TRANSACTIONS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY
HELD AT PHILADELPHIA
FOR PROMOTING USEFUL KNOWLEDGE

NEW SERIES—VOLUME 58, PART 8
1968

DANIEL CARL SOLANDER
NATURALIST ON THE "ENDEAVOUR"

ROY ANTHONY RAUSCHENBERG
Department of History, Ohio University

THE AMERICAN PHILOSOPHICAL SOCIETY
INDEPENDENCE SQUARE
PHILADELPHIA
November, 1968
To
EDNA AND FRED RAUSCHENBERG,
My Mother and My Father
With Admiration and Gratitude

Copyright © 1968 by The American Philosophical Society

Library of Congress Catalog
Card Number 68-84560
ACKNOWLEDGMENT

I would like to thank the librarians, directors, and benefactors of the following libraries which have been very helpful in supplying me with material. The libraries are: the American Philosophical Society; the John Bartram Society; the British Museum; the British Museum (Natural History); the John Crozer Library; the Sotoo Branch of the California State Library, San Francisco; the Commonwealth National Library, Canberra, Australia; The University of Illinois Library; the Linnean Society of London; the Newberry Library; the Mitchell Library, Sydney, New South Wales; the Principal Probate Register; the Public Record Office; the Redpath Library; Mefill University; the Alexander Turnbull Library, Wellington, New Zealand; the Wedgwood Museum, Barlaston, Stoke-on-Trent, England; the Windsor Castle Library; and the Yale University Library.

I would also like to thank Major Sir D. H. Hawley, 7th Bart, of Moreham-Le-Fen for use of his personal collection.

A special word of gratitude needs to be given to Professor R. P. Stearns for his kind and helpful criticism of this work in its early stages, and for his help in securing materials from Sweden and his personal archives.

I also wish to express my appreciation to Doctors C. S. Alexander, D. J. Gealanoplos, F. A. Shannon, and J. B. Srich for their useful comments.

Finally I wish to thank Gretchen, my wife, for her great help in reading, typing, and correcting my manuscript.

R. A. R.
# CONTENTS

- Introduction: 1723-1760 ........................................... 3
- Early years and education ........................................... 6
- Eighteenth-century Sweden ........................................... 7
- Upsala University ............................................. 8
- Daniel Carl Solander, the person .................................. 12
- A prolonged journey to England ................................... 14
- Years ............................................................. 17
- Rise in England .................................................. 18
- The King and Kew .............................................. 19
- The M.D. degree ................................................. 20
- Decision to stay in England ....................................... 20
- A Solander-Linnaeus breach ........................................ 21
- Years of scholarship: 1763-1768 ................................... 22
- British Museum .................................................. 22
- Activities for other scientists ..................................... 23
- The community of science .......................................... 25
- Joseph Banks .................................................... 26
- IV. The voyage of the "Endeavour": 1768-1771 ....................... 27
- Equipment and personnel .......................................... 27
- Daily routine .................................................... 28
- South America ................................................... 28
- The South Pacific and Tahiti ..................................... 30
- New Zealand ..................................................... 32
- Australia ........................................................ 35
- The East Indies .................................................. 38
- The voyage home .................................................. 39
- V. The voyage of the "Endeavour": Solander's and Banks's findings ......................................................... 40
- The wait .......................................................... 40
- The heroes' welcome .............................................. 40
- The results ....................................................... 42
- Early plans for the second Cook voyage ......................... 44
- VI. The journey to Iceland: 1772 ................................ 45
- Withdrawal from the second Cook voyage ..................... 46
- A voyage to Iceland .............................................. 47
- Iceland ........................................................... 48
- The results of the Iceland tour ................................... 50
- VII. The years of prominence: 1773-1782 ......................... 51
- British Museum .................................................. 51
- Solander and Sir Joseph Banks .................................... 51
- Ormal ............................................................ 53
- Contributions to the works of others ............................. 54
- North American ties .............................................. 55
- Activities in clubs and societies ................................... 55
- Aid to Scandinavians ............................................. 57
- Death ............................................................. 57
- Bibliography ..................................................... 59
- Index ............................................................. 64

# INTRODUCTION

The latter half of the eighteenth century was for England an era of world wars, tremendous economic change, and religious revival. The years between 1750 and 1800 also saw great scientific activity. The fledgling science of chemistry had its Joseph Priestley and Henry Cavendish. Medicine had Dr. William Jenner, John Hunter, and Dr. William Hunter among its adherents. Names like Matthew Boulton and James Watt appeared in the ranks of the applied sciences. In navigation and exploration there was Captain James Cook. At the same time the British Museum and Kew Gardens, which have contributed so much to the natural science of later generations, were both passing through their infancy.

Although often forgotten in the discussions of the century, Daniel Carl Solander was actively involved in the scientific concerns of the age. One of the best students of Linnaeus, Solander was the great Swedish naturalist's first choice to be his successor and possibly was also his first choice as husband to his eldest daughter. Solander, however, had other thoughts on these matters and became instead a curator of the British Museum, the naturalist on the first Cook voyage, and one of the luminaries of the London intellectual and social scene.

His contemporaries respected and praised him highly; however, later historians and naturalists typically considered Solander a brilliant student of Linnaeus who never lived up to his early promise because of a "constitutional indolence." Their conclusion was largely based on the facts that he published very little and that he was a poor correspondent with many—but not all—of his acquaintances. As the research on this work progressed, it became obvious that Solander was anything but lazy; he was, to the contrary, busily engaged in scientific pursuits. In fact he did a great deal of taxonomic work for other naturalists, and his designations were published or attached to other person's names. His list of correspondents was found to be quite large. Thus, though it is true that he pub-
lished little under his own name, and was a poor correspondent with his mother and Linnaeus. Solander was a leading, if not the leading, botanist in Europe in the 1760's and 1770's. Actually Solander remained forgotten because by the second quarter of the nineteenth century the scientific milieu to which he belonged had passed into history. Solander, the pleasant, gregarious, talkative, systematic biologist, fit well into the world of the eighteenth-century dilettante gentleman amateur scientist and of systematic natural science. When botany moved into new more fruitful channels in the nineteenth century and the dilettante amateur gave way to the rigorously trained specialist, Solander was dismissed by subsequent generations as the gossip, slothful, sterile, arrested product of a once promising career.

1. THE MAKING OF A SCIENTIST

THE YEARS: 1733–1760

Daniel Carl Solander, although he was to achieve his greatest renown in England, spent his formative years in Sweden. He was born, raised, and educated in a Lutheran manse in Swedish Lapland. From there he went to the University of Uppsala where he studied and worked under the greatest naturalist of the day, Carl Linnaeus. In the late 1750's in response to requests from English naturalists for an adviser to aid in organizing their biological collections, Solander went to England.

EARLY YEARS AND EDUCATION

If heredity has anything to do with achievement, Daniel Carl Solander was well endowed from the start of his life. Energetic and talented, the Solander family typified a Swedish pattern of family movement from farmer to clergyman to scientist. The great-grandfather Daniel Sollmtoptian was of Norrland farming stock and became a clergyman in Nordmaling parish. His son, also Daniel, following a then common practice of altering family names on entrance to a learned profession, changed the family name to Solander. This Daniel Solander served as rector of Nordmaling; then as senior master; and later headmaster of the Harndand secondary school. Still later he became the clergyman in a rural parish near Piteå in Lapland in northern Sweden. He then progressed to the post of rural dean over the Piteå district. He married the daughter of Carl Lundius, a professor of jurisprudence at Uppsala, and had two sons and one daughter. The younger son Daniel became a professor of jurisprudence at Uppsala; the older son Carl, the father of the naturalist, followed in his father's footsteps as a senior master and then headmaster at the Piteå secondary school. Later Carl succeeded his father as rector and rural dean of Piteå. By 1732, he was the leading cleric in the region. Two years later and again six years later he was chosen as a delegate to the Riksdag.

He died on May 27, 1760, as a result of complications from an injury sustained when he jumped from his sled drawn by a runaway horse.\(^1\)

Very little is known about the mother and siblings of Daniel Carl Solander, the naturalist. Magdalena Bostnia, the mother, who survived well into the 1780's, was the daughter of a district judge in Västerbotten. She bore her husband four children; only Daniel and his younger sister Anna Magdalena reached adulthood. Anna Magdalena, a talented child, was chosen as a fifteen-year-old in 1751 to make a speech commemorating the Queen's birthday. She later married Daniel Idman, rector in Ijo, Finland. When left destitute by her husband's death in the late 1780's, she received help from Joseph Banks—the President of the Royal Society of London and friend of her brother—for herself, her two children, her mother, and a very aged aunt. Banks later in 1792 established an endowment of 250 pounds to provide support for her. After her death in 1812, the income from the endowment was used to augment the salary of the Bergius Professor of Natural History at Uppsala.\(^2\)

Daniel Carl Solander's first seventeen years were spent in Piteå, then a remote community in northern Sweden. He was born in Piteå on February 19, 1733, and was christened Daniel Solander two days later. Although the traditional Swedish practice of naming last names by adding the suffix "son" to the father's first name had been made illegal, the young Solander continued the confusing tradition by later taking his father's name as his middle name. Piteå, at the time of Solander's youth was a trading community of early seventeenth-century frame houses, clustered around a Lutheran church and school, on the frontier of Swedish civilization with primitivism not far removed. The whole of Norrland, essentially the northern half of present-day Sweden, by 1750 had about 150,000 of Sweden's 1,000,000 people in fifty settlements confined to the Bothian coastal plain. Like most frontiers, violence was not unusual. Piteå suffered Cossack raids in 1710 and 1721. In 1732 on his tour of Lapland, the town greeted Linnaeus with the sight of three corpses—two beheaded Finns and a quartered Lap. The two former had been convicted of highway robbery and murder; the latter of murdering a relative. Piteå was not only a remote frontier community, but it was surrounded by a harsh climate and terrain. Linnaeus, snowbound for the winter in southern Norrland, wrote in his diary, "Never can the priest describe Hell, this is much worse; never can the poet describe Styx, as

---


THE MAKING OF A SCIENTIST

this is much uglier." Indeed Pitèd, even farther north, is in the northernmost section of a country described by "June is spring, July summer, August autumn, and all the rest winter." The terrain is as difficult as the climate. In the west—the landscape slopes from west to east—it is tied into the Norwegian complex, an old hard dissected mountain plateau reaching a maximum height of 6,993 feet. To the east below the plateau's escarpment, called the fjäll, is a region of crystalline rock deeply overlain by glacial deposits. Where morainic deposits formed natural dams, the streams emerging from the mountains produced elongated finger lakes. Below the lakes, the streams etched deep valleys; these broaden into the Bottenian coastal plain made of Gulf of Bothnia marine deposition. It is in this last region, of course, that the earliest settlements were made. Over the region plant cover varies greatly depending on drainage and soil conditions. Thus,

On the fjäll above 1600 ft. . . . there is a meadow vegetation of scanty and monotonous growth, poor in species and dominated by mosses and lichens, while there are dwarf forms of birch and juniper. Below this alpine zone is the birch forest zone . . . Betula alboflora with some aspen and rowan growth. Where the soil is moist and fertile trees go full with dense undergrowth, but usually there is rather sparse cover. Lower down the slopes is the coniferous tree region which covers the greater part of the country and is dominated by Scots pine . . . and common spruce . . .

Where soils are poorly drained trees give way to peat bog.

It would seem that this remote barren provincial environment would have worked a hardship on Solander’s education even with his excellent family background. Admittedly his father, skilled in mathematics and natural history as well as the humanistic disciplines associated with a theological education, was able to provide the academic preparation to enter the university at Upsala; but what about the social and linguistic skills which were Solander’s mark subsequently as he was welcomed as a cosmopolitan savant by the illuminates of eighteenth-century London society? The remoteness of Pitèd may be deceiving. Even today the Lap tracks make their way through the region. Certainly during Solander’s youth Swedish officials, lay and clerical, were an elite superimposing their own culture on an alien Lap culture. Such a task obviously required adroitness in at least certain linguistic and social aptitudes. Given the position of the elder Solander and his wife, the daughter of a district judge, the son may well

have acquired the confidence, graces, and skills of the Swedish elite in his own home environment. With this inheritance mingling first in Sweden’s aristocracy while at Upsala, then with England’s, and then with the world’s on the Cook voyage was not particularly difficult.

EIGHTEENTH-CENTURY SWEDEN

The Sweden into which Daniel Solander emerged was making the transition from a nation of great soldiers, with a long proud military tradition, to a nation whose great contributions were to be in science, art, and the ways of peace. With the advent of Charles XII to the throne in 1697, Sweden entered the Second Northern War which ended with Sweden defeated and its strength irreparably sapped. When Charles died without legal issue, the Estates of Sweden, using their powers of election to end royal absolutism, elected Ulrika Eleonor in return for concessions which made Sweden a limited monarchy with the Estates controlling finances, legislation, and the council.

The struggle between royalists and constitutionalists dominated Swedish politics for the rest of the century. Ulrika Eleonor ascended to the throne in 1718. Two years later she created her husband King Frederick I; he ruled until 1721. During the first two decades of the reign, quiet cautious Arvid Horn, the Prime Minister, sought to maintain peace as well as to expand Swedish industry and commerce. The encouragement of the arts and sciences as part of this program gave rise to the foundation of the Societas Regia Literaria et Scientiarum, Kungliga Vetenskapliga Societet i Upsala, and the Kungliga Vetenskap Akademien. With Horn’s retirement, Swedish politics polarized with one group the “Hats” favoring a French-oriented, militant, anti-Russian foreign policy and royal dominance, and the other group the “Caps” favoring Horn’s domes tic policies as well as accommodation with Russia and a pro-English orientation in foreign affairs. The “Hats” with better leadership in the persons of Count Gyllenbern, as Prime Minister, and Count Tessin, as the Speaker of the House of Notables, led Sweden into another unsuccessful war with Russia in the 1740’s. It contributed to a still further decline in Sweden’s prestige. Parematically Count Tessin, the son of Sweden’s leading architect, became a patron of the arts and sciences; and he was especially helpful to Linnaeus.

When Ulrika Eleonor died in the early 1740’s, the question arose as to who would succeed her husband, Frederick I. Elizabeth I of Russia had the answer in her favorite Adolf-Frederick, Duke of Holschin-Göt...

torp; as she still held Finland, taken in the previous war, Elizabeth had the "trump card." The Estates agreed to name Adolf Fredrikk and his wife Louisa Ulrika, the sister of Frederick II the Great of Prussia, as successors in return for Finland. These two became involved in the struggle between royals and liberals immediately; they also became patrons of Swedish science involving both Linnaeus and Solander in their activity. Although the King was a modest man, the Queen had all the qualities of her royal brother.

Adolf Fredrikk was a . . . [simple] man . . . happier at a carpenter's bench than at a Council table. Louisa Ulrika was gay, gifted, pretty, vain and eager for power. Her great delight was to surround herself with artists, writers, and scientists. Both took a keen interest in natural science.49

In 1751 they ascended to the throne. During the Seven Years War, the "Hats," following the lead of the royal beneficentress, took Sweden into the conflict hoping to profit at Prussia's expense. Unfortunately for them, Sweden was unsuccessful, and the "Caps" took control of the government. In power the "Caps" pursued a policy of greater economy in government, peace in foreign affairs, and freedom of the press. Their cutbacks in expenditures hurt several vested interests; and when the depression of the late 1760's occurred, the two combined made it possible for the King to establish a modified royal absolutism. In 1770 a new monarch Gustaf III, a patron of poets and artists, came to the throne. Sweden was given several years of peace, stability, and prosperity.50

During the period 1718-1772, often referred to as the "Period of Freedom," some impressive scientific developments arose in Sweden. In general through most of the seventeenth century, until the battle between Cartesianism and Aristotelianism in the last third of the century ended with a victory for the former, Lutheran orthodoxy dominated the schools and directed their curricula into channels more appropriate for theological rather than scientific studies. Until the turn of the seventeenth century, schools still taught Latin, Greek, logic, general history, rhetoric, arithmetic, and geometry. Modern languages, botany, and geology remained outside the curriculum; though, they were taught in private schools or, as seems true in Solander's case, by private tutors. As late as 1700, Stockholm alone had 18 such private schools and 130 tutors. Beginning near the end of the first quarter of the eighteenth century, building on the foundation laid in the late seventeenth century on Cartesianism, Swedish science blossomed vigorously in the "Period of Freedom." The stimuli for these changes were multiple. The defeated nation, now orientated towards middle-class business interests, saw the utility of science. The experience gained by Swedish scientists—especially physicians—as they studied abroad amidst the vigorous experimental activity of the universities of the Netherlands as well as the Royal Society of London, fostered similar Swedish concerns. Finally the challenge Newtonianism raised to the dominant Copernican system required answers and experimentation. The first scientific academy in Sweden came into existence at Uppsala in 1710 when faculty members interested in science formed an academy to pursue scientific studies. By 1730 the Academy of Science had come into being with the promotion of the practical application of mathematics and natural science as one of its major goals. By 1750 at Uppsala, the Riksdag had established chairs of economics, physics, and chemistry to replace professorships of canon law, poetry, and oriental languages. The first census taken in 1750 is another example of the use of applied mathematics in the interest of society. Some sort of quantitative insight into the scientific vigor of the age can also be gained from the fact that of the thirty scientists considered in Swedish Men of Science, thirteen had their active years in this period.51

On July 1, 1750, young Daniel Solander entered Uppsala University and this stream of eighteenth-century activity. Initially the young man, residing with his uncle Daniel Solander, professor of jurisprudence, studied the humanities and languages, attended some of his uncle's lectures, and appeared headed for a legal or clerical career. However, when he began to study natural science and chemistry, under Carl Linnaeus and Johan Gottschalk Wallerius respectively, his interests turned in that direction. With Linnaeus's help, Solander secured his parents' permission to enter into an unexpected career in science and began to work toward a Doctor of Medicine degree.52

UPPSALA UNIVERSITY

Eighteenth-century Uppsala and its university were essentially small provincial centers by twentieth-century standards. The university, Sweden's oldest, was founded initially in 1477 by the Archbishop of Uppsala. During the Reformation era, however, it suffered from the religious uncertainty and was actually closed for a time in the late sixteenth century. The town, the traditional political capital of Sweden as well as its religious and university center, also suffered a decline during the sixteenth century. At the time the university was closed, the archbishop was reduced in importance by the religious changes of the Reformation, and the capital was moved to Stockholm. In the seventh

49 Gustaf, ibid., p. 226.
eighteenth century Uppsala’s importance was fixed permanently as the university recovered, and the town became the provincial administrative center. At the core of the old town were the cathedral which was built in 1276, the castle, and the university. Situated on a long narrow gravel ridge, this complex overlooked the marshy valley of the river Fyris. By Solander’s day, the town with about 5,000 people had spilled down into the plain. Beyond the confines of the city, the plain, covered with grain, pasture, and meadow, melted off into forest-clad hills. The university was still recovering from the disastrous fire of 1702 which had destroyed much of the physical plant as well as the town’s castle. Fortunately the library with its fine medieval holdings escaped harm. This recovery took place during the “Period of Freedom” and may well have reinforced the intellectual vigor of the era with the stimulus of a common rebuilding effort. When Solander enrolled, the university had between five and six hundred students divided into thirteen nations, essentially the provinces from which the students came.14

In general Uppsala at this time may not have been too different from other eighteenth-century European universities. These have been described as “held in bondage by church and state . . . anchored firmly to the Middle Ages in their ideals, and . . . commonly despised by the progressives as obsolete, monkish foundations, busy with crotchets and enslaved to the antique.” Goethe gave his view of the eighteenth-century university when he had the student in Faust say, “the professors handed me lies from old books, which they did not believe themselves; and so they robbed me and themselves of true life.”15

The Swedish universities may have shared this poverty. Certainly there were no matriculation requirements; Latin was still the medium of instruction, and too many professors, in addition to being conservative orthodox Lutherans who favored a clerically orientated classical curriculum, were unproductive scholars. If these woes were not sufficient burdens to bear, the Riksdag constantly interfered in university affairs to the point of actually making faculty appointments. All too often to the detriment of university life, these reflected a man’s standing in the eyes of the legislature rather than his standing in the eyes of his colleagues or his students. It is not surprising then that half the students who entered the university brought their tutors with them.16

Although the conservatism of eighteenth-century academic life may have been characteristic of Uppsala, its natural-science faculty with Johann Gottschalk Wallerius, Nils Rosen von Rosenstein, and Carl Linnaeus was excellent by any criteria. Wallerius, like Solander and Linnaeus, the son of a clergyman, was born on July 11, 1709, in Stora Mälöns Parish of Närke Province, Sweden. By the age of five he was studying Hebrew and he entered Uppsala in 1725. Although initially Wallerius inclined towards theology, and never really lost a Biblically centered view of the natural world, he eventually specialized in chemistry and mineralogy. In 1732 he was made professor of medicine at Lund University. In 1735 Wallerius received his M.D. degree and became a lecturer at Uppsala. During the next few years he practiced medicine, supervised and chemically analyzed a mineral spring, and began a chemical and mineral collection. In 1740 he tried to secure the medical professorship at Uppsala; however, Linnaeus received the appointment instead. The same year Wallerius’ Decades Binae Theatrum Medicorum attacking Linnaeus and casting a shadow on his own reputation was published. In 1741 he was promoted to assistant professor of medicine which involved public lectures in physiology and anatomy. At the same time he gave private lectures in chemistry and mineralogy. In 1750 Wallerius became Uppsala’s first professor of chemistry, metallurgy, and pharmacy. Four years later, owing to his efforts, the university’s chemistry laboratory was built. He also developed an interest in the application of chemistry to agriculture and became the “father of agricultural chemistry.” He published Agriculturae Fundamentum Chemicum, 1761, in which he propounded the then novel thesis that the agriculturist should be concerned about the chemical composition of soils and plants. In 1767, because of declining health, he resigned his post at Uppsala and retired to his farm where he experimented with his own theories. The culmination of his life’s work was his Observationes Agriculturae During Thirty Years, published in Swedish in 1779. Wallerius died November 16, 1785.18

Even more lavish was added to the faculty of Uppsala by the presence of Nils Rosen von Rosenstein, the “father of Swedish medicine.” He was born on February 1, 1706. His father was vicar of Svedjärda and Rosjö near Gotthenburg. Nils too initially planned to enter the ministry; however, as he studied at Lund University, medicine soon became his chief interest. Financial difficulties—his father raised nine children on a clergyman’s salary—forced him to go to Stockholm where he found employment as a tutor and translator. In 1728 Rosen was offered an assistant professorship in medicine at Uppsala provided he secured the M.D. degree. Following an extended tour of the continent visiting the universities of Halle, Turin, Montpellier,
Paris, and Leyden, he was granted the M.D. degree at the University of Hardewijk in 1730. In 1731 Nils Rosen assumed his duties at Uppsala and began a renaissance in Uppsala's languishing medical studies. With simple, clear, and well-organized instruction, Rosen soon established himself as an anatomy teacher-scholar of the first order. His *Compendium Anatomicum*, 1736 and 1738, was the first real Swedish anatomy. When this project was completed, he became interested in improving Uppsala's clinical facilities. Although Uppsala had established a hospital in 1669, the facilities were not finished until 1717 and had decayed thereafter. Because of Rosen the hospital was restored and became Sweden’s first medical institution used for clinical and classroom demonstrations. After this, the physician made several other improvements in Swedish medicine. He was the first Swedish doctor to use quinine to fight malaria found in the Swedish marshes as far north as Lapland. He was also a leading advocate of inoculation, and he successfully humanized the royal family for small pox. However, Rosen is best remembered for his work in pediatrics. His *Instructions on Childhood Diseases and Their Treatment* (1764) represents a major milestone in this field and was translated into German, English, French, Danish, and Dutch. Even before this, he was made first *archiep.* essentially dean of the college of physicians or physician in chief, and in 1762 ennobled as von Rosenstein. By 1756 he had withdrawn from teaching and concentrated on other activities. In 1773 he died.

Carl Linnaeus, however, is the best remembered of Uppsala’s trio of natural scientists. Carl Linnaeus was born in the parish house at Råshult in Småland on May 23, 1707. He was educated at Vaxjö, Lund, and Uppsala where he soon showed much talent. In 1729 he began investigations into the stamens and pistils of flowers which soon convinced him that these organs could serve as the basis of a taxonomic system. In 1732 he collected natural history materials in Lapland for the Academy of Sciences. During this expedition Linnaeus stopped at the Solander residence in Petsa. Three years later *Systema Naturae* was published setting forth the Linnean system which became the standard system for Sweden, Germany, and England by the 1780’s. After travels which took him to Denmark, Germany, the Low Countries, France, and England, in 1741 Linnaeus was appointed to the chair of medicine in Uppsala which he exchanged for the chair of botany in the following year. Following several years of botanical exploration in Sweden, after 1748 Linnaeus devoted himself to teaching and writing. He was knighted in 1762, and was thereafter known as Carl von Linné. Weakened mentally and physically by a stroke in the early 1770’s, Linnaeus passed away on January 10, 1778.

Essentially the Linnean system was a taxonomic technique including plants, animals, and minerals. The plant system was the most influential and complex. Plants were divided into 24 classes according to the number, proportions, and situations of the . . . male organs, and each class further subdivided in accordance with the number of . . . female organs.” These groups, called orders, were in turn broken down into genera which Linnaeus regarded as the basic distinct unit. Each order had certain features common to all its species which were primarily divided according to fructification. Other features like the shape of the leaves also were used. First set forth in 1735, by 1758 the tenth and classic edition of the *System of Nature* was published.

The utility of the work depended very much upon the rigidly methodical, and extremely succinct, descriptions, which in turn were made possible by the use of a technical terminology that was largely of Linnaeus own creation. He also paid great attention to nomenclature. . . . The rules which Linnaeus drew up for coping with this problem anticipated in part those now accepted by international agreement, and within a few years his binomial system was universally accepted among naturalists.

The Linnean Order was determined by a purely mechanical procedure. To it might be assigned thousands of different plants.

There can be no doubt Linnaeus was a great teacher who left his mark on all his students. They responded to his enthusiasm for his subject by literally going to the ends of the earth to collect flora, fauna, and minerals. Ternstrem, Linne’s first pupil, died on his way to China in 1745. Fredericke Hasselquist went to the Near East in 1749 where he ranged back and forth between Egypt and Smyrna until his death in 1752. Forskål died in 1761 while collecting flora and fauna in the Holy Land to be used to provide more complete knowledge about the Holy Land. Peter Leoffling went to Spain in 1751; two years later he went to the Spanish Caribbean where he died of fever at age twenty-seven. In 1763 Falk went to St. Petersburg to become court physician. He committed suicide in Tartary while collecting plants for the imperial botanical gardens. Not all of Linnaeus’ students died on quests for the cause of science. Rolander who went to Surinam in 1755, Torrín who in 1750 went to the Malabar Coast and Surat, Osbeck who went to China in 1751, all survived their adventures. Peter Kalm, after spending three years in America from 1747 to 1751 and later traveling in Russia, returned to Sweden where he lived as a professor until his death in 1790. Andrew Sparrmann who died in Stockholm in 1820 was in China in 1765, Cape of Good Hope in 1772, and West Africa.

---

27 Ibid., pp. 75-80.
in 1787. Charles Peter Thunberg, who died in Upsala at age eighty-five in 1828, in the course of a nine-year odyssey made in his youth visited the Cape of Good Hope, Java, Ceylon, and Japan. This list does not exhaust the voyaging students of Linnaeus. Xylander went to Italy; Alstroemer traveled to Italy, France, Spain, and England; Von Troil to Iceland; Fabricius saw Norway, England, and France; and Solander's travels carried him to Lapland, the Madeiras, South America, the South Pacific, Australia, the East Indies, St. Helena, and Iceland.82

Probably the most complete, but certainly from the evidence typical, account of what study with Linnaeus was like, is the following description by Johann Christian Fabricius, Linnaeus' student a few years after Solander and an eighteenth-century entomologist.

For two whole years [1762 to 1764] have I been so fortunate as to enjoy his instruction, his guidance and his confidential friendship. ... In summer we followed him into the country. In winter we lived directly facing his house, and he came to us almost every day, in his short red robe de chambre, with a green fur cap on his head and a pipe in his hand. He came for half an hour, but stopped a whole one, and many times two. His conversation on these occasions was extremely agreeable and pleasant. It either consisted in anecdotes relative to the learned in his profession... or in clearing up our doubts, or giving us other kinds of instruction. He used to laugh then most heartily, and displayed a serenity and an openness of countenance, which proved how much his soul was susceptible of amity and good fellowship.

Our life was much happier when we resided in the country... He rose very early in summer, and mostly about four o'clock. At six he came to us because his house was then building, breakfasted with us, and gave lectures upon the natural order of plants (ordinum naturalium plantarum), as long as he pleased, and generally till about ten o'clock. We then wandered about till twelve upon the adjacent rocks, the productions of which afforded us plenty of entertainment. In the afternoon we repaired to his garden, and in the evening we mostly played at the Swedish game of trisett, in company with his spouse.

On Sundays the whole family usually came to spend the day with us... While we were dancing, the old man, who smoked his pipe... became spectator of our amusement, and sometimes, though very rarely, danced a Polish dance, in which we included every one of us of young men. He was extremely delighted whenever he saw us in high glee, nay, even if we became very noisy, had he not always found us so, he would have manifested his appreciations lest we should not be sufficiently entertained...

What made him so excessively kind towards us was, because we were foreigners... we also were those who alone adhered to him, who alone heard and attended him, and remained at Upsal entirely on his account. He found that we loved his science, and that we proved this love by a most zealous application to its different pursuits... He was also fond of conversation on all subjects relative to natural history. That science almost entirely engrossed his speech, and every thought of his mind. When I got acquainted with Sir Charles Linnaeus, who was then in his fifty-sixth year, increasing age had already furrowed his face with wrinkles. His countenance was open, almost constantly serene, and bore great resemblance to his portrait in the Species Plantarum. But his eyes—of all the eyes I ever saw—were the most beautiful. They certainly were not little, but carried and a penetration of aspect which I never observed before in any other man. It sometimes appeared to me, as if his locks would penetrate through the very innermost recesses of the heart.

His mind was remarkably noble and elevated, though I well knew that some persons accused him of several faults; the acuteness and energy of his mental faculties, even through his eyes. But his greatest excellence consisted in the systematical order by which his thoughts succeeded each other. Whatever he said or did was founded on order, to truth, and to regularity. In his youth his memory was uncommonly vigorous, but it began to sink early into decay.

His passions were strong and violent. His heart was open to every impression of joy; and he loved jocularity, conviviality and good living. He was an excellent companion, pleasant in conversation, full of strong hints of fancy and seasonable and entertaining stories; but at the same time, suddenly tossed to anger and bitterness; the sudden effervescence of this fiery passion subsided, however, almost at the moment of its birth and he immediately became all plain good nature again. His friendship was sure and irrevocable. Science was generally its basis, and every one who knew him must own what concern he always manifested for his pupils, and with how much zeal they returned his friendship, and frequently became his defenders...

The ambition of Linnaeus knew no limits; and his motto, Famae Extensio Factis, was the real mirror of his soul. But... it never degenerated into early or offensive pride. He certainly did not care much for the opinion of his contemporaries, and only heeded that which proceeded from those who were men of genuine literary merit. His way of living was moderate and parsimonious, his dress plain, and often times even starchy.

In the pursuits of his studies he could but ill brook contradiction and opposition. He corrected his works agreeable to the just remarks of his friends. He did not think of his opponents he despaired... he could not easily forgive aggressions, and strained every nerve to erase them from the annals of literature. He was liberal in dispensing praise, because he was fond of being flattered; and this, indeed, may be considered as his greatest fault. At the same time, his ambition was founded upon the consciousness of his own greatness.

He was not quite happy and comfortable in his own family. His wife was tall, robust, dominating, selfish, and desirous of every advantage of a good education. ... Under those disadvantages, the education of the children of Linnaeus could not but be of an inferior description. The young ladies, his daughters, are all good-tempered, but rough children of nature, and deprived of those external accomplishments which they might have derived from a better education. The younger Linnaeus, who succeeded his father in his professorship at Upsal, is certainly not endowed with the same vivacity; but he has-knowledge which he acquired by a constant practice of botany, and by the many and excellent observations of his parent which he found in his manuscripts, must have rendered him a very useful man there. The eldest daughter, who married Cap. von Bergencrance, returned afterwards to her parents, and lived constantly in their house.83

82 W. Mac Gillaey, Lives of Eminent Zoologists (Edinburgh, 1834), pp. 251-254.
A modern historian summarizes Linnaeus's character and contributions in the following insightful statement.

A tender and lyrical gleam surrounds the figure of Linne... He stands out as the Flower King, a man with great simplicity and孩童的诗歌 -- which produced a strong sense of being called to uncover God's secrets in nature -- self-assurance, and a sense of humor were all seen in Linnaeus's personality. In later years, even before his health declined, bitterness and pessimism also entered the character of Linnaeus. As for Linnaeus's contribution to science, although he resolved the old problem of classification, he did not pioneer into new areas. His scholarly mind provided him with a talent for logic and order; this in turn led to the development of a simple correct classification which stimulated several generations into collecting materials from all over the world. Despite the fact this became somewhat sterile in later generations, no reservations, however, can minimize the profound significance of his work. His brilliant powers of observation led to discoveries in various fields which were later to reveal even deeper content. As a systematic botanist, Linne put on a whole science in a completely different condition from that in which he received it. Finally, and well worthy of consideration, Linne grew together with his nation as perhaps none other of the great scientists. He has become one of the indispensable figures in the history of his country's spiritual cultivation.  

DANIEL CARL SOLANDER, THE PERSON

Daniel Carl Solander seems readily to have formed a bond with Linnaeus. The young student certainly took full advantage of the opportunity to study with Linnaeus. The two men had much in common. Linnaeus had visited Solander's home on his tour in Lapland in 1732. They both were Lutheran clergyman's sons. In addition Solander's personality and Linnaeus', though not identical, appear to have corresponded at some levels. Fabricius' statement that Linnaeus was "an excellent companion, pleasant in conversation, full of seasonable and entertaining stories..." sounds very similar to statements made about Solander by his English acquaintances.  

In his maturity years Solander fit the following description. He was short, stout, and 13 stone—182 pounds—in weight. His eyes were small, his face jovial, and his complexion fair. He was a careless dresser given to bright waistcoats. He combined humility, charm, absent-mindedness, and social skill in an ingratiating blend. James Boswell once said of Solander, "Throw him where you will, he swims." Frances Burney—an early female novelist—found Solander "very sensible, full of talk, information, and entertainment... a philosophical gus". Charles Bladen referred to him as "the mildest, gentlest, most obliging of men." In addition Chalmers's A Biographical Dictionary reported:

[Those] who knew him intimately [said] that to a very extensive knowledge he added a mode of communication, not only remarkable for its readiness, but so peculiar a modesty, that he contrived almost to appear to be a man of great impression when he was bestowing it in the most unassuming manner.

Reconstructing Solander's personality beyond this point is difficult because of the paucity of material. From his background it can be assumed that he was an orthodox Lutheran, rejecting the piety and embracing the rationalism of the eighteenth century. These conclusions are lent some support by the fact that one occasion Solander jokingly and disdainfully told Joseph Priestley, the Unitarian divine and chemist, about a Methodist sailor on the "Endeavour" whose attempts to convert the Polynesians were unsuccessful because of the native's inability to comprehend the doctrine of the Trinity.

Solander seems to have had no particular interest in women. Mrs. Thrale, Dr. Johnson's "intimate friend" reported:

...I have been comically unfortunate with regard to Dr. Solander. Earnest to please the Man, & get him about me, I have invited & caressed & flattered him, but still something fatal stands in the Way of our Intimacy... from my Heart I wish to make myself agreeable to him & have taken more than ordinary Pains. [Mrs. Thrale's desire for Solander seems to have been a quest for his friendship and not romantic intimacy; a few months later she recorded in her diary] the Men I live best in the World are Johnson, Sсrase, and Sir Philip Jennings Clarke. The Men I like best in the World are Burney, Solander, and the Bishop of Peterborough.

The first indication of questionable personal conduct on Solander's part is found in his November 16, 1761, letter to Linnaeus, in which the younger man indicated he intended to go down to the Thames in order to buy specimens destined for other naturalists in England. Solander wrote, "If I can select a few first, I shall not be scrupulous in the matter." Far more serious and questionable was Solander's assumption of the title Doctor before he had earned it. While this undoubtedly helped him advance in England in 1762, it was hardly an honest procedure. Solander also apparently shared the aristocrat's disdain for the peasant. He wrote to Linnaeus on April 2, 1760, about the peasants of Scania, "I never could have conceived peasants so stupid, they hardly know more than dogs or..."

31 Solander to Linnaeus, 11/10/1761, p. 4, Solander manuscripts in the library of the Linnean Society of London.
sterile."  Even this, however, must be subject to certain reservations. As Scania was only added to Sweden in 1660, Sweden generally viewed the Scanians as inferiors—a Danish group. Linnaeus for example once wrote, "This we also see in Scania and a Lapp; both are lazy dogs."  

Solander has often been accused of laziness. The Dictionary of National Biography states that Solander failed to live up to the early potential he showed because of "a constitutional indolence." Elsewhere E. E. Smith wrote that "the dissipation of London society seems to have induced in him pernicious habits of indolence, and to have developed untoward traits of character, rarely witnessed in a votary of the amiable science." The most caustic statement is found in Norman Brett-James, The Life of Peter Collinson, in which the author indicated that the "lazy and dilatory" Solander helped Collinson when "he could summon up enough energy" to do so. Despite these statements, Solander was not lazy. Admittedly Solander's list of publications—two articles and one booklet—is not impressive; however, a closer examination of Solander's life shows that he was a busy man engaged in scientific pursuits. A typical week in the 1770's followed this routine. Five days were spent at work in the British Museum. A part of every day was consumed in activities in Banks's house. One day a week was used at the Duchess of Portland's Museum. After attending Sir Joseph Banks's Thursday morning breakfasts, Thursday afternoons and evenings were devoted to the affairs of the Royal Society and Royal Society Club. On Sundays Banks's dinners for a selected small group of guests were often followed by a tour of the British Museum led by Solander. One other evening a week was spent at Young Slaughter's Coffee House attending the meeting of a society of scientists. In addition to all these, Solander spent alternate Monday evenings with Dr. John Forster's society of physicians. The list of scientific projects upon which Solander worked by himself or in collaboration with others is equally impressive. Krol, in his Bibliotheca Botanica Suecana lists sixty-six works to which Solander made a contribution. Specifically he was the first taxonomist to describe and catalogue the natural history collection of the British Museum; he described and catalogued Sir Joseph Banks's museum; he did the plant classifications for Kew Gardens, and he delineated and arranged the Duchess of Portland's collection. Furthermore Solander did the descriptions for Gustav Brander's Fossilia Hantoniense, the second edition of Alexander Russell's Natural History of Aleppa, and John Ellis's Natural History of Zephyrates as well as many of Ellis's and Dr. John Forster's articles. He also helped Peter Collinson, Thomas Pennant, John Lightfoot, John Bartram, and Alexander Garden. More indirectly, Solander's notes and cataloguing slips were used by Johann Reinhold Forster, William Aiton, and others. Finally, his knowledge of the Linnaean system, his personal contact with Linnaeus, and his own popularity with English naturalists, all combined to promote and implant the Linnaean system in the British Isles. 

Solander's contributions are probably best summarized by James Edward Smith who, while adding to the myth of Solander's laziness, recognized his contributions as well.

The dissipation of London society... and the indolence induced by a sedentary and luxurious life [appear in] Solander's growing neglect of his museum work, which Linnaeus complains... even much earlier experienced by Solander's mother; several of whose letters to her son were found unopened after his death.

It ought nevertheless to be remembered, that... the talents and liberality of this... man... proved the example and the spur of all that has been done for natural science, during half a century, in Britain; perhaps in every quarter of the world. It was Solander who reduced our garden plants to order, and laid the foundation of the Hortus Regalis of his friend Aiton. His instruction made every body correct and systematic, and introduced Linnaean learning and precision... No one ever came so near his great teacher in the specific discrimination of plants. In generic distinctions he was prone rather to combine than to separate... Natural orders or affinities seem never to have entered into his contemplation. In nomenclature and terminology he was always classical and correct... Conchology especially engaged his attention, and he laboured successfully, with Ellis, in that study; as also in the investigation of the more obscure tribes of marine vegetables as well as animals.

All of this lay ahead of the young student; however, in his collegiate days he took full advantage of the opportunities at Uppsala. By 1752 Solander was helping Linnaeus on his numerous projects. In that year during his summer and Christmas vacations, Solander traveled with Linnaeus to Stockholm where they classified the contents of the royal collections at Utriksdal and Drottningholm as well as the holdings of Count Tessin. Adolph Frederich had made Linnaeus' acquaintance in the mid-1740's. In the years which followed a warm personal bond was formed between the two men. When Adolph became king in 1751, he established a natural history collection which he asked Linnaeus to catalogue. His wife, also Linnaeus' friend, 

---


following her husband’s lead, established a museum of shells and insects at Drottningholm Palace. Count Tessin, the son of Sweden’s leading architect, maintained a life-long interest in art, and culture. He also was Linnaeus’ benefactor on many occasions. The result of Linnaeus’ and Solander’s labor was published in Museum Adolphi Frederica, Museum Ludovicae Uransk, and Museum Tessinianum. The indexes of these works were prepared by Solander. In the spring of 1758, Solander published a condensation of Linnaeus’ General Botany under the title CaroL IINIAUS EINEZATIB = Botanica. Two years later Solander examined a supposedly parasitic worm; this study resulted in his 1772 essay, “Furia interna vermis.” When in 1758 Linnaeus purchased Patrick Browne’s herbarium—the basis of Browne’s Civil and Natural History of Jamaica—Solander helped Linnaeus examine these plants, and his handwriting appears on many of the specimens still preserved in Linnaeus’ herbarium. These works coupled with Solander’s frequent visits to his home gave Linnaeus the high esteem for his student reflected in the teacher’s letters. This regard was so great that Linnaeus asked Solander to be his successor and also hoped Solander would become his son-in-law. Solander also made two botanical expeditions to Lapland on his own during the 1750's. Although lumped together by some accounts, the first of these excursions was definitely in 1753. It is mentioned by Linnaeus in the tenth edition of Systema Naturae and in a letter from M. Kachler to Linnaeus dated April 10, 1754. On this expedition Solander went up the Pitka basin, crossed the Kjöllen Mountains—a region not explored until 1880—into Norway, botanized in the vicinity of Rorsstad, Norway—near present-day Bodø—and returned to Upsala. Solander’s second Lapland expedition was undertaken in 1755 to the Torneträ basin. The plants collected from these excursions, still preserved, are among the oldest in the Swedish Natural History Museum. The latter of these two excursions may explain a widely circulated falsehood concerning Solander. This particular story interestingly is confined to continental non-English accounts of Solander’s life. In 1782 Johann Reinhold Forster reported that Solander “after completing his studies, traveled over Lapland to Archangel, from there to St. Petersburg and again to Upsala.” Although there is no basis for this tale in Solander’s letters or papers, and quite probably it is merely an invention of Forster’s mind, a charitable conclusion would be that Forster may have confused

Solander’s trip to Lake Torneträ with a trip to Finnish Lapland and Archangel. Somewhere during the course of his life, Solander acquired a knowledge of several languages. His English was excellent. This quite clearly he started to learn during his last years at Upsala in preparation for his journey to England, although his mastery of the language was greatly improved during his first year in England. Norwegian was probably learned on his first tour of Lapland during his stay in Rorsstad. Swedish and Latin, as well as possibly Greek and Hebrew, were obviously learned as he grew up. Polynesian he picked up while on Tahiti. However, what about the German which he was to use in the East Indies on the first Cook voyage? Probably this too was learned at Upsala. Solander undoubtedly knew students from Sweden’s German territory on the south shore of the Baltic. He may well have learned the language from them in order to take advantage of the rigorous outpouring of the eighteenth-century German universities and to be equipped to study at them. It is also possible that Solander may have known Dutch. Although Banks’ “Endeavour” journal is inconclusive about the subject, one Banks biographer indicated that Solander was disappointed that Dutch was not spoken on Savu when the “Endeavour” visited there. Cook in his journal indicated that Solander understood the language well enough to carry on business with the Dutch on Savu. If he knew Dutch, it was probably learned at Upsala also. Although no longer required of his generation of students, going abroad to study for the doctorate was a Swedish academic tradition just abandoned. As Dutch universities were among the favorite institutions—Linnaeus himself studied at them—Solander may well have learned the language in preparation for such study.

A PROLONGED JOURNEY TO ENGLAND

Solander’s years of apprenticeship with Linnaeus, coupled with a desire to go abroad, made him a logical choice when Peter Collinson and John Ellis asked for help in establishing the Linnean system in the Isles. Ever since Linnaeus visited England in the 1730’s, the


system had been gaining popularity. Although important naturalists like John Martyn, the elder, and John Dillenius never accepted the sexual system, by 1754 Isaac Gruenberg, Linnaeus’ student, had reworked Dillenius’ edition of Ray’s 

*Flora Anglica*. The first English naturalists to use the Linnaean system were Benjamin Stillingfleet in *Miscellanea Tracts in Natural History* and Philip Miller in his seventh edition of *Gardener’s Dictionary* published in 1759. These men were soon followed by James Lee’s *Introduction to Botany* and John Hill’s *Flora Britannica*. Despite the growing use of the binomial system for classification, as early as May 12, 1756, in order to compile a catalogue of his garden according to the Linnaean system, Peter Collinson asked Linnaeus to send a student to England. This request had crystallized into a commitment of Solander to visit England by October 24, 1758, when John Ellis advised Linnaeus to have Solander improve his English before he arrived. In the course of 1758 and 1759, with the help of Linnaeus, plans were laid for Solander to go to England for a year, or two at most. Getting his parents’ permission was a difficult problem; and only after Linnaeus intervened, was it secured. In addition the great naturalist helped Solander secure financing from Count Carl Frederick Piper. This financial arrangement was initially a partial pension, but it became a full pension later. However, when this proved insufficient during the first year in England, Solander was forced to borrow money from Linnaeus. Solander left Uppsala for England on April 6, 1759. When he had not arrived in England by July 25, a worried Peter Collinson asked Linnaeus about him. Linnaeus, who on May 30, already had asked John Ellis to look after “my much beloved pupil” knew no more than Collinson about the young traveler. Solander’s whereabouts remained a mystery until the fall of 1759.

The young naturalist’s journey to England was to be delayed for over a year by an attack of epidemic influenza. Just five days after Solander left Uppsala he was visiting relatives in Westra Carlby, in southwestern Sweden not far from Copenhagen. Although he was slightly ill when he arrived, while he waited for the English convoy Solander explored the surrounding area. On one of these jaunts Solander became ill. The syndromes included fever, nausea, and a headache. The last felt like a band being tightened around the head, and was so intense that Solander’s eyes teared and his gums bled. The fever, at its height, followed a definite three-day cycle; the pain began in early evening, mounted until midnight, and then disappeared the following noon, and then recommenced the following evening. Although the disease had some of the symptoms of scurvy and some of the symptoms of Quaran Fever, a variety of malaria, Solander recognized the disease as Uppsala Fever, epidemic influenza, and took cinchona to counteract the illness.

After the initial attack, Solander suffered several recurrences. The first attack limited Solander’s activities from late April through May and prevented his departure for England. Subsequently a combination of damp weather and attempts to resume a normal schedule caused to cease relapses throughout July and August. When this pattern seemingly ended in early October plans to commence the journey were made. However, when Solander set out for his port of embarkation he suffered a relapse. As things turned out this last relapse was all for the best because the ship Solander was to sail on founded on the rocks of Gothenburg with heavy losses. By the time he had recovered in December, winter had closed the Baltic to shipping, forcing him to postpone the trip to England until spring.

Although the illness preceding more than fifteen minutes at a time, Solander was able to examine the natural and human life of the region. In the course of his stay he did find two new species of insects which were sent to Linnaeus, along with some other insects and plants, in May, 1760. In addition he did keep a record of the flora, fauna, and people observed; although aside from the two insects, he found nothing new. Generally he thought Scanian society was inferior to that of central and northern Sweden. As for the University of Lund, its natural history museum and faculty were both inferior to Uppsala. On February 23 he wrote, “One may in vain expect of the kind [natural history] museum in Lund the same exhibits as those in Uppsala.”

The following May as the sailing season approached, Solander moved from Westra Carlby to Helsingor in Denmark. Here he waited, passing his time collecting plants and insects, until the spring thaw would allow the first blossoms of the season to sail from Stockholm to

---


44 Solander to Linnaeus, 10/15/1759, pp. 2-8; 11/2/1759, pp. 1-4; 12/3/1759, pp. 2-3; 4/21/1759, p. 1; 5/19/1759, p. 1; 5/24/1759, p. 3, Solander MSS.

45 Solander to Linnaeus, 10/15/1759, pp. 1-3; 5-8, 10, 12-15, 18-20; 11/19/1759, pp. 2; 12/25/1759, pp. 1-4; 1/16/1760, p. 2; 2/28/1760, pp. 1-5; 4/2/1760, pp. 2-4; 4/17/1760, pp. 2-4; 5/19/1760, pp. 1-2; 5/24/1760, pp. 1-3, Solander MSS.
London. On May 30, the fleet arrived, and Solander set out for England.46

Although the young naturalist fully expected to return, he was never to see his homeland again. His early years and training, however, were to bear fruit in England. Within two years he was to become one of the most popular figures in London's scientific circles and to be hired by the British Museum as a librarian.

II. YEARS OF DECISION AND ANGLICIZATION; 1760-1763

FIRST WEEKS IN ENGLAND

When Solander left Scandinavia in May of 1760, he expected to return to Upsala in a year, or perhaps two years. During his sojourn on Great Britain, he hoped to become acquainted with the English naturalists, to secure specimens for Linnaeus, and to enrich his own experience by traveling throughout England. This Solander did do; but when the time arrived to return to Sweden, Solander decided to stay in England.

Solander arrived in England on 30th June, 1760, after a rough but eventful passage from Denmark. He soon was firmly established in England. During this first visit, he planned to visit a friend on a tour of the countryside. He went to visit a friend, and ended up in London. Solander's first stay in London was to be a stimulating experience. The next weeks of Solander's life were incorrectly described in two different versions. In 1783 in his "Das Leben des Verstorbenen Solander," Johann Reinhold Forster published the story that Solander went to the Canary Islands shortly after he arrived in England. According to this story, during his first weeks in Britain, Solander went to visit a friend on board a British warship. During the outing, orders were received to proceed without delay to the Canary Islands. The ship immediately set sail; and the young Swede, with no alternative open to him, had to go with the ship. He was on board and were received, according to Forster, collecting natural history specimens and teaching the "ship's company of the gentler sort" the essentials of natural history. For these efforts when the ship seized a prize, Solander supposedly secured an able-bodied seaman's share. Although Solander's letters during this period definitely indicate that he was in England and that this anecdote is undoubtedly incorrect, it is still noteworthy; for, the story like Forster's tale about Solander's visit to Archangel, has been accepted and circulated by French, German, and Swedish publications.

More plausible at first sight is Sir Joseph Banks' version of how Solander passed his first two weeks in England. According to Banks, shortly after he arrived, Solander was introduced to Lord Keeper of the Privy Seal Northington by Philip Carteret Webb. Then, only eight days after disembarking in England, the young Swede went to the Hampshire estate of the Lord Keeper. When business forced Lord Northington to return to London, Solander stayed in Hampshire for several weeks with Lady Northington and her daughter. During his stay he studied English and acquired the excellent command of the language which was noted by many in later years. Although Banks' account seems in accord with the young traveler's own statement that he was going to the country to improve his English, it breaks down when examined further. Solander was not introduced to Lord Northington until late in 1764. Solander indicated that he would be gone for only two weeks, not several. Finally, on July 11, he wrote Linnaeus from London, eleven days after he landed.

Whatever his exact schedule was, Solander's circle of acquaintance grew rapidly. The young naturalist made his first call on Peter Collinson on the evening of Monday, July 2. The following afternoon the young Swede visited Philip Miller, the Chelsea gardener and author of several books. A few days later, Solander went to the estate of Richard Warner, also a noted gardener, at Woodford Green in Essex and received several plants for Linnaeus from the Englishman. The young Swede then visited the private garden of Rev. J. Emerson, librarian of the British Museum, C. Branden, Spalding's partner, and Stanley Alcock, botanist.

---

46 Solander to Linnaeus, 4/17/1760, pp. 1-2; 4/21/1760; 5/19/1760, pp. 1-2; 5/24/1760, pp. 1-3; 5/29/1760, Solander MSS.
4 Solander to Linnaeus, 7/1/1760, pp. 1-4, the Solander Manuscripts at the Linnean Society of London.
lander’s success in these ventures, however, was marred by the news of his father’s death; and in the period which followed, Solander turned to Linnaeus to fill the parental void.6

SOLANDER AND LINNAEUS

Solander had his first shipment of specimens gathered for Linnaeus by July 21, 1760. The shipment included two insects collected by Solander on his voyage to England, the four plants from Warner, some seeds from Dr. Russell which he had acquired from his brother in Aleppo, and several items from John Ellis. Included in these were some American seeds from John Clayton, the Virginia naturalist, a wintergreen shrub, and a description of some fish found by Alexander Garden, the Charleston, South Carolina, M.D.5

During the next three years, Solander sent several more shipments to Linnaeus. In October of 1760 the young Swede received more plants from Miller, Warner, and Gordon as well as commitments for more from Collinson, Warner, the Earl of Northumberland, and the Duke of Argyile. Then in December, Solander sent his mentor the first tea seeds ever seen in Sweden. The seed was procured by John Ellis from a shipment destined for the English colonists in the Americas. Solander, at the same time, sent his mentor a branch of an *Eucryphia*. This plant-shaped animal was later to be the subject of an article published by Ellis with Solander’s help. Some magnolia seeds secured from Alexander Garden were sent to the great Swedish naturalist in February of 1761. On the following August 13, the young Swede forwarded two boxes of material, including some narcissus bulbs, plants, fish, and reptiles from the South Carolinian to Linnaeus. Although Solander wrote Linnaeus four times in 1762, Solander sent just one shipment to his mentor on October 29; this included a packet of seeds from Philip Miller of Chelsea, the last volume of William Hudson’s *Flora Anglica*, and George Edwards’ history of birds.4

In addition to sending Linnaeus botanical and zoological materials, Solander was also instrumental in sending his mentor the only American student the great naturalist ever had. In November, 1761, Adam Kuhn, later to be a professor of botany in Philadelphia, stopped in London on his way from Lancaster, Pennsylvania, to Upsala. When several Englishmen, using claims that food was inadequate and English was not understood at the Swedish university, tried to dissuade the Pennsylvania from going on to Upsala, Solander came to the defense of the university and publicly debated the English critics. Kuhn went to Upsala.3

Although Solander secured items for Linnaeus from English naturalists, he also secured items from Linnaeus for English naturalists. This started when Solander had barely established himself in England. John Ellis asked him to use his influence with Linnaeus to get the great naturalist to agree to Ellis’ use of the name *Gardenia* to reward Alexander Garden for his efforts. Ellis incidentally had already used the name *Gardenia* to describe the plant and was afraid he would be embarrassed by Linnaeus not accepting the name. Solander was able to get Linnaeus to accept it in July, 1760. Having accomplished this, Ellis as well as some of his associates, decided to get Linnaeus to name a plant after Gordon, the gardener. Solander forwarded the request to Linnaeus, but with a negative recommendation. As a result Gordon was not honored until Ellis named a tea genus *Gordonia* in 1770. Throughout 1761 Ellis was interested in securing rhubarb seed from Linnaeus. Solander’s first request successfully secured seed in April; however, this only added to Ellis’ interest in the plant. During the summer of 1761, he continued to encourage Solander to ask Linnaeus for more seed with the result that on November 15, 1761, the young Swede wrote his mentor:

They have in the gardens here, 3 or 4 varieties of *Rheum rhaponticum* & all maintain their own is the best. I rather believe they are equally good. . . Mr. Ellis wishes to be informed which kind you consider the best.6

The rhubarb debate ended the following spring when Ellis informed Solander that the plants secured from Linnaeus were growing more rapidly than others.4

Solander, during his first years in England, looked to Linnaeus as a son would to a father. In 1761, after the news of the death of Pastor Solander, Daniel asked Linnaeus to be his father. Linnaeus performed this function so well that, by October, Solander asked him for money. The adverse exchange rate, wartime inflation during the Seven Years War, and the death of George II, which forced the young naturalist to buy new mourning clothes, all combined to drain Solander’s finances. A request for still more funds was made in December; this in turn was followed by two askings in November, 1761.10

TOURS

Solander took several trips during his first years in England. Besides a number of visits to the gardens in the vicinity of London in the summer of 1761, during the late summer or early fall of that year, Solander

---

5 Solander to Linnaeus, 7/1/1760, p. 4; 7/11/1760, pp. 1–2, Solander MSS.
6 Solander to Linnaeus, 7/13/1760, pp. 1–4, Solander MSS.
7 Solander to Linnaeus, 10/31/1760, pp. 1–2; 12/5/1760, p. 7; 12/10/1760, p. 1; 10/18/1762, p. 1; Solander to Linnaeus, 10/31/1760, pp. 1–2; 12/5/1760, p. 7; 11/10/1761, p. 4; Solander MSS.
8 Solander to Linnaeus, 7/11/1760, pp. 1–2; 10/31/1760, pp. 2–3; 11/16/1760, p. 3; 11/17/1760, p. 3–4; 11/24/1761, Solander MSS.
9 Ellis to Solander, 8/24/1760, 8/31/1760, 8/30/1761, 9/4/1761, 11/22/1761, 3/28/1762, in J. Ellis letters of the Ellis-Transalon Letters. A. MSS. 28,533 (R. M.); Solander to Linnaeus, 10/31/1760, p. 1–2; 2/5/1761, p. 8; 11/10/1761, p. 4; Solander MSS.
10 Solander to Linnaeus, 7/11/1761, pp. 1–2; 10/31/1760, pp. 5–7; 12/19/1760, p. 3; 11/16/1760, p. 3–4; 11/24/1761, Solander MSS.
tourd Kent, Sussex, and Middlesex. On the tour he gained several plants for Linnaeus including magnolias, hydrangeas, *Kalmias*, and rhododendrons. In December, Solander took a journey of about six hundred miles with Morton Leuch, a Swedish merchant, through southwestern England. Although the winter weather prevented Solander from botanizing, the two men were able to make observations on the industry, gardens, geology, and people of England. The latter, Solander wrote to Linnaeus:

... are generally civil to foreigners only they expect to be flattered and that we should tell them that [what] we have seen in England is finer than anything we ever saw before. ... I think there cannot be a more complacent nation ... and they talk as if the English could subdue the whole world if they would.\(^{10}\)

Starting from London, the travelers went to Buckingham where they observed the preparations for Christmas. Here Stow with its size and fourteen temples impressed the young Swede. From Buckingham they went to Woodstock in Oxfordshire. Solander here visited a steel-works factory and was surprised at the high prices demanded for them. The two men toured nearby Blenheim Palace for two days. They next spent several days at Oxford. From here the journey proceeded to Tetbury and Sodbury, Gloucestershire, where Solander examined some marine fossils in the local limestone. A week was spent in Bristol visiting copper, brass, and glass works of Quaker acquaintances of Peter Collinson. This technology was so impressive that Solander subsequently sought to have it copied for introduction into Sweden. From Bristol the two men went to Bath. Although Solander later in his letters to Linnaeus mentioned finding fossil mollusks here, he never mentioned the social life at Bath. Perhaps he thought such references would not be in keeping with his requests for money from Linnaeus. On their way to Salisbury the two men stopped at Stonehenge, the site of building the temples with stone found tons of miles away with only primitive technology impressed Solander, as it has others before and after. The wool production was their major concern at Salisbury. Southampton was their next stop; here the seemingly insanes English were swimming in the sea in the middle of the winter. Lord Peterfield’s gardens, especially some fine imported Italian agate flower pots, not to forget their chrysanthemums Solander’s attention. Portsmouth was their final stop. Here thanks to a letter of introduction from Peter Collinson, the two Swedes were able to board an admiral’s ship, observe the flotilla preparing for that year’s English campaign in the new world, and visit the new naval hospital there.\(^{11}\)

The following July, Solander accompanied John Ellis and John Chandler to the south coast of England in order to study zoophytes. This year Solander with as much insight into English manufacturing as the one taken the previous year. However, he did see more gardens; and he became aware of as well as deeply impressed by the amount of money, time, and land invested by the English in introducing new flora, especially trees, from the outside into the British Isles. The English entry into the market was expected to improve their income by introducing faster growing, more productive timber. On July 5 Solander and Chandler left London; on the way out from London, Solander and Chandler spent two days at the estate of Lord Middleton who had the then largest collection of azaleas and *Kalmia* in England. While here Solander for the first time met Mr. William Chambers, the King’s architect, whom Solander later helped secure plants for the Royal Gardens at Kew. Chambers, a Swede by birth, had previously traveled in the far east as well as on the continent and had just completed the Chinese pagoda in Kew Gardens. Solander found this future secretary of the Royal Academy a learned interesting person and hoped he would return to Sweden. From Lord Middleton’s estate the group went to Bushbridge where they joined John Ellis. The travelers then proceeded toward the coast. En route they stopped at the estate of the Duke of Richmond. Although the Duke himself was gone, his sister Lady Sarah Lennox was there to show the visitors around the gardens with their outstanding collection of American trees and shrubs. Following the Duke’s instructions, the Earl of Montagu, they progressed to the sea-shore, where they began their eastward trip at Chichester. At Pagharn they stopped, and Chandler drew sketches of several medusae. From here the three moved on to Breyner Rocks, Little Hampton, and Shoreham-by-Sea collecting fish and sponges along the way. The latter caused much discussion between the two naturalists. Ellis, who was later to publish about the sponges, at this point in the development of his thought, SS sponges might be the habitation of little worms found nearby. Solander disagreed with this; though he could not offer a counter theory. Brighton, then known as Brightonstone, was the last coastal stop on their itinerary. Here they collected additional marine specimens and made further observations upon the nature of sponges. After leaving Brighton, they made their way back to London stopping at the estate of the Earl of Egremont. Here Solander was much impressed by Egremont’s stand of oak. The men then returned to Bushbridge and London in early August. Solander’s reaction to the English on his first tour was somewhat negative; his second tour elicited quite another response. A few days later he wrote to Linnaeus:

I have now seen all the new plantations and gardens in

\(^{10}\) Solander to Linnaeus, 2/5/1761, pp. 1-2. Solander MSS.

England worth looking at . . . the new English taste in planting . . . is most excellent. No one who has not seen these extensive gardens can imagine the variety of foreign trees & shrubs which adorn the gardens of the nobility and gentry.18

RISE IN ENGLAND

During the years 1760, 1761, and 1762, Solander obviously was becoming well known in England. The reasons for this are not hard to find. First, just being Linnaeus’ student was important. “European science was dominated during the eighteenth century by two names, Newton and Linnae. Both were great constructors of systems, each reduced chaos to cosmos in his own field.” p. 14

To be the pupil of Linnaeus, his friend, his correspondent, his informant—this was to be sealed with the sweet of new virtue, this was to be enlisted under a banner, to be one of a brotherhood, to have a master and a father, and in Nature an intellectual home. . . . 17

The magic name of Linnaeus obviously opened many doors for Solander. The second factor was Solander’s own personality. He “was esteemed . . . for his polite and agreeable manners, as well as his great knowledge in most departments of Natural History.” 18 “The urbanity of his manner, and his readiness to afford every assistance in his power, joined to that clearness and energy with which he affected it,” made Solander and the Linnaean system popular with the naturalists of the day. 17

The way in which Solander gained entry into English life is best illustrated by his relations with John Ellis. While Ellis spent much of the time between July, 1760, and March, 1763, supervising Philip Carteret Webb’s garden and constructing his conservatory at Busbridge, Solander conducted Ellis’s affairs in London including the production of Ellis’s biological studies. Aside from the prolonged attempt to secure rhubarb seed and the publication of Ellis’s article on the Encrinite, these activities on Ellis’s behalf consisted of securing favors from Linnaeus, obtaining seed cuttings and equipment in London, getting a book, or some similar action. Typical is Ellis’s request of January 31, 1762, asking Solander to send Ellis his copy of Walkers’ book and to check with a London gardener about some plants that Ellis had ordered. The Encrinite, found near Barbados in the West Indies, was secured by Ellis in December, 1760. During the succeeding months, Solander described it, and Ellis had a rough drawing of the animal made. When, in the spring of 1762, Ellis began to prepare an article on Corallines for the Philosophical Transactions, Solander was asked to supervise the production of the illustrations for the publication. During March and April, 1762, Solander did oversee the preparation of an accurate drawing of the Encrinite; in September the completed drawings were obtained by Solander and turned over to Ellis. He did not publish an account of Corallines until 1767; however, his “. . . on the Animal Nature of the Genus of Zoophytes Called Corallina,” in the Philosophical Transactions of that year went a long way toward establishing Ellis as the first, and for a long time the only, English authority in the field of zoophytes. 15

Although Solander served as Ellis’s agent in London and link to Linnaeus, Ellis was a major avenue for the young Swede to make contact with other scientists. Through Ellis, Solander knew and did descriptions for the North Americans John Clayton, Alexander Garden, and John Greg. Even Linnaeus, in later years, had to depend on Ellis to find out what his erstwhile student was doing. Solander, however, had other ties with North American scientists besides those furnished by Ellis. The young Swede knew Adam Kuhn of Pennsylvania; and through Peter Collinson, Solander became a correspondent of John Bartram. In fact, within a short time he was describing Bartram’s biological specimens. 19

THE KING AND KEW

The Ellis-Solander correspondence, in addition to illustrating Solander’s rapid rise, furnishes insight into several other areas of the young Swede’s life. For example on November 4, 1761, the English naturalist wrote to Solander:

You will be so busy about my Lord Mayor and the King that it will be a real favour to receive a line from you; however, pray dear Solander consider I am quite alone and a letter from you with Literary news would cheer my spirits. 18


20 Ellis to Solander, 11/4/1761, Ellis-Francillon Letters.
There is no record of Solander having visited the Lord Mayor; however, Peter Collinson, his nephew Thomas, and the young Swede did visit Sir Thomas Fludyer, the brother of Sir Samuel Fludyer, Bt., the Lord Mayor in 1762, at Leigh near Blackheath. Solander's efforts to secure plants for Kew Gardens at this time appear to be the point at which he came into contact with the King. At the time Kew Gardens, though still the property of the Princess Dowager Augusta of Saxo-Coburg, were being improved by George III and his chief minister Lord Bute, both of whom were interested in encouraging agriculture through plant science. Solander was employed by Bute at this time; and Ellis' correspondence with Solander definitely indicates he was involved in Chamber's project collecting plants for the garden. Solander may well have become part of the project when he met Chambers on the tour of England made in July, 1761.11

THE M.D. DEGREE

The Ellis-Solander correspondence gives rise to one very important question about Solander's life—namely, what is the source and date of the Swedish naturalist's Doctor of Medicine degree? On July 5, 1761, Ellis wrote to Solander and addressed him as Doctor. This is the first recorded use of the title in addressing Solander. The Swede himself did not use the title until he published an article in the Philosophical Transactions in 1762. British authors have always assumed that Solander secured his M.D. from Uppsala. Yet, as early as 1758, a Swedish journal challenged Forsberg's statement that Solander received his M.D. degree from Uppsala after his return from the "endeavour" voyage. Later Swedish research has pointed out that there is no record at Uppsala that Solander completed his doctorate work there. In fact Solander's journey took him to England before he completed the M.D. requirements. Swedish authors, contrary to the British view, have always maintained that Solander secured his M.D. at Oxford; and for this reason Oxford granted him a Doctor of Civil Law degree on November 21, 1771, after his return from the first Cook voyage. However, Alumni Oxonienses indicates that Solander received his M.D. from Uppsala and received only his D.C.L. from Oxford. It is possible that Solander secured his degree in absentia from some other school, a very common practice in the period for the Dutch and Scottish universities. However, a check of all the medical schools then existing in the British Isles, Scandinavia, and Holland, revealed that Solander did not receive a degree from them. Admittedly the degree might have been secured elsewhere, but why? The institutions checked did grant absentia M.D. degrees; and they were closer to London. The Dutch universities were highly thought of in Sweden in this period. It seems safe to assume that, if Solander had an M.D. degree, he would have wanted it from one of these. With an absentia degree ruled out, the only conclusion left open is that Solander never did receive an M.D. degree. This view is given some support by Solander's letters of administration which indicate he possessed only a D.C.L.12

Why Solander assumed the title Doctor before 1771 is not difficult to imagine. It obviously increased his stature in English scientific circles at an important point in his career. In late 1762, for example, when he first used the title, Solander was being considered for a position at the British Museum and having the title Doctor was undoubtedly an asset in applying for the post. This build-up may also explain why Solander's article on the Gardenia, his only publication in the Philosophical Transactions; appeared when it did. Although Ellis really should have gained credit, he had described the plant and used the name Gardenia before Solander arrived in England, Solander published the first description. The explanation of this is probably connected with the date of publication, December 23, 1762. This again was during the winter of 1762 and 1763 when Solander was being considered for a position at the British Museum; a publication in the Philosophical Transactions must certainly have strengthened his candidacy.13

DECISION TO STAY IN ENGLAND

When Solander arrived in England, he had intended to travel and to observe as much as he could in a year.

11 Ellis to Solander, 6/9/1762, Ellis-Francillon Letters; Daniel C. Solander, "An Account of the Gardenia," Philosophical Transactions, 332, 2, 1768 (London, 1768); p. 654-661; Forsberg, "Das Leben des . . . Solander," p. 474; Ulfstierna, Felicia Tidningar (1783); p. 230; R. E. Fries, "Daniel Solander," Kongl. Svenska Vetenskapsakademien Arbok, 130 (1900); p. 262, 300 n. 9; "A Grant of Letters of Administration of Daniel Charles Solander of London on January 2, 1783," manuscript in the Library Department of the Principal Probate Registry. Letters of inquiry were sent to Guy's Hospital, St. Thomas' Hospital, St. Bartholomew's Hospital, St. George's Hospital, all in London; the University of Aberdeen, the University of Edinburgh, and the University of St. Andrews, all in Scotland; the Royal College of Physicians of Ireland; the University of Groningen, the University of Leiden, the University of Utrecht, the University of Amsterdam, all of the Netherlands; the University of Lund in Sweden; and the University of Copenhagen. In addition the following alumni registers were examined: J. Venn and J. A. Venn, compilers, Alumni Oxonienses: . . . Part II (6 v., Cambridge, University Press, 1849-1863); G. D. Bartenhall and T. U. Sudler, Alumni Oxonienses. . . (London, Williams & Norgate, 1924); W. L. Addison, comp., A Roll of the Graduates of the University of Glasgow (Glasgow, J. Mac Leod & Son, 1948); J. Foyler, Alumni Oxonienses . . . 1755-1836 (4 v., Oxford, 1891) p. 1327.

and then to return to Sweden. The first modification of these plans occurred in the early months of 1761; Solander decided to stay in England another year.\textsuperscript{24}

Solander’s departure from England seemed assured when in the winter of 1761–1762 he was offered a chair of botany in the Academy of Sciences in St. Petersburg. Linnaeus, who was responsible for securing his erstwhile student the post, informed Solander about it in December of 1761. During the following months, the student and his mentor discussed the move in their correspondence; and Solander agreed to accept the position with some reservations. First, he wanted to travel another year and a half in order to collect more material before he settled in Russia. Second, after he had resided in St. Petersburg three years, he wanted to be free to resign—providing he could find a suitable replacement. Third, he wanted his salary to commence on the first day of the year 1762.\textsuperscript{21}

Solander received the opportunity to become Linnaeus’ successor even before the St. Petersburg negotiations were completed and turned it down. Late in 1762 after Solander had received the Russian offer, in gratitude for long service at Uppsala, Linnaeus was given the privilege of naming his successor. Solander was the first choice. Solander, however, rejected both of the offers to remain in England where there was much interest in plant and animal science, there was much more wealth, and there was a society congenial to the young emigrant.\textsuperscript{18}

Efforts to gain Solander a position on the British Museum staff started in September, 1762, when John Ellis held discussions with Philip Carteret Webb about the museum post. Although Sir Joseph Banks, writing some years later, gave Webb the credit for securing Solander’s appointment, other Englishmen were also at work on the young Swede’s behalf. Ellis asked Dr. Forber to influence his correspondence with Dr. Gowin Knight, the librarian of the British Museum, to gain Solander the position. Peter Collinson also played the important role in securing the post for Solander. On September 26, Collinson wrote the following to Dr. William Watson, a member of the Museum board:

It will be to the honor of the nation as well as to the curator that the world may be acquainted with [...[the British Museum’s] riches, that all students in natural history may know where to improve their knowledge.\textsuperscript{5}

The gentlemen [in charge] are well qualified [... but] if it is considered from their long & constant attendance & the necessary time required [... it cannot be expected [... for them to complete so long and laborious a work [...\textsuperscript{5}

17 Collinson to Dr. Watson, 9/25/1762, Linnean Society manuscript on file at the American Philosophical Society.

18 Ellis to Solander, 9/19/1762, Ellis-Francillon Letters; "Some Account of Dr. Solander and Mr. Banks", p. 82; Smith, Corresp. of Linn., 1: p. 80; 19-191; Banks, " LETTERS OF LINNAEUS", p. 541; The History of the Collections Contained in the Natural History Departments of the British Museum (2 v., London, British Museum, 1911) 1: p. XIV.

19 Smith, Corresp. of Linn., 1: p. 103.


The philosophic world is deprived of an inconceivable fund of knowledge [... an opportunity now offers which may never happen again, for the appearance of a learned gentleman [... "[trained] under the greatest of professors, Dr. Linnaeus."\textsuperscript{27}

Collinson, in addition to writing to Watson, asked Lord Bute to secure the King’s aid on Solander’s behalf. This apparently helped; for, the London Magazine of July, 1773, indicates that Bute had been instrumental in securing the museum position for Solander. On February 26, 1763, Solander joined the staff of the British Museum as an assistant with a salary of less than sixty pounds a year.\textsuperscript{28}

A SOLANDER-LINNAEUS BREACH

After October 9, 1762, the correspondence between Solander and Linnaeus ceased until 1768. This break has usually been attributed, probably rightly so, to Solander’s proclivity for lax correspondence habits. However, Ellis’ letter to Linnaeus on January 1, 1765, gives indication that it might have been something more.

Mr. Kuhn [Adam Kuhn on his way back to Pennsylvania] has fully explained the affair between Solander and me, which I was totally ignorant of before, and for which I am extremely sorry.\textsuperscript{29}

Swedish authors have speculated that a rift developed in the Solander-Linnaeus relationship because of the marriage of the latter’s eldest daughter, Elizabeth Christiana, to an army officer. During the years Solander was at Uppsala, he developed a high regard for Linnaeus’ daughter, and the letters from his early travels in Lapland close with greetings to her at various levels of endearment. Furthermore, Johann Christian Fabricius, who studied with Linnaeus in the early 1760s reported that “Fru” Linnaeus hoped that “Solander [... would marry the oldest daughter.” Even more weight is given to the position of Swedish authors by the fact that Solander even expressed a deep love when he wrote about her six years later.\textsuperscript{30}

This next romantic plot to explain the Solander-Linnaeus rift does not seem to fit all the facts. The correspondence between the two during the period of October, 1759, and October, 1762, contains only three
specific greetings to Elisabeth Christina and these only in the formal closing. Nowhere else in these letters is there a reference to her. From this Solander hardly appears as an ardent lover. Although it is true that the younger man seldom wrote his mentor and that the letter made some bitter statements about his student, Solander revered Linnaeus throughout his life, sought to continue the development of the Linnaean system after its creator’s death, and tried to help him as well as his family on several occasions. In light of these, it is hard to think of the two as having a bitter split. The gulf between them was probably the inevitable division between an older man past his peak and a young active man. In the 1760s and 1770s as a result of illness, Linnaeus’ mental powers underwent a marked decline, as he became increasingly senile. In addition Solander was a gregarious friendly person who reflected the world around him, and became involved in the activities immediately at hand at the exclusion of all else. As a result, Solander busily engaged in London life never took the time to write to his family and friends in Sweden, even though he retained the greatest respect for them.33

In 1762 Solander, who had initially come to the British Isles only temporarily, became a permanent resident. His plant collecting for Linnaeus, his travels, and his association with John Ellis and others had convinced him that England was the place for him to remain. During the next few years Solander did some of his most fruitful work as an employee of the British Museum and a consultant of other naturalists.

III. YEARS OF SCHOLARSHIP: 1763–1768
The years 1763 to 1768 marked five years of fruitful labor for Daniel Solander. In this period, using the Linnaean system, he organized the natural history collection of the British Museum, helped Gustav Brander with Portia Hanovriana, worked with John Ellis and Peter Collinson, and formed a lifelong friendship with Joseph Banks. In addition he was fully engaged in the professional and social activities of the eighteenth-century scientist. All of these added to his already rich experiences; so that at the end of the period when he joined the Cook voyage, he was one of the better naturalists, if not the best naturalist, in England.

BRITISH MUSEUM
The British Museum was in its infancy when Solander joined its staff on February 26, 1763. The original collection was comprised of Sir Robert Cotton’s manuscript collection, the manuscript collection of Robert and Edward Harley, and Sir Hans Sloane’s extensive library and natural history collection. This last was probably the greatest in its day, about 1750, with 75,054 items including approximately 5,000 books and manuscripts. Further additions were made when George III gave the museum the Royal Library in 1757, and when in 1762 George III presented the Thomson collection of English Civil War tracts to the museum. Although enabling legislation—essentially providing for a lottery to gain funds to purchase the Cottonian, Harleian, and Sloane collections as well as to establish an endowment—was enacted in 1758, the museum was not opened until January 15, 1759. The original home of the museum was the thirty-eight-room Montagu House, built by Ralph Montagu, Charles II’s ambassador to Paris. This then essentially suburban location, consisting of a house surrounded by seven acres of ground facing Great Russell Street in Bloomsbury, remained the quarters of the British Museum until the house was razed in 1864 for the present structure. By twentieth-century standards it was a small museum and library; its reading room, for example, located in the basement held one table and twenty chairs.34

The budget, staff, and program in these early years were also limited. The budget was 900 pounds. The staff of four included a principal librarian, Dr. Govin Knight, and three keepers. At the time J. Emsom served as the keeper of the natural history section with the Reverend Mr. Andrew Planta as assistant keeper. Because of its limited resources in funds and staff, visitors to the museum were curtailed by limiting the hours and numbers of visitors. The museum was open Monday through Friday from 9:00 a.m. to 3:00 p.m. between September 1 and April 30. From May 1 to August 31 the museum was open from 9:00 a.m. to 3:00 p.m. on Tuesday, Wednesday, and Thursday; and from 4:00 to 8:00 p.m. on Monday and Friday. In addition to Saturday and Sunday, the British Museum was closed all major Christian and state holidays as well as for one week after Christmas, Easter, and Whit. With these hours groups outside the leisured class were pretty well excluded. Even with these restrictions obtaining admission tickets was a long frustrating task seemingly designed to keep people out. To secure a ticket a permit was necessary; this was gained by getting an application from the porter in the museum’s entrance lodge. The completed application giving name, address, occupation, and social rank was then submitted to the principal librarian to see whether the applicant was a proper person to be admitted.

colonies. The gift also included artifacts found by Commodore Byron on his trip around the world via the South Pacific. These undoubtedly served as a useful introduction to the South Seas which Solander was to visit in just four years.

The catalogue made more progress in 1767. By February a corrected and revised copy of almost all of the animal catalogue was completed. By mid-June the plant catalogue had reached the point where all the plants were labeled. However, work was slowed again in February when John Ellis, at the time the royal agent for West Florida, and the Earl of Hillsborough presented to the museum a collection of West Indian materials which Solander had to catalogue. A second interruption occurred in September when Solander suffered an attack of influenza.6

Nevertheless by February of the following year, Solander was able to give the museum trustees a manuscript catalogue of the work he had completed. This included descriptions of most of the animals with some fair copy descriptions, descriptions of previously unnamed African and American plants, and some preliminary manuscripts of fossils and the remaining plants. At the time Solander anticipated having fair copies of all these made and the catalogue completed within six months.7

ACTIVITIES FOR OTHER SCIENTISTS

While he laid the basis for the British Museum (Natural History), Solander also helped arrange the collections of Gustavus Brander, the Duchess of Portland, John Ellis, Peter Collinson, and the North American John Bartram and Alexander Garden.

Gustavus Brander, F.R.S., F.S.A., a member of the Bank of England and the British Museum boards, and one of Solander's first acquaintances in England, made the study of antiquities and natural history an avocation. In the early 1760's, Brander built a villa overlooking the English Channel on the site of a ruined church and priory between Christ Church and Lynington in Hampshire. The excavation of the foundation unearthed a number of fossils which were given to the British Museum. The first steps toward bringing the descriptions of these fossils into print were taken in 1763; the results were published in 1766 under Brander's name in Fossilia Hantoniciana. This work was one of the first attempts to deal with English fossils and remained a standard work on the subject for some time.8

---

It was also one of Solander's primary contributions to conchology. Solander's descriptions of the Duchess of Portland's collection also added to his reputation. The Duchess was the daughter of Edward Harley, the second Earl of Oxford and the original owner of the Harleian collection. When Lord Harley died, his library was sold to the British Museum, but his collection of natural history specimens and historical artifacts passed into his daughter's hands. This collection, said to be the finest private museum in the period of the 1760's through 1780's, had a natural history collection that was larger than Linnaeus'. Solander first started working for the Duchess in the summer of 1764 arranging her marine flora and fauna, her gems, and her art works including the famous Portland vase. In 1779 he became curator of this museum. Though a formal catalogue of the collections was never printed, the sale catalogue, made at the time the museum was sold off in 1786 after the Duchess' death, did give Solander's identifications of the museum's contents. By this means Solander's work passed into the scientific literature adding still more luster to his reputation as a naturalist, especially as a conchologist. The catalogue showed that Solander was:

...An all-round naturalist... a worthy pupil of Linne, and his knowledge of every branch of natural science must have been profound. His ornithological work showed accuracy and detail far ahead of Linne [this] while he... considered himself primarily a botanist.

Solander also continued to help John Ellis with his various projects. During 1764 Ellis requested Dr. William Brownrigg and the Reverend Mr. William Borr- lase to send their Ellis-bound marine fauna to Solander who was making Linnean identifications of these items for Ellis' work. Ellis wrote Borralse:

...I am in hopes when I have made my scheme known to the rest of my friends and the world know that the Ingenious Dr. Solander, who is very little inferior if anything to the Master Dr. Linneaus, is to describe those Plants I shall have the Assistance of all the Curious round our Coast....

In August, 1764, Solander joined Ellis and Dr. Knight on a trip to Sussex in order to examine sponges. The findings of the expedition were incorporated in Ellis' pioneer article on sponges in the Philosophical Transactions of 1765. Solander with Sir John Hunter also took part in Ellis' study of an amphibian bipeed published in the Philosophical Transactions for 1766. The following year Solander also took part in Ellis' investigation of zoophytes which was published in the 1767 volume of the Phil. Trans.

In 1767 and 1768, Solander and Ellis were concerned about sponges. Baron Münchhausen, Hanoverian statesman and curator of the University of Göttingen, convinced Linnaeus that the sponges were animal in nature. Between October 24, 1767, and November 4, 1767, Ellis and Solander made microscopic observations of sponges in order to test Münchhausen's thesis. As early as October 30, 1767, Ellis wrote to Linnaeus that their findings did not confirm the Hanoverian's thesis. Further experimentation did find some animals found in the proximity of the mushroom sponges; however, the two experimentors both agreed that these animals were eating the sponges. Their final report to Linnaeus on January 15, 1768, reiterated their earlier stand.

John Ellis was Linnaeus' major link with his erstwhile student. Between 1765 and 1768 there are several references to Solander in the Ellis-Linnaeus letters which clearly indicate this. In August, 1765, Linnaeus asked Ellis to check with Solander to see whether he had received and delivered his letter to Dr. Lee. Solander had not. In September the teacher asked Ellis to tell Solander that a friend at Upsala had died. Two years later Ellis told Linnaeus about an attack of influenza suffered by Solander. Then in December, 1767, Ellis received a letter from Linnaeus asking him to tell Solander to write his mother—she had not received a letter from her son for several years. This letter incidentally is usually cited by Solander's detractors as proof he was lazy. It fails to do this; but it shows he did not write to his mother. He obviously did not write to Linnaeus either, and it was Ellis on August 19, 1768, who informed the great Swedish botanist that...


Solander was joining Banks on the "Endeavour" voyage.  

Ellis was also the middelman in Solander's correspondence with Alexander Garden. The disturbed South Carolinian wrote to Ellis on November 19, 1764, that he had written Solander a letter and had sent him to pass on to Linnaeus all the American specimens that he had collected for Uppsal; even so, Solander had not written for over a year and a half. Garden also inquired about some fish he had sent Solander for Linnaeus, and finally asked for Solander's catalogue of the British Museum. He repeated essentially the same request and complaint in May, 1765. In July and December the American naturalist again wrote to John Ellis asking about the names Solander had given to some plants and for news about Solander respectively. In February, 1767, and July, 1768, Garden wrote to Ellis in essentially the same vein. On July 14, 1768, Ellis described to Garden Solander's and Banks's preparations for the Cook Voyage. 

In the years between 1763 and 1768, Solander was also a scientific associate and regular guest of Peter Collinson. It was through this association that Solander probably was first introduced to Benjamin Franklin. In late July, 1767, Solander visited Collinson's Mill-Hill home with Franklin. Collinson wrote to John Bartram on July 31 about the stay. "Think how happy I am, at this present writing, to have the two Doctors, Franklin and Solander, my guests for a few days, to enjoy the delights of Mill-Hill." The two men visited Collinson twice more that year. On October 14, Franklin wrote to Collinson that he would be able to visit Mill-Hill any day the following week convenient to both Solander and Collinson. Then during the following Christmas season, Collinson reported: 

I am here retired all alone . . . . the old Christmas log is burning, and the fire of friendship is blazing. Franklin has been staying here with me—Dr. Solander brought him. 

Even though Solander and John Bartram corresponded with each other directly, Peter Collinson continued to serve as the primary link between the Swedish naturalist and the North American. This direct and indirect correspondence indicates that Solander examined and named the materials Bartram collected on an expedition into Virginia and the Carolinas in 1762. During 1764 and 1765 Solander was slow in completing work for Bartram; in fact in another letter often cited to show Solander's laziness, Collinson wrote to Bartram on September 19, 1765. "Doctor Solander is a strange, idle man. I cannot get thy spring specimens from him, is the reason thou hearst nothing from me, about them." This was of course the year in which Solander had increased responsibility at the British Museum because of Empson's illness and death, worked with Ellis on his amphibious bipeds, and was completing Brander's Fossilia Huntiensis. In the years that followed, Solander did examine and identify plants which Bartram collected on tours as the King's botanist through South Carolina, Georgia, and Florida. These travels and the results were described in Bartram's journal of his expeditions in the southeast. Certainly in the summer of 1767 when Solander visited Peter Collinson with both Franklin and Adam Kuhn, on separate occasions. Peter Collinson had high respect for Solander's work. On July 31 Collinson wrote to Bartram: 

My dear John hath at last gratified my longing wishes with the sight and perusal of his laborsious, entertaining Journal [dealing with Florida and the southeastern United States, and published in 1764], . . . The King's specimens came safe, and are delivered; and that's all I ever knew about them. I am much obliged for those directed to me; there are many new, curious plants among them. If I have time, I will give thee Dr. Solander's observations on them, who is a very acute botanist, little inferior to Linnaeus; and not only in Botany, but in all branches of Natural History. 

On at least two occasions Solander used Bartram as an intermediary with Swedish clergymen, serving the Lutheran Swedes in Pennsylvania and Delaware. On July 1, 1763, Solander wrote that he was sending his letter by the Reverend Mr. Haeggblad and hoped Bartram could help the cleric. In August, 1764, Bartram told Collinson that he had delivered Solander's packet of Swedish letters to Dr. Wrangel who was serving his parishioners humbly, piously, zealously, and indefatigably. 

THE COMMUNITY OF SCIENCE 

Solander also became a Fellow of the Royal Society. He attended meetings in 1762 and reported about the meetings to John Ellis, then working on Webb's conservatory at Bushbridge. On June 7, 1764, Solander was nominated for membership, and two weeks later he was admitted to the Society. He remained active in the organization until his death. 

Solander's way of life between 1763 and 1768 was a busy one of work and social pleasures with fellow 

---

21 Smith, Corresp. of Linn. 3. pp. 71, 76; Solander to Peter Collinson, July 15, 1767, J. Bartram Association Manuscript at the American Philosophical Society; B. Franklin to P. Collinson, October 14, 1767, A. Philosophical Society.  
22 R. H. Fox, Dr. John Fothergill and His Friends (London, Macmillan, 1919), p. 179.
always declined. The flavour which he enjoyed with George III was of long standing: that Prince loved the frankness of his character, the courage with which he had so often exposed himself to danger in the pursuit of knowledge, and the firmness with which his conduct was marked on all trying occasions. Sir Joseph's political principles, too, those of a high tory, were much to the Monarch's liking; and a country gentleman who never troubled himself with Parliamentary life, nor ever desired to rise above the rank he was born to, was sure to find a friend in His Majesty. Though a tory, and very firm in his opinions, both in Church and State, he was anything rather than a party man. He never interfered in politics beyond using his legitimate influence in Lincolnshire and Derbyshire, where his property lay, to aid those country gentlemen whom he believed fitted to make useful representatives of the landed interest... 

Banks and Solander first met in 1764, or slightly earlier when Banks was still enrolled at Oxford. Their initial acquaintance soon grew into an abiding friendship. When in 1766 Banks prepared to go to Newfoundland to study its natural history, Solander gave him instructions about botany which proved very useful. When Banks returned, Solander helped catalogue the plants. In the years which followed, Solander introduced his friend into the circle of scientists and undoubtedly helped Banks in this way too. The influence Solander had on Banks was strong enough that in 1767 Banks started making plans to go to Upsala in order to study with Linnaeus.

These plans were all altered by Banks's decision to join the voyage of the Endeavour. Early in 1768, the Royal Society wanted to observe the transit of Venus across the Sun, a phenomenon which occurs about once every one hundred years and was to occur in June, 1769. By viewing it from several widely dispersed places on the globe, eighteenth-century astronomers hoped to compute the distance between the Earth and the Sun. Tahiti, just reported by Commodore Wallis, seemed to offer the ideal location for observations from the South Pacific. The society petitioned the government for financial aid in outfitting the astronomical expedition. This the Crown approved, in part because it wanted to help, but also because it wanted to explore thoroughly the area in order to counter any French claims to Terra Australis Incognita which might arise from Bougainville's voyage then in progress. When Banks heard of the Royal Society's plans, he lost all thoughts of Upsala and offered to finance his return if allowed to join the Endeavour voyage in order to study the natural history of the areas visited. This permission was granted. 

Joseph Banks came from that entitled class, the landed gentry; close enough to the land to draw common sense from it, and with enough of it to draw from it a handsome revenue; with brains enough, indeed, unlike some country gentility, to repay education, and with wealth more than enough to allow of a town as well as a country existence. and of a standing in society which no mere rural square could claim.

Though often pressed to take a seat in Parliament, he

Joe Rauschenberg; Daniel Carl Solander [trans. Am. Phil. Soc.]

29. J. Banks, Endeavour Journal 1, p. 3.
I immediately told Dr. Solander, who received the news with great enthusiasm, without a moment's delay he promised to give me information about everything pertaining to natural history which might be encountered on such a long and unprecedented voyage. But several days later when we were dining at Lady Pomfret's table and talking about how I had an untried opportunity to enrich science and to become famous, Solander sat at once excitedly rose from his chair and asked me with intent eyes: would you like a fellow-traveller? I answered: Someone like you would give me untold pleasures and rewards. Then that is it, he said. I'll travel with you; and from that moment everything was settled and decided.

Actually Banks had to clear Solander's participation with the Admiralty. Initially there was some reluctance on the part of the Admiralty, but this passed, and Solander became part of the voyage. The spring and summer of 1768 were spent completing arrangements for the voyage. If we can believe Ellis's letters to Linnæus and Garden, the two men went as well equipped as they could. Ellis wrote to Linnæus:

No people ever went to sea better fitted out for the purpose of Natural History. ... They have got a fine library of Natural History; they have all sorts of machines for catching and preserving insects; all kinds of nets, trawls, drags, and boxes for coral fishing; they have even a curious contrivance of a telescope by which, put into the water, you can see the bottom at a great depth, where it is clear. They have many cases of bottles with ground stoppers of several sizes, to preserve animals in spirits. They have the several sorts of salts to surround the seeds; and wax ... both bees wax and that of Myrica; besides, there are many people whose sole business is to attend them for this very purpose. They have two painters and draughtsmen, several volunteers who have a tolerable notion of Natural History; in short Solander assured me this expedition would cost Mr. Banks ten thousand pounds.

Although the Annual Register indicates that Banks and Solander set out for Deal on August 5, Cook actually did not send for them until August 14. On the fifteenth the two naturalists had dinner with Horace de Saussure, celebrated French naturalist and physician then touring England. On August 20, they arrived in Plymouth; and on August 26 at 11:00 A.M. the signal for the "gentlemen" to board was given. By 2:00 P.M. they were on board, and the "Endeavour" set sail.

The five fruitful years between 1768 and 1773 were now at an end. These years among other things had seen Solander arrange the natural history collection of the British Museum, take part in the publication of Fauna Hibernica, begin his work with the Portland Museum, help Ellis with several projects, do descriptions for Alexander Garden and John Bartram, and finally form a lifelong friendship with Joseph Banks.

The net result of all this experience was that when he joined Banks on the voyage of the "Endeavour," Solander was well prepared for the expedition which would carry him to South America, the Society Islands, New Zealand, Australia, the East Indies, and South America. In short what lay behind was impressive, but what lay ahead was a voyage which began the final exploration of the Pacific and its boundaries.

IV. THE VOYAGE OF THE "ENDEAVOUR" 1768-1771

In the afternoon of August 26, 1768, the scientists boarded the H.M.S. "Endeavour" and the journey began. The voyage was to take them to South America, Australia, and Africa, and across the Atlantic, Pacific, and Indian Oceans. For Solander it was a venture involving daily routine, frustration, brushes with death, exotic natives, and hundreds of new biological specimens.

EQUIPMENT AND PERSONNEL

By eighteenth-century standards, Solander and Banks were well prepared for the voyage. Banks invested £10,000 in their equipment, supposedly unparalleled in its completeness. In addition to the equipment, Banks recruited eight other men to aid him and Solander in their work. John Reynolds, Sydney Parkinson, and Alexander Buchan were employed as artists to draw sketches of the flora and fauna, natives and scenery. Herman Spöring was hired as a draftsman, but apparently served as Banks's secretary. Peter Briscoe, James Roberts, Thomas Richmond, and George D familiarity were hired as servants; the two latter were Negro.

Even though the right quarters of the vessel on a long voyage were conducive to short tempers, Solander got along well with his shipmates throughout the journey. Banks wrote later that:

During the whole time, we never had an exchange of words which even for a second became heated. We often disagreed with each other's opinion of many things; but these disputes ended as they had started, good humorously. Generally once the other person's position was understood, agreement was reached.

Solander's popularity as a comrade was not limited to Banks. The Swede accompanied Cook in the ship's boat regularly; and after the voyage, Solander was a warm personal friend of Cook as well as the other ship's officers.

---

DAILY ROUTINE

Solander and Banks established their daily routine quickly as they sailed south towards the Madeiras on the first leg of the voyage. Although their assistants were required to take regular turns at watch, the two scientists were guests and assigned no duties on board ship. With this freedom the two men spent most of their day in the pursuit of science. Banks described their habits on two occasions.

... seldom was there a storm strong enough to break up our usual study times, which daily lasted from about 8 a.m. until 2 p.m. From 4 or 5 p.m. after the cabin had lost the odor of food, until dark, we sat at the great table with the draughtsmen directly across from us. In this position while the plants were still fresh, we made rapid descriptions of all the circumstances surrounding the natural history of the specimens under consideration and showed the draughtsman how the drawings should be made. When we were far from land and the stores room was empty, we finished each description and added to the synonomy in the books which we had. These completed descriptions were immediately entered in books in the form of Botanik of each of the lands we visited.4

At another time as they were sailing towards New Zealand, Banks recorded that:

Now do I wish that our friends [arc] in England could by the assistance of some magical spying glass take a peep at our situation; Dr. Solander sits at the cabin table describing, myself at my Bureau Journalizing, between as hangs a large bunch of sea weed, upon the table lays the weed and parasites; they would see that not withstanding our different occupations our lips move very often, and without being conjurers might guess that we were talking about what we should see upon the land which there is no doubt we shall see very soon.5

On September 13 the “Endeavour” anchored in Funchal Bay off Madeira Island. After lodgings with the British consul were obtained, the two naturally spent as much time as possible examining the natural and human history of the island by exploring the immediate vicinity of Funchal and by purchasing material representing other areas of the islands.6

SOUTH AMERICA

The one major interruption to their routine on the passage to Rio de Janeiro occurred when the ship crossed the equator. On October 25 the naturalists were made subject to the seaman’s ritual for crossing the line. Although many seamen were dazzled into the ocean three times by dropping from the main yard on a seat attached to the yard by lines, Solander and the rest of Banks’s party were initiated by each paying four days’ allowance of wine.7

The “Endeavour” sailed into Rio Bay on November 13, 1768. To the surprise of the ship’s company the reception was hostile. The Portuguese governor gen-

erally refused to cooperate with the “Endeavour” and excluded the ship’s personnel from going ashore except for those securing water and provisions. The governor apparently thought the “Endeavour” was either a smuggler’s ship or a ship carrying spies or both. Cook and Banks issued written statements trying to convince the Portuguese official otherwise. On November 17 memoranda were sent to the governor in which it was pointed out that Great Britain and Portugal were at peace, that the Cook voyage was directed towards scientific discovery, and that French explorers had only recently been allowed to enter the Brazilian interior. However, even though Cook and his crew wore Royal Navy uniforms, the ship was a collier not a warship, the English were notorious smugglers, and quite obviously the extremely curious learned civilians could well be spies.8

After their attempt to get the governor to rescind his order was unsuccessful, undaunted by the failure to gain their ends legally, Banks and Solander resorted to other means. The Portuguese officer in charge of the boat watching the “Endeavour,” an Englishman, Lieutenant Thomas Forrest, smuggled plants to them from shore. In addition, as early as November 22 clandestine journeys ashore were made by members of the scientists’ party to collect specimens. On both the twenty-second and twenty-fourth, the servants collected plant and insect specimens as part of the party getting water. On the twenty-fifth Solander sneaked ashore. Once I have ventured, as belonging to the watering boat, to land at the watering place, which is in the middle of the town, where happening to meet with a civil captain of the gaard and telling him I was the surgeon mate and should be glad to go up to some apothecaries shops to buy drugs, he granted me a gaard . . . that followed me not only around the town, but likewise a little way into the country, where I collected a few plants and insects; but I could not get so far as the undelighted places where the palms grow.9

About this same jaunt Banks, who always kept his eye on females, records that Solander was well received and that “D’Solander . . . declares . . . that as soon as it was night the windows were everyone furnished with one or more women . . . .”10

With this perhaps to urge him on, Banks during the next night under cover of darkness stole ashore and collected plants. These secret tours ended the following day when Brazilian authorities sent out patrols to find these interlopers.11

---
5 Banks, Endeavour Journal 1: pp. 33, 39b.
6 Ibid. 1: pp. 198-199.
7 Ibid. 1: pp. 176-177.
10 Banks, Endeavour Journal 1: p. 199.
DAILY ROUTINE

Solander and Banks established their daily routine quickly as they sailed south towards the Madeiras on the first leg of the voyage. Although their assistants were required to take regular turns at watch, the two scientists were guests and assigned no duties on board ship. With this freedom the two men spent most of their day in the pursuit of science. Banks described their habits on two occasions.

...seldom was there a storm strong enough to break-up our usual study times, which daily lasted from about 8 A.M. until 2 P.M. From 4 or 5 P.M. after the cabin had lost the odor of food, until dark, we sat at the great table with the draughtsmen directly across from us. In this position while the plants were still fresh, we made rapid descriptions of all the circumstances surrounding the natural history of the specimens under consideration and showed the draughtsmen how the drawings should be made. When we were far from land and the stores room was empty, we finished each description and added to the synonomies in the books which we had. These completed descriptions were immediately entered in books in the form of Botanik of each of the lands we visited.4

At another time as they were sailing towards New Zealand, Banks recorded that:

Now do I wish that our friends [exc] in England could by the assistance of some magical spyglass take a peep at our situation; Dr. Solander sits at the Cabbin table describing, myself at my Bureau Journalizing, between as hangs a large bunch of sea weed, upon the table lays the wood and hardwoods; they would see that not withstanding our different occupations our lips move very often, and without being conjurers might guess that we were talking about what we should see upon the land which there is no doubt we shall see very soon.5

On September 13 the “Endeavour” anchored in Funchal Bay off Madeira Island. After lodgings with the British consul were obtained, the two naturally spent as much time as possible examining the natural and human history of the island by exploring the immediate vicinity of Funchal and by purchasing material representing other areas of the islands.6

SOUTH AMERICA

The one major interruption to their routine on the passage to Rio de Janeiro occurred when the ship crossed the equator. On October 25 the naturalists were made subject to the seamen’s ritual for crossing the line. Although many seamen were dunked into the ocean three times by dropping from the mainyard on a seat attached to the yard by lines, Solander and the rest of Banks’s party were initiated by each paying four day’s allowance of wine.7

The “Endeavour” sailed into Rio Bay on November 13, 1768. To the surprise of the ship’s company the reception was hostile. The Portuguese governor generally refused to cooperate with the “Endeavour” and excluded the ship’s personnel from going ashore except for those securing water and provisions. The governor apparently thought the “Endeavour” was either a smuggler’s ship or a ship carrying spies or both. Cook and Banks issued written statements trying to convince the Portuguese official otherwise. On November 17 memoranda were sent to the governor in which it was pointed out that Great Britain and Portugal were at peace, that the Cook voyage was directed towards scientific discovery, and that French explorers had only recently been allowed to enter the Brazilian interior. However, even though Cook and his crew wore Royal Navy uniforms, the ship was a collier not a warship, the English were notorious smugglers, and quite obviously the extremely curious learned civilians would well be spies.8

After their attempt to get the governor to rescind his order was unsuccessful, undaunted by the failure to gain their ends legally, Banks and Solander resorted to other means. The Portuguese officer in charge of the boat watching the “Endeavour,” an Englishman, Lieutenant Thomas Forster, smuggled plants to them from shore. In addition, as early as November 22, clandestine journeys ashore were made by members of the scientists’ party to collect specimens. On both the twenty-second and twenty-fourth, the servants collected plant and insect specimens as part of the party getting water. On the twenty-fifth Solander sneaked ashore.

Once I have ventured, as belonging to the watering boat, to land at the watering place, which is in the middle of the town, where happening to meet with a civil captain of the gaard and telling him I was the surgeon mate and should be glad to go up to some apothecaries shops to buy drugs, he granted me a gaard ... that followed me not only around the town, but likewise a little way into the country, where I collected a few plants and insects; but I could not get as far as the uninvited places where the palms grow.9

About this same date Banks, who always kept his eye on feralics, records that Solander was well received and that “D’Solander ... declares ... that as soon as it was night the windows were everyone furnished with one or more women, ...”10 With this perhaps to urge him on, Banks during the next night under cover of darkness stole ashore and collected plants. These secret tours ended the following day when Brazilian authorities sent out patrols to find these interlopers.11

5 Banks, Endeavour Journal 1: pp. 33, 39b.
6 Ibid. 1: pp. 139-140.
7 Ibid. 1: pp. 176-177.
10 Banks, Endeavour Journal 1: p. 179.
those plants ... have turned out in general so entirely different from any before described that we never tired with wondering at the infinite variety of Creation. . . .

Although tracks of a large animal, probably a llama, were seen, the only mammals observed were sea lions and seals. Land birds and fish were scarce; but waterfowl and shellfish, clams, and muscles were available in greater supply. The Indians encountered and observed were nomadic hunters and gatherers, clothed in seraskins or llama cloaks draped over their shoulders and reaching to their knees. The males, while not the giants reported by an earlier voyage to the region, were relatively tall, averaging 5 feet 8 inches to 5 feet 10 inches; the females were only about 5 feet tall.18

THE SOUTH PACIFIC AND TAHITI

The "Endeavour" left Tierra del Fuego on January 21, sailed across the Pacific through the low Tuamotu Islands, and on to Tahiti. When the ship's progress allowed, the two naturalists went out in a small boat and collected what they could. Most of the time, however, their efforts were confined to identifying items previously collected and stored on board the ship. On April 3, the first Polynesian landfall, one of the Tuamotu Islands, was sighted and observed by telescope.19

On April 13, 1769, the "Endeavour" entered Matavai Bay, Tahiti, and received a warm friendly welcome. Even before the anchor was secured, the vessel was surrounded by native canoes offering fruit, coconuts, breadfruit, and fish in exchange for beads. An even more striking reception awaited Cook, Solander, Banks, Green, Monthouse, Lieutenant Gore, and a marine escort who went ashore as soon as the ship was at anchor.

... we were met by some hundreds of inhabitants whose faces at least gave evident signs that we were not unwelcome guests, tho they at first hardly dare approach us, after a little time they became very familiar. The first who approached us came creeping almost on his hands and knees and gave us a green bough the token of peace. . . . We then walked into the woods followed by the whole train to whom we gave beads and small presents. In this manner we walked for 4 or 5 miles under groves of Coconut nut and bread fruit trees loaded with a production of fruit and giving the most grateful shade I have ever experienced, under these were the habitations of the people most of them without walls; in short the scene we saw was the true picture of an arcadia of which we were going to be kings that the imagination can form.20

The next day was spent cementing friendly relations with the natives. The process started when two upper-caste Polynesians came out to the "Endeavour," made Cook and Banks their blood-brothers, and then escorted them, with Solander and the marine escort, to the island. Here the voyagers were taken to a log house and gifts were exchanged.

After the ceremony was over we walked freely about several large houses attended by the ladies who showed us all kind of civilities our situation could admit of, but as there were no places of retirement, the houses being entirely without walls, we had not an opportunity of putting their politeness to every test that maybe some of us would not have failed to have done had circumstances been more favourable; indeed we had no reason to doubt any part of their politeness, as by their frequently pointing to ... themselves and upon them they plainly showed that they were much less jealous of observation than we were.21

Banks and Solander established their pattern of life for their stay in Tahiti within a few days after the expedition established its base near the Vaipoo River. In the morning they traded with the natives for food at the entrance to the small fort the expedition built; their afternoons were passed examining the natural and human history of nearby portions of the island. In addition from time to time, they joined Cook on diplomatic and exploratory excursions to other parts of the island. Certainly Solander and Banks continued to find Tahiti exotic in culture as well as in climate. The Polynesian's sexual freedom was a most surprising thing. The crew apparently was soon swept into this pattern; by April 22, one journalist recorded that every man was beginning to have his friend. Perhaps the popularity of the "noble savage" was due less to the nobility of the males than to the graciousness of the females. Certainly this sexual freedom was not without its problems; infanticide was perhaps the most repulsive aspect of it. The explorers found:

... more than half of the better sort of the inhabitants of the Island have like Comus in Milton entered into a resolution of enjoying free liberty in love without a possibility of being troubled or disturbed by its consequences; these mix together with the utmost freedom seldom cohabiting together more than one or two days by which means they have fewer children than they would otherwise have, but those who are so unfortunate as to be thus begot are strangled at the moment of their birth. Some of these people have been pointed out to me by name and on being asked have not denied the fact, who have contracted clandestine and lived together for years and even now continue to do so, in the course of which 2, 3, or more children have been born and destroyed.22

Free love was not the only thing that the Europeans found exceptional about these exotic people. They were also expert thieves. In the course of the first tours of Polynesian houses, Solander and Monthouse discovered that a pair of opera glasses and a small box respectively had been stolen. After a minor show of force involving the "ratting" of Banks's musket, negotiations were carried out which led to the return of these items. The very next day however, a native was

18 Ibid. 1: pp. 233-236.
19 Ibid. 1: pp. 228-229.
20 Ibid. 1: pp. 220-221.
22 Banks, Ibid. 1: p. 234; R. Molyneux, "Remarks in Port Royal Bay in King George the Third Island," in Cook, The Voyage of the Endeavour, p. 553.
shot and killed while fleeing with a musket he had stolen. Even this did not deter the natives and the need for vigilance continued throughout the stay on Tahiti and subsequently on the voyage through Polynesia. The greatest exhibition of Polynesian dexterity as thieves came during the night of May 23–29, 1769, while Solander, Banks, and Cook were visiting some friendly natives. Even though Cook carefully went to sleep with his head on his boots and other possessions to protect them, they were stolen.

Another was common on both sides. On April 26, a native dignitary informed the Cook party that the ship’s butcher had stolen the native’s stone hatchet with threats to cut his wife’s throat. Cook had the offender whipped publicly the next day. Slightly different was the incident which occurred on June 18. A party of the ship’s crew was sent to get ballast. They soon found the native cemetery was the closest and easiest place to find the necessary stones. The natives, on this occasion, made it quite clear that if this continued they would fight. The result was that the crew went on to a nearby stream, which though further from the ship, was much less controversial.

The Polynesians’ burial and mourning practices also seemed odd to the Europeans. On April 28, they saw a recently widowed woman as part of her mourning take:

...from under her garment a shark’s tooth and stuck it into her head with great force 6 or 7 times. A profusion of blood followed these strokes...for two or 3 minutes she laid freely more than a pint in quantity, during the time she talked loud in a most melancholy tone. I was not a little moved at so singular a spectacle and holding her in my arms, did not cease to ensure what might be the cause of so strange an action, she took no notice of me till the bleeding ceased nor did any Indian in the tent take any of her...but what surprised me most of all was that as soon as the bleeding ceased she locked up smiling and immediately began to collect pieces of cloth which during her bleeding she had thrown down to catch the blood...and threw [them] into the sea.

After death the bodies, wrapped in cloth along with a hatchet, some coconut hair, and a cup of water, were placed on a stake-supported bier covered by a small hut. Because of the heat and innumerable insects, bodies deteriorated rapidly, and the burial grounds could be smelled long before they were seen. Despite this uninviting trait, the natives revered these places: in fact, on June 13 the first violence committed by a native against one of the Europeans occurred when Monckhouse pulled a plant from a native burial ground. He was set upon by a young native and only after two other Polynesians pulled the man off was Monckhouse able to leave. Banks’s curiosity had led him to participate in a funeral even before this on June 10.

As the funeral procession moved past the fort and into the woods, all the natives not involved fled in terror from this taboo—a word, by the way, which entered the English language as a result of the voyage.

On April 30 one of the more slapstick incidents of the voyage took place. It, in a sense, probably typifies an endless number of events that must have occurred as Western culture spread to the rest of the earth. As Banks and Solander were standing at the gate of the fort trading:

About 10 Tomio came running to the tents, she seized my hand and told me that Tubauru was dying...he had vomited they said and he told me he should certainly die in consequence of something our people had given him to eat, the remains of which were shown me carefully wrapped up in a leaf. This upon examination I found to be a Cachet of tobacco which he had begged of some of our people.

In June the explorers made their observations of the transit of Venus. The observers were divided into two groups. One group including Gore and Monckhouse set up an observation post on a small islet just inside the coral reef; Solander, Cook, and Green, the astronomer, carried on their sightings from the fort. The night of June 2 and 3 passed in freetfle asleep—frequently interrupted to check whether the weather was clear or overcast. The day turned out to be nearly ideal; the only drawbacks were the 119\degree temperature and the heat waves as the sun burned down through a cloudless sky. Solander, because of the superior equipment purchased by Banks, actually got a clearer, larger sighting than his colleagues using government supplies.

On June 26 Solander joined Cook and Banks in a circumnavigation of the island in the ship’s boat. In the course of the tour the next day they encountered some architectural works which required a high degree of sophistication, and increased the Europeans’ already high esteem for these “noble savages.”

...we came to the district which particularly belonged to Wahaulia, it was situated on the point of a large bay...a large and most fertile flat...the country we went through was more cultivated than anything we have seen in the Island; the barks were every where banked into narrow channels with stone and the very sea was confined by a wall of stone also. The houses were not very large or very numerous but the large canoes which were build up everywhere along shore almost immumable; they were of a different built from those which we have seen...longer and their heads and sterns higher...At almost every point was a mooring or burying place and many within land.

Two days later the voyagers for the first time saw a statue of Maui, the Polynesian cultural hero.

26 Ibid. 1: p. 265.
... a figure of a man of Basket work, roughly but not ill designed; it was 7 feet high and too bulky in proportion to its height, being covered with feathers, white to represent skin and black to represent hair and tattoo; on the head were three protuberances which we should call horns, but the Indians called them tata tua, little men. 

Later that same day a real find was made:

... we had from far observed trees ... [ironwood] from whence we judged that thereabouts would be some auramin; nor were we disappointed for we no sooner arrived there than we were struck with the sight of a most enormous pile, certainly the master-piece of Indian architecture in this island so all the inhabitants allowed. ... Its form was like that of Morais in general, resembling the roof of a house, not smooth at the sides but formed into 11 steps, each of these 4 feet in height making in all 44 feet, its length 267 its breadth 71. Every one of these steps were formed of one course of white coral stones most nearly squared and polished, the rest were round pebbles, but these seem to have been worked from their uniformity of size and roundness. Some of the coral stones were very large, one I measured was 3 by 24 feet. The foundation was of Rock stones likewise squared, one of these corner stones measured 4 ft 7 in by 2 ft 4 in. The whole made a part of one side of a spacious area which was walled in with stone, the size of which seemed to be intended for a square was 118 by 116 paces, which was entirely paved with flat paving stones. It is almost certain by the whole was entirely covered with leaves, whereof we had no opportunity to form an idea, as the structure without the assistance of Iron tools to shape their stones or mortar to join them, which last appears almost essential as the most of them are round; it is done tho, and almost as firmly as a European workman would have done it, the work is prodigious: the quarry stones are but few but they must have been brought by hand some distance at least, as we saw no signs of quarry near it tho I looked carefully about me, the coral must have been fished from under water. ... The labour of forming them when got must have been at least as great as the getting them, they have not shown us any way by which they could square a stone but by means of another, which must be most tedious and liable to many accidents by the breaking of tools. The stones are also polished and as well and truly as stones of the kind could be by the best workmen in Europe, in that particular they excel owing to the great plenty of a sharp coral sand which is admirably adapted to that purpose and is found everywhere upon the seashore in this neighbourhood. 

The day after the men returned to the fort, an excursion was taken up valley into the interior. As they proceeded they noticed that the natives had planted breadfruit at several different levels on the valley slopes to provide a more even food supply by differing maturation dates. Habitation ceased after about four miles where the valley narrowed to less than 400 yards. In about another six miles the valley closed into a narrow head with the stream cascading down from above into a clear pool. Native guides offered to help the visitors over the crags by means of bark ropes, but the explorers opted for a return to the fort. In the course of the jaunt the travelers examined the valley’s rock outcroppings with care and found the interior core of the island was volcanic in origin. 

Preparations for departure now began. The fort was dismantled between July 7 and 10. On the twelfth Tubaia, one of the native priests, came aboard to join the voyage on her return to England; the rest of the Endeavour raised anchor and sailed out of Matavai Bay.

Before striking towards New Zealand, the Endeavour cruised for nearly a month amid the rest of the Society Islands. The explorers first stopped at Huahine, then proceeded to the twin islands of Raivavae and Tahuata, from here the southerly going on to Borabora, and finally after returning to the other side of Raivavae the Englishmen sailed to the south. In general they found these islands basically the same as Tahiti physically, biologically, and culturally. On July 21, however, while on Raivavae, the largest canoe yet encountered was seen. The dexterity and craftsmanship obtained by native artists in constructing a large double sailing canoe seemed an epitome of the skills of the “noble savage.”

Its extreme length from stem to stern not reckoning the bowing up of both those parts 51 feet; breadth in the clear at the top forward 14 inches, midships 18, aft 15; in the bilge forward 32 inches, midships 35, aft 33; depth midships 3 ft 4; height from the ground she stood on 3 ft 6; her head raised without the figure 4 ft 4 from the ground, the figure 11 inches; her stern 8 and the figure 3 feet. A great part of her was lashed another like her in all parts but less in proportion being 33 feet in her extreme length.

This work difficult as it would be to an European with his Iron tools they perform without Iron and with amazing dexterity; they follow with their stone axes as fast at least as our Carpenters could do and dub the slowly with prodigious nicety; I have seen them take off a size of an angular plank without missing a stroke, the skin itself scarce 1/16 part of an inch in thickness. Boring the holes through which their sewing is to pass seems to be their greatest difficulty. Their tools are made of the bones of men generally the thin bone of the upper arm; these they grind very sharp and fix to a handle of wood, making the instrument serve the purpose of a gouge by striking it with a mallet made of a hard black wood. ...
and west of Tahiti could not be excluded until somebody sailed through the area.

On October 7 land was plainly seen. From its size it appeared that it might be the long-sought-for southern continent. Banks wrote eagerly, "... in many parts 3, 4, and 5 ranges of hills are seen over the other and a chain of Mountains overall, some of which appear enormously high. ... All hands seem to agree that this is certainly the Continent we are in search of." Closer inspection the following day indicated that "the land ... makes in many white cliffs like chalk; the hills are in general cladded with trees, in the valleys some appear to be very large; the whole appearance is so fruitful as we could wish." 28

During the first nine days off the east coast of New Zealand, the "Endeavour"'s" occupants encountered the Maoris first on October 8; they were found to be addicted to thievery every bit as much as the Tahitians. However, unlike the relatively pacific Tahitians, these New Zealand Maoris were quite aggressive and warlike. In the late afternoon of October 8, Solander went with Cook to explore this unknown land. While part of the group examined the surrounding area, the Polynesian Maoris attacked the boat. The attack was not repulsed until the crew opened fire and killed one of the natives. When the "Endeavour" people returned to the same place the next day to continue the search for water, a "welcoming" party of from 50 to 100 Maori warriors armed with spears and a small, highly polished, stone-handled weapon threatened the voyagers in an obvious show of force.

[They] drew themselves up in line. Then with a regular jump from left to right and the reverse. They brandished their weapons, disdained their Mouts, Lolling out their tongues and turn'd up the whites of their eyes. The whole was accompanied with a strong hoarse Song, calculated in my opinion to Cheer Each Other and Intimidate Their Enemies. 29

Despite a show of force by Cook's marines, Tuaki warned the explorers to be on their guard. The squad of marines in battle array, friendly overtures by Cook's group, and the gift of iron implements were of no avail; a Maori seized the dials of Green the astronomer and started to go away with it. To prevent this he was shot. When the rest of the Maoris did not disperse, the explorers fired on them as well, wounding three. A Polynesian retreat, during which their wounded comrades were picked up, was now in order. 30

Still another encounter between the explorers and the Maoris took place later in the day. As the "Endeavour" group explored the bay, they spotted a native canoe and decided to catch it in order to make friends with the natives. The Polynesians had other thoughts, when the Europeans drew near, the Maoris unleashed a painful barrage of rocks. Cook ordered his men to return the fire with the result that four natives were killed, and three trembling, obviously terrified Maoris were captured. Solander, along with Banks and Cook, went ashore the following day to release the captives and to collect wood. While the crew engaged in chopping wood and the gentlemen and officers hunted ducks, a piquet of marines detected armed natives advancing on the shore party from three directions. The hunters now retreated to the work party where they faced a group of about 150 to 200 Polynesians. As nothing useful could be gained by a struggle, Cook decided to return to the ship. Aptly he named the area Poverty Bay. 31

For the next few days as the "Endeavour" coasted the shore to Cape Turnagain and then retraced its path, encounters with Maori canoes were frequent and usually bellicose. The ship's guns had to be used to disperse five canoes on the twentieth. On October 14 a party of 150 natives was dispersed only after grape shot was fired at them. On the following day, the New Zealanders trading from their canoes tried to grab and kidnap Tuaki's Tahitian boy servant as he reached down to them; he was saved only when marines opened fire, wounding at least one Maori and allowing the boy to pull free. Cook named the place Cape Kidnappers. On October 16, 1769, Cook turned around at Cape Turnagain and sailed north to Anaura Bay. While the crew collected water and supplies from friendly natives here, Solander and Banks collected plants—98 different ones in all—and shot birds. They continued to study the customs of the Maoris; fish, Terra roots, yams, sweet potatoes, and taro seemed to be their staples. "... Dogs, very small and ugly," were the only domesticated animals. 32 Banks, as usual, had his eye on the women.

The women were plain and made themselves more so by painting their faces with red oxide and oil which generally was fresh and wet upon their cheeks and foreheads, easily transferable to the noses of any one who would attempt to kiss them; not that they seemed to have any objection to such familiarity... but they were as great coquetts as any Europeans could be and the young ones as skittish as unbroken fillies. One part of their dress I cannot omit to mention: besides their cloth... each wore round the lower part of her waist a string made of leaves of a highly perfumed grass, to this was fastened a small bunch of the leaves of some fragrant plant which served as the innermost veil of their modesty. 33

28 Cook, "On Board His Majesty's Bark Endeavour," Public Record Office MSS. Add. 51/4546/145, Monday, October 9, 1769.
The “Endeavour” next found a haven in Tolaga Bay. Again while the crew worked on collecting stores, observations of the natural and human history of the area were made by the two scientists. Here for the first time the two men were able to examine the long hardwood lances and the short polished stone paioio paioio, used like a tomahawk, which constituted the basic arsenal of Maori warriors. They also visited an impressive natural bridge nearby.

It was certainly the most magnificent surprise I have ever met with, so much is pure nature superior to art in these cases. I have seen such places made by art where from an appearance totally inland you was led through an arch 6 feet wide and 7 high to a prospect of the sea, but here was an arch 25 yards in length, 9 in breadth and at least 15 in height.41

On the twenty-eighth, Solander and Banks saw the largest native canoe they had yet seen; in all it measured 68 feet 6 inches in length and 5 feet in breadth.42

For the next several days, the “Endeavour” sailed north, east, and west along the coast of North Island. Aggressive natives continued to be part of the scene. As the ship sailed, the telescope served as means of making observations of the island’s shore and interior. Because of the well-wooded pleasant terrain and numerous habitations thus sighted, Cook called the bay the Bay of Pity. During the afternoon of November 3, the “Endeavour” anchored in Mercury Bay, so named because Cook observed the transit of Mercury here. During their eleven-day stay here which was in the main uneventful, Solander and Banks collected over 200 specimens and continued to make observations of Maori life.43

On November 18 the “Endeavour” entered the Firth of Thames at the lower end of Hauraki Gulf. The explorers remained here for three days and made their one jaunt into the interior by going up-river. Because it reminded them so much of the Thames in England, they gave it that name. As the party moved upstream they first encountered alluvial sand and mud banks after which they moved into a very luxuriant and spectacular stand of giant eucalypts. One of these “monarchs of New Zealand’s northern forests,” but not the largest, measured 18 feet 9 inches in girth at 6 feet above the ground, and did not have a branch for 89 feet.44

On November 29 the “Endeavour” entered the Bay of Islands near the northern end of North Island’s east coast. Here again the initial encounter with the Maoris was a violent one. The master and mate returned from their morning survey of the bay and reported trouble. By noon the “Endeavour” itself was surrounded by a flotilla of boats manned by some three hundred natives who seemed peaceable enough until a prearranged signal they tried to steal the ship’s boughy. Later that same afternoon when Solander and Banks joined Cook and a party of crew collecting wild celery, a group of from 200 to 600 natives attacked them. Their initial attack was broken up by fire from the explorers, but they did not disperse until a broadside from the “Endeavour” exploded behind them.45

After leaving the Bay of Islands, the “Endeavour” sailed without stopping north along the east coast and then south along the west coast of North Island to Queen Charlotte Sound on South Island. On December 25, in the Tasman Sea the “Endeavour” voyagers celebrated their second Christmas at sea. The snow-capped extinct volcano cone Mount Egmont, sloping down in solitary splendor from its 8,260-foot summit to the surrounding plain, was sighted on January 2, as the vessel neared Cook Strait. The voyagers entered Queen Charlotte Sound on January 15, 1770. The “Endeavour” remained there until February 3, being carreered and collecting water, wood, and food. During this period Solander and Banks collected some 230 items and continued their anthropological observations. On January 16, during a visit to a native family they gained their first visual proof of cannibalism.

[While] looking carefully upon one of [the provisions baskets] we by accident observed 2 bones, pretty clean picked, which ... were undoubtedly human bones ... upon them were evident marks of their having been dressed on the fire, the meat was not entirely picked off from them and on the gritty ends which were gnawed were evident marks of teeth, and these were accidently found in a provision basket. ... The honour that appears in the countenance of the sermon on hearing this discourse ... is better conceived than described.46

On January 22, while Solander and Banks were collecting in a valley below, Cook from the top of a hill saw the Pacific Ocean to the east, thereby substantiating his suspicions that Cook Strait was indeed a pass between the Tasman Sea and the Pacific Ocean. A week later Solander joined him in a survey of the channel. On February 3 preparations for sitting began, and on the sixth the “Endeavour” began its passage through the Cook Strait.47

---

41. Ibid. 1: p. 419.
42. Ibid. 1: p. 439-421; Chessman, Manual of the New Zealand Flora, p. xvii.
47. Ibid. 1: p. 425. This sight may well have returned to both Banks and Solander several years later when they heard that Cook himself was so consumed.
Cook circumnavigated South Island much more quickly than he did North Island. After passing through Cook Strait into the South Pacific Ocean, he sailed up the east coast of North Island to Cape Turnagain in order to prove to some of his officers that North Island was not a peninsula jutting out from the southern continent. The doubts were convinced. Cook turned southward and sailed down the east coast of South Island. On February 17 Banks Peninsula, the eroded remains of an old volcanic outpouring, was rounded and named for the naturalist. A strong swell from the southwest on March 2 indicated that South Cape of South Island had been passed and the "Endeavour" turned north. Nine days later Solander Island, a volcanic island seventy miles west southwest of Invercargill off the south coast of South Island was sighted and named. From here the voyagers sailed up South Island's west coast and saw the spectacular New Zealand Alps. On Tuesday, March 26, the "Endeavour" anchored in a bay near Queen Charlotte Sound. While supplies were taken on board, Solander and his fellows continued their studies.  

**AUSTRALIA**

Cook now decided to sail westward to the east coast of Australia from New Zealand. Actually Cook had three options open to him. First he could return to Europe by crossing the South Pacific at high latitudes between New Zealand and Cape Horn, thereby putting to rest once and for all the idea of a southern continent; in fact Cook did just this on his second voyage. This plan, however, was rejected on the first voyage because the gear of the "Endeavour," the sails and lines primarily, was not in good enough condition to take the beating of the gales of the roiling 40's. The second alternative was to sail directly from New Zealand to Cape of Good Hope; this was rejected because the "Endeavour" had supplies and gear enough to do more than this. As a result, the exploration of the east coast of Australia followed by re provisioning and repairing in the Dutch East Indies offered an ideal compromise. The Dutch had explored the Australian west coast as well as most of the north and south coast. However, the Australian east coast was still unexplored, and the Torres Strait between Australia and New Guinea was shrouded in mystery. Luis Vasco de Torres, the Portuguese explorer, had reported it; but subsequent voyages were unable to find it. During the passage to Australia, Solander occupied his time completing his findings made in New Zealand and collecting marine fauna in much the same manner as he did on the outbound voyage to Tahiti.  

Australia was seen for the first time on April 19.

---

49 Banks, ibid. 2: pp. 38, 43-49.  
For the next seven days the "Endeavour" sailed northward along the east coast of Australia. The land was generally comprised of a sandy beach zone with gentle slopes leading back up into the hills. Initially the hills were covered with some sparse stands of timber; but as the ship progressed further inland, the land seemed to become more dry and barren. Australian Bushmen were sighted for the first time, with the aid of a telescope, on April 22, and appeared quite dark.  

The "Endeavour" sailed up the Australian east coast until June 17. Stops were made for water at Botany Bay, D'Entrecasteaux Bay, and Botany Sound. During each of these pauses, Solander and Banks examined the surrounding area to find out about its natural and human history. At the stay in Botany Bay, between April 28 and May 5, Solander and Banks had their first opportunity to observe the Bushman and his culture. Although personal contact was seldom made, the explorers using a telescope as well as direct observation found theaborigines a brown, folk fond of decorating themselves with white paint and speaking a language totally different from Polynesian. Their culture, observed first hand in the small bark huts and caves of a nearby village, was primitive. Their weaponry consisted of long wooden lances, a scimitar-shaped weapon, probably a boomerang, and throwing sticks. The landscape encountered ranged from marshes through sandy coastal soils to spots of deep black soils covered by an open timber-grassland flora. The land fauna was sparse, though a small rabbit-sized, wease-like animal, paw prints of a doglike creature, and dung resembling a deer's were seen. Sting rays, however, were so abundant that Cook toyed with the idea of naming the bay Sting Ray Bay. At Botany Bay, so named for a bird of the species shot there, Solander and Banks collected flora, though they were pestered by the green stinging ants in the mangrove swamp. The soils here, beyond the coastal marshes, were sandy, and the ground covered with dry grass and trees. The same species of green ants made their collecting at Tully Bay equally unpleasant; however they did find a minnow-sized fish which, using its fins, moved over dry land as readily as water.  

Two days after leaving Botany Bay, the "Endeavour" entered shoals, and a week later the explorers came to the Great Barrier Reef. From the twenty-sixth of May until the twenty-fifth of August, the explorers sailed through some 1,250 miles of the world's more dangerous waters without the help of charts. On two different occasions during this passage the "Endeavour" was almost lost. On the evening of June 10, Cook decided to sail on slowly in the bright moonlight. "Before 10 o'clock [P.M.] we had 20 and 21 fathoms and continued in that depth until a few Minutes before 11 when we had 17 and before the Man at the lead could..."  

49 Ibid. 2: pp. 49-50.  
51 Ibid. 2: pp. 52-52; Cook, The Voyage of the Endeavour, pp. 306-311, 324-325, 330-333.
heave another cast the Ship Struck and struck fast." 93 At this point the Cook voyage underwent the first of the great challenges it was to face in the unknown waters around the Great Barrier Reef; hundreds of miles from the nearest civilized settlement in Timor, on the unexplored coast of a vast unknown continent, the chances of survival if the "Endeavour" sank were slim. With this prospect facing them, everyone on board the ship entered wholeheartedly into the efforts to save it. Even Banks and Solander, soft Londoners that they were, took their turns at the pump. Certainly the gazing of the ship against the coral reef was an uninviting reminder, constantly in the background, of the precarious position of the ship and crew. When dawn came the floating debris proved what their ears had led them to suspect—the "Endeavour" was badly damaged, perhaps fatally so. By 8 a.m. the pumps had cleared the hold, but it still was necessary to keep the pumps working. The stricken ship now could be refloated. Even this seemed hazardous; for no one knew that it would not sink so soon as it left the reef. The remainder of the day was spent preparing the ship and taking out the anchors in order to warp it off the reef. By 10 p.m. the high tide the "Endeavour" was floating. There still remained the problem of whether to beach the ship immediately or to sail on in the badly damaged state. At this point one of the midshipmen proposed that the ship be beached. Although Cook and none of the officers had ever used this technique before, they all had heard of it: a sail filled with wool, oaktim, and animal dung was hauled over the bottom of the ship to cover and till the damaged area. It worked, everyone breathed more easily, and they now began to think of the next move. 94

By this time the ship's boats, sent out earlier to look for a haven, returned with the news that there was an estuary nearby which would afford the "Endeavour" the harbor needed. As luck, fate, destiny, or coincidence would have it, the "Endeavour" had hardly begun to move into the river when heavy winds began to blow which prevented the vessel from entering the harbor for four days. If the winds had come a few hours earlier, the vessel would surely have broken up on the reef. By the evening of the seventeenth of June, the ship was safely moored in the Endeavour River estuary. The repairs were not completed until July 29. 94

It took several days to get the "Endeavour" ready for beaching; and then on the twenty-second, it was found that the hole in the ship was much larger than anyone suspected. The only thing that had kept the sea from sinking the ship was a fist-sized piece of coral which had torn from the reef, wedged into the opening, and served as a partial plug. After this damage was patched by July 1, it was found that the very process of beaching the ship had strained and sprung several planks, making even more repairs necessary. 94

During all this Solander and Banks passed their time fruitfully drying out specimens damaged by the water, collecting new flora and fauna, and exploring the area. On June 22 some of the ship's party returned from a pigeon hunt, reporting the sighting of a very swift animal as large as a greyhound. The same animal, as well as several other strange creatures, were seen in the days which followed. On the twenty-fourth one of the seamen reported seeing a beast "...as large and much like a one gallon cagg, as black as the Devil and ... 2 horns on its head. ..." 95 This strange thing was probably a flying fox fruit bat whose Indian species sometimes attains a four-foot wing span. On a jaunt inland on the twenty-eighth Solander and Banks examined some ant hills six feet high which reminded Solander of the Ruse Stones on the plain of Uppella. On the twenty-ninth an American midshipman saw a wolf; it probably was a dingo though the Thylacine wolf, a marsupial rather than a true wolf, generally believed to be extinct in Australia by this time, may have been seen. With the additional repairs necessary, Solander and Banks decided to join Lieutenant Gore and several other seamen on a three-day exploration upstream. Starting on July 6, the party passed through the coastal mangrove swamps for about three leagues and then entered a low-lying landscape covered with long, thick grass and occasional tiliaceus trees. The latter were abundant along the river banks. This terrain in turn gave way to a hillier, drier region. Although a native encampment was discovered, no contact with humans was made. Animal life was another story. A dingo, a large fruit bat, and three of those different greyhound-sized animals were seen. After a mosquito-ridden, hot, sleepless night on the following day, they got a better view of this strange species.

We walked many miles over the flats and saw 4 of the animals, 2 of which my greyhound fairly cuss'd, but they beat him owing to the length and thickness of the grass which prevented him from running while they at every bound leaped over the tops of it. We observed much to our surprise that instead of Going upon all fours this animal went only upon two legs, making vast bounds. ... 95

On the morning of the third day they decided to return to the ship. The return trip down stream, with the help of an ebb tide as they neared the coast, was made very rapidly. 94

During the next few days, the bushmen in the vicinity of the ship became less timid and began to visit the area. Obviously they knew nothing about iron for they rejected it as they did everything else save food.

93 Cook, Ibid., p. 344.
94 Cook, Ibid., pp. 349-350, 364; Banks, Ibid. 2: pp. 81-83.
THE VOYAGE OF THE "ENDEavour"

They are a very small people or at least this tribe consisted of very small people . . . in general about 5 feet 6 in height and very slender. Their color was nearest to that of chocolate, not that their skins were so dark but the snout and chin with which they were all clad over, which I suppose served them instead of Cloths, made them of that colour. Their hair was straight in some and curl'd in others . . . it was of the same consistence with our hair, by no means woolly or curl'd like that of Negroes. . . .Cloaths they have none, not the least rag . . . They Painted themselves with white and red . . . Their ornaments were few: necklaces, bracelets . . . a string . . . tied round their bodies which was sometimes made of human hair, a piece of Bark tied over their forehead, and the pre-posterous bone in their noses . . . Their language was totally different from that of the Islanders; it sounded more like English in its degree of harshness . . .

Tubiia expressed the opinion that these people were good only for being sacrificed to the Gods. Banks took another view; later he wrote:

... these ... happy people, content with little may almost nothing. Far enough removed from the anxieties attending upon riches, or even the possession of what we Europeans call common necessaries. . . .

When one of the "animals of the country" was killed on July 14, Solander and Banks asked the natives what it was called. Their answer Kangaroo was the name the explorers gave it.

On the sixteenth, with the ship once again in commission, preparations to set sail began. In the remaining days of their stay, Solander and Banks made ready to renew the voyage. The ship's crew at the same time collected several turtles. This in turn led the emboldened bushmen to demand a captured turtle; on the nineteenth when the request was denied, the natives set fire to the dry grass surrounding the "Endeavour's" camp. Fortunately by this time most of the camp was packed on board; however, a sow and her litter were lost.

After several days of adverse winds, on August 4 the ship began to make its way out of the Endeavour River. Cook now decided to escape from behind the reef into the Coral Sea and to follow the reef northward in search of the Torres Strait. After several days of searching for a passage, involving frequent excursions to the crests of nearby hills for a better view of the sea, which in turn allowed Solander and Banks more time to collect, Cook's Passage through the reef was found. The "Endeavour" now entered the Coral Sea.

The danger to Solander's life and findings now seemed past; however, this was an hallucinatory impression. Cook, in order not to miss Torres' Strait, kept in sight of the reef's breakers. As a result, on the night of the fifteenth the "Endeavour" was embayed by the coral. During the night the wind stopped and the flood tide carried the "Endeavour" toward the reef.

The night . . . was not the most agreeable: All the dangers we had escaped were little in comparison to . . . being thrown upon this reef . . . a Reef such as one as I now speak of is a thing scarcely known . . . anywhere but in these seas: it is a wall of Coral rock rising almost perpendicularly out of the innumerable ocean . . . generally bare at low water . . . [with] a most terrible surf. Breaking mountain high, especially when . . . the trade wind blows directly upon it.

At three o'clock this morn it dropped calm on a sudden . . . we judged ourselves not more than 4 or 5 fogs from the reef . . . and the swell . . . drove . . . the ship towards it fast. We tried . . . often . . . to find ground that we might anchor but in vain; before 5 the roaring of the Surf was plainly heard and as day broke the vast foaming waves were . . . to be seen a sound mile from us . . . by 5 . . . we were within a Cables length of them . . . still no sound at 100 fathom. Every method had been taken . . . to get the boats out . . . but it was not yet accomplished; the Pinnace had a Plank stripped off her for repair and the longboat . . . was not yet got out . . . sweeps were out at the stern ports . . . in hopes that might delay till the boats were out. All this while we were approaching . . . so between us and it was only a dismal valley the breadth of one wave . . . no ground could be felt above 150 fathom . . . a speedy death was all we had to hope for. . . the boats were in the ship and must be dashed in pieces with her and the nearest dry land was 8 or 10 leagues distant. . . . At this critical juncture . . . a small air of wind sprang up, so small that any other time . . . we should not have observed it . . . every sail was . . . put . . . to catch it. . . . This . . . gave us time . . . and we . . . got out the long boat . . . in less than 10 minutes our little Breeze died . . .

The ship held its position, and when another puff of wind came, it moved toward a small opening in the reef in hopes of getting through into the lagoons behind. Just before the opening, the "Endeavour" was caught in the ebb tide and carried off the reef a quarter mile. With the assistance of the boats, the ship was two miles off the reef when flood tide resumed. With either calm or contrary winds blocking escape into the Coral Sea, the only avenue out of the danger was to reenter the maze of shoals behind the reef. When a narrow but adequate pass, Providential Channel, was sighted, the "Endeavour" sailed through it on the crest of the flood tide.

Once inside the reef, the "Endeavour" again began to proceed northward. As the "Endeavour" slowly and carefully worked its way through these waters, Solander and Banks continued to observe the abundant natural life in the shoals and their islands. On August 21, Cook, on the basis of the tidal swell and the narrowing of the land, suspected the strait was near. By noon the vessel had entered the Endeavour Strait.

---

43 Ibid. 2: pp. 92-93.
44 Ibid. 2: p. 120.
47 Banks, ibid. 2: pp. 101-104.
48 Ibid. 2: pp. 105-106.
Later he went ashore with Solander in order to gain a better view of the surrounding waters from the nearby heights. When his suspicions were confirmed, Cook laid claim to the east coast of Australia for Great Britain, and named the area New South Wales. On the twenty-fifth after a slow uneventful passage, the vessel sailed out into the Gulf of Carpentaria and made for New Guinea.86

THE EAST INDIES

Although New Guinea was sighted on August 23, at the corner of Frederik Hendrik Island, soft mud shoals paralleling the coast prevented the voyagers from going ashore until the third of September. During the passage from Australia, Banks and Solander followed their usual routine, caught up on book work connected with their findings, and noted some brown algae, about the color of sawdust, which covered the sea. When they finally went ashore they found a heavy tropical growth within 100 yards of the beach; this growth caused the shore party to stay close together for defense against any surprise attack which the natives might launch. Solander and Banks tried to botanize; and about 200 yards from their point of landing they found an excellent stand of coconut palms, plantains, and breadfruit trees. As they progressed about a quarter of a mile from their point of landing, three natives jumped out of the forest 100 yards ahead of them, and started to attack, launching darts and other missiles en route. A charge of small shot stopped them; when more natives appeared the ship's shore party decided to return to the ship rather than run unnecessary risks.87

From here the "Endeavour" sailed across the Arafura Sea to Timor and then across the Indian Ocean, with a stop at Sava, to Java. The "Endeavour" reached and coasted Timor from September 12 to 15. The cleared slopes and gentle valleys of Sava sighted on the seventeenth were a welcome sight to the homesick Europeans. Once in the harbor Solander conducted trade negotiations with the Dutch resident—a Saxon with whom Solander could converse in German. The people of the island, the most civilized encountered by the voyagers since Brazil, raised coconuts, bananas, manila, mullet, sheep, swine, and water buffalo. All these made inviting food to the crew which had been on two-thirds rations, much of which were rotten, since leaving the Endeavour River.88

On August 21 the "Endeavour" put out to sea for Batavia, Java. Sailed by adverse winds and tides in the Soenda Straits, the ship dropped anchor in Batavia harbor on October 9. Batavia was situated on a flat, low-lying coastal plain covered with a luxuriant growth of tropical products and was protected from storms by

87 Cook, ibid., pp. 404-405, 408-409; Banks, ibid. 2: pp. 139-141.
88 Cook, ibid., p. 419; Banks, ibid., 2: pp. 145-176.
Solander . . . returned from airing this even extremely ill; he went to bed immediately, I sat by him, and soon observed symptoms which alarmed me very much. I sent immediately for Our Physician . . . who applied sinapisms to his feet and blisters to the calves of his legs, but at the same time gave me little by no hope of even the possibility of his living till Morning. Weak as I was I sat by him till noon, when he changed very visibly for the better. . . .

A country house two miles from town near the sea on the bank of a swiftly flowing stream was now rented. Solander, Banks, and their servants moved there immediately; that very night Solander became quite ill again. Here, despite the fact that the Malay servants proved unreliable and the men had to care for themselves, a gradual recovery did take place. By late November the repairs to the "Endeavour" were finished; however, by now all but thirteen or fourteen of the crew were unable to sail. Solander's own gradual recovery continued; by November 24 he was up and about. In early December, Solander had another attack which swept away all the progress he had made towards recovery and by the night of December 5 plunged him to the threshold of death again. By December 25, however, he had recovered enough to board the "Endeavour" in preparation for the departure to the Cape Colony.

THE VOYAGE HOME

On December 25 the "Endeavour" began its passage for England. The voyagers' third Christmas at sea was hardly the joyful occasion of the earlier two. The hearty weathered men of the first two Christmases were now a gaunt, tired, ashcn crew; seven of their number had died in Estavía and more were to die on route to Cape Town. As the "Endeavour" made slow progress against adverse winds in the Sonda Strait, Banks and Solander made a discovery which foreboded ill for the "Endeavour."

I had been unaccountably troubled with Mosquitoes ever since we left Batavia, and still imagined that they increased instead of decreasing, although my opinion was universally thought improvable; today however the mystery was discovered, for on getting up water today, Dr. Solander who happened to stand near the scuttle cock observed an infinite number of them in their water state in it, who as soon as the sun had a little effect upon the water began to come out in real effective mosquitoes incredibly fast.

By January 20, the first cases of dysentery began to appear; from this day until March 12, when the "Endeavour" landed in Capetown, the journals seemingly record nothing but the names of men who died from the "bloody flux." Twenty-four men succumbed in the passage across the Indian Ocean; Solander and Banks lost three of their party—John Reynolds, Herman Sporing, and Sydney Parkinson—leaving just two—James Roberts and Peter Driscoll—of their original group alive besides themselves. Even in Capetown illness plagued Solander. On March 17 in the morning he became ill with a relapse of dysentery. For the next two weeks he suffered intermittent attacks of fever and violent cramps which confined him to his room. Solander's and Banks's collecting was thus limited to the immediate vicinity of Capetown.

On April 14, the "Endeavour" hoisted its sails and set out for England. Progress to England was steady though slow, in keeping with the "Endeavour"s" collier origins. Solander and Banks followed their usual routine organizing their materials and collecting more fauna from the ocean. On May 1 they arrived at St. Helena. Despite a stay abbreviated to just two days, the two men were able to discover that St. Helena was a rugged, volcanic, tropical island rising 2,700 feet above the sea. Dissecting the dark escarpment, which overlooked the harbor, a narrow, green valley opened into an interior made up of several narrow, steep-sided, green valleys. The crops grown in these were a mixture of temperate zone and tropical commodities. The ebony trees, then approaching extinction, were the major botanical interest of the explorers. Far more interesting was the fauna. The larger fauna consisted of birds and the ubiquitous rats and mice. Most interesting of all, however, was the abundant small population; one species had actually adapted itself to living on the very highest ridges. The white English population seemed inoppressive and unduly harsh on its slaves. From St. Helena the explorers sailed towards England. On July 10 the Lizard was sighted—after three years home was just hours away. At three o'clock on July 12, they landed at Deal.

Thus ended a voyage which had taken Solander around the world via South America, the South Pacific, New Zealand, Australia, the East Indies, and South Africa. The voyage marked the beginning of the last stage of the exploration of the Pacific. After Cook's vessels completed two more tours of the "Peaceful Ocean," its boundaries were known; and all that remained was to fill in the small parts of the puzzle. Solander might well have joined the second and third Cook voyages; fate denied him this position. Nevertheless, he did play a role in the process. Indeed, in the years between 1771 and 1782 Solander was a major transmitter of knowledge about the natural and human history of the Pacific. He also continued his role as a major figure in English science.
V. THE VOYAGE OF THE “ENDEAVOUR”:
SOLANDER’S AND BANKS’S FINDINGS

Almost from the day the voyage left England, every scrap of news about it was eagerly received by the natural scientists in England. When Banks and Solander returned, they were the center of attention for some time. Yet despite this welcome, the published results from their efforts were quite small and disappointing to their scientific colleagues.

THE WAIT

From 1768 to 1771 news of the adventurers found a ready audience in England, The Annual Register for 1768 reported that on October 24, Solander’s letter to Ellis dated September 18 from the Bay of Funchal had arrived. Linnaeus received a mailing from Ellis on November 1, 1768, including a letter describing Solander’s findings en route to the Madiera and a letter from Solander to his mother. In 1769 Solander’s letter of December 1, 1768, to John Ellis from Rio de Janeiro was published in the Gentleman’s Magazine. On January 19, 1769, Ellis forwarded a letter from Solander to Linnaeus written in Rio de Janeiro. Although the English naturalist was queried by Linnaeus about Solander in the months which followed, Ellis was unable to furnish any more information.1

Ellis and Linnaeus were not alone in their interest. On May 25, 1770, Dr. David Macbride of Dublin asked Ellis about the kind of antiscorbutic agents Banks and Solander had taken with them. Doubts about the safety of the voyage appeared when Ellis answered an inquiry by Dr. Skene. On December 26, 1770, Ellis wrote that “We live in hopes of hearing from Banks & Solander tho’ our fears increase [sic] as the time is nearly expired when they were expected.”

These fears were dispelled and replaced by anticipation in the following May. On May 7, 1771, the Admiralty, which had “feared that said Vessel was lost,” sent word to the King that a letter dated October 23, 1770, had been received from Cook. Linnaeus was informed by Ellis on May 10 that Solander and Banks had reached Batavia, Java, and were expected to arrive in England the following June. On July 8 Ellis received word from Dr. James Badenach at Brighton that the “Endeavour” had been with a convoy of East Indians until 8 degrees north latitude and would soon be in England. The Annual Register for the year reported that on July 13 it was announced that Solander and Banks had returned, that many new natural


history specimens had been found, and, falsely, that Solander was still ill.2

News of Solander’s safe arrival was forwarded to Sweden within a few days. On July 16 Linnaeus heard from Ellis that Solander had landed with much material, that despite a long illness he and Banks were both well, and that the geographic discoveries of the voyage would be published quickly. The English naturalist made an astute prophecy when he added:

. . . but as to their Natural History, I fear I shall not live to see it. They have [specimens] sufficient for one thousand folio plates. They unfortunately lost both their painters, but . . . most of their rarest things were drawn, but not . . . finished.3

Soon Solander’s friends in Sweden heard more directly about the voyage. Solander himself wrote to his mother describing his travels, and Anders Berthin sent a twenty-six-page letter to Linnaeus which discussed Solander’s trip.4

THE HEROES’ WELCOME

Starting in May, 1771, with the news that the “Endeavour” had reached Batavia, the London newspapers wrote glowing accounts of the “Banks and Solander expedition.” This may seem strange to subsequent generations, which refer to the voyage as “the First Cook Voyage,” but in 1771 and 1772 the expedition was known as “the Banks and Solander Voyage,” or “the Banks Voyage.” Cook, still an obscure Yorkshire naval lieutenant in His Majesty’s service, was unknown in the London intellectual and social circles. On the other hand Solander, and Banks to a lesser extent, had been integral parts of this coterie before they left. It was Cook’s second voyage, the publication of Hawkesworth’s account of the first voyage in the mid-1770s, and Banks’s and Solander’s praise which made Cook’s role appreciated. Typical of the emphasis on Banks and Solander was the May 9 edition of the General Evening Post which reported that the “Endeavour,” “which sailed near three years since for the South Seas with Dr. Solander, Mr. Banks, and other astronomers . . . arrived the 16th of October at . . . Batavia . . .”. The Public Advertiser for July 22 said, “Dr. Solander and the other Gentlemen, who lately sailed around the world in the ‘Endeavour’. . . . [have returned after four months on Tahiti] . . . Dr. Solander and his Company touched . . . near forty other undiscovered Islands.” Cook’s minor position in all this publicity is typified by an article in the London Evening Post for August 16


SOLANDER'S AND BANKS'S FINDINGS

which reported, "Thursday Lieutenant Cook, of the Royal Navy, who sailed round the Globe with Messrs. Solander, Banks, etc.," was presented at court. The two men were discussed everywhere; Lady Mary Coke wrote in her diary,

But the people who are most talk'd at present are Mr. Banks & Dr. Solander. I saw them at Court & afterwards at Ly Hertford's, but did not hear them give any account of their Voyage round the world, which I am told is very amusing."

This acclaim continued throughout the remainder of 1771. So intense was the interest that one account expressed excitement over the fact that some of the seeds they brought back from Tahiti were sprouting. On July 22, the Public Advertiser, the London Evening Post, and the General Evening Post announced that Solander's group had spent four months in Tahiti, that two natives had died in Batavia, and that Solander had discovered forty new islands and one thousand new species of plants. This story was repeated in another paper on July 23. Six days later an article appeared entitled,

An Authentic Account of the Natives of Otaheite, or George's Island: Together with Some of the Particulars of the Three Years' Voyage Lately Made by Mr. Banks and Dr. Solander, in the Years 1768, 1769, and 1770. Being the Copy of an Original Letter From —-, on Board the "Endeavour," to His Friend in the Country.

In this article Cook's name was not mentioned once. On August 2, it was reported that Solander and Banks had deposited several plants at the Royal Garden at Richmond and that they had found no gold. The public learned on August 6 that a piece of coral which had stuck in the opening made when the "Endeavour" ran onto the shoal had saved the ship. The following day Banks and Solander were credited by the Public Advertiser for making more discoveries on their trip than anyone else in the previous fifty years. On August 8, the London Evening Post reported,

On Saturday Dr. Solander and Mr. Banks, accompanied by Sir John Pringle, by His Majesty's desire, attended at Richmond and had the honour of a conference with His Majesty, on the discoveries they made on their voyage."

According to the London Magazine,

The King ... expressed great satisfaction in the recital of their voyage. They presented His Majesty with many exotic curiosities. Among these were several species of plants, till that time unknown in Europe, which were planted in the Royal gardens at Richmond and Kew ... a coronet ... made of gold and set around with many variegated feathers and ... some beautiful birds from the South Sea islands."

Enthusiastic, some distorted, reports of the Banks and Solander expedition continued to come out in the press. On August 20 it was reported that the Queen was so well pleased with Banks's and Solander's work, and that the death of Banks's artists en route had been an irreparable loss. There was speculation on August 21 that Solander's and Banks's discoveries would increase the size of the British Empire. Two new straits, probably the Cook and Torres Straits, would save hundreds of leagues of sailing, discovered by the Banks and Solander voyage were reported in the August 24 Public Advertiser. On the same day the Gazetteer and New Daily Advertiser reported that Banks and Solander had obtained new plants in the Philippines; the "Endeavour" had never been within nine hundred miles of the islands. Between August 24 and 31, there were reports that Solander and Banks were making frequent visits to the King, who was examining their specimens and drawings with care. On August 26 the Gazetteer and New Daily Advertiser published the story that Banks was being given two ships to make another voyage starting in March. Five days later, a journal announced that Banks and Solander were going to display their collections in the Queen's palace for the nobility. An early September article indicated that Banks was to make another voyage to Tahiti with three ships and with enough men and material to establish a colony. The same story stated that Cook was promoted to the command of some new ships to the Princess Dowager of Wales for Kew Gardens was also the subject of an article on September 4."

Throughout the fall of 1771 and the winter of 1771–1772, Solander continued to be a focus of public acclaim and to secure honors. During September, Solander was honored at a dinner given by Lord Sandwich, the First Lord of the Admiralty, at which Solander, Banks, Cook, and Dr. Charles Burney were the distinguished guests. At this dinner, plans for a second voyage by Cook, Banks, and Solander to the South Pacific were discussed. On November 12, Solander and Banks joined Dr. William Watson, Dr. George Fordyce, Robert Mylne, and several other members of the Royal Society to measure the altitude and dimensions of St. Paul's Cathedral in order to determine the difference in the atmospheric pressure between the cathedral spire and the surface of the Thames. Shortly after this, on November 21, Banks and Solander went to Oxford and received honorary D.C.L. degrees."

Not all the reaction to Banks's and Solander's return was favorable. Lord Monboddo, a Scottish judge and linguist, who through linguistics had traced the evolu-

---


5 Cook, The Voyage of the Endeavour, pp. 642-651.

tion of man from the monkey, was disappointed when Banks and Solander failed to report the existence of men with tails, an intermediary position in Monobdo's system of evolution. Horace Walpole thought that Banks was a wild man who had gone to draw naked savages and to be scalped. Years later Walpole wrote,

How I abominate Mr. Banks and Dr. Solander who roosted the poor Otaheites out of the center of the ocean, and carried our abominable passions with them.15

Dr. Samuel Johnson was equally unimpressed, and Boswell recorded the following conversation:

Boswell: Had not you some desire to go upon this expedition? Johnson: Why yes, but I soon had it aside. Sir, their is very little of intellect in the course. Besides, I see but a small distance. So it was not worth my while to go see birds fly, which I could not have seen fly, and takes swim, which I could not have seen swim.16

Later Boswell wrote,

Hawkesworth's compilation of the voyages to the South Sea being mentioned:—Johnson. "Sir, if you talk of it as a subject of commerce, it will be gainful, if as a book that is to increase human knowledge, I believe there will be not much of that. Hawkesworth can tell only what the voyagers told him; and they have found very little, only one new animal, I think." Boswell. "But many insects, Sir." Johnson. "Why, Sir, as to insects, Ray reckons of British insects twenty thousand species. They might have staid at home and discovered enough in that way." Boswell. "I am well assured that the people of Otaheite who have the bread tree, the fruit of which serves them for bread, laughed heartily when they were informed of the tedious process necessary with us to have bread:—plowing, sowing, harrowing, reaping, threshing, gristing, baking. Johnson. "Why, Sir, all ignorant savages will laugh when they are told of the advantages of civilized life. Were you to tell men who live without houses, how we pile brick upon brick, and rafter upon rafter, and that after a house it raised to a certain height, a man tumbles off a scaffold, and breaks his neck: he would laugh heartily at our folly in building; but it does not follow that men are better without houses. No, Sir, (holding up a slice of a good loaf,) this is better than the bread tree."17

On still another occasion, when asked his opinion of whether or not Solander and Banks should be given any credit for their botanical collection of the voyage, Johnson replied, "Why, sir, was it . . . for Botany they went out. I believe they thought only of calling simples."

16 The cartoonists seemingly seized upon this comment, for Solander was satirized in The Shooting Match—a cartoon with a full-length etching of Solander, who in one hand held a large flowering plant and in the other held a naturalist's knife. Under the cartoon was the verse: "Like Solander Goose from the frozen zone I wander, On Shallow Banks grow fat, Sol." 17

THE RESULTS

Banks and Solander's failure to publish their findings has been a disappointment to their own and to succeeding generations. The two men had returned with a collection estimated to include one hundred new families and one thousand new species of plants. Yet, aside from Fabricius' descriptions of the insects found on the voyage and some 130 of the descriptions printed by the British Museum in the early 1900's, none of their findings have been published.18

For this, Solander has been blamed. According to this view, although he continued to work, Solander procrastinated after 1771 and spent too much time in the pleasantness of the London social and intellectual scene, to the detriment of his scientific interests. The result was that when Solander died suddenly in 1782, the project was incomplete.19

This view is in error; for, although Solander must bear his share of the blame, it was Banks who owned the specimens and was responsible for their publication. There were other naturalists who could have taken up Solander's work; Banks never pushed the project. He himself wrote that initially he entrusted their publication to Hawkesworth while he prepared for a second voyage with Cook. When this voyage had to be abandoned, Banks went to Iceland instead. Not until his return from the North Atlantic did he show any interest in the publication of his South Sea findings. The work on the collections then proceeded slowly. Banks's correspondence contains a series of letters written in 1773 and 1774 by George Bell of Hauapeau who discussed making the plates for Bank's book on South Sea flora. Four years later, on December 5, 1778, Banks told Linnaeus' son that he had been working on the plates uninterruptedly for five years but had not yet finished half of them. As late as September, 1785, Banks wrote:

The botanical work with which I am presently occupied is nearing its conclusion. Solander's name will appear on the title page next to mine because our common effort was

19 Boswell, Banks, p. 45.
20 E. Smith, Banks, p. 174.
used to bring everything together. There hardly is a single clause written in it, composed while he was alive, in which he had not shrunk. Since all the descriptions were made while the plants were fresh, all that remains to be done is to complete the drawings, which are not as yet fully drawn, and to record the synonyms for those plants listed in books to which we did not have access while on the voyage. What little remains can be completed in two months if the engraver can come to put the finishing touches on it.\(^{11}\)

The plates were close to completion; and yet, they were never published by Banks. Evidently, he had too many other interests to maintain the drive and energy needed to prepare this material for publication. After Solander died, Banks increasingly became more interested in the Royal Society and in being the scientific promoter. As Professor Beaglehole so aptly puts it:

[Banks] had lost interest. He had lost interest because... his mind was never, in relation to science, truly "professional." He was a gentleman and an amateur... a dilettante. His talent was not a managing talent. Dary [Sir Humphry Davy, Banks's successor as President of the Royal Society] summed up his predecessor [as]... "He was a good-humoured and liberal man, free and various in conversational power, a tolerable botanist, and generally acquainted with natural history. He had not much reading, and no profound information."\(^{12}\)

Despite the fact that the bulk of Banks's and Solander's findings was not published, their efforts were of value to the scientific world. They made some very real contributions in the field of entomology. The insects collected on the voyage were organized by Fabricius, who published this portion of the collection in his *Systema Entomoligiae*, 1775.\(^{30}\)

Indirectly Solander made still other fundamental contributions to the knowledge of the flora and fauna of the region. He was one of the first naturalists to collect on Tierra del Fuego and other islands around Cape Horn; he was the first English naturalist to explore the plants and animals of Polynesia and eastern Australia; he collected large numbers of plants in Melanesia; and, though he was confined to his sickroom much of the time during his stay in Cape Town, he managed to arrange and classify 469 plants there. His descriptions, though never published, were in Banks's library where Banks allowed others to use them freely. Johann Reinhold Forster borrowed extensively from them to describe his findings on the second Cook voyage; and Joseph Gaertner used them for his study of plants.

Subsequently, these passed into the hands of the British Museum whose staff in turn used them. Through channels such as these, Solander's work was incorporated in part, if not in entirety, into the literature of the natural sciences. Even today Solander's findings have value for the historical botanist or zoologist as a means of determining the eighteenth-century plant and animal populations of the regions in which Solander had collected.\(^{22}\)

Besides these specific contributions to natural history, Solander's part in the first Cook voyage yielded other permanent fruits. In order to preserve his manuscripts on the voyage, Solander invented the Solander case for which book lovers are still thankful. One book collector has written:

Blessings upon the head of Daniel Solander, ... He invented the leather case which bears his name. It is a box in the exact shape of a book in which some precious volume may he kept.\(^{23}\)

As another direct result of the voyage, Solander's name is attached to the rocky, craggy, snow-topped Solander Island off the south coast of South Island, New Zealand, and to Cape Solander which forms the south side of the entrance to Botany Bay. Solander and Banks deserve credit for being among the first naturalists sent out specifically to collect flora and fauna on a government-sponsored voyage of exploration. In this they helped set a precedent which later allowed Charles Darwin to go out as the naturalist on the H.M.S. "Beagle." In the same vein, the H.M.S. "Bounty" voyage, and its famous mutiny, came about because Solander and Banks envisioned Tahitian breadfruit as a staple for West Indian slaves. Solander's and Banks's glowing accounts of Australia also stimulated interest in the colonization of the island continent. These accounts were picked up by the literature of the day so that one early Australian settler wrote,

In my boyish days I had read much of Captain Cook's voyages, and of the adventures of Sir Joseph Banks in the Southern Hemisphere, ... I had heard much of... the freshness of the climate, beauty of the birds and flowers, and of the dangerous, until my mind began to dwell upon these new scenes. England was at this time engaged in a hopeless war with France... it changed the whole order of society...\(^{41}\)


The prospect for young people in England to rise in life was at this time... cloudy... and the unsettled state of the times, induced me to turn my thoughts... to Australia.23

Solander and Banks made two other contributions which are admittedly difficult to evaluate. First, they contributed to the greatness of Cook's second and third voyages. During the first voyage, Cook learned a great deal from them about the importance and methods of making observations of the natural history of an area, as well as the customs and history of the people. Thus, although he was a competent astronomer and a good marine surveyor at the beginning of the first voyage, in the course of his association with Solander and Banks, Cook became a student of natural and human history as well. These additional talents helped Cook and gave him a wider view of the explorer's role on his second and third voyages. Second, Solander and Banks, as well as the whole "Endeavour" party, must have added to the idea of the "noble Savage" and the "natural man" in European thought and action. Their discussions of the island paradise of the South Seas abound with these concepts. Despite cannibalism, libertarian sexual practices, infanticide, and thievery which ran counter to the traditional ethical standards of Europe, Solander told Anders Berling.[The virtues of the Polynesians] are the more astonishing in a nation which has no love of religion but is governed by the simple dictates of nature.24

Thus, although Solander's published contributions stemming from the voyage are slight and disappointed many contemporaries, when these and the indirect results are added together, the results of the "Endeavour" voyage contributed by Solander and Banks are by no means insignificant.

EARLY PLANS FOR THE SECOND COOK VOYAGE

Within a few weeks after the first Cook voyage was completed, Banks was asked by Lord Sandwich, the First Lord of the Admiralty, to join a second voyage to the South Pacific. The first public reference to the second voyage was made on August 26, 1771. The Gazetteer and New Daily Advertiser carried the story that Banks was to be given two ships for a voyage of exploration which was to commence in March, 1772. In the first week of September, another journal indicated that Banks was to be given three ships and enough men to establish a colony on Tahiti. At a din-

23 Banks, Endeavour Journal 1, p. 29; C. Singer, The Story of Living Things... (New York, Harper & Bros., c. 1915), p. 236; R. Smith, Banks, pp. 213-214; G. Seton, Memoir of George Seton... G. Mackenzie, ed Australian Historical Monographs 17 (Sydney, New South Wales, G. Mackenzie, 1948); p. 13; Smith, Correspondence of Linnaeus 2: pp. 24-25; Cameron, Banks, pp. 64-70, 75.

24 Banks, Endeavour Journal 1: pp. 35-36, 40; Cook, The Voyage of the Endeavour, pp. 53-94; A. Berlin to Linnaeus, p. 8, Solander, MSS.
ever, did not materialize; Solander did not join the second Cook voyage but journeyed to Iceland instead. Though not as famous or fruitful as the "Endeavour" voyage, the Iceland trip was an interesting and rewarding journey.

VI. THE JOURNEY TO ICELAND: 1772

Within a short time after he arrived back in England, Solander seemed destined for another voyage to the Pacific. However, a misunderstanding between Banks and the Admiralty led to a journey to the Hebrides and Iceland instead. Although this voyage was not as monumental as the first Cook voyage, the expedition contributed to the increased English concern about these areas in the late eighteenth century; and Solander's scientific standing was increased by it.

WITHDRAWAL FROM THE SECOND COOK VOYAGE

Banks and Solander began planning for their voyage to the South Pacific as soon as they were approached by Lord Sandwich. By the spring of 1772, Banks had invested ten thousand pounds for the equipment and salaries of his retinue. This group of scientists, artists, technicians, and servants included Solander; Joseph Priestley; John Zoffany; James Lind, M.D. (for whom Banks secured a four-thousand-pound grant from Parliament); John Frederick Miller and James Miller, artists; John Cleveley; a painter; Mr. Walden, a secretary; and Mr. Boscum, M.D. and surgeon as a secretary for this voyage, as well as nine of Bank's servants. In addition, Banks used his influence with the Board of Longitude to have William Bayly and William Wales, the astronomers who viewed the transit of Venus from Fort Churchill on Hudson Bay in 1769, as astronomers.1

Banks's and Solander's first difficulty arose in connection with Joseph Priestley. Priestley, who had already made arrangements with his congregation to have an assistant take over in his absence, wrote later...

... Mr. Banks informed me that I was objected to by some clergyman in the board of longitude, who had the direction of this business, on account of my religious principles. This was no disappointment to me, and I was much better employed at home, even with respect to my philosophical pursuits.2

A second and far more serious difficulty arose over the vessels to be used for the voyage. While Banks and Solander were making plans for the voyage, Cook and the Admiralty were making theirs. In late 1771 the Admiralty, on Cook's advice and contrary to earlier conversations between Banks and Lord Sandwich, purchased two Whity-built colliers which were similar to the "Endeavour" in construction. Cook wrote later that he chose these vessels because:

"A ship proper for the voyage... must... be a construction that will bear to take the ground and of a size which in case of necessity may be safely and conveniently laid on shore to repair any accidental damage or defects. These properties are not found in ships of war of forty guns, nor in frigates, nor in East India Company's ships, nor in large three-decked West India ships, nor indeed in any other but North Country built ships or such as are built for the coal trade, which are particularly adapted for the purpose."

Banks on the other hand wanted larger more commodious quarters for the larger party he was taking and had initially spoken to Lord Sandwich in terms of a fifty-gun warship. Lord Sandwich and the Admiralty, even though the Naval Board and Captain Palliser, the comprimder, opposed the alterations, were willing to alter "the Resolution"—Cook's flagship—to give the Banks group more room. The upper works of Cook's flagship were raised about a foot and a new deck was laid from the quarter deck to the forecastle. The great cabin, increased in size, was given to Banks and his associates as a workroom; and Cook was given a new round cabin constructed on top. This arrangement satisfied nobody. The ship as it emerged was so top-heavy that it was "dangerously crank and liable to capsize. "Beyond the Nore the pilot refused to take her lest he would ruin his professional reputation."

The views of the Naval Board now prevailed. Despite the offer of all accommodations possible, Banks came to the conclusion that he was the victim of a plot. In his own words,

"First to the proposed alterations they added a round house for the Captain to be built over all this & all the other alterations they made with timber so heavy & strong that the top of the round house was... thicker than the gun-deck... This the I saw, I could not remedy. The ship was made so crank by it that she could not go to sea. Some of the oldest sea officers, who I believe jealous that discovery should go out of their line, prevented an order that the ship might be reduced to her original state. In this situation then, I was again offered the alternative to go or let it alone with a great deal of coddling; however, for I now had inadvertently opened to them every idea of discovery which my last voyage had suggested to one & there they thought themselves able to follow without my assistance now they had once got possession of them."

On May 30 Banks wrote a long letter to Lord Sandwich in which he said that the "Resolution" was unfit


4. Smith, Banks, p. 23; Banks, Endeavour Journal 1: p. 73.

for the health and welfare of his party because it did not have adequate space. He added:

For my own part, I am able and willing to put up with as small accommodations as any man living. It is our great Cabbow which is too small and that is in reality the ship where we are all to work. I shall always hold myself ready to go upon any undertaking of the same nature when ever I shall be furnished with proper accommodations but to undertake so expensive a pursuit without any prospect but Disgrace and disappointment is neither Consistent with Prudence or public spirit. [Banks added that several frigates in His Majesty’s fleet had been successfully beached for repairs.] For my own part I can only say that was your Lordship . . . to let us have [a frigate] for our intended Expedition, I would gladly embark on board a Ship in which safety and Accommodation . . . are more nearly united . . ., and well know that there are many Commanders in His Majesty’s Service of undoubted Abilities and experience who would willingly undertake to proceed . . .

Banks’s “ultimatum” was referred to the Naval Board by Lord Sandwich. The reply of the Board was made on June 3, 1772. It made short work of Banks’s objections by stating:

Mr. Banks’s first objection to the Ship respected only the Conveniences for himself . . . As to the proper kind of Ship and her fitness and sufficiency for the Voyage, his opinion was never asked . . . he being in no degree qualified to form a right Judgment . . . everything was done to satisfy him by which it happened that the Properties of the Ship were so . . . altered that it has been necessary to take away the additional works . . . After this small reduction there remained on the whole much better Accommodations than he had in the former Voyage in the “Endeavour” and the great Cabin remained in Length and Height, though not in breadth, equal to those in a 74 gun ship . . . [fixed] for an Admiral who frequently embarks in such Ships to Command His Majesty’s Fleet at Sea . . . Mr. Banks seems shut out of the ships as fitted out wholly for his use: the whole undertaking to depend on him and his People; and himself as the Director and Conductor of the whole . . .

The note concluded by pointing out that the “Resolution’s” accommodations had better circulation than any other ship in the fleet of comparable size and that, contrary to Banks’s statement, the ship frigates that had been beached could not have been repaired under conditions like those of the “Endeavour” beaching in Australia.

The Naval Board in saying “Mr. Banks seems . . .” to consider the ships as fitted out wholly for his use; the whole undertaking to depend on him and his People; and himself as the Director and Conductor of the whole” Not only the newspapers and general public, but Banks himself thought that he and Solander were the leaders and “stars” of the “Endeavour” voyage; and he refused to compromise.

---

1 Cameron, Banks, pp. 266-290.
2 Ibid., p. 291.
3 Ibid., pp. 291-292.

Banks’s stand was further strengthened by the fact that officials of the East India Company had expressed interest in sending him on a voyage to the newly discovered islands in the summer of 1773. Banks must have believed that, if the Admiralty voyage with Cook did not materialize, he could accept the voyage sponsored by the East India Company instead. Thus, believing that he and Solander had been the leading figures on the “Endeavour” voyage—without whom a successful second voyage would be impossible—and knowing that there was the possibility of a voyage the following year with the comforts of an East Indianman, Banks took an uncompromising stand on the question of the alterations of the “Resolution.”

At this point the dispute was dropped. Banks drafted a public letter attacking the Admiralty. In order to counter Banks’s move, the Admiralty prepared a defense of its position, gained George III’s approval, and prepared to publish it under a fictitious name on the publication of Banks’s attack. When Banks heard of this, in order to avoid a controversy involving the King, he withdrew without further question. Although Banks never forgave the members of the Naval Board, whatever slight breach there was between him and Lord Sandwich and Captain Cook was quickly forgotten. By the time Cook left, the two men were exchanging cordial notes and the friendship was restored. Banks also helped the Admiralty find another naturalist to replace Solander and himself.

At the time, two reasons for Banks’s withdrawal were offered to the public. One London newspaper, true to English tradition, blamed it on the Spanish ambassador. On June 15, 1772, Bingley’s Journal published the following:

The true reason that Messrs. Banks and Solander do not go to the South Seas is that the Court of Spain have strongly remonstrated against our navigating in those seas and our Court have mildly and cowardly given up the original design, and to cover their baseness in this matter the ship intended for Messrs. Banks and Solander was fitted out in so bad a manner . . .

Banks’s own version recorded in his Iceland journal and quoted earlier was echoed in the London Magazine of July, 1772, and received wide circulation thereafter. The London Magazine said:

. . . everything was settled, apparently, to the satisfaction of all parties, when Mr. Banks went to examine the ship . . . and found her deficient in every respect. The public are already acquainted with the naked inventions, which were used to give birth to this pitiful trick, that it was planned by the miserable pride of a naval officer, [Sir Hugh Palliser] who was luckily connected with the business, but whose advice was not judged necessary to carry it into execution and that in the true spirit of a man of science he afterwards endeavoured to conceal his real design.

---

1 Banks, “Iceland Journal,” pp. 5-6 of the introduction.
2 Banks, Endeavour Journal 1: pp. 71-80; Smith, Banks, p. 25; Cameron, Banks, pp. 52-53.
3 Cameron, Ibid., p. 56.
by the most frivolous and quibbling evasions. The ship . . . was at length tried, and found inadequate to the dangers of even a very short voyage; and Mr. Banks after some altercation, securing the gratification even so important an expedition would afford him, except on the free and independent terms of a gentleman, relinquished it entirely.10

THE VOYAGE TO ICELAND

When Banks's party followed his lead and resigned from the voyage, even though all of them except Solander had been asked to continue, Banks was faced with the problem of finding some way of keeping together the men and equipment he had assembled for the voyage he expected the East India Company to sponsor. It was his intention to provide them with employment; some of the men in the group, Lind especially, had gone into debt purchasing equipment and were in financial difficulty. With these factors in mind, it was decided to go elsewhere; Iceland was the choice. The reasons for the selection are fairly clear. The island was then little known to English naturalists; and it was a center of volcanism, about which there was a growing interest at the time. Given the shortness of the sailing season remaining for the year, Iceland was the only interesting area close enough to be reached. Solander probably influenced this choice because he was a regular correspondent of Johann Gerard König and an acquaintance of Andreas Holt, director of the Iceland Company. The former, like Solander, a student of Linnaeus in the 1750s, had lived on Iceland during 1764 and 1765, and was enthusiastic about the opportunities there to study natural history.11

Planning for the expedition to Iceland started as soon as the second Cook voyage was dropped. A passport was secured from the Danish envoy in England; a gardener was hired to take care of any plants collected; and the ship was the 190-ton brig "Sir Lawrence," with a crew of twelve, for four months at one hundred pounds a month. In addition four new members joined the group: Uno von Troil, a Swedish traveler, scholar, and later Archbishop of Upsala; John Gore, the naval officer who served on Cook's first and third voyages; Riddell, possibly Robert Riddel; and Moreland, the gardener. John Zoffany left Bank's entourage to go to Italy. Preparations completed, at 11 p.m. on July 12, 1772, Banks, Solander, and company left Gravesend on board the ship—just one day short of one year after his debarkation from the "Endeavour."12

From Gravesend the "Sir Lawrence" sailed out of the Thames, through the Straits of Dover, and along the south coast to Plymouth. Delayed by adverse winds at the mouth of the Thames, the voyagers spent three days, July 13 to 15, visiting nearby castles and collecting biological items in the countryside. After four days of sensibilities, a two-day respite, July 19 and 20, was spent making observations on the Isle of Wight. From here the "Sir Lawrence" sailed on to Plymouth. Solander and Banks here visited the docks, then among the world's finest, and collected in the surrounding countryside including Mount Edgecumbe.13

From Plymouth the ship followed the coast, rounded Land's End, and sailed into the Irish Sea towards the islands off the west coast of Scotland. The "Sir Lawrence" entered St. George Channel on the twenty-eighth; on the thirtieth the ship passed between Dublin and the Isle of Man. From here they sailed through the North Channel; and at daybreak of August 1, the "Sir Lawrence" docked at Bownmore on the Isle of Islay, the southernmost of the Inner Hebrides.14

Banks and Solander spent the next seventeen days in the Hebrides. In the course of this time they visited Islay, Jura, Oronsay, Staffa, and Iona. During their visit, the two men and their companions made observations of both the natural and human conditions of this then largely unknown remote area of Great Britain. With the exception of the ironworks of Islay, the soils in this mountainous, geologically complex area were generally poor. Thus though small plots of good soil in valleys were cropped, grazing poor quality black cattle and sheep was the major source of income. Agricultural techniques in the region were in the main behind those of England. The population of the region spoke Gaetic, and the inhabitants of a given locale all had the same surname. The food staples were oats and barley, used for cakes as well as spirits. Milk, however, was also a widely used beverage. Although the wealthier residents enjoyed a standard of living equal to that of an English farmer paying a rent of 100 pounds, the poorer "inferior people" lived in conditions more humble than those of the most of the natives encountered on the "Endeavour" voyage. Houses were primitive one-room structures made of rock and often overcrowded. On Islay for example Solander and Banks saw the home of a poor weaver. The structure consisted of rocks so loosely stacked that the wind streamed right through the house. The two doorways had no doors; an open fire pit in the middle of the floor emitted its smoke through a hole in the roof. The two beds accommodated the weaver, his wife, his mother-in-

11 Camerino, Banks, p. 56; Banks, "Iceland Journal," pp. 4-7 of the introduction; H. Hermannsen, "Sir Joseph Banks and Iceland," Icelandic 18 (Ethica, New York, Cornell University Library, 1926); pp. 4-6; J. Banks to T. Falconer, Jan, 12, 1775, p. 1-2 in the collection of Major Sir D. H. Hawley, 7th Bart. of Moreham-Le-Pen.
14 Ibid., pp. 10-14.
law, six children, and a female guest. Although the wealthier men engaged tutors for the children, education was carried on by the parish and considered a common concern.17

After crossing Islay, climbing one of the peaks on the neighboring island of Jura, and visiting the monastic ruins on nearby Oronsay island, the travelers sailed northward through the Firth of Lorne and Mull Sound, between the Isle of Mull and the mainland of Scotland. Because of the narrowness of the pass, the tides, and the winds, progress through here was slow and stops were frequent. During one of these the scientists were told about Fingal’s cave and basaltic pillars on the seldom visited island of Staffa just seven miles away. Banks, who had wanted to see the pillars at Giants’ Causeway in Ireland and the medieval monastic ruins on Iona near Staffa, now seized the opportunity to visit Staffa and Iona.18

While the “Sir Lawrence” was sent ahead, the scientists proceeded by boat to Staffa. After a tedious seven-mile passage, they arrived at 9 P.M. The night which followed was an uncomfortable one: part of the group slept in a small tent and part of the party, including Solander, slept in a smoke-filled, ice-ridden stone cottage. The discomfort, however, was not in vain. The sea cliffs of the island were made up of ranges of basaltic columns fifty feet high. Banks wrote,

Compared to this what are the cathedrals or the palaces by men? How models or play things imitations or dimimations, as his work will always be when compared to those of nature. Where is now the boast of the architect? Regularity the only part in which he fancied himself to exceed his mistress nature is here found in her possession & here it has been for ages uncounted. Is not then this the school where the art was originally studied & what has been added to this by the whole Grecian school? A capital to ornament the column of nature of which they could execute only a model. . . . How amply does nature repay those who study her wonderful works.19

As Solander and his associates progressed along the shore, they arrived at Fingal’s Cave. The cavern was 250 feet deep and varied from 117 to 70 feet in height. With ocean water covering its floor serving as a natural reflecting pool, broken pillars and stalactites hanging down from its roof, and complete pillars making up its sides, the cave was indeed beautiful. At 5 P.M. they embarked for the trip to Colunia Kill, better known as Iona, just off the southwest tip of Mull. Here, however, poor accommodations, adverse weather, and poor maintenance of the ruins combined to disappoint Banks and Solander.20

---

18 Ibid., pp. 7-17, 11.
19 Ibid., p. 41.
THE JOURNEY TO ICELAND

The rest of the day was spent in friendly conversation with the *stjórnman*. Following dinner they toured the Governor's gardens, which were sunny and surrounded by "immaculately high" stone, or sod, walls to protect the gardens from the harsh winds on this treeless landscape. Although cabbage and turnips were grown, the severe climate prevented the maturation of small grains.46

After establishing the base for operations and unloading the ship on Monday and Tuesday, the remainder of the week was passed collecting flora and fauna, making observations at nearby lava flows, and observing human customs. On the following Sunday, they invited the *stjórnman*, some other officials, and their families for dinner. Although the male Icelanders dressed like Danes, the women were distinguished by Icelandic costume which consisted of a one-sleeved headpiece eighteen inches long which was tilted forward slightly as well as jackets, and petticoats. After dinner, the Icelanders returned to their homes on small sure-footed horses which navigated the rough roadless terrain with speed and dexterity that amazed the English.22

To the Icelanders, the scientists lived in luxury and were very rich. They rewarded the pilot handsomely and,

They had their own cooks and supply of food, entertained the leading men of the neighborhood, and indulged in various pastimes when they were not exploring the country.20

Jon Steingrimsson, one of the Icelanders who met the group left the following account:

In 1777 [sic] a beautiful English ship came to this country. One ship there were very learned naturalists who wished to see Hecla and other rare objects of nature. I was traveling at that time, and visited one of them in Hafnarfjörður, because the two others were not present. I was invited into a parlor along one side of which there was a long table, and wine and any thing else I wished were offered to me, because they were generous. On the table an open book was lying, in which were only lines and notes of music, and I looked at it. The interpreter who talked Danish, although he really was Icelandic, asked me, if I desired to hear how these melodies sounded, which I answered in the affirmative. . . . The master, whose name was Müller sat . . . at the upper end of the table . . . eight Englishmen sat . . . on the bench opposite me, and joined the music . . . playing the same tune with their hands and feet, stamping on the floor . . . so it seemed to me that the house also was taking part in the playing. When this had gone on for a while I noticed that they looked at me and began to laugh. I . . . finally discovered that the dance had so stirred my senses . . . that I was moving unconscious and rowing back and forth.27

Shortly after September 6, the scientists started inland to visit the volcanic Mount Hecla. This journey carried them through the southwestern corner of Ice-land. From Hafnarfjörður they went to a farm on the western shore of Lake Thingvalla. They next visited the meeting place of the Althing—Icelandic Parliament —north of Thingvalla and went on to Langavatn, north and east of Thingvalla. From there they went to Múl near the Great Geysir. On September 13, they measured the height of its eruption and found it to be ninety-two feet. The see of the Bishop of southern Iceland was their next stopping place. While at Skálholt the group investigated some nearby hot springs and gave the cathedral church as well as the Bishop some valuable gifts. The scientists then journeyed east from Skálholt, ferried across the Thjórs River, and stayed at the parsonage of the parish of Skard. They then went to Selstund, a village near the base of Mount Hecla.28

We arrived (September 21, 1772) at a green spot under Grænaleið where we pitched our tents and proceeded to a crater which was an opening half a mile in circumference, but its western side is destroyed by the eruption. . . . The lower part and the remaining walls are composed of nothing but ashes, cinders, and pieces of lava in various states. . . . The scene of desolation all around is almost inconceivable.29

Ignoring local residents' warnings about the dangers to be faced—these included black crowlike man-attacking birds armed with iron beaks—the explorers pushed up Hecla's slopes from this wasteland to its crest. After a rampart of crumbling lava debris which ranged from 40 to 70 feet in height was crossed, the travelers made rapid progress over gently sloping terraces of crumbling pumice stone. As the altitude increased, the weather became more severe.

We ascended Mount Hecla with the wind blowing against us so violently that we could with difficulty proceed. The front too was lying upon the ground and the cold was extremely severe. We . . . were covered with ice . . . On . . . the summit of the first peak, we [found] . . . places were (sic) the snow had been melted, and a little heat was arising from them . . . The water we had with us was all frozen. . . . We thought we had arrived at the highest peak, but soon saw one above us, towards which we hastened. Doctor Solander remained . . . in the intermediate valley . . . the summit of the peak . . . we found intensely cold but on the highest point was a spot of three yards in breadth, wherein there proceeded so much heat and steam that we could not bear to set down upon it.30

Though in the middle of the night, it was as bright as day and the group had a view of much of southwestern Iceland. However, there was nothing of additional interest on the top of Hecla; and the group returned to the base of the mountain by way of one of several ravines which had been formed by lava flows from the crater.31
From here the scientists made their way back to Hafnartjörður. They first returned to Skard. The group then crossed the Thjóра and stayed at the parsonage at Hraungróður. From here they proceeded westward, forri the mouth of the Hvitá River and stayed at Reykjavík. While here the scientists examined some more hot springs. Banks and his associates then crossed over the Höllas Heyde to Hafnartjörður.  

The rest of the expedition in Iceland is somewhat obscure because the last portion of Banks’ journal has been lost. Passages in von Troll’s book support the view that the travelers made a return visit to the geysir basins followed by a tour westward and northwest to the North Cape. From here they may have proceeded east and south around the island. Banks, on the other hand, wrote to Thomas Fauclier,  

The course I steered was through the western islands to Iceland from whence after having remained 2 weeks [sic] I returned by the Orkneys to Edinburgh & from there by land to London.  

The island of [sic] contains an area I believe larger than that of Iceland: as we were only 6 weeks ashore upon it cannot be expected that we could examine so large a shore indeed we travelled 13 days on horseback & merely reached Hecla as the extremity of our journey. Wherever we travelled lava & that stone... cald... Tufa... seldom traveled half a day without hot baths... their waters periodically [spotted up] to an immense height particularly that cald [sic]...  

Whatever the case may be, since there is one drawing made in Iceland dated October 15, the departure was sometime after that day and before October 29; the date Banks, Solander, and Lind, after stopping at the Orkneys and visiting the Rev. Mr. George Low there, arrived in Edinburgh. Boswell recorded meeting them on November 2, at a dinner given by James Hamilton of Hagnost, a Scottish landowner and schoolmate of Banks. After this the travelers toured the Highlands and did not leave Edinburgh for London until November 20.  

---  

*Hermannsson, “Banks and Iceland,” pp. 12-13; Solander, “Memoranda Connected with the Visit to Iceland by Banks and Solander,” manuscript at British Museum (N. H.)."
VII. THE YEARS OF PREEMINENCE: 1773-1782

The years between 1773 and 1782 were busy years for Solander. He continued his work at the British Museum; he helped Banks with his projects; he was employed by the Duchess of Portland; and he aided John Ellis, Doctor Forthgill, and others in their scientific projects. In addition to these occupations, Solander was actively involved in the affairs of the Royal Society, the Royal Society Club, at least one coffee house club, and a society of physicians.

BRITISH MUSEUM

After his return from the "Endeavour" voyage, Solander was reinstated as assistant keeper of the British Museum. On March 6, 1773, he received a promotion to the position of Keeper of the British Museum with a salary of one hundred pounds and an eight-pound allowance for coal and candles. The duties involved included conducting tours, making acquisitions for the museum, and cataloguing materials. In addition Solander answered queries from private individuals, and testified in Parliamentary hearings concerning the museum. His tours were apparently quite popular.

He possessed an unusual charming ability to describe with taste the curiosities in the British Museum; so that men as well as ladies attended in those hours when they knew Solander was responsible for showing the collection. Indeed his tour was so stimulating and pleasing, he was not only sought by learned men, but the King himself had the greatest interest to hear him with his private discussions.

As for his role in acquisitions, on April 19, 1776, Solander purchased several drawers of coins, medallions, specimens of antiquity, and items of natural history from Lord Maynard's estate. Three years later on April 1, 1779, the museum directors were asked by Solander for funds to make purchases at an approaching sale of natural history specimens. The archives of Solander's service as a resource person, or consultant, for a private individual occurred on May 8, 1779. Josiah Wedgwood informed his London representative of a growing interest in Wedgwood medallions on the continent; and the entreprenuer suggested that the agent ask Solander for help to obtain likenesses of leading personalities on the continent.

Solander appeared before Parliament on behalf of the British Museum on three different occasions. On the

1 J. Banks, "Ueber Solander," Botanische Monatschrift 8, 9 (September, 1781): p. 247;

first and third times Solander presented estimates of the income and expenses of the museum in order to provide a basis for Parliamentary appropriations. On the second visit the testimony he gave was during the hearings on an unsuccessful attempt to change the rules governing the British Museum. Basically three changes were sought. Under the then existing statute governing the museum, anyone wishing admission secured a free ticket by aiding museum officials—specifically the porter—for one. When the number for any hour reached fifteen, no more tickets for that hour were given out. If someone failed to use his ticket, it meant somebody else who had wished to visit the museum at that hour had been uselessly turned away. In addition the constant tours prevented the small staff from repairing old exhibits and setting up new ones in the rooms which were never free from visitors. Lastly, the joining of Companies is often disagreeable, from Persons of different Banks and Institutions being admitted at the same time and obstructing one another... it is very disagreeable to the Officer to attend some of the lower kind of People...

To meet these problems, Solander testified in favor of paid admissions on some days with free admissions on others, as well as certain other changes calculated to promote the museum's program. The final vote was 55 to 53 against the bill.

SOLANDER AND SIR JOSEPH BANKS

Along with his duties at the British Museum, Solander did a great deal of work for others. As seen earlier, he spent one day a week at the Duchess of Portland's museum working on the collection. His efforts on behalf of Joseph Banks were even more noteworthy. When the two men returned from the "Endeavour" voyage, Banks brought his companion into the Soho Square household as the librarian and curator of Bank's personal museum. Thereafter Solander spent a part of each day arranging this collection of items obtained on the Cook voyage and elsewhere by Banks. Banks's London town house, which subsequently became the headquarters of the Linnean Society of London until razed in the 1930's was...

...a perfect museum; every room contains an inestimable treasure... [one room was devoted solely to weapons and tools; another contained clothing and ornaments. In addition] a large collection of insects, several fine specimens of the broad and other fruits preserved in spirits; together with a complete herbarium, text of all the plants collected in the course of the voyage... [The third room contained] an almost unnumbered collection of animals... preserved in spirit... Here I was lost in amazement, and cannot attempt any particular description. Add to these the...

3 "Report... Committee... Admissions of Visitors," Jour. H. of C. 34: p. 229.
4 Ibid. p. 278-279; Votes of the House of Commons... in the Fourteenth Year of the Reign of King George the Third... 1774 (London, 1774), p. 291; Solander, Diary... 1772-1782, March 14, 1777.
closetest collection of drawings in Natural History that perhaps ever enlivened any cabinet... All the new genera and species contained in this vast collection are accurately described, the descriptions fairly transcribed and fit to be put to the press.

In the same vein, one of Bank's biographers reports that the house was,

...as a vast museum, in which beloved, pictures, marries from all parts of the world, and innumerable botanical specimens delighted the varied company, and gave magical effect to Bank's frequent stories and less formal gatherings. Over all these things Dr. Solander reigned a Librarian and Curator...

Perhaps the best tribute to the quality of Bank's collection is the fact that for some years after the British Museum acquired his collection, the botanical section of the museum was known as the Bankian Museum.

As Bank's librarian, Solander also described the plants of Kew Garden. Bank's, who became director of this garden in 1771, required that, "Whenever a new plant flowered it had to be submitted to Bank's librarian for naming..." In the course of his work for Bank's, Solander discovered a quantity of unknown species and new families from many different parts of the globe. Their descriptions, he carried out according to Linne's exact and precise method... In general they are models of execution. For the botanists in [the British Isles] he was an advisory court of appeal, where one willingly turned; from great English gardens with their rich flood of unknown forms of plants, every kind of question was submitted for his judgment...

These plant catalogues were later used by William Aiton for Hortus Kewensis. When this work became the standard, it and the slip catalogue of Bank's collection—a often used by others—as well as the British Museum served as avenues by which Solander's designations were introduced into the literature.

Solander was not only Bank's librarian and curator; he was the latter's friend and confidant, and the humissy of Bank's house as well. Bank himself was shy, reserved, and often seemingly austere; Solander, the interesting facile conversationalist, was an important contributor to the success of Bank's gatherings as well as his Thursday morning breakfasts and Sunday dinners, well known in the period.

The death of Solander was a serious loss to the Bank's coterie. He made friends with all. His habitual presence among the company to be seen in Soho Square, [Bank's house] gave hauteur to the scene, all in his attractive disposition and in the graces of learning and intelligence. Not only was the Bank's right-hand man in his scientific work, but, from the day when Bank invited Solander to go round the world with him, they had been bound in the firmest friendship. And he was always acceptable in good society.

So influential was Solander with Bank's that, when the latter broke off his engagement to Miss Harriet Blouet on his return from the Cook voyage, Solander was accused by the tilted girl's family of being the person who influenced Bank's decision. Although this has never been verified, it is possible that Solander, a confirmed bachelor, might have convinced Bank that marriage had no place in a scholar's life. If this was the case, Bank's apparently reconsidered and rejected Solander's advice; he married Dorothy Hugessen in March, 1779.

Solander was involved with Bank's in the latter's difficulties with Stanfield Parkinson after the first Cook voyage. Before Sydney Parkinson, one of the artists in Banks's group died during the passage from Java to Capetown on January 26, 1771, he had left instructions with Solander to give his papers to his heirs to give Banks a copy of his will. As Banks carelessly delayed in giving Parkinson's papers to his heirs, Stanfield Parkinson, the artist's brother, accused Banks of holding back the effects for his own ends. When Dr. John Forthgill attempted to help Parkinson, a fellow Quaker, Solander became a central figure as the agent between Banks and Forthgill. In 1772 a mauled settlement was made which satisfied everyone but Stanfield Parkinson, who by this time was insane. Parkinson demanded the papers in addition to the cash settlement; and he was allowed to see the manuscripts. He promptly copied them, published an account of the voyage based on them in violation of an agreement to the contrary, and attacked Forthgill as well as Banks in the preface. Before this work was put on the market, Parkinson died. Forthgill, in an attempt to help Parkinson's family and to live up to his agreement with Banks, bought up all the unsold copies of the work. After consultation with Solander, he added a new section to the preface in which he explained his position, and then circulated the work. This ended the affair of Stanfield
Parkinson, but by this time Banks was in the midst of another dispute.  

The new dispute arose between Johann Reinhold Forster and the Admiralty over who should write the official account of the second Cook voyage. Lord Sandwich, the First Lord of the Admiralty, originally appointed Johann Forster to write the official account of the voyage. When Cook decided to publish his own description of the voyage, Forster wrote to Banks, who had secured Forster the post as naturalist, and threatened to expose the " infamous conduct" of Cook and Lord Sandwich, in hopes that Banks could reverse Cook's decision. Banister's efforts to help Forster again failed to have the desired effect. The Admiralty forbade Forster to publish the account. He in turn, in order to circumvent this ban, had his son Johann Georg Adam Forster write a report of the journey. The Forsters continued to correspond with Banks for some time thereafter. Solander capitalized his view of the elder Forster when he wrote to Banks on September 5, 1775:

Forster has called, "he is of all men I know either the most open or the greatest fool" as he talks too much and has too good an opinion of himself. . . . Lord Sandwich has asked Forster to write an account of Dusky Bay, and if this is approved, Forster is to write the account of the voyage, with half profits and half to Capt. Cook."

Whenever Banks was away from London, Solander wrote to him about events and gossip in the capital. In the main these letters are of little interest. Solander later arrived in London, July 9, 1773, however, this date is significant. Its contents are unimportant, but the date and place of origin serve to clarify one aspect of Solander's life. It has been thought that Solander accompanied Banks, Lightfoot, and Paul Sandby on an excursion to Wales between June 25 and August 13, 1773. Sandby's son in later years referred to this in his biography of his father. However, the July 9 letter, when added to the facts that Solander made several entries in his museum diary during the period and that his name is not mentioned in Lightfoot's journal of the excursion, supports the conclusion that Solander was not on Banks' Welsh journey. Solander's letters in August of 1778 informed Banks of Sir John Pringle's retirement as President of the Royal Society and of the strong support for a movement to elect Banks to succeed Pringle.  

53 OMAI

Five letters written by Solander to Banks in the summer of 1775, while Banks was touring Yorkshire, were filled with news about Cook's second voyage. Although the Antarctic Circle was crossed for the first time, thus beginning the exploration of the region, and new islands were discovered by the voyage, the visit of Omai to England was an even more exciting event.

When the H.M.S. "Adventure," the consort of Cook's H.M.S. "Resolution," returned to England on July 14, 1774, it brought Omai, a Polynesian, to London. He immediately became a center of attention in London; it now had its own "Noble Savage" to rival the celebrated Atoumou whom Bougainville had brought to Paris five years earlier and who was the prototype of the "Noble Savage" in French literature. Omai sensed his importance and conducted himself with gravity, decorum, and dignity, which added luster to his romantic figure. He was taken to meet George III and greeted him with a courteous "How do, King Tosh." His portrait was painted by several artists, including Sir Joshua Reynolds, and the tattooed savage from Tahiti, actually a native of Huanhine living on Tahiti, gained entrance into the finest intellectual circles in London. During his stay in England, Omai was under the guidance of Solander and Banks.

The following excerpts are typical of the interest shown in him in the contemporary literature.

There was an openness of countenance, and a native politeness, that would do honour to an Englishman. The Bishop of London was much in his company, and he found the two leading principles of his mind were a regard for Religion and a desire for Revenge. He was particularly offended at the Bishop sitting at a table between two ladies: a custom not allowed the High Priests in his country.  

For more detailed is the description made by John Callum, who wrote on December 3, 1774:

"He is about 30 years old, rather tall slender, with a gentle mien; his nose is some what flat, and his lips thick, but on the whole his face is not disagreeable. His ears are bared with a large hole at the tip; his complexion swarthy; his hair of considerable length, and perfectly black. The backs of his hands are tattooed with transverse lines, [as was much of his body in keeping with Polynesian custom] and his fingers with round ones. . . . He walks erect, and has acquired a tolerable genteel bow, and other expressions of civility. He appears to have good natural parts; has learned a little English, and is in general desirous of improvement. . . . Mr. Banks . . . [seems] to keep him as an object of curiosity, to observe the workings of an untutored, menlightened mind. When he is serious, and observing what others are saying, his Look is sharp and sensible, but his Lough in rather childish. When he wants you to understand something he has seen, he uses very lively and significant gestures; and is . . . a most excellent Pantomime. He is pleased with trifling amusements, and is unhappy when he has nothing to entertain him. . . . He had seen Hall before he came into
England, and there fore was not surprised at the first fall of snow, which he called...white rain. But he was pre-
digiously struck when he first saw and handled a piece of
ice...18

On August 5, 1774, as he described the voyage of the
"Adventure," Solander portrayed Omai as,
...well behaved and intelligent. He knew us, who had been...
....in the "Endeavour"... and it was very pleasing
to us that we had not forgotten the South Sea Language.
So we can converse with him without difficulty. He is not
at all a handsome man, and rather browner than most
of his country men...19

Omai remained a center of Solander's attention for
some time after his arrival. In August, at George III's
instigation, Omai was inoculated for small pox and his
recovery was one of the items Solander discussed in the
letter to Banks on tour in Wales. In the fall of 1774
and again in the summer of 1775, the Polynesian spent
some time with Banks in tours of northern England.
Omai returned to Tahiti with Cook's third voyage,
where he died just thirty months later.20

CONTRIBUTIONS TO THE WORKS OF OTHERS

As in the period before the first Cook voyage, So-
lander helped several men of science in the years after
his return from Iceland. Thomas Pennant consulted
the Swede in 1773 and again in 1775 in connection with
his studies on zoology. Solander also described and
identified many plants in Fothergill's Upton Garden,
which was second only to Kew Garden in reputation
at the time. In addition he did the botanical descrip-
tions for the Quaker physician's article, "Some Account
of the Cortex Winteranum." As he and Lightfoot both
were connected with the Duchess of Portland's collection
it is not surprising that Solander was consulted by
Lightfoot for help with his Flora Scotiae. During
1775 Banks and Solander both participated in experi-
ments conducted by Dr. Charles Blagden in which
the latter tested the ability of humans to stand heat.
During one session Solander and Banks were in a room
heated to 210° Fahrenheit.21

18 Ibid., pp. 41-42.
19 Solander to Lord Harvich, August 5, 1774, p. 2; Harvich Papers 2, Ad. MSS, 35,850 (B. M.).
20 Sir J. E. Smith, A Selection of the Correspondence of
Linnaeus... (2 vols., London, 1811) 2: pp. 18, 20; Banks, The
Banks Letters, pp. 51, 669; D. C. Solander to My Dear Doctor,
July 10, 1775, Alexander Turnbull Library Manuscript, Well-
ington, New Zealand; Capt. W. Bligh, Flora and the Bounty
21 J. Ramsbottom, "Old Essex Gardeners and Their Gardens," Essex Rambler 285: p. 101; Fox Fothergill, p. 36; J. Fother-

gill, "Some Account of a Cortex Winteranum, or Magellanica
with a Botanical description by Dr. Solander," Medical Ob-
servations and Inquiries by a Society of Physicians in London
5: pp. 41-55, as cited in Jesup Dyer, Catalogue Historicorum
Naturalis Josephi Banks (5 vols., London, 1797) 3: p. 505; J.
Greene, A History of Botany in the United Kingdom (London

54 RAUSCHENBERG: DANIEL CARL SOLANDER [TRANS. AMER. PHIL. SOC.

John Ellis, however, was the person whom Solander
aided the most. During the three years which preceded
Ellis' death in 1776, Solander worked with him on
at least four different projects. One of them concerned
coffee. As early as October 9, 1773, Solander consulted
with Atton about Ellis' interest in coffee and made
arrangements for Ellis to get some coffee beans when
they arrived at Kew. Ellis' The History of Coffee,
with botanical descriptions by Solander, was published
in 1774. Later in 1774, on October 27 and December
21, the characteristics of different varieties of chocolate
as well as the production of engravings of them were
discussed by the two men. On August 28, 1775, So-
lander wrote to Ellis about the jujup plant used as a
plant used to make a purgative drug—and sent a copy
of the printer's plate to Ellis.22

By far the greatest amount of Solander's effort on
Ellis' behalf was spent on their work on zoophytes.
Solander wrote the descriptions for Ellis' article on the
Gorgonia, a coral genus, and for Ellis' book on zo-
ophytes published with the assistance of Fothergill.
Beginning July 22, 1774, there are repeated references
to these works. In an undated draft of a letter to Fother-
gill, probably written in the summer of 1774, Ellis ex-
pressed concern that Solander was too busy to help
them with their work on corals. Solander explained
on July 22 that the arrival of "an Oseheite friend" on
the "Adventure" had delayed him. On October 27,
Solander assured Ellis he would help on the coral de-
scriptions but was prevented from doing more by mu-
seum activities. By the ninth of November, Solander
had started to describe Fothergill's corals. When fin-
ished with these in late November, he began to describe
John Ellis' corals. On June 29, 1775, a complete de-
scription of the Gorgonia was published. Ellis' coral
collection were turned over to Ellis. John Ellis' article
on the Gorgonia was published the next year in the Philo-
osophical Transactions in the form of a
letter to Solander. Although neither Ellis nor Solander
lived to see the publication of the former's Natural
History of... Zoophytes, it was published, though incom-
plete, in 1786 by Ellis' daughter at Banks' urging. De-
spite its faults, this work was widely acclaimed in its
own day for,

[Ellis'] established the animal nature of corals and cord-
lines, and then, in conjunction with Doctor Solander, laid

Scotica... (2nd ed., London, 1799); Banks, The Banks Letters,
pp. 541, 662-665, 689; Biographisch-Literarisches Hand-
lexicon zur Geschichte der Exakten Wissenschaften, J. C.
Poggendorf, ed. (Leipzig, 1861) 2: p. 915.
22 Smith, Correspondence, 2: p. 48; J. Britten and G. S.
Boziger, compiles, A Biographical Index of Distinguished British
and Irish Botanists, rev. by A. B. Rendle (2nd ed., London,
Taylor and Francis, 1911), p. 162; Solander to Ellis, 16/9/1775,
16/27/1775, 8/28/1775, MSS.
the foundation of ... accurate knowledge of marine botany in England. 29

During 1776, the last year of Ellis' life, the two men continued to correspond. Most of their correspondence was composed of routine notes making appointments for meetings and discussing the production of plates for Ellis' publications. One of these, however, contains an interesting suggestion which foreshadows the H.M.S. "Bounty" voyage. On May 4, 1776, Solander described the virtues of the breadfruit as a source of food and added, "I think it would be necessary to encourage everybody who goes to any part of the world where it is to be met with to bring it over. . . . I am sure no expense ought to be spared in an undertaking so interesting to the public." 30 Eleven years later in 1789, largely because of Banks' influence, Captain Bligh and the "Bounty" were sent out to collect breadfruit plants from Tahiti for the West Indies. 31

NORTH AMERICAN TIES

Throughout the years between 1773 and 1776, Ellis was Solander's intermediary with several North American naturalists including Alexander Garden, John Greg, and John Bartram. On August 10, 1774, Solander acknowledged in a letter to Ellis the receipt of a bottle from John Greg. That fall Solander was involved with Alexander Garden's electric eel specimens, the first ever seen in Europe. On October 13 Solander wrote to Garden commending his description of the strange fish and suggesting it be published. Five electric eels arrived in England in early November. Though they were dead by the time they reached London, John Hunter, who made the anatomical descriptions of the animals to accompany Garden's paper, "danced a jig when he saw them, they are so complete and well preserved." In 1775 Solander dissected a Venus fly trap which Bartram had sent Ellis. 32

Solander continued his acquaintance with Benjamin Franklin. Even though Solander and Banks had both been present when Priestley demonstrated putting fixed air (carbon dioxide) into water at the Royal Society, in early May, 1772, after their request Franklin expressed a willingness to explain the process to them. In August, Franklin asked Solander about lucerne, alfalfa. Solander was unable to supply any information on the subject. In 1773 Solander helped the North American with an experiment concerning the

effect of oil on rough water. With several friends including Banks and Solander, Franklin poured several barrels of oil on a rough surf about a quarter of a mile offshore and observed its effect on the in-going water. The group found that the oil did not alter the height of the surf, but it did seem to reduce the surface roughness. In 1774 Solander was one of a group which dined with Franklin at the Royal Society Club. 33

Solander's ties with North America continued in modified form throughout the American Revolution. Sir Charles Blagden, who was stationed at various points in the colonies between 1776 and 1779, wrote several letters to Solander and Banks during this period in which he discussed the climate and the progress of the war. 34

ACTIVITIES IN CLUBS AND SOCIETIES

Solander was also an active member of several scientific organizations. Of these the Royal Society was the most eminent. As a member of the organization, Solander signed the nominations for membership of Richard Parry Price, John Lettsom, Alexander Garden, and Captain James Cook. Solander's interest in the Royal Society Club was closely related to his Royal Society activities. Although the first record of the group in the Royal Society archives is dated October 27, 1743, a British Museum manuscript clearly places its beginnings in the early 1730's. It grew out of the desire of some of the members of the Royal Society to eat dinner together after Society meetings and met on Thursday evenings. Membership was by election; and failure to attend meetings regularly during a year was sufficient grounds for forfeiture of membership. Solander first visited the club in 1772 after his return from the Cook voyage. On July 29, 1773, he was elected to membership. The following year at the annual business meeting on July 28, he was elected treasurer, the group's second. He held this post until his death in 1782. He was:

...an earnest and loyal officer who had been eminently successful in looking after the prosperity of the Club. He had been especially indefatigable in seeking out and inviting to the dinners any scientific foreigners who came to London. His own reputation among the Scandinavian naturalists could not fail to draw to him all the northern men of note who came to England. 35

His foreign guests included: Count Brulh; Pascal Paoli, Corsican patriot and general; De Luc, the Swiss geologist; Count Fersen, a Swedish nobleman and politician; Mr. Boleman, a Swedish politician from an old Livonian family; M. Danzbehof from St. Petersburg; Herr von Bilkow of Dresdenburg; Count de Visconti, an Italian nobleman and antiquarian; Colonel Roy; Count de Clary; Charles Greville; John Alström; and probably Linnæus' son, Charles von Linne the younger. One of his British guests was the Reverend John Phyfeair, the mathematician and early geologist.66

Along with the Royal Society and its appendage, Solander enjoyed a society of scientists which met once a week, first at Jack's Coffee House and then later at Young Slaughter's Coffee House. Despite the fact that the group had no name and kept no minutes, it continued to meet for years. Franklin refers to the society in his letters, but the best account of it is found in the autobiography of Richard Lovell Edgeworth. Edgeworth indicated that:

John Hunter was our chairman. Sir Joseph Banks, Solander, Sir C. Babbage, Dr. George Fordyce, Milne, Mackenzie, Captain Cook, Sir G. Shuckburgh, Lord Malgrave, Smeaton, and Ramsden, were among our numbers. Many other gentlemen of talents belonged to this club, but I mention those only with whom I was individually acquainted. [The members exchanged ideas and shared knowledge. By this,] a certain esprit de corps, unconnected with jealousy, in some degree combines the talents of numbers to forward the views of a single person... We practiced every means in our power, except for personal malice, to try the temper and understanding of each candidate for admission. Every prejudice, which his profession or situation in life might have led him to cherish, was attacked, exposed to argument and ridicule. The argument was always ingenuous, and the ridicule sometimes coarse. The ordeal prevented for some time the aspiration of too anxious candidates, but private attachments at length softened the rigour of probation... 67

Through Edgeworth, the Young Slaughter's Coffee House society had a link with the Lunar Society of Birmingham, another association of persons interested in science. Founded around 1766, the Lunar Society met regularly until the turn of the century and derived its name from the fact it met once a month on the Monday evening nearest the full moon, a good choice in the days before adequate street lights. The group was small, averaging eight to ten in attendance, and kept no records. It is thus known primarily through the memoirs of its guests and members. Among its members were Matthew Boulton, Dr. Erasmus Darwin, John Whitehurst, Dr. William Small, Thomas Day, Richard Lovell Edgeworth, Josiah Wedgwood, Dr. William Withering.

---


James Watt, Captain James Keir, John Backville, Dr. Joseph Priestley, William Murdock, the Reverend R. A. Johnson, Messrs. Samuel Galton Sr. and J., and Dr. Stowe. Banks and Solander were among the guests who visited the group.66

Solander was also a member of a medical society founded by Dr. Fothergill. About 1752 Fothergill and several other physicians agreed to meet together to discuss the nature and treatment of prevalent diseases. The original group included Dr. John Clephane, Dr. John Baptiste Silvester, Dr. Thomas D. Dickson, Dr. George Macnail, Dr. Samuel Pyc, and Dr. William Hunter. Subsequently they were joined by Dr. Michael Morris, Dr. William Watson, Solander, Richard Brocklesby, Richard Morris, William Pitcairne, Richard Saunders, and Gilbert Thompson.

This society adopted no distinctive name, but was simply called the Medical Society, with the words sometimes added "in London"; less often it was styled a Society of Physicians... The meetings were held on alternate Monday evenings at the Mitre Tavern in Fleet Street. The society was small and select... never more than a handful; in 1783 it seems to have fallen to seven.66

Hunter, Brocklesby, R. Morris, Pitcairne, Watson, Saunders, and Thompson were the remaining seven. Following the pattern of the Medical Society of Edinburgh, the London Society, at Fothergill's expense, published six volumes of Medical Observations and Inquiries between 1757 and 1784. This project was so successful that the College of Physicians began to publish the Medical Transactions on a similar plan in 1767.68

Solander belonged to at least five other societies. On March 11, 1772, he was elected to L'Académie Royale des Sciences as a corresponding member. On May 5 of the following year he was chosen as a foreign member of the Svenska Vetenskapshandeln. Then because of his Swedish birth as well as training and the honor for which he had been reflected on Swedish science as a result of his findings, the society selected him as the member for which the 1773 commemorative medal was struck. The Gesellschaft naturforscherder Freunde of Berlin, on February 27, 1776, elected Solander to membership. The following year, on August 18, he became a member of the Vetenskap och Vitterhets Sällskapet of Göteborg, Sweden, which changed its name in 1778 to the Kungliga Vetenskaps och Vitterhets Sällskapet. The Real Acad-
emia della Scienze e della Belle Lettere in Naples accepted Solander as a foreign member in 1778.48

**AID TO SCANDINAVIANS**

Throughout his life in England, Solander gave aid to Scandinavian travelers, students of Linnaeus, and members of the latter’s family. Scandinavians were frequently his guests at the Royal Society Club. Solander also used his influence to have his foreign acquaintances shown through the Bodleian Library. This apparently reached a nuisance proportion; for on July 20, 1775, the Reverend John Price, librarian of the Bodleian Library, wrote that he was being kept busy attending “... so many foreigners... by the recommendation of Dr. Solander...” Johann C. Fabricius relates, on another occasion,

From 1772–1775, I spent winters in Copenhagen, and the summer brought me to London. My friends, Solander and Banks, had returned from the voyage around the world and had brought back an extraordinary amount of natural history specimens and insects; here I lived with real pleasure. With Banks, with Hunter and Drury, I found enough conditions to occupy me and everything possible for their utilization; I could not wish for a more agreeable yet instructive situation.49

In 1777 Solander entertained John Alström, Carl Peter Thunberg, one of Linnaeus’ students who traveled through the world, recorded that in 1778–1779 while in England,

Dr. Solander... who strove to render my abode in London both agreeable and advantageous to me, had the goodness on this occasion to order the whole of this collection [Banks'] to be brought down from the upper story, and to go through with me every single and distinct species of it.50 Solander’s intercourse in behalf of Swedes continued even after his death. On October 11, 1783, Blagden wrote to Banks that inquiries made on behalf of Solander about a Swede in the King’s army revealed that the Scandinavian in question had been killed in action in North Carolina.51

All these efforts were recognized and appreciated. When Solander died and Jonas Dryander replaced him as Banks’s librarian and curator, Court Chaplain Swedens wrote:

Comparisons are always odious, but I cannot prevent myself from saying that he [Dryander] is not Dr. Solander, in whom the Swedes in London lost more than words can describe.52

Although he seldom wrote to his mentor, Solander always maintained a high regard for Linnaeus and his family. After Linnaeus’ death, Solander continued to develop the Linnaean system as he described and arranged plants for Banks, the British Museum, and Kew Gardens. When Linnaeus’ son, Liné, the younger, came to England in 1781 and 1782, Solander sponsored him throughout England and nursed him through an illness. When Fabricius published an article which Solander considered damaging to Linnaeus, he tried to buy up all the copies and destroy them.53

**DEATH**

In 1782 Solander was at the height of his career; suddenly he was stricken with apoplexy on May 8 and died May 13. The morning of the stroke Solander reported that he was in excellent health. Then as he sat talking with a group of people in Banks’s museum, the first signs of the illness appeared. Charles Blagden described the scene in a letter written to Banks, then out of town, the same day.

Soon after breakfast this morning Dr. Solander began to feel himself much indisposed and in a short time the symptoms of a spasm of the left side began to appear. I was conversing with him at the time and as soon as the stroke became certain dispatched a messenger for Mr. Hunter, while Professor Lindesay went to call Dr. Heberden and Dr. Pitcairne. Lady Banks has been so kind as to order an apartment for him in the house and I shall quit him as little as possible. You may judge the affliction of everyone here. I am so much affected myself that I know not what else to say to you...54

Despite the care of these leading medical men, Solander died on May 13, 1782, in his forty-ninth year. An autopsy showed death came as a result of a ruptured blood vessel in the brain; a heavy nose bleed two years earlier had been a forewarning of the impending trouble.55 Solander’s death was a loss to his many friends. Banks was especially hard hit and never did find a replacement for Solander in his life. Letters of sympathy and appreciation for Solander came to Banks from all over the world. At Solander’s funeral on May 19, 1782, Swedish and English mourners alike were moved to


51 C. Thunberg, Travels in Europe, Africa, and Asia, Made Between the Years 1770 and 1777 (4 v., London, 1795) 4: p. 292


53 Fries, "Solander," p. 297


tears. At this time the Swedish ambassador Baron Noclizen distributed the following epitaph:

This grave contains The Mortal Part of Daniel Solander M.D. &c. Genius and Solid Knowledge Faved Him the Way to Immortality. Natural Knowledge was His Pursuit; To Praise the Creator's Wonderful Works His Chief Pleasure. Sovereigns and Subjects Distinguished his Merit By Unfeigned Applause. Virtues Adorned his Life. He Felt Friendship Showed Tenderness to the Distressed, Respect to Superiors, Esteem to Equals, Good Will to All. He Fulfilled What Humanity and Ambition Required. Death Moved Down His Life Th 18th of May 1782."

The body was initially interred in the Swedish Protestant church of London in Princess Square, Rokliffe Highway, next to the body of Emmanuel Swedenborg. When the church was razed in 1793, Solander's remains were removed to the Swedish cemetery at Woking (Brookwood). The Swedish Royal Academy there erected a granite memorial inscribed with the words, "Kungliga Vetenskapsakademien rest värden 1914. Daniel Solander 1733–1782." 64

Several memorials were established in Solander's name. The Kungliga Vetenskapsakademien had a medal struck in Solander's honor. On the reverse side of the medal were Solander's head and a flower—"Pavonia monogynea." On the reverse side was a dedication to Banks. The plant genus Solandra was subsequently named after him. Banks, as mentioned earlier, established a fund in honor of Solander to support the latter's sister while she lived and after her death to endow the Bergius Choir in natural history at Uppsala. The Kungliga Vetenskapsakademien placed a headstone on So-

64 Manuscript in the Sutro Branch of the California State Library, San Francisco, California.


lander's grave in 1794. Still another memorial stone was erected that same year at Burnell on Botany Bay next to Cook's monument and bears the following inscription on the front side, "This Monument was erected to the memory of the Swedish Scientist Daniel Carl Solander, who landed with Captain Cook and Joseph Banks at Botany Bay on the 29th of April, 1770." On the reverse side, looking towards the water, is written, "Erected by his countrymen in Australia, August, 1914."

In 1940 the Vetenskapsakademie issued another commemorative medal in his honor. It was at this time that Fries's excellent article on Solander was read. 65

Daniel Carl Solander passed into memory in 1782. Although his contemporaries remembered him as an able student of natural history, he was dismissed as an unproductive philosophical gosspid by subsequent generations. This accusation, though inaccurate, is not hard to understand. By the time of Banks's death in 1820, the day of the gentleman amateur dilettante in science was over. In addition, systematic botany, Solander's strong forte, was being displaced as botany moved into new ultimately more productive channels. Thus as the world of Solander's science, in which his talents as a gregarious systematist were appreciated, passed on, subsequent generations could dismiss him as talkative and entertaining but sterile. Yet, in the context of his day he made very real contributions to science.
BIBLIOGRAPHY

1. PRIMARY SOURCES

A. Manuscripts—Journals, Diaries, Logs


"Endeavour," 27 May 1768-28 Sept. 1770, Public Record Office manuscript, Adm. 51/4547/133.


Cook, John. "On Board His Majesty's Bark Endeavour, Lieutenant James Cook Commander, 3 July 1768-6 June, 1769," Public Record Office manuscript, Adm. 51/4548/145.


Linning, J. "A Journal of a Botanical Excursion in Wales in the Year 1775..." Transcript by Sigmund Baetschman. British Museum (Natural History) manuscript.

"A Log of a Voyage Round the World to His Britannic Majesty [sic] Bark 'Endeavour' Perform'd in the Years 1768, 1769, 1770, & 1771. Mr. Cook Lieut. & Purser Commander," manuscript in the Commemorak National Library, Canberra, A. C. T., Australia.

"The Master's Log 'Endeavour,'" Public Record Office manuscript, Adm. 51/19.


Solander, Daniel Carl. "Dr. Solander, Diary, 1764-1768," Ad. MSS., 45,975 (B.M.).

"Books and Solander: Memoranda Connected with Their Visit to Iceland. 2 Itineraries." British Museum (Natural History) manuscript.


B. Manuscripts: Letters

1. Collections

John Ellis Letters in the Ellis-Francillon Letters, Ad. MSS., 29, 533 Palm.


The Solander Letters in the Correspondence of Josiah Wedgwood, Manuscripts in the Wedgwood Museum, Etruria.

2. Letters


"Joseph Banks to Thomas Falconer, January 12, 1773 and April 2, 1771," in the collection of Major Sir D. H. Hawley, 7th Bart. of Morecambe-Le-Fen.


Collinson, Peter. "Peter Collinson to Dr. Watson, September 25, 1762," a letter copy of a London Society of London manuscript on file at the American Philosophical Society.

Forster, John. The John Forster Letters in the Sir Joseph Banks manuscripts in the Yale University Library.

Franklin, Benjamin. "B. Franklin to Peter Collinson, October 14, 1767," American Philosophical Society manuscript.


Solander, Daniel Carl. "Daniel Solander to Peter Collinson, July 15, 1770," John Herstein Association manuscript on file at the American Philosophical Society Library.

"Daniel Solander to Lord Morton from Rio de Janeiro," The West Papers, XVIII, Ad. MSS., 34,744 (B.M.).

"Daniel Carl Solander to Lord Harwick, August 5, 1774," The Harwick Papers XI, Ad. MSS., 34,745 (B.M.).

"Daniel Solander to Dr. John Doveton, July 10, 1773," manuscript in the Alexander Turnbull Library, Wellington, New Zealand.

"A Grant of Letters of Administration of Daniel Charles Solander of London in Jan. 1763," Principal Probate Register manuscript.

Solander Letters in X, 1762 of the E. De Costa Correspondence, Ad. MSS. 2, 854 (B.M.).

Wardrope, Joseph. "Josiah Wedgwood to Thomas Bentley," in the Solander Correspondence of the Wedgwood Letters, manuscript in the Wedgwood Museum, Etruria.

C. Printed Materials

1. Books, Pamphlets, and Letters


The Annual Register or a View of the History, Politics, and Literature for the Year.

Banks, Sir Joseph. 1888. The Banks Letters: A Calendar of the Manuscript Correspondence of Sir Joseph Banks Preserved in the British Museum, the British Museum (Natural History), and Other Collections in Great Britain, Warren R. Davison, ed. (London, British Museum).

1962. The Endeavour Journal of Joseph Banks: 1768-1771, J. C. Beaglehole, ed. (2 v., The Sir Joseph Banks Mem-
BIBLIOGRAPHY

Vol. 56, Pt. 6, 1948

Each to the Author, Concerning the Edda and the Elephanms of Iceland: Also Professor Storrman's Current Observations and Changes Examination of the Lava and of the Substances Produced on the Island (London).


Wright, Gilbert. 1877. The Natural History and Antiquities of Suffolk, in the County of Southampton, Thomas Bell, ed. (2 v., London).

2. Articles and Reports


II. SECONDARY SOURCES

A. Books


Ashton, W. H. J. 1898. A Roll of the Graduates of the University of Glasgow: From 10th December, 1777, to 1st December, 1897 (Glasgow, James M'Leod & Son).

Aubry, Edme. 1835. Der kaude Linnk's Briefe und (Stockholm).


Sir Joseph Banks and the Royal Society: A Popular Biography, with an Historical Introduction and Index (London, John W. Parker, 1844).

Biographisches Lexicon der Hervorragenden Geistigen und Wissenschaften (6 v., Berlin, 1829).

Biographisches Lexicon der Hervorragenden Geistigen und Wissenschaften (6 v., Berlin, 1829).


The Book of Dignities: Containing Lists of the Official Personages of the British Empire, Civil, Diplomatic, Heraldic, Judicial, Ecclesiastical, Municipal, Naval, and Military, from the Earliest Period to the Present Time: Together with the Sovereigns and Rulers of the World, from the Foundations of their Respective States: The Orders of Knighthood of the United Kingdom & India; and Numerous Other Lists Founded on Baron's Political Index (1805); Re-Modelled, and Brought Down to 1831, by the Late Joseph Heydon. Continued to the Present Time with Numerous Additional Lists, and an Index to the Entire Work, by Horace Oehms (London, 1800).


Buschhoff, George Dames, and Thomas Ulric Sabler. 1924. Aberdeen Delineations: A Register of the Students, Graduates, Professors and Professors of Trinity College, in the University of Dublin (London, Williams & Norgate).

RAUSCHENBERG: DANIEL CARL SOLANDER

CHAMBERS, ALEXANDER, ed. 1816. The General Biographical Dictionary: Containing An Historical and Critical Account of the Lives and Writings of the Most Eminent Persons in Every Nation; Particularly the British and Irish; From the Earliest Accounts to the Present Time (3 v., London)
Foster, W. S. ed. 1891. Alumni Otagonenses: The Members of the University of Otago, 1853-1891: Their Forenames, Birthplaces, and Years of Birth, with a Record of Their Degrees (4 v., Oxford)
FOX, R. H. 1919. Dr. John Fisher Gill and His Friends: Chapters in Eighteenth Century Life (London, Macmillan)
FREEDSMAN, DOUGLAS. 1920. The Life of Horace Benedict De Saussure, Henry F. Montagnier, collaborator (London)
FRIESE, ROBERT E. 1950. A Short History of Botany in Sweden (Seven International Botanical Congress, Stockholm, 1950)
FRITZ, THEODOR MAGNUS. 1923. Livet av... (Aftredande Carl vom Lemo) : The Story of His Life, Adapted from the Swedish of Theodor Magnus Fritz, Emeritus Professor of Botany in the University of Uppsala, and Brought Down to the Present Time in the Light of Recent Research, Benjamin Dayton Jackson, trs. (London, H. F. & G. Witherby)
GREEN, RENATA. 1959. The Botanical Explorers of New Zealand (Wellington, New Zealand, A. H. & A. W. Reed)
HAWKES, ELLISON, and G. S. BOUZER. 1928. Pioneers of Plant Study (New York, Macmillan)
HICK, FREDERICK. 1931. The History of the Collections Contained in the Natural History Departments of the British Museum (2 v., London, British Museum, 1912)
HOFSTED, HERMANN, ed. 1906. Svenska Botaniska Husläsning (2 v., Stockholm)
LEHMANN, STEIN, ed. 1952. Swedish Men of Science (1650-1908) (Stockholm, Swedish Institute)
LINNAEUS, CARL. 1822. Brev och Sketcherer Af och Tid Carl von Linné Med Undertof den Svenska Naturforska Af Uppsala University (Uppsala)
MEMBRILL, HISTORICAL AND ILLUSTRATIVE, of the Botanic Garden at Chelmsford: Belonging to the Society of Apothecaries of London (London, 1820)
—1954. The Botany of Cook's Voyages: and its Unexpected Significance in Relation to Anthropology, Biogeography, and History Chronica Botanica 14 S 6
O'DELL, ANDREW. 1907. The Scandinavian World (New York, Longmans, Green & Co)
RAETTELE, ARTHUR. 1950. Quakers in Science and Industry: Being an Account of the Quaker Contributions to Science and Industry During the 17th and 18th Centuries (New York, Philosophical Library)
REICH, ABRAHAM. 1819. The Cyclopaedia; or, Universal Dictionary of Arts, Sciences, and Literature (39 v., London)
ROGAN, CHARLES. 1924. Botanicals: the commonplace Book of James Boswell (London)
RYDER, PER AXEL. 1907. Scandianovesna Hoe Har Contribuerte to the Knowledge of the Flora of North America Contributions from the New York Botanical Garden No. 100 (New York, reprinted from the Augustana College Library Publications no. 6)
SACHS, JOHN FREDERICK. 1824. Necrolipsiblioriorum (from the Necrology of the Cathedral of Trel 2 v., New York)
SMITH, EDWARD. 1911. The Life of Sir Joseph Banks: President of the Royal Society with Some Notices of His Friends and Contemporaries (New York, John Lane)
SMITH, PERSIANS. 1957. A History of Modern Culture: 2, The Enlightenment, 1757-1776 (Gloucester, Mass, Peter Smith)
BIBLIOGRAPHY


SVERIGES SJÖA LITTERATUR. En Överblick vid Akademiska Föräldernas Föreställningar om Södersjöen . . . (Stockholm, 1847).


VENN, JOHN, and J. A. VENN. 1940-1934. Alumni Cantabrigenses: A Biographical List of All Known Students, Graduates and Holders of Office at the University of Cambridge, from the Earliest Times to 1909; Part II From 1752 to 1900 (6 vols, Cambridge, University Press).


B. Articles


INDEX

L'Acaedémie Royale des Sciences, 16
Academy of Science, Swedish, 8
Academy of Sciences in St. Petersburg, 21
Aide-Mémoire, 40, 45, 46, 53
Adolf-Frederich, Duke of Holstein-Gottorp, 7, 8
"Adventure," H.M.S., 53
Aiton, William, 13, 52, 54
Alcock, Stanley, 16
Alteroomer, Johan, 11, 55, 57
Answara Bay, 33
Aral Sea, 35
Arhangelsk, 14
Argyle, Duke of, 17
Articulation, 8
Asgaum of Sare-Czoburg, Princess Dowager, 23, 41
Australia, 35, 41, 50
Australs, 18
Bacstrom, Signmund, 45
Bedeaux, James, 40
Banks, Joseph, 6, 13, 14, 21, 26, 27, 28, 39, 53, 55, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 59, 51, 52, 53, 54, 55, 56, 57
Banks Peninsula, 35
Barbados, 19
Bartra, John, 13, 19, 25, 55
Basseville, John, 56
Bavaria, 38, 39, 40
Bath, 18
Bay of Biscay, 28, 40
Bay of Islands, 34
Bay of Plenty, 34
Bay of Success, 29
Bayly, William, 45
"Beagle," H.M.S., 43
Begej, J., C., 43
Bergman Professor of Natural History, 6, 58
Berlin, Anders, 46, 46
Biped, Amphibious, 24
Blagden, Charles, 54, 55, 56, 57
Blocken Palace, 18
Bloem, Harriet, 12
Boedtian Library, 37
Borbon, 52
Boscane, William, 24
Bostad, Magdalen, see Schonler, Magdalena Bostad, 26
Boswell, James, 42, 53
Bowey Bay, 35, 43, 58
Boulton, Matthew, 36
"Bozart," H.M.S., 45, 55
Bowmore, 47
Boymo Rocks, 18
Brasil, Gustav, 13, 16, 17, 23
Breightmoore, 18
Brighton, 18
Briscoe, Peter, 27, 29, 59
Brindal, 18
British Museum, 20, 21, 22, 42, 43, 50, 51, 52, 53, 57
British Museum (Natural History), 23
Brookbery, Richard, 56
Brownrig, William, 24
Brubel, Count, 55
Bucolam, Alexander, 27, 29
Buckingham, 18
von Below, Herr, 55
Buren, Charles, 41
Burbridge, 18, 19
Butenmor, 34
Butterfield Bay, 33
Bute, Lord, 20, 21
Byron, Commodore, 23
Canary Islands, 16
Cape of Good Hope, 35
Cape Horn, 33
Cape Kidnappers, 33
Cape Solander, 43
Capetown, 20
Cape Turnagain, 33
"Caps," 7, 8
Cartesianism, 8
Chambers, William, 18, 20
Chadwell, John, 18
Charro, XIII, 7
Chichester, 13
de Clary, Count, 56
Clayton, John, 17, 19
Clephane, John, 56
Clowes, John, 43
Colpet, 24
Coke, Lady Mary, 40
Collinson, Peter, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 25
Colombia Hill, 48
Cook, James, 14, 27, 28, 30, 31, 33, 37, 43, 44, 45, 52, 53, 54, 55
Cook Strait, 34
Cook's Passage, 37
Copenhagen, 13
Coral Sea, 57
Coraline, 19
Cotton, Robert, 22
Cullum, John, 33
Davieshall, Mr., 56
Darwin, Charles, 43
Darwin, Erasmus, 56
Day, Thomas, 56
De Luca, Jean André, 56
Dickson, Thomas D., 56
Dilhousie, John, 15
Dorset, George, 27, 29
Dryander, Jonas, 37
Dysenter, 39
East India Company, 46, 47
East India Company, 42
Edgeworth, Richard Lovell, 56
Edward, George, 17
Egremont, Earl of, 18
Electric red, 55
Elizabeth I of Russia, 7, 8
Ellis, John, 15, 14, 16, 17, 18, 19, 20, 21, 23, 25, 26, 27, 40, 43, 44, 54
Empson, J., 16
Engrosser, 19
"Endeavour," H.M.S., 28, 32, 36, 57, 38, 59, 47, 51
Endeavour River, 46, 57
Endeavour Strait, 57
Fabricius, Johann Christian, 11, 21, 26, 42, 57
Falconer, Thomas, 50
Falk, 10
Farnham, Count, 56
Fingal's Cave, 48
Firth of Thames, 54
Flora Scotiae, 24
Flyder, Samuel, 20
Flyder, Thomas, 20
Fordye, George, 41, 55
Forester, 10
Forester, John, 25
Forster, Johann Georg Adam, 53
Forster, Johann Heinrich, 13, 14, 16, 20, 43, 44, 53
Forster, Thomas, 28
Fractula Historiae, 23
Fothergill, John, 15, 21, 57, 54, 56
Fryholt, Benjamin, 25, 53, 59
Frederick I. of Sweden, 7
Frederik Hendrik Island, 38
Gabel, 47
Gastro, Joseph, 43
Galton, Samuel, 56
Glatton, Samuel, 56
Garden, Alexander, 13, 17, 19, 25, 27, 35
Garonca, 17, 20
George I, 17
George III, 21, 22, 40, 41, 46, 53
Gesellschaft Naturforscher und Freunde of Berlin, 55
Giant's Causeway, 48
Gordon, James, 16, 17
Gore, John, 90, 31, 47
Gorgonia, 54
Graal, 49
Gravesend, 47
Great Barrier Reef, 35, 36
Great Geyser, 49
Green, William, 29, 30, 31
Grey, John, 19, 23, 55
Greville, Charles, 56
Grubberg, Isaac, 15
Gulf of Carpentaria, 38
Gustaf III, 8
Gylenberg, Count, 7
Haeggblad, Mr., 25
Hafnæ, 48, 49, 50
Hamilton, James, 20
Harley, Edward, Second Earl of Oxford, 22, 24
Harley, Robert, First Earl of Oxford, 22
Harcourt, 6
Hasselquist, Frederik, 10

64
INDEX

| Lunar Society of Birmingham, 86 |
| Land, University of, 11 |
| Landius, Carl, 6 |
| Macaulay, George, 55 |
| MacBride, David, 40 |
| Madsen, 28, 49 |
| Magnell, 18 |
| Max, 53 |
| Martyn, John the Elder, 15 |
| Maximiliana, Novii, 56 |
| Mt. Ayr, 30, 32 |
| Medical Observations and Inquiries, 50 |
| Medical Society, 55 |
| Mercury Bay, 54 |
| Middelburg, 18 |
| Middelburg, Lord, 18 |
| Miller, John Frederick, 45, 20 |
| Miller, Philip, 18, 19, 27, 28 |
| Milne, Collin, 56 |
| Mitre Tavern, 56 |
| Monmouth, Lord, 41, 42 |
| Mount Grace, William E., 29, 30, 31, 38 |
| Montana, Earl of, 18 |
| Montana House, 22 |
| Moreland, James, 47 |
| Morris, Michael, 55 |
| Morris, Richard, 55 |
| Mount Edgcumbe, 47 |
| Mount Egmont, 54 |
| Mount Holyo, 49 |
| Mitre, Lord, 55 |
| Mull Sound, 48 |
| Minchboune, Baron, 24 |
| Mudine, William, 56 |
| Mylius, Robert, 41 |

Veined History of Zoophytes, 54

Naval Board, 45, 46

Newfoundland, 26

New Guinea, 35, 38

New Zealand, 37

New Zealand Alps, 35

Norden, Baron, 58

Northumbria, Royal, 56

Northumberland, Earl of, 17

Oeni, 53, 54

Orossay, 47, 48

Osborne, 10

Oxford, 18, 20

Oxford University, 20, 41

Pagham, 18

Parliment, 51

Pancri, 34

Pelland, Thomas, 13, 54

"Period of Freedom," 8

Peterfield, Lord, 18

Philosophical Transactions, 19, 20, 24, 34

Piper, Count Carl Frederick, 15

Pittairne, William, 36, 37

Pitcairn, 6, 7, 14

Planta, Andrew, 22

Playfair, John, 56

Plymouth, 47

Portland, Duchess of, 13, 24, 51, 54

Poverty Bay, 83

Price, John, 57

Price, Richard Parry, 55

Price, Joseph, 45, 55, 56

Pringle, John, 42, 54

Provender Channel, 37

Fye, Samuel, 56

Queen Charlotte Sound, 34, 35

Raita, 33

Ramsden, John, 56

Real Academia della Scienza e della Belle Lettrice di Naples, 37

"Resolution," H.M.S., 46, 53

Rey, 50

Reynolds, John, 27, 29

Rhenish, 17, 19

Rheims, Duke of, 18

Riccardi, Thoas, 27, 29

Riddell, 47

Rio de Janeiro, 78, 90

Robert, James, 27, 29

Royerer, 16

Kösten, 14

von Rosenberg, Nils Renner, 9

Roy, Colonel, 55

Royal Garden at Richmond, 40

Royal Library, 22

Royal Society, 25, 26, 41, 44, 53, 55, 56

Royal Society, 55, 57

Russell, Tawsend, 13, 17

Russia, 21

St. Helena, 39

St. Paul's Cathedral, 41

St. Peter's Church, 14, 29

Salisbury, 18

Sandby, Paul, 53

Saunder, Lord, 44, 45, 46, 53

Saunder, Richard, 56

de Saussure, Horace, 27

Savoy, 38

Second Northern War, 7

Selwood, 49

Seven Years War, 17

Shoreham-by-Sea, 18

Shuckborough, George, 55

Silverstone, John Bapst, 56

Stimpson Macaroni, the, 42

"Sir Lawrence," 47, 48

Skipwith, 49

Skene, David, 40

Skye, 48

Slane, Hans, 22

Smith, William, 56

Smyth, James Edward, 13

Society Regir Litterarum et Scientiarum, 7

Sodbury, 18
Socadia Straits, 38, 39
Soho Square, 51
Solander, Anna Magdelena, see Idman, Anna Magdelena, 6
Solander, Carl (father), 5, 17
Solander Case, 43
Solander, Daniel (grandfather), 6
Solander, Daniel (son), 6, 6
Solander, Daniel C., appearance, 12; contributions, 13; M.D. degree, 29; personality, 12
Solander Island, 35, 43
Solander, Magdalena Boettadis, 6, 24
Solomon Islands, Daniel, 6
Southampton, 18
South Island, 38
Spalding, 16
Sparrow, Andrew, 10
Spencer, 24
Sporring, Herman, 28, 30
Staaff, 47, 48, 50
Stevens, Isher, 29
Steinriess, Jan, 49
Stenhammar, 48, 49
Stellingwerf, Benjamin, 13
Sting Ray Bay, 25
Stokes, Dr., 36
Strait of Le Maire, 29
Sussex, 18
Sveriges Vetenskapsakademis, 56
Sweden, 8
Swedenborg, Emmanuel, 58
Tahiti, 33
Tahiti, 26, 32, 34
Ternstroem, 19
Terra Australis Incognita, 26
Tessin Count, 7
Tetbury, 18
Thetis Gulf, 40
Tingvalla Lake, 40
Thirroul Sound, 25
Thjors River, 49, 50
Thomson Collection, 22
Thompson, Gilbert, 56
Thunberg, Charles Peter, 11, 12
Tierra del Fuego, 20
Timor, 35, 38
Tolaga Bay, 34
Toro, 21
Toren, 19
Torred, 14
de Torres, Luis Varez, 35
Torres Strait, 35, 37
Tuamotu Islands, 30
Tuvalu, 17, 33, 37, 38
Tubuai, 31
Ulrika Eleonora, 7
Uppsalas, 8, 9
Uppsala University, 8, 9, 20, 21
Västergo River, 20
Versailles tray, 55
Versailles, Treizeufs, 26, 31, 45
Vetenskap och Vitterhets Sällskapet af Göteborg, 56
de Vicomte, Count, 56
Von Troil, Uno, 11, 47
Waiden, Mr., 45
Wallis, William, 9
Wallerian, Johann Gottschalk, 9
Wallis, Commodore, 26
Walpole, Horace, 42
Warner, Richard, 16, 17
Watson, William, 21, 41, 56
Watson, James, 56
Webb, Philip Cartaret, 16, 19, 21, 25
Wedgwood, Josiah, 31, 36
Westra Carlyle, 15
Whitehurst, John, 56
Withering, William, 56
Woodstock, 38
Wraned, Dr., 25
Young Slaughter’s Coffee House, 56
Zoffany, John, 45, 47
Zovikites, 24, 34