

INTRODUCTION

In the United States, at the beginning of the nineteenth century, a few virtuosi and amateurs cultivated natural history, but the great American treasury of natural objects was largely undescribed, unclassified, and unstudied. By the end of the century the fauna and flora of the expanded nation had been entered in ordered catalogues, and the study of natural objects could proceed from taxonomy to bionomics and the less tangible consequences of the theory of organic evolution. This efflorescence of zoölogy and botany is attributed to many causes: the increasingly scientific temper of the century; the introduction of instruction in these sciences in the colleges; the support of the government and learned institutions; the exciting vistas of western lands not yet known to the scientist; and the zealous, if not always careful, collection of specimens in remote areas by persons whose only reward was an acknowledgment of esteem.

Not only did zoölogy and botany receive more attention from the public, but the method of study changed radically. Until 1850 the dominant figure was the naturalist, the man who was successively an explorer, an observer, a collector. After 1850 the naturalist was superseded by the scientist, who worked upon the specimens obtained by planned expeditions and examined in laboratories.¹ The scientist of authority came to depend upon the more adventurous frontiersman for representative collections of fauna and flora.

During this transitional period of the middle of the nineteenth century these collectors on the western frontier were in large proportion not native Americans but

¹ W. M. Smallwood, *Natural History and the American Mind* (New York, 1941), p. vii-ix, 215, 337.

European immigrants and travelers. It is not surprising that so many frontier naturalists were children of the Old World; there they had been exposed to a liberal secondary education, books in great number dealing with American wonders and nature, and the example of many private individuals who cherished science as an avocation. Moving to the New World, they brought with them respect for learning and eagerness for exertions which profited immensely the growth of the natural sciences.

The general body of European naturalists in America, from 1830 to 1860, may be divided into settlers and travelers. Both contributed to the development of American science: the former by the collection of specimens and, less importantly, by accounts of their activities; the latter primarily by their narratives and secondarily by their collections. Journeying to the United States from nearly all parts of Europe, they left the records of their observations in their own languages. From the Germanies came Duke Paul Wilhelm of Württemberg, Prince Maximilian of Wied-Neuwied, Balduin Möllhausen, Lindheimer, Wislizenus, Moritz Wagner and Karl Scherzer;² from France,

² Duke Paul Wilhelm of Württemberg, born in 1797 in Karlsruhe, Silesia, died in 1860 at Mergentheim, Württemberg. From 1822 to 1824 he traveled in the region of the upper Missouri River, and from 1829 to 1833 in Missouri, Texas, and northern Mexico. He was in Louisiana, Texas, and California in 1849 and 1850, and in 1851 he ranged from New Orleans to the Great Lakes, and from New York to Fort Laramie. During the succeeding three years he was in the eastern and southern states. His American travels were completed in 1856. *Erste Reise nach dem nördlichen Amerika in den Jahren 1822 bis 1824* (Stuttgart and Tübingen, 1835) describes his early travels, and the later ones are recorded in forty manuscript diaries.

Prince Maximilian of Wied-Neuwied, born in 1782 in Neuwied, died there in 1867. His American travels, of great significance to biology and ethnology, are described in his *Reise in das innere Nord-Amerika in den Jahren 1832 bis 1834* (Coblenz, 1839-1841).

Heinrich Balduin Möllhausen, born in 1825 near Bonn, died in 1905 at Berlin. In 1849 he made his first journey to America, and joined Duke Paul Wilhelm in an expedition to Fort Laramie. In 1853, after returning for a short time to Berlin, Möllhausen again traveled

Lesueur and Nicollet;³ from England, Thomas Nuttall;⁴

in America, as a collector for the Smithsonian Institution and topographer for Lieutenant Amiel Weeks Whipple's expedition from Fort Smith to Los Angeles. After a second visit to Germany he joined the party of Lieutenant Joseph Christmas Ives in the exploration of the Colorado River. He wrote *Tagebuch einer Reise vom Mississippi nach den Küsten der Südsee* (Leipzig, 1858), *Reisen in die Felsengebirge Nord-Amerikas bis zum Hochplateau von Neu-Mexico* (Leipzig, 1861), and numerous romances based upon American themes.

Ferdinand Jacob Lindheimer, born in 1801 in Frankfurt-am-Main, died in 1879 at New Braunfels, Texas. He immigrated to America in 1834, and traveled widely in Texas and Mexico. His extensive botanical collections were submitted to George Engelmann and Asa Gray for study.

Friedrich Adolf Wislizenus, born in 1810 in Königssee, Schwarzburg-Rudolstadt, died in 1889 at St Louis. He studied natural science at Jena, Göttingen, and Tübingen, and in 1835 came to America. His western travels (1839-1846) ranged from Fort Hall to Chihuahua, and his collections embraced all branches of biology. He wrote *Ein Ausflug nach den Felsen-Gebirgen im Jahre 1839* (St Louis, 1840), and *Memoir of a Tour to Northern Mexico, Connected with Col. Doniphan's Expedition, in 1846 and 1847* (Washington, 1848).

Moritz Wagner, born in 1813 in Bayreuth, died in 1887 at Munich. Wagner, who was later to distinguish himself as a famous biologist and champion of the Darwinian hypothesis, arrived in America on 7 June 1852, in the company of Karl Scherzer. In their tour, accomplished partly together and partly in separate journeys, Wagner undertook natural history and Scherzer the geographical and statistical studies. They proceeded to Central America in April 1853, returned to the United States early in 1855, and departed for Europe in the spring of the same year. The results of their journey in the United States appeared in a three-volume work, *Reisen in Nordamerika in den Jahren 1852 und 1853* (Leipzig, 1854).

Karl Ritter von Scherzer, born in 1821 in Vienna, died in 1903 at Görz. His American tour is noted above. He was one of the leaders of the Austro-Hungarian East Asiatic Expedition of 1869, from which he separated in order to visit California and the Rocky Mountains.

³ Charles Alexandre Lesueur, born in 1778 in Le Havre, died there in 1846. From 1816 to 1837 he was in the United States, and in 1819 was engaged in mapping the northeastern boundary. His collections were chiefly in ichthyology.

Joseph Nicolas Nicollet, born in 1786 in Cluses, Savoy, died in 1843 at Washington. From 1836 to 1840 he explored and surveyed the valleys of the Mississippi and Missouri rivers, and wrote a *Report Intended to Illustrate a Map of the Hydrographical Basin of the Upper Mississippi River* (Washington, 1843).

⁴ Thomas Nuttall, born in 1786 in Settle, Yorkshire, died in 1859 at 'Nutgrove,' near Liverpool. His travels included the regions of the Missouri River (1809-1811) and the Arkansas and Red rivers (1818-

from Switzerland, Jean Louis Berlandier;⁵ from Denmark, Henrik Krøyer;⁶ and from Russia, Viktor Ivanovich Mochulskii.⁷

The motives which impelled them to journey to the New World ranged from free intellectual curiosity to the search for political asylum. No uniform pattern can be detected in the multifarious activities of these naturalists. Some voyaged alone, some in large expeditions. Some were in correspondence with American scientists and submitted their specimens to the academies of the Atlantic seaboard, others reserved their collections for European biologists. The narratives of some are simple and matter-of-fact, of others embroidered and fanciful. Some hoped for preferment in America or Europe consequent upon their labors, others had less selfish motives.

By restriction of this scrutiny to those who came as immigrants rather than as travelers, a type which embraces almost all representative activities may be established. It consists of a European who left his homeland for polit-

1820), and in 1834-1835 he was a member of the Wyeth expedition to the mouth of the Columbia. His botanical and ornithological studies were monumental. He wrote *A Journal of Travels into the Arkansa Territory* (Philadelphia, 1821), and *A Manual of the Ornithology of the United States and of Canada* (Cambridge, Mass., and Boston, 1832-1834).

⁵ Jean Louis Berlandier, born about 1805 near Geneva, died in 1851 in Matamoros, Mexico. He was commissioned in Switzerland to make collections in Mexico and Texas, and landed near Tampico in 1826. His enormous accumulations and his manuscripts were acquired by the Smithsonian Institution after his accidental death.

⁶ Henrik Nikolaj Krøyer, born in 1799 in Copenhagen, died there in 1870. In 1842 he became inspector of the Royal Museum of Natural History, and in 1854 he traveled to the United States, proceeding from New Orleans to St Louis, Cincinnati, and New York. He collected molluscs and other animals. Two manuscript diaries of this journey are preserved at the Royal Library in Copenhagen.

⁷ Viktor Ivanovich Mochulskii, born in 1810, died in 1871 at Simferopol. This eminent coleopterist traveled in 1853 from New York to Cincinnati, and from New Orleans to Philadelphia and Boston.

ical reasons, thought of settling in a new home, drifted uncomfortably in a strange environment, enlisted in the army or joined an exploring party, reached the frontier, seized the opportunity to collect specimens of natural history, attained recognition and enjoyed correspondence with the academic scientists, published in his native tongue accounts of his adventures designed to enhance his reputation among his countrymen, sought the bounty of patronage so evident in American public life, and eventually either sank into obscurity or returned to his homeland to enjoy the benefits which his transatlantic reputation assured.

Few European immigrants displayed these facets more brilliantly than the Hungarian János Xántus. He rose from complete obscurity to lasting fame, put the natural history of America permanently in his debt, interpreted the United States, through his writings, to Hungary, and wove such a veil of romance about his life that no biographical account of him has penetrated to the facts of his career in America. Naturalists have long felt the need of a biography of Xántus, because the lack of his itinerary and the ignorance of conditions under which he collected have prevented them from studying comprehensively the species taken by him. Taxonomic and ecological questions stemming from Xántus's work as a naturalist are incapable of solution on the basis of the faulty and corrupt biographical accounts at present available; valid conclusions await a biography based upon the sources available in the United States and Hungary but not previously explored.

Biographies of field naturalists are extremely rare. The conditions under which their collections were made, the obstacles they overcame, and the nature of their relations with the closet scientists have only infrequently been set forth. Thanks to the extraordinarily full documentation

of Xántus's career as a collector in America, it is possible, by examining his life, to display the frontier naturalist in the light of contemporary events.

In this biography of Xántus emphasis will be placed on the years of his stay in America, from 1851 to 1864.