

CHARLES NUTTING AND THE EXPEDITIONARY PERIOD

Charles C. Nutting (Fig. 1), who had come to the University as a graduate student under Calvin, was appointed curator of the Cabinet of Natural History and Instructor of Natural Science in 1886 (Taylor, 1943). He served as curator of the Museum (renamed in 1887 from the earlier "Cabinet") for the next 41 years. With Samuel Calvin and Thomas Macbride, Nutting was part of the "great triumvirate" (Taylor, 1943) of University of Iowa naturalists who explored the entire realm of natural science (Schertz and Myers, 1947). His primary research interest was in the taxonomy and geographic distribution of animals. In 1889 he was named head of the newly-organized Department of Systematic Zoology.

Nutting's investigations, unusual for a scientist of that time in land-bound Iowa, were primarily directed to marine biology. He published extensively for both the University and Smithsonian Institution on marine hydroids. In all, Nutting described 134 new species, and produced a beautifully illustrated three-volume monograph on American hydroids, a classic of its kind.

The Museum also received its first significant donations of birds (Schrimper, 1982) and mammal specimens under the curatorial stewardship of Nutting. In 1886 both William Temple Hornaday and Dr. Asa Horr donated their personal collections. An avid hunter and collector, Hornaday had earlier been sent by proprietor Henry Ward of Ward's Natural Sciences Establishment, Rochester, New York, on a three-year (1876-78) round-the-world expedition to "collect two of every animal, both large and small" (Dolph, 1975). An agreement with Ward enabled Hornaday to keep one of each species that he collected for his own personal use in exchange for mounting the other specimen for sale by Ward's thriving taxidermy and museum supply business. A total of 125 Hornaday specimens were received by the Museum, including a number of rare Australian marsupials.

The Iowa-raised Hornaday, a taxidermist and pioneer in the development of natural history dioramas as well as first director of the New York (Bronx) Zoological Park, later championed the cause of wildlife conservation at a time when few people recognized the need to preserve our natural heritage. The plight of the American bison, nearly extinct by 1890, became Hornaday's crusade. Largely through his efforts in organizing the American Bison Society and the aid of influential friends, including Andrew Carnegie and Theodore Roosevelt, the bison were saved through the breeding of captive (zoo) stock and establishment of Western refuges.

The bird collection of physician and naturalist Dr. Asa Horr (Aldrich, 1896) of Dubuque, Iowa, included 171 mounted specimens. The student newspaper Vidette Reporter commented in 1887:

Among the most desirable forms may be noticed a fine Bald Eagle, three Loons, two Cormorants, a White Swan, a number of splendid Hawks and Owls, among which we noticed a Snowy Owl of gigantic dimensions, being larger than the extreme limits given by the authorities... The Horr collection...nearly doubles the number of species represented... We now have nearly 1,200 specimens of birds.

(The Vidette Reporter, February 19, 1887)

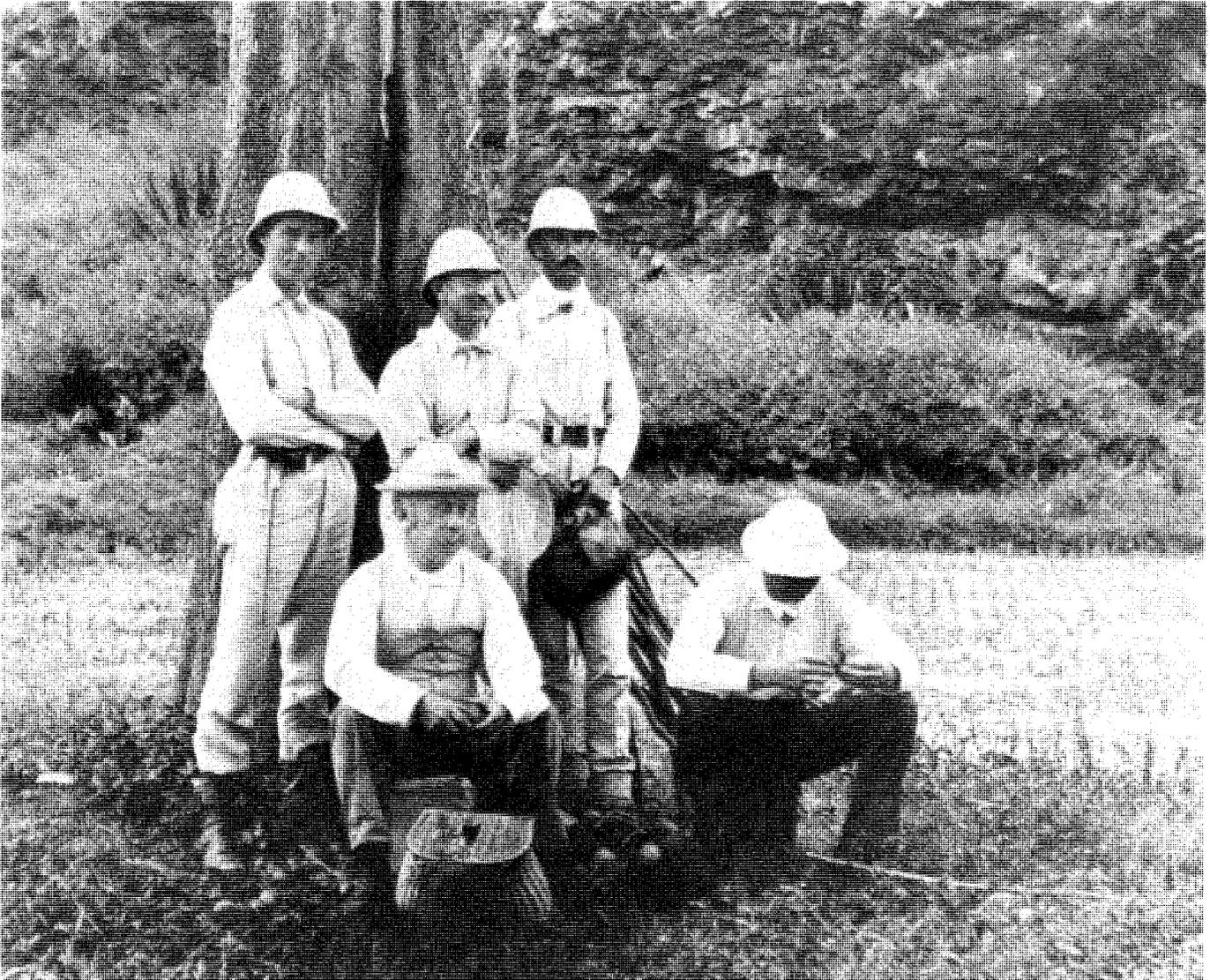


Fig. 1. Prof. Charles C. Nutting (seated, left foreground) with fellow scientists on the island of Kauai during the U.S. Fish Commission's 1902 Albatross Expedition. Nutting and his colleagues surveyed birds and marine life of the mid-Pacific.

One of the most significant private collections secured by Nutting was that of Daniel H. Talbot, in 1891. The Talbot collection numbered in excess of 7,000 specimens, and provided the Museum with ornithological rarities, including Passenger Pigeons, Ivory-billed Woodpeckers, Whooping Cranes and Carolina Parakeets. Talbot, a wealthy Sioux City land speculator, has been described as a bird collector from the "old school" (Stephens, 1944). As a consequence of a celebrated collecting foray down the Arkansas River in 1882, Talbot was credited as having "quite literally cleaned out the last bunch of Parakeets in the Indian Territory" (Oklahoma) (Paluka, 1975). However, the Museum now has an excellent series of Carolina Parakeets from the "Cherokee Nation, Indian Territory." Talbot's extensive ornithological library, including two sets of Audubon's *The Birds of America*, Wilson's *American Ornithology*, and other rare editions, was also donated to the Special Collections division of the University Library in 1891.

Expeditionary work was the basis for Charles Nutting's scientific reputation. Even before coming to the University of Iowa, Nutting had demonstrated his capability and enthusiasm for arduous field work by collecting for the Smithsonian Institution in Costa Rica and Nicaragua in 1882-83:

I strapped on my "machete," slung my collecting basket over my shoulder, took down my shotgun, and was prepared for the business for which the United States National Museum had sent me to that out-of-the-way corner of other world, i.e., the collecting of birds and other objects of natural history.

(Charles Nutting, 1884)

For over 30 years he organized, directed, and participated in a series of University expeditions which collected specimens for support of his taxonomic research as well as public display. These activities suitably blended Nutting's work into the mainstream emphasis of scientific inquiry of that era, a research emphasis in systematic biology linked with the concomitant growth of natural history museums in North America and Europe.

In historical context, the development and growth of systematic museum collections was a consequence of a trend during the second half of the 19th century toward increasing museum specialization. Out of the eclecticism of early museums there had evolved by 1880 the four basic types that are recognized today: art, history, natural history (including anthropology), and science and technology. And, in a correlative manner, as scholarship grew in specialized fields, related

museums gained recognition. Natural history museums led this development and, with their repositories, became new centers for research and scholarly activity. The pioneering work of Lamarck, Cuvier, Darwin, and other early evolutionary theorists served as catalyst for a "Golden Age" of museum-based expeditionary work. The fascination with new species as well as the need to test and corroborate the theory of organic evolution acted as a driving force behind naturalists' exploits into unknown lands. Systematic biology — the description, illustration, and classification of living and fossil organisms — was dependent upon the accumulation and management of extensive collections. (Schrimper, et al., 1990). Charles Nutting and his early University of Iowa colleagues were on the cutting edge of these investigations.

Nutting also recognized the value of an interested public's attention to and support of his work. The Museum of Natural History served not only as a repository but also as a public window to scientific research. Shrewdly, Nutting gave equal attention to the development of popular exhibits. By 1894 Nutting's exhibits — systematic series of specimens crowded together in glass-topped cases — were a popular campus attraction: "We as students of the University are very justly proud of our Museum, and when friends come to visit us that is one of the first places to which we think of taking them."

(Vidette Reporter, April 7, 1894.)

To obtain specimens for both research and museum display, Prof. Nutting organized University expeditions to the Bay of Fundy (1890), Manitoba (1891), the Bahama and Dry Tortugas Islands (1893), Hawaii (1902), Laysan Island (1911), Barbados and Antigua (1918), and New Zealand and the Fiji Islands (1922). After returning from each of his major expeditions, Charles Nutting gave public lectures. He was an interesting, convincing speaker, and his enthusiasm and personal anecdotes attracted a full house for five successive weeks following the Barbados-Antigua Expedition in 1918 (Nutting, 1918). He wrote his expedition journals in a popular style, filled with vivid accounts of exotic animals, lands, and cultures.

Of the various expeditions initiated during Nutting's tenure, the

1893 Bahama-Dry Tortugas Islands expedition led by Nutting, Frank Russell's one-man expedition to the Canadian Arctic in 1892-94, and the 1911 Laysan Island expedition headed by Homer Dill have been particularly well-documented. The Bahama expedition party consisted of 21 members. Nutting and his instructor-assistants, Henry Wickham and Gilbert Houser, led a group of coed University students, most of whom had never before seen salt water, on an 83-day collecting foray (Fig. 2).

It is doubtful if any skipper ever started on a three-months' cruise with a more inexperienced lot of "landlubbers"... Everything pertaining to the sea, the vessel, and marine life was novel, and the more experienced members of the party awaited developments with no little anxiety.

(Charles Nutting, 1895)

The expedition sailed from Baltimore on the "Emily Johnson," a 95-foot, two-masted schooner. It was the first time that a vessel had been chartered by a university for the express purpose of giving its students a chance to work and study at sea. They sailed nearly 3,000 miles and collected over 15,000 specimens which were subsequently used in Professor Nutting's teaching laboratory and in museum exhibits. Nutting took special interest in the hydroids. Other groups of marine invertebrates, including echinoderms, crustacea, and mollusks, were sent to the Smithsonian Institution and Yale University for further study. The expedition received particular acclaim for its success in gathering *Pentacrinus* — rare, stalked crinoids — with its primitive, hand-operated dredging equipment (Nutting, 1895).

Graduate student Frank Russell's (Fig. 3) two and one-half year exploration of northern Canada augmented the Museum's collections with many new vertebrate specimens as well as valuable ethnographic materials. With Nutting's support, Russell obtained approval from both the Hudson Bay Company and the Iowa Board of Regents to collect musk oxen (Schrimper, 1979). [In an ironic historical perspective, the argument for collecting musk oxen for science in 1892 was strengthened by concern that they were then on the verge of extinc-

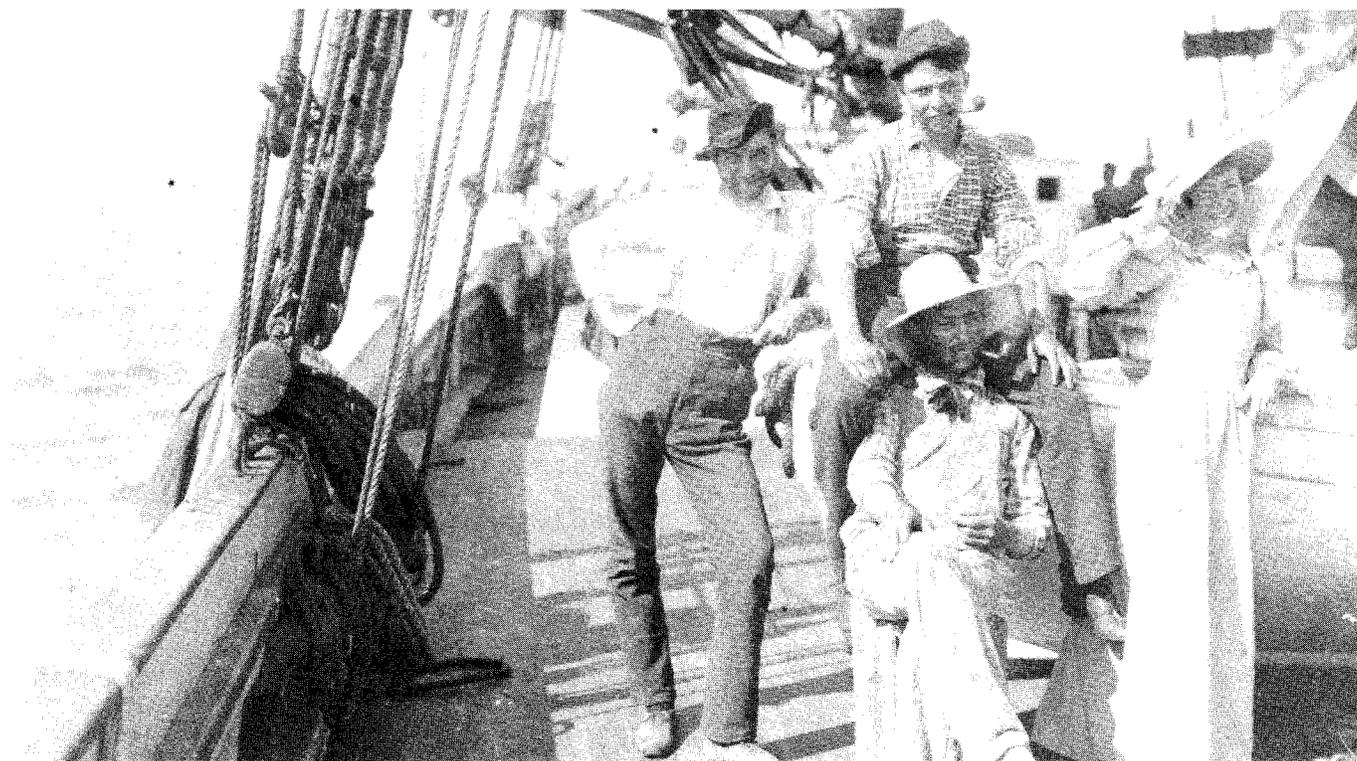


Fig. 2. The 1893 Bahama — Dry Tortugas Expedition included twelve University of Iowa students. Professor Nutting gave high praise to his students for their "hearty and ready cooperation at all times, and the zeal with which they carried on the often arduous labors of the cruise."



Fig. 3. Native Iowan Frank Russell in Far North garb. In his quest for museum specimens of musk oxen, Russell traveled by dog sled from Great Slave Lake to Bathurst Inlet on the Arctic Sea.

tion.] The Regents also charged Russell, in his words, "to pick up everything else I could lay my hands on" (Russell, 1895). Unfortunately, "through some oversight," the Regents failed to fund the expedition. At this point, University President Charles A. Schaeffer personally advanced the sum of \$2,050 which included Russell's salary of \$30 a month.

Frank Russell's adventures are described in fascinating detail in his expedition journal *Explorations in the Far North*, published by the University of Iowa in 1898. After "acclimating" himself by collecting in northern Manitoba during the fall and winter of 1892, Russell continued west via Edmonton, Alberta to Fort Chippewyan on Lake Athabaska. For the next two years he traversed the immense and lonely lands from Lake Athabaska and Great Slave Lake north to the Mackenzie delta, and westward along the Arctic coast from Bathurst Inlet to Alaska and Siberia. The privations of his northern sojourn are well-described in a commentary from Fort Rae, Northwest Territories, in February, 1894:

I did not expect to winter here, but a few hundred miles more or less in any direction cuts no figure here. This is the bleakest, dreariest, loneliest, loneliest, windiest, most God-forsaken post on earth.

(The Vidette Reporter, Feb. 6, 1894.)

Russell returned to a hero's welcome in Iowa City on November 2, 1894. In spite of his hardships², he was successful in obtaining 21 large

mammals of the north, including five musk oxen, nearly 600 birds and small mammals, and hundreds of artifacts representative of the Eskimo as well as Cree, Chippewyan, Dog Rib, and Loucheux Indian cultures.

HOUSING THE EXPANDING MUSEUM

The Museum of Natural History collections swelled with these and other additions, and Nutting became the driving force behind efforts to construct a large new museum. The Museum had earlier been moved from the Old Capitol to the newly-completed Science (now Calvin) Hall in 1885. However, by 1894 the burgeoning collections dictated that an even larger building be constructed. Nutting was a tireless advocate of a new facility that would also house the classrooms and laboratories of the Natural Science Department — inclusive of botany, geology and zoology.

More than any other individual at the University, Nutting was responsible for the construction of the Natural Sciences Building (now Macbride Hall). He enlisted the aid of prominent scientists throughout the country to help persuade the Regents of the need for a fireproof, modern structure, "...a beautiful building with a museum in its center" (Taylor, 1943). One such scientist was Professor G.R. Wieland of Yale University who examined fossil cycads collected by Thomas Macbride. Wieland subsequently wrote to Iowa Governor Shaw:

...this collection...represents material that is not only of priceless value, but is unsurpassed in excellence by that in any museum in the world. It is, therefore, a matter of deep regret to me...to find these plants are not kept in a fire proof building, much less in a place where their beauty can be seen to advantage... No matter of insurance could ever repay the people of Iowa or science for their loss.

(Vidette Reporter, April 16, 1901.)

The Daily Iowan (renamed from the earlier Vidette Reporter) gave its direct voice to the condition of the Museum and the need for better housing:

Few realize what a wealth of valuable material we possess since the crowded floor space entirely prohibits proper exhibition of many of our finest specimens. Who knows, for instance, that we own a beautiful series of seal from the Alaskan waters and of walrus taken by Peary in Greenland. How many students aside from those who are admitted to study it, are aware that we have the skeleton of a large whale stored in the darkness of an attic along with thousands of other specimens? Small wonder that the extent of our collections is not appreciated when they are packed away in odd corners exposed to constant danger from fire and mould. In time when this part of the University is properly housed, the people may know what our museum is.

(Daily Iowan, November 25, 1903.)

Nutting was particularly concerned about the risk of fire to his specimens in the overcrowded Science Hall and constantly reminded the administration of the hazard. His long-standing fears of losing the Museum's collections to fire were exacerbated by the University Library fire of June 17, 1897 (Monson, 1980). Lightning had struck the library building, burning it to the ground along with most of the books and manuscripts.

Approval for a new fire-proof Natural Sciences Building was eventually secured at the January 8, 1904 meeting of the Board of Regents. The building was to house all branches of the Natural Sciences Department — botany, zoology, and geology — as well as the Museum and herbarium. The architectural firm of Proudfoot and Bird of Des Moines was engaged for the project and, in March, 1904, Professor Nutting and architect W.T. Proudfoot visited six of the

²His health shattered by the rigors of the expedition, Russell died in 1903.

largest museums in the eastern U.S. for design studies (Daily Iowan, 1904).

In order to clear the building site for the new structure, the old Science (Calvin) Hall had to be moved (Rich, 1905). In an engineering feat that would be impressive today, the three-story brick building, weighing an estimated 6,000 tons, was raised on 800 jack-screws and gently rolled to a new location across the street (Fig. 4). Classes continued to be held in the building as it was being moved; the greatest distance traveled in one day was 17 feet. [Calvin Hall, after housing the Geology Department for many years, was renovated in the 1980's for the Office of Admissions.]

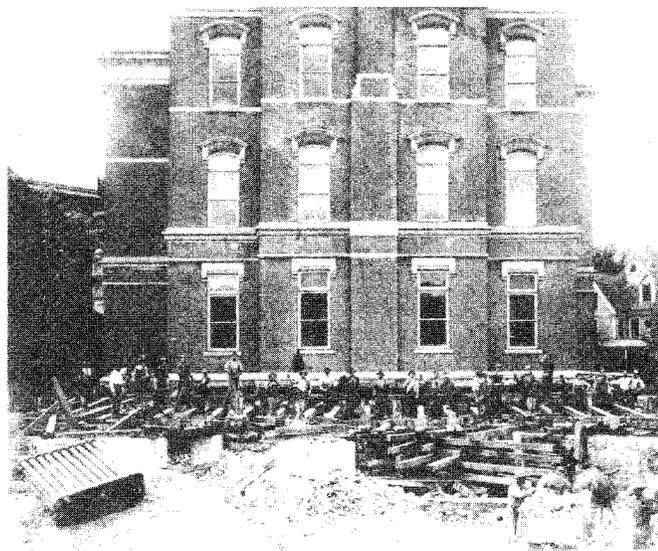


Fig. 4. Old Science Hall being moved to make room for construction of the new Natural Sciences Building (Macbride Hall).

Construction of the Natural Science Building began in the fall of 1904, and it was completed in 1907 at a cost of \$313,872.28, including furnishings (MacLean, 1908). The neoclassic stone building incorporated architectural details reminiscent of the 1893 World's Columbian Exposition in Chicago — a stately, Ionic-columned portico, an ornate rotunda with fourteen free-standing scagliola columns, and, perhaps its most distinguishing feature, designs of birds and other animals carved into the stone facade. The Daily Iowan commented as construction proceeded:

Probably one of the most novel, instructive, and...artistic pieces of exterior ornamentation in stone in the state of Iowa is that which is now being done on the new hall of natural sciences... The most prominent sides, the south, east, and north fronts of the building, will all be decorated by the carving of American animals on the several window heads.

(Daily Iowan, November 4, 1905.)

The building was a fitting architectural monument, reflecting the state's pride in the internationally-recognized work of the University of Iowa's great naturalists of that time — Samuel Calvin, Thomas Macbride, Bohumil Shimek, and Charles Nutting.

Regrettably and ironically, Prof. Nutting's plan for the Natural Science Building was not to be realized in his lifetime. Its fireproof construction, inspired in large part by the library fire of 1897, induced the University administration to use the central rotunda of the Natural Science Building, designed as an exhibit gallery, for the University library. Additionally, President George MacLean decided that a large portion of its center section would be developed as an auditorium.

Museum exhibit space was confined to three galleries on the top floors of the building — Bird Hall, Mammal Hall, and Invertebrate Hall, with a combined area of approximately 16,500 square feet.

Because of these modifications to the original architectural plan, the botany and geology departments were prevented from joining zoology and the Museum in the new building. The logic of this arrangement was seriously questioned at the time:

That there is need...for a larger auditorium...and that better library accommodations should be had all admit; that it is a wise policy to direct the best part of the building, now under construction, to those purposes — at heavy expense for fitting up, and at heavy expense later to restore the original plan — is more than doubtful. But the extra expense of building up and pulling down is not the worst feature of the policy, it is the hazard of losing by fire two of the most valuable Natural History collections [botany and geology] west of the Allegheny Mountains. Their loss would be a calamity to the University from which it would not recover in years.

(Iowa Alumnus, 1906.)

The Departments of Botany and Geology never moved into the new Natural Sciences building, and in 1926 Zoology was moved out to take advantage of laboratory facilities in a vacated building of the old Medical College as well as to provide room for unrelated departments. Invertebrate Hall, a space of 5,500 sq. ft. filled with mahogany display cases containing specimens from Charles Nutting's many marine expeditions, was dismantled to accommodate the Home Economics Department. Nutting was crushed.

During his later years, Charles Nutting also witnessed the progressive deemphasis of museum-based studies in the taxonomy and geographic distribution of animals. By 1926, the research pendulum at the University of Iowa and many other institutions had swung decisively from systematics to experimental studies driven by new interests in genetics and physiology. The shift in emphasis at Iowa was also responsive to the increasing growth and prestige of the Medical College, its needs better served by entrants trained in chemistry and cellular biology rather than whole organism biology. Nutting, with colleagues Samuel Calvin, Thomas Macbride, and somewhat later, Bohumil Shimek, had ridden the popular crest of "natural history" studies and were replaced by a younger generation of disciplinary specialists.

If saddened, Nutting was also realistic in his assessment of the diminishing stature of systematists. He spoke candidly to a professional gathering of zoologists:

Of all the departments of biological science, none offers as little that is attractive to the average man as that which has to do with classification and the host of outlandish names that the systematist delights... The average college student agrees with the general public, and will be prone to elect anything rather than systematic zoology or botany... Even the best of our fellow zoologists and botanists wish us nothing better than a speedy and painless, at any rate, speedy, death and the worst of them would be glad to hasten the day.

(Stromsen, 1950, pp. 20-21.)

Prof. Nutting died in 1927, bitter and disillusioned. In 1934 the Natural Science Building was renamed Macbride Hall.

HOMER DILL — AN EMPHASIS ON EXHIBITION

Homer R. Dill, who joined the Museum staff in 1906 as taxidermist and assistant professor of zoology (Kohler, 1944), succeeded Nutting in 1926. In 1908 he became "Director of the Exhibit of Vertebrates" under Nutting who, as curator, administered the Museum as a division within the Department of Systematic Zoology.

[The Department of Systematic Zoology had been formed out of the old Natural Sciences Department in 1889. Subsequent reorganizations resulted in separate departments for Animal Morphology and Physiol-

ogy, Geology, and Botany. The Departments of Systematic Zoology and Animal Morphology and Physiology were recombined in 1926 as the Department of Zoology. The 1926 reorganization also administratively separated the Museum of Natural History from the Department of Zoology. One year later, the Department of Zoology was moved to the building vacated by the Medical College; the Museum remained in Macbride Hall with Homer Dill as its director. The University's geological and botanical collections, except for a few specimens selected for Museum exhibits, were left under the curation of their respective departments in separate University buildings. These collections continued to develop over the following decades primarily as research and teaching support repositories.]

Homer Dill, a protege in taxidermy of William Hornaday, had served as curator of the Maine State Museum from 1901 to 1905. Hornaday later described Dill's application to the position of museum taxidermist at the University of Iowa:

[In 1906] the University of Iowa announced its intention to appoint a chief taxidermist for its museum. There were twenty-four applicants, and some of them were mighty good men. In an open and fair competition Dill won the prize and made good.

(Hornaday, 1925, p. 270.)

While still serving under Nutting, Dill established himself as a capable leader by heading collecting trips to Hawaii (1911 and 1920), Louisiana (1918), Washington (1919 and 1920), Wyoming (1921), Florida (1921), Colorado (1923), and Mexico (1924) (Fig. 5). With the exception of the 1911 Laysan Island expedition which resulted in scientific journal descriptions, these trips were organized solely to gather specimens for public display. Dill and his students expertly prepared the specimens in his "Taxidermy and Plastic Art" laboratory. The resulting dioramas, complete with foreground accessories and mural backdrops, were a significant departure from the Museum's earlier "curatorial style" displays with its uninspiring rows of mounted specimens on polished wooden bases. Dill received much acclaim for his taxidermy and exhibit work.

Homer Dill is credited with founding in 1907 the first university courses in the U.S. devoted to museum studies (Cushman, 1984). By 1917 there was sufficient interest in the University's museum training program that Dill reported to the American Association of Museums "we cannot furnish enough graduates to supply the demand for curators and other workers." Among Dill's many students are the former directors of several prestigious natural science museums including the Denver Museum of Natural History, the James Ford Bell Museum of Natural History at the University of Minnesota, and the University of Michigan Exhibit Museum, as well as numerous curators and exhibit specialists. The UI museum studies program remains active — courses have been taught continuously since 1910 by the Museum of Natural History faculty.

The hallmark exhibit of Professor Dill's tenure was the superb Laysan Island cyclorama — probably still the best known of the Museum's ornithological exhibits (Dill, 1952). Laysan and other islands of the Leeward Group in the Pacific Ocean were designated by President Roosevelt in 1909 as the Hawaiian Islands Reservation, one of this country's first bird refuges (Laycock, 1970). To study the vast Laysan bird rookeries and secure materials for a Museum display, arrangements were concluded in 1911 by Professor Nutting for a cooperative expedition between the University and the U.S. Biological Survey to visit the island. Nutting's inspiration for such an exhibit came during his visit to Laysan in 1902 as a member of the Smithsonian's "Albatross" expedition, organized to survey Pacific marine and bird life (Nutting, 1909).

Homer Dill was chosen by Nutting to head the Laysan Island expedition, from which a total of 398 birds representing 23 species were collected (Fig. 6). Of these, five species were endemic to the island — found nowhere else in the world. Professor Dill later directed the preparation of the unique exhibit. The mounting of the 106 birds



Fig. 5. Prof. Homer R. Dill at Mazatlan, Mexico in 1924. During his 43 years of service, Dill led many collecting expeditions and made extensive contributions to the Museum's bird, mammal, and fish collections.

and installation of the cyclorama foreground required nearly three years. Charles A. Corwin, a noted muralist at the Field Museum in Chicago, accompanied the expedition under an agreement that the Field Museum would be provided with a complete series of Laysan bird skins in exchange for his services (Walsten, 1986). Corwin's exhibit mural, based on field sketches made on the island, is 138 feet long and twelve feet high. When the display was completed in 1914, it was among the first museum exhibits anywhere to depict either birds or mammals in a cycloramic presentation of their natural habitat. It is recognized today by museum historians as a milestone in the evolution of the dioramic display concept (Wonders, 1989).

The expedition was not without controversy. Upon obtaining approvals for the trip, Nutting had agreed to provide the U.S. Biological Survey which, with the War Department, controlled access to the island, with 365 Laysan bird skins. He had been given authorization to collect a total of 1,030. Because Dill's collecting party spent only five weeks on the island instead of the original objective of three months, correspondingly fewer birds were obtained.

When Nutting subsequently sent the Biological Survey only 45 prepared specimens, he received a heated reply from Bureau Chief Henry W. Henshaw: "I confess I am surprised and disappointed at...the small number of specimens assigned to the Department. ...you cannot settle the obligation by basing the settlement on a vague general proposition made tentatively by you in an early letter in the correspondence" (Henshaw, 1912). Nutting, caught in the awkward position of satisfying his commitments to the government and Field Museum and still having enough bird specimens for the exhibit, was



Fig. 6. Homer R. Dill and UI student Clarence J. Albrecht preparing bird skins on Laysan Island in May, 1911. The shed was left from an early guano mining venture.

standing precariously on the vague language of an earlier letter to Henshaw in which he stated that "a series of specimens of birds and photographs illustrating the avian population would be turned over by our party to the Department of Agriculture." The irascible and bureaucratic Henshaw would have nothing of it:

I do not for a moment agree with you that the general statement contained in your letter of November 23, 1910...could possibly be accepted as the basis of a working agreement between us... A precise statement of the number of birds your party could collect and the number we were to receive from you was made in a letter by myself. As you made no protest to these terms, we assumed naturally that they were agreeable to you and that you agreed to them.

(Henshaw, 1911)³

Henshaw, after additional excoriations, eventually relented. Not wishing to seem "captious" or "cripple you and defeat the efficiency of the whole exhibit," he reluctantly agreed to accept Nutting's offer of 45 birds as final settlement.

Not so easily reconciled were Homer Dill's differences with William Alanson Bryan. Bryan, a professor of zoology at the College of Hawaii, had been granted permission by Henshaw to join the expedition late in the planning process as the representative from the U.S. Biological Survey. As expedition leader, Dill did not welcome the late comer's presence. The details of their disagreement remain unclear, but Bryan asked to be taken off the island by the revenue cutter "Thetis" after only one week. Later, when it was time to submit their expedition report and describe the condition of the Laysan rookeries, they disagreed over who would be listed as primary report author. The report was eventually published in two sections under each author's name. However, the cover page of two-part U.S. Biological Survey Bulletin No. 42 "Report of an Expedition to Laysan Island in 1911," gave Dill, assistant professor from Iowa, top billing over Bryan, the full professor from Hawaii. Homer Dill, a proud and stubborn man, persevered.

Reflecting a 20th century trend in other American museums of natural history, several of Prof. Dill's later museum "expeditions" can more accurately be described as hunting trips, funded by private benefactors with interests keyed more to the pursuit of trophy animals than science. By 1927 — the severance of the Museum from the Department of Zoology and the death of Professor Nutting — even

this level of collecting had largely ceased. The decades of the 1930's, 40's, and 50's were characterized by additional claims on Macbride Hall space by unrelated departments, increasingly austere Museum budgets, and seemingly, reduced ambitions and expectations of an isolated Museum faculty.

After the 1920's, the Museum's collecting sphere was also appropriately reduced from the cosmopolitan venue of Nutting's tenure.⁴ Prof. Dill and curator Walter C. Thietje, who had joined the museum staff in 1929 as Dill's assistant, spent the greater portion of their careers collecting North American birds and mammals, mounting them in systematic series and in several habitat groupings. Professor Thietje was placed in charge of the Museum in 1949 upon Dill's retirement. This shift in emphasis from research-based collecting to exhibition and public outreach of the Museum was also responsive to the requirements of the museum training program. As a free-standing academic department, the Museum was dependent upon a viable student registration as well as a loyal and interested public for much of its basic support. Although the Museum gained recognition for its vertebrate displays, other collection areas languished. A notable deficiency was the artifactual record of Iowa's cultural pre-history. For lack of proper display space, there was also little geological and botanical representation, the great majority of those specimens remaining in departmentalized repositories elsewhere on campus.

Walter Thietje continued the ornithological collecting of Dill, and his work essentially completed the Museum's North American taxonomic display series. Thietje and John R. Rohner, who served as Museum Instructor and Assistant Curator from 1950 to 1962, are largely responsible for the quality and completeness of the Museum's outstanding series of small song and insectivorous birds native to Iowa. From 1962-67, Museum Instructor and Assistant Curator Allan S. Liss established the beginnings of a Museum anthropological display series.

A PROPOSAL TO ELIMINATE THE MUSEUM

Every venerable institution must at times weather adversity, and by far the most serious challenge faced by the Museum in its 123-year history was a bombshell proposal to eliminate the Museum, placed before the Board of Regents on October 14, 1965, by Howard R. Bowen, then University President. Bowen had succeeded the 24-year presidency of Virgil Hancher one year earlier. Faced by a combination of rapidly expanding student enrollments, the need for additional classroom space, and an apparently stagnant Museum program, the Museum was viewed by the administration as occupying space on the central campus that was far too valuable for purposes of exhibition. Considering the decades-old shift away from instruction in systematic biology, Bowen believed that the Museum collection served virtually no educational function for the University. He did acknowledge the value of the Museum to generations of school children: "It does attract children, and I am sorry that we cannot continue to provide this facility for them" (Iowa City Press Citizen, Oct. 15, 1965).

President Bowen's proposal to eliminate the Museum was met by an avalanche of opposition. University students, faculty, and alumni as well as museum professionals from across the country flooded his office with protests. Students described the Museum as a "pleasurable oasis" in the too-often traumatic existence of campus life. Faculty organized in defense of the Museum and provided the president with the numbers of students who used Museum exhibits as class assignments. Alumni reminded President Bowen of their past financial support of expeditions and exhibits. Newspaper editorials across the state were

³The letter date of 1911 (May 2) is probably a typographical error. Henshaw could not have known the number of birds collected until after the expedition departed Laysan Island on June 6, 1911.

⁴The disciplinary, chronological, and geographic collecting emphases of museums are now defined by formal mission statements. The unfocused, cosmopolitan tendencies of most 19th century science museums gradually yielded to recognition by museum administrators that they could not collect everything — in part, a result of an emerging professionalization of museum work.

written in defense of the Museum. Reacting to Bowen's suggestion that the evicted Museum might be "temporarily" stored in Iowa City until a new home could be found, columnist Donald Kaul of the Des Moines Register observed in an article entitled "No Gnus is Bad 'News':

As anyone who ever has had experience with temporary classrooms knows, temporary at a university means forever. It is not generally known but the Pyramids originally were designed as temporary classroom buildings for the University of Egypt...

The museum is a glory of the state, not of Iowa City.

(Des Moines Register, Nov. 3, 1965)

Probably the most vociferous opposition came from Iowa school children who sent mass mailings of letters to Dr. Bowen, many with crayon illustrations of their "favorite" bird or mammal. Ironically, the Museum's mounted replica of a dodo — archetypal symbol of extinction — became the rallying point of the children's efforts to save the Museum. Under these pressures, Dr. Bowen capitulated to the public mood and the proposal was dropped.

REVITALIZATION AND GROWTH

The episode underscored the weak administrative condition of the Museum and the fact that over the years it had lost much relevance to its audience. In November, 1965 a twelve-member Museum Advisory Committee was organized and chaired by Dean of Liberal Arts Dewey B. Stuit. The objective was to provide a mechanism for faculty overview and input into the directions and priorities of the Museum. Out of this group was formed an executive subcommittee comprised of one faculty representative each from the Zoology, Botany, Geology, and Anthropology Departments. Under the vigorous chairmanship of zoology Professor Richard V. Bovbjerg, this quickly became a working, "action" committee, pumping ideas, enthusiasm, and support into the Museum program.

George D. Schrimper, previously a student in the Museum Studies graduate program, was appointed Museum faculty Instructor and Assistant Curator in 1966 and, with the committee members, charged to "do something about the Museum." Redesign of antiquated exhibits was prioritized. The primary goal of this effort was to coordinate exhibit design and content with undergraduate instruction in University natural sciences courses. This in turn presented major design challenges because of the continued utilization of these same exhibits by the public audience ranging from pre-school age to senior citizens. By the end of 1972 the Advisory Committee was able to report to the Dean that more than 4,000 University students formally used Museum exhibits as class exercises.

Following the retirement of Walter Thietje in 1971, Schrimper was appointed Museum Curator, a title subsequently changed to Director, and Assistant Professor of Museum Studies (1973). With modest infusions of new budgetary support, the exhibit renovations continued through the 1970's. Much of this effort was ably assisted by Joseph B. Meder, Museum faculty Instructor from 1978 to 1982.

At the same time, outdated offerings in the museum training curriculum were dropped to accommodate new courses responsive to philosophical and programmatic changes in the museum field. The course additions represented a major shift in emphasis from the almost exclusive laboratory-technical emphasis of the Dill-Thietje years. On the graduate level, joint masters degree programs were developed with the Science Education and Anthropology Departments, their respective degrees providing for a concentration in museology.

These internal changes together with the programmatic cooperation developed with the natural sciences departments provided the Museum with both the credibility and a network of faculty support by 1978 to begin advancing a plan for a major new exhibit gallery — Iowa Hall — through University channels. In the process, the Museum emerged successful from an acrimonious inter-departmental controver-

sy precipitated by a University decision to assign the intended Iowa Hall space to another, unrelated department (Home Economics). This was the original rotunda space, architecturally designed as the Museum's main gallery, which had been occupied "temporarily" by the University Library upon completion of Macbride Hall in 1907. The Library was finally moved in 1951 to its present building. The space was then subdivided into yet more temporary offices and classrooms for three other departments.

The Museum claim on the 6,000 square foot rotunda had a solid historic basis. The basic concept itself of "Iowa Hall" as a thematic focus for the rotunda exhibits could be traced to a 1913 letter from curator Nutting to President John Bowman:

"...it is to be hoped that the library will be moved out of its present quarters and the main reading room will be available for the "IOWA ROOM" which I hope to be the real focal point of the entire museum. Here the Director of the Exhibit of Vertebrates [Dill] would have a chance to carry out his admirable ideas concerning habitat groups on a large and very effective scale, and the present curator would be inclined to give him a free hand in planning and carrying into effect the whole scheme of the Iowa room."

(Nutting, 1913)

As the 1978 controversy flared to an "incendiary" level, President Willard L. Boyd, who had succeeded Bowen in 1969, declared a moratorium on the renovation plan which had already been submitted to architects. Taking advantage of the moratorium, the Museum gained critical time to develop several extensive reports outlining the basic value and advantages of a state-of-the-art exhibit gallery to the University and State.

The exhibit development itself was predicated on removing from storage the finest of some one-million natural history objects — most coming from the geology, archaeology, and botany repositories — which, because of lack of suitable display space, had never before been seen by the Iowa public.

Numerous meetings were held over the next two years with members of the central administration, and compromises were eventually reached with the affected departments. Formal approval of the Iowa Hall proposal was granted by the central administration and board of directors of the Iowa Foundation in September, 1981.

An ad hoc Iowa Hall planning committee was chaired by Professor Schrimper which defined exhibit concepts and content for each of the 60 displays comprising the archaeological, geological, and ecological components of Iowa Hall (Fig. 7). The other members of this key committee and their planning assignments were State Archaeologist Duane Anderson (archaeology), Professors Richard Bovbjerg (ecology), Jeffrey Schabillon (botany and paleobotany), and Holmes Semken, Ms. Jean Prior (geology), and Museum adjunct Instructor and Design Artist William Thomson (1982 to present). A network of other individuals and agencies provided critical assistance in the development of specific components of the presentation.

A \$1.9 million public fund raising campaign was pursued concurrent with exhibit design. Contracts were written for the Iowa Hall site preparation as well as specialized aspects of exhibit fabrication and installation. Sixty exhibits within the 6,000 sq. ft. gallery were linked spatially, thematically, and chronologically, illustrating Iowa's geologic record, cultural prehistory, and ecology (Anderson, 1985; Jackson, 1986). Following four years of planning and construction, Iowa Hall was opened to the public on May 11, 1985. Charles Nutting's dream of "a beautiful building with a museum in its center" had been kept alive for 80 years and was finally a reality (Fig. 8).

POST IOWA HALL AND THE FUTURE

Post Iowa Hall planning has focused on 1) increasing dependency upon external funding requirements of the Museum resulting from



Fig. 7. Iowa Hall planning committee members Duane Anderson, Richard Bovbjerg, Holmes Semken, George Schrimper, and Jeffrey Schabillon. The mosaic Great Seal of the University, tiled over when the Library vacated Macbride Hall in 1951, was revealed during the Iowa Hall project and is now highlighted in the gallery lobby.

diminished University (State) allocations, 2) redesign of older exhibits, 3) upgrading the management of repository collections, and 4) expanding public outreach programming.

An annual public program series of lectures, field trips, and special events was facilitated in 1985 with the hiring of Karole Fuller as Museum Program Assistant. The objective has been to provide environmental and natural science education to audiences of varying ages as well as to develop community support for the Museum.

The Museum's achievement of Iowa Hall and subsequent develop-

ment of organized outreach programs are illustrative of recent decisions by virtually all museums to shift greater emphasis to public programming. This movement away from traditional support of collecting and research, even in museums having significant repository study collections has been primarily driven by financial realities of museum operations. Public attendance builds revenues, and quality exhibits and attractive outreach programs are now viewed by most museum administrators as being more vital than research to developing a solid base of financial support.



Fig. 8. East Portico entrance to Macbride Hall and the Iowa Hall gallery of the Museum of Natural History.

It is interesting to note, however, that the trend in recent decades within colleges and universities to disperse or abandon collections because of a de-emphasis of research or training in systematics is now in reverse. New emphases on global biogeographic and biodiversity studies due to world-wide environmental concerns are now leading to an increased growth of systematic collections. And it is now possible to use dry and alcohol-preserved museum specimens for DNA research (Gibbons, 1991).

These recent developments test the relevance and resilience of science museums everywhere. It has been widely recognized that the Museum does have an important agenda for its public audience. It is also recognized that the Museum has a significant role to play relative to its present and potential academic constituency. The design of didactic exhibits coordinated with undergraduate instruction will continue to be a priority. And, to a great extent, the Museum's support of present and future research directions in the natural sciences will be influenced by the trends and priorities within the natural science departments themselves.

The 132-year-old Museum, responsive to its administrative, academic, and public environment, continues to evolve. Its repository collections — storehouses of implications and potential, linked with the lifework of some of Iowa's most distinguished naturalists — continue to support important faculty research in the natural sciences. Its exhibits and outreach programs serve as a window to the University and bring thousands of students and members of the public into meaningful contact with our cultural and natural heritage.

It has a promising future.

ACKNOWLEDGEMENT

The author thanks Dr. Neil Bernstein and the membership of the Iowa Natural History Association for their encouragement and support of this manuscript, an outgrowth of a speech given to the Association at its 1985 annual meeting in Iowa City.

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