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The Sylvia and Herbert Berger Lecture  
New York Academy of Medicine  
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**The Death and Resurrection of a Virus**

Special pleasure for my return to the Academy and to renew old friendships, especially with you President of whom I am delighted and have been a great admirer. They the viruses incarnated may be kind-hearted. Special thanks for including my family - great of whom one now speaks.

I am most grateful to the Academy for the invitation to present this year the Sylvia and Herbert Berger Lecture. Those who have preceded me in this lectureship are a distinguished group indeed. I am duly honored to be invited to join such a notable group.

Twenty years ago, on 8 May 1980, the World Health Assembly declared that smallpox had been eradicated. Initially, the announcement was greeted with frank disbelief. How could one possibly be certain that in some distant, isolated village, cases might not still persist? Those who knew Africa and Asia best were probably the most skeptical. Gradually, however, confidence grew and countries ceased vaccination; no further cases were found; and thus drew to a close a great adventure -- the eradication of a disease -- the only disease that <sup>man has</sup> ~~we have~~ yet succeeded in eradicating. The fact that this was, through history, by far, the most deadly of all diseases made the victory that much more gratifying. For even as recently as the 20<sup>th</sup> century, more than 300 million persons died of smallpox, three times as many who died either directly or indirectly as a result of armed conflict during the past century. *To give perspective to the present*

(Tonight I should like) to view briefly with you the historical perspective of smallpox the disease; something of the trials and little known tribulations of the eradication program itself; how it was born, albeit barely; how it struggled and eventually succeeded, but by the narrowest of margins. Then, just as preparations were being made to conclude the difficult Odyssey by destroying the remaining stocks of the virus, information emerged that the Soviet Union had been engaged in an unbelievably reprehensible program to weaponize the virus for strategic use -- in ICBMs. And then ~~the final blow~~ -- a last minute reversal by the US of its position on destruction of the virus, a strange <sup>and</sup> ~~policy~~ <sup>policy</sup> decided at high levels of government where the scientific air is traditionally thin.

Origins

① Ramess - 1157 but + other mummies 400+ yrs. older  
No animal reservoir Human to human chain - 3500 years.  
Probably a mutant from a true mammal reservoir



Ⓐ Ⓑ Ⓒ Ⓓ Portrait of smallpox + blindness

②③ Gods - Unique among diseases - specific death.

④ Maeauky - complexion

⑤ Jennor -

⑥ Mark maid -

x ⑦ Vaccine evolution

x ⑧ Zdanov <sup>1958</sup> - U.S. pro malaria

x ⑨ <sup>1966</sup> WHA {  
• U.S. position changes "Can't eradicate" - Rene Dubos Man Adapting  
• The debate — No more money for U.N.  
2 votes  
• DG - asks for an American  
• Concern is Russians and vaccine - Socialist system.

⑩ 1967 Program begins

\$2.5 x 10<sup>6</sup> / yr. (many donations expected) \$70K over 5 yrs.  
10 yrs. time target  
10 - 15 x 10<sup>6</sup> cases 2 million deaths.

⑪ Strategy

⑫ 1970

⑬ 1973 "Only subcontinent" - 700 million people.

⑭ ⑮ ⑯ Movement

⑰ U.P.

⑱ Ethiopia

⑲ ⑳ Ethiopia roads

㉑ Ali Maalin.

㉒ WHA Resolution #1

㉓ " " #2

㉔ Smallpox is Dead - OR IS IT?

(Cost \$100 x 10<sup>6</sup> or \$7 x 10<sup>6</sup> over 14 yrs)

25 Russia criteria - smallpox at the top.

26 Al. book quotes.  
Why so important

27 Moschede

28 The case

29 The cause

30 Hospital

Prepared to destroy the virus  
so why not destroy the virus



U.S. scenario  
~~U.S. 40x10 doses~~

U.S. 40x10 doses  
emergency

CDC \$ for labs  
network; training funds;  
Planning

31 Committee doc.

32 Endorsements

33 Conference call

Decision

34 Final resolution

35 " "