



Health Science and National Security

DONNA SHALALA, FORMER U.S. SECRETARY OF Health and Human Services, makes an astute observation in her Editorial "New directions for biomedical science" (25 Jan., p. 585), that the real battle against bioterrorism must be waged at the local level. She extends her discussion to the more general question of how do we apply science to health in the 21st century. Addressing such a broad scope of issues raises an enormous challenge for health science. Will an invigorated pursuit of health safety lead to a more myopic approach to health science, one that treats local symptoms and not global disease? In this case, the looming, and linked, challenges of health and security call for a unified approach.

Self-perpetuating disease, destruction, and fear are the goals of bioterrorism and biological warfare. However, for many parts of the world, such conditions define everyday life. According to the World Health Organization (1), nearly 90% of all infectious disease deaths are caused by six diseases: tuberculosis, malaria, HIV/AIDS, pneumonia, diarrheal diseases, and measles. They account for more than 13 million deaths per year and for one in two deaths in developing nations. Infectious disease is one of the major threats to health and stability in developing nations, and thus the world. Not focusing on the basic health needs of all these people creates a disease pool to draw on and provides motivation for increasingly desperate (or drastic) acts by those most affected.

Shalala mentions a need for people who understand both scientific findings and patients' needs. We should also ask, where are such people needed, and what else should they know in an increasingly interconnected world? And, why should we in developed nations care—we've virtually wiped out these diseases (excluding HIV/AIDS)? In answer to the last question, we should care because we haven't really wiped them out, as antibiotic-resistant tubercu-

losis and staphylococcus show, and also because, as the past few months have shown, tackling these health issues directly is the most effective means for battling biowarfare of any sort, natural or human-made. Extending this perspective to a global scale allows intelligent national security decisions.

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References and Notes

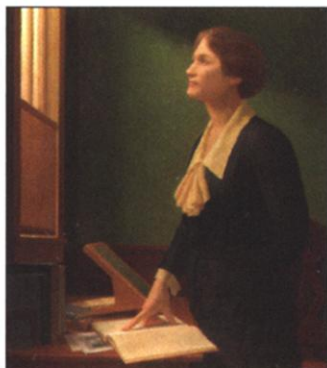
1. D. L. Heymann, "The urgency of a massive effort against infectious disease," testimony before the Committee on International Relations, U.S. House of Representatives, 29 June 2000.

In Good Company with Newton and God

DUDLEY HERSCHBACH'S DONATION OF A portrait of Cecilia Payne-Gaposchkin to the faculty room at Harvard University is long overdue recognition of a great astronomer. In the Random Samples item "Breaking the portrait glass ceiling" (15 Feb., p. 1227), the painting is compared with William Blake's watercolor depicting God surveying the universe (1), but it seems more to recall Blake's painting "Newton." The position of Newton's right hand on the scroll and of Payne-Gaposchkin's on the notebook is almost identical. I suspect that Payne-Gaposchkin would have preferred a comparison with Isaac Newton rather than one with the Almighty.

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Similarity is in the eye of the beholder. (Left to right) Portrait of Cecilia Payne-Gaposchkin and Blake's "Newton" (1795) and "The Ancient of Days" (1794).



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References and Notes

1. The Blake painting "The Ancient of Days" is the one referred to in the Random Samples item. In this case the right hand is not visible and the left hand holds a pair of dividers (see www.triblio.org/wm/paint/auth/blake/ancient.jpg).

A South African Perspective on 2001

FOR SOUTH AFRICA AND HIV/AIDS, 2001 was the year of the two court cases. In the first, 39 members of the Pharmaceutical Manufacturers Association (PMA) challenged the South African government over its Medicines and Related Substances Act of 1997. The claim was that sections of the Act breached the Trade-Related Aspects of Intellectual Property agreement. But faced with unprecedented national and international opposition, the PMA withdrew their case on 19 April 2001. It seemed that patients would be placed before patents.

When the PMA's case collapsed, however, so did the united front of government, labor, nongovernmental organizations, and the Treatment Action Campaign (TAC). Health Minister Manto Tshabalala Msimang indicated that South Africa was not planning to implement antiretroviral treatment, citing the very argument used by the PMA: inadequate infrastructure. Defending the government's practice, Msimang said, "it is erroneous to believe that South Africa does not give treatment to people with AIDS" (1).

This intransigence over antiretroviral treatments led directly to the second case, filed on 26 November 2001, in which the TAC took the government to court over the delay in implementing mother-to-child transmission prophylaxis. The

TAC called for the government to make nevirapine available throughout the public health sector and not only at 18 pilot sites. TAC also demanded that the government produce a national treatment plan.

The government opposed the action, but on 14 December, Judge Chris Botha of the Pretoria High Court found in favor of the TAC. He ruled that state health departments are "obliged to make nevirapine available to pregnant women with HIV...and to their babies," and he also ordered that the state "forthwith plan an effective comprehensive national program to prevent or reduce mother to child transmission...including the provision of voluntary testing and counsel-

ing...and formula feed" (2). Within days the government appealed. Msimang said that the courts were meddling in executive affairs and that this would "throw executive policy making into disarray and create confusion about the separation of powers, which is a cornerstone of our democracy" (3).

The government has tried to justify their opposition to treatment programs by arguing that resources are scarce, costs are prohibitive, and further research is needed—this last being the motivation behind the testing of nevirapine at 18 pilot sites. The day after World AIDS Day 2001, the African National Congress (ANC) National Executive Committee "endorsed government's wide-ranging strategy to combat HIV/AIDS" and insisted that "so little is currently known about the longer term effects of [nevirapine]" (4).

As with the Presidential AIDS Panel of May 2000, where the issue of whether HIV causes AIDS was reopened, politics is again meddling in science. Jerry Coovadia, a leading pediatrician, has said that "nothing could be simpler" than the nevirapine regimen in mother-to-child transmission prevention (5), yet Msimang calls advocates of treatment "irresponsible" (6). Presidential spokesperson Smuts Nkonyama has accused the TAC of being "in the pockets of

the pharmaceutical industry." Such statements evidence the "crisis of truth-telling" (7) that Justice Edwin Cameron has identified as a major impediment to progress against HIV/AIDS in South Africa.

It is chimerical for government spokesperson Jo-Anne Collinge to say that South Africa's policies are "in line with [United Nations] practise" (8). Now, to our shame, the government is to challenge a ruling based on Section 27 of the constitution, which guarantees the "right of access to health care services, including reproductive healthcare services." Msimang has said it is a "crime against humanity" for the poor to die because they lack medicines (9); yet, is it not scandalous that her own people are being denied freely donated nevirapine? South Africa is party to the Commitment of Intent that came out of the United Nations special session in June 2001; but in December the ANC posed the question, "Does an infective agent exist? If it does, is it a virus?" (10).

The real question is how South Africa and the concerned international community can rid the country of nonsense that is killing thousands of our people.

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Letters to the Editor

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References and Notes

1. "Government AIDS drugs still a way off," *Business Day*, 20 April 2001, p. 1.
2. Case no. 21182, Transvaal Provincial Division, Judge C. Botha, High Court of South Africa, ruling 14 December 2001. Full text of the judgement is available on the TAC Web site, at www.tac.org.za.
3. TAC news release, "TAC responds to government appeal," 19 December 2001.
4. Statement of the ANC National Executive Committee, 2 December 2001. Available at www.anc.org.za/anc-docs/pr/2001/pr1202.html.
5. "ANC still cautious on drugs to safeguard newborns," *The Star*, 3 December 2001, p. 5.
6. "Rigorous facts will prove the best antidote to HIV-related hysteria," *Sunday Times*, 14 October 2001, p. 22.
7. "'Crisis of truth' undermines campaign," *Business Day*, 25 October 2001, p. 11.
8. Z. Nkuta, *Sowetan*, 30 November 2001, p. 1.
9. "Cheaper AIDS drugs must be on trade talks agenda, says minister," *Business Report*, 30 October 2001, p. 1.
10. ANC, "HIV/AIDS in South Africa: challenges, obstacles, responses," briefing document, 30 November 2001. Available at www.anc.org.za/ancdocs/ancoday/docs/aidsbrief.htm.

Facts of Political Life

THERE HAS BEEN MUCH DISCUSSION ABOUT the length of time it took to get the science adviser to the president in place (for example, Breakthrough of the Year, "Bush mystery science theater," 21 Dec., p. 2446). But

how long did it take to get the national security adviser in place? Who was the national security adviser to the candidate? Who was the science adviser to the candidate?

From my experiences as an American Association for the Advancement of Science Congressional Science and Engineering Fellow, I offer the following observation: The facts of political life are that if you expect to sit around the table after the election victory making decisions and being immediately appointed, you must have been in the trenches during the campaign.

If the scientific community wants to have a presidential adviser and other science positions filled right after the election, they should strive to have advisers in place during the campaign.

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CORRECTIONS AND CLARIFICATIONS

REPORTS: "Otolith $\delta^{18}\text{O}$ record of mid-Holocene sea surface temperatures in Peru," by C. Fred, T. Andrus, D. E. Crowe, D. H. Sandweiss, E. J. Reitz, C. S. Romanek (22 Feb., p. 1508). All instances of the term

" $\delta^{18}\text{O} \rightarrow$ " were typographical errors and should not have appeared in the text.

RANDOM SAMPLES: "Scared to death by the number four" by D. Malakoff (11 Jan., p. 267). Sociologist David Phillips from the University of California, San Diego, was misidentified as a professor at the University of San Diego.

EDITORS' CHOICE: "Neurodegeneration: expanding on a theme" (4 Jan., p. 15). The credit for the accompanying photos was incorrect. J. Robitschek and J. P. Taylor obtained the images.

NEWS OF THE WEEK: "New genome a boost to plant studies" by E. Pennisi (14 Dec., p. 2266). It was erroneously stated that Maynard Olson at the University of Washington and his team were recruited by Eugene Nester, also at that university, to do the sequencing of the *Agrobacterium tumefaciens* genome. Instead, Olson and his team became involved in the project after sequencing had been initiated by investigators at E. I. duPont de Nemours Company and Pioneer Hi-Bred International, Inc. All of these investigators are among the co-authors of the report by D. W. Wood *et al.* in the same issue [*Science* **294**, 2317 (2001)].

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