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GRISEBACH'S FLORA OF THE BRITISH WEST INDIAN ISLANDS: A BIOGRAPHICAL AND BIBLIOGRAPHICAL INTRODUCTION

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DESPITE THE PASSAGE OF TIME the *Flora of the British West Indian Islands* (London, 1859–1864) by August Heinrich Rudolf Grisebach (1814–1879) is a work which students of the Caribbean flora must necessarily often consult on account of the many new specific names and nomenclatural combinations published therein, as well as for taxonomic information. Indeed, little taxonomic work on West Indian plants can be done without reference to it. The following notes on this *Flora* were originally compiled about 1960 to form an introduction to a facsimile (*Historiae Naturalis Classica*, no. 30), which through a misunderstanding was published in 1963 without them. They deal with its dates of publication (p. 263), the area covered (pp. 260–263), the abbreviations for literature employed by Grisebach (pp. 276–285), and the collectors (pp. 264–272) whose material he cited. To these have been added a short biography of Grisebach (pp. 245–249) and a chronological list of his publications (pp. 249–260).

Historically Grisebach's *Flora* is of interest as the first of a series of British colonial floras initiated at Kew by Sir William Jackson Hooker (1785–1865). As stated in a memorandum of 1863 on colonial floras, "the publication by Government of a series of inexpensive portable 8vo works, illustrative of the vegetable products of the British possessions, has long been contemplated by the Director of the Royal Gardens of Kew. To him, in his official capacity, incessant applications for information on the vegetable products of our Colonies are made, by the Home and Colonial Governments and by private individuals, especially merchants and manufacturers; and he is habitually applied to by travellers and emigrants for the names of such books as will enable them to obtain precise information about the plants of the different Colonies." Grisebach's *Flora* was, however, "commenced before the general plan was entertained; and neither the plan, size, nor typography of the work, nor the sequence of the orders are uniform with the Floras since undertaken." Bentham's *Flora Hongkongensis* (1861) served as a model for these. It is of interest to note that the British West Indies were then estimated to possess 2,000



FIG. 1. AUGUST HEINRICH RUDOLPH GRISEBACH (1814-1879).

species, British Guiana 2,500 species, Canada 2,000 species, South Africa 10,000 species, British India 12,000 species, Ceylon 3,000 species, Hong Kong 1,000 species, Australia 8,000 species, and New Zealand 1,200 species.

The choice of the British West Indies as the first area for systematic botanic treatment in this way reflects Hooker's own personal interest. For

years before, during his professorship at Glasgow (1820–41), he had been receiving specimens and plants from his correspondents in the West Indies, notably Scots, and his eldest son had emigrated to Jamaica (where he died in 1840). One of Hooker's first acts on becoming director of the formerly private royal gardens at Kew was to send Purdie to Jamaica to get West Indian plants for the expanding Royal Botanic Gardens now open to the public. The period during which these collections were made coincided with one of economic decline in the British West Indies. As stated by Parry and Sherlock, "one disaster followed another: bankruptcy and financial chaos in the eighteen-forties, droughts and epidemics in the eighteen-fifties, rioting and bloodshed in the eighteen-sixties" (*Short Hist. West Indies*, 188. 1956). The will and means for founding institutions of higher learning existed neither among the planters nor the emancipated slaves. Encouragement for the scientific study of the plants of the British West Indies and for further collecting had therefore to come from outside the area. With the completion of Grisebach's *Flora* this external stimulus ended and local interest languished. Instead of forming the basis for yet more investigation, the *Flora* gave the impression by its apparent exhaustiveness that no further investigation was needed. Particularly did this apply to Jamaica, where between 1860 and 1880 almost all botanical activity ceased.

Renewed collecting in Jamaica, following the appointment in December, 1879, of Daniel Morris (1844–1933) as director of Public Gardens and Plantations and his founding of a Botanic Department herbarium for Jamaica, quickly demonstrated the unreality of such a view.¹ By 1909, according to Urban (*Symb. Ant.* 6: 84. 1909), the new botanical exploration had led to an increase of 358 species of flowering plants above those recorded for Jamaica in Grisebach's *Flora*, 285 of them being species new to science. Most of these discoveries stood to the credit of William Harris (1860–1920) who went out to Jamaica as a gardener in 1881; most of the support for his work came from the interest and encouragement of Ignaz Urban (1848–1931) in Berlin and Nathaniel Lord Britton (1859–1934) in New York.

BIOGRAPHY OF GRISEBACH

August Heinrich Rudolf Grisebach was born on 14 April 1814, at Hanover, north Germany, where his father Rudolf Dietrich Grisebach (d. 1837) was auditor general of the kingdom of Hanover. His mother's brother, the Göttingen professor Georg Friedrich Wilhelm Meyer (1782–1856), author of *Primitiae Florae Essequiboensis* (1818), *Chloris Hanoverana* (1836), and other botanical works, encouraged and directed his early interest in natural history. After schooling at Hanover and Ilfeld he entered, in the autumn of 1832, the university of Göttingen, studied botany here under H. A. Schrader and F. G. Bartling, as well as medicine,

¹ See STEARN, W. T., A botanist's random impressions of Jamaica. *Proc. Linn. Soc. London* 170: 134–147. 1959.

for five terms, then moved to the university of Berlin in April 1834, to complete his studies, becoming doctor medicinae et chirurgiae in April 1836. At Berlin he came under the influence of C. S. Kunth, H. F. Link, F. J. F. Meyen, and M. J. Schleiden; as his doctoral dissertation he presented *Observationes quaedam de Gentianearum Familiae Characteribus* (Berlin. 1836), a pamphlet of 37 pages preliminary to his massive *Genera et Species Gentianearum adjectis Observationibus quibusdam phytogeographicis* (364 pages, Stuttgart & Tübingen. 1838). Already in 1833 he had botanized in southern France and had become interested in the associations of plants characteristic of regions and habitats. Alexander von Humboldt's travels inspired him as they did Charles Darwin. From Berlin he moved back to Göttingen in 1837.

In March 1839 Grisebach set out on the most important journey of his life, a botanical expedition to the Balkan Peninsula (he extended the use of the term Rumelia to cover all the central region then under Turkish rule) and north-west Asia Minor (Bithynia), which had long captivated his imagination, this region being virtually unexplored from the botanical standpoint and little known in other aspects. He left Vienna on 2 April 1839, and travelled by water to Istanbul (Constantinople), first down the Danube to Tulcea (Tuldscha) and Sulina, then south along the Black Sea coast of the Balkan Peninsula to Istanbul where he arrived on 17 April. As interpreter, servant, and cook he engaged a reliable Greek who spoke fluently Turkish, Greek, Arabic, French, and Italian and travelled with him, by way of Üsküdar (Scutari), Kartal, Yalova, and Gemlik (Kemlik) to Bursa (Brussa) which they reached on 2 May. Four days later Grisebach climbed to the snowline of the Ulu Dağ (Olympus Bithyniae). He distinguished on this mountain three main zones of vegetation: the region of sweet chestnut (*Castanea*), ca. 50–2500 feet, the region of conifers, 2500–4600 feet, the alpine region, 4600–6920 feet. He then returned to Istanbul, visiting Mudanya (Modania) on the way. Back in Istanbul he met Fortunato Pestalozza, an Italian doctor from Milan, who later sent him and also Boissier many specimens from Asia Minor. Grisebach left Istanbul on 18 May, then travelled westward, by way of Tekirdağ, to Enez (Enos) in Thrace, reaching this on 25 May and leaving it on 30 May. He then went on to Maronia (Marogna), taking ship from here to the island of Thasos (Tassos) and thence to Athos (Hajion-Oros), where he stayed from 3 June to 12 June surveying its vegetation. He then crossed Khal-kidhiki, by way of Kholomonda (Cholomonda) to Thessaloniki (Salonichi). This he reached on 16 June and left on 24 June, from here travelling northwestward to Edhessa (Vódena) in Macedonia, thence to Bitola (Monastir, Bitolia), Prilep (Perlepe), Skopje (Ueskueb), Tetovo (Tetova) and Kalkandele at the foot of the Šar Planina (Scardus). On 14 July he made an ascent of Scardus reaching the peak (2496 meters high) of Ljuboten (Ljubatrin) on 17 July and Kobelica (Kobelitza, 2526 meters high) on 22 July. This survey provided both many observations on the altitudinal zoning of vegetation and many specimens of hitherto unknown species. His route now took him from Prizren (Prisdrén) westward over

north Albania to Shkoder (Scutari), which he reached on 27 July, leaving on 31 July for Lastua at the southern tip of Dalmatia. Here his Rumelian journey ended. In three months he thus covered a transect of the Balkan Peninsula between 40° and 42° N. and from sea-level to 2526 m.

The scientific results of this journey across Thrace, Macedonia, and Albania, made when Grisebach was 25 years old, entitle it to rank in botanical history with the celebrated journey into floristically unknown Lapland made a little over a hundred years earlier by Linnaeus at the age of 25. His *Reise durch Rumelien und nach Brussa im Jahre 1839* (2 vols., Göttingen. 1843–46) gives a general account of his travels. His *Spicilegium Florae Rumelicae et Bithynicae* (2 vols., Brunswick. 1843–45) is a systematic enumeration of the plants then collected, its value as a pioneer flora of the Balkan Peninsula being increased by the inclusion of plants collected here and in Bithynia by Friedrichsthal, Frivaldzki and Pestalozza, and by references to those described by Buxbaum, Sibthorp and Smith, and others. This journey laid that foundation of first-hand knowledge of types of European vegetation on which Grisebach built his later phytogeographical work culminating in his *Vegetation der Erde* (1872). In 1842 he made a journey to Norway in order to become acquainted with northern vegetation; this provided the material for his paper "Über den Vegetationscharakter von Hardanger" in Wiegmann's *Archiv für Naturgeschichte* 10: 1–28. 1844.

Late in 1847 Grisebach became full professor (professor ordinarius) of botany in the medical faculty of the University of Göttingen, having been a privatdocent there from 1837 to 1841, associate professor (professor extraordinarius) since 1841, and here he remained during the rest of his life, for his loyalty to Göttingen, which during its hundred years of existence had become a leading academic center of Germany, led him to decline the offer of professorships elsewhere, i.e. at Giessen in 1846, at Leipzig in 1851 and again in 1866, at Berlin in 1851, at Munich in 1855, and at St. Pétersbourg in 1855.

Although Grisebach's monographic work on Gentianaceae had extended his studies far beyond the European flora, his travels and his collections naturally concentrated his attention mostly on European plants. For a long time, however, he had wished to investigate the vegetation of a tropical area with the aid of extensive material. The tragic death of W. G. Walpers in 1853 led him to Caribbean botany. Walpers possessed a large collection of herbarium specimens, enriched with notes and drawings, which had been made in Guadeloupe, Panama, and St. Thomas by the Guadeloupe-born French doctor and naturalist, Placide de Fontbressin Duchassaing (1818–1873). He gave this valuable material to Walpers for publication, but Walpers, who had evidently become mentally disordered, did nothing worthwhile with it and after his suicide Grisebach purchased it all. In the course of determining Duchassaing's plants Grisebach catalogued not only these but also all the other species recorded in the literature from the West Indian islands between 15° and 19° N., i.e. between Martinique and St. Thomas. He published this list in 1857 as

“Systematische Untersuchungen über die Vegetation der Karaiben insbesondere der Insel Guadeloupe” (Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 7: 151–286). “About the same period,” as Grisebach states in the preface to his *Flora of the British West Indian Islands*, “Sir W. Hooker was exerting himself to procure the publication of a complete series of Colonial Floras . . . and consequently entrusted the elaboration of the present volume to myself, putting all the materials of the Hookerian Herbarium and the Kew Museums at my disposal, and procuring a grant of £300 to meet the necessary expenses. . . . Four times I went over to England, to compare my own West Indian herbarium with that at Kew; whilst all those forms which proved not to be in my possession were most liberally placed in my hands to be examined at Göttingen. . . . For a series of doubtful West Indian plants mentioned by older authors I have, when sojourning in London, consulted the Banksian collection of the British Museum, but not to as great an extent as might have been desirable. All those Swartzian species, however, which I had no opportunity of seeing there, were kindly sent for inspection by Professor Andersson, of Stockholm, and these proved most important . . . the only authentic information as to certain Swartzian species is to be derived from his originals, either in the possession of the Academy of Stockholm, or of the British Museum.”

This *Flora of the British West Indian Islands* was “intended to be a synopsis of all vascular plants as yet known to inhabit the British West Indian possessions.” The descriptions were accordingly made as concise as possible, synonymy was kept to a minimum and, in general, only illustrations were cited. Keys were omitted and distribution only briefly indicated. Grisebach toiled at it intensively, continuously, and rapidly, and its completion was a remarkable achievement. He was a very able botanist, but the work swarms with mistakes, some due to the insufficiency of material but most of them attributable to the high speed with which it was prepared; Urban has noted that his errors are especially numerous among species with very small flowers, which require time-consuming observation. While engaged on this task Grisebach received a set of specimens collected in eastern Cuba by Charles Wright (1811–1885). This material and observations made while working on the Flora led him to publish two important papers in 1860, namely, “Erläuterungen ausgewählter Pflanzen des tropischen Amerikas” (Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 9: 3–58) and “Plantae Wrightianae, e Cuba Orientali.” Pars 1 (Mem. Am. Acad. Arts & Sci. N.S. 8: 503–536). He never visited the West Indies himself, and the greater part of them had yet to be explored botanically. In 1865 he published a paper on “Die geographische Verbreitung der Pflanzen Westindiens” (Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 12: 3–80) summarizing phytogeographical information as then available. According to this, the known flora consisted of about 4400 species of flowering plants and 400 of vascular cryptogams, the endemic species being apportioned as follows:

CUBA	849 species	MARTINIQUE	2 species
JAMAICA	275 "	GUADELOUPE	1 "
TRINIDAD	83 "	ST. LUCIA	1 "
DOMINICA	29 "	ANTIGUA	1 "
ST. VINCENT	12 "	BARBADOS	1 "
MONTSERRAT	2 "	BAHAMAS (including	
GRENADA	2 "	TURKS ISL.)	18 "

These figures are low because some of the areas rich in endemic plants had then scarcely been entered by botanical collectors. The known West Indian flora consists of about 10,000 species of phanerogams and 600 of vascular cryptogams.

Work on Philippi's and Lechler's collections from southern Chile and the Straits of Magellan (see Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 6: 89-138. 1856) and on the Malpighiaceae of Central America and Brazil gave him an acquaintance with the flora of the American mainland. This was extended further by the receipt for naming of big collections of Argentinian plants made by Paul Günther Lorentz (1835-1881)² and by Georg Hieronymus (1846-1921)³ which he catalogued in "Plantae Lorentzianae" (Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 19: 49-278. 1874) and "Symbolae ad Floram Argentinam" (Abhandl. Kön. Ges. Wiss. Göttingen (Phys.) 24: 3-346. 1879).

Meanwhile Grisebach had become the world's leading authority on plant geography, partly through his own field-work, partly by the study of herbarium collections from many lands, partly through the analysis of innumerable floristic and geographical publications. Already in 1838 he had published a paper in *Linnaea* (12: 159-200. 1838) "Über den Einfluss des Klimas auf die Begränzung des natürlichen Floren," and from 1841 to 1856 he published yearly reports on plant geography and systematic botany. He brought together the fruits of this study in his monumental *Die Vegetation der Erde nach ihrer klimatischen Anordnung* (2 vols., Leipzig. 1872), translated into French as *La Végétation du Globe d'après sa Disposition suivant les Climats* (2 vols. Paris. 1875-78). This and the *Flora of the British West Indian Islands* are his most important single contributions to botanical literature. In 1878, at the age of 64, he began an even more ambitious undertaking, a *Flora Europaea*, of which he wrote the text relating to Ranunculaceae, Berberidaceae, Papaveraceae and part of Cruciferae during the winter of 1878-79, but which his death on 9 May 1879, from Bright's Disease, prevented him from publishing even in part. The fragment was, however, published by Agost Kanitz, in 1882, under the title *Reliquiae Grisebachianae*.

CHRONOLOGICAL LIST OF GRISEBACH'S PUBLICATIONS

[The following list of Grisebach's publications is extracted from the "Biographische Nachrichten über A. Grisebach und Bibliographie seiner

² See "Zur Erinnerung von Dr. Paul Gunther Lorentz" by A. Stelzner in Beih. Bot. Centr. 9: 450-468. 1882.

³ See obituary by R. Pilger in Hedwigia 62. Heft. 5-6 [unpaged] 1921.

Werke" by his son, the diplomatist Eduard Grisebach, appended, as pages 605–628, to his posthumous *Gesammelte Abhandlungen und kleinere Schriften zur Pflanzengeographie* (Leipzig. 1880). Some quotations are here omitted. To increase its utility a few supplementary details, enclosed within brackets, have been added.]

Noch als Student hatte er veröffentlicht:

1. Die bei Hannover wachsenden Giftpflanzen. (Hannöver'sches Magazin, Jahrgang 1834).
2. Bericht über eine botanische Reise nach dem Dauphiné und der Provence im Herbst des vorigen Jahres; von Herrn *Grisebach* in Göttingen. (Allgem. botanische Zeitung Nr. 21, Regensburg am 7. Juni 1834. p. 321–334). [i.e. *Flora* (Regensburg) 17: 321–334]

Die Doctor-Dissertation ist betitelt:

3. Observationes quaedam de Gentianearum familiae characteribus. Dissert. inaug. quam . . . publice defensurus est auctor *Aug. Henr. Rud. Grisebach*. Berolini, typis Nietackianis. (37 pp.).

In dem nämlichen Jahre (1836) schrieb er ferner:

4. Some remarks on the germination of *Limnanthemum lacunosum* (Ann. Nat. hist. I. p. 6–12). [1838]
- [4b. Some remarks on the genus [*Erythraea*]. (Ann. Nat. hist. I. p. 438–439. 1838)]
5. *Gentianeae Americae borealis* (in: *Hooker*, *Flora boreali-americana*). [2: 54–71; July 1837]
6. *Gentianeae Americae australis* (in: *Hooker*, *Contributions*).

Die Monographie der Gentianeen führt den Titel:

7. *Genera et Species Gentianearum adjectis observationibus quibusdam phyto-geographicis auctore Aug. Henr. Rud. Grisebach*. Stuttgartiae et Tubingae, sumtibus *J. G. Cottae*, 1839. (VIII & 364 pp.). [Published at end of 1838. Listed in *Allgemeine Bibliogrbl. Deutschl.* 3 no. 42: 585 (19 Oct.) 1838; "the work had actually reached the London booksellers, near a month before the end of 1838." (cf. *Bentham*, in *London Jour. Bot.* 4: 232. 1845.)] Das Werk ist gewidmet "Viro illustrissimo Sir *W. J. Hooker*, fautori studii *Gentianearum* generosissimo hunc qualemcunque libellum grati animi tesseram observantissime dico." Den grösseren Theil des Buches hatte er noch in Berlin, auf dem botanischen Garten in Schöneberg, ausgearbeitet, die Vorrede ist jedoch schon von Göttingen (15. Mai 1838) datirt, wo er sich seit Michaelis 1837 als Privatdocent niedergelassen hatte.

Im Jahre 1838 gab er ferner zum Druck:

8. Über den Einfluss des Klimas auf die Begränzung der natürlichen Floren. (*Linnaea*, XII, p. 159–200). [Reprinted in item 139, pp. 1–29 (1880)]
9. Über Luftröhrenhaare (ibid. p. 681–685). [i.e. *Grisebach & Hoffmann*, *Beobachtung der Luftröhrenhaare bei Limnanthemum Gmelin und Villarsia Venten.* op cit.]
10. *Malpighiacearum Brasiliensium Centuriam* (ibid. XIII, p. 155–259).
11. *Alph. de Candolle*, *Introduction à l'étude de Botanique*. Paris 1835. (Recen-

- sion — anonym — in: Göttinger Gelehrte Anzeigen vom 17. Mai 1838, p. 781–800).
12. *Raspail*, Nouveau système de Physiologie végétale et de Botanique. Paris 1837. (Recension — anonym — ibid. 20. September 1838, p. 1489–99).
 13. *Dutrochet*, Mémoires pour servir à l'histoire anatomique et physiologique des végétaux et des animaux. Paris 1837. (Recension — anonym — ibid. 20. u. 22. October 1838, p. 1668–80 u. 1683–86).
 14. *Hegetschweiler*, die Flora der Schweiz. Zürich 1838 (Recension — anonym — ibid. 10. Nov. 1838, p. 1796–1800).
 15. *Benj. de Lessert*, Icones selectae plantarum. tom. III. Paris 1837. (Recension — ibid. 6. Dec. 1838, p. 1929–38).
 16. *Kunth*, Flora Berolinensis. Berlin 1838. (Recens. ibid. 29 Decemb. 1838, p. 2071–78).

Im März 1839 trat er von Göttingen aus seine grosse Forschungsreise nach der Türkei an.

Diese Reise gab zu folgenden Publikationen Anlass:

17. Reise von Salonichi nach Vodena (in: *Cotta'sches Ausland* 1840).
18. Einige Bemerkungen über türkische Bäder. Hannover 1840. Gedruckt bei *G. Beese & Comp.* (12 pp. Separatdruck aus: *Holscher*, Hannover'sche Annalen der gesammten Heilkunde, V).
19. Reise durch Rumelien und nach Brussa im Jahre 1839. Erster Band Göttingen, *Vandenhoeck & Ruprecht*, 1841 (VI u. 362 pp.) Zweiter Band ib. 1841 (374 pp. u. 2 Tafeln).
20. *Spicilegium Florae rumelicae et bithynicae exhibens synopsis plantarum quas aest. 1839 legit auctor A. Grisebach*, Dr. med. Professor extr. Göttingensis. Vol. I. Brunsvigae, *Vieweg*, 1843. (XII u. 407 pp.). Vol. II. ib. 1844, (548 pp.). [Vol. 1, pp. 1–160, Feb. or Mar. 1843 (before Apr. 1843 according to Grisebach in vol. 2, p. 497, no. 114), pp. 161–407, Dec. 1843; vol. 2, pp. 1–160, probably June 1844, pp. 161–548, Dec. 1845; cf. I. M. Johnston in *Jour. Arnold Arb.* 34: 264. 1953].

Seit 1840 lieferte *Grisebach* 14 Jahre hindurch regelmässige Berichte über die Leistungen in der Pflanzengeographie und systematischen Botanik.

Hiervon sind erschienen:

21. Bericht über die Leistungen in der Pflanzengeographie während des Jahres 1840 (*Wiegmann's Arch. für Naturgeschichte* VII [2: 1841], p. 433–474).
22. Bericht über die Forschungen in der Pflanzengeographie während des Jahres 1841 (ibid. VIII [2: 1842], p. 406–462).
23. Bericht über die Leistungen in der Pflanzengeographie während des Jahres 1842 (ib. IX [2: 1843], p. 373–432). [English translation in Ray Society, Reports and Papers on Botany, 57–122. 1846]
24. Bericht über die Leistungen in der Pflanzengeographie während des Jahres 1843 (ib. X [2: 1844], p. 366–443). [English translation in Ray Society, Reports and Papers on Botany, 125–212. 1846]
25. Bericht über die Leistungen in der Pflanzengeographie während des Jahres 1844 (ib. XI [2: 1845], p. 329–416). [English translation in Ray Society, Reports and Papers on Botany, 312–413. 1849]
26. Bericht über die Leistungen in der Pflanzengeographie und systematischen Botanik während des Jahres 1845 (ib. XII [2: 1846], p. 317–394). [English translation in Ray Society, Reports and Papers on Botany, 417–493. 1849]

27. Bericht über die Leistungen in der systematischen Botanik während des Jahres 1846 [ib. XIV. 2 (1848) 169–194]
28. Bericht über die Leistungen in der Pflanzengeographie während des Jahres 1846 (ib. XIII [2: 1847], p. 409–472).
29. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1847 (ib. XIV [2: 1848], p. 257–350).
30. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1848 (ib. XV [2: 1849], p. 340–446).
31. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1849. [ib. XVI. 2 (1850) 251–350]
32. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1850 [ib. XVII. 2 (1851) 273–392]
33. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1851 [ib. XVIII. 2 (1852) 308–429]
34. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1852 [ib. XIX. 2 (1853) 287–411]
35. Bericht über die Leistungen in der geographischen und systematischen Botanik während des Jahres 1853 [ib. XXI. 2 (1855) 313–410]

In das Jahr 1840 fallen ferner noch:

36. *Edm. Boissier*, Voyage botanique dans le midi de l'Espagne. Livr. I u. II Paris 1839. (Rec. in: Götting. Gel. Anzeigen vom 17. Februar 1840 p. 281–286).
37. Proceedings of the Botanical Society of London. July 1836–Nov. 1839. London 1839 (Recension ibid. 19. März 1840 p. 462–464).
38. *E. Meyer*, Preussens Pflanzengattungen. Königsberg 1839 (Recension ibid. 14. Mai 1840 p. 779–781).
39. Transactions of the Linnean Society. Vol. XVII u. XVIII. London 1837–38. (Recension ib. 21. Mai 1840 p. 812–824).
40. Nova acta physico-medica Academiae Caesareae Leopoldino-Carolinae naturae Curiosorum. Tom. XI. Breslau 1839 (Recens. ibid. 27. und 29. Aug. 1840 p. 1369–91).
41. *E. Meyer*, Commentarii. (Recens. ibid.).

1841:

42. Verhandelingen over de natuurlijke geschiedenis der Nederlandsche overzeesche bezittingen door de leden der natuurkundige commissie in Oost-indië. Aflev. 1–3. Leyden 1839–40. (Recens. in Gött. Gel. Anz. vom 10. Juli 1841 p. 1071–1078).

1842 unternahm er eine neue botanische Forschungsreise nach Norwegen, als deren Ergebniss später veröffentlicht wurde:

43. Über den Vegetationscharacter von Hardanger in Bergens Stift. (*Wiegmann's Archiv für Naturgeschichte*, X. [Jahrgang 1844] p. 1–28). [Reprinted in item 139, pp. 30–51]

1842 erschienen:

44. *Royle*, Illustrations of the Botany and other branches of the natural history of the Himalayan mountains and of the flora of Cashmere. London 1833–40. (Recension in: Göttinger Gel. Anz. vom 5. Febr. 1842 p. 205–214).
45. *Bertolonii* Flora italica. Bologna 1833–39. (Recension — anonym — ibid. 26. Februar 1842 p. 329–332).

46. *Moris*, Flora sardoā. Turin 1837. (Recension — anonym — ibid. p. 332–334).
47. *Edm. Boissier*, Voyage botanique dans le midi de l'Espagne. Livr. III–XVII. Paris 1839–41. (Recension — anonym — ibid. 14. u. 16. April 1842 p. 598–613).
48. Smilaceae et Dioscoreae. Exposuit *Aug. Henr. Rud. Grisebach*, (in: *de Martius*, Flora Brasiliensis, fasc. III–V. Vindob. et Lipsiae 1842 1. Aprilis p. 1–48, c. tab. 1–6).

1843:

49. Gentianeae, (in: Nova Acta Academ. Caesar. Leop. Carolinae vol. XIX [1843] suppl. p. 47–52).
50. Beobachtungen über das Wachsthum der Vegetationsorgane in Bezug auf Systematik.
Erster Abschnitt (*Wiegmann's Archiv* IX [1843] p. 267–292).
Zweiter Abschnitt (ib. X p. 134–155 mit Tafel). Dazu: Nachtrag zu den Beobachtungen über das Wachsthum der Blätter. (ib. p. 345 bis 347 mit Tafel).
Dritter Abschnitt (ib. XII p. 1–33).
51. *F. Unger*, die Pflanze im Momente der Thierwerdung. Wien 1843. (Recension in: Göttinger Gel. Anzeigen vom 21. October 1843 p. 1675 bis 1676).

1844:

52. *Ch. Gaudichaud*, recherches générales sur l'organographie, la physiologie et l'organogénie des végétaux. Paris 1841 (Recens. ib. 27. Juni 1844 p. 1014–22).
53. *Sir W. J. Hooker*, Icones plantarum vol. II–VI. London 1840–43. (Recens. ib. 7. September 1844 p. 1427–39).
54. *Meyen's Reliquiae* (Recension ibid.).
55. Phytozoen an Phanerogamen. (Botanische Zeitung. II p. 661). [English translation in Ann. Mag. Nat. Hist. 15: 264–265. 1845 "On the occurrence of phytozoa in phanerogamous plants"]

1845:

56. a. *Kirschleger*, Notice sur la végétation comparée du Jura, des Vosges et de la Forêt Noire.
b. id., Statistique végétale de Strassbourg.
c. *K. Schimper*, über den Bau der Cruciferenblüthe.
d. *M. Rameaux*, des températures végétales.
In: Congrès scientifique de France. Strassbourg 1843. (Recension in: Göttinger Gel. Anzeigen vom 1. März 1845 p. 338–341).
57. *J. Bennet* und *Rob. Brown*, Plantae javanicae. Part 1–3. London 1838–44. (Recension ib. 28. April u. 1 Mai 1845. p. 682–693).
58. *Goepfert* und *Berendt*, die im Bernstein befindlichen organischen Reste der Vorwelt. Berlin 1845 (Recension ib. 6. und 8. November 1845, p. 1770–89).
59. Über die Pflanzenernährung (*Poggendorf's Annalen* LXIV p. 630–32).
60. Gentianaceae (in: *De Candolle*, Prodromus systematis naturalis, Vol. IX. [pp. 38–141, 561–563] Paris 1845).
61. Über die Bildung des Torfs in den Emsmooren aus deren unveränderter Pflanzendecke (in: Göttinger Studien, redigirt von *A. B. Krische* Göttingen *Vandenhoeck & Ruprecht* 1845 p. 255–370). [Reprinted in item 139, pp. 52–135]

1846:

62. Novor. Actor. Academ. Caesar. Leopold. Carolinae tom. XX. u. XXI.

Breslau 1843. 45. (Recension in: Göttinger Gel. Anzeigen vom 9. u. 12. Februar 1846, p. 233–243).

63. Über die Bildung des Torfs. (Selbstanzeige, *ibid.* 19. März 1846, p. 442–44).

1847:

64. Über die Vegetationslinien des nordwestlichen Deutschlands (in: Göttinger Studien. Göttingen *Vandenhoeck & Ruprecht* 1847 p. 461–562). [Reprinted in item 139, pp. 136–216]

1848:

65. Über die Vegetationslinien (Selbstanzeige in: Göttinger Gel. Anzeigen vom 19. October 1848 p. 1667–69).

66. *St. Endlicher*, Synopsis Coniferarum. St. Gallen 1847. (Recens. *ibid.* 8. Januar 1848 p. 41–52).

67. *C. Nägeli*, die neueren Algensysteme und Versuch eines eigenen Systems der Algen und Florideen. Zürich 1847. (Recension, *ibid.* 9. u. 11. März 1848 p. 395–416).

68. *v. Middendorff* und *v. Trautvetter*, Reise in den äussersten Norden und Osten Sibiriens. St. Petersburg 1847. (Recens. *ibid.* 16. Septbr. 1848 p. 1481–90).

69. *Plantae Kegelianae Surinamenses*. (in: *Linnaea*, XXI, p. 181–284).

1849:

70. Beiträge zu einer Flora der Äquinocial-Gegenden der neuen Welt [Malpighiaceae, [Trigoniaceae], Gentianeae]. (*Linnaea*, XXII p. 1–46).

71. *Plantae Regnellianae* [Gentianeae] (*ib.* p. 567 f.).

Im Jahre 1850 unternahm *Grisebach* eine grössere wissenschaftliche Reise in die Pyrenäen, auf welcher u. a. die Hieracien besonders studirt wurden, deren Monographie er vorbereitete. Es erschien in diesem Jahre:

72. Ein neues deutsches Hieracium (*Botanische Zeitung*, VIII, p. 638).

73. *Irmisch*, zur Morphologie der monokotylyschen Knollen- und Zwiebelgewächse. Berlin 1850. (Recens. in: Göttinger Gel. Anzeigen vom 27. März 1850 p. 481–93).

1851 machte er mit *A. Schenk* eine gemeinsame Forschungsreise in die Alpen, nämlich durch das westliche Tirol, das Engadin, die Lombardei, Piemont und Dauphiné, als deren Frucht veröffentlicht wurde:

74. *Observationes quaedam de plantis, quas in itinere alpino a. 1851 suscepto legerunt A. Grisebach et A. Schenk*. (*Linnaea*, XXV, 593–611).

Den Herbst des Jahres 1852 benutzte er zu einer botanischen Reise, wieder mit *Schenk*, in die Karpaten. Die Ergebnisse sind niedergelegt in

75. *Iter hungaricum a. 1852 susceptum*. Beiträge zur Systematik der ungarischen Flora. (*Wiegmann's Archiv*, XVIII p. 291–362).

1852 erschien ferner:

76. *Commentatio de distributione Hieracii generis per Europam geographica*. Auctore *A. Grisebach*. Sectio prior. Revisio specierum Hieracii in Europa sponte nascentium. Gottingae, Sumptibus Dieterichianis, MDCCCLII (4°. 80 pp. Separat-Abdruck aus dem V. Bande der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen.)

77. Über die geographische Verbreitung der europäischen Hieracien. (Selbst-

anzeige in: Nachrichten von der königl. Gesellschaft der Wissenschaften, August 1852).

Später (1867 s. unten Nr. 113) bemerkte *Grisebach* über diese Schrift: "Meine in den Schriften der Göttinger Societät über die Hieracien veröffentlichte Abhandlung blieb unvollendet, weil die Hoffnung, ihre geographische Verbreitung aus äusseren Einflüssen ableiten zu können, nicht in Erfüllung ging."

78. *Gramina Rossica. Exposuit A. Grisebach.* (Seorsim impressa ex *Ledebour* Flor. Ross. Vol. IV) [pp. 324-464. 1852; 465-484. 1853] Stuttgartiae. Sumtibus librariae E. Schweizerbart. 1852. (163 pp.)

79. Über einige kritische *Epilobien*. (Botanische Zeitung [X] vom 3. December 1852 p. 849-55).

1853:

80. *Grisebach* und *Oersted*, *Malpighiaceae centroamericanae*. (Vidensk. Meddelelser fra den naturh. Forening i Kjöbenhavn for 1853 p. 43-52).

81. *Gentianeae* (ibid. 11 pp).

82. *Schenkia*, novum genus *Gentianearum* (*Bonplandia*, I, p. 226).

83. *Tiedemann*, Geschichte des Tabaks und anderer ähnlicher Genussmittel. Frankfurt a/M. 1854. (Recens. in: Göttinger Gel. Anzeigen vom 24. u. 27. October 1853 p. 1697-1708).

84. Sir *John Richardson*, Arctic searching expedition. London 1851. (Recens. ibid. 12. u. 15. December 1853 p. 1981-98).

85. *Seemann*, Narrative of the voyage of *H. M. S. Herald*. London 1853. (Recens. ibid. 15. u. 17. December 1853 p. 1998-2013).

1854:

86. *K. Koch*, Die Krim und Odessa. Leipzig 1854 (Recens. ib. 18. Dec. 1854 p. 2001-2005).

87. Grundriss der systematischen Botanik für akademische Vorlesungen entworfen von *A. Grisebach*. Göttingen, Verlag der Dieterich'schen Buchhandlung, 1854 (180 pp).

88. Systematische Bemerkungen über die beiden ersten Pflanzensammlungen *Philippi's* und *Lechler's* im südlichen Chile und an der Maghellans-Strasse. Mit 1 Kupfertafel. Göttingen, in der Dieterich'schen Buchhandlung, 1854 (in 4°. 50 pp. Separat-Abdruck aus dem VI. Bande [Phys., pp. 89-138] der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen).

1857:

89. Systematische Untersuchungen über die Vegetation der Karaiben, insbesondere der Insel Guadeloupe. Göttingen, Verlag der Dieterich'schen Buchhandlung 1857 (in: 4°. 138 pp. Separat-Abdruck aus dem VII. Bande [Phys., pp. 151-286] der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen).

1858:

90. *Novitiae Florae panamensis*. (*Bonplandia*, VI, p. 2-12).

91. *Malpighiaceae*. Exposuit *Aug. Henr. Rud. Grisebach*, (in: *de Martius* Flora Brasiliensis, fasc. XXI. in folio p. 1-124 m. Taf. 1-22).

Das Material zu der letztverzeichneten Arbeit war ihm durch Herrn v. *Martius* im Jahre 1853 zugegangen. Am 10. Februar 1857 konnte er die betreffende Pflanzenkiste nach beendigter Untersuchung nach München zurücksenden.

In dem nämlichen Jahre (1857) liess ihm die königlich grossbritannische Regierung durch Sir *William Hooker* die Bearbeitung einer westindischen Flora antragen. Nach sechsjähriger Arbeit war das durchweg in englischer Sprache geschriebene Werk (am 13. Juli 1863) im Manuscript vollendet. Die Vorrede ist "Göttingen, 26th June, 1864" datirt. Viermal hatte er einen längeren Aufenthalt in London, behufs Benutzung der dortigen Museen, genommen. Das gesammte Werk führt den Titel:

92. Flora of the British West Indian Islands. London: Lovell Reeve & Co. Henrietta Street, Covent Garden. 1864. (XVI u. 789 pp). [pp. 1-96. (Dec.) 1859; pp. 97-192. (June) 1860; pp. 193-315. (end of Loranthaceae), late 1860; pp. 315-410. late 1861; pp. 411-506. 1862 (probably May); pp. 507-602, 603-789, i-xvi. (October) 1864]

Während der Arbeit an diesem grossen Werke erschienen als Parerga:

1859:

93. Notes on *Abuta*, a genus of *Menispermaceae*. (Journ. Linn. Soc. botan. III p. 108).

1860:

94. Erläuterungen ausgewählter Pflanzen des tropischen Amerikas. Göttingen, Verlag der Dieterich'schen Buchhandlung. 1860 (in 4°, 58 pp. Separat-Abdruck aus dem IX. Bande [Phys., pp. 3-58] der königl. Gesellschaft der Wissenschaften zu Göttingen).
95. *Plantae Wrightianae e Cuba orientali. Pars I. Cantabrigiae Nov. Angl.* Dec. 1860 (in: 4°, ex Mem. Acad. Amer. Scient. et Artium, N. Ser. Tom. VIII p. 153-192).

1861:

96. Notice sur le genre *Rheedia* (Ann. des scienc. natur. botanique XV p. 231-235).
97. Bemerkungen zu *Wilkomm's* Monographie der europäischen Krummholzkiefern. (Flora [XLIV] vom 14. October 1861 p. 593-98).
98. Zur Systematik der Birken (ibid. [XLIV] 28. Oct. 1861 p. 625-31).

1862:

99. *Plantae Wrightianae e Cuba orientali. Pars II. Cantabrigiae Nov. Angl.* Nov. 1862 (in: 4°, ex Mem. Acad. Amer. VIII p. 503-36).
100. Notes on *Coutoubea volubilis*, Mart., and some other *Gentianeae* of tropical America. (Journ. Linn. Society [Bot.] VI p. 140-46).

1863:

101. Über einen wahrscheinlichen Dimorphismus bei den Farnen. (Nachrichten der königl. Gesellschaft der Wissenschaften zu Göttingen vom 25. März 1863 p. 101-12).
102. Das Pflanzenleben der Donauländer. Von *A. Kerner*. Innsbruck 1863. (Recension in: Göttinger Gelehrte Anzeigen vom 28. October 1863, p. 1686-92). [Reprinted in item 139, pp. 217-221]
103. *Christ's* Übersicht der europäischen Abietineen. (Regensburger Flora [XLVI] 1863 p. 189-90).

1864:

104. Über die von *Fendler* in Venezuela gesammelten Bromeliaceen. (Nach-

richten von der königl. Gesellschaft der Wissenschaften zu Göttingen, vom 13. Januar 1864 p. 1–21).

105. On *Welwitschia*, a new genus of Gnetaceae by *Jos. Dalt. Hooker*. London 1863 (Bericht in: Göttinger Gelehrte Anzeigen vom 27 Januar 1864 p. 127–47).

1865:

106. Die geographische Verbreitung der Pflanzen Westindiens. Göttingen, in der Dieterich'schen Buchhandlung 1865 (in 4°, 80 pp.; Separat-Abdruck aus dem XII. Bande [Phys., pp. 3–80] der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen). [Reprinted in item 139, pp. 222–285]
107. Flora of the British West Indian Islands by *A. H. R. Grisebach* London 1864 (Selbstanzeige, zugleich Anzeige von Nr. 106 in: Göttinger Gelehrte Anzeigen vom 1. März 1865 p. 321–330).
108. Diagnosen neuer Euphorbiaceen aus Cuba. (Nachrichten von der königl. Gesellschaft der Wissenschaften vom 15. März 1865 p. 161–81).

1866:

109. Catalogus plantarum Cubensium exhibens collectionem Wrightianam aliasque minores ex insula Cuba missas. Lipsiae apud Guilielmum Engelmann 1866 (IV. u. 301 pp.).
110. Die Vegetationsgebiete der Erde, übersichtlich zusammengestellt. Mit Karte (*Petermann's* geogr. Mittheilungen 1866 II, p. 45–53).
111. Der gegenwärtige Standpunkt der Geographie der Pflanzen. (*Behm's* geogr. Jahrbuch I, p. 373–402). [Reprinted in item 139, pp. 307–334]

1867:

112. Catalogus plantarum Cubensium quas recensuit *A. Grisebach*. Lipsiae 1866. (Selbstanzeige in: Göttinger Gelehrte Anzeigen, Stück 12, 1867 p. 465–67).
113. Botanische Mittheilungen von *C. Nägeli*. München 1866. (Bericht *ibid.* Stück 18 p. 696–712).

1868:

114. Über die Gramineen Hochasiens. (Nachrichten von der königl. Gesellschaft der Wissenschaften zu Göttingen vom 12. Februar 1868, p. 61–93). [Reprinted in item 139, pp. 286–306]
115. Bericht über die Fortschritte in der Geographie der Pflanzen. (*Behm's* geogr. Jahrbuch II, p. 186–219). [Reprinted in item 139, pp. 334–366]

1870:

116. Bericht über die Fortschritte in der Geographie der Pflanzen (*ibid.* III, p. 172–210). [Reprinted in item 139, pp. 367–402]

Im Jahre 1872 erschien das 1866/67 begonnene, den Abschluss der pflanzengeographischen Studien des Verfassers bezeichnende Werk:

117. Die Vegetation der Erde nach ihrer klimatischen Anordnung. Ein Abriss der vergleichenden Geographie der Pflanzen. Erster Band. Leipzig, Verlag von Wilhelm Engelmann 1872 (XII u. 603 pp.). Zweiter Band. Mit einer Übersichtskarte der Vegetationsgebiete. *Ibid.* 1872. (X u. 635 pp. und Sach- und Personen-Register p. 637–709).

Seit seinen langjährigen Jahresberichten (cf. oben Nr. 21–35), welche, soweit

sie von bleibendem Gehalt, in die "Vegetation der Erde" eingearbeitet worden sind, hatte *Grisebach* das schon in seiner ersten Abhandlung (cf. oben Nr. 8) betretene Gebiet der Pflanzengeographie nie aus den Augen verloren, ja die systematischen Forschungen nur als die Grundlegung zu einer Erklärung des Phänomens der nach Floren gegliederten Pflanzendecke des Erdballs betrachtet.

Von der "Vegetation der Erde" erschien alsbald eine russische Übersetzung von *Beketoff* (s. oben p. 511), sowie eine französische, welche betitelt ist:

La végétation du Globe d'après sa disposition suivant les Climats. Esquisse d'une géographie comparée des plantes. Par *A. Grisebach*. Ouvrage traduit de l'allemand avec l'autorisation et le concours de l'Auteur par *P. de Tchihatchef* Correspondant de l'Institut de France. Avec des annotations du Traducteur. Accompagné d'une carte générale des domaines de végétation. Tome premier. Paris *L. Guérin et Cie*. [später *J. B. Baillière et Fils*] 1875 (gr. 8°, XVI u. 765 pp.). Tome deuxième. Paris, librairie *J. B. Baillière et Fils* 1878 (VI u. 905 pp.).

Grisebach schrieb eine neue Vorrede dazu (October 1874 t. I p. XIV–XVI) und hat das Manuscript des Übersetzers vor dem Drucke einer sorgfältigen Durchsicht unterworfen. [A posthumous second edition, "Zweite, vermehrte und berichtigte Auflage" Erster Band 1884 (xv + 567 pp.) Zweiter Band 1884 (xi + 594 pp.) Register 1885 (pp. 597–693)]

In das Jahr 1872 fallen ferner noch:

118. Die Wirksamkeit *Humboldt's* im Gebiete der Pflanzengeographie und Botanik. (*A. v. Humboldt*, eine wissenschaftliche Biographie, herausgegeben von *Bruhns*. Leipzig, F. A. Brockhaus 1872. Band III p. 232–268). [Reprinted in item 139, pp. 557–584]
119. Bericht über die Fortschritte in der Geographie der Pflanzen. (*Behm's* Geogr. Jahrbuch IV, p. 21–58). [Reprinted in item 139, pp. 403–438]
120. *V. Hehn*, Kulturpflanzen und Haustiere in ihrem Übergange aus Asien nach Griechenland und Italien, sowie in das übrige Europa. Berlin 1870. (Recension in: Göttinger Gelehrte Anzeigen vom 6. November 1872 p. 1766–77).
121. *Blumenbach*. Von *A. Grisebach*, (in: Göttinger Professoren. Ein Beitrag zur deutschen Kultur- und Literärgeschichte. Gotha 1872, p. 139–165).

1873:

122. *A. S. Oersted's* System der Pilze, Lichenen und Algen. Aus dem Dänischen. Deutsche vermehrte Ausgabe von *A. Grisebach* und *J. Reinke*. Mit 93 Figuren in Holzschnitt. Leipzig, Verlag von Wilhelm Engelmann, 1873. (VI u. 194 pp.).

Die Übersetzung rührt ausschliesslich von *Grisebach* her, ebenso die Vorrede, die in Klammern dem Texte eingefügten Ergänzungen grösstentheils von Professor *Reinke* in Göttingen.

1874:

123. *Plantae Lorentzianae*. Bearbeitung der ersten und zweiten Sammlung argentinischer Pflanzen des Professor *Lorentz* zu Cordoba. Göttingen, in der Dieterich'schen Buchhandlung 1874, (in 4°, 232 pp. Mit 1 Tafel, Separat-Abdruck aus dem XIX. Bande [Phys., pp. 49–278] der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen).

Der systematische Theil des Werkes ist in lateinischer Sprache verfasst

(p. 20 bis 232), voran geht eine Einleitung in deutscher Sprache, enthaltend: von p. 1–10 die pflanzengeographischen Ergebnisse (vgl. oben im Text p. 550–552) und von p. 10 unten bis p. 20 “systematische und morphologische Bemerkungen.”

[Published December 1874 according to Croizat in *Darwiniana* 5: 422, note 1. 1941]

124. Bericht über diese Publikation in: *Nachrichten der königl. Gesellschaft der Wissenschaften* 1874 p. 53 f.
125. Bericht über die Fortschritte in der Geographie der Pflanzen (*Behms Geogr. Jahrbuch* V, p. 46–97). [Reprinted in item 139, pp. 438–487]

1875:

126. *Symbolae ad floram Brasiliae centralis cognoscendam* edit. *Eug. Warming* Part. XXI:
Malpighiaceae, Dioscoraceae, Smilaceae. Exposuit Dr. A. Grisebach. (ex actis Videnskabelige Meddelelser societatis historico-naturalis Havniensis 1875 p. 121–164).
127. *Pflanzengeographie*, von A. Grisebach (in: *Anleitung zu wissenschaftlichen Beobachtungen auf Reisen*, herausgeg. von Dr. G. Neumayer, Berlin 1875, p. 333–358).

1876:

128. Bericht über die Fortschritte in der Geographie der Pflanzen (*Behms Geogr. Jahrbuch*, VI, p. 211–284). [Reprinted in item 139, pp. 487–556]
129. Bericht über die botanischen Institute der Universität Göttingen im Jahre 1876. *Nachrichten d. Gesellschaft der Wissenschaften* p. 58–64.
130. *Index Seminum Horti Academici Gottingensis*. 1876. Appendix: *Species criticae quae a. 1876 in Horto Gottingensi floruerunt*. Gottingae, typ. off. acad. Dieterich. (in folio. 8 pp.).

1877:

131. China. Ergebnisse eigener Reisen und darauf gegründeter Studien von *Ferd. Freiherrn v. Richthofen*, Berlin 1877. (Bericht darüber in *Gött. Gelehrte Anzeigen* vom 11. Juli 1877 p. 865–88). [Reprinted in item 139, pp. 585–602]
132. Über *Weddell's* Pflanzengruppe der Hypseocharideen, (in: *Nachrichten der Gesellschaft der Wissenschaften* 15. Aug. 1877 p. 493–500).
133. Zum Andenken an *Karl Ernst von Baer*, (ibid. 5. Dec. 1877 p. 745 bis 748). [Reprinted in item 139, pp. 600–602]
134. *Index seminum*, 1877. Appendix: *Species novae vel criticae quae a. 1877 in Horto Gottingensi floruerunt*. Gottingae, typ. off. acad. Dieterich. (in folio, 8 pp.).

1878:

135. Die systematische Stellung von *Sclerophylax* und *Cortesia*. (*Nachrichten* vom 15. Mai 1878 p. 221–28).
136. Der Dimorphismus der Fortpflanzungsorgane von *Cardamine chenopodifolia* Pers. Ein Beitrag zur Theorie der Befruchtung. Von A. Grisebach, (ibid. 12. Juni 1878 p. 332–341).
137. *Index seminum*, 1878. Appendix: *Species novae vel criticae, quae a. 1878 in Horto Gottingensi floruerunt*. Gottingae, typ. off. acad. Dieterich. (in folio, 8 pp.).

1879:

138. *Symbolae ad Floram argentinam*. Zweite Bearbeitung argentinischer Pflanzen, nach den durch die Regierung zu Buenos-Ayres veranstalteten Sammlungen der Professoren *Lorentz* und *Hieronymus*, sowie den im Museum zu Göttingen aufbewahrten Herbarien anderer Naturforscher. Von *A. Grisebach*. Göttingen, Dieterich'sche Verlagsbuchhandlung, 1879 (in 4°, 346 pp. aus dem XXIV. Bande [Phys., pp. 3–346] der Abhandlungen der königl. Gesellschaft der Wissenschaften zu Göttingen).

Über das Werk meldete er seinem ältesten Sohne am 13. December 1878: "Meine *Symbolae ad Floram argentinam* werden nun seit Anfang November gedruckt, bereits 13 Bogen — es werden über 40, so dass ich mich nun zu andern botanischen Arbeiten wenden kann." Diese neue Arbeit war zunächst eine *Flora europaea*, von welcher er im Winter 1878/79 die Familien der Ranunculaceen, Berberideen, Nymphaeaceen, Papaveraceen und einen Theil der Cruciferen vollendete. Jede Art ist mit einer kurzen lateinischen Diagnose begleitet, die geographische Verbreitung ist in deutscher Sprache angegeben. Bei *Sisymbrium contortuplicatum* DC. bricht das 68 Quartseiten engster Schrift umfassende Manuscript jäh ab.

[139. *Gesammelte Abhandlungen und kleinere Schriften zur Pflanzengeographie* von *A. Grisebach*. Leipzig, verlag von Wilhelm Engelmann. 1880 (vii + 628 pp.)]

[140. *Reliquiae Grisebachianae. Flora Europaea. Fragmentum auctore Augusto Grisebach ex Manuscripto . . . edidit Augustus Kanitz. Claudiopoli, apud E. Demjén* 1882 (58 pp.).

This is the concise synopsis of the European flora on which Grisebach was working shortly before his death; see under item 138 above.]

SCOPE OF GRISEBACH'S FLORA

Although long out of date in much of its nomenclature and taxonomy, often unreliable in matters of detail and concerned only with the British West Indian Islands, which occupied only about an eighth of the total land area of the West Indies and by 1864 had been far from exhaustively explored botanically, Grisebach's *Flora* remains nevertheless the most comprehensive general descriptive guide to the plants of the archipelago stretching from the Bahamas and the Florida Keys to Trinidad and Aruba.

Floristically these islands may be divided into five main groups, those covered by Grisebach's book being cited in LARGE and SMALL CAPITALS:

1. The **Bahamas**, i.e. the **BAHAMA ISLANDS** comprising 29 major islands and about 3,000 islets (in all 4,403 sq. miles)⁴ and the Turks and Caicos Islands (170 sq. miles.)

2. The **Greater Antilles**, consisting of Cuba (44,178 sq. miles), Hispaniola (29,838 sq. miles), JAMAICA (4,411 sq. miles), Cayman Islands (100 sq. miles), Puerto Rico (3,450 sq. miles) and the Virgin Islands (67 sq. miles), and separated by the deep Anegada Passage from the Lesser Antilles proper.

⁴ 1 square mile = 2.59 square kilometers.



FIG. 2. THE WEST INDIAN ISLANDS. Roman numerals refer to "the five natural sections" noted by Grisebach (for discussion of this division see page vi of Grisebach's text). The islands considered by Grisebach are in solid black.

3. The Lesser Antilles:

(a) Leeward Islands, between the Anegada Passage and the Martinique Passage, including Anguilla (35 sq. miles), St. Martin (38 sq. miles), St. Barthélemy (8 sq. miles), Saba (5 sq. miles), St. Eustatius (9 sq. miles), St. Kitts (68 sq. miles), Nevis (50 sq. miles), Barbuda (62 sq. miles), Antigua (108 sq. miles), Montserrat (32 sq. miles), Guadeloupe (Grande Terre, 255 sq. miles; Basse Terre, 364 sq. miles), Marie Galante (60 sq. miles), Dominica (305 sq. miles); the Virgin Islands are usually listed under the Leeward Islands.

(b) Windward Islands, from the Martinique Passage south to Grenada, including Martinique (430 sq. miles), St. Lucia (238 sq. miles), St. Vincent (150 sq. miles), Bequia (7 sq. miles) The Grenadines (13 sq. miles), Grenada (133 sq. miles).

(c) Barbados (166 sq. miles).

Alternatively

(a) Eastern Arc: Anguilla, St. Martin, St. Barthélemy, Barbuda, Antigua, Guadeloupe (Grande Terre), Désirade, Marie Galante; these form a series of old limestone-topped volcanic islands.

(b) Western Arc: Saba, St. Eustatius, St. Kitts, Nevis, Montserrat, Guadeloupe (Basse Terre), Dominica, Martinique, St. Lucia, St. Vincent, Bequia, The Grenadines, Grenada; these form a series of younger volcanic islands.

(c) Barbados.

4. Tobago (116 sq. miles) and Trinidad (1,864 sq. miles).

5. Southern Caribbees, consisting of Aruba (67 sq. miles), Curaçao (164 sq. miles), Bonaire (93 sq. miles), etc.

Trinidad belongs geologically and floristically not to the West Indies but to northern South America, as Grisebach pointed out as long ago as 1865: "schon jetzt ist man indessen berechtigt, Trinidad von Westindien nach seiner Pflanzenproduktion zu trennen und als ein Glied des Festlandes zu betrachten." The Lesser Antilles are similarly independent of the Greater Antilles. An observation by Alston (1952) emphasizes this: "the 80 miles of sea separating Tobago from Grenada, and the 120 miles which separate St. Thomas from Saba are more formidable barriers to *Selaginella* than the 90 miles between Cuba and Jamaica, and there seems to be no reason for this but the geological history of the various islands" (Bull. Brit. Mus. (Nat. Hist.), Bot. 1: 28). Barbados and Tobago are on the same South American continental shelf and thus not geologically associated with the volcanic Lesser Antilles. As a result of covering such a heterogeneous assembly of islands Grisebach's *Flora* includes most of the widespread tropical lowland weeds, together with many endemic West Indies species and a number of characteristic South American species.

According to an analysis by Krug in Urban, *Symb. Ant.* 1: 57. 1898, Grisebach recorded from the individual islands the following number of

species of vascular plants (to which some more recent estimates or counts are added in parentheses for comparison):

BAHAMAS 191 (995 phanerogams, 69 pteridophytes, fide Britton & Millspaugh, 1920).

JAMAICA 2303 (approx. 2900 phanerogams, 540 pteridophytes).

ST. KITTS 129 (no total for phanerogams available; 129 pteridophytes).

NEVIS 11 (no total for phanerogams available; 83 pteridophytes).

BARBUDA 1 (230 phanerogams; no record of pteridophytes).

ANTIGUA 520 (approx. 724 phanerogams, 34 pteridophytes).

MONTserrat 48 (no total for phanerogams available, 68 pteridophytes).

DOMINICA 684 (no total for phanerogams available, 191 pteridophytes).

ST. LUCIA 82 (no total for phanerogams available, approx. 120 pteridophytes).

BARBADOS 63 (approx. 830 phanerogams, 22(+) pteridophytes).

ST. VINCENT 635 (approx. 1000 phanerogams, 160 pteridophytes).

GRENADA 16 (no total for phanerogams available, approx. 90 pteridophytes).

TOBAGO 4 (no total for phanerogams available, 95 pteridophytes).

TRINIDAD 1,282 (approx. 2,200 phanerogams, 300 pteridophytes).

This gives a total of 3,143 phanerogams, 356 pteridophytes. Grisebach's *Flora* thus deals with about a third of the phanerogam species and about half of the pteridophyte species known from the West Indian archipelago between Florida and Venezuela.

PUBLICATION OF GRISEBACH'S FLORA

The *Flora of the British West Indian Islands* was published in London in seven parts as follows:

PART	DATE	COMMENTS AND SOURCES
Part 1, pp. 1-96	December, 1859	Received by Linnean Society on 14 Dec. 1859, by British Museum on 20 Dec. 1859. Cf. Grisebach in Abh. Kön. Ges. Wiss. Göttingen (Phys.) 9: 16. 1861.
Part 2, pp. 97-192	June, 1860	Received by L. S. and B. M. on 4 June 1860.
Part 3, pp. 193-315 (ending with Loranthaceae), 316 (blank), 317-322 (index to Section I), half-title and title to Section I; this p. 315, dealing with Loranthaceae but not Caprifoliaceae, and the index to Section I have been discarded as redundant in most bound copies.	late 1860	Received by L. S. on 2 Nov. 1860, by B. M. on 3 Dec. 1860. Cf. Am. Jour. Sci. II. 31: 129. (Jan.) 1861.

Part 4, pp. 315-410	late 1861	Received by L. S. on 2 Nov. 1861, by B. M. on 6 Dec. 1861. "Im Druck vollendet" on 25 Sept. 1861 fide Grisebach in Bot. Zeit. 19: 296. (Oct.) 1861.
Part 5, pp. 411-506	1862 probably May	Received by L. S. on 14 May 1862.
Part 6, pp. 507-602	)))	Received by L. S. on 1 Oct. 1864, by B. M. on 8 Oct. 1864. Cited in Gard. Chron. 1864: 1038. (29 Oct.) 1864, Jour. Bot. (London) 2: 360. (1 Nov.) 1864, Am. Jour. Sci. II. 39: 108. (Jan.) 1865.
Part 7, pp. 603-789, i-xvi)	October 1864	

The details cited above correct the account of publication by B. D. Jackson in *Jour. Bot.* (London) 30: 347. 1892, and accepted by Urban, *Symbolae Antillanae* 1: 57. 1898.

BIOGRAPHICAL NOTES ON COLLECTORS

Grisebach based his *Flora* chiefly on herbarium material assembled at the Royal Botanic Gardens, Kew, through the enterprise of William Jackson Hooker. This material included many specimens collected by residents, mostly medical men, in the British West Indies, notably Bancroft, Crueger, Distin, Finlay, Guilding, Imray, Lane, Lockhart, Macfadyen, Gilbert McNab, March, Nicholson, Schack, Robert Schomburgk, Waters, Wiles, and Wilson. For Jamaica the most interesting and extensive collections studied were those made by Purdie, sent out from Kew in 1843, and by Alexander (later Prior), who visited Jamaica in 1849-50. Grisebach came to England four times during the preparation of the work and was able to have much material from Kew on loan at Göttingen and to retain fragments for his private herbarium, which remains at Göttingen. He also had available the collections, not represented in British herbaria, made by Wulfschlägel and Bertero. The historic collections by Sloane, Masson, Roger Shakespear, Swartz, and others, then at the British Museum, Bloomsbury, now at the British Museum (Natural History), South Kensington, London, were known to Grisebach but he made little use of them, probably because they were then less accessible than the later collections at Kew.

The following notes on collectors cited by Grisebach are based on Urban's "Notae biographicae peregrinatorum Indiae occidentalis botanicorum" in *Symbolae Antillanae* 3: 14-158. 1902, but provide some information not available to Urban.

ALEXANDER (after 1859 PRIOR),⁵ RICHARD CHANDLER (1809-1902);

⁵ The names of some collectors cited in his *Flora* were abbreviated by Grisebach as

English medical man; author of *Popular Names of British Plants* (1863), etc.; collected from November 1849 to August 1850 in Jamaica, mostly in the Blue Mountains and St. Ann (with Moneague as center); adopted the name of Prior after the death of maternal uncle so-named, thereafter spent six months of every year on his property at Halse near Taunton, Somerset, England, the other six months in London; herbarium at Kew; Urban, *Symb. Ant.* 3: 107. 1902; Proc. Linn. Soc. London sess. 115 (1902-03): 35. 1903.

ANDERSON, ALEXANDER (d. 1811); medical man; settled in St. Vincent between 1775 and 1785, being from 1785 to 1811 superintendent of the St. Vincent Botanic Garden; visited Guiana in 1791; Guiana plants in British Museum (Nat. Hist.), West Indian plants at Kew; Urban, *Symb. Ant.* 3: 17. 1902.

BANCROFT, EDWARD NATHANIEL (1772-1842); English medical man; settled in Jamaica in 1811 and died there in 1842 as General Inspector of the Army Hospital at Kingston; herbarium at Kew; Urban, *Symb. Ant.* 3: 19. 1902.

BERTERO, CARLO GIUSEPPE (1789-1831); Italian medical man; studied medicine and natural history in Turin under Balbis; travelled to West Indies in 1816 as a ship's surgeon; was 1816-18 in Guadeloupe, 1818 in St. Thomas, 1818-19 in Puerto Rico, 1819-20 in Santo Domingo and Haiti, 1820-21 in Colombia, 1821 in Jamaica which he visited on his way back to Europe; in 1827 went to Chile, thence in 1830 to Tahiti; on the return to Valparaiso from Tahiti his ship was lost at sea without a trace; main herbarium at Turin, much material at Geneva, other specimens at Paris, Munich, etc.; Urban, *Symb. Ant.* 3: 21, 22. 1902.

BRADFORD, DR.; collected orchids in Trinidad, 1845-46, Antigua, 1846; specimens at Kew; Urban, *Symb. Ant.* 3: 27. 1902.

BROWNE, PATRICK (ca. 1720-90); Irish medical man; studied at Leyden; voyaged about 1745 to Barbados, Montserrat, Antigua, and St. Kitts, settling in Jamaica in 1746, where he journeyed and collected extensively; returned to England in 1755, where he published in 1756 his *Civil and Natural History of Jamaica* (the original edition being 250 copies, fide Sabin, *Dict. Books* 2: 572. 1869, quoting Chalmers); went back to the West Indies but returned to England in 1781, and then retired to County Mayo, Ireland, his birthplace; in 1758 Linnaeus bought his herbarium, now part of Linnaean Herbarium at the Linnean Society of London; some specimens in British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 29. 1902; Stearn, *Introd. Sp. Pl.* 76. 1957.

CRUEGER, HERMANN (1818-64); German apothecary from Hamburg, who settled in Trinidad in 1841; appointed on Purdie's death, in 1857, as

indicated here: Alexander (*Al.*), Anderson (*Anders.*), Bancroft (*Bancr.*), Crueger (*Cr.*), Distin (*Dist.*), Elsey (*Els.*), Guilding (*Guild.*), Hartweg (*Hartw.*), Hjalmarsson (*Hjalmars.*), Imray (*Imr.*), Lockhart (*Lockh.*), Macfadyen (*Macf.*), McNab (*M'Nb.*), Oersted (*Oerst.*), Purdie (*Pd.*), Schack (*Sch.*), Sieber (*Sieb.*), Swainson (*Swains.*), Swartz (*Sw.*), Wilson (*Wils.*), Wullschlägel (*Wullschl.*).

government botanist and director of the botanic garden at Port-of-Spain, Trinidad; specimens at Kew; Urban, *Symb. Ant.* 3: 33. 1902.

DISTIN, HENRY (d. ca. 1840); medical man; lived at Savanna-la-Mar, Jamaica, whence he sent specimens to W. J. Hooker in 1831, 1833, and 1836; his medical work prevented him from collecting except near Savanna-la-Mar; specimens at Kew; Urban, *Symb. Ant.* 3: 37. 1902.

DON, GEORGE, the younger (1798–1856); Scottish gardener and botanist, son of GEORGE DON the elder (1764–1814), and brother of DAVID DON (1799–1841); in 1822–23 collected for the Horticultural Society of London in Brazil, Cuba, Jamaica, and Sierra Leone on the voyage of the *Iphigenia*; some specimens in British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 38. 1902.

ELSEY, JOSEPH RAVENSCROFT (1834–57); English medical man and naturalist; went in 1857 to the West Indies to collect specimens for Grisebach's *Flora* but died after only seven weeks on the island of St. Kitts; specimens at Kew; Urban, *Symb. Ant.* 3: 44. 1902.

FENDLER, AUGUST (1813–83); German plant-collector; emigrated in 1836 to the United States; in 1846–47 collected botanical specimens in New Mexico, in 1850 in Panama, in 1854–58 in Venezuela, in 1877–83 in Trinidad, where he died. W. M. Canby, "An autobiography and some reminiscences of the late August Fendler," *Bot. Gaz.* 9: 285–290, 301–304, 319–322. 1884; Urban, *Symb. Ant.* 3: 47. 1902.

FINLAY, KIRKMAN (d. ca. 1884); medical man; settled in Trinidad ca. 1837 and collected there as well as in Antigua, Grenada, and Dominica; specimens at Kew; Urban, *Symb. Ant.* 3: 47. 1902.

FRASER, JOHN (1750–1811); Scottish plant-collector and nurseryman; made journeys in 1780, 1784–85, 1790, 1791, and 1795 to North America; in 1801 visited Cuba, in 1802 New Providence, Bahamas; Urban, *Symb. Ant.* 3: 48. 1902.

GUILDING, LANSDOWN (ca. 1797–1831); clergyman; born on St. Vincent; studied at Oxford; returned to St. Vincent in 1817; specimens at Kew; Urban, *Symb. Ant.* 3: 53. 1902.

HARTWEG, CARL THEODOR (1812–1871); German gardener and plant-collector; went, in 1836, to Mexico for the Horticultural Society of London, also visited Guatemala, Peru, Ecuador, and Colombia and on return journey stopped in Jamaica during May 1843, collecting in the Port Royal Mountains, north of Kingston, in company with Purdie, before going on to England; (cf. Bentham, *Pl. Hartweg.* 263–266. 1846); specimens at Kew, British Museum (Nat. Hist.), Geneva, etc.; Urban, *Symb. Ant.* 3: 57. 1902.

HIGSON, THOMAS (1773–1836); English merchant; was curator of Bath Botanic Garden, Jamaica, 1828–32; Urban, *Symb. Ant.* 3: 61. 1902.

HJALMARSSON, JUSTUS ADALRIK (1823–1876); Swedish apothecary, who emigrated, in 1850, to St. Thomas, settling in Puerto Rico in 1857; in May 1858 visited the island of Grand Turk, Turks Islands, for 14 days; specimens at Kew and Göttingen; Urban, *Symb. Ant.* 3: 60. 1902.

IMRAY, JOHN (1811–1880); Scottish medical man; emigrated to Do-

minica in 1832, began investigation of flora of the island in 1837; specimens at Kew; Urban, *Symb. Ant.* 3: 67. 1902.

JACQUIN, NICOLAUS JOSEPH VON (1727–1817); Austrian botanist; born in Leyden, Netherlands, but of French descent; studied philosophy at Louvain, medicine and botany at Leyden, then at Paris; went, in 1752, to Vienna for the completion of his medical studies, became acquainted with the Emperor Franz I and was dispatched by him to the West Indies in 1755 to obtain plants and animals for the Imperial gardens and menagerie at Schönbrunn; between 1755 and 1759 visited St. Vincent, Grenada, Curaçao, Aruba, Venezuela, Guadeloupe, St. Christophers, St. Eustatius, St. Martin, St. Barthèlemy, Haiti, Jamaica (1758), Martinique and Cuba; later became professor of chemistry and botany in Vienna; some specimens in British Museum (Nat. Hist.), sold to Banks in 1777; Urban, *Symb. Ant.* 1: 75–78. 1898; 3: 65, 66. 1902; Dawson, *The Banks Letters* 447. 1958.

The results of Jacquin's botanical work were summarized in his *Enumeratio systematica Plantarum, quas in Insulis Caribaeis vicinaque Americes Continente detexit* (Leyden. 1760), a work of only 41 pages but nomenclaturally important for the first publication of genera and species later described and often illustrated in his folio *Selectarum Stirpium Americanarum Historia* (Vienna. 1763), of which a sumptuous limited new edition with colored illustrations copied direct for Jacquin's drawings was published about 1780.

LANE, A. W.; surgeon; visited Bermuda, Cuba, Jamaica, St. Thomas, Antigua, Grenada, and Trinidad some time before 1844; specimens at Kew; Urban, *Symb. Ant.* 3: 71. 1902.

LINDEN, JEAN JULES (1817–1898); Belgian horticulturist and plant-collector; born in Luxembourg; made his first collecting journey at the age of 18 to Brazil in 1835–37; his second, in 1837, to Cuba, Mexico, and Guatemala; his third, in 1841–45, to Venezuela, Colombia, Jamaica, and Cuba; on his return to Europe set up in Luxembourg an establishment for the introduction of new plants; directed, from 1852 to 1862, the Jardin Royal de Zoologie et d'Horticulture in Brussels; specimens at Kew, British Museum (Nat. Hist.), Geneva, Paris, etc.; Urban, *Symb. Ant.* 3: 76–78. 1902.

LOCKHART, DAVID (d. 1846); English gardener; accompanied Tuckey on the Congo expedition of 1816; sent, in 1821, to Trinidad to found a botanic garden, of which he was superintendent until his death in 1846; Trinidad specimens at Kew; Urban, *Symb. Ant.* 3: 78. 1902.

MACFADYEN, JAMES (1800–1850); Scottish medical man; studied medicine and natural history at Glasgow; went to Jamaica, in 1825, as Island Botanist but owing to lack of money resigned from this post and took up medical practice, devoting his spare time to botany and the preparation of his *Flora of Jamaica* (Vol. 1. 1837); unfortunately his death from cholera prevented the publication of Volume 2, of which 216 pages were printed, and his personal herbarium seems to have been destroyed; specimens at Kew; Urban, *Symb. Ant.* 1: 99. 1898; 3: 79, 80. 1902.

McNAB, GILBERT (1815–1859); Scottish medical man; third son of WILLIAM McNAB (1780–1848), brother of JAMES McNAB (1810–1878), uncle of WILLIAM RAMSAY McNAB (1844–89); emigrated, in 1838, to Jamaica and practiced in St. Ann and Kingston in association with James Macfadyen; specimens at Kew and Edinburgh; Urban, *Symb. Ant.* 3: 80. 1902.

MARCH, WILLIAM THOMAS (ca. 1795–ca. 1872); lawyer in Jamaica; lived at Spanish Town, where he had a fine garden; probably many plants recorded from Jamaica on the authority of specimens sent to Kew by March, but not since found in Jamaica in a wild state, were really garden-grown; specimens at Kew; Urban, *Symb. Ant.* 3: 81. 1902.

MASSON, FRANCIS (1741–1805 or 1806); Scottish gardener and plant-collector; sent out from Kew to collect at the Cape of Good Hope in 1772–74, to the Azores in 1776, Canary Islands in 1777, Madeira in 1778, Barbados and Grenada in 1779, St. Eustatius, Antigua, St. Kitts, St. Lucia, Nevis in 1780, Jamaica in 1781, then back to the Cape in 1786–95; in 1797 to North America, dying at Montreal in December 1805 or January 1806; specimens in British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 82. 1902; M. C. Karsten in *Jour. S. Afr. Bot.* 24: 203–218. 1958; 25: 167–188, 283–310. 1959; 26: 9–15. 1960; 27: 15–45. 1961.

NICHOLSON, THOMAS (1799–1877); Scottish medical man; settled at St. Johns, Antigua, in 1822, returned to England in 1848 but went back to Antigua in 1849 and prepared a catalogue of Antiguan plants, the manuscript of which is at the University of the West Indies, Jamaica, with photocopy at British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 92. 1902.

OERSTED, (ØRSTED), ANDERS SANDÖE (SANDØE) (1816–1872); Danish botanist; made, in 1845, a journey to the West Indies, in the course of which he visited St. Thomas, St. Croix, Grenada, and other isles of the Lesser Antilles, then went to Jamaica where he spent six weeks, botanizing with McNab and Macfadyen and ascending the Blue Mountain Peak; his *Skildring of Naturen paa Jamaica* (1856–57, reprinted in 1863) gives a general survey of the zoning of vegetation (summarized in Urban, *Symb. Ant.* 1: 118, 119. 1898); he then travelled in Costa Rica and Nicaragua, returning to Copenhagen in 1848; here he became professor in 1860; specimens at Copenhagen; Urban, *Symb. Ant.* 3: 93, 94. 1902; Christensen, *Danske Bot. Hist.* 1: 377–420. 1925; 2: 232–244. 1929.

PURDIE, WILLIAM (1817–1857); Scottish gardener trained at Edinburgh under William McNab; sent out to Jamaica in 1843 by W. J. Hooker to collect seeds, plants, and specimens; travelled extensively and collected with great success over much of the island; left Jamaica in April 1844 for Colombia, where in May–July 1844 he collected on the Sierra Nevada de Santa Marta, then elsewhere in Colombia in 1844–46, leaving Colombia in 1846 to become government botanist and superintendent of the Botanic Garden, Port of Spain, Trinidad; visited Venezuela in 1851 and Puerto Rico in 1854; died in Trinidad 14 October 1857; specimens at Kew, some duplicates in Paris; Urban, *Symb. Ant.* 3: 107; Ewan, J.,

"A review of *Purdieanthus* and *Lehmanniella* . . . and biographical notes on Purdie and Lehmann," *Caldasia* 5: 85-98. 1948.

Purdie's route in Jamaica, as revealed by his letters and localities on specimens at Kew, may be summarized as follows:

1843

ST. ANDREW: 14 May, arrived at Kingston; 19 May, left for Port Royal Mountains with Hartweg, crossed Liguanea Plain, reached Flamstead; 22 May, reached St. George's Gap; 24 May, returned to Kingston. ST. CATHERINE: 26 May, to Spanish Town; 27 May, along gorge of Rio Cobre to W. McNab's residence at Woodbridge. ST. ANDREW: 31 May, returned to Kingston by way of Stony Hill; 6 June, set out for Blue Mountain Peak, reached Penn Hill. ST. THOMAS: 7 June, crossed Yallah's River, reached Radnor Coffee Plantation in Blue Mountains; 8 June, at Portland Gap; 12 June, reached Blue Mountain Peak, stayed overnight; 13 June, returned to Radnor. ST. ANDREW: 16 June, to Resource; 17 June, to John Crow Ridge; 18 June, to Morce's Gap. PORTLAND: 20 June, to Spring Hill, by way of Silver Hill and Shentamee; 23 June, to Fox's Gap at junction of St. Andrew, Portland, and St. Mary Parishes. ST. THOMAS: 25 June, back to Radnor; 27 June, back to Portland Gap. ST. ANDREW: 28 June, returned to Kingston by way of Guava Ridge. ST. THOMAS: 7 July, set out for Bath, along coast by way of Albion, the Salt Ponds and White Horses to Morant Bay; 8 July, Port Morant and Bath Botanic Garden; 10 July, Plantain Garden River and Wheelersfield; 11 July, to Quaw Hill and Holland Bay; 12 July, John Crow Hill; 13 July, Holland Bay and Morant Point; 14 July, back to Bath with fever; 19 July, to Cuna Cuna Pass and into Portland to Golden Vale estate. PORTLAND: 20 July, by way of Moretown to Port Antonio, Blue Hole, Turtle Crawle, Fairy Hill; 21 July, back to Golden Vale; 22 July, back to Bath. ST. THOMAS: 24 July, to Golden Valley and up to the Plantain Garden River; 25 July, to Dunrobin Castle; 26 July, back to Bath; 1 August, White Hall; 2 August, Morant River, then to Windsor Forest, Woburn Lawn; 3 August, by way of Hagley Gap, back to Kingston. ST. CATHERINE: 9 August, by way of Ferry, to Twickenham Park. ST. ANDREW: 10 August, Red Hills. ST. CATHERINE: 11 August, Ferry, Spanish Town, Guanaboa, Twickenham Park, Caymanas, Ferry; 14 August, visited lagoons near Ferry by boat, returned to Kingston; 23 August, by boat to Apostles Battery, Port Henderson, and vicinity. Purdie's route hereafter is not well documented. September, Guys Hill, ST. MARY: 6 October, reached Kingston from St. Mary and Pedro district of ST. ANN. 29 October, left for MANCHESTER; 19 November, Great Valley, Manchester; then to Maroon Town, TRELAWNY.

1844

January, Montego Bay, ST. JAMES; then to Lucea and Orange Bay, HANOVER, thence to interior of WESTMORELAND, visiting Dolphin Head (HANOVER) and Bluefields Mountain (WESTMORELAND), and to ponds of ST. ELIZABETH. 9 March, salt marshes near Kingston, ST. ANDREW. 23 March, to Pedro district of ST. ANN. April, Roaring River, ST. ANN. May arrived Santa Marta, Colombia. Several species recorded by Grisebach from Jamaica, e.g. *Drymonia parviflora* and *Pinguicula elongata*, were, in fact, based on specimens collected by Purdie in Colombia.

A letter of J. H. Hart written on 12 June 1896 to the Royal Botanic Gardens, Kew, calls attention to confusion between St. Anns, Port-of-

Spain, Trinidad, and the Parish of St. Ann, Jamaica; "several species credited to St. Anne's, Jamaica, have not been re-found and it may be well to note that locality as doubtful. From many circumstances I feel diffident about attaching any importance to Purdie's specimens from St. Anne's, Jamaica, most of the specimens so credited being found in St. Anne's, Trinidad, the district in which the Botanic Gardens are situated."

RUGEL, FERDINAND IGNATIUS XAVIER (1806–1879); German pharmacist and plant-collector; born at Wolfegg on the Ach near Weingarten, Württemberg, on 17 December 1806; went to Switzerland, thence, in 1840, to the United States, collecting at cost of R. J. Shuttleworth in 1846 in southern Florida, including Key West, and in 1849 in Cuba (mostly in the province of Matanzas); settled then in Jefferson County, eastern Tennessee, where he died on 31 January 1879; specimens at Kew, British Museum (Nat. Hist.), Göttingen, Leyden, New York, etc.; Urban, *Symb. Ant.* 3: 115, 116. 1902; S. W. Geiser, "Biographical note on Dr. Ferdinand Rugel, American botanist," *Field & Laboratory* 16: 113–119. 1949; S. W. Geiser, "Birthplace of Ferdinand Rugel (1806–79), early Southern botanist," *Field & Laboratory* 18: 112. 1950.

RYAN, JOHN (d. 1808); English medical man; plantation owner on island of Montserrat towards end of the 18th century; returned to England in 1792 but owing to customs difficulties at Plymouth sent his specimens on to Copenhagen, whence they were later sent to Banks in London; specimens in British Museum (Nat. Hist.) and Copenhagen; Martin Vahl published descriptions of them in his *Eclogae Americanae* (1796–1807) and *Icones* (1798–99), the last at Ryan's expense; Urban, *Symb. Ant.* 1: 173. 1898; Dawson, *The Banks Letters* 727. 1958.

SCHACK, BARON VON (d. 1824), Austrian; lived for many years in Trinidad and sent living plants from there to the botanic gardens of Glasgow and Liverpool; specimens at Kew; Urban, *Symb. Ant.* 3: 119. 1902.

SCHOMBURGK, SIR ROBERT HERMANN (1804–1865); German botanist, brother of SIR MORITZ RICHARD SCHOMBURGK (1811–1890); collected during 1835–44 in British Guiana, northern Brazil, and Venezuela; knighted in 1844 by Queen Victoria for his achievements as an explorer; spent 11 months (1846–47) in Barbados; was British consul from 1848 to 1857 in Santo Domingo; specimens in Kew, British Museum (Nat. Hist.), Paris, and Berlin; Urban, *Symb. Ant.* 3: 121. 1902.

SIEBER, FRANZ WILHELM (1789–1844); Austrian plant-collector and dealer in herbarium specimens at Prague; collected himself in Italy, Crete, Egypt, Palestine, Mauritius, Australia, and South Africa, but collections were made for him by Franz Kohaut in Martinique in 1820 (specimens distributed as "Flora Martinicensis") and by Franz Wrbna in Trinidad in 1722 (specimens distributed as "Flora Trinitatis"); some confusion of localities may have occurred; specimens in many herbaria; Urban, *Symb. Ant.* 3: 127. 1902; Maiwald, *Gesch. Bot. Böhmen* 111–116. 1904.

SLOANE, SIR HANS (1660–1753); Irish medical man and botanist; studied medicine in London, Paris, and Montpellier, then voyaged, in

1687, to Jamaica as personal physician to the Governor, the Duke of Albemarle, by way of Madeira, Barbados, Nevis, and St. Kitts; was in Jamaica from December 1687 to March 1689; although resident in St. Jago de la Vega, now Spanish Town (St. Catherine), and evidently restricted by his professional duties, Sloane managed nevertheless to travel in the parishes of St. Andrew, St. Mary, and St. Ann, ranging in the north from St. Ann's Bay to Rio Nuevo; on his return became a very successful and wealthy doctor; knighted in 1716, made President of the Royal College of Physicians in 1719, and President of the Royal Society in 1727; published first a *Catalogus Plantarum quae in Insula Jamaica sponte provenient* (1696), then his two-volume *Voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica with the Natural History . . . of the last of those Islands* (Vol. 1. 1707; vol. 2. 1725), which contains accurate descriptions and illustrations of his plants; specimens contained in volumes 1-8 of the Sloane Herbarium in the British Museum (Nat. Hist.), London. Urban, *Symb. Ant.* 1: 154-157. 1898; 3: 130. 1902; G. R. de Beer, *Sir Hans Sloane and the British Museum* (1953); E. St. John Brooks, *Sir Hans Sloane, the great Collector and his Circle* (1954); J. E. Dandy (ed.), *The Sloane Herbarium* (1958).

SPRUCE, RICHARD (1817-1893); English botanist; began as a school teacher; from 1849 to 1864 travelled to South America (Brazil, Colombia, Ecuador, Peru, and Venezuela), making immense and botanically most valuable collections; then returned to England in bad health and spent the rest of his life as an invalid in a humble Yorkshire cottage, courageously and diligently, although in frequent pain, monographing South American Hepaticae. The major results of his study are embodied in his *Hepaticae Amazonicae et Andinae* (1884-85); he did not collect in the West Indies, but his specimens, distributed to numerous herbaria, serve for comparison with material from Trinidad; Spruce, *Notes of a Botanist on the Amazon and Andes* (2 vols. 1908).

SWAINSON, ——— (fl. 1830-1842); collected in the Bahamas; not to be confused with the zoologist WILLIAM SWAINSON (1789-1855); specimens at Kew; Urban, *Symb. Ant.* 3: 134. 1902.

SWARTZ, OLOF (1760-1818); Swedish botanist; studied natural history and medicine at Uppsala; went in August 1783 to North America, then to the West Indies, leaving Boston on 26 Nov. 1783, landing at Montego Bay, Jamaica, on 5 Jan. 1784; stayed for some time on the Hampden estate, Trelawny, travelled between January and August 1784 in Hanover, St. Elizabeth, and Westmoreland, visited Savanna-la-Mar, later Kingston and from here, in 1785, ascended Blue Mountain Peak (East Peak) and stayed with Matthew Wallen of Coldspring, St. Andrew, in the Blue Mountains, and visited Catherine Peak (Catherine Hill), as well as the Liguanea Plain, Ferry, and Spanish Town in St. Catherine, and Morant Bay, Bath, and Manchioneal in St. Thomas; visited Cuba and Haiti; in 1786 brought his collections to London and worked them out with the aid of Dryander in Sir Joseph Banks's house at Soho Square, London, presenting Banks with specimens of Jamaican species not al-

ready represented by specimens collected by Mason, Shakespear, and Wright; in autumn of 1787 returned to Sweden; published between 20 June and 31 July 1788 his *Nova Genera et Species Plantarum seu Prodrromus* (facsimile in 1962) briefly characterizing many West Indian plants, then *Observationes botanicae* (1791) giving critical observations on species already but often imperfectly known, *Icones Plantarum incognitarum* (1794–1800), *Flora Indiae occidentalis* (1797–1806) and other works; in 1789 became keeper of the Royal Natural History Collections at Drottingholm, in 1791 professor at the Hortus Bergianus, Stockholm, in 1807 keeper of the museum of the Royal Academy of Sciences; specimens in British Museum (Nat. Hist.), London (from Herb. Banks), Riksmuseum in Stockholm (Swartz's personal herbarium), Linnean Society of London (in Smith Herbarium), Geneva (in Prodrromus Herbarium), Copenhagen, Munich, etc.; original drawings listed by Urban in *Symb. Ant.* 1: 164, 165. 1898, now in Library of Royal Academy of Sciences, Stockholm (see p. 284); Swartz, *Adnotationes botanicae* (1829); Urban, *Symb. Ant.* 3: 134, 135. 1902.

WATERS, JAMES (fl. 1826–1847); English clergyman; collected specimens in Jamaica which are at Kew; Urban, *Symb. Ant.* 3: 139. 1902.

WILES, JAMES (fl. 1791–1805); English gardener; sailed with Captain Bligh on his second voyage (1791–93) to introduce the breadfruit (*Artocarpus communis*) into the West Indies from the Pacific, was successful in establishing this first in the botanic gardens of St. Vincent, then in Jamaica; specimens in British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 140. 1902.

WILSON, NATHANIEL (1809–74); Scottish gardener; emigrated to Jamaica and became Island Botanist and Superintendent of Botanic Garden at Bath; founded Castleton Garden in 1860; in 1857–58 made collections in many parts of Jamaica, including Dolphin Head and around Manchioneal; specimens at Kew, British Museum (Nat. Hist.); Urban, *Symb. Ant.* 3: 140. 1902.

WOODFORD, SIR RALPH (1784–1828); Governor of Trinidad, 1813–28; specimens at Kew; Urban, *Symb. Ant.* 3: 141. 1902.

WRIGHT, WILLIAM (1735–1819); Scottish medical man; settled in Jamaica, in 1765, on Hampden Estate, Trelawny; returned to Britain in 1777–79; on voyage back to Jamaica as regimental surgeon to the newly raised Jamaica Regiment in 1779 was captured by a combined Spanish and French fleet, and interned in Spain; returned in 1782 to Jamaica, where he was visited by Swartz; returned to England in 1785; specimens at Kew, British Museum (Nat. Hist.), Edinburgh, Brussels; Urban, *Symb. Ant.* 3: 143. 1902; W. Fawcett, "William Wright, a Jamaican botanist," *Jour. Bot. (London)* 60: 330–334. 1922.

WULLSCHLÄGEL, HEINRICH RUDOLF (1805–1864); missionary belonging to the Moravian Brothers; 1844–47 in Antigua (herb. nos. 1–760), 1847–49 in Jamaica (herb. nos. 761–1345), in parish of Manchester; main herbarium at Munich, some duplicates at Göttingen; Urban, *Symb. Ant.* 3: 145. 1902.

COLLECTORS GROUPED BY ISLANDS

The following conspectus lists chronologically under each island the botanical travellers and residents in the British West Indies who, by collections or records, contributed to a knowledge of their flora down to the year 1900. It has been extracted with slight modification from Urban's more extensive "Conspectus insularum earumque peregrinatorum botanicorum" in *Symbolae Antillanae* 3: 147-158. 1902. Persons listed within brackets, e.g. [J. B. Labat between 1694-1705], are not known to have left herbarium specimens although they made notes, sometimes incidental, on plants. Collectors cited by Grisebach are italicized, e.g. *O. Swartz*.

ANTIGUA

- | | |
|-----------------------------------|-------------------------------------|
| P. Browne 1745 | Ch. Breutel 1841 (chiefly Crypt.) |
| F. Masson 1780 | A. W. Lane before 1844 |
| de Ponthieu before 1786 | <i>H. R. Wulfschlägel</i> 1844-1847 |
| L. Cl. Richard 1786-1787 | K. Finlay ca. 1850 |
| W. Hamilton ca. 1814 | A. G. Tillson 1889-1897 |
| F. L. l'Herminier 1815 | H. A. A. Nicholls 1890-1891 |
| <i>T. Nicholson</i> ca. 1831-1841 | C. A. Barber 1891-1895 |

BAHAMAS

- | | |
|--|-----------------------------|
| M. Catesby 1725-1726 | H. E. W. Robinson 1877 |
| F. Boos, F. J. Märter & [J. D. Schöpf] | L. J. K. Brace 1877-1880 |
| 1784 | A. H. Searing ca. 1885 |
| A. Michaux 1789 | F. H. Herrick 1886 |
| J. Fraser 1802 | [J. Gardiner 1886-1888] |
| Crudy before 1810 | C. S. Dolley ca. 1887 |
| <i>Swainson</i> 1830-1842 | H. von Eggers 1887, 1888 |
| W. F. Daniell 1857-1858 | A. S. Hitchcock 1890 |
| <i>J. Hjalmarsson</i> 1858 | J. I. & A. B. Northrop 1890 |
| W. Cooper 1859 | D. Morris 1895 |
| R. W. Rawson 1867-1868 | |

BARBADOS

- | | |
|---------------------------------|-------------------------------|
| [R. Ligon 1647-1650] | C. S. Parker ca. 1825 |
| H. Sloane 1687 | [J. D. Maycock before 1837] |
| J. Reid 1692 | <i>A. W. Lane</i> before 1844 |
| [J. B. Labat between 1694-1705] | Rob. Schomburgk 1846-1847 |
| P. Browne 1745 | W. Munro 1870-1876 |
| [G. Hughes before 1750] | W. B. Murray ca. 1871 |
| F. Masson 1779 | O. Kuntze 1874 |
| A. Anderson between 1785-1811 | R. W. Rawson before 1875 |
| J. Gregg before 1786 | C. S. Sargent 1885 |
| Martfelt before 1791 | E. H. L. Krause 1890 |
| W. Wright 1796-1798 | H. von Eggers 1890, 1891 |
| F. Seaforth ca. 1803 | E. Warming 1891 |
| T. W. Simmonds 1803-1804 | J. H. Hart ca. 1895 |
| F. Pursh 1810-1811 | J. F. Waby 1895 |
| W. Hamilton ca. 1814 | |

BARBUDA

de Ponthieu before 1786
L. Cl. Richard 1786-1787

H. A. A. Nicholls 1891

DOMINICA

[J. B. Labat between 1694-1705]
J. Gregg before 1786
F. Pursh 1810-1811
[J. B. Ricord-Madianna between 1821-1825]
J. Imray 1837-1880
Hoskin 1841
K. Finlay ca. 1850
Murray
H. von Eggers 1880-1883

[W. Schimper 1881, 1883]
F. Johow 1882-1883
A. Duss 1883, 1885
H. A. A. Nicholls since 1886
G. A. Ramage 1888-1889
J. J. Walsh ca. 1889
W. R. Elliott 1892, 1894, 1895 to 1896
(Crypt.)
C. A. Barber ca. 1893

GRENADA

[J. B. du Tertre ca. 1650-1656]
[J. B. Labat between 1694-1705]
N. J. Jacquin between 1755-1757
F. Masson 1779
A. Anderson between 1785-1811
de Ponthieu before 1786
A. W. Lane before 1844
A. S. Oersted 1845-1846
K. Finlay ca. 1850
R. W. Rawson 1870-1872

G. Murray 1886 (Algae)
W. R. Elliott 1886-1889 (Pterid.)
H. von Eggers 1889
J. J. Walsh ca. 1889
R. V. Sherring 1890-1891
G. W. Smith 1890-1894
D. W. Alexander 1891
W. E. Broadway since 1894
J. H. Hart ca. 1895

JAMAICA

J. Harlow ca. 1670
H. Barham 1680-1726
H. Sloane 1687-1689
W. Houstoun between 1729-1733
P. Browne 1746-1755
[E. Long ca. 1755-1769]
N. J. Jacquin 1758
A. Robinson before 1768
W. Wright 1771-1777, 1782-1785
Th. Dancer 1773-1811
R. Shakespear 1777-1782
F. Masson 1781
O. Swartz 1784, 1785-1786
de Ponthieu before 1786
J. von Rohr 1786
F. J. Märter 1786-1787
J. Wiles 1793-1805
A. Broughton before 1800
F. R. deTussac 1802
E. N. Bancroft 1811-1842
[J. Lunan before 1814]
C. Bertero 1821
G. Don 1822

R. Heward 1823-1826
J. Macfadyen 1825-1850
J. Waters ca. 1826-1830
Murray 1827
Th. Higson 1828-1836
H. Distin 1830-1840
H. Cuming 1831
G. McNab 1838-1859
Th. Hartweg 1843
W. Purdie 1843-1844
H. J. Krebs between 1843-1866
A. W. Lane before 1844
W. A. Bromfield 1844
P. H. Gosse 1844-1845
A. S. Oersted 1846
N. Wilson 1846-1858
H. R. Wullschlägel 1847-1849
R. C. Alexander Prior 1849-1850
F. H. Taylor 1852-1854 (Pterid.)
H. Barkly 1853-1856
W. T. March especially 1857-1858
W. F. Daniell ca. 1863
G. S. Jenman 1873-79 (Pterid.)

B. Baker (Pterid.)
 Kendal (Pterid.)
 T. L. Rees (Pterid.)
 S. Roberts (Pterid.)
 S. B. Wilson 1874 (Pterid.)
 W. Nock 1875-1880 (Pterid.)
 Lady O'Malley 1877
 G. Syme 1879-1884
 D. Morris 1879-1886
 R. V. Sherring 1880-1887
 F. C. Lehmann 1881
 J. H. Hart 1881-1887
 C. S. Sargent 1885
 W. Fawcett since 1887

H. von Eggers 1888
 W. J. Thompson since 1889
 D. E. Watt ca. 1890
 A. S. Hitchcock 1890
 E. H. L. Krause 1890
 J. E. Humphrey 1893, 1897 (Crypt.)
 [A. Worsley 1894]
 W. Cradwick since 1894
 W. Harris since 1894
 E. Campbell 1894-1896
 B. D. Gilbert 1895 (Pterid.)
 A. Fredholm 1897
 O. Hansen 1897
 C. F. Millspaugh 1899, 1900

MONTSERRAT

P. Browne 1745
 J. Ryan ca. 1780
 de Ponthieu before 1786
 J. von Rohr 1786

H. K. Holme ca. 1878
 H. A. A. Nicholls 1890-1891
 C. A. Barber ca. 1893

ST. KITTS (ST. CHRISTOPHER)

[J. B. du Tertre ca. 1650-1656]
 H. Sloane 1687
 [C. Plumier between 1689-1697]
 [J. B. Labat between 1694-1705]
 P. Browne 1745
 N. J. Jacquin between 1755-1757
 F. Masson 1780
 S. Fahlberg between 1785-1834
 B. A. Euphrasén 1788

W. Hamilton ca. 1814
 Ch. Breutel 1841 (chiefly Crypt.)
J. R. Elsey 1857
 H. von Eggers 1882
 C. S. Sargent 1885
 W. F. R. Suringar 1885
 J. J. Walsh ca. 1889
 C. A. Barber ca. 1893

ST. VINCENT

[C. Plumier between 1689-1697]
 [J. B. Labat between 1694-1705]
 N. J. Jacquin between 1755-1757
 G. Young 1765-1774
 A. Anderson 1785-1811
 W. Lochead 1811-1815
 G. Caley 1816-1823
L. Guilding 1817-1833
 J. Macrae 1823

C. S. Parker ca. 1825
 H. von Eggers 1889-1890
 H. H. & G. W. Smith 1889-1890
 E. H. L. Krause 1890
 H. A. A. Nicholls 1890-1891
 W. R. Elliott 1891-1892 (Crypt.)
 H. Powell 1891-1893
 J. H. Hart ca. 1895

SANTA LUCIA

[J. B. du Tertre ca. 1650-1656]
 [J. B. Labat between 1694-1705]

J. B. Leblond ca. 1767
 F. Masson 1780

TOBAGO

[de Rochefort before 1665]
 G. Young ca. 1765
 J. Gregg before 1786
 de Ponthieu before 1786
 W. Hamilton ca. 1814
 F. L. l'Herminier

L. C. Meyer 1879
 H. von Eggers 1889, 1891, 1899
 Th. Clemens 1890-1891
 H. A. A. Nicholls 1890-1891
 J. H. Hart ca. 1895
 A. Seitz 1896

TRINIDAD

[G. F. de Oviedo between 1519–1556]	K. Finlay ca. 1850–1868
J. B. Leblond ca. 1767	Germain ca. 1860 (Crypt.)
Ryan ca. 1780	H. Prestoe 1864–1886
A. Anderson between 1785–1811	O. Kuntze 1874
J. von Rohr 1786	A. Fendler 1877–1883
N. Baudin, A. P. Ledru, A. Riedlé 1797	F. Johow 1882–1883
R. Woodford 1813–1828	[W. Schimper 1882–1883]
D. Lockhart 1818–1846	H. von Eggers 1883, 1899
von Schack ca. 1820	R. V. Sherring 1885–1886 (Pterid.)
F. Wrba (for Sieber) 1822	J. H. Hart since 1887
C. S. Parker ca. 1825	W. E. Broadway 1888–1894
H. Crueger 1841–1864	D. W. Alexander 1890 seq.
A. W. Lane before 1844	E. Warming 1891
W. A. Bromfield 1844	Baptiste 1891–1896
Bradford 1845–1846	W. Lunt 1894–1898
W. Purdie 1846–1857	F. A. Lodge since 1899

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Grisebach's references to literature in the *Flora* are restricted for the most part to concise citations of plates and figures. Although many of these are self-evident, a number require much amplification in order that the works concerned can be traced in a library catalogue. After each entry below are given references to G. Pritzel's *Thesaurus Literaturae botanicae*, 2nd ed. (1872) cited as "Pr." with an entry number, to Urban's "Bibliographia Indiae occidentalis botanica" in I. Urban, *Symbolae Antillanae* 1: 1–179. 1898, cited as "Urb. 1" with a page number, to C. Nissen's *Die botanische Buchillustration* 2. 1951, cited as "Niss." with an entry number, and to C. Stevenson's *Catalogue of botanical Books in the Collection of Rachel M. M. Hunt* 2. (II). 1961, cited as "Hunt" with an entry number.

⁶ Since this paper was set in type the author has sent a series of additional references which we are glad to cite here under the same abbreviated citations as in the text. *Ed.*

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