

Recent Mammalogy and the Chicago Academy of Sciences

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The Chicago Academy of Sciences recently re-organized its mammalogy collection, and all specimen information was entered onto a computer database. The collection of 5,056 specimens is almost exclusively from North America, except approximately 100 animals from Africa. There are 179 American species represented, most collected between 1890 and 1940 (see Appendix). The collection rarely has been noted in the professional literature, and the present paper highlights the history of the Academy's involvement in mammalogical research. We will also refer to several important specimens, including holotypes of two subspecies, and give a general analysis of the Academy's mammalian holdings.

The Chicago Academy of Sciences has a long history of investigations in mammalogy. The institution was founded in 1857, making it among the earliest scientific organizations in the American West. In 1866 the distinguished Smithsonian naturalist Theodore Gill published the first description of the northern elephant seal (*Macrorhinus angustirostris* = *Mirounga angustirostris*) in the Academy's Proceedings. (Gill, 1866).

One of the earliest and most distinguished of America's nineteenth century mammalogists was Robert Kennicott, the driving force behind the establishment of the Academy's museum. In 1855 Kennicott published a catalog of animals found in Cook County, where he noted forty-nine mammal species, including elk (*Cervus elaphus*), buffalo (*Bison bison*), lynx (*Felis lynx*), cougar (*Felis concolor*), and black bear (*Ursus americanus*). These five species, as well as several others listed by Kennicott, are now extirpated from the state. (Kennicott, 1855).

In 1856 Kennicott followed up this initial survey of Illinois mammals with a series of articles published in three separate parts. Entitled "The Quadrupeds of Illinois Injurious and Beneficial to the Farmer," Kennicott's papers were intended to educate a general audience, particularly farmers, on the food preferences and habits of mammals, many of which were killed indiscriminately. Kennicott came out strongly in favor of the protection of wildlife, long before such sentiments were fashionable. In the introduction he wrote, "before waging war upon any animal, let us study its habits, and look well to

the consequences which would follow its extermination." (Kennicott, 1857, p. 52.) Kennicott also published a series of articles on mammals in the *Prairie Farmer*, a popular agricultural newspaper. (Vasile, 1994).

Kennicott was one of the first naturalists to explore in the American subarctic and arctic. His first trip to the region, from 1859-62, was highly successful in obtaining northern mammals. (By a Committee of the Academy, 1869). By 1866 the Academy contained thousands of mammals from the Arctic region, as well as 2,000 specimens from the Midwest. A fire in June of 1866 destroyed roughly half of these, and the great Chicago fire of 1871 incinerated the remainder. (To the Friends and Correspondents of the Chicago Academy of Sciences, 1871).

The Academy collection contains twenty-one Kennicott mammals, which were transferred in 1930 from Northwestern University in Evanston. Collected in the mid-1850s and early 1860s, these specimens document Kennicott's collecting efforts in Cook County, Illinois, and a trip up the Red River in 1857.

In 1912 Charles B. Cory of the Field Museum of Natural History published a book on the mammals of Illinois and Wisconsin. Cory quoted at length from Kennicott's earlier studies, and the book was an admirable attempt at synthesizing information on Illinois and Wisconsin mammals. (Cory, 1912). The work was not based on original research, however, and little was done on Chicago-area mammals until 1929, when Edwin V. Komarek of the Academy and Don A. Spencer of the University of Chicago embarked on a survey of Chicago and the immediate vicinity. This was a thorough and arduous investigation, as the authors noted that "sixty-four nights and one hundred and eight days were spent camping out in all kinds of weather." (Komarek and Spencer, 1931a, p. 3). Thirty-five different localities were visited, and more than 3,000 mammals were collected and studied, of which 475 were made into skins and added to the Academy's collection. In all, Komarek and Spencer found thirty-nine species, compared to the fifty-three which were known to have existed in the area within historic times. (In an otherwise excellent treatment of the history of mammal research in Illinois, Donald F. Hoffmeister (1989, p. 1-2) failed to cite the Komarek and Spencer survey.)

One of their discoveries was a new subspecies of the Illinois pocket gopher, (*Geomys bursarius illinoensis*). (Komarek and Spencer, 1931). The type specimen (CAS# 713) was collected one mile south of Momence, Illinois in Kankakee County. The Academy's collection contains thirty-eight other specimens of this subspecies, many from the type locality and collected during the same summer. One of these (CAS# 2194) was collected in breeding status outside the range suggested by Hoffmeister (1989, p. 187.)

Another study Ed Komarek undertook for the Academy was a survey of the mammals on the Menominee Indian reservation in northern Wisconsin. This field work in the summer of 1929 resulted in seventy-six specimens being added to the collection. (Komarek 1932b). Komarek continued collecting for the Academy throughout the 1930s, often with his brother Roy. In the spring of 1931 Ed and several others began a survey of the Great Smoky Mountains, particularly in Tennessee. The summer of 1931 was spent collecting in Colorado, but from 1932-34 Ed returned to the Smokies with Roy to conduct more extensive field studies. The area was still largely a rugged wilderness, consisting of

173,209 square hectometers along the borders of Tennessee and North Carolina. Parts of the region were second generation growth and had been subjected to cultivation, lumbering and hunting.

From a base at Greenbrier, Tennessee, Ed and his brother Roy eventually collected 860 mammals from the Smokies, concentrating on the smaller species. Due to this predilection they came to be known as "the Academy rat catchers." In all, the Komareks found 48 species. One important specimen discovered by the Komareks in the Academy's collection is the type of (*Microtus chrotorrhinus carolinensis*) (CAS# 1506), the Smoky Mountain rock vole. (Komarek, 1932a). The type was collected eight kilometers north of Smokey Mountain, North Carolina, in Swain County. In all, the Academy collection has thirty of these animals.

In 1940 the National Park Service dedicated the area as the Great Smoky Mountains National Park. The Komareks noted that since most of their survey was made prior to the area being designated a park, their work would serve as a basis for comparing the effects of the formation of the park upon the mammalian fauna of the region. (Komarek and Komarek, 1937). In 1971 Alicia V. and Donald W. Linzey updated the Komareks work, noting that several small mammals collected by the Komareks had rarely, if ever, been seen again in the region. (Linzey and Linzey, 1971). For example, the Academy contains two specimens of the hairy-tailed mole (*Parascalops breweri*) (CAS# 2334,2335), the first records for the park, as well as for the state of Tennessee. The only breeding record in the park of (*Cryptotis parva*) (CAS#2403) is also the highest recorded elevation (50 kilometers) for this species. A rice rat collected by the Komarek's (*Oryzomys palustris*) (CAS#1481) is the only one ever found in the Park.

In 1934 the Komareks extended their studies into Florida and Georgia. They traversed twelve thousand miles in Florida, accumulating sixty-seven different species and subspecies. The Academy has 519 Florida mammals and 254 from Georgia. Ed Komarek left the Academy in 1935; that same year the Academy published his short paper on the mammals of the Indiana Dunes. (E. Komarek 1935). His brother Roy took his place at the museum and continued collecting. In 1936 Roy traveled to Colorado and Wyoming, where he took four specimens of the rare sagebrush vole, (*Lagurus curtatus*). The following year Roy accompanied Academy director Howard Gloyd on an expedition to Arizona. While reptiles and amphibians were the primary focus of the trip, the Academy collected 333 mammals from this state, many of which, particularly the bats, still await specific identification.

In 1958 the Academy donated the type specimen (CAS # 4061) and five paratypes of (*Thomomys bottae operosus*), Botta's pocket gopher, to the Smithsonian Institution. The specimens were collected in Arizona in 1937 by Roy Komarek. The Academy still has six of these animals from the type locale.

After the Arizona expedition Roy Komarek took a job in North Carolina, but the Komareks continued to send mammals to the museum for another five years. Between 1929 and 1937, these two men collected prodigiously for the Academy, often at their own expense. Ed collected 1,945 specimens, Roy another 773, and they brought in another 120 mammals in conjunction with other collectors, including Mrs. Betty Komarek, Ed's

wife, for a total of 2,838 specimens from this family. This figure represents over half of the Academy's total holdings of mammals. Academy director Howard K. Gloyd noted that these two indefatigable brothers were responsible for building the mammal collection, and pointed out that they had done it with a minimum of support from the Academy. (Gloyd, 1937). The Komarek's selfless work was somewhat overshadowed by their later work at the Tall Timbers Research Station in Florida. Indeed, the name Komarek is now synonymous with the study of lightning and wildfire in America. (Pyne, 1982).

Others also have advanced the Academy's research on mammals. Tappan Gregory was a Chicago lawyer who also had a life-long interest in mammals. A founding member of the Kennicott Society, Gregory was appointed honorary curator of mammals at the Academy in 1930. He pioneered the use of the camera to photograph mammals at night, and between 1925 and 1932 published twelve papers on this subject in the *Journal of Mammalogy*. The Academy archives contain more than 400 of Gregory's glass negatives documenting various mammals, particularly white-tailed deer (*Odocoileus virginianus*), short-tailed shrews (*Blarina brevicauda*), black bears (*Ursus americanus*), and beavers (*Castor canadensis*). There are also some 200 lantern slides taken by Gregory. Most of the photos were taken in northern Michigan, but Illinois, Montana, and New Mexico are also represented. Many of these photographs were used in Gregory's articles and books. (Gregory, 1939).

The Academy has published several noteworthy papers relating to mammals, including, Tappan Gregory, (1936) "Mammals of the Chicago Region,"; E. V. and Roy Komarek, (1938) "Mammals of the Great Smoky Mountains,"; Walter L. Necker and Donald Hatfield, (1941) "Mammals of Illinois, an annotated check list with keys and bibliography,"; D. Hatfield, (1942) "Mammals from south-central Arizona,"; and Elsie P. Anderson, (1951) "Mammals of Fulton County, Illinois." Thirty-four shorter papers on mammals appear in the Academy's Natural History Miscellanea series, from 1948-1981, including contributions from Donald Hoffmeister, Colin Sanborn, and Willard Klimstra. Among them is "A List and Bibliography of the Fossil Mammals of Illinois, by Robert S. Bader and David Techter (1959).

Naturalists who are represented by at least one specimen in the mammal collection include Ferdinand Hayden, the first head of the U. S. Geological Survey; Philo R. Hoy, a colleague of Kennicott's and one of Wisconsin's first naturalists; Howard K. Gloyd, Academy director from 1936-1958, known chiefly for his studies of the rattlesnakes; Carl Akeley, African explorer and pioneer taxidermist; Charles Brower, who sent forty skins from Point Barrow, Alaska, the northernmost settlement in North America; and Benjamin T. Gault, an early Illinois ornithologist.

The Academy has approximately 150 mammals preserved in alcohol. Most of the other specimens are represented by both a skin and a skull. The appendix lists numbers of specimens by state, and numbers of specimens by decade, respectively.

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APPENDIX

Chicago Academy of Sciences
Mammal Collection - State Count

Pacific Frontier	NC - 97
AK - 43	SC - 20
HI - 0	TN - 763
Pacific Coast	VA - 96
CA - 209	WV - 0
OR - 2	Northeast
WA - 0	CT - 0
Mountain	ME - 0
CO - 431	MA - 4
ID - 3	NH - 0
MT - 0	NJ - 0
NV - 0	NY - 12
UT - 23	PA - 10
WY - 118	RI - 0
Southwest	VT - 4
AZ - 334	
NM - 4	
OK - 2	
TX - 85	
Midwest	
IL - 933	
IN - 133	
IA - 12	
KS - 1	
MI - 73	
MN - 8	
MO - 15	
NE - 48	
ND - 10	
OH - 8	
SD - 38	
WI - 223	
Southern	
AL - 79	
AR - 2	
DE - 0	
FL - 521	
GA - 255	
KY - 87	
LA - 102	
MD - 0	
MS - 11	

Mammal Collection - Distribution by
Decade

Count (Percent of total collection)

1990+ -	2	(<1%)
1980-89 -	11	(<1%)
1970-79 -	35	(<1%)
1960-69 -	28	(<1%)
1950-59 -	11	(<1%)
1940-49 -	189	(3.7%)
1930-39 -	3575	(70.7%)
1920-29 -	708	(14.0%)
1910-19 -	120	(2.4%)
1900-09 -	76	(1.5%)
1890-99 -	45	(<1%)
1880-89 -	4	(<1%)
1870-79 -	25	(<1%)
1860-69 -	7	(<1%)
<1860 -	27	(<1%)

data not complete - 193 (3.8%)