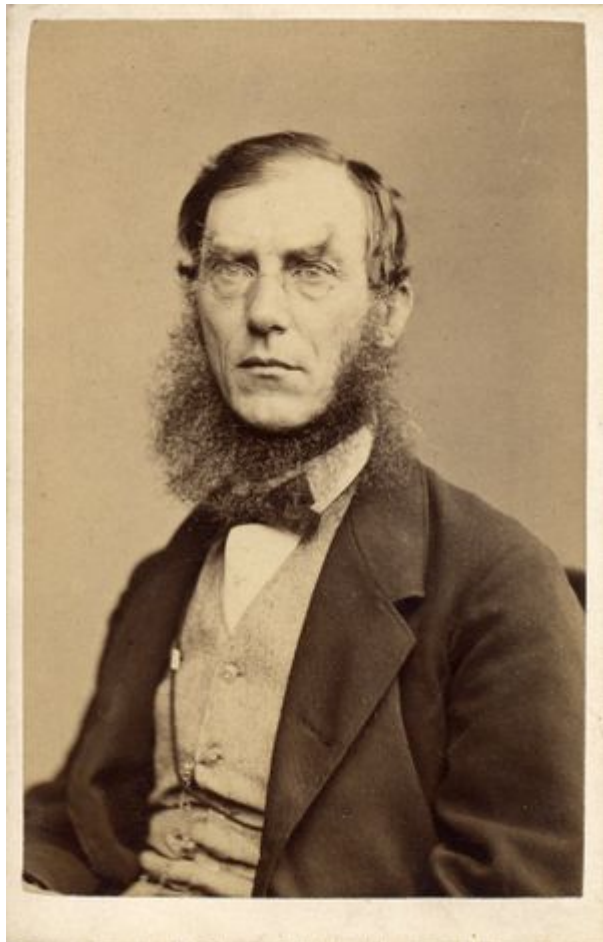


Joseph D. Hooker slide collection

From Earthwise

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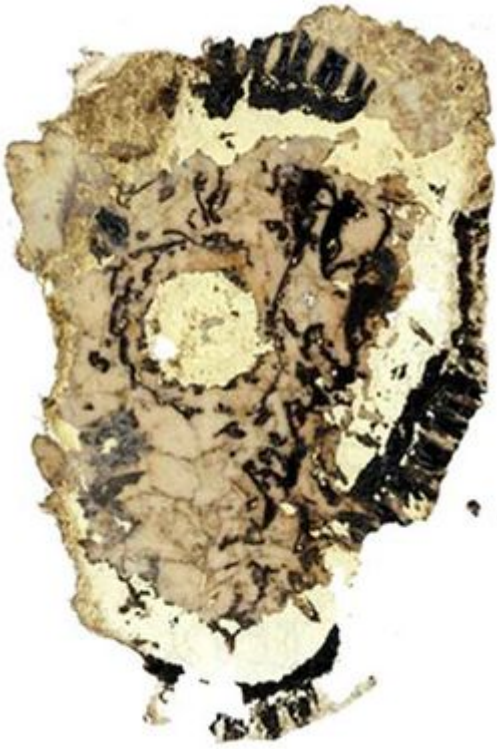
By H. J. Falcon-Lang



J D Hooker



'The Bandit's Lair' from about 1885; newly recruited field staff attended a workshop in the North West Highlands.



This slide shows the stem of a seed fern, possibly [Lepidodendron](#), collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.



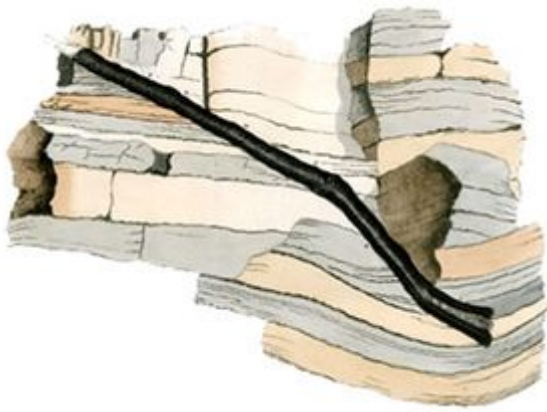
HMS Erebus: originally a warship (bomb vessel), it was refitted as an exploration vessel for Antarctic service.



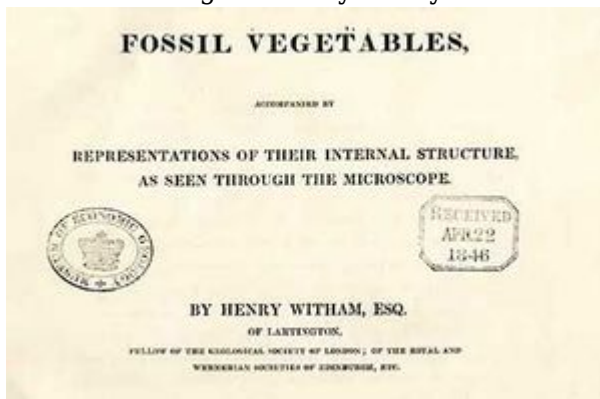
J D Hooker



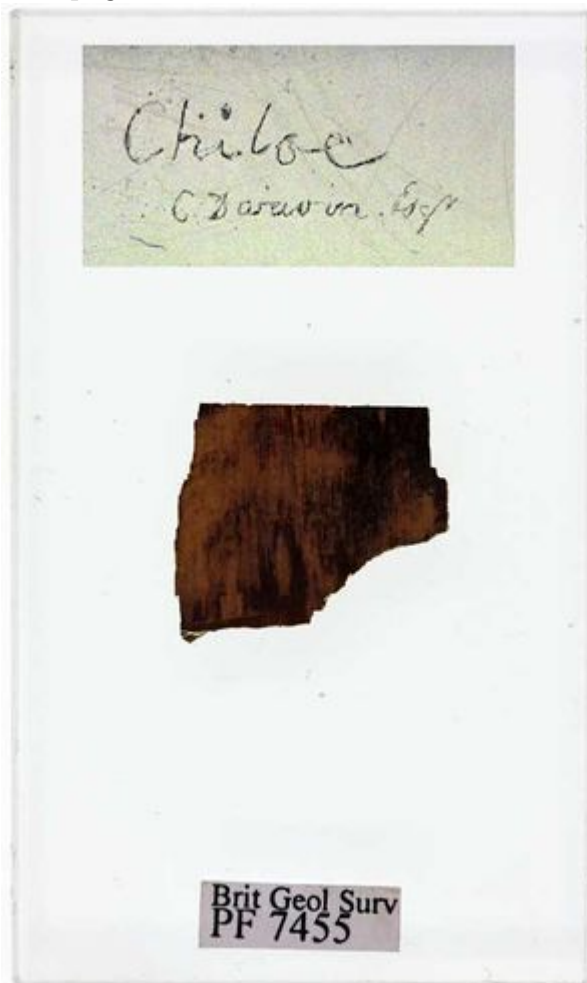
File:P775757; Australia outline.



Fossil tree in Craigneith Quarry. Reproduced from Fossil Vegetables by Henry Witham.



File:Fossil Vegetables... by Henry Witham, Title page.



This section of fossil wood.



Museum of Practical Geology in Jermyn Street, Piccadilly, London.

□

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J D Hooker slide collection

Dr Howard Falcon-Lang, a palaeontologist at Royal Holloway, University of London, describes how he rediscovered the Joseph Hooker Collection slides. [Youtube video](#). Dr Mike

Howe, BGS Chief Curator, explains how the Hooker collection was curated in 1846 about two years before the Survey's formal numbering system was established in 1848. [Youtube video](#)

The British Geological Survey is home to more than three million fossils collected over two centuries and catalogued with enormous precision.

However, as generations of curators have come and gone, a few collections have lain forgotten and their significance has gradually passed out of memory.

Recently, a collection of 'unregistered fossil plants' was found in one of the Survey's windowless vaults in Keyworth, in central England.

These comprise hundreds of beautiful thin sections of fossil wood dating from the early nineteenth century.

The collection was assembled by botanist Joseph Hooker (Darwin's best friend) while he was briefly employed by the Survey in 1846.

The material includes some of the first thin sections ever made by William Nicol, the pioneer of petrography, in the late 1820s, as well as specimens picked up by Darwin and Hooker on their round the world voyages in the 1830s and 1840s.

The collection is particularly interesting in the way it sheds light on the vibrant and sometimes murky world of early nineteenth century science. This is the story of these fascinating fossils:

Joseph Hooker, botanist to the Survey

Joseph Hooker was one of the great botanists of the nineteenth century, long-time director of Kew Gardens, and close friend of Charles Darwin. Hooker was briefly employed by the BGS from February 1846 to October 1847; he was still in his late twenties and just at the very start of his illustrious career.

Some of Hooker's 'unregistered' slides were re-discovered in 2011. The slide labels had been directly inscribed onto the glass using a diamond tool, and a few were signed, 'J.D.H. 1846'. These initials stand for Joseph Dalton Hooker (1817-1911).

Hooker had made his name as an intrepid botanical explorer in the course of a circum-Antarctic voyage on HMS Erebus from 1839-1843.

At the Survey, his work dealt with the fossil plants of the Carboniferous Coal Measures, a task that he later confided to Darwin that he both loved and hated.

BGS jobs boom

In those days, the Geological Survey of Great Britain was a young, vibrant organisation. Its roots had been established in 1835 under the directorship of Henry de la Beche (1796-1855), but the organisation only really took off in 1845, when a parliamentary act was passed to produce a comprehensive geological map of Great Britain.

That led to a spate of new hirings, and soon a small team of geologists, palaeontologists, and surveyors — mostly in their 20s and 30s — were out in the field, scrambling over Britain's diverse rock formations.

One of these new employees was Hooker, who spent the summer of 1846 investigating the Bristol, Somerset and South Wales coalfields.

However, in the autumn of 1846, he informed Darwin that he was back at the Survey's Museum of Economic Geology in Charing Cross, London. Here he was hard at work cataloguing specimens, almost certainly including those found in the 'unregistered' fossil plant collection today.

Roots, trunks, branches and cones

Seed fern, possibly *Lepidodendron*. This slide shows the stem of a seed fern, possibly *Lepidodendron*, collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.

The largest proportion of Hooker's 'unregistered' collection comprises sections of Coal Measure plants from the Wolverhampton district and in the vicinity of Merthyr, South Wales.

These had been prepared from material that Hooker and his Geological Survey colleagues had obtained earlier that year.

The slides include beautiful examples of roots, trunks, branches, and 'cones' of the giant clubmoss tree, *Lepidodendron* — the iconic plant that dominated the Carboniferous coal swamps.

The names of donors inscribed on the slides show that Hooker's work at the Survey relied heavily on the generosity of a huge number of amateur collectors — not unlike today.

Hooker published his findings in a three-part series that appeared as the first Memoir of the Geological Survey in 1848.

However, by the time that this weighty tome had come to press, he had already relinquished his employment, having embarked on his next botanical voyage of discovery, this time to India and the Himalayas.

Voyages of discovery

Amongst the remaining slides that Hooker assembled in 1846 are specimens of fossil wood that he had collected in the course of his circum-Antarctic explorations onboard HMS Erebus.

Some of these are from the Kerguelen Islands, desolate volcanic rocks positioned at 49°S in the wild southern extremities of the Indian Ocean, where Hooker spent three months in the spring of 1840.

The geology of the Kerguelan Islands is dominated by thick successions of Tertiary basalt flows, and Hooker wrote that, 'throughout many of the lava-streams are found prostrate trunks of fossil trees of no mean growth'.

James Clark Ross (1800–1862), who famously led the expedition, added that one of these trees 'exceeding seven feet in circumference was dug out and sent to England'. Perhaps this is one of the fossils now in the Survey's collection?

Southern Indian Ocean travels

Hooker informed Darwin that he had this specimen sectioned in December 1844. In the early twentieth century, Cambridge palaeobotanists, A C Seward and E A N Arber sectioned more of Hooker's fossil wood specimens from the Kerguelen Islands, and identified them as conifers related

to the modern-day monkey puzzle and cypress.

Many geologists now regard the Kerguelan Plateau as a kind of 'Atlantis', which was covered by subtropical vegetation throughout much of the Tertiary, before largely sinking below the waves.

From the desolation of the Kerguelan Islands, Hooker sailed onto Tasmania in south-east Australia, arriving in August 1840. There, local people took him to see 'vast quantities of silicified wood' scattered over the Macquarie Plains.

Amongst these was a massive fossil tree buried upright in basalt lava flows of Tertiary age, measuring some three feet in diameter and nine feet high. With some difficulty, this specimen of 'most beautiful agate' was shipped back to England, where it was showcased at the Great Exhibition of 1851, before going to its permanent home at the British Museum (Natural History) in London — now simply the Natural History Museum.

Fifty years later, Arber named the specimen, *Cupressinoxylon hookeri* in honour of its discoverer.

Van Diemen's Land

Australia outline (P776133: a cross-section of a fossil tree from Scarborough, Yorkshire, England). In Hooker's 'unregistered' collection at the Geological Survey, there are fifteen sections of Tasmanian fossil wood, mostly labeled Van Diemen's Land (the official name of the island until 1856). Exactly how they relate to the giant tree, if at all, is unknown.

Fossils from a slightly earlier round-the-world voyage are also stored with Hooker's specimens at the Geological Survey. These include at least two sections of fossil wood obtained by Charles Darwin in the course of his famous voyage of the HMS Beagle, from 1831-1836.

In December 1834, Darwin explored the northern part of Chiloe Island, Chile, under conditions of persistent rain. Far from enamored by the place, he had written that, 'Chiloe, from its climate is a miserable hole'.

However, in the course of his visit, Darwin encountered 'many fragments of black lignite and silicified and pyritous wood, often embedded close together', probably from Tertiary deposits along the coast.

He shipped these specimens back to Robert Brown (1773-1858), Keeper of the Botany Department at the British Museum (Natural History), who had them cut and ground into thin sections in 1837.

Darwin's correspondence shows that he and Hooker exchanged fossil wood slides in 1844, and in this way, some of Darwin's sections seem to have found their way into the Geological Survey's collection. One is labelled 'Chiloe, C. Darwin Esq'.

First-ever thin sections

While rediscovering 'lost' fossils from Darwin's voyage on HMS Beagle is hugely exciting, there are other specimens in Hooker's 'unregistered' collection that are arguably of greater scientific significance.

These are associated with William Nicol (1771-1851), the pioneer of petrography, who invented the polarizing microscope and produced the first-ever thin sections — some of which are in the Geological Survey's collection.

The impetus for Nicol's twin breakthrough was the discovery, in 1826, of a gigantic Carboniferous fossil tree in Craigleith Quarry on the outskirts of Edinburgh where he lived. Over the next three years, Nicol experimented with samples of this fossil, in collaboration with lapidary, George Sanderson.

Glue, glass and wood slices

Eventually, they created the first translucent sections by attaching ground slices of fossil wood to glass plates using Canada balsam — laying the foundations of petrography.

However, the numerous thin sections from this era preserved in the 'unregistered' collection of the Geological Survey, do not all appear to have originated directly with Nicol, but instead shed light on a rather murky episode in the history of science.

One of Nicol's closest friends and supporters was Henry Witham (1779–1844), a wealthy naturalist from County Durham. Recognising the potential of the thin section technique to revolutionise palaeobotany, Witham encouraged Nicol to produce many more sections and used his contacts to source fossil wood samples from across northern Britain.

Bad blood

However, the collaborative relationship seems to have turned sour when, in 1831, Witham published a groundbreaking book based on Nicol's sections, entitled *Fossil Vegetables*.

Although Witham fully acknowledged his debt to Nicol, the latter had evidently expected co-authorship. Worse was to come, however, because with Nicol now unwilling to collaborate further, Witham continued to work directly with Sanderson to study further fossils, resulting in a second expanded edition of his book in 1833.

As an indication of the degree of bad feeling that had developed between the two men, this edition made no reference to Nicol at all.

Fossil Vegetables

At least thirty thin sections from Witham's former museum at Lartington Hall, County Durham are preserved in Geological Survey's 'unregistered' collection. How they found their way from County Durham to London is unclear, but as Witham died in 1844, the likelihood is that the geological contents of his museum were donated to the Survey about the time of Hooker's arrival as botanist in 1846.

Reflecting the split between Nicol and Witham, the sections made for the first edition of *Fossil Vegetables* are labelled in Nicol's handwriting while those prepared for the second edition are engraved by Witham.

The specimens are mostly of lower Carboniferous trees from several sites across Scotland and its borders, but also include Jurassic specimens from the Yorkshire coast, and Tertiary angiosperm trunks from as far afield as the East China Sea.

Slide-makers to the Empire

Witham's book, *Fossil Vegetables*, described his thin section technique in sufficient detail that anyone with basic know-how could replicate the process; Nicol was especially annoyed by this. Read

more about this in Double-crossed Nicol.

As a result, by the mid-1830s, a small handful of professional slide-makers, mostly based in London, had set up business to supply the growing demand from gentleman collectors for geological thin sections.

Slides prepared by three of the best known of these early professionals are represented in Hooker's 'unregistered' collection, and combine science with some extraordinary artistry.

One of these slide-makers was William Hill Darker (1811-1863), who worked out of Lambeth, London, in the late 1830s. Many of his sections were evidently made for coal geologist, Edward Binney (1812-1882), and the localities of the fossils, in and around Manchester, suggest that they date from the early 1840s.

The other slide-makers were Charles M Topping and Cornelius Poulton, and date from a similar period.

'Global reach' of British science

The truly remarkable thing about all these slides is the way they illustrate the 'global reach' of British science in the early nineteenth century; fossil woods were sourced from Antigua, Australia, Egypt, India, Jamaica and the Far East, as well as many classic English localities including the Isle of Portland, Dorset.

Intriguingly, many of these slides give the name of the donor as 'Miss Henslow'. That suggests some sort of connection with the Rev. John Stevens Henslow (1796-1861), Darwin's mentor at Cambridge and a keen collector of fossil woods.

In 1847, Hooker became engaged to Henslow's oldest daughter, just a few months after he assembled the Geological Survey's slide collection. It seems likely therefore that many of the specimens found in the 'unregistered' collection today originated from the Rev. Henslow's personal cabinet.

Others seem to have been donated by a motley crew of explorers, missionaries and administrators from across the British Empire.

How the collection was 'lost'

Despite the passing of 165 years, the origin of Hooker's 'unregistered' collection is slowly becoming apparent. However, far less clear is how it came to be 'lost'.

The answer to that question may simply be a case of bad timing. As already noted, the Geological Survey's formal register of acquisitions only commenced in 1848, two years after Hooker had assembled his collection; however, by that time, he was off exploring the wilds of the Himalayas, and unavailable to assist with cataloguing his thin section collection.

When he returned in 1851, the collection was in the process of being moved to a new home at the Museum of Practical Geology in Jermyn Street, Piccadilly, London; from there it travelled to the Geological Museum in South Kensington in 1935, and 50 years later, to its current home in Keyworth.

With each move, the origin and significance of the collection became ever more obscure. However,

that trend may now be set to reverse because the entire collection has been accessioned, photographed, and will shortly be made available online.

It is hoped that this, in turn, will stimulate more research, shedding light on the early history of palaeobotany, and affording these beautiful slides, the attention that they have been denied for so long.

- Selection of J.D. Hooker thin-section



Genus: Genus &
sp not known
Fossil gum;
Taxon: Not
Entered;
Locality:
Tasmania.



Genus: Tampin
fossil tree;
Taxon: Plants:
Undifferentiated
; Locality: Not
known.



Genus: conifer
wood; Taxon:

Plants:
Undifferentiated
; Locality:
Tasmania.



Genus: Not
known; Taxon:
Not known;
Locality: Van
Diemens Land
Tasmania.



Genus: Genus &
sp not known;
Taxon: Not
known; Locality:
Chiloe Island
Chile.



Genus: Agate
from centre of
fossil tree;
Taxon: Not
Entered;
Locality: Not

known.



Genus: conifer
wood; Taxon:
Plants:
Undifferentiated
; Locality: Not
known.



Genus: Strobili;
Taxon: Plants:
Gymnospermoph
yta; Locality:
Not known.



Genus:
Lepidostrobus;
Taxon: Plants:
Gymnospermoph
yta; Locality:
Bilston.



Genus:
Lepidostrobus
spores; Taxon:
Plants:
Gymnospermoph
yta; Locality:
Bilston.



Genus:
Stigmaria;
Taxon: Plants:
Gymnospermoph
yta; Locality:
Wolverhampton.



Genus: lycopsid;
Taxon: Plants:
Lycophyta;
Locality:
Wolverhampton.



•

Genus: axes in
lime mud;
Taxon: Plants:
Undifferentiated
; Locality:
Wolverhampton.



•

Genus:
Lepidodendron ?
; Taxon: Plants:
Gymnospermoph
yta; Locality:
Not known.



•

Genus:
Lepidodendron;
Taxon: Plants:
Undifferentiated
; Locality:
Glasgow. [*].



•
Genus: wood
with goniatites
attached; Taxon:
Plants:
Undifferentiated
; Locality:
Manchester. [*].



•
Genus: petrified
conifera; Taxon:
Plants:
Undifferentiated
; Locality: near
Whitby - North
Yorkshire. [*].



•
Genus: Great
Tree; Taxon:
Plants:
Undifferentiated
; Locality:
Craigleith
Quarry near
Edinburgh.



-

Genus: Not known; Taxon: Not known; Locality: Craigleith near Edinburgh.



-

Genus: conifer wood; Taxon: Plants: Undifferentiated ; Locality: Bottom of cliff New South Wales.



-

Genus: Genus & sp not known; Taxon: Not known; Locality: Lee Farm Coliery Rothbury.



•

Genus: conifer
wood; Taxon:
Plants:
Undifferentiated
; Locality:
Whitby North
Yorkshire.



•

Genus: conifer
stem with pith;
Taxon: Plants:
Undifferentiated
; Locality:
Whitby North
Yorkshire.



•

Genus: large
conifer axis;
Taxon: Plants:
Undifferentiated
; Locality:
Scarborough -
Yorkshire. [*].



•

Genus: Not known; Taxon: Not known; Locality: Egypt.



•

Genus: Coniferous; Taxon: Plants: Undifferentiated ; Locality: Not known.



•

Genus: Not known; Taxon: Not known; Locality: Antigua.



•

Genus: Not
known; Taxon:
Not known;
Locality:
Antigua.



Genus: wood;
Taxon: Plants:
Angiospermae;
Locality: Not
known.



Genus: conifer;
Taxon: Plants:
Undifferentiated
; Locality:
Weymouth
Dorchester.



Genus:
Araucaria;
Taxon: Plants:
Undifferentiated
; mirabilis;
Locality: Not

known.



Genus:
Prototaxites;
Taxon: Plants:
Undifferentiated
; Locality:
Forfarshire,
Scotland.



Genus: conifer;
Taxon: Plants:
Undifferentiated
; Locality:
Railway cutting
W of station
Ashby de la
Zouch.

This is part of an edited transcript of the following article: FALCON-LANG, H J. 2012. [Fossil 'treasure trove' found in British Geological Survey vaults](#). *Geology Today* 28 (1), 32-36. Reprinted by permission of Wiley-Blackwell

Contact: For further information about Hooker's slides or to visit the Materials collection contact Dr Mike Howe

Full list of thin-sections

From Collection A: Joseph Dalton Hooker collection.

Hooker's collection comprises material collected during his 1839-1843 circum-Antarctic voyage in HMS Erebus and HMS Terror. However, it is possible that some of the slides from van Dieman's Land could have originated with William Nicol in 1831 (see notes at end).

[P775770](#) Genus: Genus & sp not known wood; Taxon: Plants: Undifferentiated; Locality: Tasmania.

[P775771](#) Genus: Genus & sp not known conifer wood; Taxon: Plants: Undifferentiated; Locality: Van Diemens Land Tasmania.

[P775772](#) Genus: Genus & sp not known Fossil gum; Taxon: Not Entered; Locality: Tasmania. Between 1839½1843, botanist Joseph Hooker explored the South Hemisphere onboard H.M.S Erebus. This thin section shows a piece of fossil wood collected from the Macquarie Plains of Tasmania in 1840. Age: Tertiary Period, 40 million years old.

[P775773](#) Genus: Genus & sp not known conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania.

[P775774](#) Genus: Genus & sp not known; Taxon: Not Entered; Locality: Myrthir.

[P775775](#) Genus: Genus & sp not known; Taxon: Not Entered; Locality: Van Diemens Land Tasmania.

[P775776](#) Genus: Genus & sp not known; Taxon: Not Entered; Locality: Van Diemens Land Tasmania.

[P775777](#) Fossil conifera, Kerguelan½s Land, Fossil conifera, South Polar Expedition 1842.

[P775778](#) Fossil conifera, Kerguelan½s Land, Fossil conifera, South Polar Expedition 1842.

[P775779](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Kerguelans Land.

[P775780](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Kerguelans Land.

[P775781](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Van Diemens Land Tasmania.

[P775782](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania.

[P775783](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania.

[P775784](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania. This slide is of another piece of fossil wood from Tasmania collected by Hooker in 1840. One of the fossil trees collected during this expedition ½ a massive specimen 7 feet in circumference - was shipped back to Britain and showcased at the Great Exhibition of 1851. Age: Tertiary Period, 40 million years old.

[P775785](#) Genus: Tampin fossil tree; Taxon: Plants: Undifferentiated; Locality: Not known. This slide is of another piece of fossil wood from Tasmania collected by Hooker in 1840. Expedition leader, James Clark Ross recorded that the fossil trees were found encased in ancient lava flows and were preserved as 'most beautiful agate'. Age: Tertiary Period, 40 million years old.

[P775786](#) Genus: Genus & sp not known; Taxon: Not Entered; Locality: Myrthir.

[P775787](#) Genus: Calamites; Taxon: Plants: Sphenophyta; sp; Locality: Myrthir.

[P775788](#) Genus: Genus & sp not known; Taxon: Not Entered; Locality: Myrthir.

[P775789](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania.

[P775790](#) Genus: conifer stem with pith; Taxon: Plants: Undifferentiated; Locality: Myrthir.

[P775791](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Kerguelan's Land Desolation Islands Indian ocean.

[P775792](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Kerguelan's Land Desolation Islands Indian ocean.

[P775793](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Van Diemens Land Tasmania.

[P776038](#) Genus: Banksia; Taxon: Plants: Undifferentiated; sp; Locality: N S Wales under the fold drift.

[P776039](#) Genus: Banksia; Taxon: Plants: Undifferentiated; sp; Locality: N S Wales under the fold drift.

[P776040](#) Genus: Banksia; Taxon: Plants: Undifferentiated; sp; Locality: N S Wales under the fold drift.

[P776110](#) Genus: Genus & sp not known Fossil gum; Taxon: Not Entered; Locality: Tasmania. Between 1839 & 1843, botanist Joseph Hooker explored the South Hemisphere onboard H.M.S Erebus. This thin section shows a piece of fossil wood collected from the Macquarie Plains of Tasmania in 1840. Age: Tertiary Period, 40 million years old.

[P776111](#) Genus: Tampin fossil tree; Taxon: Plants: Undifferentiated; Locality: Not known. This slide is of another piece of fossil wood from Tasmania collected by Hooker in 1840. Expedition leader, James Clark Ross recorded that the fossil trees were found encased in ancient lava flows and were preserved as 'most beautiful agate'. Age: Tertiary Period, 40 million years old.

[P776112](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Tasmania. This slide is of another piece of fossil wood from Tasmania collected by Hooker in 1840. One of the fossil trees collected during this expedition is a massive specimen 7 feet in circumference - was shipped back to Britain and showcased at the Great Exhibition of 1851. Age: Tertiary Period, 40 million years old.

From Collection B: Darwin collection.

At least two slides represent material collected by Darwin in Chiloe, southern Chile, in the course of the Voyage of the Beagle in 1835. Other similar slides, unlabeled, may also be Darwin's material, but more study is required. This material is similar in construction to slides cut by the professional lapidary, Topping (whose slides for a separate collection below). Hooker and Darwin were close friends so perhaps these are specimens that Darwin passed to Hooker for study. Slides from the Voyage of H.M.S. Beagle, 1831-1836.

[P775741](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile. Between 1831-1836, Charles Darwin explored the world on H.M.S. Beagle. His observations were to form the core of his theory of evolution. This slide shows a piece of fossil wood that he collected from the Island of Chiloe, Chile in 1834. Darwin didn't enjoy his time on Chiloe calling it a 'miserable hole'! Age: Tertiary Period, 40 million years old.

[P775742](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile. Between 1831-1836, Charles Darwin explored the world on H.M.S. Beagle. His observations were to form the core of his theory of evolution. This slide shows a piece of fossil wood that he collected from the Island of Chiloe, Chile in 1834. Darwin didn't enjoy his time on Chiloe calling it a 'miserable hole'! Age: Tertiary Period, 40 million years old.

[P775768](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile. Between 1831-1836, Charles Darwin explored the world on H.M.S. Beagle. His observations were to form the core of his theory of evolution. This slide shows a piece of fossil wood that he collected from the Island of Chiloe, Chile in 1834. Darwin didn't enjoy his time on Chiloe calling it a 'miserable hole'! Age: Tertiary Period, 40 million years old.

[P775769](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile. Between 1831-1836, Charles Darwin explored the world on H.M.S. Beagle. His observations were to form the core of his theory of evolution. This slide shows a piece of fossil wood that he collected from the Island of Chiloe, Chile in 1834. Darwin didn't enjoy his time on Chiloe calling it a 'miserable hole'! Age: Tertiary Period, 40 million years old.

[P775958](#) Genus: Agate from centre of fossil tree; Taxon: Not Entered; Locality: Not known. This is another specimen of fossil wood collected by Charles Darwin in South America in 1834. The specimen is labeled 'agate found at the centre of a fossil tree'.

[P775959](#) Genus: Agate from centre of fossil tree; Taxon: Not Entered; Locality: Not known. This is another specimen of fossil wood collected by Charles Darwin in South America in 1834. The specimen is labeled 'agate found at the centre of a fossil tree'.

[P775963](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775964](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775965](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775966](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775967](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775968](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775969](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775970](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile.

[P776114](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Chiloe Island Chile. Between 1831-1836, Charles Darwin explored the world on H.M.S. Beagle. His observations were to form the core of his theory of evolution. This slide shows a piece of fossil wood that he collected from the Island of Chiloe, Chile in 1834. Darwin didn't enjoy his time on Chiloe calling it a 'miserable hole'! Age: Tertiary Period, 40 million years old.

[P776115](#) Genus: Agate from centre of fossil tree; Taxon: Not Entered; Locality: Not known. This is another specimen of fossil wood collected by Charles Darwin in South America in 1834. The specimen is labeled 'agate found at the centre of a fossil tree'.

From Collection C: Lias collection from Whitby and elsewhere in east Yorkshire

Almost all these slides originated in the cabinet of Mr Wilson Galliard, of Barnsley, a well-known collector in the late 1830/1840s, and some of these still bear the original numbers used in his cabinet. One slide is ascribed to Mr Cooper who was an active in the London Clay Club in the late 1830/1840s. The pioneering work on the Liassic woods of Whitby was undertaken by William Nicol

from 1814 to the early 1830s, so there may be some connection between Nicol and Cooper/Wilson. The Whitby collection is of considerable scientific value, especially if associated sections can be located in other museum collections.

[P775794](#) Genus: conifer stem with pith; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire. This is another fossil tree from Whitby, England, also collected by Mr Cooper in the 1830s. This specimen is so well preserved that you can even see the concentric tree-rings Age: Jurassic Period, 180 million years old

[P775819](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire. The Yorkshire Coast of England is a classic locality for fossil hunting and many of the historic slides in the British Geological Survey's collection come from this area. This slide show fossil wood from Whitby collected by Mr Cooper in the 1830s. Age: Jurassic Period, 180 million years old.

[P775820](#) Genus: conifer stem with pith; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775821](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775822](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775823](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775824](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775825](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775826](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775827](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775828](#) Genus: conifer wood pith with septa; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775829](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775830](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775831](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775832](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775833](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Not known.

[P775834](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775835](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775836](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775837](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775838](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775839](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Market Rasen - NE of Lincoln - Lincolnshire.

[P775840](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775841](#) Genus: conifer stem with pith; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P775842](#) Conifer wood, RLS,Lias Whitby.

[P775843](#) Conifer wood, TS, Lias Whitby.

[P775844](#) Conifer wood, TS, Lias Whitby.

[P775845](#) Conifer wood, RLS,Lias Whitby.

[P775846](#) Conifer stem with pith, TS Lias Whitby.

[P776012](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P776013](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire.

[P776131](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire. The Yorkshire Coast of England is a classic locality for fossil hunting and many of the historic slides in the British Geological Survey's collection come from this area. This slide show fossil wood from Whitby collected by Mr Cooper in the 1830s. Age: Jurassic Period, 180 million years old.

[P776132](#) Genus: conifer stem with pith; Taxon: Plants: Undifferentiated; Locality: Whitby North Yorkshire. This is another fossil tree from Whitby, England, also collected by Mr Cooper in the 1830s. This specimen is so well preserved that you can even see the concentric tree-rings Age: Jurassic Period, 180 million years old

From Collection D: Edinburgh collection

This material is connected with Henry Witham (1779-1844) of Larington Hall, county Durham, and related to his landmark Fossil Vegetables monographs (1831, 1833). The slides were produced in collaboration/competition with William Nicol (1771-1851), and their lapidary, George Sanderson, all of whom were based in Edinburgh at the time. Slides were cut between 1828 and 1834. Some detailed historical notes of this material form an appendix to this document. Many of these slides are unusually thick (4 mm) and cut to fit the specimens.

[P775743](#) Genus: High coal; Taxon: Not known; Locality: Not known.

[P775744](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Allesley near Coventry.

[P775745](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Craigleith near Edinburgh.

[P775746](#) Genus: coptolitic bodies; Taxon: Ichnotaxa; Locality: Malvern, Worcestershire.

[P775747](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Lennel Braes.

[P775748](#) Genus: Great Tree; Taxon: Plants: Undifferentiated; Locality: Craigleith Quarry near Edinburgh. What seems to have fired William Nicol's interest in fossil plants was the discovery, in 1826, of a giant fossil tree at Craigleith Quarry in Edinburgh. This fossil caused a sensation and part

of this tree trunk now stands outside the Natural History Museum, London. Nicol cut this slide of the 'The Great Tree' of Craigleith in 1831. Age: Carboniferous Period, 340 million years old.

[P775749](#) Genus: Not known; Taxon: Not known; Locality: Craigleith near Edinburgh. Here is another piece of the fossil tree found at Craigleith Quarry in Edinburgh, this time cut in 1833. Nicol has cut this slide along the radius of the trunk.

[P775750](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Craigleith near Edinburgh.

[P775751](#) Genus: branch with pith; Taxon: Plants: Undifferentiated; Locality: Craigleith near Edinburgh.

[P775752](#) Genus: Plant axes; Taxon: Plants: Undifferentiated; Locality: Allenbank.

[P775753](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Allenbank.

[P775754](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Allesley near Coventry.

[P775755](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Newcastle.

[P775756](#) Genus: Tertiary wood; Taxon: Plants: Undifferentiated; Locality: Lough Neagh.

[P775757](#) Genus: large conifer axis; Taxon: Plants: Undifferentiated; Locality: Scarborough - Yorkshire. [*]. This slide shows a cross-section through a quite amazing fossil tree from Scarborough, Yorkshire, England. If you count the tree rings, you can tell the age of the tree when it died. Age: Jurassic Period, 180 million years old.

[P775758](#) Genus: Araucaria; Taxon: Plants: Undifferentiated; sp; Locality: Craigleith near Edinburgh.

[P775759](#) Genus: Tree; Taxon: Plants: Undifferentiated; Locality: Craigleith near Edinburgh.

[P775760](#) Genus: Pitus; Taxon: Plants: Undifferentiated; Locality: Tweed Mill Scotland.

[P775761](#) Genus: Pitus; Taxon: Plants: Undifferentiated; Locality: Craigleith near Edinburgh.

[P775762](#) Genus: Lepidodendron; Taxon: Plants: Lycophyta; Locality: Notts Coalfield.

[P775763](#) Angiosperm axis. Karima Yellow Sea Sanderson. Angiosperm axis, TS, 4 mm thick.

[P775764](#) Genus: Pitus; Taxon: Not known; Locality: Granton.

[P775765](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Bottom of cliff New South Wales. This slide is another of William Nicol's early works. This one shows fossil wood collected from New South Wales, Australia in the 1820s. The specimen is a conifer similar to the modern monkey-puzzle tree. Age: Cretaceous Period, 100 million years old.

[P775766](#) Genus: fragment no 3; Taxon: Not known; Locality: Craigleith near Edinburgh.

[P775767](#) Genus: fragment no 9; Taxon: Not known; Locality: Craigleith near Edinburgh.

[P775795](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Lee Farm Coliery Rothbury. Nicols cut this slide through the cross-section of a stem of fossil club moss trunk, found at Rothbury, Northumberland, England. The stem was washed out to sea where its interior decayed before being infilled by marine shells. Age: Carboniferous Period, 310 million years old.

[P775895](#) Genus: RLS conifer; Taxon: Plants: Undifferentiated; Locality: Nova Scotia.

[P775896](#) Genus: conifera; Taxon: Plants: Undifferentiated; Locality: Nova Scotia.

[P775901](#) Genus: petrified conifera; Taxon: Plants: Undifferentiated; Locality: near Whitby - North Yorkshire. [*]. William Nicol was the man who pioneered the thin section technique used to make all the slides in the British Geological Survey collection. This slide is an example of his early work. It shows a fossil tree from Whitby, Yorkshire, England, collected in 1814. Age: Jurassic Period, 180 million years old.

[P776035](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Lennel Braes.

[P776036](#) Genus: Great Tree; Taxon: Plants: Undifferentiated; Locality: Craigleith Quarry near Edinburgh. What seems to have fired William Nicol's interest in fossil plants was the discovery, in 1826, of a giant fossil tree at Craigleith Quarry in Edinburgh. This fossil caused a sensation and part of this tree trunk now stands outside the Natural History Museum, London. Nicol cut this slide of the 'The Great Tree' of Craigleith in 1831. Age: Carboniferous Period, 340 million years old.

[P776037](#) Genus: Not known; Taxon: Not known; Locality: Craigleith near Edinburgh. Here is another piece of the fossil tree found at Craigleith Quarry in Edinburgh, this time cut in 1833. Nicol has cut this slide along the radius of the trunk.

[P776126](#) Genus: petrified conifera; Taxon: Plants: Undifferentiated; Locality: near Whitby - North Yorkshire. [*]. William Nicol was the man who pioneered the thin section technique used to make all the slides in the British Geological Survey collection. This slide is an example of his early work. It shows a fossil tree from Whitby, Yorkshire, England, collected in 1814. Age: Jurassic Period, 180 million years old.

[P776127](#) Genus: Great Tree; Taxon: Plants: Undifferentiated; Locality: Craigleith Quarry near Edinburgh. What seems to have fired William Nicol's interest in fossil plants was the discovery, in 1826, of a giant fossil tree at Craigleith Quarry in Edinburgh. This fossil caused a sensation and part of this tree trunk now stands outside the Natural History Museum, London. Nicol cut this slide of the 'The Great Tree' of Craigleith in 1831. Age: Carboniferous Period, 340 million years old.

[P776128](#) Genus: Not known; Taxon: Not known; Locality: Craigleith near Edinburgh. Here is another piece of the fossil tree found at Craigleith Quarry in Edinburgh, this time cut in 1833. Nicol has cut this slide along the radius of the trunk.

[P776129](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Bottom of cliff New South Wales. This slide is another of William Nicol's early works. This one shows fossil wood collected from New South Wales, Australia in the 1820s. The specimen is a conifer similar to the modern monkey-puzzle tree. Age: Cretaceous Period, 100 million years old.

[P776130](#) Genus: Genus & sp not known; Taxon: Not known; Locality: Lee Farm Coliery Rothbury. Nicols cut this slide through the cross-section of a stem of fossil club moss trunk, found at Rothbury, Northumberland, England. The stem was washed out to sea where its interior decayed before being infilled by marine shells. Age: Carboniferous Period, 310 million years old.

[P776133](#) Genus: large conifer axis; Taxon: Plants: Undifferentiated; Locality: Scarborough - Yorkshire. [*]. This slide shows a cross-section through a quite amazing fossil tree from Scarborough, Yorkshire, England. If you count the tree rings, you can tell the age of the tree when it died. Age: Jurassic Period, 180 million years old.

From Collection E: Slides cut by William Hill Darker

Mr. Darker, of No. 9, Paradise Street, Lambeth was specialist microscopic slide maker, active in the 1830s to 1850s. Much of the material relates to English coalfield and is connected to Binney suggesting dates from the late 1830s to early 1840s for the material. Other slides represent London Clay material and specimens from the Caribbean.

[P775862](#) Genus: Palm wood; Taxon: Plants: Undifferentiated; Locality: West Indies.

[P775936](#) Genus: Palm; Taxon: Plants: Undifferentiated; Locality: Sri Lanka.

[P775937](#) Genus: Palm; Taxon: Plants: Undifferentiated; Locality: Jamaica.

[P775938](#) Fossil coniferous wood Darker shows structure as London clay ? West Africa.

[P775939](#) Genus: Coniferopus wood; Taxon: Plants: Undifferentiated; Locality: Palermo.

[P775940](#) Genus: Coniferous wood; Taxon: Plants: Undifferentiated; Locality: Lough Neagh.

[P775941](#) Genus: Not known; Taxon: Not known; Locality:.

[P775942](#) Genus: Coniferous wood; Taxon: Plants: Undifferentiated; Locality:.

[P775943](#) Genus: coniferous wood; Taxon: Plants: Undifferentiated; Locality: Aswagh ?.

[P775944](#) Genus: exogeneous fossil wood; Taxon: Plants: Angiospermae; Locality: East Indies.

[P775945](#) Genus: fossil wood mural cells; Taxon: Plants: Undifferentiated; Locality:.

[P775946](#) Genus: wood with goniatites attached; Taxon: Plants: Undifferentiated; Locality: Manchester. [*]. This slide shows fossil driftwood from the coal measures of Manchester. Attached to the top right of the fossil wood are cross-sections through sea creatures called nautiloids. Age: Carboniferous Period, 310 million years old.

[P775947](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Manchester. [*].

[P775948](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Manchester. [*].

[P775949](#) Genus: fossil wood coal; Taxon: Plants: Undifferentiated; Locality: Nottingham.

[P775950](#) Genus: Lepidodendron; Taxon: Plants: Lycopphyta; Locality: Poulton.

[P775951](#) Genus: fossil wood; Taxon: Plants: Undifferentiated; Locality: Nottingham.

[P775952](#) Genus: fossil wood; Taxon: Plants: Undifferentiated; Locality: Nottingham.

[P775953](#) Genus: coal measure lycopsid; Taxon: Plants: Lycopphyta; Locality: Not known.

[P775954](#) Genus: wood; Taxon: Plants: Angiospermae; Locality: St Barth W Jud.

[P775955](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; sp; Locality: Ladyshore Lancashire.

[P775956](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; sp; Locality: Not known.

[P775957](#) Genus: Nodule in 3rd coal; Taxon: Plants: Undifferentiated; Locality: Durham.

[P776125](#) Genus: wood with goniatites attached; Taxon: Plants: Undifferentiated; Locality: Manchester. [*]. This slide shows fossil driftwood from the coal measures of Manchester. Attached to the top right of the fossil wood are cross-sections through sea creatures called nautiloids. Age: Carboniferous Period, 310 million years old.

From Collection F: Slides made by Charles M. Topping

Charles M. Topping (1800-1874) was another professional slide maker active from late 1830s. His slides commonly show 2 or 3 specimens mounted on a single slide.

[P775914](#) Genus: Not known; Taxon: Not known; Locality: Egypt.

[P775915](#) Genus: Not known; Taxon: Not known; Locality: Egypt.

[P775916](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P775917](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P775918](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P775919](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P775920](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P775921](#) Genus: wood; Taxon: Plants: Undifferentiated; Locality: Derbyshire.

[P775922](#) Genus: Coal; Taxon: Plants: Undifferentiated; Locality: Staffordshire.

[P775923](#) Genus: Not known; Taxon: Not known; Locality: Wolverhampton.

[P775924](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Not known. This mysterious specimen bears the numbers 2886. A four digit numbering system was used by Charles Darwin to archive his specimens from the Voyage of the Beagle \ddot{u} $\frac{1}{2}$ and this is probably another one of Darwin's fossils. At least seven similar slides are in the British Geological Survey collection. Age: unknown.

[P775925](#) Genus: Not known; Taxon: Not known; Locality: Harwich.

[P775926](#) Genus: Not known; Taxon: Not known; Locality: Not known.

[P775927](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775928](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775929](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775930](#) Genus: Not known; Taxon: Not known; Locality: Egypt.

[P775931](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775932](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775933](#) Genus: Not known; Taxon: Not known; Locality: Egypt. This slide shows some fossil wood from Egypt. The knobby pattern is where the wood has started to recrystallise. Age: Cretaceous Period, 140 million years old.

[P775934](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775935](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775960](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775961](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Winston Oldbury.

[P775962](#) Genus: Not known; Taxon: Not known; Locality: Not known.

[P776113](#) Genus: Not known; Taxon: Not known; Locality: Van Diemens Land Tasmania. While exploring onboard H.M.S Erebus, Hooker also made botanical collections. Here is a specimen of modern wood collected from the Macquarie Plains of Tasmania in 1840. Note how Hooker uses the term V.D. Land, an abbreviation of Van Diemen's Land, the old name for Tasmania. Age: Recent.

[P776116](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Not known. This mysterious specimen bears the numbers 2886. A four digit numbering system was used by Charles Darwin to archive his specimens from the Voyage of the Beagle $\frac{1}{2}$ and this is probably another one of Darwin's fossils. At least seven similar slides are in the British Geological Survey collection. Age: unknown.

[P776134](#) Genus: Not known; Taxon: Not known; Locality: Egypt. This slide shows some fossil wood from Egypt. The knobby pattern is where the wood has started to recrystallise. Age: Cretaceous Period, 140 million years old.

From Collection G: Carboniferous roof nodules from Yorkshire and Lancashire coalfields

This material is connected with J.D. Hooker and was published in his three part monograph on coal measure plants (Stigmaria, Lepidodendron, Lepidostrobus, Trigonocarpus) in volume 2 of the BGS memoirs (published in 1848). Many collectors are mentioned on the slides as follows: Mrs Henslow, Mr Binney, Mr Jukes, Miss Jukes, Mr Gray, Mr Cooper, Lt Stamford, Mr Wilson Galliard, Mr Birmingham, Mrs Cunningham, Mr Thornewick, Mr Smyth, Mr Larkin, Mrs Bristol

[P775796](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775797](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775798](#) Genus: Strobili spores; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775799](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775800](#) Genus: Lepidostrobus slice; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775801](#) Genus: Lepidostrobus spores; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775802](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775803](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775804](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Barnsley.

[P775805](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775806](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775807](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775808](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Not known. In 1846, Joseph Hooker studied the coal measures of England, as part of the British Geological Survey's mapping work. In doing so, he found some amazing fossils. This slide shows a nodule packed full of the 'cones' of giant club mosses, an extinct group of plants that formed the coal. Age: Carboniferous Period, 310 million years old.

[P775809](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; Locality: Manchester.

[P775810](#) Genus: Not known; Taxon: Not known; Locality: Bilston.

[P775811](#) Genus: Lepidodendron Milstone; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775812](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775813](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775814](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Walsall, Staffordshire.

[P775815](#) Genus: Stigmaria; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P775816](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; Locality: Barnsley.

[P775817](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; Locality: Barnsley.

[P775818](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; Locality: Barnsley.

[P775897](#) Genus: Stigmaria; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton. This slide shows a cross-section through the root of the giant club moss trees that formed the coal. This type of root is called Stigmaria. The specimen was collected from the English Midlands by Joseph Hooker in 1846.

[P775898](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775899](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775900](#) Genus: Stigmaria; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P775971](#) Genus: Bark coal; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P775972](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775973](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston. This slide is another nodule containing 'cones' of giant club mosses collected from the English Midlands by Joseph Hooker in 1846. The red spot indicates that this particular specimen was figured in a publication. This beautiful slide almost looks like a water colour painting! Age: Carboniferous Period, 310 million years old.

[P775974](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775975](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775976](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775977](#) Genus: Long Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775978](#) Genus: Stigmaria; Taxon: Plants: Gymnospermophyta; Locality: Dudley Field.

[P775979](#) Genus: Stigmaria; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775980](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775981](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Milstone.

[P775982](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775983](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.

[P775984](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775985](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775986](#) Genus: Lepidostrobus spores; Taxon: Plants: Gymnospermophyta; Locality: Bilston. This slide shows another nodule containing a 'cone' of giant club mosses collected from the English Midlands by Joseph Hooker in 1846. Whereas the other images show 'cones' in cross-section, this one is in longitudinal section. Age: Carboniferous Period, 310 million years old.

[P775987](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775988](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Not known.

[P775989](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775990](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775991](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

[P775992](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Bilston.

- [P775993](#) Genus: Lepidodendron; Taxon: Plants: Gymnospermophyta; Locality: Bilston.
- [P775994](#) Genus: Lepidodendron ?; Taxon: Plants: Gymnospermophyta; Locality: Not known. This slide shows the stem of a seed fern collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.
- [P775995](#) Genus: Stigmaraia; Taxon: Plants: Undifferentiated; Locality: Not known.
- [P775996](#) Genus: Lepidodendron; Taxon: Plants: Lycophyta; Locality: Wolverhampton.
- [P775997](#) Genus: Dadoxylon; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P775998](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Walsall Colliery.
- [P775999](#) Genus: Trigonocapton; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776000](#) Genus: Stigmaraia; Taxon: Plants: Undifferentiated; Locality: Not known.
- [P776001](#) Genus: Not known; Taxon: Not known; Locality: Wolverhampton.
- [P776002](#) Genus: coal form; Taxon: Plants: Undifferentiated; Locality: Manchester. [*].
- [P776003](#) Genus: coal; Taxon: Plants: Undifferentiated; Locality: Manchester. [*].
- [P776004](#) Genus: Not known; Taxon: Not known; Locality:..
- [P776005](#) Genus: Strobili; Taxon: Plants: Undifferentiated; Locality: Dudley.
- [P776014](#) Genus: Stigmaraia; Taxon: Plants: Undifferentiated; Locality: Walsall.
- [P776015](#) Genus: Stigmaraia rootlet; Taxon: Plants: Undifferentiated; Locality: Not known.
- [P776016](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton.
- [P776017](#) Genus: Stigmaraia in lime mud; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776018](#) Genus: lycopsid; Taxon: Plants: Lycophyta; Locality: Wolverhampton. This slide shows another nodule containing the stem of a giant club moss collected from the English Midlands by Joseph Hooker in 1846. The diamonds are where leaves once attached to stem. Age: Carboniferous Period, 310 million years old.
- [P776019](#) Genus: (=Strobili)coal; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776020](#) Genus: (=Strobili); Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776021](#) Genus: Lepidodendrid wood; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776022](#) Genus: axes in lime mud; Taxon: Plants: Undifferentiated; Locality: Wolverhampton. This slide shows another nodule containing the stem of a giant club moss tree collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.
- [P776023](#) Genus: Strobili in lime mud; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.
- [P776024](#) Genus: Stigmaraia in lime mud; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P776025](#) Genus: Strobili; Taxon: Plants: Undifferentiated; Locality: Bilston.

[P776026](#) Genus: longitudinal section of small cone; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P776027](#) Genus: lycopsid; Taxon: Plants: Lycophyta; Locality: Wolverhampton.

[P776028](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Glasgow. [*]. The English coal measure contains lots of animal remains as well as plants. This nodule shows marine shells collected by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.

[P776029](#) Genus: Strobili; Taxon: Plants: Undifferentiated; Locality: Not known.

[P776030](#) Genus: Strobili; Taxon: Plants: Undifferentiated; Locality: Glamorganshire. [*].

[P776031](#) Genus: Stigmaria; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P776032](#) Genus: Stigmaria; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P776033](#) Genus: Calamites; Taxon: Plants: Sphenophyta; Locality: Barnsley.

[P776034](#) Genus: Stigmaria; Taxon: Plants: Undifferentiated; Locality: Wolverhampton.

[P776117](#) Genus: Strobili; Taxon: Plants: Gymnospermophyta; Locality: Not known. In 1846, Joseph Hooker studied the coal measures of England, as part of the British Geological Survey's mapping work. In doing so, he found some amazing fossils. This slide shows a nodule packed full of the 'cones' of giant club mosses, an extinct group of plants that formed the coal. Age: Carboniferous Period, 310 million years old.

[P776118](#) Genus: Lepidostrobus; Taxon: Plants: Gymnospermophyta; Locality: Bilston. This slide is another nodule containing 'cones' of giant club mosses collected from the English Midlands by Joseph Hooker in 1846. The red spot indicates that this particular specimen was figured in a publication. This beautiful slide almost looks like a water colour painting! Age: Carboniferous Period, 310 million years old.

[P776119](#) Genus: Lepidostrobus spores; Taxon: Plants: Gymnospermophyta; Locality: Bilston. This slide shows another nodule containing a 'cone' of giant club mosses collected from the English Midlands by Joseph Hooker in 1846. Whereas the other images show 'cones' in cross-section, this one is in longitudinal section. Age: Carboniferous Period, 310 million years old.

[P776120](#) Genus: Stigmaria; Taxon: Plants: Gymnospermophyta; Locality: Wolverhampton. This slide shows a cross-section through the root of the giant club moss trees that formed the coal. This type of root is called Stigmaria. The specimen was collected from the English Midlands by Joseph Hooker in 1846.

[P776121](#) Genus: lycopsid; Taxon: Plants: Lycophyta; Locality: Wolverhampton. This slide shows another nodule containing the stem of a giant club moss collected from the English Midlands by Joseph Hooker in 1846. The diamonds are where leaves once attached to stem. Age: Carboniferous Period, 310 million years old.

[P776122](#) Genus: axes in lime mud; Taxon: Plants: Undifferentiated; Locality: Wolverhampton. This slide shows another nodule containing the stem of a giant club moss tree collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.

[P776123](#) Genus: Lepidodendron ?; Taxon: Plants: Gymnospermophyta; Locality: Not known. This slide shows the stem of a seed fern collected from the English Midlands by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.

[P776124](#) Genus: Lepidodendron; Taxon: Plants: Undifferentiated; Locality: Glasgow. [*]. The English coal measure contains lots of animal remains as well as plants. This nodule shows marine shells collected by Joseph Hooker in 1846. Age: Carboniferous Period, 310 million years old.

From Collection H: Nicol collection?

[P775884](#) Genus: coniferous Dustyidnous now; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775885](#) Genus: coniferous Dustyidnous now; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775886](#) Genus: Calcareous wood seedgrapes; Taxon: Plants: Angiospermae; Locality: Not known.

[P775887](#) Genus: Coniferous; Taxon: Plants: Undifferentiated; Locality: Not known. This slide is labeled Coniferous. The tissue destroyed by crystallization; calcareous wood. Little is known of its origin. Age: uncertain

[P775888](#) Genus: transverse section not distinguishable; Taxon: Not Entered; Locality: Not known.

[P775889](#) Genus: Illoenus; Taxon: Not known; barreiansis; Locality: Not known.

[P775890](#) Genus: Silicified; Taxon: Not known; Locality: Tuscany.

[P775891](#) Genus: Dicot like antiqua wood; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775892](#) Genus: coniferous; Taxon: Plants: Undifferentiated; Locality: Not known.

[P775893](#) Genus: Transverse section; Taxon: Not known; Locality: Trichinopoly.

[P775894](#) Genus: Transverse section; Taxon: Not known; Locality: Not known.

[P776135](#) Genus: Coniferous; Taxon: Plants: Undifferentiated; Locality: Not known. This slide is labeled 'Coniferous. The tissue destroyed by crystallization; calcareous wood'. Little is known of its origin. Age: uncertain

From Collection I: Miscellaneous material

[P775739](#) Genus: Araucaria; Taxon: Plants: Undifferentiated; mirabilis; Locality: Not known. This spectacular slide shows the cross-section of a cone of a monkey-puzzle tree. Similar cones have been found in South America. Age: uncertain

[P775740](#) Genus: Araucaria; Taxon: Plants: Undifferentiated; mirabilis; Locality: Not known. This spectacular slide shows the cross-section of a cone of a monkey-puzzle tree. Similar cones have been found in South America. Age: uncertain

[P775847](#) Genus: Not known; Taxon: Not Entered; Locality: Not known.

[P775848](#) Genus: Not known; Taxon: Plants: Angiospermae; Locality: Harwich.

[P775849](#) Genus: large stem; Taxon: Plants: Undifferentiated; Locality: Lyme Regis, Dorset.

[P775850](#) Genus: large stem; Taxon: Plants: Undifferentiated; Locality: Lyme Regis, Dorset.

[P775851](#) Genus: Prototaxites; Taxon: Plants: Undifferentiated; Locality: Forfarshire, Scotland. This slide shows a giant fungus called Prototaxites that grew to a height of several metres. This specimen was found by Mr Powrie, near Forfar, Scotland, in the 1840s. Age: Devonian Period, 400 million years old.

[P775852](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Railway cutting W of station Ashby de la Zouch. This slide shows a fossil wood collected in a railway cutting near Ashby de la Zouch in the 1840s. The fossil was found by Thomas Rylands, the philanthropic industrialist. Age: Permian Period, 280 million years old.

[P775853](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Railway cutting W of station Ashby de la Zouch. This slide shows a fossil wood collected in a railway cutting near Ashby de la Zouch in the 1840s. The fossil was found by Thomas Rylands, the philanthropic industrialist. Age: Permian Period, 280 million years old.

[P775854](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: North Riding.

[P775855](#) Genus: Prototaxites; Taxon: Plants: Undifferentiated; Locality: Forfarshire, Scotland.

[P775856](#) Genus: wood; Taxon: Plants: Undifferentiated; Locality: Andes.

[P775857](#) Genus: Not known; Taxon: Not known; Locality: Coventry.

[P775858](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Folkestone.

[P775859](#) Genus: Palm; Taxon: Plants: Undifferentiated; Locality: Wowadeli East Indies.

[P775860](#) Genus: Palm; Taxon: Plants: Undifferentiated; Locality: Wowadeli East Indies.

[P775861](#) Genus: Not known; Taxon: Plants: Angiospermae; Locality: Egypt.

[P775863](#) Genus: Not known; Taxon: Not known; Locality: Coventry.

[P775864](#) Genus: wood; Taxon: Plants: Angiospermae; Locality: Cairo.

[P775865](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Coventry.

[P775866](#) Genus: Fossil palm; Taxon: Plants: Undifferentiated; Locality: East Indies.

[P775867](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: Coventry.

[P775868](#) Genus: Not known; Taxon: Not known; Locality: Antigua. This slide shows a cross-section through the root of a flowering plant from Antigua. Age: uncertain

[P775869](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Coventry.

[P775870](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Coventry.

[P775871](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Coventry.

[P775872](#) Genus: wood; Taxon: Plants: Angiospermae; Locality: Not known. This slide shows a tree trunk of a flowering plant, probably from Harwich, near London. This specimen was collected by Rev

John Henslow, Darwin's mentor at Cambridge, in the 1830s. Age: Tertiary Period, 50 million years old.

[P775873](#) Genus: conifer wood; Taxon: Plants: Undifferentiated; Locality: North Riding.

[P775874](#) Genus: bad jasper; Taxon: Not known; Locality: Not known.

[P775875](#) Genus: Not known; Taxon: Not known; Locality: Antigua. This slide shows some limestone from Antigua. Age: uncertain

[P775876](#) Genus: Not known; Taxon: Not known; Locality: Cape Patterson.

[P775877](#) Genus: Not known; Taxon: Not known; Locality: Sheppey.

[P775878](#) Genus: Not known; Taxon: Not known; Locality: Egypt.

[P775879](#) Genus: Not known; Taxon: Not known; Locality: Sheppey.

[P775880](#) Genus: Not known; Taxon: Not known; Locality: Not known.

[P775881](#) Genus: Not known; Taxon: Not known; Locality: Cape Patterson.

[P775882](#) Genus: Not known; Taxon: Not known; Locality: Aspley.

[P775883](#) Genus: Not known; Taxon: Not known; Locality: Aspley.

[P776006](#) Genus: Not known; Taxon: Plants: Angiospermae; Locality: Harwich.

[P776007](#) Genus: Not known; Taxon: Not known; Locality: Not known.

[P776008](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Germlingberg Ridge ?.

[P776009](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Weymouth Dorchester.

[P776010](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Weymouth Dorchester. This slide shows a tree trunk from the famous fossil forest on the Isle of Portland, Dorset, southern England. This specimen was collected by Rev John Henslow, Darwin's mentor at Cambridge, in the 1830s. Age: Jurassic Period, 150 million years old.

[P776011](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Not known.

[P776041](#) Genus: Not known; Taxon: Plants: Angiospermae; Locality: Harwich.

[P776042](#) Genus: Not known; Taxon: Plants: Angiospermae; Locality: Harwich.

[P776136](#) Genus: Not known; Taxon: Not known; Locality: Antigua. This slide shows some limestone from Antigua. Age: uncertain

[P776137](#) Genus: Not known; Taxon: Not known; Locality: Antigua. This slide shows a cross-section through the root of a flowering plant from Antigua. Age: uncertain

[P776138](#) Genus: wood; Taxon: Plants: Angiospermae; Locality: Not known. This slide shows a tree trunk of a flowering plant, probably from Harwich, near London. This specimen was collected by Rev John Henslow, Darwin's mentor at Cambridge, in the 1830s. Age: Tertiary Period, 50 million years

old.

[P776139](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Weymouth Dorchester. This slide shows a tree trunk from the famous fossil forest on the Isle of Portland, Dorset, southern England. This specimen was collected by Rev John Henslow, Darwin's mentor at Cambridge, in the 1830s. Age: Jurassic Period, 150 million years old.

[P776140](#) Genus: Araucaria; Taxon: Plants: Undifferentiated; mirabilis; Locality: Not known. This spectacular slide shows the cross-section of a cone of a monkey-puzzle tree. Similar cones have been found in South America. Age: uncertain

[P776141](#) Genus: Prototaxites; Taxon: Plants: Undifferentiated; Locality: Forfarshire, Scotland. This slide shows a giant fungus called Prototaxites that grew to a height of several metres. This specimen was found by Mr Powrie, near Forfar, Scotland, in the 1840s. Age: Devonian Period, 400 million years old.

[P776142](#) Genus: conifer; Taxon: Plants: Undifferentiated; Locality: Railway cutting W of station Ashby de la Zouch. This slide shows a fossil wood collected in a railway cutting near Ashby de la Zouch in the 1840s. The fossil was found by Thomas Rylands, the philanthropic industrialist. Age: Permian Period, 280 million years old.

From Collection J: No labels

[P775902](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775903](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775904](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775905](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775906](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775907](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775908](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775909](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775910](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775911](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775912](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

[P775913](#) Genus: Not known; Taxon: Unknown; Locality: Not known.

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