

## *James Petiver*

*Promoter of Natural Science, c.1663-1718*

BY RAYMOND PHINEAS STEARNS

FOR upwards of thirty years after 1685 James Petiver was the proprietor of an apothecary shop "at the sign of the White Cross in Aldersgate Street, London." During these years this address became familiar to brother apothecaries, shipmasters, merchants, planters, physicians, surgeons, ministers of the gospel, consuls, ambassadors, privy councilors, peers of the realm, and foreign gentlemen of various degrees extending from Moscow to the Cape of Good Hope and from the British Colonies in the New World to the Spanish settlements in the Philippines.

From this shop were dispatched thousands of letters and queries, occasional bits of medical advice together with shipments of drugs and nostrums, newssheets, scientific pamphlets and books, frequent consignments of brown paper, wide-mouthed bottles, and detailed instructions for amateur naturalists and collectors who had set forth—or were on the point of setting forth—to nearby English counties or to far-off foreign lands. To this shop were addressed other thousands of queries—most of them pertaining to the scientific identification, description, classification, use, habitat, collection, and preservation of botanical specimens and other items of natural history—and hundreds of consignments of seeds, dried plants, insects, serpents, birds, fishes, and small animals for the collections of Mr. Petiver and his friends, whose appetites for such things were insatiable. In this shop were assembled, besides the stocks of herbs and medicines common to a busy and prosperous

apothecary, one of the largest and most varied collections of specimens of the natural history of the world that existed in England during the early years of the eighteenth century. Sir Hans Sloane, whose reputation as a collector subsequently eclipsed even that of James Petiver, was said to have offered £4000 for Petiver's collections, and after the latter's death Dr. Sloane did acquire both the specimens and the principal manuscript remains of the apothecary.<sup>1</sup>

In the British Museum, of which Sloane himself was the founder, one can still find many of the specimens which Mr. Petiver preserved—a leaf from a Maryland plant sent by the Reverend Mr. Hugh Jones, “a very curious Person in all parts of Natural History”; a butterfly from Mr. Hezekiah Usher of New England; an herb from Mr. Edward Bulkley, surgeon at Fort St. George in India; a shell from Dr. Gottfried Klein, “one of the Czar's physicians”; and many others. And among the manuscript remains there are, besides a multitude of letters to and from Mr. Petiver's far-flung correspondents and a considerable number of “catalogues,” lists of plants, animals, and insects, and other notes and jottings in Mr. Petiver's small, crabbed hand; the well-executed and well-preserved drawings of Virginia plants and insects done by the Reverend Mr. John Banister<sup>2</sup>; drafts of birds, insects, and fossils by Dr. David Krieg of Riga<sup>3</sup>;

<sup>1</sup> Petiver left the bulk of his goods to his sister, Jane Woodstock, from whom Sloane purchased them. See Petiver's will, 2 *Tenison* 563:103 (Somerset House, London). The will was dated August 10, 1717, and proved April 12, 1718, by Jane and Edward Woodstock. See also Richard Pulteney, *Historical and Biographical Sketches of the Progress of Botany in England*, London, 1790, II, 31-43. Pulteney wrote (II, 31-2) that Petiver “seems to have been the only one, after the Tradescants, who made any considerable collection in natural history.”

<sup>2</sup> See especially “Papers and Draughts of the Reverend Mr. Banister in Virginia sent to Dr. Henry Compton Bishop of London and Dr. Lister from Mr. Petiver's Collection,” *Sloane Mss.* 4002, 118 fols. Others are in *Sloane* 2346, 3321, 3331, and 3336. Extracts from Banister letters to Dr. Martin Lister are in the Royal Society Library, Burlington House, London, *Classified Papers 1660-1740*, XV (1), “Zoology,” No. 3, and the *Philosophical Transactions*, XVII, 667-72 (1693-94). I am grateful to the President and Council of the Royal Society of London for permission to search among and to quote from manuscripts and other materials belonging to the Society.

<sup>3</sup> *Sloane* 2360, 4020.

drawings and descriptions of East Indian birds and medicinal plants by Edward Bulkley of Fort St. George<sup>4</sup>; "Mr. Jezreel Jones's Collection of some Productions of Nature by him observed & drawn in Barbary"<sup>5</sup>; and similar contributions from the hand of Father George Joseph Camel, a Jesuit missionary in Manila.<sup>6</sup>

Verily, Mr. Petiver's correspondents are often more interesting and sometimes more significant than Mr. Petiver himself, who was not without certain personal short-comings which will become obvious. But we cannot separate the man, who was vain, excessively ambitious, and occasionally dull, from his achievements, which were of considerable importance in the promotion, patronage, development, and popularization of the new science, especially in the field of natural history. If he referred to literary remains, Dr. Richard Pulteney hardly wrote truth when he observed in 1790 that "too little intelligence is remaining" of James Petiver; for there is an embarrassment of riches. But if Dr. Pulteney meant the proper recognition due to Mr. Petiver for his extraordinary achievements as a virtuoso, his words were correct not only for 1790 but also for today. It is the object of this paper to rescue James Petiver from the oblivion into which he has fallen, not so much, I confess, for the sake of Mr. Petiver as for the sake of certain aspects of intellectual history which cannot be illuminated without the glow from Mr. Petiver's bones.

James Petiver, the son of James and Mary (Elborow) Petiver, was born at Hillmorton, near Rugby, Warwickshire, in 1663 or 1664. Shortly after James' birth his father moved to London and became a haberdasher there. About 1676

<sup>4</sup> *Sloane* 2346, 3332, 3348, 4020, 4066.

<sup>5</sup> *Sloane* 4003, fols. 17-22; 3333, fols. 112 ff.

<sup>6</sup> *Sloane* 1968, fols. 159-61; 2941, fols. 9 ff.; 3331, 3335, 4083, A, fols. 128 ff.

the elder James died, and his son was sent to Rugby Free School "under the patronage of a kind Grandfather, Mr. Richard Elborow."<sup>7</sup> Petiver later "bewail'd" that this was the extent of his "Academicall Learning."<sup>8</sup> On June 5, 1677, he was bound apprentice for eight years to Charles Feltham, apothecary to St. Bartholomew's Hospital, London.<sup>9</sup> In this capacity he served until October 6, 1685, when he "was examined, approved, sworne, and made Free."<sup>10</sup> Soon afterwards, probably with the financial assistance of his "kind Grandfather" or of his uncle of the same name, he set up shop for himself "at the Sign of the White Cross in Aldersgate Street" where he remained until his death in April, 1718. He never married. Indeed, he seemed to look upon the married estate with acute disfavor, for in 1697 he wrote in the "Album Amicorum" of his friend, Dr. David Krieg,

Would you be free, take this from me,  
Never Marry, & you can't miscarry

<sup>7</sup> Petiver to Dr. Charles Holt, June 2, 1713. *Sloane 3339*, fols. 10-10v. Other relatives of the apothecary appear in his correspondence and in his will, as follows: Petiver's mother re-married to one Mr. Glentworth, of Rugby, by whom she had at least one son, Elborow, half-brother to James Petiver; his sister, Jane, married Edward Woodstock of London and she, with her one son and four daughters became the chief beneficiaries of Petiver when he died in 1718. Jane Woodstock was named executrix of his will. His grandfather, Richard Elborow, had a son, also named Richard, Petiver's uncle; and Petiver also appears to have had at least one uncle on his father's side inasmuch as a cousin, William Petiver, sought the apothecary's aid in 1705 to obtain a fellowship at All Souls College, Oxford, an effort which failed. Other kinsmen included William Bennett who, in 1704, became an apprentice to Mr. Petiver after much haggling over the fees to be paid (see *Sloane 4064*, fols. 6, 13, 19, 21), and James and William Sherard, the latter a botanist and antiquarian of considerable fame who served as English Consul at Smyrna where he made a fortune with which he founded the Sherardian Chair of Botany at Oxford. *Sloane 4064*, fols. 1, 17, 88, 89, 95, 350; George Pasti, Jr., *Consul Sherard: Amateur Botanist and Patron of Learning, 1659-1728* (unpublished Ph.D. thesis, University of Illinois Library, 1950), pp. 49 ff.

<sup>8</sup> Petiver to Holt, June 2, 1713, *Sloane 3339*, fols. 10-10v.

<sup>9</sup> *Court-Book*, 1 Sept., 1651 - 6 April, 1680, fol. 221 (Society of Apothecaries, Apothecary Hall, London): "James Pettiver son of James Pettiver late citizen & haberdasher of London deceased examined approved & bound to Charles Feltham for 8 yrs from this day." Petiver was a second apprentice currently bound to Mr. Feltham.

<sup>10</sup> *Court-Book*, May 1680-February, 1694, fol. 183 (Society of Apothecaries, London).

Is in a few words the sincere advice  
Of your hearty Friend, & well-wisher

James Petiver

Celebs: & Pharmacop: Londin: nec non Societatis  
Regiae Socius & what else you please<sup>11</sup>

Mr. Petiver's persistent bachelorhood, however, won the stern disapproval of his Uncle Richard Elborow, who evidently held Dissenter views of life. Accordingly, though he left Petiver "a very fair and plentyfull Legacy," when he drew up his will in 1704, Uncle Richard chose Petiver's half-brother, Elborow Glentworth, to be executor of the testament. When Petiver indicated his disapproval, his uncle pointed to his unmarried estate and added,

to deal plainly with you is I think you have not made that good Improvement of the Tallent you have been intrusted withall. . . . I take it we was not just born to maintain ourselves but to be able to do good to others in our generation, God Almighty hath blest you with great Wisdom and understanding, therefore if you have served him as you ought to do he generally gives blessings to mens endeavours.<sup>12</sup>

<sup>11</sup> *Sloane 2360*, p. 5v. To the lines quoted above Petiver added these:

"For Marriage is such a Rabble rout  
That those that are out, would fain get in  
And those that are in, would fain get out  
to be found somewhere in *Chaucer*  
& againe  
Those that Marry doe well  
But those that doe not, doe better  
(or somewhat like it)  
Saith St. Peter or St. Paul  
From the Goat Tavern in the Strand

London, Novemb. 27, in the 34th year of my freedom, i.e. A.D. 1697." This is the source from which I have established the year of Petiver's birth. Cf. the *D.N.B.*, which narrows the date only to the decade 1660-1670. A question arises as to whether Petiver might have exhibited homosexual leanings. The words "ad latus Uxoris," opposite the above verses may refer to Dr. Krieg, who was Petiver's lodger in 1697-98, or to Samuel Doody, whose "advice" to Krieg appears on page 6 opposite. To Doody, also, Petiver addressed letters with the intimate and unmanly salutations, "My Dear," and referred to Doody as "my spouse." Of course, these may have been only bibulous jests. See *Sloane 4064*, fol. 10; *4066*, fols. 328, 330.

<sup>12</sup> Richard Elborow to Petiver, April 8, 1704. *Sloane 4064*, fol. 1. Petiver's vain effort to placate his uncle follows on fol. 17.

Petiver's obvious success and growing renown at the time this letter was written suggests that his uncle held different opinions and opposing values with regard to the apothecary's way of life. And the choice of executor turned out badly. When Uncle Richard died in 1707, his executor, Elborow Glentworth, found means to withhold and ultimately to dissipate Mr. Petiver's "very fair and plentyfull Legacy" of £7000 so that it was never granted.<sup>13</sup> This financial disappointment came on the heels of another, as Petiver had written that on New Year's Day in the previous year (1706) he had received the "unwelcome news" of the bankruptcy of his friend James Ayrey who, said Petiver, "owed me neer 800 pounds in money lent besides physic." It is not surprising that this jolt gave Petiver "no small discomposure." But "after 3 months melancholy reflections," accompanied by a bout with "my old companion the ague" and with a painful abscess in his arm, he recovered both his health and his spirits.<sup>14</sup> Nor is it surprising that, except his mother and his sister, Jane, and the latter's family, he cast off his relatives entirely for the remainder of his days. His profession, his friends, his collections, his publications, and his correspondence received that extra measure of zeal and devotion which men commonly bestow upon a family.

Less than two years after completion of his apprenticeship with Mr. Feltham, James Petiver began the practice of physic. Evidently he was not accorded fellowship with the College of Physicians of London to which several of his close

<sup>13</sup> *D.N.B.*, sketch of James Petiver.

<sup>14</sup> For these facts see Petiver's letters to J. P. Breynius, James Hamilton, and William Sherard in *Sloane 3335*, fols. 9-10, 13v-4, 14v, 15v-6, 20v-1, 25; also Petiver to James Cunningham, Jan. 23, 1707/8, (*Sloane 3336*, fol. 16) wherein Petiver indicates that Ayrey was making a financial recovery and might be able to pay his debts after all.

friends and associates belonged.<sup>15</sup> Possibly this omission helped to explain why his practice seldom reached into the higher brackets of society like that of his friend, Dr. Hans Sloane, although he sometimes consulted with Sloane about particular cases. Still, Petiver counted among his own patients many London merchants and a few "gentlemen," including, in 1697, the Governor of Carolina.<sup>16</sup> Whatever his practice may have lacked in quality it made up in quantity. His prescription-books, which clearly are not all extant, fill 1454 folio pages with the names of patients, dates of calls, and prescriptions all set down in his tiny script.<sup>17</sup> The practice of physic, with bleeding and surgery, greatly augmented Petiver's income and enhanced both his professional and his social prestige.<sup>18</sup> Further, it complemented his training as an apothecary and deepened his early interest in botany and other branches of natural history.

It is impossible to state exactly when and by whom James Petiver's interest in botany was aroused. His training as an apothecary required, of course, a knowledge of medicinal

<sup>15</sup> See, however, the unsigned testimonial dated May, 1700: "We the subscribed Fellows of the College of Physicians, London, do propose to observe your Honour that we know Mr. J. P. is a skillful Apothecary not of a common character, having acquired an extraordinary knowledge in Botany & many other parts of Natural Philosophy, most usefull Qualifications for his profession. And believe him capable & faithfull to be intrusted with any thing relating to his said Art." (*Sloane 4063*, fol. 29.) It seems likely that this document was prepared by Dr. Hans Sloane to further Petiver's candidacy for the position at the Charterhouse; for Petiver was appointed Apothecary to the Charterhouse about this time.

<sup>16</sup> Petiver to Bobart, June 3, 1697. *Sloane 3333*, fols. 7v-8v. The comment of the writer in the *D.N.B.* to the effect that Petiver's practice was "good," though "not of a high order, since he advertised various quack nostrums," overlooks the fact that the "best" physicians of the day, including Sloane and Meade, used and advertised "quack" nostrums.

<sup>17</sup> The prescription-books begin not later than Sept. 22, 1687, and run, with some gaps, to Dec. 20, 1710. See *Sloane 3220-1*, 3222-6. The evidence suggests that Petiver's practice tapered off after 1700, although he took over the Charterhouse position in that year and the practice there was considerable. See *Sloane 3219*, fols. 1-142, Petiver's "Medical Rules for the Charterhouse," etc.

<sup>18</sup> Of these advantages, Petiver was well aware. See his letters to William Bennett in 1704. *Sloane 4064*, fols. 6, 13, 19, 21.

plants and included herbalizing trips to the Society of Apothecaries' Garden and similar excursions to extraordinary collections of plants, trees, and shrubs like the Fulham Palace Gardens developed by Bishop Henry Compton.<sup>19</sup> It is likely that on one of these expeditions Petiver met John Watts, the Superintendent of the Apothecaries' Garden, and, perhaps, through the good offices of Mr. Watts he and his friend and fellow apothecary, Samuel Doody, were initiated into the wonders of natural science and gradually extended their acquaintance with others interested in such mysteries.

The time was propitious. Since the Earl of Danby had established a botanical garden at Oxford in 1632 botany had aroused interest widely in England. As young students at Cambridge in the latter days of the Protectorate, John Ray and Francis Willoughby became ashamed of the low estate of natural history in England and determined to "endeavour to supply this defect, & polish what was omitted by others."<sup>20</sup> The Royal Society of London, chartered in 1662, soon took an active hand in this work. It published, in 1682, Dr. Nehemiah Grew's pioneer work in microscopy, *The Anatomy of Plants*, and it sponsored the collection and study of specimens in natural history from all parts of the world. Additional stimuli were derived from the examples of foreigners, especially from France, where the Jardin du Roi, with its Superintendent, Guy Crescent Fagon, and its learned botany professor, Joseph Pitton de Tournefort, were marvels in the eyes of foreign visitors and students. A number of Englishmen had studied in France

<sup>19</sup> Each apprentice was required to pay an annual fee to the Society of Apothecaries "for the carrying on of an Annuall herbarizinge." *Court-Book*, 1 Sept., 1651-6 April, 1680, fol. 166 (Apothecaries Hall).

<sup>20</sup> *Sloane 2339*, fol. 38-43v. This copy of "Mr. Ray's Preface to his Cambridge Catalogue of Plants abt the University" is among Petiver's papers. See also William Derham (ed.), *Philosophical Letters Between . . . Mr. Ray . . . and Correspondents*, London, 1718, Appendix, pp. 355-7. The theme is excellently developed in C. E. Raven, *John Ray, Naturalist: His Life and Works*, Cambridge, 1942.



during the Interregnum, and others followed after the return of the Stuarts. Robert Morison, who became Professor of Botany at Oxford, had studied in the famous garden of the Duke of Blois for ten years before the Stuart Restoration. Drs. Martin Lister, Tancred Robinson, and Hans Sloane had all studied in France before settling into medical practice in England—and each of them exhibited a vital and continuing interest in natural history. With the expansion of European colonization and commerce into the Americas and the Far East, whole new worlds of flora and fauna challenged the efforts and ingenuity of European scientists still fumbling in their attempts to perfect the new science, or “natural philosophy,” as they commonly called it. Problems of identification, taxonomy, uses, and the like baffled the best minds of the Old World. New systems of classification and nomenclature vied with old and with one another. Botany, zoology, entomology, anatomy, physiology, and other branches of science as we know them today were in embryo.

Had not the men interested and knowledgeable in these matters co-operated in the free exchange of information, specimens, opinions, and interpretations, it is unlikely that these embryos would have survived to reach that degree of maturity which they demonstrate today. Even with widespread co-operation on an international basis it was nearly two hundred years before the major errors had been swept aside and reasonably complete, accurate, and workable methods and systems were perfected. During this time, thousands of persons, many of them obscure and unknown, served as hewers of wood and drawers of water, each contributing his mite to the edifice of modern scientific knowledge. The process was slow and by no means a steady progression forward. The errors made were often fully as significant as the corrections contributed. Entire genera-

tions of honest workers labored with a maze of imperfect data and with unworkable systems. There was little experimentation as we know it—little by way of plant breeding and crossing, plant physiology, plant chemistry and the like. The collection and cultivation of plants were directed towards two primary objectives, both of them postulated upon an almost universal belief in the fixity of species: the perfection and completion of an internationally acceptable system of taxonomy and nomenclature on the one hand, and an equally complete tabulation of the medicinal, commercial, or manufacturing uses to which each species could be assigned on the other. These were enormous, endless, even hopeless objectives. But generations of scientists, both amateur and professional, labored to achieve them. These generations include many unsung heroes in the advance of scientific frontiers. And it is in this light that we must view James Petiver and his friends.

The Royal Society of London soon became the principal agency in England for the collection, study, classification, exchange, and publication of scientific information of all kinds.<sup>21</sup> But within the Society, outside it, and between those who were Fellows and others who were not, were a variety of private, unofficial, and unchartered groups, clubs, and voluntary associations of men, some lasting for only a few months and others continuing for years, which devoted themselves to some branch of scientific investigation as a matter of personal interest, recreation, or both. They made private collections, engaged in wide correspondence overseas, performed experiments, demonstrated and shared their discoveries with one another at meetings and, occasionally, they carried their findings to the Royal Society

<sup>21</sup> For a resumé of its work see my article, "The Royal Society of London: Retailer in Experimental Philosophy, 1660-1800," *Dargan Historical Essays*, Albuquerque, 1952, pp. 39-54.

itself in the form of a demonstration, paper, or communication. By means of these groups the Royal Society was informed of many of the scientific activities carried on outside its own walls, and many of the members of these groups attracted the favorable attention of the Royal Society and were elected to its proud roll of Fellows. Such was the Temple Coffee House Botany Club to which James Petiver belonged throughout most of his professional life.

As this Club was unofficial, probably without formal organization, and certainly social as well as scientific in its *raison d'être*, there are no records of it in any collected sense. Only from the private correspondence of its members are we informed of its existence. It appears to have come into being in the early autumn of 1689, probably having been brought together in the first instance by Dr. Hans Sloane, who had just returned from Jamaica where he had served fifteen months as physician to the Governor, the Duke of Albermarle, and had made a large collection of West Indian plants and animals upon the basis of which he subsequently published several books about the natural history of the West Indies.<sup>22</sup> The Club met on Friday evenings, and it mixed social intercourse with the exchange of botanical information, specimens, and communications from correspondents at home and abroad—all, as Mr. Petiver put it, for the benefit of "the World in the Recreative Science of Botany."<sup>23</sup> On Sundays and occasional holidays during the Summer months members of the Botany Club often embarked upon botanizing expeditions to Greenwich, Hampton Court, Primrose Hill, Fulham Palace Gardens, and elsewhere. By the Spring of 1691 the Club was said to

<sup>22</sup> *D.N.B.* I am much indebted to Professor George Pasti, Jr., of East Carolina College, who seems to be the discoverer of the Temple Coffee House Botany Club and described it in his doctoral thesis referred to in note 7 above.

<sup>23</sup> Petiver to Breynius, c. Dec., 1692. *Sloane 4067*, fol. 81.

consist of forty members.<sup>24</sup> These included several persons already familiar—Dr. Sloane, Dr. Martin Lister, Tancred Robinson, John Watts, Nehemiah Grew, William Sherard, Samuel Doody, and James Petiver—and others, such as Samuel Dale, the apothecary-physician of Braintree and author of the famous *Materia Medica* published with the sanction of the London College of Physicians in 1693; Charles du Bois, an officer of the East India Company and later Fellow of the Royal Society; Dr. Leonard Plunkenet, the lofty but unpopular author of *Phytographia* (1691–1705), who later fell out with Sloane and Petiver; Captain Charles Hatton, a behind-the-scenes promoter who had persuaded John Ray to undertake his remarkable *Historia Plantarum Generalia*; Adam Buddle of Henley, who specialized in English grasses and mosses and corrected John Ray's works in these particulars; and occasional visitors from Oxford, Cambridge, the Colonies, and continental countries. The Club continued to hold its weekly meetings in the Temple Coffee House well into the 1700's, although its membership was obviously fluid.<sup>25</sup> And Mr. Petiver continued to take an enthusiastic part in the botanizing expeditions until near his death in April, 1718.<sup>26</sup>

There is a certain mute testimony to James Petiver's abilities as an amateur scientist and to his capacities for friendship that he was so early and so long accepted by men of such intellectual calibre, professional attainments, and social station on such a remarkable footing of equality. It is also a testimony to the egalitarianism of the Republic of the New Philosophy—or, at least, the absence of impenetrable

<sup>24</sup> *Sloane* 3061, fol. 41.

<sup>25</sup> See J. Wanley to Sloane, Feb. 2, 1702/3. *Sloane* 4039, fol. 80.

<sup>26</sup> See the pass granted to them in July, 1713, to proceed to Gravesend, *Sloane* 4020, fol. 107. Other evidences of the trips are in *Sloane* 3336, fol. 11v; 4066, fols. 277–91; 4067, fols. 144, 146.

social barriers. Petiver was no university man, and he had little of the polish and cosmopolitanism which so often was the product of the Continental "Grand Tour." Yet he possessed good natural abilities, great adaptability, a consuming ambition to rise in the world, and an unusual perseverance in attention to routine detail. He managed enough Latin to read the classics in natural history, and his papers are filled with notes from them. Moreover, he prevailed upon one or another of his multi-lingual friends, such as Dr. David Krieg, to translate for him large portions from French, Dutch, German, and Italian works of his own day, copies of which are scattered through his copious catalogues of plants, insects, and other parts of natural history. But he was no perfectionist. He was often too hasty in his decisions, was frequently concerned far more in seeking reputation than in finding truth, and his imagination seldom turned up anything refreshingly new. On the whole, he followed paths well marked by his predecessors and contemporaries. But he trod them far more industriously than they, and he betrayed a zeal which bordered upon that of a fanatic and must have amused and occasionally shocked an age which was almost enthusiastically anti-enthusiastic.

Clearly Petiver's associates recognized his abilities and were not totally unaware of his shortcomings. They not only accepted him: they also aided him and often profited from his tremendous industry. They introduced him to their scientific friends and correspondents in England and abroad; they encouraged him in his collections; and they subscribed to his publications. As early as June 21, 1693, Petiver and his friend, Doody, were invited to attend a meeting of the Royal Society, and they took part in the discussions—a rare thing for visitors to do.<sup>27</sup> On November

<sup>27</sup> *Journal-Book*, VIII, June 21, 1693 (Ms. in the Royal Society archives).

27, 1695, both Petiver and Doody were elected Fellows of the Royal Society,<sup>28</sup> an event which, to Petiver at least, was of singular importance. He frequently paraded his fellowship in the Society with conscious pride. In the next year (1696), Petiver was chosen one of the Auditors of the Accounts of the Society, a recognition repeated in 1710, 1711, and 1713; and in 1708, 1710, 1713, and 1716 he was elected to the Council which managed the business affairs and settled the major policies of the Society.<sup>29</sup> In the meantime, he presented to the Society scores of specimens in natural history, communicated many letters from his correspondents, read several of his own papers, and aided greatly to enlarge the correspondence of the Society itself in many parts of the world.<sup>30</sup> Indeed, it is difficult to escape the feeling that the Society overlooked an important possibility in not persuading James Petiver to become its Secretary. In industry, enthusiasm, and scientific ability—though perhaps not in good judgment and certainly not in linguistics—Petiver might well have been the best Secretary since Henry Oldenburg, who was the Society's first Secretary and the ablest man in that position from the founding of the Society until the end of the eighteenth century.

In 1700 another honor was conferred upon Mr. Petiver which added to his professional standing and, to a lesser extent, to his income. In May of that year the apothecaryship of the hospital commonly referred to as the Charterhouse became vacant, and his friends, led by Dr. Sloane, successfully recommended Petiver for the position. Charles Hatton wrote that "I doe not know a greater Benefaction can be done to the Hospitall than bringing Mr. Pettifer to

<sup>28</sup> *Ibid.*, VIII, 318.

<sup>29</sup> *Sloane 3341*, fol. 19; *Journal-Book*, XI, 155, 194, 247, 254, 385, 390; *ibid.*, XII, 135. (Royal Society).

<sup>30</sup> See *Journal-Book*, VIII, IX, X, XI, XII, *passim*; *Sloane 3341*, fols. 4, 19, 23, 40, 55; 4026, fols. 310-1.

the place now Vacant," and he later congratulated Petiver, saying "this will be a step to speedy preferment more worthy of you."<sup>31</sup> The position carried a salary of only £30 a year, with additional allowances for "physic," but it furnished Mr. Petiver with great prestige both as an apothecary and as a physician.<sup>32</sup> By this time, too, Mr. Petiver had reached the height of his powers. He was successful and prosperous in his profession, was received among the greatest scientific men of his day, and had won active fellowship in the foremost scientific society of Europe. It is hardly surprising that he was proud of his achievements, although it was not always becoming when he pointed to them in writing to his less accomplished correspondents in an effort to spur them to greater efforts to serve him.

James Petiver's scientific correspondence was under way by 1690, and its beginnings are not difficult to discover. The Royal Society of London had been encouraging all manner of scientific exchange for thirty years, and many of Petiver's friends in the Botany Club, especially Martin Lister, Tancred Robinson, Leonard Plunkenet, and Hans Sloane had developed a regular correspondence both at home and abroad. Petiver followed his friends' examples. His earliest correspondents were persons to whom he had been introduced, either in person or by letter, by Plunkenet, Lister, or others among his London associates. Through them, for example, he came to know the young William Byrd who, upon his return to Virginia, became a Petiver correspondent and who, in 1689 or 1690, placed Petiver in direct contact with the Reverend Mr. John Banister of

<sup>31</sup> *Sloane 4066*, fol. 369; *4060*, fol. 103.

<sup>32</sup> Several papers relating to this position, together with Petiver's prescriptions in "Charterhouse Physicke" from 1700 to 1713 are in *Sloane 3219*, fols. 1-142.

Virginia.<sup>33</sup> Again, by the good offices of Dr. Plunkenet, Petiver opened an unusually rich exchange with Samuel Browne, a surgeon in the East India Company's service at Fort St. George in Madras.<sup>34</sup> In similar fashion, Mr. Petiver soon extended his literary frontiers to include Edward Bartar, a surgeon in the employ of the Royal African Company,<sup>35</sup> the Reverend Dr. John Smyth of Port Royal, Jamaica,<sup>36</sup> Mr. John Dickinson of Bermuda,<sup>37</sup> and others. The manuscript volumes of the *Sloane Collection* labelled "Petiver Adversaria" demonstrate that, by 1693, Mr. Petiver had developed a remarkably wide scientific correspondence. By this time, also, he had begun to demonstrate that remarkable resourcefulness and zeal which characterized his entire career as a collector, patron, and scientific correspondent.

For James Petiver was satisfied neither with the *extent* of his scientific correspondence nor with the *efforts* displayed by the correspondents themselves. He was ever alert to discover new ways to enlarge his circle of collectors and informants, and he employed a variety of ingenious, although occasionally crude, methods to counteract the real or imaginary inertia, laziness, carelessness, unreliability, ignorance, and irresponsibility of his correspondents who, in his impatient opinion, too frequently lacked that constant concern for science—and especially for Mr. Petiver's wishes!—which Mr. Petiver felt they should exhibit. A

<sup>33</sup> For Byrd's early association with Plunkenet and others, see his letter to Plunkenet, Dec. 14, 1687, *Sloane 4062*, fol. 226; for Byrd's role in the Petiver-Banister correspondence, see Banister to Petiver, n.d. (1689?), *Sloane 3321*, fol. 7; and for the Petiver-Byrd correspondence, see *Sloane 3336*, fols. 10v, 48v; *3337*, fol. 64-7; *Journal-Book*, XI, 105, 108, 179 (Royal Society).

<sup>34</sup> Petiver to Brown, March 16, 1689/90, *Sloane 3332*, fol. 7. This is the first of a long and profitable series of letters and exchange of specimens. See also, *Philosophical Transactions*, Nos. 244, 264, 277, 282, 287 (London, 1698-1703).

<sup>35</sup> Petiver to Bartar, Feb. 27, 1692/3, *Sloane 3332*, fol. 33v and *passim*.

<sup>36</sup> Petiver to Smyth, Feb. 21, 1692/3, *Sloane 3332*, fols. 33, 36v, 43, 54.

<sup>37</sup> *Sloane 3332*, fols. 19v-29v.



survey of his correspondence with an eye to these things is informative, occasionally amusing, and sometimes surprising with regard to Mr. Petiver's intensity and impudence, on the one hand, and his correspondents' long-suffering regard for him on the other.

Mr. Petiver played constantly upon the vanity and the ambitions of his correspondents, especially the pride of seeing one's name in print, the fame of turning up a new variety of plant which Mr. Petiver might name after the discoverer, the satisfaction of being able to boast about one's personal exchange with London's great men of science, and the possibility of commercial or professional advancement as a result of such services. In 1695 Petiver published the first of a series of little books entitled *Musei Petiverani Centuria Prima Rariora Naturae Continens*. It contained names and descriptions of one hundred plants, shrubs, trees, insects, shells, and animals which Mr. Petiver had added to his collections together with the names of the places from which the items had been sent and a gracious acknowledgment of the several donors. The first of Petiver's "Centuries," as they came to be known, listed specimens largely of Petiver's own collection in England, although there were also items from the Guinea Coast of Africa, from Ireland, from Amoy in China, from Fort St. George, from Barbados, from Holland, from Norway, and from Cartagena—each with an acknowledgment similar to that following the twenty-first specimen, which read:

A Guinny Tree call'd *Aconcroba*. This the Reverend Mr. John Smith sent me from Cabo Corso (vulgarly called Cape-Coast) in Guinny. Being boyled in Wine, and drank, is good in the Small-Pox.<sup>38</sup>

<sup>38</sup> This copy of Petiver's "Centuria Prima" is bound in *Sloane 3330*, fols. 164-71v. It consists of fifteen pages printed in London, 1695. See p. 6. At the end of his fifth "Century" published in 1699, and in subsequent "Centuries" as well, Mr. Petiver proudly printed "An Abstract of what *Collections* I have received the *last Twelve Months* and the *Persons* whom I am obliged to for them." Twenty-eight persons made up the list in 1699, and Mr. Petiver hoped that the examples set by these persons would encourage others to do likewise.

At the end of this first "Century," Mr. Petiver appended the following "Advertisement":

This *Century* consisting of such *Animals, Vegetables, Fossils, &c.* as have been either observed by myself, or communicated to me not only from many *Very Worthy* and *Learned Assistants at Home*, but also brought me, by my *Kind Friends* from divers parts of the World, or transmitted from such *Curious Persons* as do me the Honour to Correspond with me from several parts Abroad: I thought myself highly obliged to acknowledge them as my *Generous Benefactors*; And designing to continue the *Publishing* of these *Centuries* as my *Philosophical Acquaintances* and *Correspondents* Abroad and at Home shall enrich me; I do therefore most humbly beg the Communications and Assistance of all *Curious Persons* and *Lovers of Natural History*, the which shall be *justly* and *faithfully acknowledged*. And if there be anything in this or the following *Centuries* which they shall desire to be farther inform'd of, I shall endeavour to serve them in that or what else is in the Power of  
November 30, 1695. Their most obliged Servant

From the *White-Cross* in  
*Aldersgate-Street* London.

James Petiver.

Between 1695 and 1703 Mr. Petiver published ten of these "Centuries," each illustrative of his expanding correspondence and of his growing stature as a natural scientist. On December 2, 1696, he presented his first "Century" to the Royal Society which turned it over to Robert Hooke for review. Hooke's report, presented to the Society in the following January, was not only favorable but also emphasized further Petiver's desire for wider correspondence and led the Society to register formal approval of Mr. Petiver's designs.<sup>39</sup> Each of the succeeding "Centuries" was presented to the Society, and many of Petiver's specimens received from remote places were displayed as well. Written accounts of several of the specimens were printed in the *Philosophical Transactions* together with a significant paper which Mr. Petiver read before the Society on May 10, 1699, entitled "A Discourse of some attempts to prove that Herbs

<sup>39</sup> *Journal-Book*, IX, 12 (Royal Society); *Sloane 3341*, fol 4.

of the same make or class for the generality, have a like virtue, and Tendency to work the same Effects on human bodies."<sup>40</sup> This paper placed James Petiver in the company of Morison, Ray, Tournefort, and others of that group of systematic botanists who, from Andrea Cesalpino in the late sixteenth century to Karl Linnaeus in the early eighteenth century, adopted artificial classifications based upon theoretical (often teleological) principles which went far beyond the simple-minded empiricism of such early German fathers of botany as Konrad Gesner and Kaspar Bauhin.<sup>41</sup> Mr. Petiver himself was not humble about the recognition he had won and, although it was hardly official, he soon sought to impress his more remote correspondents by referring to himself as "botanist to the Royal Society."<sup>42</sup>

With few exceptions, Petiver's published works depended upon his scientific correspondence. This correspondence, as we have seen, owed its beginnings to the good offices of Petiver's friends, especially to his fellow members of the Temple Coffee House Botany Club. These early communications quickly led to multilateral exchanges of specimens and, as the collector's fever mounted, to a variety of methods for solicitation of new correspondents and of ways to infuse them with the apothecary's zeal. Almost no one who went abroad, especially if he were formally educated or professionally trained (whether in scientific subjects or not), was immune from Mr. Petiver's entreaties. Friends, friends of friends, customers in the shop at the Sign of the White Cross, fellow apothecaries, physicians, surgeons, ship captains, merchants, planters, and missionaries—all were asked

<sup>40</sup> *Journal-Book*, IX, 150 (Royal Society); Petiver's publications in the *Philosophical Transactions*, and an incomplete bibliography of his published works, appeared in Pulteney, *Historical and Biographical Sketches*, II, 33 ff. Petiver's theory about the classification of herbs according to their medicinal "virtues" was at least as old as Andrea Cesalpino.

<sup>41</sup> Julius von Sachs, *History of Botany, 1530-1860*, Oxford, 1906, Chapter II.

<sup>42</sup> *Sloane 3337*, fols. 151, 152.

themselves to collect for Mr. Petiver and to enlist the services and correspondence of other persons dwelling in the lands they visited. Mr. Petiver supplied them with detailed, printed instructions as to what to collect and how to preserve and pack the specimens for shipment to England.<sup>43</sup> He furnished them with quire upon quire of brown paper for preserving plants, wide-mouthed bottles for insects, small animals, and fishes, and "an easie method" to pickle "Fleshy bodies capable of corruption" in brine or in spirits. To James Keil, a ship surgeon about to sail for foreign parts in August, 1696, Mr. Petiver wrote "That whatever Part you touch att I desire you will make a Collection of Plants you meet with as well those you doe know as those you doe not." And he listed

The following Things to be taken with you when you goe abroad. viz.

Collecting books &c.

A Quire or two of Brown Paper

A Flagg Baskett

Two or 3 Cloath or Linnen Baggs for Shells

Several wide mouth'd Vialls or Glasses

A Box for Insects

A Pincushion & Pins

A Pencil & Pencill Book or An Inckhorn & a Sheet of Paper to write on

Brandy or spirits for preserving fleshy worms, etc.<sup>44</sup>

Again, when Petiver sent Isaac, his "butterfly boy" to Maryland in 1699 (to whom we shall return later), Isaac had the following instructions:

<sup>43</sup> See his "Directions," dated Oct. 17, 1690, in *Sloane 3332*, fols. 1-6; the "Advertisement" on the last two leaves of *Musei Petiverani Centuria Secunda & Tertia*, London, 1698, *Sloane 3330*, fols. 179-80v; and the printed sheet entitled "Brief Directions for the Easie Making and Preserving Collections of all Natural Curiosities For James Petiver Fellow of the Royal Society London" [British Museum 456.e.11(9)].

<sup>44</sup> *Sloane*; 3332, fol. 220v.

Whenever you goe ashore take with you a Quire of Brown Paper or Collection Book, An Insect Box, Pins & a small Viall half fil'd with Spt. in which draw all your supernummery Flies, Beetles, Catterpillars, & other Insects especially such you shall find in water. Also a Booke for Butterflies & Moths of each of which get all you can find; With a paper bag or two to put all ripe seed, Fruit & berries as also all the shells you meet with both land & water & as many of each sort as you can find; such as are thin & brittle you must put into a Pocket by themselves with moss or any soft leaves to keep them from breaking.<sup>45</sup>

What the natives of the East or West Indies believed when they saw such apparitions come ashore is not recorded; but Jezreel Jones, who collected for Mr. Petiver at Cadiz in Spain in 1701, had his difficulties. He wrote:

The place I am in is in great confusion and the Spaniards are so ill natured upon the rumours of a warr that a Stranger, especially an English[-man], can not tell how to please them; I have been suspected for one that Studys witchcraft, Necromancy, and a Madman by some who observed me following butterflies, picking of herbs and other lawful exercises and I have had much to do to escape the censure of the higher powers.<sup>46</sup>

Besides supplies and instructions necessary for the collection of specimens in natural history, Mr. Petiver gave a variety of material inducements to encourage his correspondents to serve him faithfully. In the case of Jezreel Jones, for example, Petiver, with Dr. Hans Sloane, was instrumental in raising money by subscriptions among his friends to support Jones on a trip to Spain and the Barbary Coast.<sup>47</sup> In

<sup>45</sup> "Directions for Isaac," *Sloane 3333*, fols. 94-v.

<sup>46</sup> Jones to Petiver, April 2, 1701, *Sloane 4063*, fol. 76.

<sup>47</sup> Jezreel Jones, a brother of the Reverend Mr. Hugh Jones of Maryland (who will appear later), had served the Royal Society as Clerk and Assistant to the Secretary during the absence of Edmond Halley in 1698-99, and his trip to Spain and Africa was undertaken with the Royal Society's approval [*Council Minutes*, II, 106, 111, 113. (Ms. in the Royal Society Archives)]. As the Royal Society's treasury did not have "a stock sufficient wherewith to do it," Jones's expedition was financed by Petiver, Sloane, Sherard, Bishop Compton, and others. *Sloane 3333*, fols. 112, 140-3, 153, 190, 250, 268; *3334*, fols. 11, 30-2, 47v, 67; *3340*, fol. 144v; *4003*, fol. 17-24; *4026*, fols. 364-5; *4038*, fols. 144-5, 154; *4039*, fol. 9; *4059*, fol. 199; *4063*, fols. 67, 76, 101; *4066*, fol. 391; and *Stowe Ms. 747*, fol. 140.

other instances, Petiver sent presents to his correspondents, supplied them regularly with newssheets (usually *The Present State of Europe*, which he believed was the most reliable and complete newssheet of the day); furnished them with scientific journals and the latest books in natural history; sent them scientific instruments, such as thermometers and barometers, in special cases in which merit appeared to accompany need; gave free medical advice, often accompanied with free drugs and nostrums and the suggestion that Mr. Petiver would be happy to market more of the latter through the medium of his correspondent; and, in several cases, looked after the welfare of his correspondents' relatives in England. In the early years, Petiver does not appear to have offered to pay for specimens, although he frequently urged his correspondents to employ natives, or boys, or servants to make collections at Mr. Petiver's expense; and he reimbursed his correspondents for any financial expenses incurred in his behalf. In his later years, however, beginning in 1708, Mr. Petiver frequently offered payment for specimens collected. The following letter to one "Mr. Rickets, Gardiner at Mr. Gales at Falmouth in Antegoa" is representative of several of its kind:

Having lately heard an Extraordinary Character of your Ingenuity & Curious Inclinations towards Plants & other parts of Natural productions as Insects, Shells, &c. from our hearty Friend Mr. Fairchild, Gardiner at Hoxton, I here make bold to desire a frequent Correspondence with you & that you may see I am a Lover of these things I have here inclosed sent you some Tables I have lately printed relating to the Natural Productions of your Parts. . . .

For the encouragement of such from whom I shall receive Collections either from Antegoa or any of the neighboring Isles within a year after the Date hereof I promise to pay the following Prises, viz.

5 Shillings for every Quire of Paper filled with the Fair dryed Specimens of any plant there growing that has either Flower, Fruit or Seed on its Leaf or otherwise perfect not exceeding 4 Sprigs of a Sort.

The like for every wide mouthed Quart Bottle filled with small Birds not bigger than Larks & Fish none exceeding Herrings as also all Snakes, Frogs, Lizards or Guanoes not bigger than midling Eeles & all Insects whatsoever as Bees, Wasps, Beetles, Cricketts, Grasshoppers, Fire Flies, Mosquitoes, Ants, Spiders, Scorpions, Centipeds, Worms, &c. Provided in each Bottle there be 10 different sorts of any of the aforementioned drowned in Rum.

The same sum for every Oyster Barrel of Land, River, or Sea Shells as also Crabs, Prawns, Shrimps, sea Urchins, Starre Buttons &c. packt up with whatever Sea Weeds Sponges, Corallines & Mosses the Shoare affords, not exceeding a Handfull of each Weed.

The like sum of 5 Shillings for each Hundred of Butterflies, Moths, & such like Insects as shall be entire & fairly sent in any printed, written, or white paper Booke not exceeding 5 of each sort.<sup>48</sup>

These opportunities for immediate material gain were far overshadowed, however, by Mr. Petiver's promises of fame and recognition in the new Republic of Natural Philosophy. To Samuel Brown, of Fort St. George, Petiver wrote on June 12, 1695, shortly before his first "Century" had been published, to expect soon

something in print from me relating to the Naturall History of those parts you send me from & be assured your frequent Correspondence & returns from China, Persia, Arabia, &c with what an acct. you can get of those gums you mentioned & which are in my Catalogue will be so vast a discovery that your name will live as long as the Noble Science of Physick have a being.<sup>49</sup>

This appeal to his correspondents' vanity became a refrain in Mr. Petiver's letters to which he returned again and again throughout his career. In February, 1694, he opened correspondence with Dr. Daniel Mackenning of Antigua with the usual instructions and gifts of collector's supplies

<sup>48</sup> *Sloane 3336*, fols. 39v-41. The letter is undated; probably it was written about March 30, 1708. Other offers of the same type were made to Crawford of Jamaica (*Sloane 3337*, fol. 71), to Bulkley of Fort St. George (*Sloane 3337*, fols. 32v-33).

<sup>49</sup> *Sloane 3332*, fols. 14-5. Brown was one of Petiver's oldest correspondents, and Petiver gave recognition to his contributions in *Musei Petiverani Centuria Prima*, nos. 32, 37, 38, 47, 55, 60, 64, 81.

and the assurance that as soon as he had received specimens from Antigua, "I will publish to the world with a grateful & just acknowledgment of you, their first Detector.<sup>50</sup>" Petiver's works, both published and unpublished, are filled with these "grateful & just" acknowledgments to his widespread collectors and correspondents.

In 1695, when Petiver's name was before the Royal Society, he used his impending election to that body as further inducement to his correspondents: "then," he wrote to Edward Bartar of Guinea, "I shall have far more frequent opportunities of printing more att large whatever my friends and correspondents abroad shall from time to time send me."<sup>51</sup> And in 1707 he promised another Guinea Coast contributor that whatever was received

shall be communicated to the Royal Society of which illustrious body I have the Honour to be a Member—shall be shewed to them and published either in their Transactions or in such Papers I may have occasion to publish myself . . . and [thereby] let the World know how much we are beholden to you for the discovery.<sup>52</sup>

In at least two instances, Petiver promised to use his influence in behalf of his correspondents' election to the Royal Society. Patrick Blair was one, and he was "most expeditiously chosen" in December, 1712; and Jean Salvador, an apothecary of Barcelona, Spain, was the other. But Salvador, to whom Petiver made his promise in 1715, was not elected, partly, perhaps, because he displayed no eagerness to win the distinction.<sup>53</sup> It seems likely, also, that Mr. Petiver was responsible for such opinions as were expressed

<sup>50</sup> *Sloane 3332*, fols. 45v-6 (Feb. 5, 1693/4).

<sup>51</sup> *Sloane 3332*, fols. 164-6 (Oct. 15, 1695).

<sup>52</sup> Petiver to ?, Feb. 4, 1706/7. *Sloane 3335*, fol. 57v.

<sup>53</sup> Petiver to Blair, June 22, 1712, and Jan. 29, 1712/3. (*Sloane 3338*, fols. 85, 135v-6.) Petiver left the impression that he had done it single-handed. See also Petiver to Salvador, Nov. 15, 1715 (*Sloane 3340*, fols. 183-4). Salvador's son, Jean, migrated to England and did become a Fellow of the Society in 1759.



by the Reverend Mr. John Smyth of Port Royal, Jamaica—but temporarily in London—to Edward Bartar, a servant of the Royal African Company in Guinea. Writing on December 10, 1696, the Reverend Mr. Smyth said:

I understand by severall of the Royal Society that you have honored them highly in sending Mr. Petiver so brave a collection of plants & that they design to make you one of them which will be a means highly to advance you here when you come. You have been enquired of by many of them; now my advice to you is to send over 3 or 4 snakes . . . to send into the country for all the rarities there . . . leave no stone unturned to serve them. It will redound more to your credit & honor then all you will get in the Company's Service. You need not doubt preferment here from the Society; if you will but send them one large collection you will have your name written in their house in golden Letters as their grand benefactor.<sup>54</sup>

Almost twenty years later, Mr. Petiver himself wrote to Mr. William Toller, a surgeon in the service of the South Sea Company, to set forth a similar inducement. After urging Toller forward in the collection of specimens, Mr. Petiver stated:

I can assure you that nothing can better or sooner recommend you to the South Sea Company's Favours or service than communications of this Kind & especially of such Plants, Minerals &c as relate to dying or a medicinall use. One of the S. S. Company, seeing the communications which Mr. [Joseph] Burnet had made to me upon my printing of them they immediately preferred him to be Surgeon at Porto Bello whither he is now gone.<sup>55</sup>

The total effect of Mr. Petiver's blandishments to his correspondents is impossible to assess in view of the aid he received from fellow apothecaries, physicians, surgeons, shipmasters, and missionaries in extending his communications abroad. To cite all of these would be insufferable; but a few will be discussed as further evidence of the manner in

<sup>54</sup> *Sloane* 3332, fol. 250.

<sup>55</sup> Petiver to Toller, Nov. 19, 1716, *Sloane* 3340, fols. 275v-276v. Burnett was a Petiver correspondent only in the latter years of Petiver's life. Subsequently, he was a frequent correspondent of Sir Hans Sloane. He became a physician at the Court of the King of Spain in the 1730's. *Sloane* 3340, fol. 304; 4065, fol. 285; 4072, fol. 295; 4026, fol. 320; 4055, fols. 103 ff.

which Mr. Petiver and his friends operated one of the largest one-man enterprises in cultural cross-fertilization since the days of Erasmus.

James Cunningham was of singular importance to Petiver, to Sloane, and to the Royal Society. This able Scottish surgeon and naturalist collected natural history specimens on a voyage to St. Helena and the Cape of Good Hope in 1696. In 1698 he shipped as surgeon to the English factory at Amoy in China. Here he made further collections, and when he returned to England in the following year he was elected Fellow of the Royal Society upon the recommendations of Petiver and Sloane.<sup>56</sup> In 1700 he went to the Far East again, this time to settle for three years on the Chusan Islands. He gathered large collections there for his English friends and is reputed to have been the first Britisher to make botanical collections in China. In 1703 he moved to Pulo Condore Island to assist an English expedition in an effort to open trade in Cochin China. The expedition, however, fell into the hands of unfriendly Chinese who massacred most of the English and held Cunningham captive for nearly two years. After his escape he wrote jauntily to Petiver from Batavia (April 29, 1707):

I question not but before now you have lamented . . . that you lost one of your Butter-flie catchers, but a Singular Providence has hitherto preserv'd me through a great many dangers, in the midst whereof I could never forgett you, & when clear of yokes & out of Prison I made a few Botanic Collections . . . [and] now send you some Cochinchina Butterflies.<sup>57</sup>

<sup>56</sup> Petiver took Cunningham to Society meetings as his guest, and Sloane proposed him for Fellowship in the Society. *Journal-Book*, IX, 27, 171-2, 174, 177. (Royal Society.) In his fifth "Century," published in 1699, Petiver gave high praise to Cunningham, "A Learned and most *Industrious* promotor of Natural Philosophy." See also, *Philosophical Transactions*, Nos. 255 (1699), 333 (1712).

<sup>57</sup> *Sloane 4064*, fol. 139. Cunningham contributed more to Sloane than to Petiver, and he made many communications to the Royal Society. His adventures are briefly recounted in the *D.N.B.* In the *Add. Mss.* 5292, No. 2 (British Museum) is a water-color "Book of Chinese Plants with the Chinese Names, & their explication in Latin sent by Mr. Cunningham to Mr. Petiver."

Unfortunately, after surviving all these dangers, Mr. Cunningham died at sea en route to England in 1709.

Cunningham's services to Petiver and his friends went beyond the extraordinary collections and communications which he shipped from the Far East. On his trip outward in 1700 he spent some time at the Cape of Good Hope where he solicited the aid of a Dutch resident, John Starrenburgh, who, as Cunningham wrote to Petiver, "has promised to make you Collections of all sorts, so fail not to write him."<sup>58</sup> Mr. Petiver was clearly delighted, the more perhaps, because his previous attempts to win active correspondents at the Cape of Good Hope had proved unusually barren of results.<sup>59</sup> Starrenburgh lost no time in sending a collection of plants, insects, and stones from the Cape and in appealing loudly for collector's supplies, a butterfly net, a thermometer, and a weather-glass. Petiver responded with the usual quires of brown paper and promised to send the instruments in the near future. He also urged Starrenburgh to hire a native, at Petiver's expense, to collect more shells and plants, especially from the interior regions too remote for convenient European penetration. To this request Mr. Starrenburgh replied (March 27, 1701):

As for sending a Hottentot, or Some other body a Collecting, is Impossible, for a hottentot and a hog is the Same, and other people are not to be had for that purpose. I am content to go my selfe if you would but provide mee with necessary things. . . .<sup>60</sup>

Petiver's exchanges with Starrenburgh continued at least until 1709 and, within the limits imposed by poor shipping and communication facilities—made more uncertain by the War

<sup>58</sup> *Sloane 3321*, fol. 52.

<sup>59</sup> Petiver wrote to one Dr. Oldenland of the Cape of Good Hope in 1695, but evidently little was forthcoming from the Doctor, who died before 1698 (*Sloane 3332*, fol. 116v-7; 3333, fols. 105, 149, 183v-4). An Englishman, Alexander Brown, was at the Cape in 1697, but his collections, evidently went to Jacob Bobart at Oxford (*Sloane 3333*, fols. 65, 145v).

<sup>60</sup> *Sloane 4063*, fol. 74.

of Spanish Succession—it was a profitable source for the naturalist and collector of Aldersgate Street.<sup>61</sup> Most likely it was principally from the data transmitted by Mr. Starrenburgh that James Petiver prepared an unpublished paper about “The Natural History of the Great Isle of Madagascar.”<sup>62</sup>

An extraordinary group of apothecaries, surgeons, and physicians in Scotland assisted in the extension of Petiver’s correspondence in 1700 and afterwards. Chief among them were James Hamilton, Robert Rutherford, Patrick Blair, Charles Preston, and James Sutherland. Sutherland, of the Physic Garden in Edinburgh, wrote in 1700 gratefully to acknowledge receipt of Petiver’s first five “Centuries” and to promise to assist “in further augmenting your Musaeum so far as my capacitie and circumstances can allow.” And he went on to say:

All the Surgeons and Apothecaries apprentices in this place are usually my Schollars at the Physick Garden and after they have served in a Shop five years they seek occasions of going Surgeons in Ships in the East or West Indies or any other forrain place that Offers, and so spend their time abroad for the space of six or seven years before they return and set up a shop of their own. And I assure you I shall not be wanting for the future to oblige every one of them to do you all the Service they are capable. In testimony whereof I recommend to you this bearer, Mr. William Porteous, Chirugion, my most speciall friend, ready to go to Sea . . . that he may receive your instructions and Commands.<sup>63</sup>

Later in the same year Hamilton and Rutherford, of the Edinburgh Society of Apothecaries, promised similar co-operation with Petiver; and in 1708 Charles Preston, Superintendent of the Edinburgh Physic Garden, and Patrick Blair, then apothecary-surgeon at Dundee and later a Doctor of Medicine and, as we have already noted, a Fellow

<sup>61</sup> Most of the correspondence extant is in *Sloane 4063*, fols. 61 ff; *4064*, fols. 105 ff.

<sup>62</sup> The manuscript is in *Sloane 3986*, fols. 40 ff. Petiver may have received specimens and data from John Blanckenburgh of the Cape of Good Hope, whose assistance he solicited in 1709. *Sloane 3337*, fols. 33v-4.

<sup>63</sup> Sutherland to Petiver, March 25, 1700, *Sloane 4063*, fols. 9-10.

of the Royal Society of London, added their names to the group of Petiver's Scottish benefactors.<sup>64</sup> From these sources Mr. Petiver not only received much information and many specimens from Scotland, but also he was placed in touch with many trained young Scots who could—and in several cases did—supply him with collections and data from many different parts of the world. Among these was Alexander Christie who, in 1708, sailed for India to become surgeon at the Fort of Bombay accompanied by Petiver's exact instructions and pleas for specimens together with the promise that, upon receipt of a collection, "by the next [shipping] I may send you the Figures of them & your name in print."<sup>65</sup> And another young Scot who was recommended to Mr. Petiver by his Scottish friends was Cadwallader Colden. On September 24, 1708, when he was still contemplating settlement in America, Colden was sent by Charles Preston to Mr. Petiver for "advice & assistance in his studies" and "the way of making Specimens of dry plants & of collecting other natural curiosities."<sup>66</sup> Slightly more than a year later, Mr. Colden, now on the point of departing for Pennsylvania, wrote to Mr. Petiver (October 17, 1709):

The curious world is bound to you for the toil & cost you put yourself to in serving them; and I would be glad to shew how much I think it my duty to give all the Assistance in my power. You may assure yourself I will omit no oportunities of doing it. In obedience to your commands I give you the trouble of this that you may know that I design to go for Pennsylvania from a Port near this [Oxnam] within three weeks or a Month at furthest. Please to lay your commands on me as soon as possible before I go.<sup>67</sup>

Petiver's reply was as prompt as we might expect. Ten

<sup>64</sup> For Hamilton, see *Sloane 4063*, fols. 21-2, 111; *3321*, fols. 175, 182-3; for Rutherford, see *Sloane 4063*, fols. 35, 36, 49, 69, 73; for Blair, whose correspondence with Petiver was more extensive, see *Sloane 3321*, fols. 232 ff; *3337*, fols. 68 ff.

<sup>65</sup> Petiver to Christie, Jan. 31, 1708/9, *Sloane 3337*, fol. 35.

<sup>66</sup> Preston to Petiver, *Sloane 4064*, fol. 178.

<sup>67</sup> *Sloane 4064*, fol. 213.

days later he addressed Colden with thanks for "your kind assurance of serving me when in Pennsylvania."<sup>68</sup> So was forged another link—although in this case a weak one—in Mr. Petiver's chain of overseas correspondence.

As we have reserved Petiver's American correspondents for more detailed consideration in a later portion of this account, perhaps we may be permitted to draw attention to three more of Petiver's English friends who enlarged his collections in natural history and extended his philosophical correspondence. These men were Dr. William Sherard, Dr. John Lecaan, and Mr. (later the Reverend Mr.) James White. Their paths crossed in a few instances, and as they all made similar contributions to Mr. Petiver we may treat them together.

Sherard was a kinsman of James Petiver. Educated at the Merchant Taylor's School and St. John's College, Oxford, he became a botanist of great promise and studied (1686–88) at Paris with Tournefort and at Leiden with Paul Hermann. Either as a tutor or as a student he spent nearly all the decade of the 1690's travelling and botanizing, first in Ireland, then in Holland, Italy, and Germany. After a brief return to England, he was appointed Consul at Smyrna (1703) from whence he returned to England only a few months before Mr. Petiver's death. In the years before 1700, however, Sherard had served as an unusually active agent for Sloane, Petiver, the Temple Coffee House Club (to which he belonged), and the Royal Society of London. He collected specimens, bought continental books, and greatly extended the philosophical correspondence and exchange of his English friends. He placed Mr. Petiver in communication with Paul Hermann of Leiden, prepared the way for exchanges with Caspar Commelin and Fredrik Ruysch of Amsterdam, strengthened Petiver's reputation with Tournefort, Sebastien Vaillant, and others in Paris, and introduced the name of

<sup>68</sup> *Sloane* 3337, fol. 63v.

Petiver to Fra Silvio Boccone, botanist to the Duke of Tuscany, to Antonio Bonnani and Fra Francesco Cupani of Sicily, and to the Principe della Cattolica himself in Rome.<sup>69</sup>

While he was assisting Dr. Hermann with his work in the Physic Garden at Leiden during 1694-95, Sherard's path crossed that of Dr. John Lecaan. Dr. Lecaan, who had been associated with Mr. Petiver in London and had corresponded with him since the early 1690's, was a physician in the service of the English army during the War of the League of Augsburg. He collected specimens for Petiver in Holland and Brabant and, between military campaigns, managed an occasional visit to London. There he, too, sometimes assembled with the Temple Coffee House Club. With the permission of Dr. Hermann he gathered specimens from the Leiden Physic Garden for Petiver, and he appears to have had a finger both in establishing Petiver's correspondence with Ruysch and Commelin at Amsterdam and with one Dr. Oldenland, a servant of the Dutch East India Company at the Cape of Good Hope.<sup>70</sup> During the next war—the War of Spanish Succession—Dr. Lecaan served as "Physician General to Her Majesties Forces & Hospitals in Spain." In this capacity he took part in the Catalonian Campaign of 1705-1706, and, upon the fall of Barcelona in the autumn of 1705, he met that Catalan apothecary, Jean Salvador, to whom we have referred before. Salvador appears to have been one of the "hardy Catalan citizens" who was "ready to welcome the attackers with enthusiasm."<sup>71</sup> In any case, he quickly embraced a philosophical correspondence and exchange of specimens with Mr. Petiver,

<sup>69</sup> George Pasti, Jr., *Consul Sherard (Ms. in loc. cit.)* adds greatly to the earlier sketches of Sherard. See especially pp. 92 ff. See also Petiver's letters in *Sloane 3333*, fols. 254-7.

<sup>70</sup> See the various letters between Petiver and Lecaan in *Sloane 3332*, fols. 52v, 217-8, 238; 4067, fol. 15; 4070, fols. 12-3. Petiver to Dr. Oldenland, 1695-98, in *Sloane 3332*, fols. 116 ff.; 3333, fols. 105 ff.

<sup>71</sup> Arthur Parnell, *The War of The Succession in Spain*, London, 1905, p. 119.

an exchange which continued with much satisfaction on both sides until the end of Mr. Petiver's life.<sup>72</sup>

At Barcelona Dr. Lecaan's path crossed that of James White, another of Petiver's correspondents, although it does not appear that they were acquainted. White returned to England from a voyage to the East Indies in November, 1702. He had served as a surgeon in the East India Company's ships, brought back specimens and oriental "physic" for both Petiver and Sloane, and now (1702) he sought an appointment as surgeon to His Excellency the Lord of Peterborough.<sup>73</sup> With Dr. Sloane's assistance the position was won, and as surgeon to Charles Mordaunt, the third Earl of Peterborough, Mr. White turned up at Barcelona, where the Earl was one of the commanders of the British Expeditionary Forces. Until the end of the War Mr. White's communications to Petiver were few. In the winter of 1712-13 he was in London for a time, where he won a new appointment, this time as physician to Robert Sutton, second Baron Lexington, one of the plenipotentiaries chosen to conduct negotiations in Spain relating to the Treaty of Utrecht.

White's return to Spain coincided with renewed efforts on the part of the Royal Society of London to revive and extend its correspondence abroad.<sup>74</sup> Among the fruits of these attempts was a letter from Queen Anne directing her "Ministers and Governors that go abroad, to contribute all they can . . . towards promoting the design for which the Royal Society was first instituted. . . ."<sup>75</sup> James Petiver

<sup>72</sup> Salvador had studied botany in both Italy and France. See his letter to Petiver, Dec. 24, 1706, *Sloane 4064*, fol. 124. Other letters regarding both Dr. Lecaan and Salvador are in *ibid.*, fols. 176, 184, 254; and in *Sloane 3336*, fols. 63 ff; 3337, fols. 82 ff; 3338, fol. 96; 3339, fol. 25.

<sup>73</sup> White to Petiver, Nov. 4, 1702. *Sloane 4063*, fols. 180-1.

<sup>74</sup> *Journal-Book*, XI, 347. Various letters by Secretary Richard Waller in 1712-13 in *Guard-Book W-3*, Nos. 72, 75-6, 78, 80, 83, 85; *Letter-Book*, XV, pp. 1-2, 4-5, 6-9 ff. (All in the Royal Society Archives.)

<sup>75</sup> The letter, dated Feb. 7, 1712/3, is published in C. R. Weld, *A History of the Royal Society*, London, 1848, I, 420.



was appointed to a committee created by the Royal Society to draw up instructions and queries for English envoys. This appointment placed him in a position to promote his own as well as the Royal Society's correspondence abroad, and he took pains to impress James White with the fact that these efforts bore the specific approval of the Queen.<sup>76</sup> Spain, said Mr. Petiver, and especially the Spanish Colonies overseas, can supply much by way of specimens and information in natural history; and Mr. White was implored to use his best means to open philosophical correspondence in those areas both for the Royal Society and for Mr. Petiver himself.

Mr. White replied that he would be happy to cooperate, but he warned that the botanists of Spain could ill afford the time and expense of collecting and that, if Spaniards were to be persuaded to make collections in natural history, either the Queen or the Royal Society must "be at the necessary Charge."<sup>77</sup> However, White reported that the King of Spain had ordered the Governors of Peru and Mexico "to employ people to get specimens of all vegetables in those parts"; and that he had persuaded Dr. Frederick Bottoni, one of the Queen's physicians, to undertake philosophical correspondence with Mr. Petiver. Shortly afterwards, White also enlisted the cooperation of Dr. Langdale, another Royal Physician at the new Bourbon Court of Spain, to communicate with Petiver,<sup>78</sup> and by September, 1713, the English apothecary was betraying his

<sup>76</sup> Petiver to White, n.d. (c. Feb. 15, 1712/3). *Sloane 3338*, fols. 143-4.

<sup>77</sup> White to Petiver, Madrid, May 29, 1713. *Sloane 4065*, fols. 107-8. Petiver read White's letter to the Royal Society on June 18, 1713. *Journal-Book*, XI, 365-6. (Royal Society.)

<sup>78</sup> The natural philosophers of Spain proved to be foreigners in the main. Dr. Langdale, a French physician to the Queen, wrote Petiver (Dec. 1, 1713) stating that the King of Spain loved the new science, but that the subjects showed little interest. (*Sloane 4065*, fols. 133-4). And Dr. Bottoni, who was a Sicilian whose father, D. Bottoni, was a Fellow of the Royal Society of London on the Foreign List, wrote on June 4, 1713, that the Faculty of Physic in Madrid relied on "fruitless Subtiltie" and experimental philosophy moved "but slowly" in Spain. *Sloane 3339*, fols. 23-4v.

own and the Royal Society's eager interest in the well-guarded Spanish secrets regarding the "rare quinquina or *Cortex Peru.*"<sup>79</sup>

In the meantime, Petiver had written to Henry Wortley, the English envoy to Portugal, who had arranged a philosophical exchange with Dom Pedro d'Almeida.<sup>80</sup> And James White furthered these efforts by writing to merchants in Lisbon and in Brazil. He urged Humphrey Hardwicke, "Vice Consul for the English Factory" at Lisbon, to find Portuguese virtuosos who would correspond and exchange specimens with Mr. Petiver; and he asked Hardwicke to deliver a letter to a Lisbon apothecary whom White knew, one Don Antonio, "a little black man & very Courteous, & I believe honest." Don Antonio, in turn, was begged to find Jesuit fathers or others who resided in Brazil

to correspond with my friend, Mr. James Petiver, who will be at all charge as he is with his other correspondents for Letters or parcels of plants, shells, insects, &c. . . . I know there are few Portuguese who have a taste this way. Nevertheless, I hope my Friend Antonio will begin so good a work for the promotion of Learning in general for the good of Mankind, & for making Portugal remarkable for its industry in this kind as well as their neighbours.<sup>81</sup>

<sup>79</sup> Petiver to Bottoni, Sept. 3, 1713, *Sloane 3339*, fol. 31.

<sup>80</sup> Petiver to Wortley, Nov. 25, 1713. *Sloane 3339*, fol. 48v. Other parts of the Petiver-Wortley correspondence are in *Sloane 3340*, fols. 53v ff; 4065, fols. 170, 215. Dom Pedro appears to have been slow to respond to Petiver's entreaties and to have shown no interest at all in becoming a Fellow of the Royal Society of London through Petiver's good offices there. Petiver wrote, however, on Dec. 11, 1716, that the Portuguese envoy to London "did me the Honour to make me a 2 Hours visit in my dirty parlour and at the time I desired he would be pleased to acquaint the Court that whatever I could spare mentioned in that collection I would upon the first Notice spare him." But there were no requests, to Petiver's consternation. See Petiver to "Don Pedro d'Almayda," *Sloane 3340*, fols. 305-306v.

<sup>81</sup> Dated August 24, 1712. *Sloane 4065*, fol. 54. White wrote to Harwicke, Oct. 15, 1714, to reinforce this plea and to praise Petiver's collections which, from "the two Indies" alone "are worth 1000 lbs. sterling." The padres of Brazil, said White, should be proud to "enter into this sort of correspondence with a man so Eminent, seeing they all have an Itch after this kind of learning. . . ." *Sloane 3337*, fol. 151-v. The "Itch" was obviously much exaggerated by Mr. White.

Again, White appealed to Joseph Gulston, Jr., a merchant of Lisbon who was on the point of visiting Brazil, to serve Mr. Petiver, "Botanist to the Royal Society." Whenever "you or your brother are diverting yourselves in walking," said Mr. White, you are begged to collect "any curious insects, as odd kinds of Grasshoppers, butterflies; small serpents, as Scorpions; Snakes of any rare kind, as the Cobra, Capella, &c" for Mr. Petiver:

He is a man of good Interest with People of the greatest quality in the land, and I know Merchants have oftentimes business that want such assistance & I can assure you he's a gratefull man & of a generous temper, & you may command him by doing of this trifling business if occasion should serve without prejudice to you in any other respect; for he'll be at any charge.<sup>82</sup>

Mr. Petiver had already supplied Gulston with brown paper and printed instructions for the preservation of specimens, together with another plea for the assistance of "the Reverend Fathers there, particularly such whose inclinations tend to the study of Nature." The exchange was desired the more, said Petiver, "because wee have never seen anything from that part of the Continent of America."<sup>83</sup>

These latter attempts, however, appear to have yielded very little. Neither the Spanish nor the Portuguese exhibited a lively interest in natural history; and they were as reluctant to share with the English information about Peruvian Bark as their ancestors had been to share the wealth of Potosi. Moreover, in 1715, Mr. White surprisingly gave up his work as a surgeon, took the cloth, and moved to Jamaica, where he became rector of the Parish of Vere. He continued to promote Mr. Petiver's interests until the latter's death. But his Iberian connections were severed, and his

<sup>82</sup> Oct. 15, 1714. *Sloane 3337*, fol. 152.

<sup>83</sup> Petiver to Gulston, Nov. 16, 1711. *Sloane 3337*, fols. 157-8.

Jamaican efforts in behalf of Mr. Petiver were unimpressive.<sup>84</sup>

In addition to these friends who helped to extend James Petiver's scientific exchanges in various parts of the world (and the above account is by no means exhaustive), three events occurred during Petiver's career which enabled him to tap still other sources.

The first of these was the English visit of Peter the Great in the early months of 1698. During this extraordinary visitation Petiver became acquainted with Dr. Gottfried Klein, a German physician in attendance upon the Czar. In part, at least, the association centered around medical supplies, and Petiver's first letter to Dr. Klein after the latter's return to Russia referred largely to drugs shipped to him *via* Archangel. But Mr. Petiver had let no opportunity slip by to establish a scientific exchange with such a little known quarter. He asked for the usual plants, shells, and insects, suggested that the Doctor hire a poor Muscovite to collect for him, expressed hope that items might be gathered from China, and begged specifically for some caviar and a sample of "Muscovy glass, by some called Isingglass, being such [as] they make ship Lantherns with."<sup>85</sup> In the course of the next three years Petiver sent seeds, clothing, books, and other items to Dr. Klein and exchanged several letters with him. But the latter found it difficult to ship his collections to London, although Mr. Petiver's eighth "Century," which appeared in 1700, acknowledged receipt of a collection of plants from Moscow, some animals collected on a voyage

<sup>84</sup> *Sloane* 3340, fols. 177v-8v, 242v-3; 4065, fols. 278-9. In the last, a letter from White to Petiver, dated Spanish Town, April 2, 1717, White refers Petiver to Henry Barham (F. R. S.), of whom there will be more below, and states that "the heat is so extreme & plantations so distant from one another, that it is almost impossible to go a simpling on this Island." White also sends regards to friends at Oriel College, Oxford, suggesting that he had been a student there.

<sup>85</sup> Petiver to Klein, Jan. 28, 1698/9. *Sloane* 3333, fols. 248-9.

to Azov, and some shells from Persia, all from "Dr. Godfried Klein, one of the Czar's Physicians."<sup>86</sup>

In the autumn of 1698, only a few months after the Czar's departure from England, Edmond Halley sailed on his first voyage into the South Atlantic. As commander of H.M.S. *Paramour Pink*, he set forth with official instructions to observe variations of the compass in the South Atlantic, to establish with greater accuracy the latitudes and longitudes of the ports and islands there, to try to discover and establish the true position of "the Coast of Terra Incognita, supposed to lye between Magelan's Streights and the Cape of Good Hope," and to visit the English West Indies plantations, "or as many of them as conveniently you may," in order to check their respective geographical positions.<sup>87</sup> Leaving the Downs on October 24, 1698, the *Paramour Pink* was forced to put in at Portsmouth for repairs before she touched Madeira and the Cape Verde Isles, crossed the Line and curved far southward before turning northward along the coast of Brazil, continued on to Barbados and as far north as the Banks of Newfoundland before returning to Plymouth on June 23, 1699. The voyage was cut short by insubordination of officers under Halley's command and, after the difficulties had been settled in the London Admiralty Court, Halley sailed on an even more extensive voyage in 1699-1700.<sup>88</sup>

It is with the first of these voyages that we are concerned. For James Petiver prevailed upon his friend and fellow Royal

<sup>86</sup> *Musei Petiveriani Centuria Octava*, London, 1700, pp. 68, 80. The correspondence between Petiver and Klein is largely in *Stoane 4063*, fols. 2, 8, 24, 38, 52.

<sup>87</sup> Eugene Fairfield MacPike (ed.), *Correspondence and Papers of Edmond Halley (History of Science Society Publication, n.s., ii, Oxford, 1932)*, pp. 8, 110-1, 243; Alexander Dalrymple, *A Collection of Voyages Chiefly in The Southern Atlantick Ocean*, London, 1775, pp. 1-77. Dalrymple published the journal of "Dr. Halley's First Voyage" from "his *Original MSS* in possession of the Board of Longitude."

<sup>88</sup> See my article, "The Course of Capt. Edmond Halley in the Year 1700," *Annals of Science*, I, 294-301 (July, 1936).

Society member, Captain Halley, to take with him Petiver's eldest apprentice, George Harris. We are not informed in what capacity George went, whether as cabin boy or in some more exalted position; but we do know Mr. Petiver's meticulous "Directions for George to take with him," which ran as follows:<sup>89</sup>

Procure Correspondents for me wherever you come, & take directions how to write them, & procure something from them [with whom] you stay, showing their Slaves how to collect things by taking them along with you when you are abroad.

Engage some Persons where ere you come to procure you all the smallest of each Kind of Lizard, serpent, &c. while you stay & if you can learn of them their Names either Native or otherwise or other properties that may belong to them fail not to transcribe it. The like do as to all small Beasts, Birds & Fishes & whenever you catch any of these last very large looke into their gutts & Stomach & take out what Animalls you shall find there.

Take always your pencil booke with you & never fail to write down any thing observable as soon as you see it which transcribe into your Observatory booke as soon as you can.

Send part of such Collections you have by you by every Ship you shall meet with, with 2 or 3 letters of advise by other hands to prevent their miscarrying.

At the Island of Providence or the Bahamas you will find Mr. Graves & enquire there for Mr. Benj. Hill, Surgeon, & if possible procure some account & Specimens of the [*illegible*] Logwood, Campeche, Brasille &c.

Att Jamaica pay my respects to [the Reverend] Mr. [Henry] Pasmore, [Anthony] Biggs, & [Roger] Fenwick &c.

Att Barbados you will find Dr. [David] Crawford, Ramsey & Dr. Banes to all whom give my Service & procure (besides what you get yourself) Collections from them.

Att Antego lives Dr. [Daniel] Mackenning, Mr. Porter & Mr. Brodie to whom as above.

Make it your greatest effort to settle me Correspondents amongst the Spaniards & Portuguese & most particularly at Brazil where you

<sup>89</sup> Dated Oct. 18, 1698. *Sloane 3333*, fols. 235-6. Letters to George are in *ibid.*, fols. 192, 229v. Petiver told James Cunningham of "My eldest servant I have lately sent with Mr. Halley of our Royal Society," *ibid.*, n.d. (c. Nov., 1698), fol. 184.

must get what account you can of the 3 sorts of Ipecancuanha & the Balsam; but above all wherever you come inquire after the Cort.[-ex] Peru which they call Cascarilla & by some Gannanaperide [?] & if possible procure branches of it.

Give my printed Directions & Centuries to such you can engage & whilst you are with them give out 2 or 3 quires of brown paper & Insect books to have filled by their servants or slaves which requite as they shall deserve.

Wherever you come enquire of the Physitians or Natives what herbs &c they have of any Value or other use as in Building, Dying &c or what shrubs, Herbs etc they have that yield any Gum, Balsam, or are taken notice of for their Smell, taste &c & each of these get Samples with the names they call them by.

The like learn of them in relation to their Beasts, Birds, Fishes, Insects, Fossills &c & whatever they report take down in writing & if possible procure the things themselves.

Coppy out some of the most materiall of your Observations & have them ready to send with what Collections you have by you to send by every Ship & withall let me know what Persons you have engaged & the Ports you next design to touch at & what else you shall think worth communicating to

Your Loving Master & Friend

Oct. 18, 1698

J. P.

Obviously Mr. Petiver held high expectations for the returns to follow upon George's voyage. But the difficulties that arose among Halley's officers weakened the morale of the crew so as to reduce their accomplishments as well as to shorten the voyage. Moreover, the Portuguese governors in Brazil would permit no one ashore from the English vessel and, although they furnished fresh supplies for Halley's men, they made it impossible for George to collect specimens, correspondents, or scientific information there. In consequence of these unfortunate occurrences—and possibly because of unrecorded failures on the part of George himself—there appears in Petiver's correspondence and papers remarkably little evidence of George's efforts in his

master's behalf on this voyage. Still, beginning with his fourth "Century," published in 1699, Mr. Petiver described specimens gathered on Halley's expedition, including a few contributed by "my worthy Friend Capt. Halley" himself.<sup>90</sup> And the relative failures of the expedition did not dim Mr. Petiver's exhibition of resourcefulness in arranging this extraordinary voyage for his apprentice.

The third event by means of which Mr. Petiver was able to extend his scientific tentacles took place several years later. In May, 1711, he received word from John Hermann of Leiden that the latter's mother, Madame Anna Hermann, had resolved to sell at auction on the following June 29th (n.s.) the contents of her museum.<sup>91</sup> The collection was that of the late Paul Hermann, with whom Petiver had had a brief correspondence before the former's death in 1695, and it contained many rare specimens from the Far East. Mr. Petiver imparted this news to his friend, Dr. Sloane, who determined to purchase parts of Hermann's collection and who commissioned no less a person than Mr. Petiver himself to represent him at the auction.

The resultant short trip to Holland was evidently the only occasion on which James Petiver set foot outside England, and he talked about it to his correspondents for months afterwards.<sup>92</sup> He sailed from Harwich on June 7/18, arrived at The Hague the same day, proceeded to Leiden to view Madame Hermann's collection and to check items

<sup>90</sup> See Petiver's fourth and fifth "Centuries" (1699), Nos. 346-7; eighth "Century" (1700), p. 77.

<sup>91</sup> J. Hermann to Petiver, n.p. or d., *Sloane 3321*, fol. 262. Marked "Recd. May 22, 1711."

<sup>92</sup> He also wrote a will "In case I should dy before my Return from Holland," leaving to Dr. Sloane "all my Collections of Natural Things whatsoever," a bequest of £100 for "the Discovery & collecting Natural Productions" for the Royal Society's Repository, and £100 for the benefit of the Physic Garden at Chelsea. None of these bequests were in his will as later proved in 1718, although personal bequests to his relatives and to charity were similar in this and in the last will. Petiver to Sloane, Harwich, June 7, 1711. *Sloane 4042*, fols. 295-6.



in the catalogue issued for the sale, and then moved on to Amsterdam where, until just before the auction on June 18/29, he sought out his Dutch correspondents. Dr. Fredrik Ruysch received him "civilly" and promised greater hospitality after Madame Hermann's sale was over. Petiver returned to Leiden for the auction and, as he wrote to Sloane, "I was present all the while & have bought you the greatest share of the choisest of them."<sup>93</sup>

Afterwards Mr. Petiver spent nearly the whole of July in Holland arranging to ship to England the items purchased for Dr. Sloane and visiting with Dutch naturalists and collectors.<sup>94</sup> Besides Ruysch, he met Caspar Commelin, who showed him a coffee tree with "near 2 pounds of ripe Fruit." He viewed the fine collection of insects and reptiles made by the Dutch apothecary, Albertus Seba; he visited Madam Maria Sybilla Merian, who had concentrated on the natural history of Surinam and from whom Petiver already had received several specimens; he saw the museum of his friend, Levinus Vincent, and believed it to contain the best collections in natural history in Amsterdam; he met the widely known Dr. Andreas Gundelsheimer, who had accompanied Tournefort on the latter's extensive scientific tour of the Levant some years before; and through Gundelsheimer's good offices also, as Petiver wrote, "I had the Honour to wait on the King of Prussia," whom Dr. Gundelsheimer served as chief physician.<sup>95</sup> In short, as Petiver stated after his return to England, in Holland "I have seen vast magazines of all the Rarities in Nature & been highly carest by all the most

<sup>93</sup> Petiver to Sloane, Leiden, June 18/29, 1711. *Sloane 4042*, fol. 305.

<sup>94</sup> J. Hermann to Petiver, Leiden, July 14, 1711 (n.s.), *Sloane 3321*, fol. 265; Petiver to Mr. Carey, July 31, 1711; "I am just return'd from Holland. . . ." *Sloane 3337*, fol. 141.

<sup>95</sup> Joseph Pitton de Tournefort, *A Voyage into the Levant*, London, 1718, I, 2; Petiver to Patrick Blair, Feb. 12, 1711/2, *Sloane 3338*, fols. 28-31.

curious men in those parts, & with whom I have fixt a settled correspondence."<sup>96</sup>

To be sure, Petiver's visit to Holland enlarged his vision and both widened and strengthened his correspondence. But the impression remains that Mr. Petiver's Dutch hosts were not universally enthusiastic in their appraisal of Mr. Petiver. Their principal criticism stemmed from Petiver's practice of describing and of making illustrations of insects and other items in natural history from imperfect specimens. In his eagerness to collect rarities, Mr. Petiver had long been inclined to ignore imperfections and to be content with the most haphazard accounts of the origins and habitats of items received. In some measure, these shortcomings followed inevitably upon the dependence which Petiver and most of his fellow naturalists of that day placed upon dried specimens collected by amateurs who, in many cases, were incapable of supplying scientific data with regard to habitats, growth cycles, and the like. To these weaknesses, of which Petiver's critics were as guilty as he, Mr. Petiver added another: "No insects will come amiss," he had written

<sup>96</sup> Petiver to George Jago, Nov. 1, 1711, *Sloane 3338*, fol. 3. In at least one instance, however, Mr. Petiver was turned away. When he called on Anthony van Leeuwenhoek at Delft he was not admitted. Mr. Petiver was incensed and wrote a protest to Leeuwenhoek after he had returned to England. Leeuwenhoek replied: "I have rec'd your letter of the 2nd of August, 1711, signifying your dissatisfaction that you were not received into my house. I intreat you that you will not take it amiss since I admit no body that endeavours to see me but such as bring Recommendations with them. I gave a civil reception to Mr. Alexander Stewart, Doctor of Physick, who also presented me with his disputation upon his taking his Degree, he having brought me the transactions and the letter from Dr. Sloane which you had given him. There were also two other Gentlemen with him, and I showed them several of my Observations; after which time I expected you several Days, and if you had left Dr. Sloan's letter by you, you had not mist of a friendly welcome in my home, but you were refused admittance not only upon the account of your being unknown, but because about 8 or 10 Days before 26 persons had taken up 4 Days of my time all of them having recommendations to me excepting a Duke or Count and their Governour with whom I was so tired that the Sweat ran down from all parts of me; this being the case I beg of you that you will not take it ill that to my great sorrow you were not admitted, but if my weak legs would have carried me I would have gone on purpose to Rotterdam to have found you out." Leeuwenhoek to Petiver, Delft, August 18, 1711. *Sloane 3338*, fol. 8.

to William Sherard in 1697, "& so I can have them cheap I shall not stand upon the loss of a leg or a wing."<sup>97</sup> Even earlier, he had been delighted when correspondents sent him chaff from hay mows containing weed seeds that produced varieties of "curious plants" with which Mr. Petiver had been unfamiliar.<sup>98</sup> And now, in 1711, he was still willing to publish, as if in the best scientific manner of the day, accounts of natural history based upon broken or otherwise imperfect specimens! He wrote to Ruysch and Seba to thank them for their hospitality to him and solemnly requested them "to lay by for me what broken Insects you dayly receive from Surinam . . . &c."<sup>99</sup> As he clearly indicated his intention of publishing accounts of these specimens with the usual acknowledgments to the donors, some of his Dutch acquaintances became outraged by these doubtful scientific practices. Albertus Seba, the Amsterdam apothecary, snorted that Mr. Petiver was only a junkman, that his collections were junk, and that, as his publications were founded upon such trash, they had little or no scientific value. The censure was harsh and, coming from one who had never seen Mr. Petiver's collections, it was not wholly justified. The attempt scientifically to describe and to classify the materials of natural history upon the basis of dried specimens was, as John Ray and many others of Petiver's day recognized, a method likely to produce some errors. But, in spite of the hazards, it *was* a fruitful method; and no better ways of attacking the problems involved had become widely practicable. James Petiver, like most of his

<sup>97</sup> July 27, 1697. *Sloane 3333*, fols. 26-8.

<sup>98</sup> Petiver to Walter Spragg (in Portugal), Dec. 18, 1693. *Sloane 3332*, fol. 36-v; Petiver to George Wheeler (in Norway), Aug. 21, 1695. *Ibid.*, fols. 163-4.

<sup>99</sup> Aug. 31, 1711. *Sloane 3337*, fols. 130-32v. A similar request was made to Seba in 1712: "whatever of these you can spare & tho not intirely perfect will be very acceptable to me. I am very ambitious of Dedicating a Plate to you of such you be pleased to send me." *Sloane 3338*, fol. 71. Evidently Seba was not taken with the thought of having dedicated to him a plate based upon a broken or imperfect specimen.

contemporaries in England and in Holland alike, employed this method and, although he preferred perfect specimens for his work, he was clearly of the opinion that a broken specimen—an insect without “a leg or a wing”—was better than no specimen at all. And so his zeal warped his scientific judgment and, to some extent, damaged his reputation as a naturalist.

The damage, however, was not crippling. Petiver's correspondence continued to flourish (even Seba's exchange with him was not wholly broken off); and Mr. Petiver continued to pursue it with the same ardor that he had displayed in the early 1690's.<sup>100</sup> To a very large extent his scientific publications still depended upon the specimens and information which he received from his correspondents. Before the appearance of his tenth and last “Century” in 1703, Mr. Petiver had embarked upon a similar enterprise entitled *Gazophylacii Naturae et Artis: Decades decem*, with engravings of animals, insects, plants, and fossils, with short descriptions of them, and with the usual “gratefull” acknowledgments to donors. Five of these “Decades” appeared between 1702 and 1706, and in the following year Mr. Petiver made a brief and unsuccessful excursion into journalism with the publication of *The Monthly Miscellany: or, Memoirs for the Curious*. This attempt at the popularization of science lasted less than a twelvemonth, but before its demise Mr. Petiver was preparing *A Catalogue of Plants found on the Mountains about Geneva . . . as observed by Gesner, the Bauhines, Chabraeus, and Ray* (1709), and he went on to publish *Catalogus Classicus et topicus omnium rerum figuratam in V. decadibus* (1709–11) and *Pterigraphia Americana* (1712). By this time, too, Petiver had evolved a plan to publish by subscription a set of volumes to illus-

<sup>100</sup> See his letter to John Martin, the instrument-maker, Aug. 27, 1711, to urge Martin to persuade his customers to correspond with Petiver. *Sloane* 3337, fol. 141v.

trate all the British plants. The plan aroused considerable initial enthusiasm among his friends, and the Royal Society gave it hearty approval. A sample of the method proposed appeared in 1713 with the title, *A Catalogue of Mr. Ray's English Herbal, illustrated with Figures*. But the cuts were too small, and the occasional errors and omissions noted by Petiver's critics, together with an obvious lack of enthusiasm for the undertaking outside of Petiver's circle of immediate friends, led subscriptions to languish.<sup>101</sup> Petiver himself grew discouraged both at the magnitude of the task and the sluggishness of subscriptions; and, as his health was beginning to fail, the work remained unfinished at his death.<sup>102</sup>

The interdependence of the bulk of Petiver's scientific publications and his scientific correspondence went far to explain the care which Petiver lavished upon his correspondents and the trouble and expenses he occasionally bore in their behalf. Moreover, it is hardly surprising that Mr. Petiver became angry with those persons who, having accepted equipment and promised collections and information about the natural history of the places to which they were going, sailed forth with never a word or a specimen to their eager benefactor of Aldersgate Street in London.

No doubt some of these irresponsible ones deserved the rebukes and scorn which Mr. Petiver poured out to them by letter. When, for example, George Wheeler failed to respond from Norway as quickly as Mr. Petiver believed he should, the latter wrote nastily to point out that Wheeler had been

<sup>101</sup> For a few of the many letters of comment and criticism, see: Henry Nicholson to Petiver, Dublin, July 25, 1713 (*Sloane 4065*, fol. 116); J. R. Rand to Petiver, n.p., Jan. 5, 1711/2 (*Ibid.*, fol. 12); George Preston to Petiver, Edinburgh, Oct. 24, 1713 (*Ibid.*, fol. 124).

<sup>102</sup> The works listed above are not a complete list of Petiver's published works, but rather a list of those which, as a whole, depended upon Petiver's scientific correspondence. The best bibliography of Petiver's work appears in Pulteney, *Historical and Biographical Sketches of the Progress of Botany in England*, II, 33 ff. The catalogue of the British Museum includes a few additional titles, with a few of doubtful authorship.

given "plain, full & easie directions" and that "any child of 6 years old is capable of doing" the simple tasks which Petiver had requested.<sup>103</sup> When Wheeler's shipment arrived shortly afterwards, Mr. Petiver wrote a doubtful apology:

I heartily beg your pardon for the harshnesse of my last letter, it proceeding from my Ardent Zeal to Natural History & now since you have found out the way to supply me you will for the future I hope never give me in the like manner the occasion to complain.<sup>104</sup>

To Edward Bartar Petiver wrote alternately to encourage him and to chide him for negligence and ingratitude, sometimes adopting a work-for-the-night-is-coming tone for, as Mr. Petiver piously observed, "we know not how long we have to live."<sup>105</sup> Again, when the Reverend Dr. John Smyth had been in Jamaica for two years without sending any returns, Mr. Petiver icily remarked that Smyth's promises must have been "the happy invention of your mercuriall brain," and he requested Dr. Smyth, unless he chose to send a collection by the next shipping, to deliver the collector's supplies to another of Petiver's correspondents in Jamaica.<sup>106</sup> And on at least one unhappy occasion Petiver lost one of his best scientific correspondents because of an intemperate pen. The case was that of Samuel Brown of Fort St. George, with whom Petiver had conducted an exceptionally rich exchange since 1690. In 1698, after Petiver had angrily accused Brown of negligence and want of gratitude, as well as with tampering with one of Petiver's shipments intended for another person, Brown wrote sadly to point out that the ship by which he had intended to send his collections to Petiver had been "unexpectedly dispatched

<sup>103</sup> May 18, 1695. *Sloane 3332*, fols. 123-4.

<sup>104</sup> Oct. 29, 1696. *Ibid.*, fol. 223-v.

<sup>105</sup> Oct. 15, 1695. *Ibid.*, fols. 164-6. Other letters to Bartar occur in *ibid.*, fols. 33v, 48v, 55v-6, 84-v, 125-6, 251.

<sup>106</sup> Jan. 13, 1695/6. *Sloane 3332*, fols. 191v-192.

from Bengall (and did not return again)"; that he had inspected the shipment which had been misdirected (being intended for the Cape of Good Hope) only in the hope of speeding its delivery to the proper consignee; that "'twas the will of Providence to take from me the friendship of the only person in England whose Correspondence I coveted & on whom I could firmly confide"; and that "I intend to make a clear house and to have no more to do with Botany."<sup>107</sup> In spite of Mr. Petiver's apology for his "passionate expressions" born of disappointments "which my nature cannot easily brooke," he found his scientific correspondence with Brown to be terminated.<sup>108</sup>

The case of Samuel Brown illustrated that in his zeal Mr. Petiver often failed to take into account—as we of the mid-twentieth century are wont to forget—the slowness and the hazards of transoceanic communication and transport of that day. So impatient was Petiver that he occasionally began to hound his correspondents before they had had an opportunity to make him a return; or protested against their alleged faithlessness when their letters or their shipments, or both, had been lost in transit. Storms at sea and other accidents born of piracy, war, and ordinary human failures led to many such losses. In recognition of these hazards many of Petiver's correspondents—and sometimes even Mr. Petiver himself—duplicated their letters and occasionally their collections of specimens and dispatched them by different vessels in the hope that one of the missives might reach its mark. Obviously, the losses were greater in the

<sup>107</sup> Brown to Petiver, Fort St. George, Sept. 30, 1698. *Sloane 4047*, fols. 29–31. It is evident from the letter that Brown was seizing upon Petiver's ill-judged outburst to break off his collecting for Petiver. But he continued to order apothecary goods.

<sup>108</sup> Petiver to Brown, n.d. (c. Nov. 14, 1698?). *Sloane 3333*, fols. 216–222v. Brown died in December, 1698 [see John Foquett (who married Brown's widow) to Petiver, Fort St. George, Feb. 4, 1699/1700. *Sloane 4063*, fol. 7]; of course, Brown probably never received Petiver's apology, and we cannot determine whether Petiver could have patched up the quarrel had Brown lived on.

shipment of specimens than in posting letters. Shipmasters, crews, and longshoremen often were indifferent to boxes and barrels of specimens which held no commercial value, or, at least, no commercial value which they could appreciate. Rain or sea water destroyed many consignments of carefully dried and painstakingly packed specimens of rare plants and insects which had been left uncovered on the dock or on the deck. Inquisitive, mischievous, or drunken hands sometimes rifled the contents of boxes, injuring the contents, losing parts, or mixing labelled items so as to render covering letters and descriptions misleading or useless. And the contents of an untold number of vials and wide-mouthed bottles filled with "fleshy" insects, small animals, or fishes preserved in brandy or other spirits were consumed by sailors unconcerned with the protein content.

Against such losses Mr. Petiver and his friends could construct no sure defenses. Most effective appears to have been the cultivation of shipmasters and ship surgeons whose interest in natural history could be aroused to the point where they would take personal charge of scientific collections and correspondence placed on board their vessels. In time, a considerable number of them were enlisted. We have already had occasion to mention some of the ship surgeons; like them, some of the shipmasters, such as Captain Patrick Rattray of the Jamaica trade, made collections themselves and helped to extend Mr. Petiver's fame among the islanders.<sup>109</sup>

Surely enough has now been set forth adequately to illustrate the objectives, the methods, and the extent of James Petiver's world-wide exchange of scientific specimens and information. With the above rather long glimpse of this extraordinary apothecary, let us now turn our attention to Mr. Petiver's correspondence in colonial America.

<sup>109</sup> *Sloane* 3324, fols. 75-8; 3333, fols. 128, 131, 133, 138. Captain Rattray transported Petiver's collections free of charge.



During the thirty years between 1688 and 1718 James Petiver corresponded on scientific subjects with at least eighty persons in the English Colonies of America. In some instances, the correspondence was brief, amounting only to three or four letters extending over a period of a year or two. But in nearly a fourth of the cases the exchange ran through many years and was obviously highly prized by the participants on both sides. It is with the latter group that we shall principally concern ourselves, because to treat of the entire number would be both tedious and fruitless.<sup>110</sup>

At least five of Mr. Petiver's American correspondents were persons who were sent to the Colonies, or who journeyed to the Colonies on their own initiative primarily, if not solely, for scientific purposes and with no intent of becoming permanent residents of the New World. One of the earliest of these was James Reed (or Rheed), a gardener, who made a botanizing expedition to the Madeira Islands and Barbados in 1689-90 and returned (October, 1690) with more than a hundred seeds and plants, besides specimens of insects, birds, fishes, and reptiles for his sponsors. The records of this expedition are not numerous, but enough remains to suggest that Reed sailed in the fall of 1689 supplied with the usual brown paper, wide-mouthed bottles, spirits, and other collector's requirements and with full directions what to gather and how to gather it.<sup>111</sup> The sponsors who subscribed funds in support of Mr. Reed and who shared in the specimens brought back by him evidently consisted of members of the Temple Coffee House Botany Club, probably guided by the initiative of William Charleton (formerly Courten), scion of a wealthy London mercantile family one of whose ships, in the days of Charleton's grandfather, had

<sup>110</sup> Notes listing all of Petiver's correspondents of whom I have seen a trace are appended to this account.

<sup>111</sup> See "Directions for Mr. James Reed," Sept., 1689. *Sloane 3962*, fol. 188.

discovered Barbados in 1624.<sup>112</sup> The entire list of sponsors is unknown,<sup>113</sup> but that James Petiver shared in the returns of Reed's expedition is demonstrated both in his manuscript remains and in his published works. Among the former are lists of "The Names of the Plants which grow in Barbados Collected by James Reed (Gardner) 1690," with descriptions of each in Petiver's hand; and at least two of the items set forth in the *Musei Petiveriana* list Reed as their donor.<sup>114</sup>

Far more important than the brief expedition of James Reed were the collections and communications of the Reverend Mr. Hugh Jones of Maryland between the years 1696 and 1702. This man has heretofore often been confused with one or more of four others of the same name in Maryland and Virginia at about the same time, especially with Professor Hugh Jones of the College of William and Mary, author of *The Present State of Virginia* (1724).<sup>115</sup> The confusion, however, is largely allayed by attention to the

<sup>112</sup> *D.N.B.*, sketch of Sir William Courten, or Curteene.

<sup>113</sup> The "Directions" listed in Note III above were by William Charleton.

<sup>114</sup> *Musei Petiveriana Centuria Prima* (1695), No. 31, p. 7; *Centuria Octava* (1700), No. 755, p. 72. The manuscript sources are in *Sloane 2346*, fols. 121-5, 197v-9v. In *Sloane 4072*, fols. 286-9, is an original by Reed, "The Names of Plants which do grow in Barbados gathered by me James Reed in the Year 1690. I did send this the 11 May." It is endorsed by "Eliz. Rheed" for "the partners" saying, "This I desire you to take a copy of this: thatt is to say Every one of you thatt is to have this Boock So thatt this Copy may be left to mee."

<sup>115</sup> The other four Hugh Joneses were later, although the first (after our Hugh) was minister of Christ Church Parish, Calvert County, Md., in 1702, dying in that year. His will was dated July 25, 1702, and was proved Aug. 11, 1702 [Jane Baldwin Cotton, ed., *The Maryland Calendar of Wills*, Baltimore, 1904-28, II, 243]. This was probably the Hugh Jones who was ordained and licensed Feb. 23, 1700/1 [*Virginia Magazine of History and Biography*, VII, 311-2 (1899-1900)]. A second Hugh Jones died in Prince George's County, Md., in 1705/6 (*Maryland Calendar of Wills*, III, 72); the third was buried in St. Stephen's Church, Cecil County, Md., although the date is not available [see the data supplied by the Reverend Mr. R. Herder, "Historical and Genealogical Notes," *William and Mary Quarterly*, X, 202-3 (1902)]; and the fourth was the Professor of Mathematics at William and Mary College, who did not arrive in America until 1716/7. See also, Grace Warren Landrum, "Which Hugh Jones?," *ibid.*, 2nd ser., XXIII, 474-92 (1943). The letter to which this author refers (p. 478) is about our Hugh Jones, as will become evident below. I am also much indebted to Professor Richard L. Morton of William and Mary College for additional aid in identifying these various Joneses.

unusual—even amusing—conjunction of events which caused him to go to Maryland.

These events center about the eagerness of the members of the Temple Coffee House Botany Club to collect specimens from exotic places. James Reed had not returned from Barbados before plans were afoot to send Edward Lhwyd, Keeper of the Ashmolean Museum at Oxford, on a similar expedition to the Canary Islands.<sup>116</sup> This particular plan was not carried out, but others similar to it were frequently proposed in the early 1690's. In the meantime, however, two additional factors entered into the situation. The first was not wholly new, for Dr. Henry Compton, the Bishop of London, had long exhibited an active interest in botany and he had been associated with the Temple Coffee House group for some time. But the reactivation of religious societies in the English Church after the Glorious Revolution, and especially the organization of the Society for the Propagation of the Gospel, placed in Bishop Compton's hands convenient financial means with which to further both the Gospel of Jesus Christ and the gospel of natural philosophy. Again, in 1694, Francis Nicholson, who had been serving as Lieutenant-Governor of Virginia, was appointed Governor of Maryland. He had need of a chaplain, some funds with which to endow one, and, like the Bishop, an interest in promoting natural philosophy. With these circumstances in mind, the intent of the following bits of correspondence soon becomes obvious.

In January 1693/4, Martin Lister wrote to Edward Lhwyd to say:

Mr. London [who was Bishop Compton's gardener] has enquired of Dr. Plot within this day or two of a Person in orders that may goe into . . .

<sup>116</sup> Lhwyd to Martin Lister, Oxford, July 1, 1690. *Lister* 36, fol. 11 (Bodleian Library, Oxford).

Mariland to be chaplain to Mr. Nicholson the Governour, and the Bishop of London, who it is that make the Enquirie will make him his Commissioner there.<sup>117</sup>

At first glance it appears strange that the Bishop of London should apply to the Keeper of the Ashmolean Museum, even indirectly, for a young man to fill a chaplain's place. Lhwyd's reply to Lister suggests the reason:

As for a chaplain to Mr. Nicholson &c. I know not well what to say to 't. The young man I mentioned to you would be (in case he'll take orders) very fit for the place. But at present he has no skill at all in plants, tho he may have some little smattering in other parts of Nat. History. In case the place be secured for him, we could make him a fit man to succeed Mr. Bannister, betwixt this & mid-summer at farthest, if that be not too late.<sup>118</sup>

The search for a chaplain who was skilled in natural history continued for more than a year, Mr. Lhwyd remarking in the interim that none of the Oxford divines and few of the Masters of colleges were "sensible of the value" of natural history.<sup>119</sup> Finally, in the autumn of 1695, Lhwyd sent Hugh Jones, "one who has been my Deputy for 2 or 3 years," to London with letters of introduction to Martin Lister, Bishop Compton, and others.<sup>120</sup> To Lister he wrote,

If you see Mr. Bobert or Mr. London desire them to secure Jones the place of Chaplain to the Governour of Maryland . . . none but himself has any notion of Natural History wherein I am well assured he'll be no lesse industrious than Mr. Banister.<sup>121</sup>

<sup>117</sup> *Ashmole 1816*, fol. 107-8 (Bodleian). Dated Westminster, Jan. 10, 1693/4.

<sup>118</sup> Lhwyd to Lister, Jan. 1, 1693/4. *Lister 36*, fol. 83. Lhwyd's letter must have been in reply to an earlier inquiry from Lister—i.e., before the one cited above. He further urged Lister to consult Samuel Dale about the matter.

<sup>119</sup> Lhwyd to Lister, Tangier near Oxford, Oct. 15, 1695. *Lister 36*, fol. 133.

<sup>120</sup> Same to same, n.d., *Lister 3*, fol. 145; another, Aug. 26, 1695, *Lister 36*, fol. 128; Hugh Jones to Edward Lhwyd, London, n.d., *Ashmole 1829*, fol. 160.

<sup>121</sup> Nov. 14 [1695?], *Lister 3*, fol. 144; the references to "Mr. Banister" are to the Reverend Mr. John Banister, who died in Virginia in 1692 after supplying much exciting data on natural history to English friends.

Shortly afterwards Jones wrote to Lhwyd that he had visited the Bishop at Fulham Palace and that

his Lordship seems to be wel pleased with my going to Maryland. I must bring him a bond of £40 penalty if I do not go, which I shall do tomorrow, upon the receipt of which he'l give me £20 and admit me into holy orders.<sup>122</sup>

And so Hugh Jones, who, though he was twenty-four years old, had only matriculated at Gloucester Hall the previous year and normally would not have been considered a fit candidate for the Anglican priesthood, was, as he reported to Lhwyd on December 31, 1695:

ordained Diacon & Priest & have received £20 advance. I have likewise paid your unckle the 10s. which I had used of his money. . . . I paid £30 for my licence & ordination papers, item eight pound ten shillings for my passage; the ship is *The John*, John Tanner Com. I think to go down next Friday.<sup>123</sup>

*The John*, however, did not sail for several months, as letters make clear. The new Reverend Mr. Hugh Jones was still in the Downs as late as May 13, 1696, and, according to his own account, he arrived in Maryland early in August following.<sup>124</sup> Evidently, also, there had been a further change of plan, probably necessitated by the delays which had taken place. Jones stayed with Governor Nicholson for five weeks upon his arrival in Maryland, but he did not serve as the Governor's chaplain. Instead, he was settled as minister of Christ Church Parish in Calvert County.

The long delay of *The John* gave Mr. Petiver and his friends ample opportunity to cultivate Jones' friendship

<sup>122</sup> Jones to Lhwyd, n.p. or d., *Ashmole 1829*, fol. 160.

<sup>123</sup> Joseph Foster, *Alumni Oxoniensis . . . 1500-1714*, London, 1891, II, 822; Jones to Lhwyd, London, Dec. 31 [1695], *Ashmole 1829*, fol. 10; *Calendar of Treasury Books, 1693-96*, pp. 1266, 1276, report the £20 paid to the new Reverend Mr. Jones.

<sup>124</sup> Petiver to Jones, May 26, 1696, acknowledging Jones's letter from the Downs of May 13. *Sloane 3332*, fols. 210-v; Jones to Samuel Doody, Maryland, March 26, 1697. *Sloane 3333*, fols. 65v-7; covering letters to Ayres and Doody of the same date are in *ibid.*, fols. 71v, 65, respectively.

and to enlist his services as collector and scientific correspondent. In his report to Edward Lhwyd at the end of December (1695) Jones had gone on to say:

I am daily treated & complimented by Mr. Doody, Mr. Petiver, & another ingenious gentleman, one Mr. Ayres, a quaker; these three earnestly desire to have a settled correspondence with me, which I readily consented to & promised to do them all the service I can; Mr. Petiver is for Shells & Insects; Mr. Doody for mosses, mushrooms, & Sea weeds; the quaker for trees & plants.

To these three correspondents of Mr. Jones, we must add Edward Lhwyd, Martin Lister, Jacob Bobart, Tancred Robinson, Governor Nicholson, Bishop Compton, and George London, the Bishop's gardener, all of whom had a finger in launching Edward Lhwyd's former deputy in holy orders and in sending the new Reverend Mr. Jones on his mixed assignment to Maryland. It is likely that Jones was taken to meetings of the Temple Coffee House Botany Club, and he was supplied with equipment including, besides the inevitable brown paper and bottles, a supply of drugs by Mr. Petiver and a weather-glass by Mr. Doody. The latter, however, was broken aboard the storm-tossed *John* before Jones had left the English shore, although, as wrote to Lhwyd, "I dare not acquaint him thereof till I shall send him a collection of plants from Maryland to excuse the misfortune & beg another."<sup>125</sup> Jones grew weary aboard the ship and, as he lacked funds sufficient for waiting on shore, he fished up shells and sea weeds for his London friends. This evidence of industry delighted Mr. Petiver, who wrote several letters to discuss the species of the specimens received, to give additional directions for collecting in Maryland, and to whisper a promise of interesting exchanges of specimens if his servant, Harris, was permitted to accompany Edmond Halley on the South Atlantic voyage—although he

<sup>125</sup> From *The John* in the Downs, n.d. *Ashmole* 1829, fol. 102.

cautioned Jones not to mention this scheme to "our Phylosophicall Friends because as yet it is but in Embrio."<sup>126</sup>

It was about the 1st of May, 1697, before Petiver and his friends received their earliest returns from America at the hands of the Reverend Mr. Jones. These included two boxes, one with trees, plants, seeds, and berries for Messrs. Doody and Ayers, and the other with fossils, shells, and insects for Mr. Petiver. They had been shipped from Maryland on the previous March 26th, and with them was a "large letter" of the same date addressed to all three of the London collectors. The letter, which told of the voyage to Maryland, related some of Jones's observations en route, and reflected some of his early impressions of the New World, ran as follows:<sup>127</sup>

Gentlemen,

I presume that a short acct of my health & circumstances with a word or two in relation to my voyage may not be unacceptable to you. I should be loth to trouble your patience with such a desultory narration if I were not confident that your candor will take nothing amiss that is well intended. After we set sail from the Isle of Wight I reckoned the fatigue of the voyage was over, being in hopes shortly to leave my floating prison that had almost worn out my patience with delays. We were about 10 weeks in our passage from the lands end to the capes of Virginia, during which time as also while we lay in the Downs I enjoyed my health very well, having not in the least been discommoded by the Sea. All that I observed in my passage worth mentioning was that after we past the western Islands which lye 300 leagues from the lands end, we dayly met with sea weeds still increasing till we came upon the coast of Virginia. They are supposed to be brought with the current which constantly runs N.E. from the Gulf of Florida wherefore the seamen call them Gulfe weeds. The abundance of flying fish that we

<sup>126</sup> May 19, 1696. *Sloane 3332*, fol. 235; for the other letters, see *ibid.*, fols. 202, 210. See also Jones to Lhwyd, from *The John*, n.d., *Ashmole 1829*, fol. 102. A plant collected by Jones was transmitted to John Ray, who described it in *Synopsis Methodica Stirpium Britannicarum*, London, 1724, p. 39.

<sup>127</sup> Another long, interesting letter from Jones to Benjamin Woodroffe, F.R.S., Jones's former Master at Gloucester Hall, was read before the Royal Society (Jan. 17, 1699/1700) and printed in part in the *Philosophical Transactions*, XXI, No. 259, pp. 436-42 (Dec., 1699). See *Journal-Book*, IX, 188. (Ms. in Royal Society Archives.)

met with were no little diversion to me; they fly in great shoals or flocks & seem at a distance like flocks of Larks. They seldom mount above 3 fathoms high, & the cause of their flight which is not past 100 yards is to avoid the Benitos & Dolphyns that prey upon them. The biggest that I saw seem not as big as a herring. I catch'd one which accidentally light on the wales of our ship which was not an inch long. The sea water differs not in gravity & consequently in saltness in any latitude that we were in from what it is at the Downs which I try'd with my water poyre. But when we were past sounding it felt a great deal warmer, almost milk warm and I suppose it is much warmer tow the bottom. For one day being in a calm I tyed a glass bottle to the end of a line adding sufficient weight to sink it & let it down near a 100 fathoms, & when I hall'd it up the cork was forced into the bottle. This I tryed 3 times adding new corks which tho never so big were forced in. I can attribute it to nothing but heat. We met with several Grampeys or whales before we came on the coast of America. About the end of July we entered the Cape of Virginia where we met with several shipp bound homeward but that on whom I sent you some letters was taken as I heard afterwards. Our ship was the 1st that come in having left the fleet at sea about a fortnight before. They reckon 1000 leagues from the lands end to the Capes of Virginia.

3 days after our entrance I came ashore in Calvert County Maryland from whence I rid up to the Governour where I stayed 5 weeks & was favored with a kind reception from his excellency. This county in generall is a greate deal better than it is represented in England, at least I found it so: & tho I came in the worst time of the year by reason of the heat yet I found it agreed with me very well. The heat indeed in July & August is somewhat excessive. I cannot give you the degrees thereof having unfortunately broke my Thermometer at sea. I can only say that it is a great deal hotter than in England; not but that it would be as hot there were it not for the breezes which commonly fan the air whereof we seldom have any that time of year unless it be now and then a gust occasioned by thunder & lightning & these want not their inconveniencies for they produce the other extream which makes our teeth chatter before the sweat is dryed upon our backs. The ground likewise is sandy & dry which adds to the heat. But in winter we have very sharpe weather. In January & Feb. when the N.W. wind blows some days together it freezes so that you would thinke yourself in Greenland. You may guess somewhat at the weather by the following



acct. of what snow fell this winter (viz) November 13 snow about a foot deep, it lay on the ground till the last Instant. December 14 such terrible snow fell which I thought exceeded any that I had seen before. It was generally above knee deep on plain ground where there was no drifts. It lay till Jan. 11. Jan. 15 a moderate snow which just covered the ground. 18 more snow, it was about a foot deep & lay till 25 at which time the ships were so frozen in that the seamen could go & come on the Ice. The Bay was frozen over one morning but the tide broke it before night. I have been told that formerly there have been hogsheds of Tobacco roul'd to the shipp's side upon the ice. Feb. 5 snow about a foot deep. It lay till the 16. Feb. 28 a moderate snow which was carried away by the rain before night. But the Snow is not halfe so intollerable as the cold N.W. winds. I have heard my Landlord say that he hath seen water thrown up out of a cup which turned to Ice before it fell. I suppose there may be some high mountains always covered with snow towards the N.W. point which make the wind so cold, but when it blows for some days from S. & S.W. tho in winter it brings warm & moderate weather. And not only the weather but the tide also is governed allso by the wind. S.E. made the highest flood & N.W. the lowest. In a calm the Ebb & flood is very inconsiderable there being hardly 3 foot difference between them.

Since my settlement I have been as diligent in quest of Naturall curiosities as my business would permit me & truly I was a pretty while before I could do any thing besides labour for my pains. I mean as to fossils for it was too late to look for plants or Insects. I now partly understand what the country produces & where I am to seek for them & I make no question this ensuing summer but to procure considerable collections of vegetables, animals & Mineralls. I have procured a man on purpose to be my assistant herein.<sup>128</sup>

<sup>128</sup> Bobart stated that Governor Nicholson paid for Jones's assistant and "would willingly allow him another; but they both mean such a one as should doe the servile part, and help him in the part of his greatest drudgery, as carrying the box, basket &c. Now it seems to me between Mr. Davis & you, you had thoughts of sending one, which perhaps might be more fit to be his Master, being . . . a Batchelor of Arts already." Jacob Bobart to Lhwyd, Oxford, March 5, 1697/8. *Ms. English History C. 11*, fol. 13 (Bodleian Library). Bobart was disappointed in his share of returns from Jones: "the trees he sent to London were soe ill & ignorantly packt, that they were all spoiled. The seeds which he sent me . . . doe not yet come to hand; where they stick I know not. I am very unfortunate in that affair, pray help me if you can." In a letter to Lhwyd, Oxford, May 8, 1698, Bobart stated that "The seeds I at length received from Bristoll, which came from Maryland; & tis well & a wonder . . . but what are, are very wellcome." *Ms. English History C. 11*, fol. 14.

Gentlemen, I hope you will take in good part what I now send you & you may assure yourselves that by the next return of the fleet if I live you shall receive better things & without any charge, for his excellency has promised to order the man of war to carry whatever I shall send for the future, which would have been done this time if I had known his mind sooner. I have no more to add but desire you to honour me with a letter with the ships return. I am, Gentlemen,

Your friend & servt.

direct your letters to me  
minister of Christ Church parish in Calvert County Maryland.<sup>129</sup>

Hugh Jones

Months before receipt of this letter, Mr. Petiver had been plying Jones with communications, having resolved, as he wrote on May 1st (1697) to write "every month in the year in relation to Naturall History, particularly with respect to America."<sup>130</sup> This decision evidently had been made before the previous January 1st, as Petiver's chain of monthly letters to Jones began on that date.<sup>131</sup> Petiver sent descriptions of shells and plants and accompanied his letters with newssheets, a copy of Dr. Sloane's *Catalogue of Jamaica Plants* ("which I desire your acceptance of humbly proposing it to you as a Pattern I hope you will imitate"), a Cheshire cheese, and bottles of English beer "for your morning draughts." In the course of the year Petiver received a request from Jones for medicines, the request arising in part, it would appear, from Jones's landlord in Maryland.<sup>132</sup> The apothecary obliged, and wrote:

The medicines I herewith send you are such as I not only have daily seen the good effects of in my private practice but some of them have been experienced for many years by the greatest Physitians of our Age.

<sup>129</sup> *Sloane 3333*, fols. 65v-7; a copy is in *Sloane 4062*, fols. 268-v.

<sup>130</sup> *Sloane 3333*, fols. 80-v.

<sup>131</sup> *Ibid.*, fols. 73-93.

<sup>132</sup> Perhaps James Miller, who himself wrote to Petiver for the "price of physick" at the "Instaygation of Mr. Hugh Jones." Miller intended a wholesale business. *Sloane 4067*, fol. 53.

They are all of them choosen good, not being made for common sales but home practice.<sup>133</sup>

To the descriptions of the "virtues" of these medicines Mr. Petiver later added further medical information for Jones's ear only, not to be shared with his landlord,

because I desire to make you a present of them as an infallible secret in your private practice to cure with ease & speed all such as are clapt, i.e., who have a gonorrhoea or running on the reins, a disease which I suppose may be sometimes found amongst your inhabitants as well as ours.<sup>134</sup>

In the following year Mr. Jones solicited Petiver's advice with regard to the condition of his landlord's wife, who suffered seizures of fits. Mr. Petiver took the case "to some very eminent physicians of our Royal Society" who, with a display of proper professional caution for the lack of sufficient details in the case, gave directions which Mr. Petiver promptly transmitted to the Reverend Mr. Jones.<sup>135</sup> Unfortunately, we are not advised as to the denouement.

Hugh Jones continued to serve his English friends until illness overtook him in 1700 and death intervened only little more than a year afterwards. In November, 1700, he wrote complaining of illness and mental dejection and indicated his desire to return to his homeland:

It has been a very sickly year amongst us, one distemper following another from the middle of summer to this present [November 20] & still continues fatal to abundance. I bore my part in the common calamity & so have all my brethrine this side of the bay, which has them so that now they talk of nothing more than a return to England. . . . Is

<sup>133</sup> June 6, 1697. *Sloane 3333*, fols. 81-2. Petiver listed ten medicines, gave dosages and "virtues," and continued the list to twenty-two medicines in his letter of July 7 next. *Ibid.*, fols. 82v-4.

<sup>134</sup> August 8, 1697. *Ibid.*, fol. 85. The substance was called a "Black healing powder." It "must be squirted up the yard," and Mr. Petiver included an injection syringe for the purpose.

<sup>135</sup> Petiver to Jones, n.d. [c. Nov. 15, 1698?]. *Sloane 3333*, fol. 223v; same to same, Jan. 2, 1698/9. *Ibid.*, fols. 257v-8. Comparatively few colonials had the advantage of such eminent medical advice, even second-handed and by mail!

it possible for an American Pilgrim to obtain preferment of forty pound a year if he should return to his country [?] my present living is worth 3 times forty yet I would gladly quit it for ONE in Wales; this is a place to get money & lose health, to gain experience but find no content.<sup>136</sup>

In the following February he wrote to James Petiver to say he had not received the wide-mouthed bottles ordered ("I suppose Capt. Dowlin thought the liquor too good for me"), and to apologize for his small shipments of specimens. He begged Mr. Petiver to ask no more of him because he was physically no longer able to make collections. Lately, he said, asthma had

grown to such a head that I cannot walk a field . . . if it has any ascent without panting for breath . . . and you will own a man in that condition is not fit to catch butterflies or to search hills and dales for plants.<sup>137</sup>

He planned to stay in Maryland one more summer, and if his health did not improve he would "make hast home." He survived the summer; but his illness overcame him in January, 1701/2.<sup>138</sup>

The Reverend Mr. Hugh Jones's communications and shipments of specimens excited the admiration of a wide circle in England. Mr. Petiver and his friends shared them with others and displayed them to the fellows of the Royal Society of London. William Sherard, for example, received specimens of Maryland plants and sowed Maryland seeds in the Duchess of Beaufort's gardens at Badminton.<sup>139</sup> John

<sup>136</sup> Hugh Jones to ?, Maryland, Nov. 20, 1700. *Ashmole 1815*, fol. 249. Jones classed himself as a "Williamite" and, asked "if there is here any employment for poor Jacobites," he replied, "I can satisfy you no further than this that its here as in England, they are under a cloud & like so to continue till another revolution."

<sup>137</sup> Feb. 26 [1700/1?]. *Sloane 4063*, fol. 68.

<sup>138</sup> His will mentioned two brothers, Richard and John (Cotton, *The Maryland Calendar of Wills*, II, 228). Richard, minister at Llanellian, Anglesea, wrote to Petiver for help in recovering his brother's effects (*Sloane 4063*, fols. 168, 175, 177); John, a schoolmaster at "Kandeil-tal-y-Bent in Glamorganshire near Swansea in Southwales," wrote to Dr. Sloane on Oct. 25, 1702, for news of Hugh Jones, fearing "he is not in being." (*Sloane 4039*, fol. 36); that another brother was Jezreel Jones, mentioned above in this account, is clear from several letters in *Sloane 3333*, fols. 140-3v, 153, and *passim*.

<sup>139</sup> See Sherard's letters in 1700 and 1701. *Sloane 4038*, fols. 58, 332; *Sloane 4063*, fol. 97.

Ray at Black Notley and his friend and neighbor, Samuel Dale, at Braintree, discussed specimens received from the Reverend Mr. Jones *via* Mr. Petiver or another of Jones's correspondents.<sup>140</sup> The *Philosophical Transactions* for November, 1698, published "Remarks by Mr. James Petiver, Apothecary, and Fellow of the Royal Society, on some Animals, Plants, &c. sent him from Maryland by the Reverend Mr. Hugh Jones."<sup>141</sup> And Mr. Petiver, both in his *Gazophylacium* and in his *Musei Petiveriana*, further gave recognition to the Reverend Mr. Jones, who was referred to as

A very curious Person in all parts of Natural History; particularly in Fossils; some of which he hath sent me from *Maryland*, with several *Volumes* of *Plants* very finely preserved; with divers *Insects* and *Shells*. From this obliging *Gentleman*, I am promised frequent remittances of whatever those Parts afford, as well *Animals & Fossils* as *Vegetables*.<sup>142</sup>

Petiver's manuscript remains further testify to the collections of Mr. Jones by way of catalogues and descriptions of hundreds of Maryland plants and insects.<sup>143</sup> By his exchanges of specimens and his published accounts, Mr. Petiver went far to project the findings of the Reverend Mr. Jones even beyond England into the current studies of natural history in Europe at large.

Mr. William Vernon, Fellow of Peterhouse, Cambridge, was the next naturalist to be subsidized for a scientific ex-

<sup>140</sup> Petiver to Dale (several letters). *Sloane 3321*, fols. 57 ff; *Sloane 3333*, fols. 251 ff. Pulteney, *Hist. and Biog. Sketches*, I, 234, 264-70.

<sup>141</sup> No. 246. Vol. XX, 393-406.

<sup>142</sup> *Centuria Quarta* (1699), unpub. See *Musei Petiveriani*, 1695-1703, pp. 39, 50, 56, 59, 69; *Gazophylacii Naturae & Artis Decas Prima*, London, 1702, pp. 5, 7, 8, 10, 41. Tancred Robinson gave the specimens "adept Latin names" at Mr. Petiver's request. See Petiver to Robinson, n.d. [Jan., 1699?]. *Sloane 3333*, fol. 142v.

<sup>143</sup> Three of Petiver's catalogues of Maryland plants from Jones are in *Sloane 3330*, fols. 771, 772, 825-6; another is in *Sloane 3324*, fols. 4-5; a list of butterflies is in *ibid.*, fols. 75-8; another catalogue of plants is in *Sloane 3331*, fol. 50. See also George Edwards, *Gleanings of Natural History*, London, 1758-64, pt. i, pp. 54-8.

pedition to America. Vernon had been in close touch with the naturalists both at Oxford and at London, and he contributed greatly to John Ray's botanical studies.<sup>144</sup> His voyage to America arose from a motion set forth by William Byrd at a meeting of the Royal Society on November 10, 1697. Mr. Byrd

moved the Society that they would think of a Fitt person to be sent over to Virginia in order to make observations and Descriptions of all the Naturall productions of those parts and to write the History thereof, and that for the Encouragement of such a fitt person the charge of his passage and £25 per Ann. would be allowed him by the Governor of Maryland.<sup>145</sup>

The proposal met with favor in the Society, and on December 31, 1697, William Vernon was approved as the "fitt Person" in a testimonial signed by Sir John Hoskins, Vice-President (and a former President) of the Royal Society, and by Dr. Hans Sloane, one of the Secretaries. The testimonial stated that Vernon

had a very good character given of him to the Royal Societe & was present at severall of their meetings & gave them good reason to believe that by his endeavours Naturall Learning would be much promoted, wherefore we thought fitt to recommend him to the favour & assistance of such persons as he thinks proper to apply himselfe to.<sup>146</sup>

Thus armed, Mr. Vernon lost no time in setting out for Maryland to claim Governor Nicholson's allowance. He

<sup>144</sup> Vernon to Lister, Peterhouse, Feb. 7, 1694/5. *Lister* 36, fol. 111; J. Archer to E. Lhwyd, n.p., Feb. 8 and March 21, 1695/6. *Ashmole* 1829, fols. 12, 14; Pulteney, *op. cit.*, I, 264-5; II, 57-8.

<sup>145</sup> *Journal-Book*, IX, 70 (Ms. in Royal Society Archives).

<sup>146</sup> *Sloane* 4068, fol. 16. Already (Dec. 23, 1697), Vernon had been granted permission by the Visitors of Peterhouse "to be absent for three or four years to improve his Botanick Studies in the West Indies," provided that he should certify yearly that he was alive and unmarried [Christopher Wordsworth, *Scholae Academica*, Cambridge, 1877, p. 207]. Vernon evidently had a reputation for perseverance, it having been jocularly reported that he once "followed a butterfly nine miles before he could catch him." [John Aubrey, *Letters Written by Eminent Persons . . . And Lives of Eminent Men*, London, 1813, II, pt. i, pp. 100-1.]

sailed before the end of January, 1698, and after a tedious voyage arrived in Maryland in early April.<sup>147</sup>

Vernon sailed forth with high expectations and, evidently, with the intent to stay in America for three or four years. Mr. Petiver wrote that Vernon's

chief design was to improve Naturall Phylosophy particularly the discovery of American Mosses & Butterflies; especially the first. His zeal was so great he has often over a Commemorative glass wished to arrive there before the moss cropping season; if he be as good as his word I expect suddenly to hear from him.<sup>148</sup>

And in a letter to Petiver soon after his arrival in Maryland, Vernon boasted that he would

make more discoveries . . . than any man that ever was in these parts, & will bring over as many Plants, Shells, Insects, Fossills, Serpents &c as will take our Botanic Club & Royall Society a twelve month the looking over.<sup>149</sup>

This enthusiasm, however, was of short duration. By mid-July it was reported in England that Mr. Vernon "thinks he will return for old England this winter, he not liking those parts so well as he expected."<sup>150</sup> The reason for his change of attitude is not known, although it seems possible that strained relations arose for a time between Vernon and Governor Nicholson as a result of the poison-pen activities of Dr. John Woodward. Woodward was jealous of the recognition accorded to Sloane, Petiver, and the Temple Coffee House crowd, and he wrote to Governor Nicholson to protest against the Governor's sponsorship of

<sup>147</sup> The dates are reconstructed from letters by Petiver. See Petiver to Buddle, April 21, 1698 (*Sloane 3333*, fols. 125-v) and Petiver to Pasmore, May 4, 1698 (*ibid.*, fol. 134).

<sup>148</sup> Petiver to Buddle, April 21, 1698, as above.

<sup>149</sup> Petiver to Hugh Jones, Oct. 6, 1698 (*Sloane 3333*, fols. 170-iv). As Petiver was reporting Vernon's words to spur Jones on to greater activity, the account should be received with caution. In another (undated) letter to Jones, Petiver urged Jones to ship his collections before Vernon's "& then you will (as I desire) have the reputation of being the first deserver of what you send." (*Ibid.*, fols. 230-v.)

<sup>150</sup> Petiver to John Ray, July 16, 1698. *Sloane 3333*, fol. 149.

one who sent collections to such "Rogues and Rascalls" in England as Sloane, Petiver, Lister, and Robinson.<sup>151</sup> The Governor soon learned to discount Woodward's wild accusations, for the Doctor held a most unenviable reputation in England; but the charges against Vernon may have caused the Governor temporarily to entertain doubts about the recipient of his grant to natural science. Whatever may have been the reason for it, Vernon returned to England in the late autumn of 1698.

Meanwhile, however, he had been remarkably industrious, and he made large collections for himself, for the Royal Society, and for his friends. He wrote to Dr. Sloane from "Anapolis" on July 24, 1698:

I met severall curious parts of Naturall knowledge, which I'd rather refer to you in the Temple Cofee-House, than *in Scriptis*. I've a collection of plants for you & any other part of my collection is at your service. When I return which I expect will be the later End of October, I shall bring Every Friday night a collection of plants to be discussed by you, & that Honourable Club, to whom my service. Mr. Krieg will be back about that time. I shall write a letter to Captain Hatton. Out of the 100 Correspondents Woodward told he had in America; I'm sure since I've not met One, or heard of.<sup>152</sup>

The Royal Society was so impressed with Vernon's work that, on January 11, 1698/9, it subscribed "in the name of the Society 20 l. for Mr. Vernon . . . towards an encouragement for his voyage to the Canaries."<sup>153</sup> But as Vernon

<sup>151</sup> Robinson to Lhwyd, Sept. 20, 1698. *Ms. English History C. 11*, fol. 90v (Bodleian Library); Vernon later told Sloane that Woodward had given him (Vernon) "the character of a very immorall man" to Bishop Compton because "I kept Company with Dr. Robinson, Dr. Lister, &c.&c. but that would not doe. I must expect dealings accordingly. In short he's an abominable, Villanous & Silly fellow." (Vernon to Sloane, Dec. 28, 1698. *Sloane 4061*, fol. 234.) Petiver twice warned Hugh Jones about Woodward and urged Jones to have nothing to do with him. (Petiver to Jones, Dec. 31, 1697, and March 10, 1697/8. *Sloane 3333*, fols. 91v, 119v-20.)

<sup>152</sup> *Sloane 4037*, fol. 102. In a letter to Richard Richardson, Jan. 28, 1701/2, Vernon said he had brought from America "near a 1000 very fine and beautiful" insects. *Ms. Radcliffe Trust C. 1*, fol. 43 (Bodleian Library).

<sup>153</sup> *Council Minutes*, II, 101-2 (*Ms.* in Royal Society Archives).



spent all the rest of the winter and the spring following in the Downs attempting—without success—to get acceptable shipping to the Canaries, the venture was abandoned.<sup>154</sup> Subsequently, Vernon returned to Peterhouse, where he actively solicited subscriptions to Mr. Petiver's works and gave valued assistance to many other English naturalists of the day.<sup>155</sup>

Of Mr. Petiver's friends and correspondents who voyaged to America primarily to make collections in natural history there remain two: "Isaack the Butterfly Boy," whose "Directions" from Petiver we have quoted above; and Dr. David Krieg, of whom William Vernon spoke in his letter to Sloane from Annapolis. For "Isaack" we have no surname. Mr. Petiver referred to him only as a "Butterfly Catcher," a "Butterfly Boy," and "a poor boy I took on purpose to run Errands &c."<sup>156</sup> He sailed as an attendant to Dr. Krieg on the *John and Thomas* in the late winter of 1697-98, arriving at the "River of Virginia the last of March."<sup>157</sup> Unfortunately, in view of Mr. Petiver's careful preparations in his behalf, Isaac appears to have taken little or nothing to his indulgent and hopeful master. Dr. Krieg reported from Maryland on May 7th that "as for the boy Isaac he has little opportunity to get something because he is most forct to stay on board."<sup>158</sup> We can only speculate as to why Isaac was so restricted and by whose authority.

<sup>154</sup> Letters of Vernon to Sloane, Margate, Feb. 5, 1698/9, and Deal, May 23, 1699; and a third, n.p. or d., in *Sloane 4037*, fols. 209, 274; and *Letter-Book*, XII, 248-9 (Royal Society Archives). The failure, alleged by some to have been the result of Vernon's mismanagement, led to a motion in the Royal Society Council, Nov. 8, 1699, to recover the money from Vernon. The motion failed, and the record of it was omitted in the final draft of the Council Minutes. See *Sloane 4026*, fol. 364v.

<sup>155</sup> Petiver's, Sloane's, and Richardson's correspondence include scores of letters to and from Vernon.

<sup>156</sup> Petiver to Hugh Jones, n.d. [c. Jan. 1, 1697/8]. *Sloane 3333*, fols. 91v-3.

<sup>157</sup> Petiver to Pasmore, May 4, 1698. *Ibid.*, fols. 134-v.

<sup>158</sup> Krieg to James Ayres, *Sloane 3333*, fols. 144-v.

Mr. Petiver recorded nothing which he had received at the boy's hands, and even Dr. Krieg appears to have been deprived of Isaac's assistance when he needed it the most.

Dr. Krieg was a Saxon physician who, in the service of various noblemen and military officers, drifted from Leipzig to Riga in the early 1690's and thence to London in 1697.<sup>159</sup> He was very skillful in drawing and coloring specimens in natural history and, as he was also learned in these matters, he was welcomed heartily among the members of the Temple Coffee House Club. He lodged with James Petiver while he was in London, and they became fast friends. When Dr. Krieg set out for Maryland, Petiver wrote a letter to introduce him to the Reverend Mr. Hugh Jones, saying that Krieg was

a German Gentleman. He hath lodged at my house about a year in which time he hath painted most of our English Insects & several other things admirably well. He designs if possible to wait on you & if he does I heartily recommend him to your Friendship & Favour & whatever service you can doe him I shall esteem it as done to my selfe. This Gentleman hath made large collections & wonderful observations of all parts of Nature that hath come in his way this year whilst in England & I know will doe not less in your parts, it being the great & only motive of his going over.<sup>160</sup>

Dr. Krieg evidently made the voyage as physician on the ship, *John and Thomas*, but he went supplied with the materials for collecting by Mr. Petiver and with additional funds earned by drawing and painting specimens of natural history for Mr. Petiver and his friends.<sup>161</sup> He remained in

<sup>159</sup> I have reconstructed this from the dates and places mentioned in his "Album Amicorum, 1691-1697." *Sloane 2360, passim*; see also Pulteney, *op. cit.*, II, 58.

<sup>160</sup> Petiver to Jones, Dec. 31, 1697. *Sloane 3333, fol. 91v.*

<sup>161</sup> The *Sloane Mss.* contain many specimens of his work. See, for example, *Sloane 3324*, fols. 75-8; *4020*, fols. 42-7; and several were displayed by Petiver to the Royal Society (*Journal-Book*, IX, 291; X, 131). After Krieg's death (at Riga, about 1710), his "Collectanea Curiosa" was said to have been purchased by the Czar "for an inconsiderable sum." Dr. Nicholas Martini to Sloane, Riga, Dec. 20, 1717. *Sloane 4045*, fols. 83-4.

Maryland during the entire summer of 1698, arriving back in England in November, laden with specimens (and drawings of specimens) of Maryland plants, birds, and insects for his London admirers. He stayed in London for the winter of 1698-99, being elected Fellow of the Royal Society in January upon the recommendations of Messrs. Petiver, Sloane, and their associates. In the following spring he accepted a position as physician to a nobleman<sup>162</sup> with whom he returned to Riga, later travelled with him in Scandinavia, Holland, and France, and ultimately (1703) returned to Riga. There he settled down to the practice of medicine for the remainder of his days. Both James Petiver and Hans Sloane continued to exchange specimens and scientific information with him during the first decade of the eighteenth century.<sup>163</sup>

The collections of Vernon and Krieg supplemented and reinforced those of the Reverend Mr. Jones. Mr. Petiver gave them the publicity which he customarily lavished upon his donors, paying especial tribute to Dr. Krieg, who, said Petiver, returned from Maryland "Plentifully stored with what in *Nature* he had taken notice of."<sup>164</sup> A considerable number of the specimens were subsequently described in John Ray's posthumous volume on the *History of Insects* (1710); and it was said that the enormous number of new and hitherto undescribed plants which had come to his knowledge as a result of these and similar collections led

<sup>162</sup> "Mons. le Comte de Guistar." I have been unable to identify the gentleman.

<sup>163</sup> J. P. Breynius reported from Dantzic in 1713 that "Dr. Krieg died at Riga some years ago in the great Plague, which is very pitty." *Sloane 3322*, fols. 16-7. Krieg referred to a brother, August Krieg, a "Chirurgeon" of Strasbourg (*Sloane 4038*, fols. 333-4). His correspondence, which was often filled with nostalgic references to "the Royal Society & Temple Club," ceased about 1709. Many of his communications were given to the Royal Society, and at least one was published in the *Philosophical Transactions* [XXIV, 1754-56 (1704-05)].

<sup>164</sup> *Musei Petiveriani . . . Quarta & Quinta*, Nos. 304, 386-7; and pp. 43 ff.

Mr. Ray to prepare a third volume of his famous *History of Plants*, which appeared in 1704.<sup>165</sup>

Nearly a third of Mr. Petiver's colonial correspondents were men whose interest in natural history or other branches of science was secondary to the private or official business which occasioned their presence in the Colonies. Most of them stayed in the Colonies for only short periods of time, and few of them appear to have intended to remain longer than their business required. This group included masters of commercial vessels trading in the Colonies. Chief among those who were serviceable to Mr. Petiver were Captain Patrick Rattray, who traded in Jamaica and the West Indies, and Captain William Halsted, who traded with the mainland American Colonies, especially South Carolina. Rattray distributed letters and literature for Petiver in an effort to widen the latter's correspondence in the islands, acquiring, in this fashion, a valuable correspondent in John Fenwick of Jamaica. The Captain also transported collectors' supplies and boxes of specimens free of charge for Mr. Petiver and his island friends. And in a few instances Captain Rattray himself made collections for the London apothecary, including a small serpent and a butterfly for which Mr. Petiver cited him as donor in the *Musei Petiveriani*.<sup>166</sup> Captain Halsted kept a vigilant eye on Mr. Petiver's correspondents in Charleston, reported on their activities, and carried their messages and their shipments of specimens and supplies to and fro.<sup>167</sup>

<sup>165</sup> Pulteney, *op. cit.*, I, 264. See also John Ray, *Historia Insectorum*, London, 1710, pp. 118, 120, 122-35, 211, 214; William Derham (ed.), *Philosophical Correspondence between Mr. Ray and . . . Correspondents*, London, 1718, pp. 342-3; Ray to Petiver, May 17, 1704. *Sloane 4064*, fol. 9. See also *Sloane 4063*, fols. 198, 207, 208-10, 227.

<sup>166</sup> *Musei Petiveriana*, No. 121; a printed list of butterflies, *Sloane 3324*, fols. 75-8; Petiver to Pasmore, May 4, 1698. *Sloane 3333*, fols. 131v, 133v-4.

<sup>167</sup> See the letters in *Sloane 3334*, fols. 67v-8, 74; *4063*, fols. 18, 34, 53.

Surgeons serving ships, trading companies, and royal officers abroad performed similar services. James Frazer and Robert Rutherford, for example, were ship surgeons who made collections for Mr. Petiver. Frazer contributed items from Guinea, Bermuda, and Jamaica; and he arranged a profitable correspondence for Petiver with Dr. David Crawford of Port Royal.<sup>168</sup> Rutherford collected shrubs, plants, and insects both in New England and in Carolina, some of which Mr. Petiver described in his published works.<sup>169</sup> Four surgeons in the employ of the South Sea Company raised Mr. Petiver's hopes of receiving rare specimens from Central and South America. Dr. Dover, stationed at Buenos Aires in 1715-16, and a Mr. Cook, described as "Surgeon to the South Sea Settlement at Panama," promised much but returned very little.<sup>170</sup> Dr. William Toller, who succeeded Dover at Buenos Aires in 1716, did better, but Mr. Petiver's failing health reduced the exchange to little of consequence.<sup>171</sup> Best of the South Sea Company's servants was Dr. John Burnett. Dr. Burnett was surgeon at the Company's factory in Porto Bello from 1716 until 1722 and at Cartagena from 1722 until 1728, after which he accepted appointment as physician to the King of Spain. He corresponded with Petiver until the latter's death in 1718 and then transferred his scientific exchange to Sir Hans Sloane, with whom he continued to communicate at least until 1736.<sup>172</sup> On his outward voyage in 1716 he established

<sup>168</sup> Frazer and Petiver were in communication between 1703 and 1707 (*Sloane 3321*, fols. 130, 215; 3335, fols. 48v, 49-v). Crawford began to correspond in 1707 and continued until 1713 (*ibid.*, fol. 49; *Sloane 3336*, fols. 18, 25, 39; 3321, fols. 234, 279; 3337, fols. 71-v).

<sup>169</sup> *Musei Petiveriana . . . Quarta & Quinta*, Nos. 473, 485; Printed list of butterflies, *Sloane 3324*, fols. 75-8.

<sup>170</sup> *Sloane 3340*, fols. 66v-7, 67v-8, 161, 261-3.

<sup>171</sup> *Ibid.*, fols. 275v-6v.

<sup>172</sup> *Sloane 3340*, fols. 260v, 267v, 304; 3322, fol. 97; 4065, fol. 285; 4072, fol. 295; 4046, fols. 227-8 ff; 4047, *passim*; 4052-4054, *passim*.

communications between Mr. Petiver and Dr. Thomas Hoy, F.R.S., of Jamaica, and he sent from Porto Bello a variety of specimens, including fishes, birds, and at least one "very fine butterfly."

Unlike the South Sea Company's servants, Dr. John Douglas of Antigua began his exchange with Mr. Petiver before the latter had lost his vigor. One of four remarkable brothers, all of whom were elected Fellows of the Royal Society,<sup>173</sup> John Douglas went to Antigua in 1712 to serve as surgeon to his brother, Colonel Walter Douglas, recently appointed Governor of the Leeward Isles. He had known Petiver before his departure, having been invited by the latter to "goe a-Herbarizing with our Company to Hamstead" in 1709.<sup>174</sup> Accordingly, he went to Antigua laden with brown paper, wide-mouthed bottles, a "fly-catcher," and Mr. Petiver's printed instructions.<sup>175</sup> By the end of the first summer (1712), Douglas reported that he had gathered "a pretty collection,"<sup>176</sup> and during the next four years he sent repeated cargoes of plants, shells, and insects to Mr. Petiver who, in return, kept Douglas supplied with collectors' needs, newssheets, scientific periodicals, and books treating of medicine and surgery.<sup>177</sup> Mr. Petiver publicly acknowledged Douglas's aid in an article in the *Philosophical Transactions* for 1715, thus, perhaps, helping to keep Douglas's name known in those medical circles in which he became prominent upon his return to London a few years later.<sup>178</sup>

<sup>173</sup> James, F.R.S., 1706; Colonel Walter, F.R.S., 1711; John, F.R.S., 1720, and George, F.R.S., 1732.

<sup>174</sup> Petiver to Douglas, April 8, 1709. *Sloane* 3338, fol. 49v.

<sup>175</sup> *Ibid.*, fols. 79, 128.

<sup>176</sup> Douglas to Petiver, Antigua, Sept. 8, 1712. *Sloane* 4065, fol. 62.

<sup>177</sup> See the correspondence in *Sloane* 3322, fol. 54; 3338, fols. 79, 128; 3339, fols. 13v-4, 81v-2v; 3340, fols. 12v, 58v-9, 64v-5v, 76; 4065, fols. 62, 114, 121.

<sup>178</sup> *Philosophical Transactions*, XXIX, No. 346 (Dec., 1715). See also the sketch of John Douglas in the *D.N.B.*

Among the permanent residents of the English Colonies in America, James Petiver's scientific correspondents were more numerous in the island colonies than on the mainland. Probably the earliest of the island correspondents was John Dickinson of the Bermudas, from whom Petiver received a collection of thirty plants in 1692.<sup>179</sup> Mr. Petiver turned the specimens over to Dr. Leonard Plunkenet, who "figured" them in his *Phytographia*,<sup>180</sup> and sent Dickinson a new supply of brown paper, a copy of Dr. Plunkenet's *Herball*, a catalogue of Barbados plants (for comparison with those found in the Bermudas), instructions for collecting and preserving further specimens, and a plea for additional correspondents in America. Thus began an exchange which continued for nearly a decade, although, in spite of Petiver's importunities, Mr. Dickinson did not dispatch either large or frequent shipments of specimens. The correspondence appears to be incomplete, but what remains records only three more shipments received by Mr. Petiver to 1701.<sup>181</sup> Perhaps it was the paucity of the returns which led Petiver to acknowledge in his publications but one item, a cedar berry, from "my Kind Friend, Mr. John Dickinson of Bermuda."<sup>182</sup>

Petiver evidently had a larger number of correspondents in Jamaica than in any other American colony—possibly a consequence of the cooperation of Dr. Sloane who, as physician to the Governor in the years 1687–89, had made many acquaintances in the island. As early as January 16, 1692/3, Petiver recorded that he had sent to the Reverend

<sup>179</sup> The plants are listed in *Sloane 3332*, fols. 22–4. Petiver's letter of thanks, dated April 10, 1692, was his fourth letter to Dickinson, but as the earlier letters are not in Petiver's *Adversaria*, we cannot date the beginning of the exchange. *Ibid.*, fols. 25–v.

<sup>180</sup> *Phytographia; sive, Stirpium Illustriorum et Minus Cognitorum Icones*, London, 1691–96.

<sup>181</sup> The correspondence is in *Sloane 3332*, fols. 19v, 22v–5v, 28–9v, 34v, 75, 115–v, 146; *3334*, fols. 62v–3; *4063*, fols. 33, 63.

<sup>182</sup> *Musei Petiveriana*, p. 75, No. 799.

Dr. John Smyth of Port Royal, Jamaica, five quires of brown paper, two collecting books, five wide-mouthed bottles, a trap for small animals, and a collection of more than one hundred dried plants for study and emulation. The shipment was prompted by the fact that Dr. Smyth had already sent collections to Petiver from Guinea, where he had been located previously.<sup>183</sup> Dr. Smyth was a friend of Petiver's brother apothecary, Samuel Dale, and it is highly probable that he had met Petiver in London before his departure for Jamaica in 1693. But, in spite of these associations and Mr. Petiver's repeated encouragements, the Reverend Dr. Smyth returned so little that, as we have seen, Mr. Petiver at length (January, 1695/6) charged that the minister's promises had been merely "the happy invention of your Mercuriall brain."<sup>184</sup>

Before this bitter remark had been written, however, Petiver had acquired other correspondents in Jamaica. Mr. Anthony Biggs, his son, Anthony, Jr., and Messrs. John and Roger Fenwick, all of Spanish Town, were together actively collecting plants, seeds, insects, serpents, and other items to dispatch to Mr. Petiver; and in 1698 the Reverend Mr. Henry Pasmore went out armed with a letter of introduction to these men and with the usual requests from Mr. Petiver that he, too, serve the latter in natural history.<sup>185</sup> Between 1696 and 1700 these men, occasionally assisted by the shipmaster, Patrick Rattray, sent many shipments of collections to Aldersgate Street. Fenwick, indeed, prepared an "Herball" of Jamaica plants for himself—a collection which Petiver asked to see, promising its return.<sup>186</sup> All these

<sup>183</sup> "James Petiver's *Collectanea Botanica*," *Sloane* 2347, fol. 5; Petiver to Smyth, Feb. 21, 1692/3, *Sloane* 3332, fols. 33-v. Smyth's collection had been shipped April 6, 1692.

<sup>184</sup> Petiver's letters are in *Sloane* 3332, fols. 43, 54, 74v, 116v, 125v-6, 166v-7, 172v, 191v-2.

<sup>185</sup> The correspondence with all these men is in *Sloane* 3333, fols. 13v-4v, 63v, 64, 128-v, 131v-3, 133v-4, 138, 230v-1v, 232, 237v-8.

<sup>186</sup> Petiver to Fenwick, Dec. 30, 1698. *Ibid.*, fol. 231. As a guide, Petiver sent Fenwick "A Catalogue of such plants as Dr. Sloan in his Jamaica Catalogue took notice to grow about . . . Spanish Town &c." *Ibid.*, fols. 246-7.



men were acknowledged as donors to Mr. Petiver in the latter's "Centuries,"<sup>187</sup> and they received such unusual marks of the apothecary's favor as presents of "Darby Ale," in addition to the usual supplies, newssheets, instructions, and the like.

After 1700—to pass over a number of Jamaicans from whom Petiver appears to have received no specimens or other communications of importance<sup>188</sup>—the most profitable of the Jamaican correspondents was Dr. David Crawford of Port Royal. The exchange began early in 1707, after Petiver had received a box of specimens from the Doctor who, as was sometimes the case, may have been moved to ship them by Petiver's blanket appeals in the "Advertisements" at the end of his "Centuries."<sup>189</sup> Petiver wrote an acknowledgment (February 3, 1706/7), and asked for a frequent Correspondence with you & shew you that nothing shall be wanting on my part to deserve so wisht for a favour I will endeavour to Figure whatever you send me that is perfect, as I have already begun, which you may perceive by the Tables I now send you.<sup>190</sup>

There followed an exchange between the two men during the next six years, rendered more regular, perhaps, by Petiver's offer of payment for specimens in 1709. Some of Dr. Crawford's contributions were used in Petiver's additions to John Ray's *History of Insects*, and others appeared in Petiver's *Pterigraphia Americana*, which was published in 1712. Dr. Crawford, however, was filled with enthusiastic notions about "physick," such as the value of a Jamaican substance which he called "Hoggum," said to have been

<sup>187</sup> *Musei Petiveriana*, pp. 18, 19, 20, 43, 72. The Reverend Mr. Pasmore died in 1699.

<sup>188</sup> Their names are given in the list of Petiver correspondents appended to this account.

<sup>189</sup> As Petiver dedicated the twenty-fifth Table of his *Varia Opera* to "Henry Barham, F.R.S., late Surgeon Major of Jamaica" [see the folio volume in the British Museum, 724. K. 1 (1-5)], it seems likely that he received aid from Mr. Barham. But I have found no correspondence between them. For Barham, see my "Colonial Fellows of the Royal Society of London, 1661-1788," in *Notes and Records of the Royal Society of London*, VIII, No. 2, pp. 204-5 (April, 1951).

<sup>190</sup> *Sloane* 3335, fol. 49.

discovered by a ship captain in a dream as a sure cure for the "dry-bellyache." Mr. Petiver thanked him for his "curious Communications in Physick," but as neither he nor Sloane (to whom Crawford also related the wonders of "Hoggum") received them in the manner Dr. Crawford felt to be deserved, a certain restraint became apparent in the later correspondence.<sup>191</sup>

After several fleeting communications from Barbados, beginning with the expedition of James Reed in 1689-90, Petiver acquired his first correspondence with a resident there in 1711. A shipmaster, Captain George Searle, who collected shells and other items for Mr. Petiver, mostly at Antigua,<sup>192</sup> was a nephew of Captain John Walduck of "Rupert's Fort in Leeward of Barbados." In 1710, John Searle, a resident of London and brother of Captain George, began to receive a remarkable series of letters from his uncle, Captain Walduck. In one of the series, dated from Barbados, October 29, 1710, Captain Walduck suggested that his nephew put him in touch with someone in the Royal Society, adding

when you design an acquaintance with some Gentlemen of the Royall Society, you must not understand me that I am qualified of keeping a correspondence with these learned Gentlemen in those Noble Studies & experiments they imploy themselves in, but I shall be very glad & spare no time, expence, or labour in any usefull observation or experiment (let them prescribe the method) they shall put me upon & lyeth within my ability.<sup>193</sup>

<sup>191</sup> The Petiver-Crawford correspondence is in *Sloane 3321*, fols. 234-v, 279-v; 3335, fol. 49; 3336, fols. 18, 25, 39; 3337, fols. 71-v, 158. Crawford spoke familiarly of Doody, Sloane, and others of the Temple Coffee House Botany Club. Was he the same Dr. Crawford who went out to Barbados in 1697 and, after a year's correspondence, was reported by Petiver to have killed a man in a duel and fled to Martinique? See Petiver to James Cunningham, n.d. [c. Nov., 1698?], *Sloane 3333*, fols. 184-v; and *ibid.*, fols. 89-91v.

<sup>192</sup> Petiver dedicated the twenty-seventh Table of his *Varia Opera* "To his Kind Friend Capt. George Searle For divers Antego Shells, Coralls &c." See also, Petiver to Searle, March 19, 1713/4. *Sloane 3340*, fol. 14.

<sup>193</sup> *Sloane 2302*, fols. 20v-4. This volume consists entirely of letters by Captain Walduck (28 fols.).

Upon this suggestion John Searle consulted his brother, the shipmaster, and they referred the matter to James Petiver. Mr. Petiver perused the letters received from Captain Walduck and, obviously impressed, he wrote on January 1, 1710/1, as follows:

With Mr Searles permission I have had the Favour to peruse most of your very curious Letters with no small satisfaction & delight, & shall thinke my selfe not a little happy to have the Honour of Corresponding with a Person of your Intelligence, Ability & Meritt.

I am, Sir, the more emboldened to hope this Favour since it seems to be your desire (toward the Conclusion of one of your Former Letters) to have a Correspondence with a Person of the Royal Society of which I have had the honour for severall years to be a Member, at the same time you mention the sending a few trifles or rather Curiosities for so I esteem all things that are the productions of Nature, which you had picked up in your perambulations. . . .

I have, Sir, for more than 20 years dedicated a great many Leasure hours to the contemplations of Natures manifold Wonderfull productions with an inexpressible satisfaction & delight as you will probably see by the Contents I herewith send you. My first & early progress began at home and after I had made some progress in the knowledge & Collecting all the Plants att London especially the Medicall ones, that part being an absolute necessary branch of my Profession, I then proceeded to the Animal Kingdom, the various classes of these from the greater Animals as Beasts, Birds, & Fish even to the minutest Insect not many of which have escaped by Observation, so that in a few years we have already discovered neer 2000 besides the divers sorts of Land, River & sea Shells, the Fabrick, Beauty, Variety & Use of all these may justly deserve our Admiration as well as Consideration & with the Holy Psalmist say How manifold are thy Works O Lord & in Wisdom has thou made them all.

It is, Sir, to such Curious Persons as your selfe that we at this distance must owe what your parts of the late discovered World can afford us. Your residence there may give us great light into many things which we as yet but imperfectly know & others we are totally ignorant of, by gathering things in all seasons & consequently in their several states of growth or vegetation by which we shall be able to give better description and more accurate Figures of them. So that I doubt not but with your Assistance in some time we may be able to give a tollerable Acct. of the

Natural productions of your Island in Respect to its Animals, Vegetables & Minerals as also the political & trading part which you have already so well begun.<sup>194</sup>

About Captain Walduck little is known. By his own account, he had travelled widely over the American Colonies—which suggests that once he may have been a ship-master engaged in colonial trade—and he had lived in the West Indies, evidently at Barbados, for fourteen years prior to 1710. His letters bear the stamp of a widely read, largely self-educated man, with a conscious bent towards Baconian philosophy, naïvely experimental, observant (but not highly critical), and eager to make his mark among the virtuosos of his day. His letters to his nephew can be a valuable aid to the historian of Barbados, though not without some knotty problems of criticism. They dealt with the natural history and geography of the island, with the history of discovery, with the ruins of the ancient civilizations in Central America and Peru, with the North American Indians, with the economy of the British Colonies (including an excellent account of the sugar production of Barbados), with the government and politics of the British West Indies Colonies (and a mighty blast against the low calibre of the colonial governors in those parts), and with social life and customs.<sup>195</sup>

<sup>194</sup> *Sloane* 3337, fols. 135-v. Subsequently, Petiver wrote several letters as commentaries upon Walduck's observations and accounts. See *Sloane* 3330, fol. 41; 3337, fols. 135v-7v; 3338, fols. 119-20v.

<sup>195</sup> Walduck was severely critical of the specialized economy of Barbados and of the society which it had helped to produce. In his letter of Nov. 12, 1710, he wrote "An Acrostick upon the Island of Barbados and the Inhabitants thereof:

B arbados Isle inhabited by Slaves  
A nd for one honest man ten thousand knaves.  
R eligion to thee's a Romantick Storey  
B arbarity and ill gott wealth they glory.  
A ll Sodom's Sins are centred in thy heart  
D eath is thy look and Dearth in every part.  
O h Glorious Isle in Villany excell  
S in to the Height thy fate is Hell.

This is the first of my Poetry and I'le promise you it shall be the Last." *Sloane* 2302, fols. 13-6.

One gets the impression that the Captain was prepared to write more along these lines, but Mr. Petiver's letter (which he did not receive until June 22, 1712), snapped his attention back to natural history. "I am heartily disposed to oblige you in all manner of ways I am able," asserted the Captain, "and as I ever took delight in things of this Nature, so now I shall doe it with more pleasure. . . ." He thanked Petiver for his "valuable Presents," and sent him, besides three bottles filled with insects, fishes and the like,

one book of plants, with as many of their names and Virtues as I could learne; their uses I have gott from our Physicians (shall I call them), nurses, old women and Negroes, and for the future, I will take care by some Experiment or other not to be imposed upon but will serve you with truth to the utmost of my capacity.<sup>196</sup>

The above letter was read and the specimens sent by Captain Walduck were displayed to the Royal Society on November 20, 1712, and three subsequent communications from him were likewise presented.<sup>197</sup> The Society returned thanks *via* Mr. Petiver, but Captain Walduck's third communication, presented on January 7, 1713/4, and dealing with rattlesnakes, seemed, in the opinion of the Society (which had given much attention to rattlers), "to give too much credit to the ill-grounded reports of the Vulgar."<sup>198</sup> But, in spite of the Royal Society's somewhat scornful attitude, Mr. Petiver dedicated a table of his *Pterigraphia Americana* to Captain Walduck and gave additional acknowledgment of the

<sup>196</sup> Walduck to Petiver, Sept. 17, 1712. *Sloane* 2302, fols. 25-6.

<sup>197</sup> *Journal-Book*, XI, 314, 401; XII, 114; *Letter-Book*, XV, 92-4 (Mss. in The Royal Society Archives); *Sloane* 4065, fols. 164-5.

<sup>198</sup> Jan. 7, 1713/4. *Journal-Book*, XI, 401. The full account by Walduck is in *Sloane* 3339, fols. 113-6v.

Captain's contributions in an article in the *Philosophical Transactions* for 1715.<sup>199</sup>

Captain George Searle appears to have been the intermediary who established communications between Mr. Petiver and Captain Thomas Grigg and his wife, Madame Rachael Grigg, both of Parham Plantation, Antigua, the only permanent residents of the island from whom Petiver received any returns of importance.<sup>200</sup> The exchange, which netted Mr. Petiver an unusually large number of shells, plants, and insects, began early in 1712, when Petiver sent supplies and a plea for cooperation to Captain Grigg. Madame Grigg took such an active interest in helping furnish Mr. Petiver's "philosophical Parlour," as he aptly expressed it, that he sent her a separate gift of six pairs of gloves in 1713.<sup>201</sup> And three years later, when Petiver's ill health had begun to impair his activity, Madame Grigg reversed the usual pattern by protesting Mr. Petiver's failure to answer letters.<sup>202</sup> The Griggs cooperated with Dr. John Douglas and with Captain Searle, and they brightened Mr. Petiver's declining years with Antiguan

<sup>199</sup> Table XIX in *Pterigraphia Americana; Phil. Trans.*, XXIX, No. 346, p. 357 (Dec., 1715). In both cases Petiver referred to him as Capt. *Thomas* Walduck, though their seems to be no doubt but that he referred to the same man. Walduck conducted some experiments in plant growth of an unusual nature for the time, concluding that water, impregnated with nitre, makes plants grow. See Walduck to Petiver, May 20, 1714. *Sloane* 3338, fols. 164-5. An extract of this letter is in the Royal Society, *Letter-book*, XV, 92-4. Walduck returned to London early in 1714, possibly to die soon afterwards. Earlier, he had announced his intention of "seeing London once more" and then of going to Carolina. I have found no trace of him after 1714.

<sup>200</sup> I exclude Dr. John Douglas here, as being no permanent resident. Two earlier Antigua correspondents, Dr. Daniel Mackenning (1694-95) and a Mr. Rickets, "Gardiner to Mr. Gales at Falmouth in Antigoa" (1708), appear to have returned little or nothing. See *Sloane* 3332, fols. 45v-6, 55, 162v; 3336, fols. 39v-40v.

<sup>201</sup> *Sloane* 3338, fol. 129. Madame Grigg was not the only woman to contribute to Mr. Petiver's collections. There were also Madame Margaretha Hendrina van Otterren, widow of "the late most exquisite Botanist Dr. Oldenland," of the Cape of Good Hope (*Musei Petiveriani*, No. 343 and p. 43); and Madame Hannah Williams of Carolina, of whom more below.

<sup>202</sup> *Sloane* 4065, fol. 240 (March 1, 1715/6).

shells, plants, and butterflies among which he found several items to "figure" for future publications.<sup>203</sup>

Among the mainland colonies of North America, James Petiver found his most rewarding correspondence from the Carolinas. North of Maryland (from which, as we have seen, he received contributions from a surprising number of itinerants) Petiver developed only a small number of correspondents all of whom, as it turned out, communicated with him for only short lengths of time. In the whole of New England, otherwise well abreast of the new philosophy, Mr. Petiver appears to have exchanged scientific communications with but three men: Benjamin Bullivant, Hezekiah Usher, and the Reverend Mr. Cotton Mather. Bullivant was a brother apothecary who, possibly because of irregular practices found intolerable by the Society of Apothecaries, migrated to Boston in 1696.<sup>204</sup> He sailed in late May or early June of that year, equipped by Mr. Petiver with collector's supplies and full directions to collect, preserve, and dispatch to the shop at the Sign of the White Cross in Aldersgate Street all plants, shrubs, insects, fishes, reptiles, and the like that he could find possible.<sup>205</sup> Before the year had passed, Mr. Bullivant had joined forces with that pious, unstable, but well-connected speculator in mines and mining lands, Mr. Hezekiah Usher, whom he recommended to Petiver as an additional correspondent in New England. Together they sent Mr. Petiver a small collection with

<sup>203</sup> Table XXIX of Petiver's *Varia Opera* was dedicated to "Capt. Thomas Grigg at Antego." The Grigg-Petiver correspondence is in *Sloane* 3322, fol. 25; 3338, fols. 38, 129; 3339, fols. 81, 149; 3340, fols. 13-v, 59, 74v, 182, 184-5; 4065, fols. 69, 176, 240.

<sup>204</sup> Bullivant had been apprenticed eight years prior to 1671 to Thomas Child, from which apprenticeship he was "made free" on April 4, 1671. He set up a shop in London and in June, 1676, was found guilty of selling medicines illegally through the medium of a scrivener's shop on White Cross Street. *Court-Book, 1 Sept., 1651-6 April, 1680*, fols. 45, 184, 184v, 208v (Society of Apothecaries' Library, London).

<sup>205</sup> Petiver "to Mr. Bullivant when he went for Boston," May 26, 1696. *Sloane* 3332, fols. 211-2.

covering letters on October 20th. Petiver reported promptly to the Royal Society, whose minutes for December 2, 1696, recorded:

There was a letter from Boston in New England read which accompany'd six Butterflies of which it was the Discription: Mr. Petiver assured the Company he had found most of them in England. He was ordered to answer the Letter, & give the Gentleman thanks for the pains he had been at.<sup>206</sup>

Petiver wrote both to Bullivant and to Usher on the following January 12th (1696/7). He thanked Bullivant, congratulated him on his safe and speedy voyage to New England, spoke fearfully of the prospects of war in Europe, expressed hope for a lasting peace that would bring "uninterrupted commerce" so that "Botany [could] flourish," acknowledged hopefully the cooperation of Hezekiah Usher, promised that whatever the two men should send "I will spare for neither pains nor cost to publish to the world & let them know of it," and sent them, as a guide for their future collections, a copy of John Josselyn's *New-England's Rarities discovered* (1672) with items marked which he most "highly desired."<sup>207</sup> To Usher he wrote as follows:

I cannot sufficiently acknowledge the great obligations I stand indebted to our good Friend Mr. Benj. Bullyvant for making me so happy in the Correspondence of so ingenious & worthy a Person as your selfe. Sir, the Collection of Butterflies you sent, with your Letter I according to your desire communicated to the Royal Society who were highly pleased with your ingenious performances & ordered me to return you their thanks with an humble desire that you will be pleased to continue your (so well begun) Communicating to me, & knowing that I have correspondence in severall parts of the world & that my inclinations tend to the promoting of naturall History, viz. the Knowledge of Birds, Beasts, Fishes, Insects, Shells, Herbs, etc. they have ordered me to give you an Acct. of in order to be published in the Monthly *Transactions* of what ever of these things shall from forreign parts come to my hands. This I

<sup>206</sup> *Journal-Book*, X, 8.

<sup>207</sup> *Sloane* 3332, fol. 234.



am now doing for some parts of Africa & the East Indies in relation to some Plants Shells & Insects I have lately rec'd from thence and being very willing to do the like for New England I must desire your farther assistance in furnishing me with more Insects and what plants, Shells, & Mineralls your parts afford & particularly in the knowledge of the last I understand you are as deservedly famous as in the 1st, viz. Insects. I am especially sensible you are most exquisitely curious & to let you see that how justly I can value anything in Nature that is rare & curious & to perfect which I will spare neither pains nor charge so far as my mean abilitie can reach, I have employed one very curious in this sort of painting to draw one of your Butterflies you sent, the which I here present to you, & do design suddenly to grave it in my Plate to my next *Century* which I will send by the first Shipps with a collection of some of our English Plants, Shells & Insects. . . . [part of the letter is lost at this point] but Fossils, viz. Stones, Earth, Mettals, Minerall &c I am att Present the least acquainted withall, I must therefore beg your kind information & assistance, that which I shall gratefully acknowledge & if you please to send me whatever of this Nature your parts afford, I can assure you they will be highly acceptable to me. I have, Sir, sent you & my kind friend Mr. Bullyvant a booke to peruse relating to the Beasts, Birds, Fishes, Serpents, & plants whch have been observed by one Mr. John Josselin in New England. I have made bold to make some short remarks on it<sup>208</sup> with easie directions how to preserve what is therein mentioned or any Plants or Animals like them, by which Directions they may be safely sent to me. Something of each of these I desire you will not fail of sending by the very first shipp after this comes to your hands, & after that by every conveniency that we may lose noe time & that you may have the deserved honour of being the first Communicator & discoverer. And be assured whatever you send me I will by the next shipp after I receive them return you my opinion of them & a farther acct of them as soon as printed.

Thus Sir I commend you to the divine benediction of him that created us & all things wishing you a long & peacefull life to enjoy & publish your stupendious & wonderful works of his wisdom. Remaining (with great impatience till I again hear from you) Sir,

Your Servt.

J. P.

<sup>208</sup> See "Observations on Mr. Josselyn his New England Rarities discovered. Sent these with the book to Mr. Bullyvant & Mr. H. Usher." *Sloane* 3332, fols. 231-2.

P.S. Sir In relation to the Butterflies you sent be pleased to take what follows, viz. [comments on each of the six specimens with primary regard for the "first discoverer" of each]

Thus Sir I have cursorily run through your very acceptable present of New England Butterflies, & can not but highly admire your most commendable & worthy Genius in the speculation of this hitherto overlookt & neglected tho beautiful part of Gods creation. There's none but inconsiderate Man that scoff & deride the contemplation of his minute Animalls, who never consider that God was the Creator of these as well as themselves & that all he made was good, which granted, surely there is nothing that he in his divine wisdom thought worth his creation but highly deserves our inspection & contemplation. Doubtless it's a duty incumbent on us to admire our creator in the works of his Creation. This consideration noe doubt occasioned the Divine Psalmist in contemplation of the various & stupendious works of the Creation thus amazingly to express him self *Iam ampla sunt opera tau O Jehova &c.* How manifold are thy workes Lord & in Wisdom hast thou made them all. We have also for our example the wisest of men, who gloried in the Knowledge of which by others was accounted vile abject & despicable, we may also take notice that the elegant mecanism of the bathed [baited?] spiders webb & industry of the painfull Ant were not by these great Men unobserved. I can not but take notice that a certain curious Observer of these minute Animalls was pleased to express *Quod nulla est tam, exilis aut abjecta creatura quin ex attenta & diligenti ejus consideratione varia & abundans occasio ratioque inveniri possit deum laudandi atque [?] admirabilem sapientiam ejus & ineffabilium imo incomprehensibilem providentiam admirandi.* The which if all these unthinking People would take seriously into their Consideration, they would presently find how to spend their time better than thus foolishly to censure others. In vindication of Insects & to promote the Knowledge of them, I could give you many Instances of their various Medicinall Virtues & several very considerable Uses that are & may be deduced from them as well in Mechanicks as Physick, but in Consideration it will take up to much room here being more fitt for a Volumn then a Letter I shall for the present wave it, with hopes that nothing will take off your wel begun & most ingenious contemplation of these things but that you will be pleased to prosecute it with daily assiduity & by the next & all oppor-

tunities let me frequently receive something of this nature from you then which nothing can be more acceptable to Sir

Your most obliged Friend & humble Admirer

J. P.<sup>209</sup>

Petiver followed this with another letter to Usher on August 29, 1697, accompanying it with a collection of English insects to give additional impetus and direction to his New England friends. But Hezekiah Usher was dead before the letter was written, and Benjamin Bullivant was left alone to collect for Mr. Petiver.<sup>210</sup>

Mr. Bullivant kept on. On January 15, 1697/8, he addressed a letter to Petiver in which he acknowledged receipt of Josselyn's *New-England's Rarities*, observed that he found Josselyn "to be short but Nervous," and continued with a considerable account of "observables" in New England. He described a variety of Indian remedies for human ailments and gave brief accounts of New England fireflies (described as "A Glow-worm volant"), butterflies, grasshoppers, hummings birds, tortoises, and clams. Mr. Petiver read the letter to the Royal Society on the following May 25th (1698),<sup>211</sup> and he addressed Mr. Bullivant on May 30th to thank him for his communication and to discuss further some of the items in it. Petiver was especially anxious to receive specimens of the New England firefly (of which, he said, he had received specimens from Virginia), the humming bird, the bullfrog, and New England reptiles; and he sent Mr. Bullivant copies of the last two issues of the

<sup>209</sup> *Ibid.*, fols. 226v, 243-5. The letter has been separated and bound in two parts in this volume with a portion missing between fol. 226v and fol. 243. Usher had previously corresponded with Robert Boyle. See his letter, dated Boston, Dec. 8, 1682, in *Boyle Papers*, VII, No. 36 (Royal Society Library).

<sup>210</sup> The letter is in *Sloane 3333*, fols. 57-8. For Usher's death see the *Diary of Samuel Sewall*, I, 456. (*Massachusetts Historical Society Collections*, 5th ser., V). His revealing will is published in *The Historical Magazine*, 2nd ser., IV, 120-6 (Morrisania, N. Y., Sept., 1868).

<sup>211</sup> *Journal-Book*, X, 70. The letter is copied in part in both the *Guard-Book*, B-2, No. 46, and the *Letter-Book*, XI, pt. ii, fols. 61-2 (Royal Society Archives).

newsheet, *The Present State of Europe*.<sup>212</sup> Except Mr. Petiver's subsequent printed acknowledgments of butterflies received from Messrs. Usher and Bullivant in the *Musei Petiveriana*, the correspondence appears to have terminated at this point. A Mr. Bullivant addressed Petiver from Northamptonshire in 1711 to consult with him about some medical problems, but there is no evidence as to whether it was the same man or, if so, when he returned to England.<sup>213</sup>

James Petiver's communications with the Reverend Mr. Cotton Mather were, by comparison with others of his correspondents, of small consequence. The bulk of Mather's scientific correspondence to England was addressed to Dr. John Woodward and to the successive Secretaries of the Royal Society, Richard Waller and Dr. James Jurin. Mr. Petiver came in for very little and this, accidentally, as it were, upon the sudden death of Waller in January, 1715. The uncertainty that arose about Mather's selection to the Royal Society in 1713 arose, in part, as a result of Secretary Waller's unexpected demise, and Mr. Petiver, either of his own volition or upon an unrecorded directive of the Council of the Royal Society, took advantage of the opportunity not only to explain the situation to the Reverend Mr. Mather but also to invite him to exchange scientific data and specimens. Petiver wrote on April 6, 1715. He stated that he wished to write to Mather since he had first seen the latter's letters to Dr. Woodward and Mr. Waller (the series called *Curiosa Americana*, sent to Woodward and Waller in 1712), "which Mr. Waller lent me after it had been read in our Royal Society, which justly gave you an Opportunity of being proposed a Member of."<sup>214</sup> Mather had been elected

<sup>212</sup> *Sloane* 3333, fols. 134v-6.

<sup>213</sup> *Journal-Book*, XI, 216. April 19, 1711.

<sup>214</sup> Petiver to Mather, April 6, 1715. *Sloane* 3340, fols. 155-7. Petiver made copies of the *Curiosa Americana* for his own use. See *ibid.*, fols. 277-97v. See also Petiver to Woodward, Dec. 4, 1716, *ibid.*, fol. 307v.

to the Society without opposition, said Petiver, and "The reason of your & the other Gentlemen's being out of the printed List [of *voting* Members who had paid their fees, taken the oath, and personally signed the registry book] is not being personally there to subscribe to the orders that should be tender'd to you, which I suppose our late Secretary acquainted you with."<sup>215</sup> Petiver congratulated Mather upon his election to the Society, sent him some "scattered papers" of his own, together with a collection of botanical specimens, and invited him to send further observations on the natural phenomena of New England and specimens of the flora and fauna there.

It seems likely that Mr. Petiver, as he frequently did, followed this letter with another to Mather within a year. If so, the subsequent communication has not come to hand. But Mather suggested that he had received more than one letter from Petiver when he wrote from Boston on September 24, 1716, saying,

"Tis high time for me to make you some return that may express my sense of the obligations which your letters, with what accompanied them, have laid upon me. 'Tis a vast load, and a somewhat uncommon variety of Employments, which my Various Capacities at home and Correspondence abroad impose upon me."<sup>216</sup>

The Reverend Mr. Mather then went on to describe experiments made in Boston of mixing red, blue, and yellow Indian corn, on the one hand, and gourds and squashes on the other, in order to observe the cross-fertilization that took place. He sent "6 or 7 plants" peculiar to New England and told of their "virtues" as related by the Indians and confirmed by the English settlers. And he promised more for the future, concluding with these words:

<sup>215</sup> The unusual circumstances of Mather's election are set forth in my "Colonial Fellows of the Royal Society of London, 1661-1788," *Notes and Records of the Royal Society of London*, VIII, No. 2, pp. 199-203.

<sup>216</sup> *Sloane 4065*, fol. 255.

I hope annually to treat the Royal Society also with such a Number of communications that if every Member of that Illustrious Body whose Name stands in the catalogue (an Honour not yett observed for mine) will do but half as much, the stores of your collection will soon become considerable.

Here ended, it would appear, the communications between Mr. Petiver and the Reverend Mr. Cotton Mather. The latter's subsequent correspondence with the Royal Society was, as has been noted, directed through channels other than Mr. Petiver; and Petiver's failing health may well have been a factor in the dearth of the exchange.

If Mr. Petiver's correspondence with New England was ephemeral, his efforts in the middle colonies were wholly barren of results. In the early 1690's the Reverend Dr. Alexander Innis promised to make collections in New York, where he proposed to settle. Mr. Petiver wrote to him twice in 1694 at "Boscobel House near Hampstead upon Long Island" to remind him of "my former Requests to you & what your self were pleased to promise me before you left England."<sup>217</sup> Twice again in 1695 Mr. Petiver sought to arouse the Reverend Dr. Innis to action: "I must confesse," he wrote on November 6, "the promise of a Clergyman gave me & my friends as well as yours no small hopes of effectually hearing from you." But it was to no avail.

Equally disappointing was the promise offered by Cadwallader Colden who, as we have seen, had written to Mr. Petiver (October 17, 1709) to offer "all the Assistance in my power" as he was about to set out for Pennsylvania. Petiver had responded with his usual eagerness:

I think myselfe very much obliged to you for your Kind Assurance of serving me when in Pennsylvania. That part of the Continent I have as yet never seen anything from so that whatever you send will be New to me, As well the Insects, Shells, & Fossills as the Plants. And be

<sup>217</sup> Petiver to Innes, c. June, 1694. *Sloane* 3332, fol. 38. See also *ibid.*, fols. 19, 53v, 125, 168.

Assured, Sir, as soon as ever I shall be so happy as to receive anything from you with directions how to write you shall hear largely from me with any Remarks on what you shall send as also some Tables of Plants, Insects &c which I have lately engraven relating to Carolina Virginia &c.

I hope you will take some Quires of Brown Paper with you to put the Plants in with some wide mouthed Vials & Bottles for Frogs, Lizards, Snakes, & all small Insects as Spiders, Wasps, Flyes, Grasshoppers, worms, leaches &c. These may be all sent together drowned in Rum which I shall gladly pay you for & what other charges you meet.<sup>218</sup>

But Mr. Colden's interest in natural history seems to have languished after his arrival in Philadelphia, in 1710. He wrote forty years later to Linnaeus (February 9, 1748/9) to say that his early American attempts in botany had been discouraging and that he had abandoned the study for nearly thirty years, until Linnaeus had given him "such new lights" that he was re-inspired and renewed his botanical interests.<sup>219</sup> Mr. Petiver's appeals, then, fell on deaf ears, and the link that Dr. Charles Preston had forged in Petiver's chain of correspondents was soon broken.<sup>220</sup> Still, who can say that Cadwallader Colden's active interest in natural history and other aspects of science, as demonstrated to a later generation after Mr. Petiver had passed on to his reward, had not been stimulated by the apothecary at the Sign of the White Cross in Aldersgate Street?

We turn from the middle colonies to Virginia, for Petiver had no important correspondents in Maryland other than the itinerants considered above. Both of his Virginian correspondents, William Byrd II, and the Reverend Mr. John Banister, have been referred to already, and their communications with Mr. Petiver were, at the outset, inter-

<sup>218</sup> Petiver to Colden, Oct. 27, 1709. *Sloane 3337*, fol. 63v.

<sup>219</sup> *Colden Papers*, IV, 95-9 (*New York Historical Society Collections*, IX, X, L-LVI, Albany, 1877-78, 1918-23).

<sup>220</sup> Petiver wrote to Preston, March 22, 1710/1, saying that about two years before "you recommended to me one Mr. Coldin who was to go to Virginia or Pennsylvania, pray let me know where he is & when you heard from him." *Sloane 3337*, fols. 122v-3v.

related. The promotional activities of Mr. Petiver and his friends of the Temple Coffee House Botany Club give rise to the opinion, not without factual support, that the Reverend Mr. Banister's work in the natural history of Virginia was supported financially, at least in his last three or four years, by subscriptions raised by such friends of botany as Martin Lister, Hans Sloane, Leonard Plunkenet, Bishop Henry Compton, Samuel Doody, James Petiver, and others.<sup>221</sup> Certainly, Banister's work was highly (and deservedly) admired by these men, who discussed his communications and studied his specimens together, shared them with others, such as John Ray and Jacob Bobart, laid them before the Royal Society, and published such accounts of them as appeared in Dr. Plunkenet's *Phytographia*, John Ray's *History of Plants*, the *Philosophical Transactions*, and some of Mr. Petiver's earlier works.<sup>222</sup>

James Petiver's share in the scientific communications of the Reverend Mr. Banister by way of specimens, catalogues, drawings, and descriptions looms large among his literary

<sup>221</sup> Banister corresponded and sent specimens to all these men. A letter by Plunkenet (n.p. or d.) exists in which he "Inclosed one of the Proposals that relates to a promotion of a Natural History of Virginia if it lies in your way to Add anything to Mr. Banisters Encouragement you will oblige all partys concern'd. . . ." (*Sloane 4067*, fol. 99v; and see a similar appeal to Col. Byrd, n.d. or p., *ibid.*, fol. 105). The careful attempts of Petiver and others of the group to recover all of Banister's papers and scientific collections after his untimely death in 1692; and the subsequent efforts by the same group to find a successor to carry on Banister's work (as in the case of Hugh Jones)—all these factors appear to show that Banister was being supported financially to some extent during the years 1688–92 by subscriptions from members of the Temple Coffee House Botany Club. Perhaps additional weight is found in Banister's letter to Doody (n.p. or d., *Sloane 3321*, fol. 3v) to suggest that "some member of your Society (which I fancy may be no great difficulty to do) can prevale so far with the royal african company as to bestow on me 4 or 5 young Negroes it will be but a small matter to them yet with what flock I can procure my selfe may in time make me a pritty livelihood." He proposed further that if he died within ten years, the donors could appoint a successor to use the chattels to complete the work.

<sup>222</sup> Plunkenet, *op. cit.*, Tables VI, XXIII, XXV, XXVI, CCIX, CCXI (7 pts. London, 1691–1705); Ray, *op. cit.*, II, 1528, 1928; *Phil. Trans.*, No. 198, XVII, pp. 667, 670, 672; No. 247, XX, p. 467; and for Petiver, see especially "Papers and Draughts of the Reverend Mr. Banister in Virginia sent to Dr. Henry Compton Bishop of London and Dr. Lister from Mr. Petivers Collection," *Sloane 4002*, 118 fols.; and *Sloane 2346*, fols. 25v–7, 101v, 107v.



remains. But of the actual correspondence between the two men there exists but one undated letter from Banister—and this, though addressed to Petiver, was obviously intended for the entire group of Banister's benefactors to which Petiver belonged. It was written probably in 1690 or 1691, and Banister began by acknowledging receipt of a letter from Petiver sent by way of Colonel Byrd. He approved of a plan to print his communications yearly (probably in the recently revived *Philosophical Transactions*) "as being less tiresome to mens expectations," but he warned against expecting too much each year, "as I am a novice by way of Draught." He spoke of shipments of specimens sent to "my Lord of London," and he proposed the following "method" in order to "dispose my matter according to 3 Elements," that is according to the ancient Empedoclean classification of earth, fire, air, and water (although Banister felt himself to be insufficiently informed about matters relating to earth):

In that of Fire [I] shall give a Relation of the Violent & suddain Thunder & lightnings we have here, with accidents relating thereto: as also the Indians way of fire-hunting, sweating &c. In that of the Aire, I shall endeavour to give an account of the healthfulness of the Climate, with the diseases incident thereto. In that of the Water, I shall relate what great Rivers we have, how far Navigable; what quantity of Ships trade hither yearly; how we are stored with fowles, Fishes, &c; & of Those which are Undescribed, which not. I shall also give some reasons I have to think that the habitable part of the Country was heretofore Sea. In that of the Earth, of the Nature & fertilities of the soile; also somewhat of the Nature, Customes, & qualities of the Natives & of the Trade we have with them; of the Birds, beasts, reptiles, Insects that are here; together with a more particular Account of the Plants of This Country, viz. Such as are Cultivated & manured or Wild & Spontaneous; Of both which, what are already described, I shall barely Name, Unless I meet with any thing New worth Observation touching in medicinal, Culinary, or other use. Such as are not well described, I shall endeavour to rectify, & resolve the Doubtfull; those also that are Nondescripts I shall de-

lineate & describe & rank them: all under these Heads. 1. Such as are More or Less imperfect: viz. the Fuci, Algi, Fungi, Misci, Filici, &c; all those of the 2d & 3d Book of the fore mentioned incomparable History. [John Ray's *Historia Plantarum Generalis*]. 2. Such as are Less Perfect, as Grasses, hops, Hemp, Nettles, Spinage; all that are in the 2th & 4th Books. 3. Such as are more perfect, whose seeds are, 1st Raised; 2d capsulate. 4. Of Trees, & Shrubbs.

Thus did the Reverend Mr. Banister describe to his sponsors the principal heads of his proposed natural history of Virginia. He indicated further that he was "very willing to cast it into any other [form] as you shall think fit," and he requested "some Instructions towards the finding of Mineral Waters, several sorts of Earth, &c., & to buy me Willoughby<sup>223</sup> or some other that has writ at large of Birds & Beasts that I may know what are & are not described." He stated that a "good microscope" would be useful, that he desired a ream of brown paper, three or four quires of good paper "for draughts," and samples of herbs and drugs that might be duplicated in Virginia. With such evidences of Banister's industry and intelligent effort as they had at hand, and with such promise for the future as the above communication indicated, it is not surprising that Mr. Petiver and his friends felt not only a keen sense of personal loss but also an incalculable loss to science when the Reverend Mr. Banister was accidentally killed in the early Summer of 1692.

Petiver's correspondence with William Byrd II appears to have been unilateral. Obviously the two men had known each other when Byrd was in England during the 1690's and beyond. Both had frequented the Temple Coffee House Club, both had cooperated in the support of the Reverend Mr. Banister, and both had become Fellows of

<sup>223</sup> Francis Willoughby, *Ornithologiae libri tres*, London, 1676; *De Historia Piscium*, London, 1686.

the Royal Society. But Byrd slipped back to Virginia in 1704-05 without having been briefed by Mr. Petiver, possibly because, as he wrote to Sloane (April 20, 1706), "The News of my Father's Death hurry'd me so suddenly from England that I had not time to receive the commands of the Society or of your selfe, so laborious a member of it."<sup>224</sup> In this same letter Mr. Byrd offered his services to the Royal Society, deplored the want of an able "missionary Philosopher" in Virginia (where there was such "a large field for Natural inquirys"), stated that his father's affairs engaged his attention so that he himself could do little by way of scientific observation and collection, and sent a box of snake-root "with which the Indians us'd to cure the bite of a Rattle-snake," and some other medicinal herbs, including samples of "Ipecacuanha root," said to be identical with that imported at heavy expense from Brazil and the Spanish Colonies.

Mr. Byrd's letter was read to the Royal Society on December 11, 1706, and the specimens were inspected by the Society on the following January 29, 1706/7.<sup>225</sup> In ipecacuanha "was judged to be good," but the entire lot of Byrd's specimens was turned over to Mr. Petiver for his opinion, with instructions to notify Mr. Byrd. Petiver wrote to Byrd on the following May 1st. He reported that he had found "the Rattle-snake root is altogether a Stranger to us," and that the ipecacuanha root appeared to be much the same as that of Brazil, at least in its medical properties. But as Mr. Byrd had failed to send specimens of the whole plants, the parts received being without leaves, flowers, and seeds, it was impossible to identify them accurately or to attempt to classify them. This omission, of course, opened

<sup>224</sup> *Sloane 4040*, fol. 151. A copy is in *Sloane 3335*, fols. 77-9v (Petiver's papers!).

<sup>225</sup> *Journal-Book*, XI, 105, 108.

the way for Mr. Petiver to invite Byrd to send not only the missing parts of the plants in question but also other specimens of the natural history of Virginia. As a guide for this work, Petiver sent "3 Tables of Virginia Plants, most of them Mr. Bannister's drawings."<sup>226</sup> To this communication William Byrd did not reply directly. Instead, he wrote to Dr. Sloane who, as Secretary of the Royal Society, had acknowledged Byrd's communications and, later, had discussed the specimens of Virginia plants at some length.<sup>227</sup> Petiver wrote again on April 1, 1708, this time sending brown paper and his printed directions for collecting; and he addressed Mr. Byrd yet a third time on January 3, 1709/10, supposing that his previous letters had miscarried. He commented upon Byrd's communications to Sloane and Sloane's replies, which he had heard at meetings of the Royal Society, urged Byrd to employ his Negro servants to collect specimens, and concluded sadly that:

I have as yet observed very few Plants, Insects, Shells, or Fosills from Virginia but from Maryland & Carolina several hundreds & am by every shipping in Expectation of many more from divers hands & particularly from one who hath lately written a Natural History of Carolina [John Lawson]. I am very sensible many of the same plants grow with you nevertheless whatever I can obtain from Virginia & more Northward convinces me they may more probably be the very same Mr. Bannister had observed who lived upon that spott.<sup>228</sup>

Evidently, however, Mr. Byrd preferred to confine his scientific communications to others, and Mr. Petiver approached him no more.

Of all the mainland colonies, the Carolinas supplied Mr. Petiver with the largest and the longest-lived group of

<sup>226</sup> *Sloane 3336*, fols. 10v-1v.

<sup>227</sup> Byrd to Sloane, Sept. 10, 1708. *Sloane 3337*, fols. 64-5; and *Letter-Book*, XIV, 230-40 (Royal Society Archives); Sloane to Byrd, Dec. 7, 1709, *Sloane 4068*, fols. 54-5; and *Letter-Book*, XIV, 241-3.

<sup>228</sup> *Sloane 3336*, fols. 48v-9; *3337*, fols. 66-7.

correspondents. At least ten Carolinians exchanged specimens and scientific communications with the London apothecary, half of them continuing in their correspondence for a decade or more. All of them, save one, were South Carolinians. The exception was John Lawson, to whom Petiver referred in his letter to William Byrd quoted above.

John Lawson's antecedents have hitherto been unknown, and it has been conjectured that he was of Yorkshire origin.<sup>229</sup> However, in view of his connection with James Petiver and of his obvious interest in and knowledge of medicines, botany, and natural history, it seems likely that he was the John Lawson referred to in the *Court-Book* of the London Society of Apothecaries under the date of February 1, 1675: "John Lawson, son of Andrew Lawson, Citizen & Salter of London, examined, approved & bound to John Chandler for 8 years."<sup>230</sup> Two years afterwards, his former master having died, the Court of the Society (May 1, 1677) turned Lawson over to James Hayes for the rest of his time. Whether Lawson completed his apprenticeship is unknown, and there appears no further record of him until he turned up in the colonies in 1700, arriving in New York and proceeding to Charleston. But in his letters to Mr. Petiver, of those extant, the first makes clear that he had known Petiver, at least by reputation, that he had been in personal association with Captain William Halsted, the shipmaster who promoted Petiver's interests in various places, and that he had met with some of Petiver's correspondents in Charleston.<sup>231</sup> This letter, dated April 12, 1701, from "Bath County on Pamphrough [Pamlico] River, North Carolina," ran as follows:

<sup>229</sup> See the sketch of Lawson in the *Dictionary of American Biography*.

<sup>230</sup> *Court-Book*, 1 Sept., 1651 - 6 April, 1680, fols. 202, 220v.

<sup>231</sup> In his *History of Carolina* (p. 78) Lawson seemed surprisingly familiar with Banister's work in Virginia, and spoke of him as "the greatest *Virtuoso* we ever had on the Continent."

Good Sir

I have sent you a Letter dated from Albemarle County in North Carolina by which I desire your advertisements in order to the collection of Animals Vegetables etc. I shall be very Industrious in that Employ I hope to your satisfaction & my own, thinking it a more then sufficient Reward to have the conversation of so great a Vertuosi. I shall shortly goe to the Sea Board which voyage I hope will furnish me with shells according to your Request to Mr [Edward] Bohun [of South Carolina] & Mr Elliot whose letters of yours to them I have. As for Cortex Elulheria [eleuthera bark?] I have laid out for, & will use with means I possibly can to procure it; butterflies, & other insects you may depend of what our new Settlement affords, fish likewise. I came about Xmas last to that place by land, from Ashley River in 11th lat. 32:45 to Okakock Inlet which this River runs to. Sir, my service to Major Halstead.

I am your most devoted att Commands,

J. L.

pray send us your Opinion concerning the distillation of Spirits from Malt, Molasses, figs, apples, Cherries, pears &c which fruit we have plenty. My journal of my Voyage through Carolina I shall send you with the nat. [natural history?] Sir Adeu

direct for me att pamphrough River in North Carolina to be left for me att Collonel [? illegible] in Philadelphia Pensilvania. I shall (God willing) Send you some collections by October next by way of Pensilvania or Virginia.<sup>232</sup>

No further communications have been preserved until those written in 1709. In the meantime, Lawson travelled extensively in the southern colonies, partly on the basis of which he prepared *A New Voyage to Carolina*, first published in 1709 and republished in 1714, and later, as *The History of Carolina: Containing the Exact Description and Natural History of that Country: Together with the Present State thereof*. He acquired lands and political interests, including a project to settle Swiss emigrants and Palatine refugees in North Carolina. In connection with the latter scheme,

<sup>232</sup> *Sloane 4063*, fol. 79. Was it his "Journal of A Thousand Miles Travel among the Indians, from South to North Carolina" that Lawson sent to Petiver? See Lawson's *History of Carolina*, London, 1714, pp. 6-60.

Lawson returned to England in 1708, where he arranged the publication of his account of Carolina, won appointment as Surveyor-General of North Carolina at the hands of the Lords Proprietors (April 28, 1709), successfully touched the said Lords Proprietors for £20 to prepare a map of North and South Carolina, and consulted in person with Mr. Petiver.<sup>233</sup>

Lawson evidently made his visits to James Petiver in the Summer of 1709. On September 7 of that year Petiver wrote to his friend, William London, that:

I have lately obtained an Acquaintance with one Mr. Lawson Surveyor General of Carolina. He is a very curious person & hath lately printed a Natural History of Carolina wherein he hath treated the Quadrupeds, Birds, Fishes, Reptiles, & Vegetables, particularly the Trees, with a great deal of Judgment & accuracy. He suddenly designs to return for Carolina & as he may be serviceable to you is very ambitious of being known to you. If therefore you will as soon as possibly you can appoint a time I will wait on you with him. He is very desirous of procuring what variety of Grapes & Plumbstones he can before his departure for which I doubt not but he will make you a suitable return from thence of whatever you desire from those parts.<sup>234</sup>

Prior to Lawson's departure with the Palatine Germans in mid-Winter, 1709-10, he consulted frequently with Mr. Petiver, who gave him both encouragement, instructions, and supplies for further work in natural history and furnished him with drugs for use on his voyage and in the Colonies. Twice in mid-October Petiver wrote, first to send John Ray's tract on Banister's plants, "a few pinns that your Insects may not fly away after you have once caught them," and a packet for delivery to Stephen Bordley, one of Petiver's lesser correspondents in Maryland; and

<sup>233</sup> William L. Saunders (ed.), *The Colonial Records of North Carolina*, Raleigh, 1886-90, I, 709, 717; *Calendar of State Papers, America and the West Indies, 1708-1700*, 402, 479, 480, 675, 813, 828; A. T. Dill, Jr., "Eighteenth Century New Bern," *N. C. Hist. Review*, XXII, pp. 11, 15, 152, 171 (Jan.-April, 1945).

<sup>234</sup> Petiver to London, Sept. 7, 1709. *Sloane 3337*, fol. 56v.

again to send some "cholick root" and other drugs which Lawson had requested.<sup>285</sup> Lawson replied from Portsmouth on November 9, thanked Petiver for his "kind present" and for "the Physick," stated that he had found the "cholick root" to be excellent, and that a few drops of Mr. Petiver's citron laudanum had done "a great kindness" to a "poor Palatine" in relieving him of a delirium. Mr. Petiver's were "choice remedies," said Lawson, "and fit for transportation to our parts." He continued:

The wind is westernly & I doubt [not?] we shall stay here longer than we wish for. Therefore if you please to send some parcels for sale & the price, I doubt not but they will do a great deal of good amongst us & answer the expectation in the returns; if you will have money send word or return'd in any commodity that Carolina or Virginia affords. If you have none made up I desire you would send the root, seeing the Dr of our ship whom I shewed it to has desired me to get him some & he would pay for it, but I could not resolve him the price. If the last months memoirs be out pray send me one & a half dozen corks for the vials, seeing quarts are too small to stop them. You may send them by the Portsmouth Coach Monday next, who comes from the White Hart in Southwark. Our Palatine children dye apace, we have lost above 40 already, they are chiefly very youngue ones. The men & women are generally in health. We are to be convoyed by Sir John Harris with a squadron of 4 or 5 men of war & goe with the first settled easterly wind. . . . This is what I can think on att present until my arrivall in America where you shall [receive?] my monthly observations with the Collections. . . .

P.S. If Mr London would oblige me with something by the next Virginia fleet I shall not forget to make him a gratefull return. Direct to be left for me at Collonel James Wilson's in Elizabeth River in Virginia & by a James River ship if possible. I hope you will not forget the grape seeds & cork acorns. I desire Juniper berries & buckthorn berries of this years growth, an ounce per the Coach if possible. pray Sir excuse this boldnes.<sup>286</sup>

<sup>285</sup> Oct. 12, 14, 1709. *Sloane 3337*, fol. 63.

<sup>286</sup> *Sloane 4064*, fols. 214.



As the ships did not sail until long after the above letter had been sent, Mr. Petiver had ample opportunity to send "4 Quires of Cholick root & 6 bottles of my citron Laudanum," and he added some papers of "universal purging powders" together with "a Bill of the lowest ready money Prices, for the encouragement of those who practice with you or can otherwise dispose of them."<sup>237</sup>

After Lawson sailed he was much engaged with the settlement of the Swiss and Palatines at New Bern and with his duties as Surveyor-General—in both of which, thanks to doubtful land dealings and an abuse of his position as Surveyor-General, he made many enemies.<sup>238</sup> Mr. Petiver wrote to him on March 14, 1709/10, to send him "more physick," a *Hortus Siccus* of English plants, and some tracts on natural history;<sup>239</sup> but Lawson found no opportunity to reply until December 30, 1710. He had sent a collection of insects, plants, and animals to Mr. Petiver in the previous July, and he needed more brown paper and "preserving liquor." The season had been good, with excellent crops:

The Swiss gentlemen here arrived safe with their people & go on bravely & will (in all probability) live very nobly in a little time. What they will make of the Palatines I cannot guess, seeing they are the most sloathfull people I ever saw, above half of them are dead of the spotted fever which took them in the ship, fluxes & the dropsy. When they are taken sick they go to bed & there lye untill they dye or recover & cannot be persuaded to the contrary, although many of them were dispatched thereby. Above one half of them are dead, one reason & the chiefest was seeing they were twice as many as ought to have been on a healthful ship.

<sup>237</sup> Petiver to Lawson, Nov. 14, 1709. *Sloane 3337*, fols. 74-5.

<sup>238</sup> Vincent H. Todd (ed. and transl.), *Christoph von Graffenried's Account of the Founding of New Bern*, Raleigh, 1920, pp. 225, 226, 293, 360-2, 373, 392; *Colonial Records of North Carolina*, I, 736-8, 741, 746-7, 786.

<sup>239</sup> *Sloane 3337*, fols. 97-v.

Lawson had been unable to keep "an exact dyary as you & I proposed until July last, when I began & shall very strictly commence it the year 1711 from the first of January with the weather & whatever happens worthy of notice in this Collony." Moreover, he had made further resolves, and "if God prolongs my dayes my Intention is this:

1st. To make a strict Collection of all the plants I can meet withall in Carolina, always keeping one of a sort by me, giving an account of the time & day they were gotten, when they first appear, in what sort of ground, with the flower, seed & disapear [when disappear?] & what medicinall uses the Indians or English make thereof to have the Accompt of the same & to let me know how near they agree with the European plants of the same species & wherein they differ. Besides I would send seeds of all the physicall plants & flowers to be planted in England. As for the trees the time they bud, flower, bring their ripe fruit & soil. I hope to comply with most of them this year 1711.

2ndly. Beasts the most easy to discover fully their kinds &c seing they are not as many as the other tribes are.

3dly. Birds to procure all of this place both land & water fowls from the Eagle to the wren to know if possible the age they arrive to, how & where they build their nests, of what material & form. The colour of their Eggs and time of their Incubation, & flight, their food, beauty, & colour, of what medicinall uses if any, if rarely designed & to the Life this would illustrate such a history very much, their musicall notes & cryes must not be omitted, which of them abide with us all the year & those that go away, and what strange birds, tempestuous weather, winds, unusual seasons & other accidents affords us.

4thly. Fishes their species, names here how far they agree with those of Europe & wherein not, their food, unusuall haunts, taste, virtues, time of brood & running to scawne as they call it, what are all the year when in season which of them delight in salt water & of others in fresh streams, Lakes, ponds &c. What species are found in ponds that are often destitute of water in dry seasons, whether spawn may be transported for propagating strange species of fish & how far.

5th. Insects. the months they appear to us in, the places of their resort, how they breed & what changes they undergo, their food, make, and parts: this may be very well done by having a many small Phyols of boxes with discriptions of every insect conteyned in each bottle & when

you receive them you rank them on wyer pins in little drawers as you think fitt, having the notes constantly by you.

Fossils, as earth, shells, stones, mettalls, minerall, stratas, paints, Phisicall Earths, where & when found & what subterranean matters are yet discovered & what methods has been theretofore taken to discover & work mines of all sorts.

Of the Nature of soyles & Land what agriculture they are most fitt for, as to orchards, Gardens, grass, pasturage, Exotick plants, how they thrive & what species may be expected to agree best with this Climate, as fruits, lumber, trees for pleasure, grain of all sorts, garden seeds & seeds of all useful sorts of Grasses, of the nature and disposition of our spontaneous Vines, if they are to be meleorated & made profitable and how. Which is the best way to bring in forraign vines that they may thrive, whether by the seed or by slips or roots. How fruit came first from the seed to be meleorated to the perfection they are at now in Europe. I think grafting not so absolutely necessary in hott climates as in cold since the best peaches & apples I ever saw are eat in Carolina come from the seed which will not do (I presume) in great Brittain. As to the Vine a great help might be had from the Event the planters of Madeira, Cape of Good Hope, & other new collonies had in planting them were we acquainted therewith. Of the making wine, its ripeness & fermentation, the making of fruit as raisins, figgs, prunes &c an account of this kind would be extremely pleasant & profitable.

The present state of such a new country as this with weather each day & month affoards in season for fruits, fish, fowl, etc, the way of living, cookery, dayry, seasons of planting, reaping, advancement of trade, increase of stocke of cattle, sheep, &c. what designs are in hand to Inrich the Country & what experiments have been made and how far they have answered the design; then buildings, fencings, fortifications, Improvements of barren lands, dreyning of marshes and other improvements, what rivers, mountains, valleys, nations of Indians, mineral waters, springs, cataracts, and other natural rarities are discovered, what other accidents are of moment as to the sick, who died and who recovered and what means were used for the same either by the Christian or Indian practitioner. These transactions being faithfully communicated to you and such ingenious gentlemen of the Royal Society with their remarks on these same will lay a foundation towards a compleat history of these parts which I heartily wish I may live to see publisht. I shall be ready and glad at all times when I can with my mite be any-

ways serviceable towards compleating so good an undertaking. I shall be glad at all times when opportunity serves to hear from you and Mr. Bellers<sup>240</sup> and to have your instructions. I have some more plants collected but the books being not full I omit sending them until compleated. Sir, pardon this freedom I take with you. I only tell you my intentions and beg your advice and am and shall ever remain to the utmost of my power sir your most humble servant to command.

John Lawson<sup>241</sup>

Mr. Lawson did not survive to carry out his ambitious intentions. On an expedition up the Neuse River to collect some wild grapes in the following September (1711), he was seized by the Tuscarora Indians who, enraged by his ill treatment of them in land transactions, put him to death on September 22nd. Scarcely two months earlier he had sent Mr. Petiver "by our Governour's Lady one book of plants very Lovingly packt up," and had expressed the hope that he would soon hear again from his London friend.<sup>242</sup> Petiver received the plants in March, 1711/2, and simultaneously learned of Lawson's death. He was moved, although his sorrow arose more, it would appear, from the loss to natural history than from the loss of his friend. "The Death of these good Friends," he wrote to Bobart, "& the dilatory performances of many of my living ones quite disheartens me, so that nothing but the glimmerings of Peace & a South Sea Trade gives me hopes of a faint recovery."<sup>243</sup>

A combination of factors and persons produced an inter-related group of Petiver correspondents in South Carolina in the late 1690's and at the turn of the century. First, perhaps, in point of time, was Robert Stephens of Goose

<sup>240</sup> Fettiplace Bellers (1687-1750?), F.R.S., philosophical writer and minor dramatist. See the *D.N.B.*

<sup>241</sup> *Sloane 4064*, fols. 249-50; partially copied in *ibid.*, fol. 267.

<sup>242</sup> *Sloane 4064*, fol. 264.

<sup>243</sup> Petiver to Bobart, March 8, 1711/2. *Sloane 3338*, fol. 37. Petiver later acknowledged gifts from "My Late curious Friend Mr. John Lawson," in *Phil. Trans.*, No. 346, XXIX, 355 (Nov.-Dec., 1715).

Creek, who had contributed to Martin Lister's shell collections for some years. In September, 1697, Petiver joined with Lister to urge Stephens to supply specimens for Petiver's "Centuries," in which a Carolina shell lent by Dr. Lister had already been described.<sup>244</sup> Petiver subsequently catalogued thirty-eight plants from Goose Creek, although Mr. Stephens refused to contribute shortly after 1700, saying that Mr. Petiver did not remunerate him sufficiently for seeds and plants and that he would collect them in the future only "to please himself, & oblige one or two particular friends."<sup>245</sup>

In the meantime, however, Robert Rutherford, the ship surgeon, had turned up in Charleston, collected some butterflies for Mr. Petiver, and persuaded George Francklyn, an apothecary, to gather "simples" and to communicate with the London collector.<sup>246</sup> Almost simultaneously, Edmund Bohun, who had known Petiver in London in 1698 and had accompanied him and "halfe a dozen hearty Friends" on botanizing expeditions, went to Carolina with the resolve to collect specimens of all sorts for his London friends.<sup>247</sup> Bohun soon enlisted the enthusiastic aid of Robert Ellis, and when Captain William Walker arrived in Charleston in April, 1700, he found an unusual coterie of naturalists collecting for and in correspondence with Mr. Petiver.<sup>248</sup> Sir Nathaniel Johnson, the Governor, also entered the scene, at least to the extent of giving his blessing to the collecting expeditions of Bohun and Ellis, of expressing for Mr. Petiver "a great esteem for the person and his character," and of soliciting

<sup>244</sup> *Sloane* 3333, fols. 108, 266v-7; *Musei Petiveriani . . . Secunda & Tertia*, No. 125, p. 19.

<sup>245</sup> *Sloane* 3330, fol. 846; Robert Ellis to Petiver, April 25, 1704. *Sloane* 4064, fol. 2.

<sup>246</sup> *Musei Petiveriani . . . Quarta & Quinta*, back fly-leaf, unsp.; *Sloane* 3324, fols. 75-8; Francklyn to Petiver, May 2, 1700, *Sloane* 3321, fol. 44.

<sup>247</sup> Petiver to Bohun, n.d. (c. Feb.-March, 1698/9). *Sloane* 3333, fol. 275; Bohun to Petiver, Charleston, S. C., March 8, 1699/1700. *Sloane* 3321, fol. 33.

<sup>248</sup> Halsted to Petiver, Charleston, S. C., May 1, 1700. *Sloane* 4063, fol. 18.

garden seeds and advice on the selection of a gardener from him.<sup>249</sup> In 1701, Ellis prevailed upon his "good Friend," Captain Thomas Walker, who had a plantation in New Providence, to collect from that island for Petiver; and three years later, after "the Enemy" had taken over New Providence, Walker retired to Charleston, where he joined his efforts with those of his Carolina friends in Petiver's behalf.<sup>250</sup>

Members of this group continued to contribute to James Petiver's stock of specimens and scientific communications until 1710, although their enthusiasm and vigor fell off rapidly after 1705. Edmund Bohun was the most faithful, possibly because he refreshed his interest by occasional trips to England. Robert Ellis dropped out of the exchange after 1705; "brother" George Francklyn, the Charleston apothecary, returned to England after a few years and settled at Downton, in Wiltshire; and Robert Rutherford, Captain Halsted, and Captain Walker flitted in and out of Charleston as the trade of their ships dictated. Taken altogether, however, the group added greatly to Mr. Petiver's store in the early 1700's, and they received that publicity which Petiver usually bestowed upon his donors. Rutherford was acknowledged both in the *Musei Petiveriani* and in Petiver's printed list of butterflies. George Francklyn, "my kind Friend," was thanked in Mr. Petiver's eighth "Century." Messrs. Ellis and Bohun were thrice cited, once for an "elegant Fly," and twice for other insects contributed; and Edmund Bohun was singled out for recognition for his gift of "Bohun's yellow spotted Carolina Butterfly" in

<sup>249</sup> Letters of both Bohun and Ellis to Petiver, Spring, 1700. *Sloane 3321*, fols. 39, 40, 41, 81.

<sup>250</sup> Walker to Petiver, New Providence, Nov. 13, 1701. *Sloane 4063*, fol. 123; see also *Sloane 4064*, fol. 58; and *Journal-Book*, XI, 8 (Royal Society), which records a letter from Walker and some New Providence plants presented by Petiver to the Society (Dec. 30, 1702).

Petiver's *Gazophlacium*.<sup>251</sup> On at least two occasions, also, Mr. Petiver displayed his specimens before the Royal Society and read communications from his Carolina correspondents.<sup>252</sup>

Captain William Halsted appears to have been the intermediary who enlisted for Mr. Petiver the cooperation of two other exceptionally active correspondents in South Carolina. One of these was Madame Hannah Williams; the other was the Reverend Mr. Joseph Lord. To these was added, in 1706, Mr. Daniel Henschman; and, as these three persons occasionally cooperated in their endeavors, they formed a second group of Carolinians that, over the years between 1701 and 1713, contributed greatly to Mr. Petiver's knowledge of the natural history of Carolina.

Madame Williams sent a collection of butterflies to Petiver by Captain Halsted in 1701. As the collection included several that were new to Petiver, he was greatly delighted with it and promptly returned his printed directions for collecting, preserving, and packing specimens with a request for more.<sup>253</sup> With this exchange began a correspondence that continued for many years. Madame Williams subsequently expanded her field to include snakes, lizards, scorpions, plants, shells, and Indian items, such as an "Indian King's Tobacco Pipe," a "Queen's Petticoat" made of moss, and a variety of Indian herbs and medicines. Mr. Petiver, in return, sent collector's supplies, newsheets, copies of his "Centuries" and "Decades," and supplies of drugs from his apothecary shop. In 1705, Madame Williams complained of trouble with her spleen, asked for medicine

<sup>251</sup> See *Musei Petiveriani*, pp. 68, 69, 71, 76, 93; *Sloane 3324*, fols. 75-8; Samuel Eveleigh and a Mr. Cooper also belonged to the Charleston group, although they appear to have been of ephemeral significance. See *Sloane 3321*, fols. 200-v; *3332*, fol. 49v.

<sup>252</sup> *Journal-Book*, IX, 265; X, 222.

<sup>253</sup> Petiver to Hannah Williams, May 22, 17034, fols. 67v-8.1. *Sloane 33*

to cure it, and suggested that she could profitably peddle Petiver's prepared medicines among her friends and return him the proceeds of the sales. Petiver responded with "some Hysterick pills & others for your head & stomach," and sent a few other medicinal items for possible sale. The exchange languished for a time before 1713, evidently because Madame Williams had heard a premature report of Petiver's death. Her son visited England that year (1713), discovered that the report was erroneous, made Mr. Petiver's acquaintance, and led to the resumption of the correspondence.<sup>254</sup>

Joseph Lord, the son of a cordwainer of Charlestown, Massachusetts, and graduate of Harvard College in 1691, was a schoolmaster at Dedham and later at Dorchester before he was ordained minister (October 22, 1695) and accompanied five other New Englanders as a missionary to Charleston, South Carolina, in December, 1695. There he settled in a town later named Dorchester, about twenty miles from Charleston on the east bank of the Ashley River.<sup>255</sup> In 1701, perhaps at the hands of Madame Williams, he met Captain William Halsted, who persuaded him to send to James Petiver five quires of dried Carolina plants which he had collected. Petiver acknowledged their receipt in a letter to Lord of May 20, 1701, expressing much pleasure with the collection, "which I understand by him [Captain Halsted] I am obliged to you for as also for Collecting most of them yourself." He announced his intention of printing accounts of the plants in his *Gazophlacium*, stated his pleasure at the prospect of a settled correspondence with a person of such obvious "character & Merit," and added:

<sup>254</sup> The letters between Petiver and Madame Williams are in *Sloane* 3334, fols. 67v-8; 3335, fols. 39v-41; 3339, fols. 87-8; 4064, fols. 53, 63.

<sup>255</sup> C. K. Shipton, sketch of Joseph Lord, in the continuation of J. L. Sibley, *Biographical Sketches of Graduates of Harvard University*, IV, 101-6 (Cambridge, 1933).



There hath as yet been very little published concerning the Animals, Vegetables & Fossills of America. I have amongst other things in our Philosophical Transactions made some small attempts towards the Natural History of Mary-land, which I herewith send you & hope with your assistance & frequent transmitting me whatever you shall meet with, to be better able to perform greater things for Carolina.

You have already, Sir, so well begun there needs noe further directions but that you will be pleased to make your Collections monthly by which we shall know the true Season when every Tree & Herb produces its Flower & Fruit.<sup>256</sup>

To this letter the Reverend Mr. Lord replied on January 6, 1701/2, as follows:

In September I rec'd your Letter Dated May 20th, 1701: In which I find you expressing your apprehensions of Obligation to me for Collecting of Some Plants & my Remarks upon them; which, tho I did indeed collect, & make remarks upon them, yet I think not worthy the Appellation of unmerited Favor; especially considering that as you were unknown to me, & I reckoned not on being this way made known to your self (having never, that I know of, seen Major Halstead) my design in collecting them was, only that I might make known what Plants were here that so such Vertues [as] are not yet known might be enquired into; & therefore your Printing of the Rarities that you receive answers my Design in collecting them; only I desire it may be done without the mention of my name.<sup>257</sup> . . . If your Design (as you hint) be to write a Natural History of Carolina, I suppose whatsoever grows Naturally in the Country may be acceptable to you. . . . In your Letter I found enclosed an Extract of a Letter from Dr. Bullivant to your self, containing some remarks he made in New England, upon which (being myself a New-Englander by Birth) I shall make some remark. . . . I should be glad to obtain several things (as Gum Fraganth, Galbanum, Mastick, Rhubarb, Elaterium, Agarick &c). . . . [I send] some of the Moss of our Countrey, which I suppose to arise of seed sown on the Branches of trees, where the Bark is Rough, by means of the wind blowing it off from other trees. . . .<sup>258</sup>

<sup>256</sup> *Sloane 3334*, fols. 63v-4.

<sup>257</sup> Lord altered this in a letter of May 3, 1704, saying, "you may use your pleasure as to publishing my name." *Sloane 4064*, fol. 4.

<sup>258</sup> *Sloane 4062*, fol. 132.

Mr. Lord wrote yearly to Petiver until 1711 when, having heard the same rumor of Petiver's death that Madame Williams had credited, he left off the correspondence.<sup>259</sup> The activity of the French and Spanish fleets during the War of Spanish Succession ("Queen Anne's War") constantly threatened the exchange, and several collections were lost, especially items sent by Mr. Petiver to Carolina. The exchange was remarkable, however, not only because of the faithfulness of the correspondents but also because of the variety and quantity of collections sent by the Reverend Mr. Lord and the unusual quality of the latter's observations and remarks. Mr. Lord had little formal knowledge of botany. Indeed, he wrote to Mr. Petiver (April 10, 1705) that:

I have but little skill in Natural Productions, & have very few advantages to increase my skill (Books of that nature not being here to be bought, & Gerrard's Herbal [John Gerard, *Herbal, or General History of Plants*, London, 1597] which I had borrowed, & was the only considerable help I had to get such skill by being called for by the owner) & by that means I am not capable of ranking them under their Proper Heads.

And again, he said (August 7, 1707) that "the only book that I have that describes Herbs is Culpepper's English Physician" [Nicholas Culpeper, *The English Physician Enlarged*, London, 1653]. Still, his acute powers of observation and his eagerness to learn went far to outweigh his antiquated reference books, and he sought to keep abreast of Mr. Petiver with regard to Carolina plants. On May 11, 1702, he wrote:

<sup>259</sup> Lord's letters to Petiver (which are extant) are, in chronological order, in: *Sloane* 4063, fol. 155 (May 11, 1702); 4064, fol. 4. (May 3, 1704); *ibid.*, fol. 69 (April 10, 1705; published in the *S. C. Hist. and Genealogical Magazine*, XXI, 50-1; 3335, fols. 42-v (Nov. 17, 1706); 4064, fol. 148 (Aug. 7, 1707); *ibid.*, fol. 192 (March 7, 1708/9; published in *S. C. Hist. and Gen. Mag.*, XXI, 6-8); 3337, fols. 97v-8v (March 15, 1709/10); 4064, fol. 233 (Aug. 9, 1710; published in *S. C. Hist. and Gen. Mag.*, XXI, 8-9); 4064, fol. 258 (March 15, 1710/1). Petiver wrote, Dec. 14, 1713, having thought Lord dead until he was informed to the contrary by Madame Williams's son (*Sloane* 3339, fol. 88). In 1717, Lord returned to New England, where he lived until 1748.

Here are so many Plants growing commonly in our Woods & Plantations that I shall send you ere long some hundreds of Species; & my desire is that if you know the names & vertues of any which I give no name unto, that you would please to let me know them also. I have often thought it a very difficult [thing] to find the Tribe to which Plants belong.

Mr. Lord's interest stemmed in part, no doubt, from the fact that he served as physician to the bodies of his flock as well as for their souls. But it went farther than that, for Lord read with a critical eye the accounts of natural history which Mr. Petiver sent to him; and he sought to amplify and to correct statements he read in Petiver's "Centuries," in the *Gazophlacium*, and in the other works that he received by Petiver's hand. Indeed, from the queries, observations, and comments found in Mr. Lord's communications, one is led to conclude that Mr. Petiver must have placed Mr. Lord alongside the Reverend Mr. Banister of Virginia as his most stimulating correspondents among the permanent residents of the American Colonies.

It seems likely that conversations with Mr. Lord—possibly even a suggestion by him—led Daniel Henchman to write to Mr. Petiver on June 1, 1706. There exist, however, certain doubts about this correspondence, stemming from the questionable probity of Mr. Henchman himself. The first and only letter from Henchman that James Petiver received was dated from Silk Hope, South Carolina, June 1, 1706, was marked received as of November 20th following; and was labelled "Letter the 4th." But Petiver's papers do not contain the first three of Henchman's letters, and Mr. Petiver, in acknowledging the letter of June 1, 1706, stated that he had not received the first three. Moreover, it was more than a year afterwards before the Reverend Mr. Lord mentioned Henchman in his letters to Petiver. On August 7, 1707, Lord wrote as follows:

I have no acquaintance with any [of the natural history] that go far into the country; but one Mr. Daniel Henschman has shewed me several things which he has collected having been himself more than 300 miles in the country, which he tells me he intends to send to the Royal Society. He is now my next neighbor, & might, I suppose, do as much that way as any that is in the country, having acquaintance with those that go to trade with the Indians.

It is possible, of course, that Henschman's first three letters were lost in transit, as many were lost during those years of warfare. It is also possible, as was suggested by Mr. Lord, that the previous letters had been addressed to the Royal Society, and not to Mr. Petiver directly—although the Royal Society's collections have revealed no such letters, nor do the Secretaries' minutes contain any references to them. And it is possible that Henschman may have referred to previous letters that never actually existed as a means of impressing Mr. Petiver with his promise as a virtuoso, although the evidence is too imperfect to justify any such unkind conclusion.

Even so, Daniel Henschman's record, insofar as it is known, was not altogether savory. Born in 1677 in Boston, Massachusetts, the son of Daniel Henschman, a school teacher who relieved the tedium of the classroom with the excitement of fighting Indians, Daniel, Jr., was to have graduated from Harvard College in the Class of 1696. Shortly before graduation, however, he was dismissed from the College for theft; and, with his reputation thus marred in New England, he shipped to Charleston, South Carolina, where he became an Indian trader. By 1705 he was in the service of Governor Nathaniel Johnson, acting as the latter's agent in the negotiations leading to the English alliance with the Creek Indians at Coweta Town in August, 1705.

There can be little doubt that Henschman had travelled more widely on the Carolina frontiers and among the

southern Indians than any Englishman in communication with Mr. Petiver. But his own account of his travels is difficult to follow, partly because of uncertainty as to the location of some of the Indian towns said to have been visited, partly because of the author's pains to emphasize his vigilant attention to natural history, and partly because the statements as to the distances traversed are both contradictory and incredible. It is difficult to believe that any Englishman, in 1704 to 1705, had gone five to six hundred miles "beyond any English plantation into the Continent" and has opened up a "safe trade" with a multitude of Indian tribes "for near Eight Hundred miles from the most frontier Plantations in this Province directly West"! Mr. Lord's statement that Henchman had been "more than 300 miles in the Countrey" is more plausible. Did Henchman count his round-trip journey when he described it to Mr. Petiver?

Mr. Henchman stated that his first three letters had related accounts of the Indian allies (Creeks), and "how much the English Empire has been in these parts enlarged since the Honorable Sir Nathaniel Johnson has been the Governor of this Province."<sup>260</sup> Elsewhere in the English Colonies discoveries had been made in the pursuit of "enlarging Trade" by Indian traders and agents who were generally ignorant and unable to make significant discoveries in natural history; but Daniel Henchman, "with Indefatigable pains both day & Night labour'd to make such Discoveries and Observations as may render me in some respect serviceable to my Country." And whereas most of the materials published about the Indians and the natural history of America were "very imperfect and mostly con-

<sup>260</sup> The letter is in *Sloane 3321*, fols. 196-9. It directed Petiver to address Henchman at "Sir Nathaniel Johnson's, Knt & Govr, where I reside." Henchman enclosed a copy of the address to the Governor sent by the Indian chiefs' council at Coweta Town. For biographical data about Henchman, see C. K. Shipton in the continuation of Sibley, *op. cit.*, IV, 297-8.

jectured or Romantick," his own observations were carefully made and attested by witnesses.

He told of a journey made in the winter of 1705, when he had travelled about a thousand miles into the territories of half a dozen Indian "nations," studying the natural history of the regions visited and perfecting a map of the country. He planned to publish an account of this journey. Again, in 1705, he had resided at a town called "Kyallegy in the Toquebatche Nation," from which he had "made a progress of many hundreds of Miles in these parts." He had kept "journals" of his travels, promised to accomplish more "than have yet ever been made," and stated that "were I but, sufficiently, encouraged, I would loose my Head without regret" to natural history. He had learned some of the Indian language, had won the good-will of chiefs, had made much progress in writing a general history of "these Nations," had collected plants and minerals together with information about their "virtues" which, by his own experiments, he had found to be "very wonderfull and almost past belief." He planned to prepare a "Medicus Occidentalis," and "resolved to lay aside all by-Ends of Trade," even if he lost £200 a year by it, to reveal "for the Publick Benefit, what by a more than ordinary Providence I had been the spectator of." He had thoughts of going to England, "but that I fear being presst and carried in the Service"; he was confident that he could be of greater service to Queen and country "in other ways." However, he had adopted Mr. Petiver as his "patron," and if Petiver would get him a pass "not to be presst" from the Lord High Admiral, he would go to England to reveal directly the wonders that he had seen. In the meantime, he would send collections as opportunity offered, asked that if Mr. Petiver published any of his communications he would edit them to free them of "tautologies" and "barbarisms," begged Petiver to place

before the Royal Society whatever "you think will favour my Designs" and referred again to the collections he had made, "some of which I have brought 6 or 700 miles by Land out of the Continent."

Mr. Petiver replied to Henschman's "curious" letter on December 16, 1706, expressing pleasure at the prospect of corresponding with such an intelligent observer. But he had not received the earlier letters mentioned nor the collection of plants which Henschman reported that he had sent. Two days later Petiver presented Henschman's letter to the Royal Society.<sup>261</sup> After that, almost two years passed before Petiver wrote again, this time (November, 1708) to say again that he had not received the first three letters to which Henschman had referred and to ask for a "more frequent Correspondence with you both of Letters & things." He sent Henschman some dried English plants, "as a Pattern," together with John Ray's *Method of English Plants*, some of his own "Tables" of American specimens, and some remarks on shells and other formed stones "supposed to have been there ever since the Flood."<sup>262</sup> Neither to the letter nor to the gifts, however, did Mr. Petiver receive any return from Daniel Henschman. During the winter of 1709-10 Mr. Petiver heard that Henschman had suddenly died. He wrote to the Reverend Mr. Lord by a Captain Belcher who tells me Mr. Henschman dyed suddenly for which I am much concerned. I doubt not but he left behind some Collections of Nature which he formerly promised to send me & other Papers concerning his Travells up into the Countrey which if to be procured, I should be glad to have Copies of which pray inquire after.<sup>263</sup>

To this request Mr. Lord replied on August 9, 1710. He confirmed the report of Henschman's death (which had taken

<sup>261</sup> Petiver's reply is in *Sloane* 3335, fols. 46v-7; see also *Journal-Book*, XI, 106 (Royal Society Archives).

<sup>262</sup> *Sloane* 3337, fol. 26.

<sup>263</sup> *Ibid.*, fols. 97v-8v. March 15, 1709/10.

place in November, 1709), and he promised to confer with Henschman's wife and, if permitted, to copy any papers treating of natural history and forward them to Mr. Petiver. That Mr. Petiver received nothing only enlarges the suspicion that Daniel Henschman was a braggart whose actual achievements in natural history feel far short of his reports thereon.

Madame Hannah Williams and the Reverend Mr. Joseph Lord made contributions to Petiver's Carolina collections which supplemented—if indeed they did not exceed—those of Bohun, Ellis, Francklyn, and the earlier group of Carolina correspondents. To "Bohun's Yellow spotted Carolina Butterfly" described in his *Gazophlacium*, Mr. Petiver subsequently added "Williams's Orange Girdled Carolina Butterfly," and the twentieth Table in his *Pterigraphia Americana* was dedicated "to that very obliging Gentlewoman Madame Hannah Williams at Carolina."<sup>264</sup> The Reverend Mr. Lord was similarly honored. Mr. Petiver's *Gazophlacium* described a variety of "Carolina Plants from Mr. Job Lord," and the eighteenth Table of the *Pterigraphia Americana* was dedicated "To that Curious Observer of Nature, Mr. Joseph Lord of Carolina." Lastly, "An Account of some Shells and Animals, sent from Carolina to Mr. Petiver" from his correspondents there was published in the *Philosophical Transactions* for 1705.<sup>265</sup>

It would be futile to pretend that the correspondence, collections, and publications of James Petiver can be evaluated with any degree of precision. It is easy to point to his collections which, said to have been larger than those of any man before him in England, amazed, entertained, and instructed untold numbers of observers in his day. And,

<sup>264</sup> *Gazophlacium*, p. 93.

<sup>265</sup> *Ibid.*, p. 96; *Phil. Trans.*, No. 299, XXIV (London, 1705).



although he mishandled them so that their state of preservation was precarious when Sir Hans Sloane acquired them after Petiver's death, none the less their addition to Sloane's collections helped to form the nucleus of the British Museum where, in some instances, they continue to amaze, entertain, and instruct observers to the present day.<sup>266</sup>

Petiver's published works can as easily be cited as examples of his work in natural history. In spite of their undersized and sometimes imperfect cuts of specimens, and in spite of their now obsolete classifications, descriptions, and nomenclature, they presented to European eyes fresh data about hundreds of known items in natural history, and they set forth a few entirely new and theretofore unknown specimens. Important as these things were to students of natural history at the time, they were probably less significant than the fact that Petiver contributed materially to the establishment of system which, as Linnaeus later asserted, marked the beginnings of a golden age in the science of botany. To be sure, no fixed, final, or universally accepted system had yet been perfected either as regards taxonomy or nomenclature; but Petiver's work helped to stimulate thought about these problems and to encourage the development of other systems, like those of Hermann, Rivinus, and Tournefort. Out of these gropings emerged, in time, the systems of Linnaeus and of the Jussieus—men who carried the art of plant description about as far as it could be taken within the doctrine of the fixity of species and without penetration into the secrets of organic structure as later developed by morphology.

His contemporaries bestowed upon Mr. Petiver great praise and admiration. John Ray, who is generally acknowledged to have been the greatest English naturalist of

<sup>266</sup> Pulteney, *Hist. and Biog. Sketches of the Progress of Botany in England*, II, 78-9.

the day, testified both in his published works and in his private letters to the generous aid he had received from James Petiver. In 1702, Ray spoke of Petiver as the best skilled in oriental & indeed in all exotick plants of any man I know, as having seen various specimens of the same species in all their states; & a man of the greatest correspondence of any in England as to these matters.<sup>267</sup>

Samuel Dale, the younger Jacob Bobart, Edward Lhwyd, William Sherard, Richard Richardson, Sir Hans Sloane, and a number of lesser English figures in the study of natural history—not to mention the Royal Society of London or the Society of Apothecaries—all admired Mr. Petiver's work and profited from it. A similar group in Scotland, including James Sutherland, Dr. Charles Preston, and James Hamilton, also exchanged specimens and communications with Petiver and expressed high regard for his work.<sup>268</sup> Tournefort, Vaillant, Nissole, Fagon, Jussieu, Father Plumier, and others of the French school were too proud to accord to an English apothecary any such acclaim as he received from his fellow-countrymen; but they corresponded with him freely, and they exchanged specimens with him, even when their nations were at war; and Father Plumier went so far as to name one of his genera of new American ferns the

<sup>267</sup> See Ray to Petiver, Black Notley, [?] 25, 1702. *Sloane 4063*, fol. 187; same to same, May 17, 1704: "[I] return you many thanks for the great pains you have taken to enrich my History with such a multitude of rare & nondescript plants from China, India, Africa & America. . . ." *Sloane 4064*, fol. 9. For some of the other private and public acknowledgments of Petiver's help, see *Sloane 4063*, fols. 77-8, 80, 85, 88, 137, 182, 198, 207-10, 225, 227, 232; Pulteney, *Hist. and Biog. Sketches*, I, 263-5; II, 57-8.

<sup>268</sup> Preston made a useful criticism of Petiver in a letter to him of Sept. 8, 1701: "I find also you have taken the same freedom of Dr. Turnefort in baptizing your plants after the names of your friends and benefactors (which is not amiss) but with this Difference that where Turnefort baptizes a new genus after his name he ordinarily gives the character whereby to Distinguish it from the other genus's but you are pleased only to give us the bare names and Leave us to Seek for the character Somewhere else. . . . You are a Little too hard upon the Doctor [Plunkenet] for how easy is it even for the best botanist to be mistaken . . . in the Description of a plant from a Dry and Imperfect Specimen, considering the Difficulty in giving exact Descriptions even from live plants. . . ." *Sloane 4063*, fols. 117-8.

*Petiveria*.<sup>269</sup> In Holland, Vincent, Ruysch, Commelin, Hermann, and Seba; in Italy, the aged Paul Boccone and the Drs. Philippe Bonanni and Bruno Tozzi; in Sweden, Claus Rudbeck, who was later Linnaeus's mentor—these and many other Europeans were admirers who recognized in James Petiver an industrious, intelligent, and serious fellow-worker.<sup>270</sup> Through his efforts they were better informed of events taking place in the world of natural science, and by his hand they were introduced to much that was new from the Far East and from the English Colonies in America. As a leavening agent in Europe, James Petiver's influence can hardly be exaggerated.

In the English Colonies and factories overseas, however, Mr. Petiver performed services of a more fundamental nature. The study of natural history would have continued in Europe without James Petiver's accelerating efforts; but it would have advanced on a far narrower front overseas and in many places it would not have been pursued at all in Petiver's day without the zealous promotion emanating from the Sign of the White Cross in Aldersgate Street in London. Petiver's vigilant, even nagging, correspondence served to introduce the study of natural science, to underscore its importance, and to suggest something of its methodology to scores of colonials. He presented it as a serious study, worthy of sustained effort, for the ultimate benefit of mankind. He sought to keep his correspondents informed of the new developments in the Old World; to introduce to the Old World new data obtained from the New; to incorporate that which was new, from whatever source, into the swelling stream of natural knowledge; and to build up a community

<sup>269</sup> Pulteney, *op. cit.*, II, 43, 50; "Delineations Plantarum Americanarum auctore Carolo Plumier," *Sloane 4017*, 116 fols.

<sup>270</sup> Dr. Tozzi, with Latin effusion, assured Petiver in a letter of July 15, 1714, that "whatever I shall observe in Natural things I shall observe them for you." *Sloane 3340*, fol. 26v.

of scholars and observers in the Old World, in the Colonies and trading centers overseas, and among those of Europe and the rest of the world. The extraordinarily wide response that he elicited was a monument to his industry and to his methods. How far beyond his correspondents the interest and enthusiasm in natural science extended is impossible to say; but it does not seem improbable that men like Bullivant in New England, Jones in Maryland, Banister in Virginia, Lord in Carolina, and the host of others both on the Continent and in the West Indies discussed natural history with their friends and neighbors and built up a kind of intellectual hinterland of interest in and receptivity to scientific affairs. By such means the new science was planted across the seas, and an important concomitant of European civilization was carried into the whole world. In this aspect of the Europeanization of the world, both in the Americas and in the Far East, James Petiver performed a major function in his generation.

## Appendix I

*Check List of James Petiver's Correspondents  
in the New World*

Several of Petiver's contributors were recognized in his published works, although no correspondence with them exists. This is especially true with regard to ship-masters and ship-surgeons with whom, probably, Petiver's communications were verbal. In some other cases the correspondence is confined to a letter or two from Petiver with no indication of a reply from the addressee. The following list includes all the American contributors and correspondents discovered among Petiver's literary remains, with the places from which they made contributions and the approximate dates of their communication.

## I. ITINERANTS

(Ship-Masters, Ship-Surgeons, Servants of Trading Companies,  
and others without a fixed abode)

George Alfrey, ship-surgeon with Edmond Halley on the <i>Paramour Pink</i> ; South Atlantic and Brazil . . . . .	1698-99
Robert Barkley, ship-surgeon; Jamaica . . . . .	1710
William Brown, ship-surgeon; Jamaica . . . . .	c. 1710
Joseph Burnett, surgeon in the employ of the South Sea Company, Porto Bello . . . . .	1716 ff.
Charles Combs, ship surgeon; Maryland and Guinea . . . . .	c. 1698
Mr. Cook, surgeon in the employ of the South Sea Company, Panama . . . . .	1714-15
Capt. Dover, surgeon and factor of the South Sea Company, Buenos Aires . . . . .	1715-16
James Frazer, ship surgeon; Jamaica . . . . .	1703-06
William Halsted, ship-master; South Carolina . . . . .	1699-1704
George Harris, Petiver's servant who accompanied Edmond Halley on the <i>Paramour Pink</i> ; South Atlantic and Brazil . . . . .	1698-99
William Hay, ship surgeon; Newfoundland . . . . .	1699
David Patton, surgeon of the H.M.S. <i>Elizabeth</i> ; Vera Cruz . . . . .	1715
Richard Planer, ship surgeon; Cartagena . . . . .	c. 1714
Patrick Rattray, ship-master; Jamaica and Virginia . . . . .	1694-99

Robert Rutherford, ship surgeon; South Carolina and Massachusetts Bay . . . . .	1698 ff.
George Searle, ship-master; Antigua and Jamaica . . . . .	1709-14
John Smart, ship surgeon in the employ of the Hudson's Bay Company; Hudson's Bay . . . . .	c. 1710
Archibald Stuart, ship surgeon in the employ of the Darien Company . . . . .	c. 1707
William Toller, surgeon in the employ of the South Sea Company; Buenos Aires . . . . .	1716
William Walker, ship-master; South Carolina . . . . .	1700
Dr. James Wallace, ship surgeon in the employ of the Darien Company . . . . .	c. 1706
Jonathan Whicker, ship-master; St. Christopher's Island . . . . .	c. 1702

## II. ANTIGUA

Mrs. Rachel Chapman . . . . .	1712
Dr. John Douglas, surgeon to the Governor . . . . .	1712-15
Capt. Thomas and Rachael Grigg, Parham Plantation . . . . .	1712-16
Daniel Mackenning . . . . .	1694-95
Mrs. Rawlins . . . . .	c. 1712
Mr. Rickets, "Gardiner to Mr. Gale at Falmouth" . . . . .	1708

## III. BARBADOS

Dr. Bane . . . . .	1699
John Dudgeon, Jr., merchant at Bridgetown . . . . .	1703
Joseph Gibbs . . . . .	1700
Claudius Hamilton, Bridgetown . . . . .	1706-08
Mr. Miller . . . . .	1705
James Reed (or Rheed) . . . . .	1689-90
William Stratton . . . . .	c. 1700
Capt. John Walduck, "Rupert's Fort in Leeward of Barbados" . . . . .	1710 ff.
James Weir . . . . .	1696

## IV. BERMUDAS

John Dickinson . . . . .	1692-1701
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## V. JAMAICA

Henry Barham, F.R.S. . . . .	c. 1710
Anthony Biggs and Anthony Biggs, Jr., Spanish Town . . . . .	1697-98

Allen Broderick, Spanish Town . . . . .	1697
W. Burdon . . . . .	1700-03
Madame Carter . . . . .	1696
Dr. David Crawford, Port Royal . . . . .	1707-12
John Fenwick and Roger Fenwick, Spanish Town . . . . .	1698
Dr. Thomas Hoy, F.R.S. . . . .	1716
The Reverend Mr. Henry Pasmore . . . . .	1698
The Reverend Mr. John Smyth, Port Royal . . . . .	1693-96
Capt. Wentworth, of "the Governour Brigadier Hamilton's Regiment" . . . . .	1710
The Reverend Mr. James White, Rector of the Parish of Vere . . . . .	1715

## VI. MARYLAND

Stephen Bordley, Chester River, Kent County . . . . .	1706-09
Isaac?, Petiver's "Butterfly Boy" . . . . .	1698
The Reverend Mr. Hugh Jones, Christ Church, Calvert County . . . . .	1696-1702
Dr. David Krieg . . . . .	1698
James Miller . . . . .	c. 1700
William Vernon, on leave from Peterhouse, Cambridge . . . . .	1698

## VII. MASSACHUSETTS BAY

Benjamin Bullivant, Boston apothecary . . . . .	1696-1701
The Reverend Mr. Cotton Mather, Boston . . . . .	1715
Hezekiah Usher . . . . .	1696

## VIII. NEW PROVIDENCE ISLAND

John Graves . . . . .	c. 1705
Capt. Thomas Walker (later moved to South Carolina) . . . . .	1701-04

## IX. NEW YORK

The Reverend Dr. Alexander Innis, Boscobel House, near Hampstead, Long Island . . . . .	1692-95
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## X. NORTH CAROLINA

John Lawson, Surveyor-General of North Carolina . . . . .	1701-11
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## XI. PENNSYLVANIA

Cadwallader Colden (later of New York) . . . . .	1709
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## XII. ST. CHRISTOPHER'S ISLAND

Rice Fellows . . . . . 1714-15

## XIII. SOUTH CAROLINA

Edmund Bohun . . . . . 1699 ff.  
 Mr. Cooper . . . . . c. 1700  
 Robert Ellis . . . . . 1700 ff.  
 Samuel Eveleigh . . . . . 1706  
 George Francklyn, Apothecary, Charleston . . . . . 1700 ff.  
 Daniel Henchman, Silk Hope . . . . . 1706  
 The Reverend Mr. Joseph Lord, Dorchester . . . . . 1701-13  
 Robert Stephens, Goose Creek . . . . . 1697-1700  
 Madame Hannah Williams . . . . . 1701 ff.

## XIV. SURINAM

James Parter . . . . . 1696-97

## XV. VIRGINIA

The Reverend Mr. John Banister . . . . . 1689-92  
 James Brodie . . . . . c. 1697  
 William Byrd II . . . . . 1689-1710  
 James Marshall . . . . . c. 1697  
 Peter Park . . . . . c. 1697-98



## Appendix II

*“Brief Directions for the Easie Making and Preserving Collections of all Natural Curiosities For James Petiver Fellow of the Royal Society London”*<sup>1</sup>

All small Animals, as Beasts, Birds, Fishes, Serpents, Lizards, and other Fleshy Bodies capable of corruption, are certainly preserved in Rack, Rum, Brandy or any other Spirits; but where these are not easily to be had, a strong Pickle, or Brine of Sea Water may serve; to every Gallon of which, put 3 or 4 Handfulls of common or Bay Salt, with a Spoonful or two of Allom powderd, if you have any, and so sent them in any Pot, Bottle, Jarr, &c. close stopt, Cork'd and Rosin'd. N.B. You may often find in the Stomachs of Sharks, and other great Fish, which you catch at Sea, divers strange Animals not easily to be met with elsewhere; which pray look for, and preserve as above.

As to fowls, those that are large, if we cannot have their cases whole, their Head, Leggs, or Wings, will be acceptable, but smaller Birds are easily sent entire, by putting them in Spirits as above, or if you bring them dry, you must take out their Entrals; which is best done by cutting them under their Wing, and then stuff them with Ockam or Tow, mixt with Pitch or Tar; and being thoroughly dried in the Sun, wrap them up close, to keep them from Moisture, but in long Voyages, you must Bake them gently, once in a Month or two, to kill the Vermin which often breed in them.

All large pulpy moist Fruit, that are apt to decay or rot, as Apples, Cherries, Cowcumbers, Oranges, and such like, must be sent in Spirits or Pickle, as Mangoes, &c. and to each Fruit, its desired you will pin or tye a sprig of its Leaves and Flowers.

<sup>1</sup> A single, printed sheet in the collection of Petiver's works in the British Museum [B.M. 456. e. 11 (9)]. This is obviously the "Printed Directions" with which Mr. Petiver supplied his correspondents who were overseas or were setting out on a voyage. An earlier, unprinted set of directions is in *Sloane 3332*, fols. 1-6; and a manuscript copy of the above, with printer's instructions is in the *Additional Mss. 4448*, fol. 5 (British Museum).

All Seed and dry Fruit, as Nutts, Pods, Heads, Husks, &c. these need no other care, but to be sent whole, and if you add a Leaf or two with its Flower, it will be the more instructive, as also a piece of the Wood, Bark, Root, or Gum of any Tree or Herb that is remarkable for its Beauty, Smell, Use, or Vertue.

In collecting Plants, Pray observe to get that part of either Tree, or Herb, as hath its Flower, Seed, or Fruit on it; but if neither, then gather it as it is, and if the Leaves which grow near the Root of any Herb, differ from those above, be pleased to get both to compleat the Specimen; they must be put into a Book, or Quire of Brown Paper stitch'd (which you must take with you) as soon as gathered; You must now and then shift these into fresh Books, to prevent either rotting themselves or Paper. N.B. All Gulph-Weeds, Sea-Mosses, Coralls, Corallines, Sea Feathers, Sponges, &c. may be put together in any old Box or Barrel, with the Shrimps, Prawns, crabs, Crawfish, &c. you will often find amongst the Seaweeds, or even on the Shoar with the Shells, which you may place in layers; as we do a Barrel of Colchester Oysters. All Shells may be thus sent as you find them, with or without their Snails in them, and whenever you meet with different sizes of the same sort, pray gather the fairest of all Magnitudes; the Sea shells will be very acceptable, yet the Land and Freshwater ones, are the most rare and desirable. In Relation to Insects, as Beetles, Spiders, Grasshoppers, Bees, Wasps, Flies, &c. these may be Drowned altogether, as soon as caught in a little wide Mouth'd Glass, or Vial, half full of Spirits, which you may carry in your Pocket: But all Butterflies and Moths, as have mealy wings, whose Colours may be rub'd off, with the Fingers, these must be put into any small Printed Book, as soon as caught, after the same manner you do the Plants.

All Metals, Minerals, Ores, Chrystals, Spars, Coloured Earths, Clay, &c. to be taken as you find them, as also such formed Stones, as have not any resemblance to Shells, Corals, Bones, or other parts of Animals, these must be got as intire as you can, the like to be Observ'd in Marbled Flints, Slates, or other Stones, that have the Impression of Plants, Fishes, Insects, or other Bodies on them; These are to be found in Quarries, Mines, Stone or Gravel Pitts, Caves, Cliffs, and Rocks, on the Sea shoar, or wherever the Earth is laid open. Note: If to any Animal, Plant, Mineral &c. you can learn its Name, Nature, Vertue, or Use, it will be still the more Acceptible.

N.B. As amongst Forreign Plants, the most common Grass, Rush, Moss, Fern, Thistle, Thorn, or vilest Weed you can find, will meet with Acceptance, as well as a Scarcer Plant; So in all other things, gather whatever you meet with, but if very common or well known, the fewer of that Sort will be acceptable to

Your most Humble Servant,  
James Petiver

Aldersgate-Street  
London.

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