

A NEW SPECIES AND HYBRID IN THE ST HELENA ENDEMIC GENUS *TROCHETIOPSIS*

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The discovery in historic herbaria of an overlooked extinct endemic from the island of St Helena is reported. The first descriptions of St Helena Ebony, *Trochetiopsis melanoxyton* (Sterculiaceae), and the specimens associated with them in the herbaria of Oxford University (OXF) and the Natural History Museum, London (BM), do not match living and later-collected material, and instead represent an extinct plant. A new name is therefore needed for living St Helena Ebony: *Trochetiopsis ebenus* Cronk *sp. nov.* The hybrid between this species and the related *T. erythroxyton* is also described here: *Trochetiopsis* × *benjamini* Cronk *hybr. nov.* (Sterculiaceae), and chromosome counts of $2n=40$ are reported for the hybrid and both parents for the first time. The re-assessment of the extinct ebony emphasizes the importance of historic herbarium collections for the study of species extinction.

INTRODUCTION

In 1601 and 1610, at the beginning and end of his voyage to the East Indies, François Pyrard de Laval touched at St Helena, an isolated island in the South Atlantic Ocean. He wrote: 'Sur le haut de la montagne il y a force arbre d'Ebène, et de bois de Rose' (Pyrard, 1679; Gray, 1890) — the first mention in print of species of *Trochetiopsis* (i.e. St Helena Redwood and St Helena Ebony). The island was settled in 1659, and the settlers of the English East India Company immediately put these ecologically important species to use. Redwood they used as timber for houses and tanbark for cowhides (Cronk, 1983), and they used the ebony to burn lime in the manufacture of mortar for their houses (Cronk, 1986). Meanwhile, in England, Plukenet, Ray and Sloane were creating the intellectual climate which encouraged travellers to collect plants from the East India run, and Plukenet described redwood and ebony with phrase names under *Alcea* in 1700. Banks and Solander, with Cook on the *Endeavour* voyage, collected redwood and ebony but published names for neither. The Forsters, on Cook's *Resolution* voyage, were able to find only the redwood (the ebony being very rare by then) and described it as *Pentapetes erythroxyton*. Solander's manuscript name for ebony, *Pentapetes melanoxyton*, was not validated until 1807. Thereafter, redwood and ebony were shuffled between the genera *Dombeya*, *Melhania* and *Pentapetes* until Bentham (1862) recognized the similarity between the St Helena plants and De Candolle's genus *Trochetia* from the Mascarenes (the difference being in the number of stamens). Over a century later, in preparing the account of *Trochetia*

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TABLE 1. Misapplied names of *Trochetiopsis ebenus* Cronk. The relationship of these applications to the names applied to other species is shown in Table 2.

<i>Dombeya erythroxylo</i> n sensu Andrews in <i>Bot. Repos.</i> 6: t.389 (1804), non <i>D. erythroxylo</i> n (G. Forst.) Willd., <i>Sp. Pl.</i> 3: 725 (1800).
<i>Pentapetes erythroxylo</i> n sensu Sims in <i>Bot. Mag.</i> 25: t.1000 (1807), non <i>P. erythroxylo</i> n G. Forst. in <i>Comment. Soc. Sci. Goett.</i> 9: 61 (1787).
<i>Dombeya melanoxylo</i> n (R. Br. in W. T. Aiton) Roxb. in Beatson, <i>Tracts</i> : 307 (1816), sensu Roxburgh.
<i>Trochetia melanoxylo</i> n (R. Br. in W. T. Aiton) Benth. in <i>J. Linn. Soc.</i> 6: 116 (1862), sensu Bentham.
<i>Melhanian melanoxylo</i> n sensu Melliss, <i>St Helena</i> : 245 (1875), non R. Br. in W. T. Aiton, <i>Hort. Kew. ed. 2</i> , 4: 146 (1812).
<i>Trochetia erythroxylo</i> n sensu Mönkmeyer in <i>Gartenflora</i> 39: 94 (1890), non <i>Trochetia erythroxylo</i> n (G. Forst.) Benth. in <i>J. Linn. Soc.</i> 6: 116 (1862).
<i>Trochetiopsis melanoxylo</i> n (R. Br. in W. T. Aiton) Marais in <i>Kew Bull.</i> 36: 645 (1981), sensu Marais; Cronk in <i>Biol. Conserv.</i> 35: 159–172 (1986).

for the *Flore des Mascareignes*, Marais wished to treat *Trochetia* as a Mascarene endemic genus and so separated the St Helena species by founding the genus *Trochetiopsis* for them (Marais, 1981). All these authors assumed that there were only two taxa in this group from St Helena. However, in preparing an endemic Flora of St Helena, it became clear that there were three quite distinct taxa, and that their rarity, unfamiliarity and the paucity of specimens had led botanists to pack three taxa into two names.

A NEW NAME FOR THE EXTANT ST HELENA EBONY

*Trochetiopsis melanoxylo*n sens. str. is known only from five specimens collected before 1800, which do not match recent specimens of ebony from St Helena. It is an extinct species. The extant ebony is therefore newly described at specific rank. This rank is chosen as the differences between it and *T. melanoxylo*n sens. str. are not only well marked and consistent, without intermediates, but they are also as great as or greater than the differences between extant St Helena Ebony and Redwood (*T. erythroxylo*n). The pronounced xeromorphy of *T. melanoxylo*n sens. str., and the different history of collecting, indicates that there were probably marked ecological and geographical differences between the two types, although as one is now extinct this cannot be verified. Tables 1 and 2 illustrate the nomenclatural complications of squeezing three taxa into two names. The epithet 'melanoxylo'n should be used only for those plants with small flowers (c.1cm diam.), white stellate indumentum on the upper surface of the leaf, and sepals not appressed sericeous inside. Table 3 gives the salient differences between all three species of *Trochetiopsis*.

TABLE 2. Application of the two names to the three *Trochetiopsis* taxa. For further details see the synonymy under *T. melanoxyton*, and Table 1 for the misapplied names of *T. ebenus*.

Year	<i>melanoxyton</i>	<i>ebenus</i>	<i>erythroxyton</i>
1700	<i>A...argentea...</i> Plukenet		<i>A...rubicundo</i> Plukenet
1704	<i>A...argentea...</i> Ray		<i>A...rubicundo</i> Ray
1787			<i>P. erythroxyton</i> G. Forst.
1789			<i>P. erythroxyton</i> Aiton
1800			<i>D. erythroxyton</i> Willd.
1804		<i>D. erythroxyton</i> Andrews	
1807	<i>P. melanoxyton</i> Sol.	<i>P. erythroxyton</i> Sims	
1812	<i>M. melanoxyton</i> Ait. f.	? <i>M. erythroxyton</i> Ait. f.	
1816	[By now long extinct]	<i>D. melanoxyton</i> Roxb.	<i>D. erythroxyton</i> Roxb.
1862		<i>T. melanoxyton</i> Benth.	<i>T. erythroxyton</i> Benth.
1875		<i>M. melanoxyton</i> Melliss	<i>M. erythroxyton</i> Melliss
1890		<i>T. erythroxyton</i> Mönkm.	
1982		<i>Ts. melanoxyton</i> Marais	<i>Ts. erythroxyton</i> Marais
1995	<i>Ts. melanoxyton</i>	<i>Ts. ebenus</i>	<i>Ts. erythroxyton</i>

1. *Trochetiopsis melanoxyton* (Sol. ex Sims) Marais [as (R. Br. in W. T. Aiton) Marais] in *Kew Bull.* 36(3): 645 (1981), *nomen sed non planta*. Type: St Helena, *Banks & Solander* s.n. (holo. BM!).

Basionym: *Pentapetes melanoxyton* Sol. ex Sims in *Bot. Mag.* sub t.1000 (1807).

Syn.: *Melhania melanoxyton* R. Br. ex W. T. Aiton, *Hort. Kew. ed. 2*, 4: 146 (1812), *nom. superfl.* (homotypic).

[‘*Alcea arbor Populnea fronde tota argentea quinquecapsularis, seu Ebenus viridis*’ Plukenet, *Alm. Mant.*: t.333, f.5 (1700); Ray, *Hist. Pl.* 3 (Suppl.): 520 (1704)].

Extinct. Probably a small *shrub*, smaller in all parts than *T. ebenus*. *Leaves* small, (2.5–)3.5(–5) × (1–)1.5(–2)cm, acuminate, entire, covered with white stellate hairs above, densely covered below, petioles (1–)1.5(–2.5)cm. *Inflorescence* (1–)2(–3) flowered, peduncles 2.5–6cm, pedicels 0.5–1.5cm. *Flowers* small, 12 × 10mm; *sepals* sparsely to densely stellate-hairy outside, glabrous on inside except for a small patch of dense lanate hairs at base, completely lacking appressed sericeous hairs, 10 × 3mm; *petals* bluntly elliptical, 10–12 × 5mm, scarcely exceeding sepals. *Capsule* 10–12 × 8–10mm, 5(–6) locular, beaked. *Seeds* smooth, mottled grey-brown, 2.5 × 1.5mm.

Nomenclature and typification. This delimitation of *T. melanoxyton* automatically revives the neglected name *Pentapetes melanoxyton* Sol. ex Sims. This name had been previously regarded as a *nomen confusum*, as it appears in an account of *T. melanoxyton* auct. (*T. ebenus* Cronk) which was erroneously given the name *T. erythroxyton*. The protologue reads: ‘... there occurs another species [in St Helena] with leaves quite entire at the margin, called Black-Wood or Ebony (*Pentapetes*

TABLE 3. Synoptic table of status and characters of the three species of *Trochetiopsis*.

	<i>T. melanoxyton</i>	<i>T. ebenus</i>	<i>T. erythroxyton</i>
Status	Extinct	Living (2 plants in the wild)	Living (extinct in wild)
Habit	?Small shrub	Shrub formerly to 3m, now semi-prostrate, up to 1m	Formerly a tree to 6m, now a shrub up to 2m
Wood	?Black	Black	Reddish-brown
Leaves	c.3.5 × 1.5cm, entire	c.9 × 4.5cm, subentire to subcrenulate	c.10 × 4.5cm, crenulate
Leaf surface	Hoary with white stellate hairs above, densely covered below	Dark green and glabrous above, pubescent with dense pale fawn stellate hairs below	Mid-green and glabrous above, pubescent with white stellate hairs below
Flowers	c.12 × 10mm, suberect	c.40 × 40mm, patent	c.50 × 40mm, drooping
Sepals	Glabrous on inside except for a small patch of dense lanate hairs at base, completely lacking appressed sericeous hairs	With appressed sericeous hairs inside	With appressed sericeous hairs inside
Petals	c.10–12 × 5mm, bluntly elliptical, scarcely exceeding sepals	c.40 × 30mm, obtriangular; 2 × as long as sepals	c.50 × 30mm obtriangular, 2 × as long as sepals
Capsule	c.11 × 9mm, beaked	c.15 × 9mm, obtuse	c.15 × 10mm, obtuse
Seeds	c.2.5 × 1.5mm, smooth, mottled grey-brown	c.4 × 3mm, angular, dark greyish-brown	c.4 × 3mm, angular, grey-brown

Melanoxyton, Solander MSS.) which is an undoubted congener of our plant'. The Solander manuscript (Solander (unpublished), in the library of the Natural History Museum) refers (p. 41) to Plukenet's 'Alcea arbor populnea fronde tota argentea' which is undoubtedly our plant, and elsewhere (p. 68) to *Pentapetes melanoxyton*. In addition, the only Banks & Solander specimen (the only specimen Solander is likely to have consulted in writing his manuscript florula) is of *T. melanoxyton* sens. str. Robert Brown's description in Aiton (1812) is much fuller and clearly also refers to *T. melanoxyton* sens. str., and is also likely to have been based on an examination of the Banks & Solander specimen. The specimen labelled 'ex Hort. Kew. 1800' (BM) was taken for Brown's type by Marais (1981), but it disagrees in every important particular with Brown's description, and belongs to *T. ebenus*.

History. This species probably became extinct at the end of the 18th century, but early naturalists had collected this dwarf kind of ebony, which was therefore probably growing on cliffs near Jamestown, where visitors would have come ashore. It was

first described by Leonard Plukenet (1700: 6, t.333, fig. 5) as his 'Alcea arbor Populnea fronde tota argentea quinquecapsularis, seu Ebenus viridis'. His specimen is preserved in the Sloane Herbarium (Dandy, 1958). Burchell and Roxburgh somewhat later used the vernacular name 'Dwarf Ebony', apparently for cliff plants of *T. ebenus*, but this name may have originated as a name for this extinct plant. R. Brown in Aiton (1812) suggests that true *T. melanoxyton* (*Melhania melanoxyton*) was introduced to cultivation in England around 1800, and his short description distinguishes it well from *T. ebenus*. However, his description was probably based on the Banks & Solander herbarium specimen, and there is no other record of the plant in Brown's description being cultivated.

The importance of the overlooked species. One of the two characters on which Marais (1981) founded the genus *Trochetiopsis* was the appressed sericeous covering of the inside of the sepals. *T. melanoxyton* sens. str., however, has glabrous interior surfaces of the sepals and in this character does not differ from the Mascarene species of *Trochetia*. The extinct species therefore invites reappraisal of Bentham's treatment that included the St Helena species in *Trochetia*. The St Helena and Mascarene plants have much in common, including secondary pollen presentation on the petals (Cronk, unpublished). The two genera are now separated only on stamen number.

In its characters generally (see Table 3) *Trochetiopsis melanoxyton* sens. str. completes an ecological series in the genus from (1) *T. erythroxyton* (redwood) of the wet uplands (wet tree-fern thicket above 600m), through (2) *T. ebenus* (ebony) of the dry lands of the SW (mid-altitudes), to (3) the xeromorphic *T. melanoxyton* sens. str. (dwarf ebony), probably in the arid north of St Helena in the rain shadow of the central ridge (coastal areas below 400m). This series may be the result of adaptive radiation during the Pleistocene when the climate of St Helena appears to have become drier, although the genus dates back on the island to the Miocene (Cronk, 1990).

The discovery is also of interest as it demonstrates the value of historic collections in understanding recent history and extinction. Clifford et al. (1990) have suggested that herbaria could be thinned radically without compromising their scientific value, an idea that has been vigorously opposed (Gyllenhaal et al., 1990; West & Conn, 1990). The current accelerated pace of ecological change on continents may be considered analogous to the ecological catastrophe that overtook St Helena after the island's discovery in 1502, accentuated by settlement in 1659. Herbarium collections in the press and drying oven today will be the historic collections of the future. Like the travellers of 1700, we have no means of knowing what will be interesting 300 years from now, but to paraphrase J. W. Diamond (1990) 'old dead plants are valuable'.

Specimens examined. The five specimens cited below are the only ones so far known of this extinct plant. The Oxford specimens in herb. Du Bois (Clokje, 1964) were collected by Captain Poirier, a French Huguenot who arrived on the island with his family in 1689 and became Governor of St Helena in 1697 until his death in 1707. He sent the specimens to Charles Du Bois FRS (1665–1740), a member of the Court of Directors of the English East India Company which administered the island by royal charter.

ST HELENA. Ex Herb. Plukenet in Herb. Sloan., H.S. 87, fol. 24, 'Cistus Arbor Populnea fronde argenteus. Insula Stae Helenae, ubi ab Anglis' Blackwood & Ebony i.e. 'melanoxyton

& Ebenum vulgo nuncupalur', c.1698, *Stonestreet* s.n. (BM-SL); ex Herb. Plukenet in Herb. Sloan., H.S. 92, fol. 3, 'Cistoides arbor Populneo frondo argentea s. Ebenus vera Insul. St. Helena Lignum nigrum et Ebonus vulgo nuncupalur vide versa', c.1700, *Unknown collector* s.n. (BM-SL); Ebony, 1701, *S. Poirier* s.n. [herb. C. Du Bois] (OXF); Ebony, 1702, *S. Poirier* s.n. [herb. C. Du Bois] (OXF); May 1772, *Banks & Solander* s.n. [as *Pentapetes melanoxylo* Inscr.] (holo. BM).

2. *Trochetiopsis ebenus* Cronk, sp. nov.

Vivens. Folia *T. melanoxylo* similis, sed majora, (3–)7–11 cm longa, (1.5–)3.5–5.5 cm lata, subintegra vel subcrenulata, breviter acuminata, supra atro-viridia et glabra, infra pallidis pilis stellatis instructa. *Inflorescentia* 1–2(–3) floribus, pedunculis (4–)6–10 cm, pedicellis 5–7 mm. *Flores* *T. melanoxylo* similes, sed majores, 30–50 mm longi, 30–50 mm lati; *sepalis* 20–25 longis, 3–4 mm latis, extus pilis stellatis, intus pilis adpressis sericeis; *petalis* (15–)40 mm longis, (10–)30 mm latis, obtriangulatis; sepala dimidio breviora petalis. *Capsula* 15 mm longa, 9 mm lata, obtusa. *Semina* 4 mm longa, 3 mm lata, angulata, atro-griseo-brunnea. Typus: St Helena, 1980, *Cronk & Benjamin* s.n. (holo. CGE).

Extant. Leaves like *T. melanoxylo* but larger, (3–)7–11 × (1.5–)3.5–5.5 cm, subentire to subcrenulate, shortly acuminate, dark green and glabrous above, pubescent with dense pale stellate hairs below. *Inflorescence* 1–2(–3) flowered; peduncles (4–)6–10 cm; pedicels 5–7 mm. *Flowers* like *T. melanoxylo* but larger, 30–50 × 30–50 mm; *sepals* 20–25 × 3–4 mm, stellate-hairy outside, with appressed sericeous hairs inside; *petals* (15–)40 × (10–)30 mm, obtriangular; sepals half as long as petals. *Capsule* 15 × 9 mm, 5-locular, obtuse. *Seeds* 4 × 3 mm, angular, dark greyish-brown.

It was formerly a small tree up to 4–5 m, but is now a low shrub only. The wood is hard and black, sinking in water, and this is the usual 'Ebony' of St Helena. Formerly common in dry places, 200–500 m, especially in the southwestern part of the island, it declined, principally through goat grazing, to near extinction at the end of the 18th century. Thought by Melliss to be extinct, it was rediscovered as two plants on a cliff near the Asses Ears (Cronk, 1986). The wood was used in the 19th century for turnery and ornament-making. Boer prisoners of war at the turn of the 20th century introduced the craft of inlay work and the wood is still used in this fashion, hence the epithet, from the latin noun *hebenus*, ebony (as in *Brya ebenus* DC.).

History. Sims (1807) implies that it was introduced to British gardens by Sir Joseph Banks (who called at St Helena during Cook's first voyage (Hooker, 1896)) in 1772, but this is an error for true *Trochetiopsis erythroxylo*, which Banks apparently did introduce, and which is probably the plant that Aiton (1789) was growing at Kew as *Pentapetes erythroxylo*. In fact, Banks appears never to have seen *T. ebenus*, collecting only *T. melanoxylo*. However, Andrews (1804) was sent this 'most desirable of hot-house plants' from T. Evans of Stepney in 1803 and in 1804 saw it 'beautifully in bloom' in the garden of Hon. Charles Greville at Paddington. By 1807 Reginald Whitley was growing it in his nursery on the Cromwell Road (Sims, 1807), confusing it with *Pentapetes erythroxylo*. (Later, in 1810, Whitley bought

the Burchell Nursery in Fulham.) By this time true *T. erythroxylo*n had been lost to cultivation, and the name *erythroxylo*n was applied to *T. ebenus*. *Erythroxylo*n is the epithet used by Andrews (1804) and Sims (1807) to accompany illustrations undoubtedly of *T. ebenus*. *T. ebenus* is likely to have been the plant grown at Kew (Aiton, 1812) around this time as *Melhan*ia *erythroxylo*n. It remained in cultivation throughout the 19th century, although it continued to be confusingly and incorrectly labelled as *erythroxylo*n (Mönkmeyer, 1890; Watson, 1890), before becoming extinct in cultivation. The various names that have been misapplied to this species are listed in Tables 1 and 2.

Specimens examined. ST HELENA. 1773, 'Robson' [J. Robertson?] s.n. (BM); 1805–1810, *Burchell* 72 (K); *Burchell* s.n., [ex herb. Lambert] (K); 1813–14, *Roxburgh* s.n. (BM); near Asses Ears: only two bushes left on a steep inaccessible cliff, x 1980, *Cronk & Benjamin* s.n. (holo. CGE); Pounceys: plant from ebony cuttings (original), upper bush, 24 viii 1986, *Cronk* 481 (CGE). CULTIVATION. Ex hort. Kew., 1800, *Unknown collector* s.n. (BM); ex hort. Kew., cultivated in the Cape House, April 1890, *Unknown collector* [W. Watson?] s.n. [scraps only] (K).

A NEW HYBRID *TROCHETIOPSIS*

In 1983 I examined a batch of St Helena Ebony seedlings raised at Pounceys, St Helena. Five of the seedlings were clearly anomalous, and the suspicion that they were of hybrid origin has been confirmed by their complete morphological intermediacy and hybrid vigour, which is very striking. One of the original F1 hybrids was taken to the University of Cambridge Botanic Garden in March 1983 and the rest were planted out at Pounceys, St Helena. Seedlings and cuttings from these have been planted on the central ridge, High Peak, Ebony Plain, Levelwood and in gardens. It has also been cultivated in botanic gardens outside St Helena including the Royal Botanic Gardens, Kew and the Cambridge Botanic Garden, UK. The name celebrates George Benjamin of Pounceys, St Helena who raised the hybrid from seeds gathered in November 1982 from a plant of ebony (*T. ebenus* Cronk) planted beside the redwood (*T. erythroxylo*n (G. Forst.) Marais) bush at Scotland, St Helena (now dead). Pollen may have been transferred by honey bees (*Apis mellifera*) which were seen to be visiting the flowers.

Trochetiopsis × *benjamini* Cronk, hybr. nov.

Hybrid formula: *T. ebenus* Cronk (female) × *Trochetiopsis erythroxylo*n (G. Forst.) Marais (male).

Frutex (vel arbor) intermedius in omnibus characteribus inter *Trochetiopsem erythroxylo*n et *Trochetiopsem ebenus*. Caules pilis stellatis albis vel pallidis. Folia subintegra, medio-viridia, infra pilis stellatis pallidis instructa. Flores 1–2 in pedunculo, leniter erubescens. Pedunculus subpatens. Staminodia carnea. Perfecte fertilis, $2n=40$ similis ambobus parentibus. Ab incolis Sanctae Helenae 'Rebony' nominatus. Typus: *Cronk* 480 (holo. CGE).

Intermediate in all respects between St Helena Redwood and Ebony. Stems with white or pale stellate hairs. Leaves subentire, mid-green, with pale stellate hairs beneath. Flowers 1–2 on peduncle, flushing pink weakly on fading. Peduncle subpatent. Stamines carnosous. Perfectly fertile, $2n=40$ like both parents. Vernacular name 'Rebony'.

The significance of the hybrid. The crossability of the two extant species of *Trochetiopsis*, and the fertility of the resultant hybrid, indicates that the barrier to gene exchange during speciation was entirely ecological and geographical: *Trochetiopsis ebenus* grew in dry places below 500m, while *Trochetiopsis erythroxyton* grew in wetter habitats above 600m (Cronk, 1986, 1989). Hybridization occurred when human intervention broke down the ecological barriers through cultivation. *Trochetiopsis erythroxyton* is extinct in the wild and survives only in cultivation, and the occurrence of hybridization poses an extra threat to the survival of the pure species.

Specimens examined. ST HELENA. Pounceys: Rebony no. 3 of the original seedling batch, cultivated at Pounceys, St Helena, 24 viii 1986, Cronk 480 (holo. CGE); Pounceys: two flowers from one of five hybrids grown at Pounceys, from seed collected from *T. melanoxyton* [i.e. *T. ebenus*] at Scotland, St Helena in c.Nov. 1982, 3 viii 1983, Benjamin s.n. (CGE).

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REFERENCES

- AITON, W. (1789). *Hortus Kewensis; or, A Catalogue of the plants cultivated in the Royal Botanic Gardens at Kew* (Ed. 1) 2. London.
- AITON, W. T. (1812). *Hortus Kewensis* (Ed. 2, enlarged by W. T. Aiton) 4. London.
- ANDREWS, H. (1804). *Dombeya erythroxyton*. *Bot. Repos.* 6: t.389. [*Trochetiopsis ebenus*.]
- BENTHAM, G. (1862). Notes on *Malvaceae* and *Sterculiaceae*. *J. Linn. Soc., Bot.* 6: 97–123.
- CLIFFORD, H. T., ROGERS, R. W. & DETTMAN, M. E. (1990). Where now for taxonomy? *Nature* 346: 602.
- CLOKIE, H. N. (1964). *An Account of the Herbaria of the Department of Botany in the University of Oxford*. Oxford.
- CRONK, Q. C. B. (1983). The decline of the redwood *Trochetiopsis erythroxyton* in St Helena. *Biol. Conserv.* 26: 163–174.
- CRONK, Q. C. B. (1986). The decline of the St Helena Ebony *Trochetiopsis melanoxyton*. *Biol. Conserv.* 35: 159–172. [*Trochetiopsis ebenus*.]
- CRONK, Q. C. B. (1989). The past and present vegetation of St Helena. *J. Biogeogr.* 16: 47–64.
- CRONK, Q. C. B. (1990). The history of the endemic flora of St Helena: late Miocene

-
- Trochetiopsis*-like pollen from St Helena and the origin of *Trochetiopsis*. *New Phytol.* 114: 159–165.
- DANDY, J. E. (1958). *The Sloane Herbarium*. London.
- DIAMOND, J. M. (1990). Molecular evolution—old dead rats are valuable. *Nature* 347: 334–335.
- GRAY, A. (transl. and ed.) (1890). *The Voyage of François Pyrard of Laval to the East Indies, the Maldives, the Moluccas and Brazil*. London.
- GYLLENHAAL, C., SOEJARTO, D. D., FARNSWORTH, N. R. & HUFT, M. (1990). The value of herbaria. *Nature* 347: 704.
- HOOKER, J. D. (1896). (ed.) *Journal of the Right Hon. Sir Joseph Banks during Captain Cook's first voyage in H.M.S. Endeavour*. London.
- MARAIS, W. (1981). *Trochetiopsis* (Sterculiaceae), a new genus from St Helena. *Kew Bull.* 36: 645–646.
- MÖNKMEYER, W. (1890). Notizen über den botanischen Garten in Göttingen. *Gartenflora* 39: 94–103. [*Trochetiopsis ebenus* as '*Trochetia erythroxyton*' on p. 96 (Abb. 17) and p. 97.]
- PLUKENET, L. (1700). *Almagesti botanici mantissa plantarum novissime detectarum ultra Millenarium numerum complectens*. London.
- PYRARD, F. (1679) *Voyage de F. Pyrard de Laval. Nouvelle edition, augmentée ... par Du Val*. Paris.
- SIMS, J. (1807). *Pentapetes erythroxyton*. St Helena Red-Wood. *Curtis's Botanical Magazine* 25: t.1000. [*Trochetiopsis ebenus*.]
- SOLANDER, D. (manuscript). *Plantae Insulae Sanctae Helenae*. Manuscript flora in the Botany Library, Natural History Museum [British Museum (Natural History).]
- WATSON, W. (1890). A Survivor. *Gardeners' Chronicle*, Ser. 3, 7: 512–513.
- WEST, J. G. & CONN, B. J. (1990). In defence of taxonomy. *Nature* 347: 222.