

Will we contain the AIDS epidemic?

by John Grauerholz, M.D.

As media everywhere are reporting, the AIDS epidemic is raging still unchecked, although there are various treatment approaches which look promising. One clue to the rapidity with which the disease is spreading may have been found.

Researchers at the Harvard School of Public Health have discovered a clue to the virus's ability to rapidly overcome the body's immune defenses. In a paper in the July issue of the magazine *Cell*, they describe a set of genes in the AIDS virus which produce a protein which binds to certain other genes in the virus, causing a 1,000-fold increase in the reproductive rate of the virus. This protein binds to genes adjacent to those which normally control the rate of reproduction, and amplifies the activity of these genes.

While such an increase in reproductive rate, in a virus, is a cause for serious concern from the point of view of disease control, the implications of this development can have extremely interesting implications for agricultural research, and perhaps provide insights into life processes in general.

French scientists, studying cases of AIDS which occur concomitantly with hepatitis-B infection, have found evidence of integration of hepatitis-B virus genetic material into the genetic material of T-cells. This material was present even in cases with no evidence of hepatitis-B virus by normal antibody studies. This indicates that, in addition to simply being an associated infection, hepatitis-B virus may act as a co-factor along with HTLV-III virus, in producing AIDS.

Doubling every year

In the United States, as of July 26, there have been a total of 12,067 AIDS cases and 6,079 deaths reported to the Atlanta Center for Disease Control. In Los Angeles County in California, 84 new cases were reported in June, bringing the total of confirmed victims in the county to 933. County authorities are also investigating 102 suspected cases. The county had averaged about 45 new cases monthly since 1981. Dr. Betty Agee of the county's Communicable Disease Division, said that the abrupt increase may mean that the two- to five-year incubation period has ended for a whole new wave of victims.

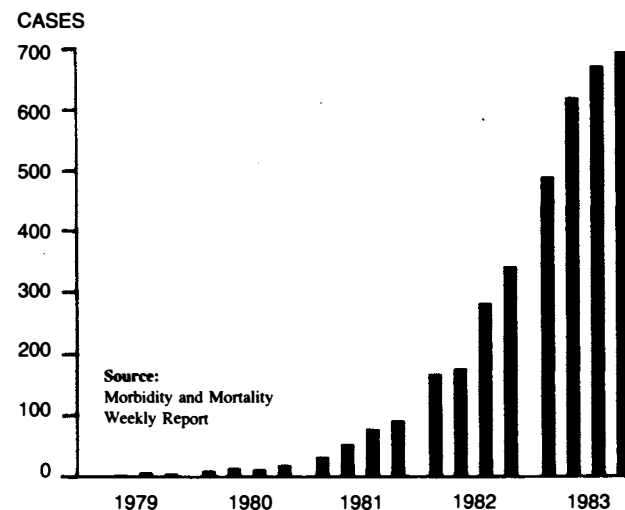
A growing incidence of AIDS is also visiting Western Europe, as conditions of economic collapse spread through these countries. During the first three months of this year,

175 new cases from 17 new countries were reported, bringing the total number of European cases to 940. The number doubled every six months from 1981 to 1983, and since then has been doubling every year. The 178 new cases reported in the first three months of 1985 represent a 23% increase over the 762 cases as of the end of 1984.

The disease is commonest in Denmark, with a reported incidence of 8.0 cases/1 million people; followed by Switzerland (7.9), and then France (5.6). These rates approximate those in the United States in the 1981-82 period, and can be expected to rise to the present U.S. rate of 40.9 cases/1 million population.

Support for this projection comes from studies in countries such as Britain, where a recent report by the govern-

Acquired Immunodeficiency Syndrome (AIDS) — Reported cases, by quarter of diagnosis, United States, 1979-83



ment's chief medical officer, Dr. Donald Acheson, indicates that 10,000 people, mostly men, have been infected with the AIDS virus. This has led to announcements by the Swiss Federal Health Office, and related agencies in Britain and France, that blood donors will undergo mandatory testing for AIDS within the year.

New Zealand recently reported its first locally contracted case in a homosexual man. Previous New Zealand cases had been acquired outside the country or transmitted by contaminated blood from other countries, such as Australia, which recently reported four cases of AIDS in women who were infected by semen from the nation's sperm bank. AIDS has killed over 40 Australians, including several babies, since first detected in Sydney in 1983.

New York City health officials think they have found a

link between the increase in tuberculosis in New York City from 1981 to 1984 and the AIDS epidemic. A report compiled by the Department of Health, and published by the New York Lung Association, states that black and Hispanic males from 25 to 44 years of age had shown the highest increase in incidence of tuberculosis and that they were demographically similar to the intravenous drug users at risk for AIDS. As the number of AIDS cases rose, there was a parallel increase in the number of AIDS-associated tuberculosis cases; the increase was most profound among black and Hispanic males. For the fourth consecutive year, the incidence of TB has increased in the city, with 1,651 cases reported last year, up 57 over the previous year, for a TB rate of 23.4 per 100,000 population, more than twice the national average. Currently, new TB cases in New York City are running over 20% above last year, indicating a phase shift toward an outright epidemic.

In Florida, where CDC studies show AIDS to be increasing more rapidly than anywhere else in the United States, Dr. Mark Whiteside of the Palm Beach Health Department says that he believes that environmental factors, such as squalid living conditions and mosquito- and rat-infested houses, are responsible for the outbreak of AIDS in Belle Glade, which has the highest incidence in the country, greater than one case per 1,000 people. He and Dr. Carolyn McLeod fear that the CDC will ignore that aspect of the outbreak in that community, where 19% of AIDS victims don't fall into the high-risk categories.

The implications of the Belle Glade cases were drawn in a recent *Life* magazine article, which pointed out that Florida farm workers migrate with crop harvests in the Eastern United States, and Belle Glade prostitutes are patronized by long-distance truckers. As conditions in more and more of the United States approach those of Belle Glade, visiting viruses will find receptive hosts.

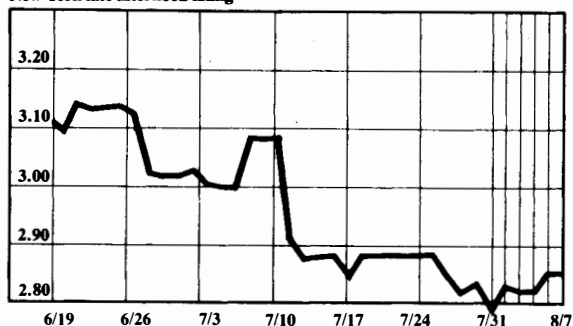
While the availability of a blood test for exposure to the virus should reduce the risk of transfusion-transmitted AIDS, the most common type in non-homosexuals and non-drug users, the long incubation period ensures that more cases will occur over the coming years. This, and the activation of disease in other already infected individuals, would continue to produce an increasing number of cases, which will constitute a growing reservoir of the disease, which could expand rapidly under the present conditions of collapsing health infrastructure in the United States and Western Europe.

The irony of this is that, even with present knowledge, the disease could be significantly contained by vigorous public health measures, as tuberculosis was, even before a definitive cure is found. Behind the present hysteria is a simple question of whether Western civilization is willing to take the action necessary to survive. AIDS is merely the biological correlate of the present economic and military threats to the survival of human civilization. All of these are susceptible to being dealt with by vigorous and decisive action. All of them will only grow rapidly worse if such action is not taken.

Currency Rates

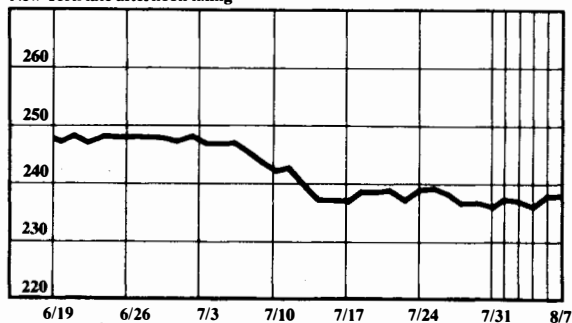
The dollar in deutschemarks

New York late afternoon fixing



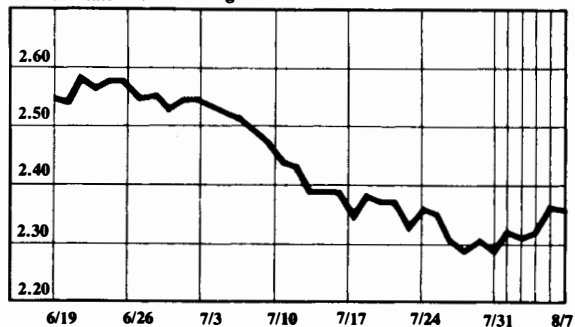
The dollar in yen

New York late afternoon fixing



The dollar in Swiss francs

New York late afternoon fixing



The British pound in dollars

New York late afternoon fixing

