Have bacteria won?
IODURES & BROMURES  

Docteur EHRlich
TIME
THE WEEKLY NEWSMAGAZINE

DR. ALEXANDER FLEMING
His penicillin will save more lives than war can spend.
(Medicine)
‘It is time to close the books on infectious disease’.

Never said in the 1960s by the US Surgeon General, William Stewart.
HACCP
BOY LEFT UNABLE TO SPEAK OR WALK BY E.COLI BUG PICKED UP ON SCHOOL FARM TRIP WINS HUGE DAMAGES PAYOUT
Groundhog Day is a 1993 comedy film directed by Harold Ramis, starring Bill Murray and Andie MacDowell.

In the film, Murray plays Phil Connors, an egocentric Pittsburgh TV weatherman who, during a hated assignment covering the annual Groundhog Day event (February 2) in Punxsutawney, finds himself repeating the same day over and over again. After indulging in all manner of hedonistic pursuits, he begins to re-examine his life & priorities.
Groundhog Day for chair of E.coli inquiry

Hygiene failures similar to Scottish case

Worrying similarities have emerged between the world's worst E.coli O157 outbreak and the outbreak in the South Wales valleys.

The E.coli public inquiry was yesterday shown a blog entry suggesting that chairman Professor Hugh Pennington was trapped in "Groundhog Day".

The item, posted at the end of February on an International Food Safety Network blog, asked how the "good professor" who led the inquiry into the Wishaw outbreak in Scotland in 1995, which infected about 500 people and killed 17, could escape from "this recurring nightmare".

It added: "The inquiry into the 2005 outbreak is again chaired by Prof Pennington, and has again heard testimony highlighting gross managerial failures and shocking levels of complacency.

The Scottish outbreak was caused by meat produced by butcher John Barr, who was found to be using the same knives to handle raw and cooked meat. The inquiry into the South Wales valleys outbreak has heard how butcher William Tudor relied on one vacuum-packing machine for raw and cooked meats.

The single machine, in use for at least nine months before the outbreak, had been repeatedly referred to as a serious risk of cross contamination, and was placed beneath a fly-killing machine at the Bridgend Industrial Estate factory.

Among the many recommendations the Pennington group made after the Wishaw outbreak were changes to the butcher licensing system, to ensure that all food handlers have at least basic food training and all supervisory staff - and those who run small, one-person operations - to be trained to at least intermediate level.

Another recommendation stated there should be "Separation, in storage, production, sale and display, between raw meat and unwrapped cooked meat/meat products and other ready to eat foods."

Speaking in 1995, Prof Pennington, said, "The prospect of another Mr Barr type situation is still quite real because everybody I talk to in meat inspection and environmental health tells me there are people who are still not doing the right thing."

Despite the recommendations, Tudor repeatedly passed routine environmental health inspections and was awarded his butcher's licence just over a month before the outbreak, which killed five-year-old Dafydd Primary School pupil Mason Jones, even though Bridgend Council's inspectors were aware that he was working with only one vacuum-packing machine.

Asked about the Groundhog Day blog entry, Prof Pennington, Dr Salmon, director of the Communicable Disease Surveillance Centre Wales, who was part of the outbreak control team, said: "The butcher, John Barr, as far as I understand, was extremely well connected in the location of which his enforcement was taking place.

"It will be important to take into account how much such considerations may or may not have applied in the case of William Tudor."

Madeleine Brindley
madeleine.brindley@radiowales.co.uk

March 11 2008

Professor Hugh Pennington

OTHER BIG E.COLI OUTBREAKS

n 1993 the Jack in the Box burgers breakout in the Western US resulted in 52 cases and four deaths.

The most serious outbreak in the UK opened in 1996 in Wishaw, near Motherwell, Scotland. It resulted in 500 cases and 17 deaths.

n 1995 in schools in Sakai, Japan, an outbreak resulting from radish sprouts to three deaths.

n 2000 an outbreak in water at Ikeron, Ontario, Canada, resulted in 390 cases and seven deaths.
The Public Inquiry into the September 2005 Outbreak of E.coli O157 in South Wales

Chairman: Professor Hugh Pennington
March 2009
## Important Outbreaks

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Type</th>
<th>Country</th>
<th>Cases/Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Jack in the Box</td>
<td>Burgers</td>
<td>Western US</td>
<td>732/4</td>
</tr>
<tr>
<td>1994</td>
<td>West Lothian</td>
<td>Milk</td>
<td>Scotland</td>
<td>100/1</td>
</tr>
<tr>
<td>1996</td>
<td>Wishaw</td>
<td>Meats</td>
<td>Scotland</td>
<td>ca 500/17</td>
</tr>
<tr>
<td>1996</td>
<td>Sakai City Schools</td>
<td>Radish Sprouts</td>
<td>Japan</td>
<td>ca 8,000/3</td>
</tr>
<tr>
<td>1999</td>
<td>North Cumbria</td>
<td>Milk</td>
<td>England</td>
<td>114/3 HUS</td>
</tr>
<tr>
<td>2000</td>
<td>Walkerton</td>
<td>Town Water</td>
<td>Canada</td>
<td>ca 2,300/7</td>
</tr>
<tr>
<td>2006</td>
<td>US Nationwide</td>
<td>Spinach</td>
<td>US, Canada</td>
<td>200/3</td>
</tr>
</tbody>
</table>
## Salmonella, England & Wales

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>S. enteritidis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>32,986</td>
<td>23,231</td>
</tr>
<tr>
<td>2004</td>
<td>14,283</td>
<td>9,028</td>
</tr>
<tr>
<td>2014</td>
<td>7,250</td>
<td>2,331</td>
</tr>
<tr>
<td>2015</td>
<td>8,558</td>
<td>2,495</td>
</tr>
</tbody>
</table>
E.coli 104:H4

Stx 2 and EAggEC
No eae genes

Germany, France, May-July 2011
3128 cases
782 with HUS
46 deaths

Next-generation sequencing
Fenugreek seeds

Egypt Nov 2009, 15,000kg in container
Offloaded Antwerp, barge to Rotterdam
By road to Germany (400kg to UK)
75kg to German sprout producer
Outbreak

95kg from UK to France
Jam jar germination
Outbreak
### Campylobacter

**Laboratory reports England & Wales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>46,748</td>
</tr>
<tr>
<td>2012</td>
<td>65,044</td>
</tr>
<tr>
<td>2015</td>
<td>55,697</td>
</tr>
<tr>
<td>2016</td>
<td>52,129</td>
</tr>
</tbody>
</table>
Campylobacter

EU 9 million cases/year
UK 280,000 cases/year

Fresh shop chickens 59%+ve
HACCP
‘Making predictions is difficult, particularly about the future’
Moore’s Law

Computer power doubles every 2 years

Rate of reduction of DNA sequencing costs faster.
Rate of increase in its power faster.
Microbes evolve in real time

Regulation is difficult

Money will be short

Greed will be with us for ever!
Have bacteria won?
No….but