

# **History and Hardwood Species of HMS Charybdis**

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# Outline

- **Brief History of HMS Charybdis**
- **Naval Timber Supply in Early 18<sup>th</sup> Century in Britain**
- **Species Identification**

# Brief History of HMS Charybdis



- The last wood-framed major warship built for the Royal Navy by the British
- A 21-gun steam-auxiliary screw corvette
- 2250 tons, 1400 H. P., 200 by 40 by 20 feet in size with a speed of 11 knots
- The regulation crew: 180

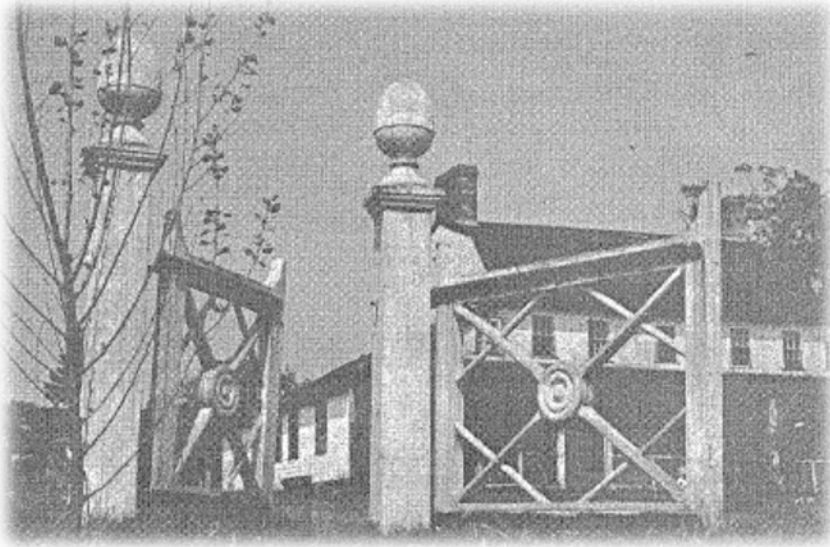
# Brief History of HMS Charybdis

- 1859: launched
- 1860: sent to the East Indies Station
- 1861: moved to the China Station
- 1862 – 1867: the Pacific Station, based in Esquimalt, British Columbia
- 1867: transferred to the Australian Station
- 1869: served as part of the Royal Navy's "Flying Squadron"
- 1869: returned to Esquimalt and the Pacific Squadron
- 1870: a refit in England
- 1873: served in China Station again and sent south to conduct anti-piracy patrols in the Straits of Malacca
- 1874: involved in the Southern Malayan state disputes
- 1880: returned to Britain
- 1880: offered to Canada as a training ship and arrived in Saint John, New Brunswick
- 1881: returned to the Imperial government
- 1882: towed to Halifax
- 1884: sold and broken-up

# Brief History of HMS Charybdis



# Gateposts made from HMS Charybdis



***All that now survives of HMS Charybdis are the gateposts of the Scott Manor house in Bedford, Nova Scotia, Canada. Two decorative posts with fat acorns on top carry handing garden gates.***

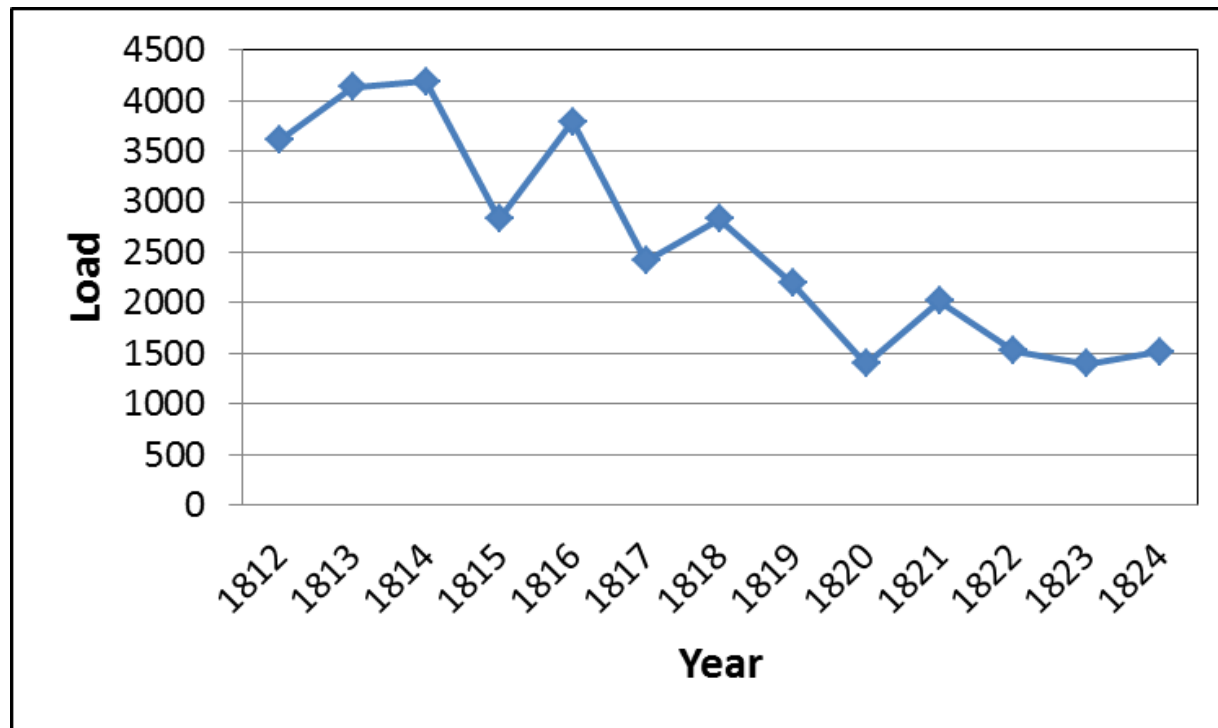
# Naval Timber Supply in Early 18<sup>th</sup> Century in Britain

- English oak (*Quercus robur*): durability and strength
- Materials for building ships, e.g. in the fabrication of a 74-gun ship of 1,745 tons (Lambert 1991)

Material	Item	Load	Weight (tons)
Oak	Timber	739 (at 55 lbs / ft <sup>3</sup> )	1,339
	Thickstuff	160 (at 55 lbs / ft <sup>3</sup> )	
	Plank	192 (at 55 lbs / ft <sup>3</sup> )	
Fir	Timber	74 (at 35 lbs / ft <sup>3</sup> )	117
	Deals	76 (at 35 lbs / ft <sup>3</sup> )	
Elm	Timber and plank	12 (60 lbs / ft <sup>3</sup> )	16
Copper			46
Iron			90
Lead			5
Total			1,613

# Naval Timber Supply in Early 18<sup>th</sup> Century in Britain

- The total quantity of oak timber available from 1812 to 1824 (Lambert 1991)



- Since 1831, African timber to substitute English oak

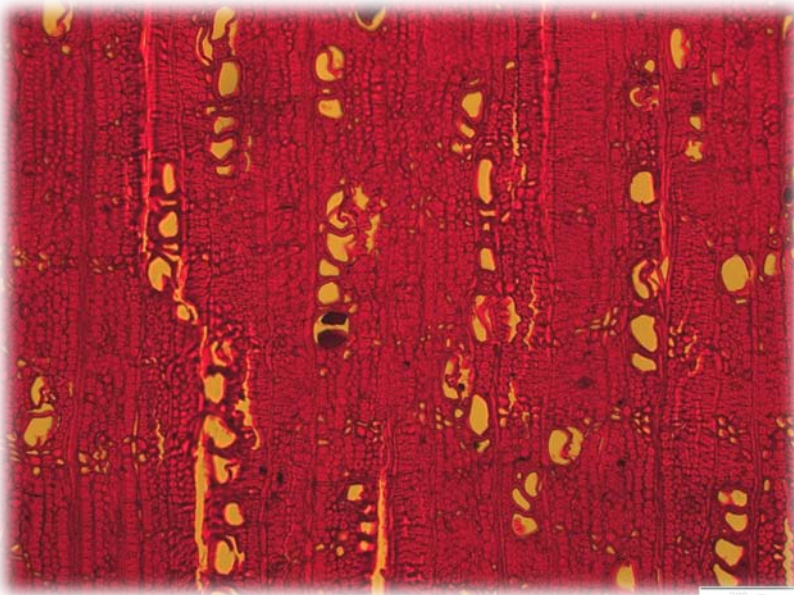


# Species Identification

- A wood sample was obtained from the Scott Manor house.
- Macro features
  - Growth ring boundaries distinct to indistinct
  - Wood (heartwood) brown to red
  - Texture fine and even grain straight
- Airdry density (airdry weight / airdry volume)
  - 0.960 g/cm<sup>3</sup>

# Species Identification

- Microscopic features (cross section)



- diffuse-porous, pores arranged in radial pattern
- very thick-walled fibres
- apotracheal longitudinal parenchyma diffuse-in-aggregates forming narrow bands

# Species Identification

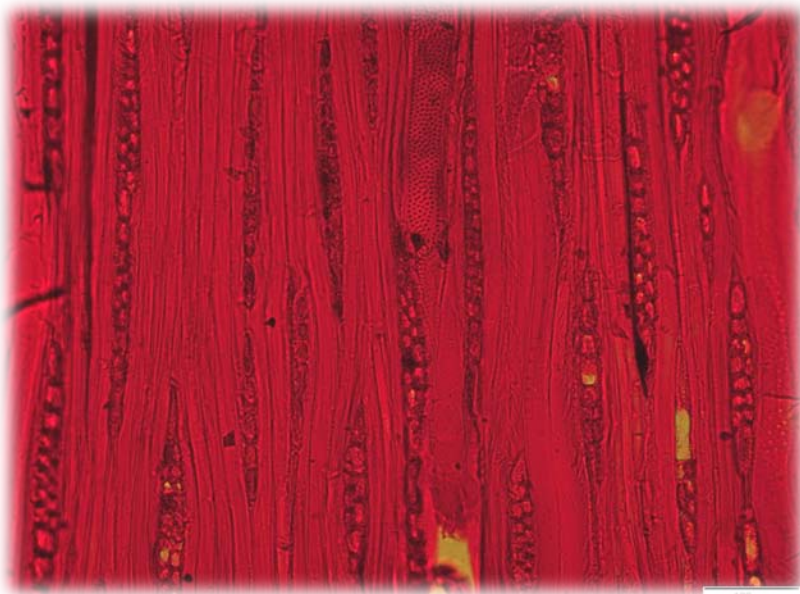
- Microscopic features (radial section)



- perforation plates simple
- 6–9 crystal per strand
- heterocellular rays consisting of procumbent cells with 2–4 rows of upright and/or square marginal cells

# Species Identification

- Microscopic features (tangential section)



- Uniseriate
- multiseriate  
rays 1–3 cells  
wide

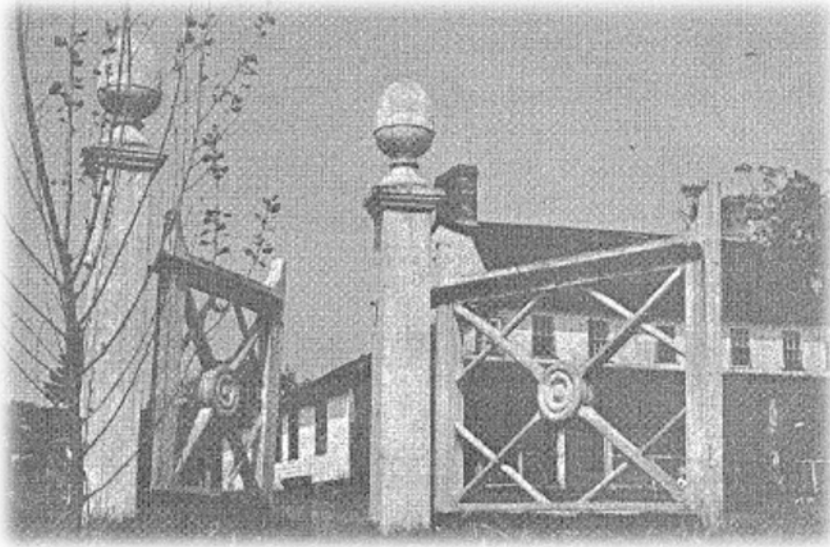
# Species Identification

- From the features observed, comparison with available micro slides, and source of wood sample
- The species of hardwood sample from HMS Charybdis
  - *Autranella spp.*
  - belonging to the family Sapotaceae
  - One of common names could be **Mukulungu** (Forest Products Laboratory 2012)

# Species Identification

- *Austranella spp.*
  - distributed in tropic Africa
  - very durable
    - may be slight termite attack
    - resistant to dilute acids
    - resistant to weathering
  - heavy construction, ship and boat building, heavy-duty flooring, bridges, sluice gates and other waterworks, railway sleepers, and poles

# Gateposts made from HMS Charybdis



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# Thank you for your attention!

## Questions?

