

Smallpox Vaccine Mystery Persists

Is the world's most famous vaccine story factually incorrect? No one knows.

As any high school student will testify, the first, foremost and famous vaccine in history was the one first developed in 1798 by Edward Jenner against smallpox. It is curious, then, and not a little ironic, that today no one knows what source virus Jenner used to create his life-saver.

Smallpox was once the lethal scourge of millions. Jenner's creation started a public health battle that ended in 1980, when the virus (a few samples securely locked away in laboratories notwithstanding) was declared eradicated.

According to the standard, school-approved, story, Jenner's insight came when he noticed that while every year lots of people fell ill to smallpox, milkmaids didn't. He reasoned that this was because cows regularly contracted a disease called cowpox – a similar but mild illness that didn't seem to affect people, but resulted in blistered udders. By touching the cowpox blisters, Jenner wondered, were the milkmaids absorbing something that protected them from smallpox? Experiments began, and the world has been forever grateful since...

Certainly, as the war against smallpox continued over the ensuing decades, cowpox was often used as the source of the virus for the vaccine. The cow disease was caused by a very weak close relative of the much more virulent human one. Introduced into the bloodstream, cowpox prompted the immune system to produce antibodies, which worked triumphantly against both viruses. But was it the source virus used by Jenner himself? Is the classroom story correct in this (one might suggest critical) respect?

Simply running a genetic line back from the virus used today to produce smallpox vaccine would not, frustratingly, provide an answer. These days, the vaccine is derived from a virus known as *vaccinia*, which exists only in laboratories. No one knows where it came from. This rather awkward admission arises because of very poor record-keeping a long time ago. *Vaccinia* has not been found anywhere outside of lab cultures. Genetically, it is a combination of cowpox and smallpox. It's very effective as a vaccine source, but given its mixed heritage is almost certainly not a direct descendent of Jenner's original culture.

Now, research reported in the *New England Journal of Medicine* throws a new possible source into the pot. A letter from a team of researchers led by Livia Schrick of the Robert Koch Institute in Germany reports on the gene sequencing of a rare smallpox vaccine sample dating from 1902. The scientists opened a vial of vaccine made in 1902 by a Philadelphia company, HK Mulford.



Opening this 1902 vial of smallpox vaccine resulted in surprises

After amplifying and sequencing the genetic material recovered, the team found that the contents bore a 99.7% similarity not to cowpox but to another virus, horsepox.

Even more curiously, they also found that certain DNA components were missing at either end of the sequence created. These deletions are not present in the genomes for either cowpox or horsepox – but they are found in *vaccinia*.

Jenner, of course, lived in Britain, and the 1902 vaccine sample was made in the US, so Schrick and her colleagues in one sense move us no closer to identifying the absolute original source of the smallpox treatment. However, they suggest, the data does at least add weight to the suggestion that the virus that in the end did most of the work in eradicating disease – *vaccinia* – derived from an equine and not a bovine ancestor.

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The Rotary Club of
Wynberg



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January in Rotary
Vocational Service month

Wynberg Rotary meet every Thursday,
6 for 6.30pm,
Palm House, Wynberg.

For more information about our club, like us
on Facebook or visit our website:

Wynbergrotary.org.za



BE THE INSPIRATION

Minutes: 10th January 2019

Compiled by Lina Howard

Attendance

22 members = 72%

Visitors: Barbara Smith, Val Cleveland, Brian Howard, Lauren Burge (Pres elect of Putney RC, UK), Jackie Wannenberg, Sarah Naidoo, Simisha Pather and Richard Cock (Guest Speaker)

From the chair of President Biffy

- Rotary Friendship exchange- 1) Sweden D2400 outgoing invitation- please refer to email sent.
2) D7120 USA in October out going.
- The RFE to Mumbai has been postponed but we are inviting them for April. President Biffy suggested we co-host with another club. The visit would then be for 3-4 nights.
- Kromboom Rotary have now introduced Opera Lite @ Marist – at St Joseph's College 10th Feb. This takes the place of Opera in a Convent Garden. Please support.

Fellowship

Birthdays: Alan on 10th, Dennis and Kit on 12th and Mary Vivian on 14th

Slots

Dennis: Norwegians students from Oddemarka Junior School visiting 17th – 25th February. All female team.

Hosting by Bruce and Biffy.

Help needed with activities (+- 3 days)

The team will be visiting the club on 21st Feb

Members' Moments

Mike: has only one school going child left at home. His daughter's Matric results were fantastic – achieving an aggregate in excess of 80% Congratulations to Cari and parents

Stacy: Her son had an emergency appendectomy and landed up at Victoria Hospital on Christmas eve. Stacy said the nursing and medical attention was fantastic.

Wenche: Commended the Fire and Rescue Service for helping her when she was knocked over at Muizenberg Beach. Their assistance was professional and she felt that she could not have been in better hands.

Justin: The barista at his office left and on Justin's suggestion, "Ground up" came in to replace – they now have a contract – another thumbs up for a good recommendation

Speaker

Richard Cock – who has been conducting and helping to raise funds with Proms for +25yrs. A stalwart supporter of Proms, country-wide.

Richard told us that the city orchestras are in trouble – there are only 2 left, one in Durban and one in Cape Town. The theatre – opera and ballet are also contracting and no more new work is being created as there is no funding from Dept of Arts and Culture.

However there are opportunities available for entrepreneurs. He now arranges the Mozart festival which has 18 events. Many European artists are happy to come out over their winter. Some embassies assist.

Youth orchestras have been expanding – we have amazing talent.

A new model needs to be developed in SA.

We applaud Richard who is our very own Mr Music Man.

Swindle

44 cards remain and the kitty stands at R915.

Val's name was drawn and she drew the 8 of Spades (agh shame...close)

Attendance prize went to Stephanie

President's Pearls

"The happiness of your life depends on the quality of your thoughts"

Duty Roster	January			February
	17	24	31 SOCIAL: Braai at the Barnards' home	7 Club meeting
Sergeant	Cleveland	Jackson		Overbosch
Wynpress Editorial	Bird	Bredenkamp		Bonga
Wynpress Minutes	Bredenkamp	Cleveland		Thomas
Door Duty	Dietrich	Gowdy		Howard
Grace	Overbosch	Schonegevel J		Schonegevel R
Loyal Toast	Smith	Thomas		Todd
International Toast	Todd	Van Niekerk		Barnard
Speaker Intro and Thanks	Gowdy	Howard		N/A
Entertainment for the month	Barnard, Bayes, Gowdy, Thomas, Schonegevel R			Murphy, Howard, Maunder, Overbosch, O'Driscoll

Dates To Diarise

17 January	Peter Kuhnert – Rhino poaching in the Kruger National Park
24 January	PP Peter Dutton – RC Hout Bay's Skate Park project, currently under construction
31 January	Bring-and braai at the Barnards' home
7 February	Club meeting
10 February	Opera Lite @ Marist (Kromboom Rotary Club)
21 February	Students and teachers from Oddemarka Junior School, Norway

FAMOUS ROTARIANS

All Rotarians are important and famous in their own way, but there are some whose names are recognized worldwide. Here are some famous people who have worn the Rotary pin:

Franklin D. Roosevelt
Pope Francis
Margaret Thatcher
Bill Gates
Prince Charles
Angela Merkel
Colonel Sanders

John F. Kennedy
Walt Disney
Neil Armstrong
Sam Walton (the founder of Walmart)
J. C. Penney
Sir Winston Churchill



Tailpiece

