

THE TYPIFICATION OF DIOSPYROS EBENUM AND DIOSPYROS EBENASTER

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IN THE LATE PART of the eighteenth century, botanists were uncertain of the identity of the trees which produced two valuable commercial timbers, red sandalwood and true ebony. John Gerhard Koenig is credited with the identification of each during a stay in India and Ceylon. Koenig was born in Polish Latvia in 1728. He moved to Denmark in 1748 and studied with Linnaeus from 1757 to 1759. As a physician, he joined a Danish mission to India in 1767 and died in India in 1785. The present paper concerns the typification of *Diospyros ebenum* (the source of the true ebony), the proper citation of the name, and its synonymy.

A paper with the Swedish title, "Diospyros Ebenum eller Äkta Ebenholz, beskrifvit af John Gerhard König" [*Diospyros ebenum* or true ebony, described by John Gerhard Koenig], was published in the first volume of the *Lund Physiographiska Sällskapets Handlingar*, printed in Stockholm in 1781.¹ In addition to a Latin description of *Diospyros ebenum*, the article contained in a footnote a discussion of the distribution of the plant, its characteristics and its use, the method of formation of the characteristic black wood, and, finally, an eulogy of Koenig for supplying the information. The article, in contrast to others in the *Handlingar*, does not indicate the author. The discussion is written in the third person and we shall show that an original article written by Koenig was translated, edited and published by A. J. Retzius, the founder and the secretary of the Lund Physiographiska Sällskapet and its publication. The correct citation of the name given the ebony tree should be *Diospyros ebenum* Koenig ex Retzius.

The original description appears to be a composite one, including unisexual and hermaphrodite flowers and fruit. It was obviously based on a field knowledge of the plant in Ceylon. No specimens were cited, and the selection of a lectotype for the species is now necessary.

In the library of the Botanical Museum, in Copenhagen, there are a number of long letters from Koenig in India during the period 1777–1783

¹ The date of publication of *Diospyros ebenum* is given in Index Kewensis and by most recent authors as 1776, the date on the title page. The first volume of this journal was published in four parts. It is significant to note that Parts 1 and 2, pages 1–64 and 65–132 respectively, were published in 1776, but that Part 3, pages 133–220, containing the description of *Diospyros ebenum*, was published in 1781, and Part 4, pages 221–318, was issued in 1786. Otto Gertz (Kungl. Fysiogr. Sällsk. i Lund 1772–1940 Historisk Överblick, 16. 1940) reports that "the Secretary of the Society announced on May 2nd, 1781, that the printing of 'Handlingarna' Part 1:3 was finished."

to Rottboell who was chief of botany in the Chair of Medicine in Copenhagen until 1797. One letter, written on August 22, 1777, is fifteen pages long. Another pertinent to the present paper was written on February 5, 1778, and is eight folio-size pages in length. Koenig's letters are handwritten in an old-style German. The structure of the language he used is strange today, as is the spelling of many of the words. We are indebted to Mr. Sigurd Molander, of the Library of the Botanical Museum of Lund, for his assistance in the interpretation and translation of Koenig's script.

From Tranquebar, India, on February 5, 1778, Koenig wrote to Rottboell of his recently completed journey to Ceylon and his discovery of the true ebony. On May 10, 1777, the English warship "Seahorse," under Captain James' command and with Koenig aboard, sailed from Madras and arrived at Trincomalee, Ceylon, nine days later. Koenig wrote a brief

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*Descriptio Ebeni. Classis Polygamia
 Dioecia.*

Genus Diospyros: Ebenum verum. Ebenus Rumphii. Glorba. Ambornense
 Tom. 3. lib. 4. Cap. 1. Sola India fert Ebenum. Virgili Georgica
 lib. 2. St. 117.

Ramulis Karingalli vel Karingali.

Arbor inter, praeceus medicinis. Truncus in fissuris densioribus crassius, equalis
 altus in dentibus minor. Stomach crispus, cortice fuscus, rimosus, fere ut in.
 Alnus nigra sed multo minor et magis cinereo fusca, durior tectis.

Frons plerumque laeta, opaca; Rami priores erecti, patentes, numerosi, reli-
 qui patentiores; ultimi virgati, communiter bifarii, penduli, cortice
 obscure fusco obducti; ad apices pilis rarioribus adspersi, propositum
 in axillis ramulorum, foliorum et gemmarum, ciliatibus a foliis
 sedibus parum inaequales.

Folia bifaria, patentia, petiolata, lanceolata, oblonga, acutiuscula, inte-
 gerrima, marginibus parum reflexis, pagina superiori glabra, nit-
 ida, inferiori ramosa; obscure viridia, rigida. Petioli cum articu-
 latione parva, ramis adnatis, firmiores, pilis rarioribus adspersi,
 breves. Gemmae axillares, oblongae, pilosae, parvae. Stipulae
 nullae.

Bractea interdum solitaria, calyce adpresso, orbiculata, ciliata,
 pilis adpressis, concava, rigida, parva, caduca, viridia fusca.

Peduncululi compositi, glabri, rigidi, flore breviores. Pedi-
 celli infra flores clavati, pilosi, brevissimi, flore minus
 caducei.

Corymbi axillares, parvi ex floribus 2 ad 5 foliis multo breviores.

TEXT-FIG. 1. First page of Koenig's manuscript, "Descriptio Ebeni Classis Polygamia Dioecia."

description of the Trincomalee Mountains, their geology and vegetation. He stated that their slopes were rugged and densely covered by many kinds of trees, among others very many ebony trees. The season was not well adapted for the collection of flowering material, but Koenig declared that he had been able to make a complete description of ebony which he enclosed and from which the addressee, Rottboell, could see that the ebony was a true *Diospyros*. The description Koenig sent was titled "Descriptio Ebeni Classis Polygama Dioecia" and is preserved today. The first page of this classic manuscript is reproduced here as TEXT-FIGURE 1. During a six-day stay in the area of Trincomalee, Koenig collected many new herbs and even concluded that he should very much like to live there. Later in his letter Koenig described another landing at Jaffna where the true ebony used to be cut. Here he said there were very tall and well-formed trees, many of which bore fruit. However, he was not able to find a single flower, though he offered rewards of much gold to the finder and many trees were thoroughly searched. In his presence two trees were cut down, and in these only the innermost part had turned black, showing beyond doubt that it was ebony. A forester on the spot told Koenig that holes were cut through the bark into the wood in order to encourage the development of pigmentation. He explained the white streaks found in ebony as incomplete mummification due to premature cutting and contrasted this with the uniformly colored woods obtained in the French and Mauritian islands. Koenig indicated in his letter that he had collected as many plants as possible and that these had been sent to Copenhagen ("von welchen allen ich im vorigthen Jahr auch nach Copenhagen zureichende Exemplar überstandt habe. .").

Although there is no correspondence to support the conclusion, it seems clear to us that Rottboell received the specimens sent by Koenig as well as the "Descriptio ebeni." He kept for himself a fruiting specimen and the wood specimen. He sent to Retzius a poorer fruiting specimen, and either the original manuscript, "Descriptio ebeni," which was later returned to Copenhagen, or a copy thereof. Retzius then edited Koenig's manuscript, for, when the original and the published documents are compared, we find several changes in Koenig's Latin constructions but no significant alteration of the diagnosis. The German text of the original manuscript was translated freely into Swedish for publication, and Retzius supplied only the footnote.

The selection of a lectotype, therefore, is a choice between the specimen Rottboell received from Koenig and sent to Retzius and the specimen which Rottboell retained. The specimen in the Retzius herbarium at Lund (PLATE I) bears only two annotations: "Diospyros ebenum," in Retzius' handwriting (PLATE Va), and "e coll. Retzii," which is probably the writing of Professor Agardh. There are fruits attached to this specimen but these are not associated with the leaves, which are only at the ends of the branches and probably represent a later period of growth. The leaves are thin in texture, pointed at the apex, and have dried a dark color.

In the Rottboell herbarium (Copenhagen) there is a specimen which we designate as the lectotype of *Diospyros ebenum* Koenig ex Retzius. This specimen (PLATE II), more ample than that sent to Retzius, has fruit associated with the leaves which, in turn, are thicker in texture, lighter in color, and less pointed at the apex than those of the specimen in the Retzius herbarium. On this sheet in the handwriting of Koenig are the annotations "Diospyros ebenum verum" and "habitat in vastissimis sylvis prope Jafnapatnam & ad latere montium Trinquemallensium" (PLATE Vb). Associated with this sheet is a piece of ebony wood and a section of a stem with both wood and bark.

A second sheet in the Vahl herbarium in Copenhagen bears a specimen in flower and an annotation partly in Koenig's handwriting (PLATE Vc). A label of more recent date designates this specimen as the "originaleksemplar" and indicates that the specimen was received from Koenig from "Trankebar ca. 1780." We do not know who supplied this particular label, but that botanist wrongly indicated its origin as "Trankebar." He failed to notice the annotation on the reverse side of the sheet which reads, "habitat in sylvis Zeylanicis copiose" (PLATE Vc). A sample of wood accompanies this flowering specimen. It is important to notice that this specimen has both older, coriaceous, light-colored leaves and younger, thinner textured, dark-colored leaves on the same shoot. It thus indicates the relationship between the types of foliage represented by the Retzius and the Rottboell collections. The more authentic label associated with the specimen in the Rottboell herbarium, the presence of two wood samples, the fruiting condition of the specimen, and the supporting correspondence have led us to accept the Rottboell specimen as the lectotype and to disregard the "originaleksemplar" label. A similar specimen is in the herbarium at Lund (PLATE IVb).

There is in the Linnaean herbarium in London a fruiting specimen with similarly shaped heavy leaves (PLATE IIIb). We have not been able to trace the origin of the Linnaean specimen in any correspondence from Koenig. The sheet is annotated "König 1777" and "Ebenum Verum ex vastis sylvis Zeylonae. Flores non vidi! an Diospyros?" We suspect that Koenig, a former student of Linnaeus, might well have sent a specimen of his important discovery directly to his former teacher. The chances are that it arrived after the death of the elder Linnaeus (January 10, 1778), for Linnaeus filius described *Diospyros ebenum* in his *Supplementum Plantarum Systematis Vegetabilium*, page 440, in 1781,² with

² On the basis of the year of issue, *Diospyros ebenum* L. f. appears to compete with the same name attributed to Koenig. According to the date given in the preface, the *Supplementum* of Linnaeus was completed by October 1, 1780. Linnaeus states that his determination was confirmed by Thunberg, who worked with him at least in the early months of 1779 (Karsten, Jour. S. Afr. Bot. 5: 103. 1939). Stoeber (*The Life of Sir Charles Linnaeus*, 295. 1794) quotes Ehrhart as stating that Linnaeus "sent me the manuscript in the autumn of 1779, to be printed. I perused it, set down my doubts and observations, and sent them to Linnaeus. A correspondence then began between us, which lasted almost the whole of the ensuing winter. After this, I had it copied afresh, and began to get it quite ready for the press; I was how-

the comment, "Hoc est verum Lignum Ebenum, cuius originem detexit König, confirmavit Thunberg." Linnaeus filius was obviously unaware of the nearly concurrent publication of the same epithet by Retzius in the *Lund Physiographiska Sällskapets Handlingar*. Certainly the date 1777 and the annotation on the Linnaean sheet, in further agreement with Koenig's letter to Rottboell, suggest that Koenig did send the specimen to Linnaeus after he had first seen ebony but while he was still uncertain of its identity as a species of *Diospyros*.

After his initial visit in 1777, Koenig returned to Ceylon several times. The majority of his visits were for but a few days. However, in 1781, he made extensive investigations of the flora. It is probable that Koenig continued to collect specimens of ebony, including ample flowering material, which he sent to Rottboell at Copenhagen. Rottboell was obviously aware of the two publications of the name *Diospyros ebenum* by Retzius and by Linnaeus, of the incomplete published description, and of the lack of an illustration of this important plant. In 1783, he published still another description of the plant, this time with an illustration, and changed the name to *Diospyros glaberrima* (Nye Samling K. Danske Videnskabers Selskabs Skrifter 2: 540. *tab.* 5. 1783). It is clear that Rottboell was renaming the plants described earlier. He points out that his description is largely compiled from Koenig's published description and from material Koenig sent him. Rottboell's own contributions, for which he takes full responsibility for errors, are based on dissections he made of the flowers, thus lending supporting to our conclusions that Koenig sent Rottboell additional material. Finally, in the explanation of the figures for the illustration he supplied, Rottboell notes, "Ramus Diospyri glaberrimi sive Ebeni." The upper portion of the illustration (PLATE IIIa) is clearly drawn from the Koenig specimen "*Diospyros ebenum verum*" in the Rottboell herbarium which we have designated as the lectotype (PLATE II). Rottboell did not annotate the sheet itself, but the outer cover is labeled *Diospyros glaberrima* in Rottboell's hand. The lectotype we have selected for *Diospyros ebenum* Koenig ex Retzius and the holotype of *Diospyros glaberrima* Rottboell are one and the same specimen. We believe this is what Rottboell intended.

The second specimen of *Diospyros ebenum* in the Retzius herbarium (PLATE IVb) at Lund is comparable to the specimens in the Rottboell (PLATE II), Vahl (PLATE IVa) and Linnaean (PLATE IIIb) herbaria. The Lund specimen, however, bears a copy of the description published by Linnaeus filius and the correct page reference to this work (PLATE Vd).

ever, prevented, by the botanical tour through the electorate of Hanover, with which his BRITANNIC MAJESTY had expressly charged me. I got it ready at last, in the winter between 1780 and 1781. The work was to be printed at *Hanover*, under my immediate inspection; but it did not take place. I agreed afterwards for the printing of the work at *Brunswick*, in the asylum. The principals of the Orphan Asylum procured new types for this purpose, printed it off in the summer of 1781, and paid an honorary of two ducats per sheet, which I sent to Linnaeus after his return from *England*." Thus it appears that *Diospyros ebenum* Koenig has a priority of two or three months over *Diospyros ebenum* L. f. (See Footnote 1.)

The label also indicates that the specimen was collected by Koenig in Ceylon and sent to Vahl in 1781 ("misit Praeclar: Demonstr. D: Vahl, anno 1781"). Vahl may have sent this to Retzius at Lund. Vahl was attached to the Botanical Garden of Copenhagen as lecturer in 1779 and was appointed professor of botany there in 1801.

We conclude that Retzius had not seen this flowering specimen, which bears the name *Diospyros ebenum* L. f. as well as the description and reference, when he published *Diospyros ebenum* Koenig ex Retzius. We do not know whether it was this specimen from Vahl or whether Retzius saw the specimen which Linnaeus filius must have had at Uppsala, but it must have seemed to him that the heavier and bluntly pointed leaves of the two specimens (PLATES IVb & IIIb) characterized a different plant from the one he had on hand (PLATE I) when he published the Koenig manuscript. Therefore, in his *Observationum Botanicarum* (5: 31. 1789) Retzius published the following:

88. DIOSPYROS *Ebenaster* foliis ovali-oblongis coriaceis, gemmis glabris.

Diospyros Ebenum L. Supplem. p. 440.

Hebenaster Rumph. Amb. III. p. 13. t. 6.

Habitat in sylvis circa Calcuttam. KÖNIG.

Obs. Manifeste utrasque Diospyri species confundit Nob. à LINNÈ Fil. Descriptio hujus habetur in *Suppl. l.c.* quacum conferri meretur Rumphius.

89. DIOSPYROS *Ebenum* foliis ovato-lanceolatis acuminatis, gemmis hirtis.

Diospyros glaberrima Friis Rottb. in Novis Act. Hafn. II. p. 540. tab. 5.

Diospyros Ebenum Physiogr. Saelsk. Handl. V. I. P. 3. p. 176.

Habitat in Zeylonae sylvis.

Descriptionem ab inventore concinatum vide 1. cit.

Folia circiter tripollicaria, quoad consistentiam tenuia, flexilia, obscure viridia.

A translation of Retzius' comment under *Diospyros ebenaster* appears to be the following: "Obviously he (Linnaeus filius) mixes up both species of Diospyros. The description of this (*D. ebenaster*) is found in *Suppl. l.c.* with which place Rumphius deserves to be compared."

It seems clear, therefore, that Retzius was substituting a new name, *Diospyros ebenaster*, for *D. ebenum* L. f. and that this species probably was known to him at least by a specimen in his herbarium which he had received from Vahl in 1781. Regrettably, we have not been able to locate any specimens annotated as *D. ebenaster* by Retzius. Furthermore, it appears that Retzius made two mistakes in the protologue of *D. ebenaster*. The first is the description of the buds as glabrous. All of the specimens we have seen are more or less pubescent when viewed under the magnification of the usual hand lens. Mr. George Proctor examined for us the specimen in the Linnaean herbarium and confirms that the buds on that, too, are slightly pubescent. The second mistake appears to be Retzius' error in referring this species to a Koenig collection from Calcutta. Certainly the present specimen in the Linnaean herbarium is clearly marked from Ceylon. While Koenig did collect in India, we have not seen any specimens of *Diospyros ebenum* collected by him and reported to be from Calcutta.

It should also be noted that the Rumphius reference does not apply to specimens from Calcutta. Furthermore this name is pre-Linnaean (1743) and technically need not be considered in the synonymy. However, Retzius obviously based his new specific name on this monomial. Bakhuizen van den Brink in a later publication described the Rumphius species as *Diospyros lolin* Bakhuizen van den Brink³ (Gard. Bull. Straits Settl. 7: 175. 1933 and Bull. Jard. Bot. Buitenzorg III. 15: 152. 1937).

There remains for consideration the difference in leaf shape given by Retzius in the protologues of the two species *Diospyros ebenum* and *D. ebenaster*. We have already indicated that the existing Koenig collections cited and illustrated show variation in single specimens comparable to that described by Retzius for the two species. During 1961, Mr. D. M. A. Jayaweera, director of the Royal Botanic Garden, Peradeniya, Ceylon, kindly obtained for us a suite of specimens of *D. ebenum*. A series obtained from a single tree clearly indicates that the size, shape, and texture of the leaves of the ebony do vary. The apex of the leaf blade may be acuminate, acute, obtuse, or emarginate on one branch. The texture of the blade in successive flushes of growth may be thin and membranaceous and black upon drying or the older leaves of the same branch may be coriaceous and of a lighter color after drying. The young buds on all the specimens examined were densely pubescent, while the buds in the axils of older leaves showed less pubescence.

We have concluded that *Diospyros ebenaster* is a synonym of *D. ebenum* and that the correct citation and synonymy should be:

Diospyros ebenum Koenig ex Retzius, Lund Physiogr. Sölsk. Handl. 1: 176. 1781.

Diospyros ebenum L. f. Suppl. Pl. Syst. Veg. 440. 1781.

Diospyros glaberrima Rottboell, Nye Saml. Kong. Dansk. Vidensk. Selsk. Skr. 2: 540. pl. 5. 1783.

Diospyros ebenaster Retzius, Obs. Bot. 5: 31. 1789.

The lectotype selected for *Diospyros ebenum* Koenig ex Retzius is the specimen in the Rottboell herbarium (Copenhagen).

Two monographs of the Ebenaceae published in the last century differ in their treatments of this species and its synonyms. Hiern (Trans. Cambr. Phil. Soc. 12(1, 2): 27–300. 1873) recognized *Diospyros ebenum* and *D. ebenaster* as distinct species. The treatment published by Bakhuizen is inconsistent and less than clear (Bull. Jard. Bot. Buit. III. 15: 1–515. 1936–41). His first reference to the species was "*Diospyros*

³ It should be noted here *Diospyros lolin* Bakhuizen based on *Hebenaster* Rumphius might be considered a substitute name for *Diospyros ebenaster* Retzius, which is derived from *Hebenaster* Rumphius. We believe that Retzius used *Diospyros ebenaster* as a substitute name for *Diospyros ebenum* L. f. and that the Retzius epithet might be typified by the specimen in the Linnaean herbarium. Although Bakhuizen does not discuss this point, he does regard *D. ebenaster* Retzius as a synonym of *Diospyros ebenum*. By typifying *Diospyros ebenaster* Retzius with *Diospyros ebenum* L. f. the way is clear for the use of *Diospyros lolin* Bakhuizen.

Ebenum L." in an observation (*loc. cit.* 5. 1936). In the *Addenda et Corrigenda* (*loc. cit.* 369. 1941) this is corrected to read "Koen. et L. f." which is incongruous. In the body of the monograph (*loc. cit.* 216. 1937) he uses "Diospyros Ebenum Koen." and in the literature cited the reference "Linn. f., Suppl. Syst. Plant. (1781) 440, partim" is given. There is no discussion of this conclusion that Linnaeus filius had a mixed collection and no reference to the other part of the Linnaean concept can be found in the monograph. Bakhuizen also established as new two varieties for "*D. ebenum* Koen." The first variety "*A. var. glaberrima* (L.f.) Bakh. — *D. Ebenum* Koen. typica, *D. glaberrima* Linn. f." ⁴ if accepted today must be var. *ebenum* including as it does Koenig's type. The second variety is "*B. var. timoriana* (Miq.) Bakh. — ?*D. Ebenaster* Retz., *D. reticulata* Willd. var. *timoriana* A. DC., *D. timoriana* (A. DC.) Miq." In the following discussion Bakhuizen states, "*D. Ebenaster* is a very vaguely described species collected by Koenig in the forests of Calcutta. Hence it is most probable that the plant in question is only a form of *D. Ebenum* Koen. . . . It will be better to consider *D. Ebenum* Koen. and *D. Ebenaster* Retz. forms of the same species." The range of *D. ebenum* var. *timoriana*, however, is given by Bakhuizen as Timor, Celebes, and the Malayan Peninsula — and Calcutta, if one believes the Retzius reference on which this location is based. We have not examined material of Bakhuizen's *D. ebenum* var. *timoriana*, nor have we seen authentic specimens of *D. reticulata* Willd. var. *timoriana* A. DC. We call attention to this problem and leave for others the decision as to whether this is truly a variety of *D. ebenum* or some other taxon.

The taxon which Hiern called *Diospyros ebenaster* was reported to occur in the Philippines and the Celebes and to be in such "cultivated places in tropical America, perhaps introduced" as Mexico, Brazil, Cuba and Montserrat. Bakhuizen van der Brink renamed this *Diospyros nigra* (Gmel.) Perrottet. Many contemporary floras continue to use the name *D. ebenaster* Retz. for this widely distributed species. The senior author has pointed out in a previous paper (Jour. Arnold Arb. 42: 430–436. 1961) that Bakhuizen was in error in using the epithet *D. nigra* and that two species are represented by Hiern's *D. ebenaster* which is Bakhuizen's *D. nigra*. One is a native of the Lesser Antilles of the West Indies, and this species does not appear to be introduced into cultivation outside of the Western Hemisphere. Its correct name is *D. revoluta* Vahl, the type of which was collected in Montserrat. The other taxon involved is correctly named *D. digyna* Jacquin. This plant is a native of Mexico and Central America but has been introduced into many areas of Asia and is cultivated in many botanical gardens.

In addition to the individuals mentioned in the body of this paper, we wish to express our appreciation to Dr. A. Skovsted, of Copenhagen; Dr.

⁴ It should be noted that this reference is in error. Linnaeus filius did not publish "Diospyros glaberrima" but *Diospyros ebenum*. Bakhuizen either misread the Linnaean descriptive phrase (*q.v.*) or intended to credit Rottboell as the author of the basionym.

Frances Jarrett, of Kew; and Mr. T. B. Worthington, of Ceylon, for many instances of valuable assistance during the course of this study.

ARNOLD ARBORETUM,
HARVARD UNIVERSITY
AND
NATURHISTORISKA RIKSMUSEET,
STOCKHOLM

EXPLANATION OF PLATES

PLATE I

Diospyros ebenum in the Retzius herbarium. This specimen presumably received from Rottboell along with Koenig's original manuscript.

PLATE II

Lectotype of *Diospyros ebenum* Koenig ex Retzius in the Rottboell herbarium, Copenhagen. This specimen is also the holotype of *D. glaberrima* Rottboell.

PLATE III

a, Illustration published by Rottboell for *Diospyros glaberrima* Rottboell (Nye Saml. Kong. Dansk. Vidensk. Selsk. Skr. 2: pl. 5. 1783). Notice by comparison with Plate II accuracy with which this figure was prepared. b, Type specimen of *D. ebenum* L. f. in the Linnaean herbarium.

PLATE IV

a, Specimen of *Diospyros ebenum* in the Vahl herbarium, Copenhagen, annotated by an unknown hand as "Originaleksemplar." This specimen, incorrectly attributed to "Trankebar," is in flower. b, Flowering specimen in the Retzius herbarium, Lund. This specimen, bearing the description and reference of *D. ebenum* L. f. may well represent Retzius' concept of *D. ebenaster* Retzius.

PLATE V

Annotations from specimens of *Diospyros ebenum* illustrated in Plates I, II, and IV. a, Annotation in Retzius' handwriting from specimen in Plate I. b, Annotations from lectotype in the Rottboell herbarium (PLATE II). c, Annotation from specimen in the Vahl herbarium (PLATE IVa). d, Annotation from specimen in the Retzius herbarium (PLATE IVb).



HOWARD & NORLINDH, DIOSPYROS



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Diospyros Ebenum

a

ex India orientali

HB. ROTTBÖLL

Diospyros Ebenum varum. §
Folios concoloribus oblique viridibus, lanceolato-oblongis
glabris, rigidis.
habitat in uadiis sylvae prope Japnapetnam, &
ad Lata mortuum Trinqueballefium.

b

Diospyros Ebenum varum.

c

habitat in sylvae Zeylanicae copiose

Diospyros Ebenum

Koenig misit

d

Diospyros Ebenum glaberrima, foliis oblongis utrinque
glaberrimis coriaceis venosa reticulatis, floribus axillaribus
foliis sessilibus. Suppl. pl. p. 443. n. 5.

Habitat in Zeylana. §.

Specimen ibi lectum a DD. Koenig misit Buxton. Descriptio G. Vahl, sans 1781.



Howard, Richard A. and Norlindh, Tycho. 1962. "The Typification of *Diospyros ebenum* and *Diospyros ebenaster*." *Journal of the Arnold Arboretum* 43(1), 94–107. <https://doi.org/10.5962/p.185637>.

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