

How a genetic quirk enabled a famous 19<sup>th</sup> Century voyage of 366 days to remain scurvy-free.

Those of you who read my Surgeons Hall blog on scurvy might recall that humans are unlucky in that we have a genetic quirk<sup>1</sup> that prevents us from making vitamin C for ourselves and so we need to get it in our diet. This raises the possibility that we might not take in enough, rendering us susceptible to the horrors of scurvy, a fate that befell generations of seafarers in the age of sail. The vast majority of other animals - dogs, cats, birds, cows etc. make their own Vitamin C.

This genetic twist enabled one of the most famous long voyages of the Nineteenth Century to set sail without fear of scurvy. In 1871 HMS Pea-green Boat set off on a 366-day voyage to Bong tree land, crewed only by The Owl and The Pussycat and provisioned solely with honey<sup>2</sup> and plenty of money (wrapped up in a five-pound note). Luckily, like most animals their livers were happily making Vitamin C throughout the voyage. On the other hand, had the crew been human, their required daily intake of vitamin C - 65-90mg/day- would necessarily have had to come solely from the honey. A recent report gave the Vitamin C content of honey as  $161.69 \pm 6.70$  mg/kg. In order to meet their Recommended Dietary Allowance, therefore the crew would have needed to consume about 0.5kg of honey a day, which is about one and a half of the normal small (340g) squeezable bottles of honey, such as the one shown in the image below. This amount of sweetness would be difficult to take, even on a voyage so unrelentingly sentimental as this one. The Bong tree, *Nothaphoebe umbelliflora*, now more commonly known as Gemor, is of the Laurel family. The vitamin C content of the Bong Tree is not recorded. So, it is not known whether eating Bong trees would have provided some anti-scorbutic relief to British sailors suffering from scurvy and marooned in Bong tree Land after voyaging the same route for a year and a day.



Left) A 340gm squeeze bottle of honey. Right) Edward Lear's own drawing of the departure of HMS Pea-green Boat, showing provisions of honey and a mysterious bag. The Pussycat is at the rudder and the absence of a sail suggests that The Owl's guitar doubles as an oar.

- 1) Accumulated mutations in the gluconolactone oxidase gene, rendering it ineffective.
- 2) Some authors have raised questions regarding the source of the wedding breakfast of 'mince and slices of quince'. However, no mention of these are made in the provisioning of the voyage in Verse 1. The porcine inhabitants of Bong-tree land seemed amenable to trade, in nose rings at least, and so they may well have supplied mince and quince, at a cost easily met from the large amount of money taken on board at the outset. The only contemporary record of the departure of HMS Pea-green Boat was made by the poet Edward Lear himself. His drawing shows only honey plus, rather puzzlingly, a bag of money rather than money wrapped up in a five pound note; conspiracy theorists take note!