D.R. Barber's Invading Bacteria as a Candidate for the Unknown Venusian Ultraviolet Absorber

Open Mike presentation by Bob Fritzius at the
Venus Exploration Analysis Group (VEXAG) Meeting #5,
University of Maryland, May 8, 2008
(Revised)

These comments provide a thumbnail sketch of what I think was a Venus-related astrobiology article, written in 1963, which was back before astrobiology was *invented* (in vogue).

Over a 31 year period (1937-1961) astronomers at the Norman Lockyer observatory in Southwestern England experienced six rainwater borne bacterial invasions of unidentifiable rapidly liquefying bacteria.

The bacteria produced *swimming pools* on astronomical photographic plates during the 45 minutes required for processing. The pools were up to 25 millimeters across and the bacteria stacked up the emulsion silver salts as walls around them.

Comments for Slide 1

The first reported event was in 1937, and the bacteria arrived via rainwater collected from the observatory roof tops. (Use of roof top rainwater for photography purposes was discontinued.)

In 1948 a second similar bacterial invasion occurred. This time the bacteria were in the observatory's spring water following a hard rain. (From that point in time the spring water was disinfected for photographic use.)

Donald Barber, the chief astronomical assistant in 1948, worked with biologists down in the lowlands (at the Area Laboratories of the National Agricultural Service). They set up a long term water sampling program at the observatory to check for further outbreaks of the rapidly liquefying bacteria.

Between 1948 and 1961 there were four additional bacterial *events.* All six events (1937-1961) occurred during the months of May through July.

On two occasions there was a brief afterglow (a recrudescence) of the bacterial activity in the following summer or two. (Three in one case)

Barber reported that the rapid liquefying bacteria were similar in appearance to local indigenous liquefying bacteria, *Bacillus (Pseudomonas) fluorescens liquefaciens*, which don't cause any significant problems with photographic emulsions, but that the *invaders* had never been seen before in terrestrial strains. They were remarkably immune to the toxic properties of the photographic silver salts *and they were strongly fluorescent*.

Late in the study Barber said, (And this was a bombshell.) "An American suggestion that the virus responsible for endemic influenza outbreaks emanated from the planet Venus, led to a fresh examination of the 1937/1948 Sidmouth data…" and "All available data was analyzed in relation to solar activity, and planetary configurations, in particular those of Venus." (This is an expansion to what was said in the talk.)

Three things were found (with one exception) to be requisite for Barber's "Invasions by Washing Water."

(1) A Venus inferior conjunction with earth,
(2) A major geomagnetic storm, time-wise near the conjunction,
(3) And rainfall at the observatory.

Each of the figures in slide 1 show, for each bacterial invasion during the 1937-1961 timeframe:

(A) the date of the nearest Venus inferior conjunction with earth

(B) the date and location of Venus, with respect to Earth, during the geomagnetic storm nearest to the inferior conjunction, (In the talk this was misstated as “where Venus was at the time of inferior conjunctions.”)

(C) the date of the onset of the bacterial event.

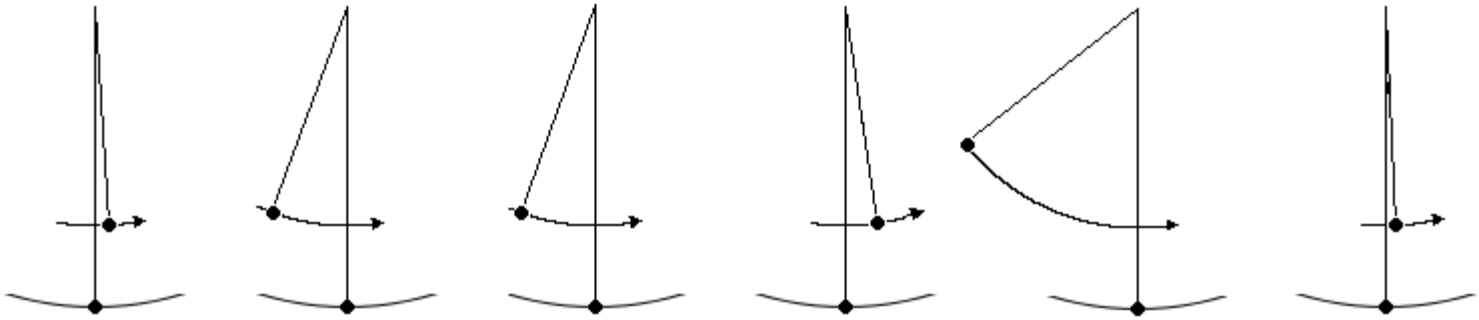
Across the bottom of the slide are the elapsed days between geomagnetic storms and the onset dates of the rainwater borne invasions (C-B). The delays averaged 55 days, with 35 days minimum and 67 days maximum.

To me, invasion number five is the most interesting of the six. It suggests the possibility of an electrically driven (with Venus as the accelerator) *jaywalker* event. (This *jaywalker* suggestion was not mentioned during the talk.)

D.R. Barber's (1963) Invasion by Washing Water

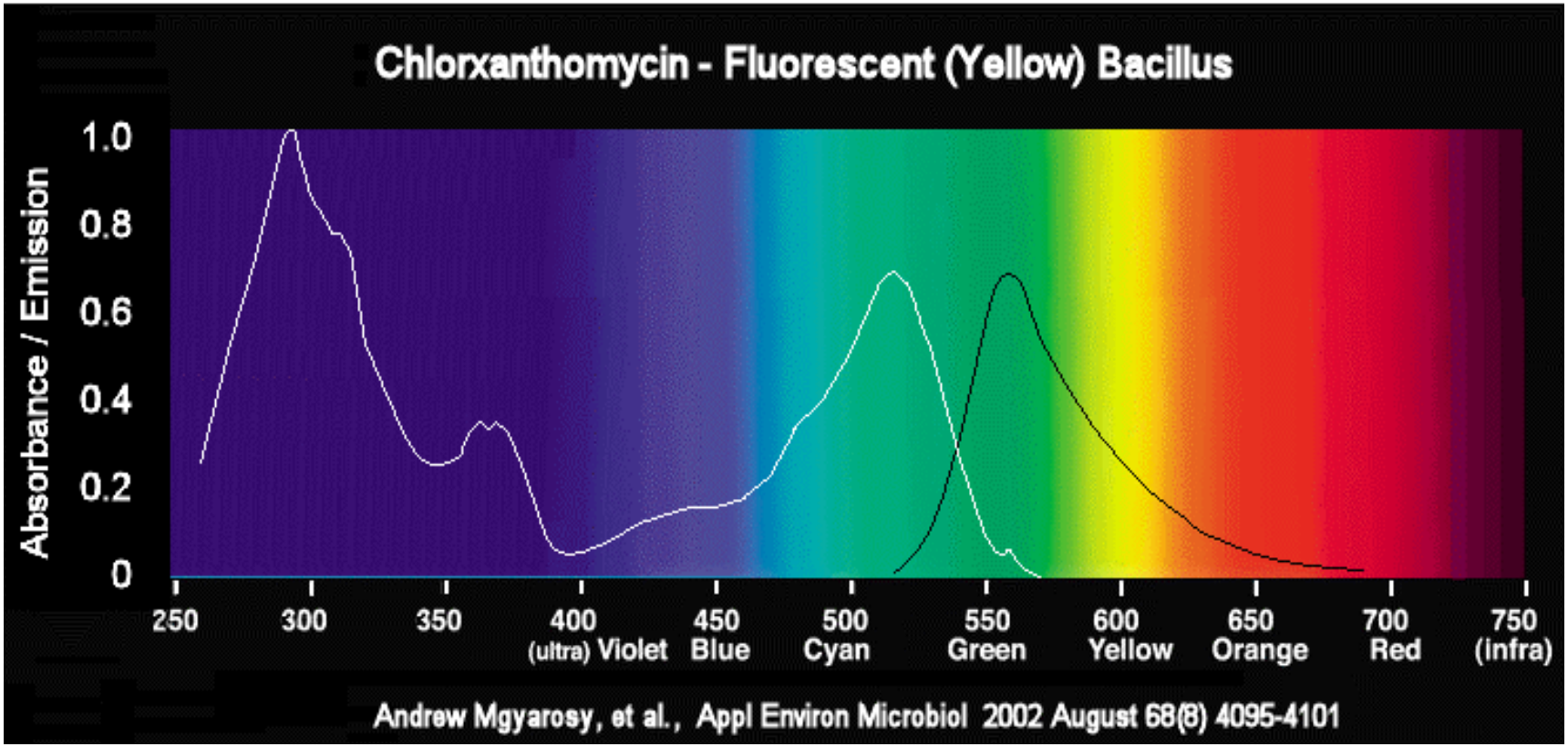
Lags between geomagnetic storms and Barber's bacterial invasions

A	Inferior Conjs.	Apr 18 1937	Jun 24 1948	Jun 22 1956	Jan 28 1958	Sep 01 1959	Apr 10 1961
B	Geomag. Storms	Apr 24-25 1937	May 21-22 1948	May 23-25 1956	Feb 11 1958	May 11-12 1959	Apr 14-15 1961
	Venus / Earth						
C	Onsets	Jun 5, 1937	Jul 26 1948	Jul 23 1956	May 8 1958	Jun 17 1959	Jun 21 1961
C-B		41	66	61	57	35	67



From: D.R. Barber, Invasion by Washing Water, *Perspective*, 5, 201-208, 1963

These UV absorption and visible light fluorescence curves are from a study done based on the pigment in fluorescent bacteria found in California soil. I think that Barber's Lockyer Observatory invading bacteria might present similar characteristics.



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If Barber's bacteria really came from Venus (and he said that if they cannot be detected enroute with satellites then Venus has to be ruled out as their source), then I speculate that the strongly fluorescent Venusian bacteria would constitute a candidate for the unknown Venus ultraviolet absorber.

Post conference note: Most *Bacillus Pseudomonas fluorescens* bacteria produce green light when excited by ultraviolet light. Barber didn't specify a visible color. Rather, he said, (and this may be ambiguous) "…the invading organisms showed strong fluorescence *in* ultra-violet light." (Emphasis added.)

Copies of Barber's paper were made available to conferees.

Copies also are available from Bob Fritzius at
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