

# SCIENTIFIC EXPLORATION

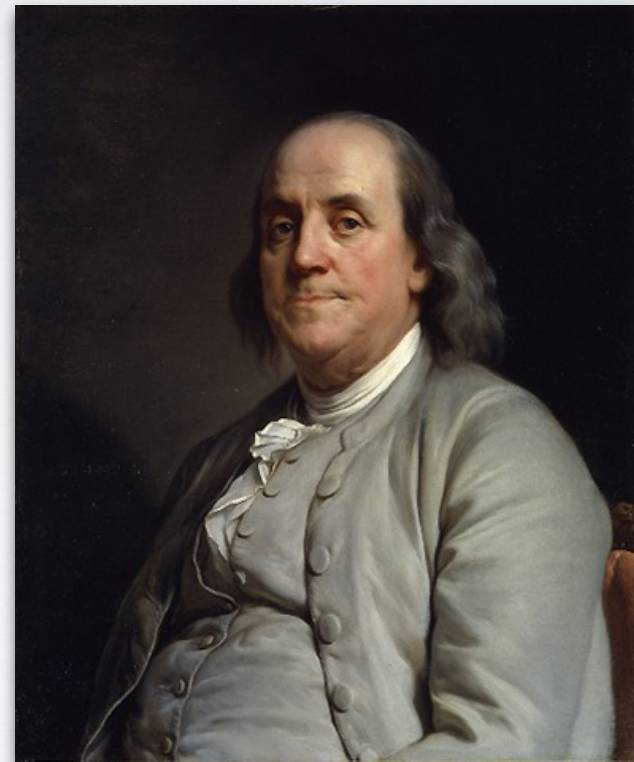


# SCIENTIFIC EXPLORATION

- Ocean scientists continued in the wake of early explorers and navigators by investigating the oceans in a quest for scientific knowledge
- This quest is on going and has resulted in a much deeper understanding of our oceans and planet which is 71% water

# SCIENTIFIC EXPLORATION

- Benjamin Franklin (1706 - 1790)
  - First to map the Gulf Stream
  - Amazingly accurate map of the warm water current that runs north along the east coast of North America



R E M A R K S

Upon the Navigation from  
NEWFOUNDLAND TO NEW-YORK,

In order to avoid the  
GULF STREAM

On one hand, and on the other the Shoals that lie to the Southwest of  
Nantucket and of St. George's Banks.

AFTER you have passed the Banks of Newfoundland in about  
the 48th degree of latitude, you will meet with nothing, till  
you draw near the life of Sables, which we commonly pass in la-  
titude 44. Southward of this life, the current is found to extend  
itself as far North as 41° 30' or 30', then it turns towards the E.  
S. E. or S. E. 1/2 E.

Having passed the life of Sables, shape your course for the St.  
George's Banks, so as to pass them in about latitude 40°, because  
the current southward of these banks reaches as far North as 39°.  
The banks of these banks lie in 41° 35'.

After having passed St. George's Banks, you must, to clear Nan-  
tucket, form your course so as to pass between the latitudes 38° 30'  
and 40° 45'.

The most southern part of the Shoals of Nantucket lie in about  
40° 45'. The northern part of the current directly to the south of  
Nantucket is felt in about latitude 38° 30'.

By observing these directions and keeping between the Stream  
and the Banks, the passage from the Banks of Newfoundland to  
New-York, Delaware, or Virginia, may be considerably shorten-  
ed; for so you will have the advantage of the ebb current, which  
moves contrary to the Gulf Stream. Whereas if to avoid the  
Banks you keep too far to the Southward, and get into that Stream,  
you will be retarded by it at the rate of 60 or 70 miles a day.

The Nantucket whalers being extremely well acquainted with  
the Gulf Stream, its course, strength and extent, by their con-  
stant practice of whaling on the edge of it, from their boats spin  
down to the Bahamas, this draft of that Stream was obtained from  
one of them, Capt. Folger, and caused to be engraved on the old  
chart in London, for the benefit of navigators, by

B. FRANKLIN.

Note. The Nantucket whalers who are acquainted with this  
Stream, make their voyages from England to Boston in as  
short a time generally as others take in going from Boston  
to England, viz. from 20 to 30 days.

A stranger may know when he is in the Gulf Stream, by  
the warmth of the water, which is much greater than that  
of the water on each side of it. If then he is bound to the  
westward, he should cross the Stream to get out of it as soon  
as possible.

B. F.



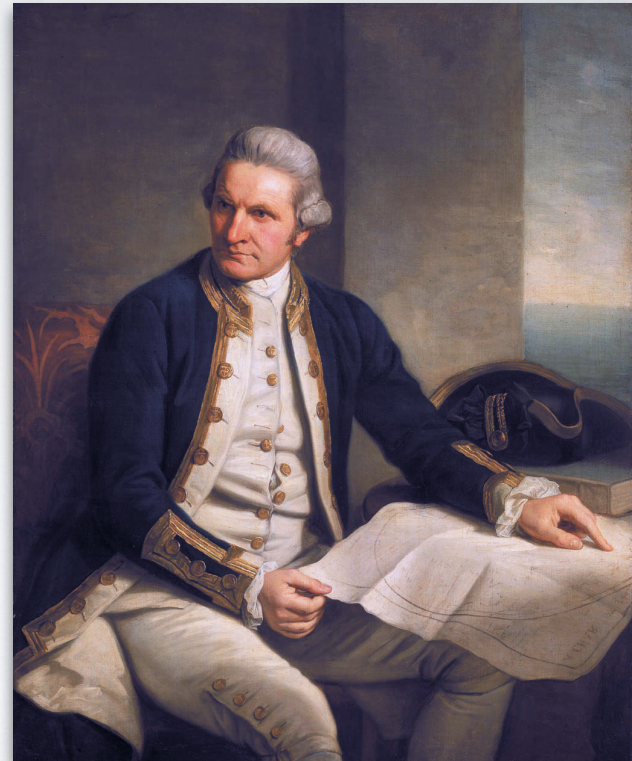
Gulf Stream Mapping

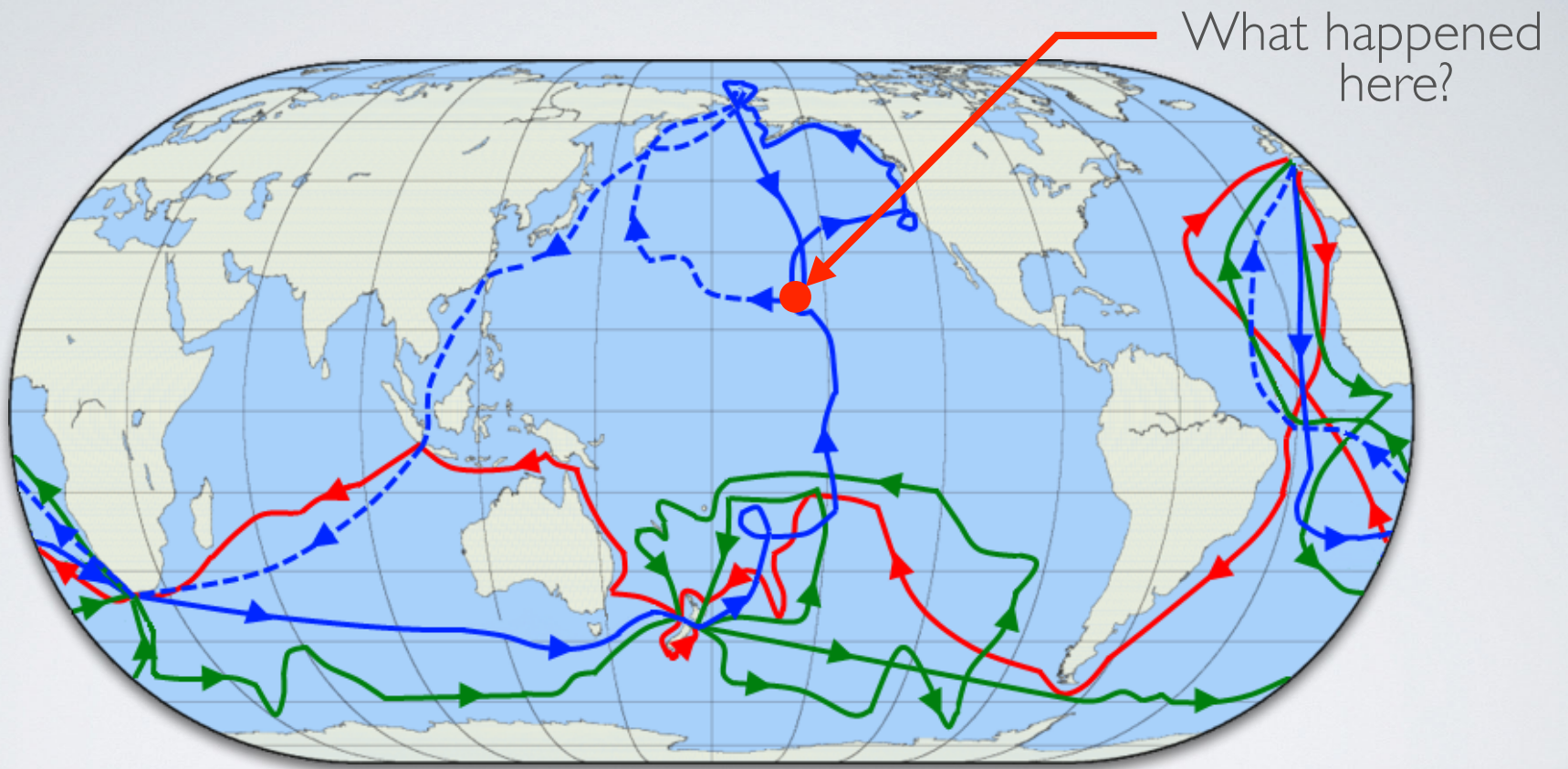
# SCIENTIFIC EXPLORATION

- James Cook (1728 - 1779)
  - British explorer who mapped the South Pacific in search of Australia
  - Discovered the importance of vitamin C to prevent scurvy
    - Scurvy - a disease resulting from a deficiency of vitamin C which is required for the synthesis of collagen

# SCIENTIFIC EXPLORATION

- James Cook (continued)
  - Excellent celestial navigator and understood latitude and longitude
  - Created many detailed maps
  - Killed while exploring Hawaii





What happened here?

Cook's Journeys



James Cook Documentary



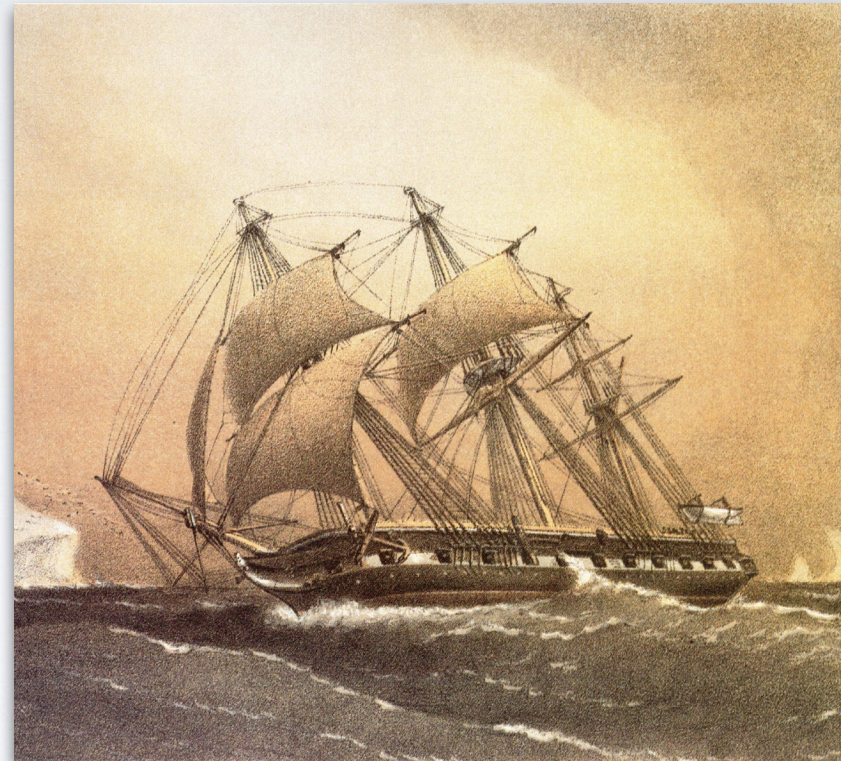
# SCIENTIFIC EXPLORATION

- Matthew Fontaine Maury (1806 - 1873)
  - American naval officer
  - Father of Oceanography
  - Published “The Physical Geography of the Sea” and “Wind and Current Chart of the North Atlantic”



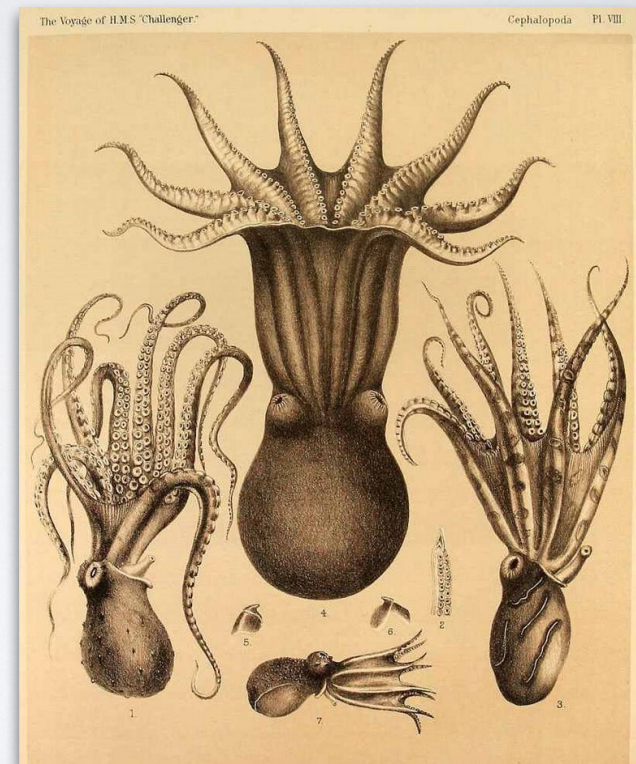
# SCIENTIFIC EXPLORATION

- H.M.S. Challenger (1873-1876)
  - A refitted British warship which crossed all the major oceans collecting samples 50 volumes worth of data



# SCIENTIFIC EXPLORATION

- H.M.S. Challenger (continued)
  - Scientific data included:
    - 4700 new species discovered
    - Temperature and pressure reading at different depths
    - Ocean-floor sediments
    - Tide data





James Cook Documentary