10:497; William M. Maury, *Alexander "Boss" Shepherd and the Board of Public Works* (Washington, 1975), p. 14.

2. The purpose of the meeting on May 10 was to discuss the condition of the Washington Canal and "the best method of abating that nuisance." Cox to Henry, May 5, 1871, RU 26, Smithsonian Archives.

3. Engineer Benjamin Severson, an outspoken critic of covering the canal, estimated that the cost of doing so was at least $4 million. U.S. House of Representatives, 40th Congress, 3d Session, *Washington Canal,* House Miscellaneous Documents, No. 36 (1869), p. 4.

4. In the late 1860s, numerous petitions from the Midwest called for removing the capital to a more desirable location (such as St. Louis). Reasons for removal included the vulnerability of the District to invasion, the city's resistance to Reconstruction policies, and the poor physical condition of the city. Constance McLaughlin Green, *Washington: A History of the Capital, 1800–1950,* 2 vols. in 1 (1962; Princeton, 1976), *1*:328–329.

5. At the meeting of May 10, Cox announced that the new Board of Health possessed more power to effect change than the old, ineffective board. The new board had been appointed after the city's reorganization under a territorial government (1871–1874), which had resulted from passage of congressional legislation in February. *Washington Daily Morning Chronicle,* May 11, 1871; Green, *1*:336.

Under the District reorganization act, a Board of Public Works, consisting of five presidentially appointed members, including a governor, took charge of public improvements in the city. By an act of Congress passed on April 20, the board was specifically granted powers previously belonging to a canal commission chaired by Washington mayor Matthew G. Emery. The canal commission had authorized dredging the canal (see Doc. 141) and this work was already underway. Alan Lessoff, *The Nation and Its City: Politics, "Corruption," and Progress in Washington, D.C., 1861–1902* (Baltimore, 1994), pp. 54, 90; U.S. House, 42d Congress, 2d Session, *Investigation into the Affairs of the District of Columbia,* House Reports, No. 72 (1872), pp. vi, 139.

Cox wanted the Board of Health to cooperate with the Board of Public Works and with the newly appointed territorial governor, Henry D. Cooke, in determining what to do with the canal. Among those attending the meeting of May 10 were Cooke, Spencer F. Baird, Montgomery C. Meigs, Benjamin Severson, Horace Capron, and Thomas Green. Henry's letter was read at the meeting, as was a letter from former Washington mayor Sayles J. Bowen. Henry was able to attend a meeting held the following week. *Washington Daily Morning Chronicle,* May 18, 1871; *Washington Star,* May 18, 1871.

Severson and Green argued strongly for dredging the canal and making it navigable, and Meigs essentially agreed, finding the idea of arching the canal impractical and too expensive. But after considering the problem over the next few months, the Board of Public Works decided to fill the canal. Even prior to the May 10 meeting, one member of the board, government architect Alfred B. Mullett, already spoke in private discussions with Henry of the need to close the canal. Mullett and Henry helped make the case to Alexander Shepherd, the most powerful member of the board. *Washington Daily Morning Chronicle,* May 11, 1871; Desk Diary, April 28 and May 15, 1871; Lessoff, p. 90.

During a congressional investigation into District affairs in 1872, one member of the Board of Public Works was asked if it took the advice of any scientific men on the subject of the canal. The response was that the board took the advice of Henry and army engineer Orville E. Babcock, superintendent of public buildings and grounds for the city. *Investigation,* p. 348.

165. TO GEORGE MAXWELL ROBESON

WASHINGTON. D.C., *June* 9, 1871.

SIR: In accordance with the law of Congress authorizing the expedition for explorations within the arctic circle, the scientific operations are to be prescribed by the National Academy;[1] and in behalf of this society I respectfully submit the following remarks and suggestions:

The appropriation for this expedition was granted by Congress principally on account of the representations of Captain Hall and his friends

as to the possibility of improving our knowledge of the geography of the regions beyond the eightieth degree of north latitude, and more especially of reaching the pole. Probably on this account and that of the experience which Captain Hall had acquired by seven years' residence in the arctic regions, he was appointed by the President as commander of the expedition.

In order that Captain Hall might have full opportunity to arrange his plans, and that no impediments should be put in the way of their execution, it was proper that he should have the organization of the expedition and the selection of his assistants. These privileges having been granted him, Captain Hall early appointed as the sailing-master of the expedition his friend and former fellow-voyager in the arctic zone, Captain Buddington,[2] who has spent twenty-five years amid polar ice; and for the subordinate positions, persons selected especially for their experience of life in the same regions.[3]

It is evident from the foregoing statement that the expedition, except in its relations to geographical discovery, is not of a scientific character, and to connect with it a full corps of scientific observers, whose duty it should be to make minute investigations relative to the physics of the globe, and to afford them such facilities with regard to time and position as would be necessary to the full success of the object of their organization, would materially interfere with the views entertained by Captain Hall, and the purpose for which the appropriation was evidently intended by Congress.[4]

Although the special objects and peculiar organization of this expedition are not primarily of a scientific character, yet many phenomena may be observed and specimens of natural history be incidentally collected, particularly during the long winter periods in which the vessel must necessarily remain stationary; and therefore, in order that the opportunity of obtaining such results might not be lost, a committee of the National Academy of Sciences was appointed to prepare a series of instructions on the different branches of physics and natural history, and to render assistance in procuring the scientific outfit.[5]

Great difficulty was met with in obtaining men of the proper scientific acquirements to embark in an enterprise which must necessarily be attended with much privation, and in which, in a measure, science must be subordinate. This difficulty was, however, happily obviated by the offer of an accomplished physicist and naturalist, Dr. E. Bessels, of Heidelberg, to take charge of the scientific operations,[6] with such assistance as could be afforded him by two or three intelligent young men that might be trained for the service. Dr Bessels was the scientific director of

the German expedition to Spitzbergen and Nova Zembla,[7] in 1869, during which he made, for the first time, a most interesting series of observations on the depths and currents of the adjacent seas.[8] From his character, acquirements, and enthusiasm in the cause of science, he is admirably well qualified for the arduous and laborious office for which he is a volunteer. The most important of the assistants was one to be intrusted, under Dr. Bessels, with the astronomical and magnetic observations, and such a one has been found in the person of Mr. Bryan,[9] a graduate at Lafayette College, at Easton, Pennsylvania, who, under the direction of Professor Hilgard, has received from Mr. Schott and Mr. Keith,[10] of the Coast Survey,[11] practical instructions in the use of the instruments.

The academy would therefore earnestly recommend, as an essential condition of the success of the objects in which it is interested, that Dr. Bessels be appointed as sole director of the scientific operations of the expedition, and that Captain Hall be instructed to afford him such facilities and assistance as may be necessary for the special objects under his charge, and which are not incompatible with the prominent idea of the original enterprise.

As to the route to be pursued with the greatest probability of reaching the pole, either to the east or west of Greenland, the academy forbears to make any suggestions, Captain Hall having definitely concluded that the route through Baffin's Bay, the one with which he is most familiar, is that to be adopted. One point, however, should be specially urged upon Captain Hall, namely, the determination with the utmost scientific precision possible of all his geographical positions, and especially of the ultimate northern limit which he attains. The evidence of the genuineness of every determination of this kind should be made apparent beyond all question.

On the return of the expedition, the collections which may be made in natural history, &c., will, in accordance with a law of Congress, be deposited in the National Museum, under the care of the Smithsonian Institution; and we would suggest that the scientific records be discussed and prepared for publication by Dr. Bessels, with such assistance as he may require, under the direction of the National Academy. The importance of refusing to allow journals to be kept exclusively for private use, or collections to be made other than those belonging to the expedition, is too obvious to need special suggestion.[12]

In fitting out the expedition, the Smithsonian Institution has afforded all the facilities in its power in procuring the necessary apparatus, and in furnishing the outfit for making collections in the various departments of natural history. The Coast Survey, under the direction of Professor

Peirce, has contributed astronomical and magnetical instruments. The Hydrographic Office, under Captain Wyman,[13] has furnished a transit instrument, sextants, chronometers, charts, books, &c. The Signal Corps, under General Myer, has supplied anemometers, thermometers, aneroid and mercurial barometers, besides detailing a sergeant to assist in the meteorological observations. The members of the committee of the academy, especially Professors Baird and Hilgard, have, in discussing with Dr. Bessels the several points of scientific investigation, and in assisting to train his observers, rendered important service.

The liberal manner in which the Navy Department, under your direction, has provided a vessel and especially fitted it out for the purpose, with a bountiful supply of provisions, fuel, and all other requisites for the success of the expedition, as well as the health and comfort of its members, will, we doubt not, meet the approbation of Congress, and be highly appreciated by all persons interested in arctic explorations.[14]

From the foregoing statement it must be evident that the provisions for exploration and scientific research in this case are as ample as those which have ever been made for any other arctic expedition, and should the results not be commensurate with the anticipations in regard to them, the fact cannot be attributed to a want of interest in the enterprise or to inadequacy of the means which have been afforded.

We[15] have, however, full confidence, not only in the ability of Captain Hall and his naval associates, to make important additions to the knowledge of the geography of the polar region, but also in his interest in science and his determination to do all in his power to assist and facilitate the scientific operations.[16]

Appended to this letter is the series of instructions[17] prepared by the committee of the academy,[18] viz: the instructions on astronomy, by Professor Newcomb; on magnetism, tides, &c., by Professor J. E. Hilgard; on meteorology, by Professor Henry; on natural history, by Professor S. F. Baird; on geology, by Professor Meek; and on glaciers, by Professor Agassiz.

I have the honor to be, very respectfully, your obedient servant, JOSEPH HENRY,
President of the National Academy of Sciences.

Hon. GEO. M. ROBESON,
Secretary of the Navy.

U.S. House, 42d Congress, 2d Session, *Report of the Secretary of the Navy,* House Executive Documents, No. 1, Part 3 (1871), pp. 240–243.

Also printed, with minor variations in capitalization and punctuation, in *Smithsonian Report for 1871,* pp. 364–366, and in *Instructions for the Expedition toward the North Pole, from Hon. Geo. M. Robeson,*

Secretary of the Navy. With an Appendix from the National Academy of Sciences (Washington, 1871), pp. 7–10. In all the printed versions, the letter is dated June 9. However, a letterpress copy of what appears to be an earlier draft, in a clerk's hand, is dated June 12 (Legal-Size Letterpress, Box 38, Henry Papers, Smithsonian Archives). The printed letter contains two paragraphs absent from the letterpress copy as well as many other changes. We have not been able to determine why the printed version is dated three days before the letterpress version. Robeson's letter of instructions to Hall, printed in the secretary of the navy's annual report and in the separate, is dated June 9. Perhaps Henry's letter was dated June 9 to agree with the date of Robeson's letter, or to predate the departure of the *Polaris* from Washington on June 10.

We have indicated in notes only significant differences between the printed version and the letterpress copy.

1. See Doc. 139.

2. Sidney Ozias Buddington (1823–1888) had been commander of the ship in which Hall sailed to the Arctic in 1860. *Appletons' Cyclopaedia of American Biography* (New York, 1887–1900).

3. These included the assistant navigator, George E. Tyson, and first mate, Hubbard C. Chester, both experienced whalers, and second mate, William Morton, who had served in the navy for some thirty years and had been on Elisha Kent Kane's expeditions. Chauncey C. Loomis, *Weird and Tragic Shores: The Story of Charles Francis Hall, Explorer* (1971; Lincoln, Nebraska, 1991), pp. 246, 252, 257.

4. The draft of this letter included a sentence here that was deleted in the printed version: "We doubt not however, should this Expedition prove successful in adding to our geographical knowledge that Congress in its increasing appreciation of the value of abstract Science will provide for another expedition of which the observation and investigation of physical phenomena would be the primary object."

5. Henry appointed the committee in a letter dated May 28, 1870 (subsequent to a joint resolution on the expedition but prior to passage of the bill in July authorizing it). Members of the committee at that time were Baird, Torrey, Hilgard, John H. C. Coffin, and Newberry. Henry to Anonymous, Committee on Polaris Expedition, Committee Files, Archives, National Academy of Sciences.

6. Emil Bessels (1847–1888) had a medical degree from the University of Heidelberg and served in 1869 as a member of an expedition led by the German geographer August Petermann. *A Supplement to Allibone's Critical Dictionary of English Literature and British and American Authors* (Philadelphia, 1891); Loomis, pp. 251–252.

Deliberations over the selection of chief scientist had taken many months. Another man, surgeon-naturalist David Walker, had been Hall's top choice and had been given serious consideration by Henry and Baird. Bessels's name surfaced while Henry was in Heidelberg in the summer of 1870; a colleague of Bessels asked if a German could serve on the American expedition, and Henry assured him that was possible. Henry and Baird eventually chose Bessels, who had more experience as a zoologist than Walker and had been highly recommended by Petermann. Loomis, pp. 247, 249, 251–252; Bessels to Baird, January 26, 1871, Assistant Secretary, Incoming Correspondence, RU 52, Smithsonian Archives.

7. The draft of this letter read: "toward the North pole, by the way of Spitzbergen."

8. The draft did not include the clause characterizing Bessels's observations.

9. Richard William Dickinson Bryan (1849–1913) had graduated from Lafayette College the previous year. He was probably recommended by Henry's longtime friend James Henry Coffin, a professor at the college. D. Arthur Hatch, ed., *Biographical Record of the Men of Lafayette, 1832–1948* (Easton, Pennsylvania, 1948), p. 30; Diane Windham Shaw, Lafayette College, private communication.

Bessels's other assistant was Frederick Meyer, a member of the Signal Corps, who was in charge of meteorological observations. Loomis, p. 257.

10. Revel Keith was a former Naval Observatory astronomer now on the staff of the Coast Survey. Steven J. Dick, *Sky and Ocean Joined: The U.S. Naval Observatory, 1830–2000* (Cambridge, England, 2003), p. 75; *Register of Officers and Agents, Civil, Military, and Naval, in the Service of the United States on the Thirtieth of September, 1871* (Washington, 1872), p. 72.

11. The draft of this letter used the phrase "under the direction of Prof Hilgard & Mr Schott of the Coast Survey."

12. The secretary of the navy's instructions to Hall stated, "You will direct every qualified person in the expedition to keep a private journal of the progress of the expedition, and enter on it events, observations, and remarks, of any nature whatsoever." The journal would be handed in at the conclusion of the expedition "to be returned to the writer, or not, at the option of the Government." *Smithsonian Report for 1871*, p. 362.

13. Robert Harris Wyman (1822–1882). *DAB.*

14. The navy supplied the steamer *Polaris,* equipping and provisioning it for a voyage of two-and-a-half years. *Smithsonian Report for 1871,* p. 362.

15. This paragraph did not appear in the draft.

16. On June 10, the *Polaris* proceeded to New York from the Washington Navy Yard, where it had been rebuilt for arctic conditions. It left the port of New London, Connecticut, on July 3, and at the end of August reached the farthest point north achieved to that time (82°11' N, 61° W), some 250 miles further than Kane had gone. But faced with ice packs in the Lincoln Sea, Hall retreated to a harbor on the coast of Greenland. He fell ill and died in November. The expedition resumed "with an ambiguous command" (Loomis, p. 283), as Buddington and Bessels vied for leadership. In 1872, some of the crew left the ship after it appeared to be breaking up, and some remained on board. Both parties were rescued the following year. Loomis, pp. 255, 260, 275–276, 279–281; *New York Times,* May 7, 1871; *ANB,* s.v. "Hall, Charles Francis."

Robeson would lead a naval board of inquiry into the disastrous expedition, focusing especially on Hall's death. The board concluded that Hall died from natural causes. A century later Hall's remains were exhumed, and an autopsy revealed arsenic poisoning to be the most likely cause of death. Although the poisoning may have been accidental, Hall's biographer considered Bessels a possible murder suspect. Loomis, pp. 338–339, 344–349, 352–353.

17. The instructions followed on page 243 of the printed version.

18. The draft of this letter included a clause here that was deleted in the printed version: "of which Prof. Baird is Chairman."

166. TO FELIX FLÜGEL

Smithsonian Inst^{on}
Aug 14th 1871

My Dear Dr. Flugel

I hope long before this you have received the missing draft which, as you supposed, was accidentally left out of the letter[1] which announced its sending; but was put in another envelope and forwarded by the mail of next day.[2]

The spectacles came safely to hand several weeks ago, and have been much admired for the beauty of the frames and the perfection of the glasses.[3]

You write the English language with great correctness, and I understood perfectly well that you were explaining the cause of the delay when you mentioned the difficulties which had been incurred in procuring the articles. You need be under no apprehension as to giving me any offence.[4] I have now known you too long to have any other than a just appreciation of your character, as a [?reliable], honest, intelligent, kind hearted man.

I leave Washington this afternoon[5] with one of my daughters[6] for a visit to the Pacific Coast. My tour in Europe last summer was of such benefit to my health that I have concluded to venture another excursion of about