The Botanist's War

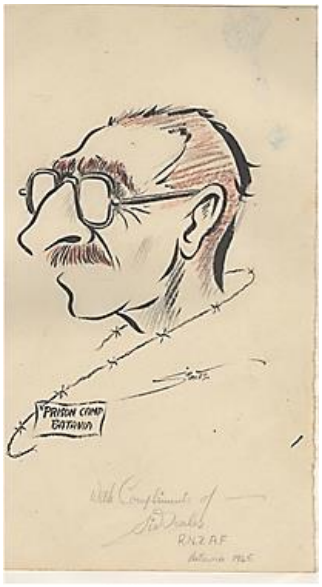
A TASC talk on Thursday 21st May, 2015 by Hilary Audus

This was the first in what I hope will be a series of talks on the lives of scientists, known or not so well known.

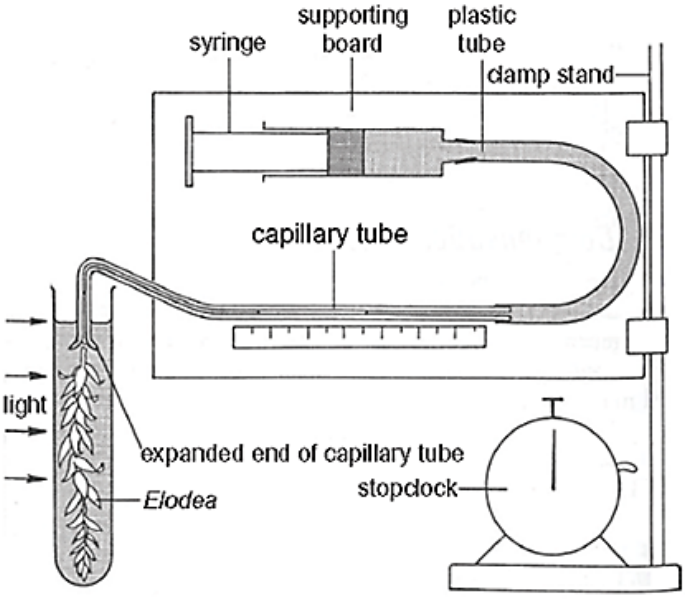
This talk was given by one of our members, Hilary Audus, who has the distinction of being the main graphics artist and animator of Raymond Brigg's Christmas tale, The Snowman.

Hilary's father, Leslie John Audus, who was a Flight Lieutenant in charge of a RADA station in the RAF during the Second World War, was captured by the Japanese and incarcerated in a number of their prisoner of war camps where he stayed till being set free at the end of the war.

Back in Cardiff, Spring 1946.



His background was in botany but he was also an extremely talented artist, so we know where Hilary got her talent. In 1940 he was credited with developing both the method and device still used today for measuring the rate at which oxygen is given off by plants, during respiration, at different light intensities. It is known as the Audus Bubbler (see diagram below). He was able to use his knowledge of botany during this time to help save the lives of many fellow inmates.



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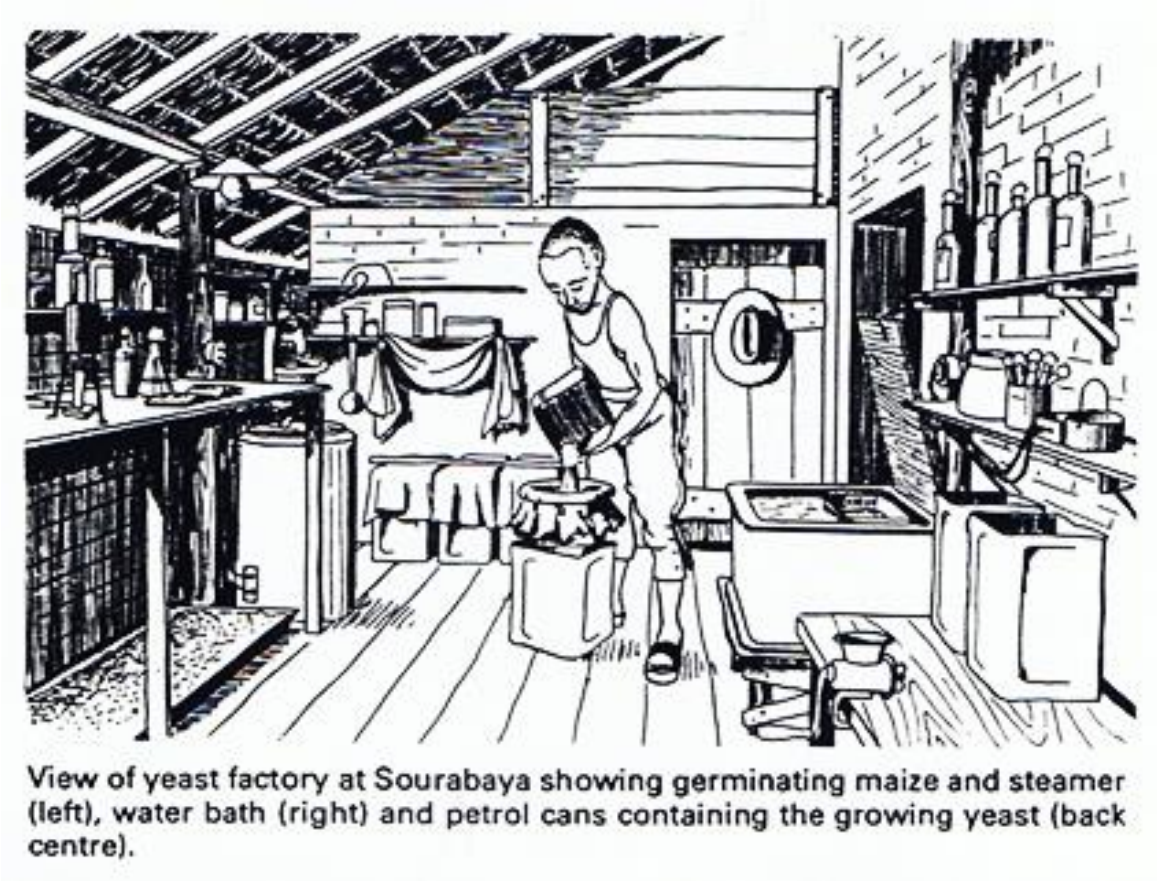
One of the main health problems that POWs faced while incarcerated was the lack of decent nourishment and especially of some crucial vitamins needed for a healthy life. Vitamin B12 was one of the major ingredients missing in their diets. Without B12 POWs suffered from a number of ailments including symptoms of Beri Beri and blurred vision which led in extreme cases to loss of sight.

By whatever means open to him, and in partnership with a few other skilled POWs, he was able to manufacture a particular variety of yeast which was a good source of vitamin B12. They had to beg, borrow and steal in order to get hold of the necessary bits and pieces to accomplish this and were able to manufacture their own equipment including water baths, steamers and germinating vessels (see sketch below) in total secrecy. When he got moved to another camp he had to start-up all over again, that is apart from the glass thermometer he managed to make from some odd bits of glass tubes left lying around the first camp he was incarcerated in. Amazingly he was able to smuggle this when he was moved to a different camp.



View of yeast factory at Sourabaya showing germinating maize and steamer (left), water bath (right) and petrol cans containing the growing yeast (back centre).

Another spin-off from this yeast manufacturing process was of course beer and the Japanese drink Saki. This was especially useful in bribing the Japanese guards.

Hilary showed us some of the many drawings and sketches he made, while in the camps, of his fellow captives and also of some of the buildings and places where the illicit stills and equipment were housed and used.

It amazes me how he and his small band of compatriots were able to keep all this secret from the camp commanders, especially as to produce yeast requires the necessary equipment to be kept at a constant temperature for long periods of time. It just goes to show how inventive and ingenious we humans can be when our back is against the wall.

Hilary's dad used his knowledge to save his fellow POWs from certain sickness, starvation and death. "The Botanist's War" showed how one man, using his scientific knowledge made a difference.

Marius Stuart (The Adstock Science Club)