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HUGH CUMING'S LETTERS TO SIR WILLIAM J. HOOKER

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ONE PLATE

The letters from Mr. Hugh Cuming to Dr. (later Sir) William Jackson Hooker, preserved in the latter's correspondence at the Royal Botanic Gardens, Kew, England, are thirty-three in number. They were written between the dates December 6, 1831, and January 21, 1858, some from London previous to Cuming's departure for the Philippine Islands, a few during his sojourn in the Islands, and the remainder after his return to England in June, 1840. These letters form a very human document and are in themselves an interesting commentary on the vicissitudes in the life of a field naturalist, both in the field and at home. Copies of these interesting letters were kindly prepared for me in 1910 by Sir David Prain, then director of the Royal Gardens, Kew. They are published here with the permission of Dr. A. W. Hill, the present director of the institution.

It is unfortunate that Cuming did not more fully describe his own experiences in these letters, but this may be accounted for by the fact that he was too busily engaged in collecting and preparing natural-history material in a very rich and previously unexplored field to take the time to write up his observations and experiences. A perusal of two letters, an undated one written from Thavies Inn, London, the latter part of 1840 on the early part of 1841 (p. 172), the other under date of May 25, 1841 (p. 173), clearly indicate that he did write an account of his experiences. The fate of this account is revealed in Cuming's letter of May 25, 1841, it falling in the category of

rejected manuscripts. Cuming's journal is probably no longer extant, but if it could be located it would to-day undoubtedly prove to be of very great interest to residents of the Philippine Archipelago, as well as to naturalists who are interested in studying the fauna and flora of the Islands. That he must have been a keen observer and that he must have had many interesting as well as some disconcerting experiences during the several years he was in the Philippines, owing to the primitive conditions then existing there, goes without saying.

We learn from Cuming's letters that he left England February 26, 1836, and returned June 5, 1840. He apparently reached Manila in October, 1836, as by November 10, 1836, he was busily engaged in prosecuting field work at Calauan, Laguna Province, Luzon. He left Manila on his return trip in November, 1839. In approximately three years, which he devoted to natural-history exploration in the Philippines, he prosecuted field work in most of the provinces in Luzon and visited nearly all of the larger islands in the Archipelago except Palawan, as well as some of the smaller ones.

As a collector, Cuming was primarily interested in securing conchological material, but his personal interests did not deter him from making more general collections such as mammals, birds, reptiles, insects, and crustaceans, as well as botanical material in most groups of plants. The only major fields he seems to have ignored are the marine and fresh-water fishes and representatives of those lower groups which in general are classed under the term marine invertebrates. This is probably explained by the fact that none of his associates in England requested him to secure such material. It is evident from his letters written before leaving England that he consulted numerous individuals previous to his departure with the view to determining what his friends and associates desired him to collect, and that when he was once in the field he diligently attempted to secure the material they desired in addition to conchological material, the securing of which was the prime object of his expedition to the Philippines.

Cuming's large collections of dried botanical material formed the essential basis of our knowledge of the rich flora of the Philippine Archipelago up to the beginning of the present century; in fact, in extent his collections have been surpassed by those of but very few individuals who have worked in this field during the past eighty years. Probably the collections made by no single individual can be considered as exceeding in value

those made by Cuming, in view of the fact that such a high percentage of his specimens became the types of new species. It is evident from an examination of the list of Cuming's plants that he followed Hooker's¹ advice and ignored those species growing in the vicinity of towns and along the seashore, and confined his field work very largely to the forested regions. The forests of the Philippines present a very high percentage of endemic species, while the vegetation of the settled areas and the open country is for the most part made up of very widely distributed forms; this statement applies also to all parts of the Malay Archipelago, and it is interesting to note that this fact was appreciated by Sir William J. Hooker; although he never personally visited the region. Cuming collected material representing not only the flowering plants and ferns, but also algæ, fungi, hepatics, lichens, and mosses. In addition to the dried material prepared by him he also sent extensive collections of living orchids to England.

Those familiar with the Philippine flora are impressed by the fact that very many common and widely distributed species are not represented in the Cuming collection. This is explained in part by the fact that to a considerable degree he ignored the littoral species and those growing in the open settled areas at low altitudes. The absence of many of the common and widely distributed endemic species characteristic of the forested areas is explained by the loss of a case of specimens referred to in his letter of November 18, 1838 (p. 168), and to the destruction of most of the material in seven cases by water, referred to in his letter of August 1, 1840 (p. 170).

The extent and value of the great collection of conchological material assembled by Mr. Cuming is well indicated by the following quotations from Sir Richard Owen's statement prepared in 1848.² This was addressed by him as Keeper of the Natural History Department of the British Museum to Dean Buckland, a trustee of the British Museum, when the collection was offered for sale but was not then accepted by that institution. The collection was greatly increased in the number of species represented, in the period of seventeen years that elapsed between this date and Mr. Cuming's death in 1865. It was purchased by the British Museum in 1866.

¹ See letter dated December 18, 1835, p. 166.

² Melvill, J. C., *Journ. Conchol.* 8 (1895) 65-68; see also Owen, R., *Life of Sir Richard Owen* 1 (1894) 313 et seq.

I may briefly state that this collection, as now offered to the British Museum, contains upwards of 19,000 species and varieties of shells, represented by about 60,000 specimens; and that not only is every specimen entire, but choice and perfect of its kind, as respects form, texture, colour, and other characters that give it value in the eyes of the shell-collector.

As I can affirm from my personal knowledge, and from authentic sources of information, that no public collection in Europe possesses one-half the number of species of shells that are now in the Cumian collection, you may judge of the vast proportion of rarities and unique specimens possessed by Mr. Cuming. It is this which has given him for some years past the command, so to speak, of all the conchological cabinets in Europe. He is better known and respected, and his labours more truly and generally appreciated in any city or town in Europe having a public natural history museum than in busy London. Mr. Cuming in his annual visits to the continent carries with him the inferior duplicates of his rarities, representing species with the sight of which the eyes of the foreign naturalist are gladdened for the first time. They open to him their treasures in return, and from most of the collections of Europe Mr. Cuming has borne away the prized species or specimens in exchange for the still rarer and more valuable shells which his abundance has enabled him to offer without detriment to his own stores.

The mode in which Mr. Cuming has obtained this conchological wealth is as moral and exemplary as the result is important and marvellous, considered as the work of one individual. Not restricting his pursuit to the stores and shops of the curiosity-mongers of our seaports, or depending on casual opportunities of obtaining rarities by purchase, he has devoted more than thirty of the best years of his life to arduous and hazardous personal exertion, dredging, diving, working, wandering under the Equator and through the Tropics, the Temperate Zones, both north and south, in the Atlantic, in the Pacific, in the Indian Ocean, and in the islands of its rich Archipelago—in the labour of obtaining from native seas, shores, lakes, rivers, and forests, the marine, fluviatile, and terrestrial mollusca, 60,000 of whose shelly skeletons, external and internal, are accumulated in orderly series in the cabinets with which the floors of his house now groan. I never think of the casualties to which such a collection in such a place is subject without a shudder!..... Perhaps one of the most striking points in the estimate of the scientific value of an extensive collection like Mr. Cuming's arises out of its relation to the present active pursuit of geology as an indispensable instrument to the determination of fossil shells. No one can give higher sanction than yourself to any expression of the importance of well-determined fossils, and especially shells, to a right knowledge of the relative age and position of the strata in which they were embedded; and the geologist's confidence in results based upon fossil conchology must be in the ratio of the extent of this comparison with recent shells that have been gone through in the determination of the fossil shells, and especially before a species is pronounced to be extinct.

This, however, is but one of its scientific uses. From the period when the Atlantic, American, and Polynesian departments of the Cumian collection reached England, in 1831, scientific conchologists have there found subjects without intermission for their descriptions, and the novel-

ties were far from being exhausted when Mr. Cuming, having undertaken a third exploring voyage, returned in 1840 from Manila, stored with the conchological riches of the Indian Ocean, which have subsequently kept the pens of competent describers of new genera and species actively at work, and will supply them for years to come. Thus the Cumingian Collection has directly advanced the science of conchology in an unexampled degree, and possesses the same peculiar claims upon the Government as custodians of the National collection here which Linnaeus' Herbarium did upon the Swedish State. Mr. Cuming's collection contains, for example, the originals from which many hundred new species have been described in the scientific periodicals or systematic works published since its arrival in this country.

Any doubt that may arise through the incompleteness or obscurity of the description, or from the inaptitude of the student, may be decided at once by reference to the original specimens. These "types of the species" become, therefore, an instrument of great importance to the progress of the science in the country in which they are preserved and made accessible. Delay in securing for the nation the Cumingian types of new species of shells may involve the necessity of crossing the Atlantic in order to compare and verify the descriptions and synonyms of Broderip, Sowerby, Gray, Reeve, and other eminent conchologists.

The value of a shell, as of a jewel, depends much upon its rarity, and is to that extent artificial. The *Concha unica*, which today commands the sum of twenty pounds, shall, next week, when a score of specimens have come into the market, fall in price to as many shillings. Still, the commonest exotic shell, if it be perfect and well coloured, and taken from a living mollusk, as is the case with the Cumingian collection, from which "dead" shells have been strictly excluded, finds its market.

I am given to understand, by competent authorities, that the sum of £5,000 asked by Mr. Cuming in 1840 does not exceed two-thirds of the most moderate estimate of the present market value of his subsequently augmented collection.

That ten times that sum would not bring together such a series as Mr. Cuming has offered to the British Museum, I do firmly believe, from a knowledge of the peculiar tact in discovering and collecting, the hardy endurance of the attendant fatigue under deadly climes and influence, and the undaunted courage in encountering the adverse elements, and braving the opposition of the savage inhabitants of seldom-visited isles, which have conduced and concurred to crown the labours of Mr. Cuming with a success, of which his unrivalled collection is a fitting monument, and of which science, and, let us hope, its cultivators in his native country more particularly, will long continue to reap the benefits.

Mr. W. J. Broderip³ briefly summarizes the field work prosecuted by Cuming in the Philippines; his data are given on page 158. As noted in this account, Cuming was a pioneer in attaching exact locality data to the shells collected by him. In

³ Description of shells collected in the Philippine Islands by Hugh Cuming, Esq., Proc. Zool. Soc. London 8 (1840) 83-84; reprinted in Ann. & Mag. Nat. Hist. 7 (1841) 226-227.

a sense, also, he was a pioneer in attaching numbers to the botanical material distributed by him, for his extensive *exsiccata* was apparently one of the first large collections of botanical material so distributed, a custom that soon became almost universal.

Mr. Cuming, the fruits of whose western voyage are so well known, left England on the 20th of February 1836: he proceeded to the Philippine Islands, by the permission of the Queen Regent of Spain and aided by powerful recommendations from her government, which opened to him the interior of the islands, and caused him to be received with a noble hospitality, equalled only by the warm interest which facilitated his pursuits wherever he arrived and made himself known.

Mr. Cuming visited the whole group. His longest stay was in the Island of Luzon, fifteen provinces of which were well ransacked by him. In the islands Mindoro, Negros, Panay, Siquijod [Siquijor], Zebu [Cebu], Bohol, Camiguin [Camiguin de Misamis], Mindanao, Leyte, Samar, Capul, Ticao, Masbato, Burias, Temple, Marinduque, Maracavan [Maricaban], and Romblon, he reaped a fine harvest. He left the Philippines in November, 1839, proceeded thence to Singapore and Malacca, and returned to England in June, 1840, bringing with him, besides the living animals which he has liberally presented to this Society, a grand collection of zoological and botanical specimens, including more than three thousand species and varieties of shells, the greater part of which appear to be new to science, and among them are several new genera. The smaller islands were particularly rich in the pulmoniferous mollusca, which were found by Mr. Cuming principally in deep forests. We commence a notice of the labours of this active and zealous collector, with an attempt to describe a few of these terrestrial species. Mr. G. B. Sowerby, who liberally gives up his valuable time to assist in laying before the public the novelties of this part of the collection, will also begin his share of the task, by describing another branch of the same numerous family; and it is intended to submit descriptions to the Society from time to time till the whole of Mr. Cuming's stores are exhausted.

Before, however, we commence our task, I must, in justice to him who has placed the materials in our hands, observe, that, to say nothing of the variety of new forms which he has been the means of bringing to light, those who cultivate this branch of zoology so highly interesting to the geologist, as well as the physiologist, owe him a large debt of gratitude, for information on a point of no small zoological importance. It is not very long since, that the localities ascribed to shells could in very few instances be depended upon. The cupidity of dealers, some years ago, not unfrequently prompted them wilfully to deceive those who gave extravagant prices for new shells on this point, and carelessness was generally the order of the day. Mr. Cuming, by his accurate notes, and the open publication of the places where every one of the multitudinous species and varieties collected by him was found, has mainly assisted in making a complete revolution in this department of the science, and has done more towards giving us data for the geographical distribution of the testaceous mollusca than any person who has yet lived.

On the occasion of Cuming's death several biographical notices were published, the most extensive one that I have seen being that reproduced below.¹

Hugh Cuming, Esq., F. L. S., died on the 10th of August, 1865. He was born at West Alvington, near Kingsbridge, in Devonshire, on the 14th of February, 1791. Remarkable even as a child for his love of plants and shells, the latter taste more especially was largely fostered and developed under the patronage of Colonel Montagu, who resided in the neighborhood.

Apprenticed to a sail-maker, he was necessarily brought into contact with seafaring men; and in 1819 he made a voyage to South America, and settled at Valparaiso. Here his passion for collecting shells found ample field for its gratification, and was greatly stimulated by the English Consul, Mr. Nugent, and by several officers of the British Navy, and especially by those in the surveying ships under Captains King and Fitzroy. In fact, in 1826, he gave up his business in order wholly to devote himself to his favorite pursuit. With this object he built a yacht, expressly fitted for the collection and stowage of objects of natural history, and a cruise of upwards of twelve months among the islands of the South Pacific amply rewarded him for his toils in dredging and collecting by sea and on shore. On his return to Valparaiso he prepared for a voyage of greater extent, on which he started under peculiar advantages. The Chilean Government granted him the privilege of anchoring in its ports free of charges, and of purchasing stores free of duty; and he was also furnished with letters to the authorities of all the states he visited. After two years spent in exploring the coast from the Island of Chiloe to the Gulf of Conchagua, dredging in all the bays and inlets, searching among the rocks and stones at low water, and inland in the plains, river-banks, and forests, Mr. Cuming returned to England with an enormous accumulation of natural history objects of all kinds. The most important part, however, was the conchological. In 1835 Mr. Cuming undertook a new expedition to the Philippine Islands, a region rich in natural productions, and but little explored, and where his familiar knowledge of the Spanish language and manners would be of great advantage. Here, although dredgings on the shores were not neglected, his attention was more particularly directed to the woods and forests, where he reaped a most abundant harvest of plants, and collected such an immense and magnificent series of land-shells as had never before rewarded the exertions of a collector. In every place Mr. Cuming was the guest of the priest, always the chief personage in the interior of these islands, and by whom he was always assisted in every imaginable way. He was also thus enabled to obtain what was of still greater importance, the services of the children educated in the public schools, and numbering

¹ *Hugh Cuming, Esq., F. L. S.*, *Journ. Linn. Soc. Zool.* 9 (1868) LVII-LIX. See also *Journ. Bot.* 3 (1865) 325-326; *Athenaeum* (1865) 247-248; *Gent. Mag.* III 19 (1865) 517-519; *Gard. Chron.* (1865) 823-824; *Diet. Nat. Biogr.* 13 (1888) 295-296; *Vidal Phanerogamae Cumingianae Philippinarum* (1885) VII-X.

in some places as many as 400 or 500. By the aid of these sharp-eyed auxiliaries, shells which gladdened his eyes by their novelty and exceeding beauty were daily brought to him in prodigious numbers.

After four years spent among these islands [that is, an absence of four years from England, three of which were spent in the Philippines], and in short visits to Malacca, Singapore, and St. Helena, Mr. Cuming returned to England with the richest booty ever collected by a single man. His dried plants, which numbered 130,000 specimens, were immediately distributed, as well as his living Orchids, which were numerous and of great beauty. Large numbers of Birds and Reptiles, Quadrupeds and Insects, were added to museums at home and abroad. But the shells formed by far the most important part of his collections. Before leaving England he had brought together from his own American collections and elsewhere the largest and most valuable collection then in existence. By his vast Philippine collections this was increased to an enormous extent; and during the twenty-five years that have since elapsed he was untiringly engaged in its arrangement, completion, and description by various conchologists. It is stated to have contained not less than 30,000 species and varieties, and in most cases several specimens of each.

From time to time he disposed of his duplicate specimens to various public and private collections, and always took pleasure in acknowledging that his expenses and labours had been amply repaid.

"The great object of my ambition," he said in 1858, "is to place my collection in the British Museum that it may be accessible to all the scientific world, and where it would afford to the public eye a striking example of what has been done by the personal industry and means of one man."

This worthy object has been obtained, and the British Museum has since his death purchased this unrivalled collection, and placed it where its founder's wishes desired it to be.

The Linnean Society, also, owes a special debt of gratitude to Mr. Cuming, who several years since presented to our Library his extensive collection of Conchological Works, into possession of which we have now entered.

Mr. J. C. Melvill¹ in 1895 published a short appreciation of Mr. Cuming's life and accomplishments from which the photograph illustrating this paper is reproduced. This article is supplemented by another in the same periodical by Mr. E. L. Layard,² on some personal recollections of Mr. Cuming. Mr. Layard's statements, "I do not think that he [Cuming] could do more than write his name" and "I have also said that I do not think that he [Cuming] could write," are refuted by Cuming's own letters. Of the thirty-three letters written by Mr. Cuming between December 6, 1831, and January 21, 1858, thirty-one were written by Cuming himself, two dated January 16 and

¹ An epitome of the life of the late Hugh Cuming, F. L. S., C. M. Z. S., etc. *Journ. Conchol.* 8 (1895) 58-70, plate.

² *Op. cit.* 71-75.

21, 1858, having been written by his daughter and signed by him. His handwriting is good and the few errors in spelling are probably due more to hasty writing than to ignorance. With his limitations as to education, it is all the more remarkable that Mr. Cuming was able to accomplish so much in the field of natural history, and especially in building up his enormous private collection of conchological material.

A bibliography of the papers based wholly or in part on Philippine collections made by Mr. Cuming would include many hundred titles, as the fields of general zoölogy, including conchology, entomology, ornithology, herpetology, and mammalogy would have to be covered, as well as that of systematic botany of both the phanerogams and the cryptogams. In practically all monographic treatments of genera and families which have been issued since 1840, so far as the numerous groups are represented in the great Cuming collections, his material is repeatedly cited and of necessity must continue to be cited because of its historical significance. A partial bibliography of papers based wholly or in large part on the Philippine material collected by Mr. Cuming is appended to this paper. No attempt has been made to make this bibliography complete, my object in compiling it being merely to give some graphic idea of the extent and scientific value of the collections assembled by this one man through his own initiative and on his own resources. In general no titles have been included where Cuming's material is merely mentioned. If this had been done, the list in botany alone would exceed six hundred titles.

A perusal of the following letters indicates that Cuming's education was deficient, yet his letters show that he was reasonably well educated. It is evident that he has attained more lasting fame than untold thousands of highly educated men; and it is also clear that his fame is more firmly established than is that of some authors of ponderous tomes and of numerous papers. Mr. Cuming apparently subordinated his own desires to a very large degree to the building up of his conchological collection. It is clear from his undated letter written from Thavies Inn (p. 172), and the following one written under date of May 25, 1841 (p. 178), that he had no illusions regarding his ability as an author. Would not some of our biological literature be of distinctly higher grade if more individuals had followed Cuming's plan of permitting and even encouraging others, presumably better equipped, to publish the results obtained by their field work?

Mr. Cuming was elected a Fellow of the Linnaean Society on May 1, 1832, and so remained until his death. His election was based not upon any data published by him, but apparently on the value of his services to the biological sciences as a collector, and further because of the fact that through his own efforts and on his own resources he built up the largest and most valuable conchological collection ever assembled by any one man or institution up to the time of his death. He personally published very little and most of the several references listed below are merely extracts from letters written by him, or references to letters received from him.

CUMING, H.

On the earthquake at Valparaiso in 1822. *Proc. Geol. Soc.* 2 (1838) 213-214.

On the earthquake in Chile, November 19th, 1822. *Trans. Geol. Soc.* 5 (1840) 263-265.

On the habits of some species of mammalia from the Philippine Islands. *Proc. Zool. Soc. London* 6 (1838) 65-68.

(Notice of) a letter dated Manila, December 24, 1836, accompanying a large box of skins of birds and quadrupeds. *Proc. Zool. Soc. London* 5 (1837) 70.

(Notice of) a letter dated Manila, November 16, 1837, forwarding a collection of 295 birds and 12 quadrupeds. *Proc. Zool. Soc. London* 7 (1839) 93.

(Notice of) a letter dated Manila, November 5, 1839, referring to the shipment of some cases of specimens. *Proc. Zool. Soc. London* 8 (1840) 33.

(Notice of) an exhibition of specimens. *Proc. Zool. Soc. London* 8 (1840) 62.

Mr. Melvill¹ lists the conchological genus *Cumingia* Sowerby and one hundred fifty-two species of mollusca dedicated by various authors to Hugh Cuming. In other zoological groups I find two birds, one turtle, one snake, five lizards, one mammal, and several insects named by various authors in honor of Mr. Cuming from his Philippine collections. In botany the genera *Cumingia* G. Don, based on South American material [= *Conanthera* Ruiz and Pav.], and *Cumingia* Vidal, based on Philippine material [= *Camptostemon* Masters], have been dedicated to him, while approximately one hundred forty species of plants have been described from his Philippine collections alone with specific names derived from that of this remarkable collector.

Of the thirty-three letters written to Sir William Jackson Hooker by Cuming, sixteen are reproduced below, as the re-

¹ *Journ. Conchol.* 8 (1895) 69, 70.

maining ones do not appertain to his Philippine experiences but refer to other matters.

79, CHARLOTTE ST., FITZROY SQ.,
London, Nov. 24, 1824.

DEAR SIR,

A Friend of mine having just returned from South America has made me a present of two Rock plants. From their appearance I think they are in Fruit. If they are worth your acceptance I shall be most happy as a Friend of yours informed me you had not one that was in Flower. Mr. Hunneman has kindly promised to forward them to you. I have been informed you have published a third part of my plants. If that is correct I shall feel most obliged to you for it. Although not a Botanist I feel highly interested in possessing the work complete particularly as you have done me so much Honour in the kind manner you have there spoken of me. I have not had a letter from Mr. Brydges since I wrote you last. He is in the place I then spoke of near the Andes halfway betwixt Santiago and Concepcion. He ought there to make a fine collection. My Friend informs me Mr. Matthews left him some time since to pass the Andes from the pass near Truxillo and would collect on the Banks of the Maranan. He gave my Friend a few Ferns the like I never before saw they are very beautifull.

I shall feel most obliged if you could gain any information in Glasgow or Grenock respecting Manilla and the Phillipine Islands, as it respects the Climate, State of Society amongst the lower classes and the Aborigines, or any information of the Civil Government towards strangers particularly those who might visit the place in Scientific Pursuits. At the same time please let me know if there has been any collectors of Natural History in those Islands or Botanists. I am still of a roving mind and should I gain anything like a satisfactory account of the place I have a great mind to pay it a visit for Two or Three years. Perhaps I might be able to render you some little service if it should not have been visited by a Botanist. From what I have learned here, nothing is hardly known respecting those Islands, all the shells from there are most beautifull and in England extremely rare. As I have not opened my mind to any one here, I beg you will not mention the subject to any person whatever as it would be more than a year before I could be ready to start, therefore I would not wish it to be known what my intentions were for the present; having received many kindnesses from your hands I hope I do not intrude by soliciting the above favour. Should I go I can only say you should have the preference as before; when it is convenient I shall be most happy to receive an answer. If favourable I then will think about it in earnest.

I am Dear Sir
Most Oblid
to command

[Signed] H. CUMING

Dr. HOOKER,
Glasgow.

LONDON, July 8, 1835.

MY DEAR SIR,

I trust you will not think me ungrateful in not answering your most kind interesting letter of Decr. last, where you offered your Friendship If I went to India. I have duly matured upon a Collecting Voyage to that part of the World and would have written in answer long since If I had been sure I should have permission of the Spanish Court to visit the Philippine Islands as that place appears to be least known of any civilized part. I have now the promise of the Grant from the Spanish Ambassador through the Influence of Earl Derby and I trust ere long to have it in my possession. Accept my best thanks for your kind offers of letters of introduction. I shall feel greatly obliged to you for them to any persons who may have interest in the Straits of Malacca, Sincapore, Penang, Canton, Java and Manilla as I think I shall visit all the above places and at the same time I shall be most proud to receive from your hands any instructions as it respects collecting of Plants &c. which you may think upon that I may be able to render you all and every Service that will lay in my power to execute; and at the same time you will confer a great favour by procuring for me as many Gentlemen who will be willing to take Collections of Plants from me on or befor my return at the same price as before. I have spoken to Mr. Brown and will also speak to Dr. Lindley and Mr. Bentham.* Perhaps you may be acquainted with some Gentlemen in London or this part of the kingdom who would be willing to add to their stores. If you would be pleased to give me their Names I will do myself the pleasure of waiting upon them or writing saying I have been recommended by you to make known my intentions &c.

I intend to leave England for Hamburg Copenhagen and Berlin on the 1st of August and will return to Town by the 1st of October and will finally leave England for the Indian seas by the first vessell after the New Year. I have to repeat how happy I shall be to receive any instructions, hints, and Letters of introductions from your hands and in return I will make the most complete Flora of those parts which I may visit that circumstances will admit of such as specimens, Fruits, and Woods. Really I fear I am giving you a great deal of Trouble, but well knowing your great love for the Vegetable productions of all the World prompts me to ask the above favours in hopes of being able to make something like a return. I shall feel obliged by an answer before the 1st of August saying what your Ideas are upon the subject perhaps you will not have time for the other subjects mentioned and there is not any hurry October will be time enough for them.

[Unsigned]

LONDON July Six 1835

Dr. HOOKER

*Regius Professor Botany
Glasgow.*

* Robert Brown, 1773-1758; John Lindley, 1799-1865; George Bentham, 1800-1884.—E. D. M.

LONDON July 17—1835.

MY DEAR SIR,

I had the pleasure to receive yours of the 9th and feel much obliged for the many usefull hints you have given me therein. I can assure you nothing would induce me to have any thing belonging to me advertised. I merely intended, when I did myself the pleasure of writing you last to know if those Gentlemen who took Collections of my Chillian Collection would like to have from me on my return from the East. If I was to ask the public for Subscriptions, they would think I was in want of Cash. That I am proud to say is not the case in any degree beforehand. Under the above circumstances I should feel obliged by your merely mentioning to your Botanical Friends when you meet them that I am going or gone to the Phillipine Islands and nothing more.

I have had a Letter from Mr. Fielding* of Lancaster requesting me to consider him a Subscriber. I have answered the Gentleman and he is put down the 7th on the List. I have done myself the pleasure to place your name on the Top of it. On my return from the Continent I will write you again by that time I shall be able to say what time I shall leave. As it respects the specimens I trust they will be better than the last. I will bring them large enough even to please Mr. Lambert."

I am Dear Sir

Yours most sincerely

[Signed] H. CUMING

A few days since I had the pleasure to be introduced to a Friend of yours Mr. Harvey" of Limerick. He is a Conchologist as well as a Botanist. I gave him every information and written instructions how to collect shells and plants, the mode of packing them, &c. I found a most perfect Gentleman and most grateful for what Information I could give him. If I should call at the Cape he tells me I shall find a hearty welcome. I may touch at the Mauritius. I intend to visit Singapore Malacca and Penang.. At Malacca or near it is a most particular Fern of which there is but a small imperfect specimen in England. I will visit that place for that Fern alone. Mr. Brown has given me the above information. Do you know any Merchants at Glasgow who have a House at Manilla if so it would be a mutual advantage to both.

Yours most sincerely

[Signed] H. CUMING

LONDON: July nineteen 1835

Dr. HOOKER

Reg. Prof. Botany
Glasgow

LONDON. Oct. 7th 1835

MY DEAR SIR,

I had the pleasure to find your letter of the 28th of Sept. laying at my house on my return from the Continent for which I am much obliged.

* H. B. Fielding, died 1851.—E. D. M.

" A. B. Lambert, 1761-1842.—E. D. M.

" W. H. Harvey, 1811-1866.—E. D. M.

When at Berlin Dr. Klotzsch gave me a parcel of plants for you which I have delivered to Mr. Hunneman who will forward them by Mr. M'Nab of Edinburgh on Saturday next with a specimen of an *Aristolochia* which is now in flower at the Bot. Garden, Berlin, Dr. K. thence inclosed. In answer to yours respecting the places I intend to visit during my absence I will say Penang, Malacca, Singapore and the Philippines Islands to be the ostensible object I have hitherto in view but should vessel offer it is more than probable I shall also visit Timor Borneo and some of the adjacent Islands. Therefore I shall feel most particularly obliged by all the Letters of Introduction you can procure for me for the Eastern Seas, not forgetting Macao² as it is probable I may call there.

I have made up my mind to quit London by the first ship after the New Year as I intend to be quite ready by the last day of the present year. You will confer a favour when you send me the Letters to give me a list, with particulars what you would wish me to collect besides the usual plants for you or any of your Friends. Mr. Brown, Mr. Stokes and some others have requested me to procure them things I should never have thought of and perhaps you may think of some things also. I shall pay due attention to the Mosses and Fuci. Some persons in Germany have also requested me to collect Fuci and Fungi. I will do my best endeavor to give satisfaction to all parties taking due care to give you a preference in everything you request me to collect. I have told them all I shall do so for Auld Lang Syne. I intend to collect seeds. Perhaps some of your Friends may like to have a collection.

I hope the above will meet your approbation.

I am Dear Sir

Yours most Gratefull

to Command

[Signed] H. CUMING

Dr. HOOKER,
Regius Professor of Botany
Glasgow.

LONDON Dec. 18, 1835.

MY DEAR SIR,

Your most valuable packet came safe to hand, for which be pleased to accept my most sincere thanks and I trust your kind intentions will not be thrown away. Mr. Stokes had a few days before the arrival of your letters introduced me to Mr. Crawford³ who has given me several letters to his Friends in India. I did myself the pleasure to write Mr. C. a note and inclosed yours to Him. Mr. Millet is living some place in Hampshire and having many letters to India perhaps it will not be necessary to trouble him on the subject. I feel most obliged by your friendly hints and I will do all I can to perform the utmost of your wishes. Whenever an opportunity offers I will do myself the pleasure of informing you of my progress in the various branches of Natural History. Mr. Stokes has promised me letters for Macao. I expect to sail from Liver-

² These letters antedate the establishment of the Hongkong colony; Macao was then an important port.—E. D. M.

³ Probably J. Crawford, orientalist, 1783-1868.—E. D. M.

pool on or about the 15th for Batavia Singapore and Manilla. You say I must not collect plants near the Sea Coasts. I shall not be able to refrain from it knowing now a little of the plants so that I won't collect the same at every place I meet for I am of an opinion I may get plants on the Sea Coasts that has escaped the Eyes of all others. I did so in Chili and trust to do the same in the East and when I cannot collect plants with seeds and flowers at the same time I intend to collect them separate so that you shall be able to make them out. I have orders for all kinds of seeds with Branch &c.

If any vessell should sail from your port to Manilla for the next two years I should be most happy to hear from you it would afford me great pleasure to know what might occur in the Scientific World.

In expectation of having the best opportunity of a Collector and the Zeal of [an enthusiast? letter torn] during my voyage I shall be able to make you a return for the many favours received by bringing you a large Collection of new plants worthy of your notice and the first Choice.

I am Dear Sir

Yours most sincerely

Most Gratefull

[Signed] H. CUMING.

To Dr. HOOKER

*Reg. Prof. Botany
Glasgow.*

CALAGUAN, PROVINCE OF LAGUNA DE BAHIA

[that is, Calauan, Laguna Province]

LUZON Nov. 10, 1836

DEAR SIR,

Having the Honour to make the acquaintance of your Friend Mr. Maartens at this place I have done myself the pleasure of forwarding by him five specimens of plants to show you and my Friends that I am living and well in a perfect paradise having collected on this Estate alone 500 species of plants in Six Weeks besides innumerable species of Insects Shells and Reptiles. If convenient I should feel obliged by your showing Messrs. Loddiges the Orchideae as I shall send him in Jan. next some living specimens. I presume the Ferns are new, to me they have given great pleasure in collecting them. I have taken nearly 50 species from this spot alone principally large ones.

My best respects to my Friends of the Linnean and say I shall be most happy to present an entire Collection of plants that I may collect in those Islands to the Society on my return.

I am Dear Sir

Yours Most Truly

[Signed] H. CUMING.

MANILA Dec. 24, 36.

DEAR SIR,

I have the pleasure to inform you of my arrival at this place on the 24th of July last just as the Rainy Season had set in therefore I could not make any excursions in the Country untill the end of Sept. then I left this place for the Hacienda of Calaguan [Calauan] in the center of

Luzon where I remained until the 15th of this Month making excursions to the Woods and Mountains in the Neighborhood and I trust my Labours will meet your approbation having collected about 1150 species of all classes since my arrival and I am proud to say nearly 1/10 are Ferns of the most beautiful forms you can conceive. Two species are Trees and one a perfect shrub throwing its branches like the Fir, and all in Flower except two or three species. I have also many species of Mosses but not many Flowering Shrubs, like those of Chili in form. Many Trees give splendid Flowers but their time is principally in March, April and May, but many of them flower twice a year. I have collected upwards of 50 Species of Orchideae but not many in Flower and of the Fungi 125 Species.

I am now preparing for a Voyage to the Southern Islands viz. Zebu, Negros Leyte and Mindanao, and if I am not made a Prisoner by the Malays I trust I shall on my return in July next be able to give you as equally good an account of myself. As yet I have not made any excursions on the Sea Coast but yet I have collected 250 Species of Shells; Insects, Reptiles and Crustaceous subjects have had their due, and I have even surprised myself in what I have done.

My reception from the Govt. has been most flattering every facility has been offer'd and afforded and the Hospitality of the Resident Spaniards is far from my expectations although I experienced much of it in South America. During the time I was at Calaguan [Calsuan] I well tried my Constitution amongst the Woods, Mountains, Marshes and Rivers some days out all the day in the rain. As yet I have not had a moment's pain except from Venomous Insects &c. which are abundant and what is more strange Calaguan [Calauan] is the most unhealthy spot in the Island therefore I trust the Climate will not injure my Health. Should anything happen to me that I should Die I have order'd all my Botanical Collection should be sent to your care and you to select out a perfect Collection with duplicates where necessary, for your own use and that you would be pleased to dispose of the remainder to those who would wish to take them on the former Terms for the benefit of my Estate. I should be most happy to hear from [you] particularly if I can be of any further service to you during my residence here.

I am Dear Sir

Yours Most Sincerely

[Signed] H. CUMING

To

Sir WILLIAM JACKSON HOOKER, Knt.
Regius Professor of Botany
Glasgow.

MY DEAR SIR,

MANILA Nov. 13, 1836.

I did myself the pleasure of writing you in Dec. 1836, and also in Nov. 1837, [? dated Nov. 10, 1836] and up to the present date I have not had an answer from you. I am fearful the letters must have been lost, although all the others, I sent to England arrived, and have been acknowledged.

In my former letters I gave you some Idea of what I had been doing in this part of the World and my success in Collecting &c. I now will

give you a small Idea of my Voyages to the various provinces and Islands in this Government.

My first excursion was to the center part of Luzon, where I collected but a few things, from the state of Cultivation, &c.; the next, to the borders of the great lake where I collected about 200 species of plants, Ferns was the principal feature of the Trip. My next excursion to the Islands in the South as Panay, Guimaras, Negros, Siquijor, Zebu [Cebu], Bohol, Camiguin [Camiguin de Misamis] and Mindanao, which occupied 10 months and at the close the plants amounted to 1900 in all, in which were many Ferns. My last Trip has been a continuation of the Southern Islands, viz. Samar, Leyte, Masbate, Ticao, Burias, Mindero and the South eastern Provinces of Luzon as Albay, Camarines, Tayabas and Batangas, here my Ferns have augmented vastly. I may say with propriety I have 400 species amongst which many Trees and one Shrub. In the Island of Samar I found a *Rafflesia* of which I have dried specimens and in spirits on the Roots of Trees, on which they grew, several species of *Nepenthes*, but few Flowers. Mosses, Lichens and Fungi are scarce, small annuals hardly any, shrubs but few, large Trees, and small ones, in abundance. The Vegetation is so luxurious the smaller plants cannot live, all open spaces are cover'd by high grass to 9 ft. high. My species now amount to 3000. The Ferns are magnificent of which I have ample sps. I have ascended several mountains to the very Top some 5, 6, and 7,000 Ft. high. On the Sea Coast nearly all the plants are the same in all localities; in the dark Woods and deep Glens is my delight. The Ill Health and fatigue that I have experienced has been very great, my Eyes are much injured by the sun; in short I am 10 years older than I ought to be. I am now preparing for the Northern part of the Island and expect to return in July next. In Oct. I leave this [place] for Singapore and that place in March 1840 for England of which I will advise you in time.

From the Govt. and all the Public authorities I am continually receiving proofs of their Friendship and protection and the Priars are my best Friends. My other Collections are equally rich, Shells, Birds, Insects &c. I have forwarded to the care of Mr. Brown a Trunk of a Tree Fern which I collected in the Crater of a Volcano; there were Thousands. I have but few small species some are so large that I have been compell'd to divide a leaf in four that has not a stem. In the North they are abundant in the Mountains. How I shall succeed I can't say as there is war betwixt the Negros and the White people and has been for some years. I must venture I cannot leave such a spot unsearch'd.

I have had the misfortune to have a large Case of plants stolen from the Warehouse in which it was deposited. I trust you will be able to procure for me several subscribers to take plants by the time I arrive in England, in the meantime

Believe me My dear Sir

Yours ever obliged most Sincerely

[Signed] H. CUMING.

Sir WILLIAM JACKSON HOOKER, Kt.

L. L. D. F. R. S. &c.

Reg. Prof. Bot.

Glasgow.

8, KING'S ROAD GRAYS INN

LONDON June 5th 1840

MY DEAR SIR,

It is with pleasure I have to inform you of my safe arrival here this morning from Singapore with all my Collections I trust safe, and in as good a Condition as I am in Health.

Since I did myself the pleasure of writing you last, I have been at Mount Ophir in the Malayan Peninsula and have had the great pleasure of Collecting the splendid Fern [*Matonia pectinata* R. Br.] which I promised you to do before I left and many others from that Locality. It is not found at the Foot of the Mountain but 4000 feet high in great abundance, of which I have taken the liberty of Collecting a number of the finest specimens. Its roots creep along the Ground and each Frond stands from 5 to 7 Feet high.

If I have my Health, I expect to have all the plants in Order by the latter end of August and if it should meet your convenience to be in London at that or at a future period I shall be most happy to see you when a division is made of the Specimens more particularly so as it is my wish for you to have the first Choice in all the plants as before.

I shall feel most gratefull to you in procuring me subscribers for Collections of plants amongst your Friends. Perhaps some of them may object from the amount of a Collection being paid down at once. To make it convenient to them it can be paid in four Instalments, the first at the time of receiving them, and at 3, 6 and 9 months if it meets their pleasure.

My address at present is at 8 Kings Road, Grays Inn, London, in the meantime I will exert myself to get all the plants in Order, these Families that I am acquainted with I will put together such as the Ferns, Orchideae, Malvaceae, with their Localities, time collected &c.

If you have leisure I shall be most happy to hear from you.

I have 15 Species of Ferns from St. Helena which I collected one day there. I met a Clergyman who informed me that he intended to send you some plants from that Island. I think his name was Phelps. As all my Baggage is on board I cannot find his card to be certain of his Name.

I am Dear Sir

Yours most Sincerely

[Signed] H. CUMING

80 GOWER STREET, BEDFORD SQUARE

Aug. 1, 1840.

MY DEAR SIR,

I hasten to inform you that I have found Seven of my Cases of plants completely ruin'd by Water, the Tin Cases being eaten through and full of Holes. It must have occur'd in Manila, where the Cases were placed in a Store over which lived a Family who must have let water fall through the Floor and as there was not any Ceiling it did not leave any marks behind.

It must have been in '38 or '39 as all the Cases injured were collected in '38 - '37 and one in the early part of '38 and a few boxes of Shells of those Years have been also wet. Shells will not damage but little.

I have unpack'd one of the damaged Cases and I am happy to say all the Species of Ferns are but little injured and you will not lose a Species in this Case. Most all the other plants are gone. Where a specimen could be recognized I have kept it for your inspection.

I am fearful the above loss will reduce my numbers to near 2,000 Species. If so my loss will be great but it is not any use to repine. I know that your disappointment will be great even more than mine.

I am My Dr. Sir

Yours ever oblidg'd

[Signed] H. CUMING

80 GOWER STREET

BEDFORD SQUARE

Oct. 13, 1840

MY DEAR SIR,

I have the pleasure to inform you that my labours in unpacking are nearly finished, as I have but one case to set in order which I expect to be done by the end of the Week.

Mr. Brown was heard from a few days since and may be expected in Town before the end of the month is up. Soon as he arrives I shall request him to consult you respecting the selecting of the plants that your convenience may be studied as it respects the time.

I trust you have had influence with some of the principal Botanists to become subscribers for a selection of my plants. As I have experienced your Friendship in so many instances it makes me a little bold to ask another Favour in the above.

I have not written to Baron Fischer of St. Petersburg under a supposition that you might have communicated with him on the subject, neither have I address'd the Revd. Mr. Henslow of Cambridge, as you did me the favour to get him to subscribe the last time.

A Mr. Shuttleworth of Switzerland made a communication to the late Mr. Hunneman for a Collection but as I do not know that Gentlemen's address I have not written to him. If you can give me any information respecting that Gentleman you will oblige me much.

If you think it necessary I will advise Mr. Fielding the plants are nearly ready. I don't know if he intends to be present or not or if he has appointed any person to look out his specimens.

I am of an opinion that some of the Gentlemen will be annoy'd by the size of many of the Ferns, many of them are Magnificent and I could not find courage to cut them to pieces where my papers would admit their size. I am certain there is more than 400 species. The Matonia is superb and I have specimens of all the different stages for you.

I remain Dear Sir

Yours ever oblidg'd

Most Sincerely

[Signed] H. CUMING

To

Sir W. J. HOOKER, Kt.

"J. S. Henslow, 1796-1861.—E. D. M.

"R. G. Shuttleworth, 1810-1874.—E. D. M.

80 GOWER STREET
BEDFORD SQUARE
London 11th Sep 1840

My dear Sir,

I have just received a letter from Mr. Fielding of Bolton Lodge who writes me that he has been informed by you that my plants has been affected by Insects, which I am most happy to contradict in the fullest sense—not having seen any symptoms of Insects or Dust in the 15 cases I have already unpacked. Six of the cases has been injured by Rain Water they having been placed in a large store in Manilla during my absence in the provinces and the Rain came upon them during one of the Bagios [typhoon] and not been noticed the water saturated the wood and corroded the Tins but am happy to say that not a fern is lost.

I beg the favour that if this report is in circulation that you will be pleased to contradict it in the fullest sense as it may tend to do me a serious injury which I trust I do not deserve.

I expect to have the Plants ready from the 20th to the 25th of next month—when ready and I do not hear from you in the meantime will write you again.

I remain Dear Sir
Yours truly

H. CUMING

Sir WILLIAM JACKSON HOOKER, KNT.

18 THAVIES INN
Saturday morning

MY DEAR SIR,

It is with great pleasure I forward to you my *Child*, with all its imperfections bad grammar &c. &c. &c. for your perusal and to select those portions that are fit to meet the public Eye. I tremble at the thought of appearing before the public in the light of a Tourist or of one attempting to describe a New Country. Do speak of it as a light trifling thing as notes taken down in the wearied hours of a man suffering under disease and Fatigue whose only recommendation is Industry and perseverance under a Thousand disadvantages.

My Friends the Spaniards be most kind, for their unbounded Hospitality, kindness and universal desire to further my object in every instance where it could be rendered, from the highest to the most indigent.

If any dark passage meets your eye note it and let me put it aright for I have not had time to read over what I have written, and the universal bad language which I have written will give you a most mean opinion of your Humble Friend.

Don't forget the Ferns I should say at least 400 Species, I think more. Orchideae also is worthy of Notice; of plants 3500 species; Shells 3210 do. of which there are 576 species and varieties, Fluvialtane, Univalves 118, and but few Bivalves from the Lakes and rivers.

I shall feel most obliged for a Manuscript Copy previous to its being sent to the press that I may be able to correct the Names of places and other matters, and let a few Copies be printed of separate, to give my own private friends who feel a Brotherly interest in the labours of their relative.

I have yet many little things to write from where I left of which I will do in due time as to let you have it by the time I receive your abstract of my Journal.

Relying on your great Influence with the Botanists of this, and other Countries, I repose the dreaded Book into your Hands, and trust I shall be able to raise sufficient subscribers to take the major part of my specimens to repay my very great expences in procuring them, to those who may not desire to take a Collection from the Expence do me the favour to inform them I shall be most happy to receive One Quarter part of the amount at the time of receiving them, and the remainder at 3, 6 and 9 months in Bills, which I promise not to negotiate in any manner whatever untill due.

The above, I have stated from a Conviction of your Friendship for me and the universal esteem and respect which you are held by all the world which gives you that gigantic influence over all the Botanists of the Civilized Globe which leads me to hope will be a sure means of procuring a ready sale of my dried specimens.

I have the Honour to be
Yours most devoted
ever gratefull

[Signed] H. CUNING

N. B.

When you have occasion to write me from Glasgow address at 80 Gower Street Bedford Square.

80 GOWER STREET
BEDFORD SQUARE
May 25th 1841

MY DEAR SIR,

I had the pleasure to receive your Note last evening, in answer to which I beg to say the plants have been pack'd up since the 15th of April and knowing that you was in Scotland I did not think you would like to have them sent to Kew untill your return to Town.

I trust the selection that I have made will give you that satisfaction I would wish, whenever I had a doubt as to usefulness of the specimen for examination I always referr'd to Mr. Bennett,* who was present all the time with one to two exceptions.

Since the selection I found two or three things put aside and forgotten untill too late to put them into the cases. I will pack them securely and cause them to be left where you will be pleased to order them.

On the other side I have given the Number of specimens &c. &c.

Now my dear Sir I must beg your kind indulgence for appearant trifling on my part respecting my Journal. I am most truly sorry that I should have given you so much trouble and then disappointment in this affair. I now candidly confess that I felt so much ashamed of the gross Ignorance of the English Language which I made in writing of the Journal and which I have not the ability to amend that I was compell'd to write you what I did and as you was justly hurt at my appearant trifling I

* J. J. Bennet, 1801-1875.—E. D. M.

had not the courage to answer your just rebuke at the time when you had so much to attend to and of so much importance, I can assure you I have been much hurt ever since I received your letter particularly as I have from the first day that I had the Honour to be known to you received the greatest attention and acts of kindness from your Hands. If I could have the pleasure of seeing you at any time convenient to yourself I trust I should be able yet make some amend for the apparent trifling conduct of mine, that kind of conduct I most devoutly detest, and to labour under that Character in your estimation grieves me much.

I remain My dear Sir

Yours ever oblig'd

Sir W. J. HOOKER

H. CUMING

80 GOWER STREET
BEDFORD SQUARE
Novr. 26, 1841

DEAR SIR,

I had the pleasure to receive yours of the 23d yesterday and as it was not in my power to answer it until I had seen Mr. Bennett of the Museum who has kept a correct List of all the Localities. Today on my visiting the Museum I found he was taking his Holidays I will write him should he be at St. Johns Wood to gain what you desire.

At the time the plants were selected the Localities were put on the Number which began with a New Locality and I am confident they were put on yours as it was done to every set. I saw many of them when I pack'd them in the Box. I shall feel a pleasure in procuring you any information you want respecting them.

[Signed] H. CUMING.

The list of localities mentioned in the last letter is very important and although it has already been published by me it is here repeated to complete this record. Cuming apparently intended to sort his plants into natural groups before numbering the collection as a whole, but abandoned this plan after he had segregated the ferns and fern allies, cellular cryptogams, and three strongly marked groups of phanerogams, *Eugenia*, *Loranthaceae*, and the *Orchidaceae*. In this task he was assisted by Mr. J. J. Bennett of the Botanical Department of the British Museum.

He used a printed label "Ins. Philippinae 1841" for the entire collection although several hundred numbers were not collected in the Archipelago, but came from the Malay Peninsula, Singapore, Sumatra, and St. Helena. The localities were not written on all the labels as the sets of duplicates were prepared, but the new locality was added on the label of the first number from that locality. It was apparently expected that subscribers to

"Philipp. Journ. Sci. 10 (1915) Bot. 183.

the sets would complete the labels, but this was rarely or never done. The result has been that many of Cuming's extra-Philippine plants occur in various herbaria under Philippine labels and have erroneously been credited to the Archipelago in botanical literature, in some cases involving genera that do not extend to the Philippines.¹² Cuming's own list of localities attached to his letter of November 26, 1841, is given below.

- 1- 434. Vascular Cryptogams, apparently distributed with properly prepared labels. Most of the species are from the Philippines, a few from Malacca, Singapore, etc.
- 435- 667. Calauang [Calausan], Province of Laguna, Luzon.
- 678- 694. Province of Tayabas, Luzon.
- 695- 702. Island of Corregidor [a small island at the entrance of Manila Bay].
- 703- 725. Province of Tondo [Rizal], Luzon.
- 726- 749. Provinces of Pampanga and Bulacan, Luzon.
- 750- 833. Province of Tayabas and the mountains of St. Cristobal and Maijaijai [that is, Mount Banajao, on the boundary between Laguna and Tayabas Provinces], Luzon.
- 834- 947. Province of Albay, Luzon.
- 948-1039. Province of Pangasinan, Luzon.
- 1040-1112. Not localized, but probably from the Province of Zambales, Luzon, judging from the species represented.
- 1113-1182. Province of South Ilocos [Ilocos Sur], Luzon.
- 1183-1260. Province of North Ilocos [Ilocos Norte], Luzon.
- 1261-1380. Province of Cagayan, Luzon.
- 1381-1454. Province of Nueva Ecija, Luzon.
- 1455-1478. Province of South Camarines [Camarines Sur], Luzon.
- 1479-1603. Island of Mindoro.
- 1604-1673. Province of Misamis, Mindanao.
- 1674-1732. Island of Samar.
- 1733-1757. Island of Leyte.
- 1758-1789. Island of Cebu.
- 1790-1810. Island of Negros.
- 1811-1857. Island of Bohol.
- 1858-2153 " Philippine material, not localized (exceptions 2052; 2053-2058).
- 2052. Malacca.
- 2053-2058. Singapore.
- 2252-2399. Malacca.
- 2400-2427. Singapore.
- 2428-2443. Sumatra.
- 2444-2464. St. Helena.

It is manifest that Cuming did not collect botanical material on all the islands he visited, for the published record shows

¹² See Vidal, *Rev. Pl. Vasc. Filip.* (1885) 83: "2154-2242 Criptogamas celulares." These were chiefly from the Philippines.

that he secured shells from Capul, Tablas, Temple, Guimaras, Burias, Camiguin de Misamis, Lubang, Siquijor, Bantayan, and Cuyo, islands that are not mentioned by him as localities in which he collected botanical material. Many of these islands are rather small, and most, but not all of them, are uninteresting from a botanical standpoint.

PARTIAL BIBLIOGRAPHY

This partial bibliography includes only papers based wholly or in large part on Philippine material collected by Hugh Cuming. Very many of them were originally printed in the Proceedings of the Zoological Society, London, here abbreviated as P. Z. S., and those there published were for the most part reprinted without change in form or title in the Annals and Magazine of Natural History, here abbreviated as A. M. N. H. These reprinted papers in the Annals and Magazine of Natural History sometimes appeared during the same year in which they were originally published in the Proceedings of the Zoological Society, sometimes the year following, and in some cases two years after they were originally printed. The original place of publication of all species considered in these two serials is in the Proceedings of the Zoological Society.

ADAMS, A.

On the animal of *Liostia*; with a description of new species of *Delphinula* and *Liostia*, from the Cumingian collection. P. Z. S. 18 (1850) 50-52, t. 3; A. M. N. H. II 7 (1851) 332-335.

Monograph of *Sphaenia*, a genus of lamellibranchiate Mollusca. P. Z. S. 18 (1850) 86-89; A. M. N. H. II 7 (1851) 420-421.

A monograph of *Scarabus*, a genus of air-breathing gasteropodous Mollusca from specimens in the Cumingian collection. P. Z. S. 18 (1850) 147-152; A. M. N. H. II 8 (1851) 66-70.

A catalogue of the species of *Emarginula*, a genus of gasteropodous Mollusca, belonging to the family Fissurellidae, in the collection of H. Cuming, Esq. P. Z. S. 19 (1851) 82-92; A. M. N. H. II 11 (1853) 146-153.

Catalogue of the species of *Nassa*, a genus of gasteropodous Mollusca belonging to the family Buccinidae, in the collection of Hugh Cuming, Esq., with the descriptions of some new species. P. Z. S. 19 (1851) 94-114; A. M. N. H. II 11 (1853) 320-325, 410-418.

Descriptions of fifty-two new species of the genus *Mitra*, from the Cumingian collection. P. Z. S. 19 (1851) 132-141; A. M. N. H. II 12 (1853) 48-58.

Contributions towards a monograph of the Trochidae, a family of gasteropodous Mollusca. P. Z. S. 19 (1851) 150-192; A. M. N. H. II 12 (1853) 142-148, 199-213.

A monograph of the genus *Monoptygma* of Lea. P. Z. S. 19 (1851) 222-224; A. M. N. H. II 12 (1853) 281-283.

ADAMS, A.—Continued.

A monograph of the recent species of *Rimula*, a genus of Mollusca, belonging to the family *Fissurellidae*. P. Z. S. 19 (1851) 226-227; A. M. N. H. II 12 (1853) 284-285.

Descriptions of sixteen new species of *Rissoina*, a genus of marine gasteropodous mollusks, from the Cumingian collection. P. Z. S. 19 (1851) 264-267; A. M. N. H. II 13 (1854) 65-68.

Descriptions of several new species of *Murex*, *Rissoina*, *Planaxis*, and *Eulima*, from the Cumingian collection. P. Z. S. 19 (1851) 267-272; A. M. N. H. II 13 (1854) 152-156.

Descriptions of new species of *Eulima*, *Triphorus*, etc., from the collection of Hugh Cuming, Esq. P. Z. S. 19 (1851) 276-277.

BENTHAM, G.

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BERKELEY, M. J.

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