Salvaging Sunken Treasure

Long weather records are essential for evaluating the historical context of extreme weather events. Currently Australia’s meteorological record only starts in 1900. To extend the length of this record the SEARCH team at the University of Melbourne has been analysing a range of historical documents including diaries, log books, newspapers and farm records.

The team recently used two of Australia’s oldest weather records to provide a unique insight into the conditions experienced by members of the First Fleet during their journey to Australia and in the first few years following European settlement in 1788.

A Ships Log

The HMS *Sirius* was the flagship of the First Fleet and aboard the historic vessel was the young marine, William Bradley. Bradley kept a daily logbook of weather observations including temperature, barometric pressure and winds.

Gergis et al. 2010 compared each eighteenth-century temperature and pressure reading against a modern climatology for each day’s position, given by the ship’s latitude and longitude, throughout the eight-month journey.

The study revealed that the observations made between 1787–1788 were useful for comparison with modern day measurements but Bradley’s readings should be handled with care due to non-standard measurement practices. The logged observations correlate remarkably well to the accounts written by diarists that provide a glimpse of what life ‘behind the numbers’ might have been like.

High Seas

The journey from England to Botany Bay took 8 months and the crew of the HMS *Sirius* faced some ferocious weather as they rode the Roaring Forties across the Southern Ocean. The most extreme conditions arose while the ships made their way up what is now the NSW coastline in the middle of summer.

A severe storm centred on 10 January 1788 is described in surgeon, Arthur Bowes Smyth’s diary:

The sky blackened, the wind arose and in half an hour more it blew a perfect hurricane, accompanied with thunder, lightening and rain…I never before saw a sea in such a rage, it was all over as white as snow…every other ship in the fleet except the Sirius sustained some damage…during the storm the convict women in our ship were so terrified that most of them were down on their knees at prayers.
The weather data recovered from the Dawes and Bradley journals together with palaeoclimate records suggested that the First Fleet may have arrived during a very wet La Niña event. According to our research, the El Niño–Southern Oscillation cycle switched in 1790 to an El Niño event that brought forth three years of drought. Historians from the SEARCH team concluded that these weather conditions stymied the development of the colony and had a significant impact on the way Australian society developed following first European settlement.

The SEARCH team digitised the instrumental observations from Dawes and Bradley in 2008 and went on to compare the readings with anecdotal evidence and independent palaeoclimate reconstructions.

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Further information:

Or visit the SEARCH website: www.climatehistory.com.au