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Gustavus Wilhelm Wuerdemann (1817-59), Early Naturalist of the U.S. Coast Survey

S. W. Geiser

The recent appearance of Wright & Roberts' sequicentennial historical account of the U.S. Coast & Geodetic Survey¹ calls to mind the splendid natural-history collections that G. W. Würdemann, tidal-observer and meteorologist, made during the years 1844 to 1859, especially in Texas, Louisiana, and Florida. As no extended biographical notice of this naturalist has appeared in the nearly one-hundred years that have passed since his death, the present note may be of interest to students of the history of scientific exploration in the early South and Southwest.

At a meeting of the Board of Regents of the Smithsonian Institution in 1859, Alexander Dallas Bache, Superintendent of the U.S. Coast Survey, made remarks on Würdemann's work, not only as it pertained to the Survey, but

¹A. J. Wright and E. B. Roberts, *The Coast and Geodetic Survey, 1807-1957*. Washington, Government Printing Office, 1957. (90 pp.)

also as it concerned the natural-history collections which he made and sent to the Smithsonian Institution:

...Mr. Gustavus Würdemann, in charge of the tidal observations of the Coast Survey on the Florida reefs and Gulf of Mexico, died at his home in New Jersey on the 30th [*correctly*, 29th] of September [1859]. His health had been failing for some years, and during the last year he had discharged his duties with great difficulty, owing to great physical debility. Mr. Würdemann entered the survey under my predecessor [Ferdinand Rudolph Hassler] and served, throughout a somewhat extended career, with a fidelity and singleness of purpose that has never been exceeded. Exact truthfulness was the leading trait of his character, and his observations, even the most minute, were always reliable. It is easily seen that it is no exaggeration to say that such a man was invaluable in his place, and an example worthy to be set up as the type of faithfulness. During the discharge of his laborious duties he found time and opportunity to make collections in natural history, which have been acknowledged by the Smithsonian as among the most valuable contributions to the knowledge of the fauna of Florida.²

Charles Girard, in the second volume of the Mexican Boundary Survey reports, described several "new species" of marine fishes of Würdemann's collecting at Brazos Santiago and St. Josephs Island, Texas; one of which, *Gobius wurdemanni* [= *G. lyricus* Grd.], he named in honor of the collector. William H. Harvey, British algologist, erected (1852) a new genus and species of red alga (Rhodophyceae), *Wurdemannia setacea* Harv., which was with other algae collected by Würdemann at Key West, and transmitted to Professor Harvey by Dr. Lewis R. Gibbes of the College of Charleston.³ Rev. John Bachman of Charleston also received from Würdemann living mammals from Key West, as appears in the introduction to Audubon & Bachman's *Quadrupeds of North America* (1856). And finally (as far as the present sketch goes), Spencer F. Baird, in the ninth volume of the Pacific Railroad Reports (1858, xv, 670) expressed his ardent appreciation of the Gulf-coast collections of Würdemann, in Louisiana, Florida, and the Florida Keys; and gave the name *Ardea wurdemanni* to the Florida Heron, "the most magnificent species of heron known to inhabit the United States, and one presumed to have been hitherto undescribed...I take much pleasure in giving it the name of Mr. Gustavus Würdemann, of the United States Coast Survey, as a slight token of acknowledgment for what he has done toward bringing to light the novelties of our southern

²*Ann. Rept. Board of Regents, Smithson. Instrn. for 1859* (1860), p. 114; reprinted with almost no changes in the *Rept. Supt. U.S. Coast Surv., 1859* (1860), p. 32. A brief obituary notice of Gustav Würdemann (?by his brother Wilhelm?) occurs in *Silliman's Journal*, (II) v. 29, p. 304, 1860.

³W. H. Harvey, *Nereis Boreali-Americana*, Part I, 1852. (Later this monograph was assembled in v. 5 of the *Smithsonian Contributions to Knowledge*.)

coast. It is not too much to say that no one, for years, has been instrumental in adding so many species of birds to our southern fauna as Mr. Würdemann; no less than nine previously unrecorded species having already been collected by him in Louisiana and Florida, besides very many new fishes and invertebrates."

From the foregoing, one can indulge an historian of science in putting on record a more ample account of Gustavus Würdemann than we at present possess.



GUSTAVUS WILHELM WUERDEMANN (1817-59)

GUSTAVUS WILHELM WURDEMANN, third son and seventh and last child of Hermann Gerhard Würdemann and his wife, Elise Phillipene Amalie Manns, was born in the old Hanseatic town of Bremen, 31 August, 1817; and died at Swedesboro, N.J., 29 September, 1859. His family was for 400 years resident in Bremen, where his father was one of the four burgomasters of the city. Of the three sons of Hermann G. and Amalie Würdemann, the eldest, Hermann, was a physician; the second, Wilhelm C. F. Würdemann (1811-1900) was for many years an instrument-maker in

Washington, and mechanician for the Coast Survey. Wilhelm came to America in 1832 (*aet.* 21), and in 1834 entered the employ of the Coast Survey under Hassler. About 1837, Gustavus Wilhelm came to America (*aet.* 20), and also entered the Coast Survey, and was employed in various tasks until about 1845, when he was put in charge of tidal-measurements at stations on the Atlantic and Gulf coasts, and so continued until his death. What was the training of these two brothers in Germany, I have no clear knowledge; doubtless they were graduates of the excellent *Gymnasium* at Bremen, and of some technical school.⁴

Würdemann's father died in 1838, the year after the boy had left Bremen for America; and the mother (who had accompanied her children to America in 1832-33, and lived for some years in New York City), died in Washington on 8 November, 1857, at the age of 72.

The salary of Gustavus in his early years with the Coast Survey was, of course, low. In 1841, his brother Wilhelm received \$800 per year, with board, and Gustavus \$25 monthly, with board. This was not the lowest compensation paid by the Survey, however; in that year there were 5 other employes who received the same pay, and 29 who earned but \$18 monthly, with board.⁵ With added years of service, Gustavus' compensation was increased, so that in 1850 he married Susan Kayser, and after a time bought a home in Swedesboro, a small village in Gloucester County, N.J.⁶ Four children were born: Sallie Amalie, Hermann and William (twins), and Gustavus Adolphus (who in 1936, at the age of 80, was still in active law-practice at Clayton, Mo., after a term as probate-judge in the city of St. Louis).

The Coast Survey was remarkably fortunate in its first two superintendents, Hassler and Bache. Hassler was a Swiss of talents approaching genius in the fields of mathematics and geodetic science. Skilled in mathematics (he wrote several textbooks on the subject for schools and colleges), and expert in the designing and use of instruments of precision, he "started the Survey on its true scientific course

⁴G. A. Würdemann to S.W.G., April 11, April 17, May 1, 1936; Harry Vanderbilt Würdemann to S.W.G., March 12, March 24, 1936; A. C. Hospes to G. A. Würdemann, March 24, 1936; Hugo Schlenk to G. A. Würdemann, April 15, April 24, 1936.

⁵U.S., 27th Congress, 2d Sess., H.R. Doc. 57, 1842, *passim*.

⁶His son, Gustavus Adolphus Würdemann, wrote me (11 April, 1936): "At the time of my birth [1856] he was living in Swedesboro, New Jersey, owing his own home there, and had built in the rear a structure called 'The Museum,' which contained a collection of birds, etc., which he had gathered in his business in the United States Coast Survey."

and set standards that still prevail....He had an understanding of sound technical procedure and a sense of lasting values. By his strength of will and his sincerity he successfully resisted those who wanted a quick and cheap job" from the Coast Survey.⁷ "He lived to see the value of his work at last being recognized...his sincerity and integrity won political and public acclaim in the end."⁸

At Hassler's death, in late November, 1843, Alexander Dallas Bache, great-grandson of Benjamin Franklin, was appointed to succeed him. This was at the nomination of the American Philosophical Society of Philadelphia (which also had been largely responsible for Hassler's appointment). Under Bache, the plans of Hassler for the development of the Coast Survey were steadily advanced. Both men had a singular ability to discover in men abilities in the work of the Survey: reconnaissance, astronomical determination of geographical positions, triangulation, coastal topography, hydrography, and tidal-movements; and the two men, Hassler and Bache, so set the pattern of work of the Coast Survey that it has been the amazement of the world. It was remarkably fortunate that Würdemann could have his career under the two great planners and pace-setters of work of the Survey. Hassler and Bache were not only the great founders and leaders of the Coast Survey, but also among the outstanding scientists of the age.

Würdemann's first important work on the fauna of Texas began in 1853, when he was commissioned to make hourly tidal observations at Brazos Santiago (at the mouth of the Rio Grande), at St. Joseph Island (Aransas Pass), and at the Matagorda Bay entrance (Paso Cavallo). He completed (for the time) his tidal observations at Brazos Santiago in early October, 1853, and then spent three months (October to December) at Aransas Pass. On completion of that assignment, he went to Calcasieu Pass, Cameron Parish, Louisiana, very early in 1854; and when that work was completed, was transferred to Nantucket Sound.

His collections of marine fishes at Brazos Santiago and St. Joseph Island are included in Girard's report (published in volume 2 of the Mexican Boundary Survey reports); but often it is not possible to say clearly that a given collection was Würdemann's, in the absence of a spe-

⁷A. J. Wraight & E. B. Roberts, *op. cit.*, 1957, p. 6.

⁸*Ibid.*, p. 14.

cific collector's name. However, I am sure of about 17 species collected at Brazos Santiago, and 18 collected at St. Joseph Island, at Aransas Pass. The Smithsonian Report for 1854 acknowledges the receipt of many of Würdemann's Texas collections: from Brazos Santiago, reptiles, fish, and invertebrates; from St. Joseph Island, fish, reptiles, and invertebrates in alcohol, and the skins of birds and mammals. From Calcasieu Pass, Louisiana, over 100 skins of birds, "including several very rare and new species," also 10 jars of reptiles and fishes from the same locality. He also sent, that year, 6 jars of fishes and marine invertebrates from Fort Morgan, Mobile, Alabama, as well as alcoholic materials from New Orleans.

In 1855, Würdemann was sent by Superintendent Bache to make for two lunar months tidal observations at St. Simons Island, Georgia, near the light house, with a Saxton self-registering gauge; and the records were reduced at the Washington office of the Survey. He also started tidal-gauge work on the St. Johns River, Florida. He was in charge of tidal observations for the Survey on the east coast of Florida, the Florida Keys, and the Gulf coast of Florida, during the years 1856 to 1859. In February, 1856 he set up self-registering tide-gauges at Fort Clinch, Nassau County, Florida (near present Fernandina), and then proceeded to St. Johns River, working along the east coast of the State until July. In the months of August to October he attended tide-gauges in the Hudson River below Albany.

For the years 1857 and 1858 I have no official data. It is certain that he was at work on the Keys during that year, for his paper⁹ on bird-collecting in South Florida is dated from "Indian Key, August 27, 1857." From a study of his bird records, in this paper and elsewhere, we find that from early February to early September, 1857, he collected birds in the neighborhood of Indian Key (with the exception of 8 to 10 April, when he collected at Key Biscayne, near present Miami); and near present Miami (Key Biscayne; Cape Florida) from 25 September to 15 November, 1857; and at Indian Key in January and February of 1858, and Cape Florida, in March, April, and May of the same year. The Smithsonian Report for 1859 acknowledges the receipt of 12 bird skins from Florida, collected over these years.

⁹G. Würdemann, "Letter relative to the obtaining of specimens of flamingoes and other birds from South Florida." *Smithsn. Rept. for 1860* (1861), pp. 426-30.

The year 1859 saw Würdemann establishing self-regulating tide-gauges on the Gulf coast of Florida: at the Tortugas, Charlotte Harbor, Egmont Key, and Tampa Bay. These were kept in order and attended by Würdemann, "who devoted to them his usual care and attention." Very satisfactory results were obtained for all of these stations, run simultaneously.

Death came to Würdemann at the age of 42, at his home in the village of Swedesboro, New Jersey. For years he had suffered from pulmonary phthisis—a familial affection, it would appear, for his oldest brother and a sister had died of it at an early age. At a meeting of the Board of Regents of the Smithsonian Institution, a resolution of regret was adopted at his passing, "whose collection of specimens from the coast of the Gulf of Mexico, and especially of the birds of Florida...have proved of great importance in increasing our knowledge of the natural history of the southern part of the United States."

Joseph Pitty Couthouy (1808-64) in Texas

S. W. Geiser

One of the most interesting and appealing members of the scientific staff of the Wilkes Exploring Expedition around the world (1838-42) was Joseph P. Couthouy. The biographers, however, have dealt badly with him. Neither *Appleton's Cyclopaedia of American Biography*, nor the curiously selective *Dictionary of American Biography* give a sketch of his life. Nor is there one in that omnium-gatherum, the Lippincott-Thomas biographical dictionary (which can hardly be called selective, judging from some inclusions). Fragmentary accounts of him are given in various notes on the work of the Wilkes expedition; and we have early been dependent on Bouvé's¹ (1880) and Dall's² (1888) biographies, scanty as they are of facts.

In recent years, however, we have Bartlett's³ account of

¹T. T. Bouvé, Boston Society of Natural History, *Anniversary Memoirs*, 1880, 134-35.

²W. H. Dall, Biological Society of Washington, *Proceedings* 4:108-111, *portr.*, 1888. This paucity of biographical material may be explained, perhaps, as a partial result of the enmity toward Couthouy of Captain Charles Wilkes of the Expedition; and the controversy that arose between James Dwight Dana, also of the Expedition, and Couthouy (regarding the alleged plagiarism by Couthouy of Dana's ideas as to the thermal distribution of corals): *Amer. J. Sci.* 45:130, 145, 1843; *ibid.* 46:378-89, 1843; *ibid.* 46:129-36, 1943; *ibid.* 46:129-36, 1843; *ibid.* 46:1-9, 10 ff [Appendix], 1844).

³H. H. Bartlett, American Philosophical Society, *Proceedings* 82:650-55, 1940.