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Science and Weapons Daily Review

**Thursday
28 February 1985**

Top Secret

SW SWDR 85-037C

28 February 1985

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1 USSR: RESEARCH ON AIDS-LIKE VIRUS 


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A reliable source reported that in 1981 the Soviets were conducting research to develop a vaccine for an AIDS-like virus to protect military personnel. We believe that Soviet scientists obtained the virus in African countries where it occurs naturally. 

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3 INDONESIA: SUHARTO ENDORSES DEVELOPMENT OF BIOCHEMICAL WARFARE INDUSTRY 


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Initially, Indonesia probably will concentrate on developing the capability to produce detection and protective equipment to provide a defensive capability against the threat of chemical/biological warfare--a threat it perceives is growing in the region 

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4 KEY JUDGMENTS: WESTERN EUROPE: TRENDS IN BIOTECHNOLOGY COMMERCIALIZATION 

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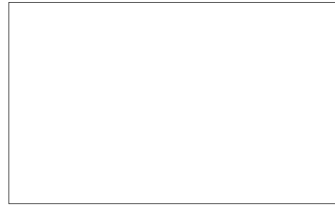
The industrial commercialization of biotechnology is being supported by governmental and industrial programs in many West European countries. Within six to eight years, we expect major multinational corporations in these countries to compete with Japan and the United States for markets in the pharmaceutical, agricultural, chemical, and energy-related industries 

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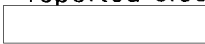
Science and Weapons Daily Review

USSR: RESEARCH ON AIDS-LIKE VIRUS 

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A reliable source reported that in 1981 a Moscow facility had developed a virus that weakened or destroyed the human immune system. Research was under way to develop a vaccine for the protection of Soviet military personnel. 

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 The viral effects reported closely match those of acquired immune deficiency syndrome (AIDS). 

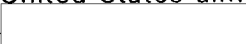
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AIDS, a fatal disease for which there is no known vaccine or treatment, is believed to have originated in Africa. Antibodies to the virus were found in Ugandan children before 1973 and in Zairian patients before 1977. The disease apparently was transmitted to Haiti, from which it was introduced into the United States. Originally described as a disease of homosexuals and drug abusers, cases are now being reported in the general US population. 

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Comment:

Because AIDS apparently was introduced into the United States from a single point source (Haiti) and the Soviets reportedly have been doing military-related research on an AIDS-like virus, we have investigated whether AIDS resulted from a natural disease outbreak or an incident of biological warfare (BW) agent dissemination. We believe AIDS is an unlikely candidate BW agent because the variability of the virus would seriously hinder the development of an effective protective vaccine for the user. We conclude that AIDS in the United States almost certainly resulted from a natural disease outbreak. 

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Soviet scientists were in Uganda and Zaire between 1975 and 1979, and it is very likely that they transported the AIDS virus to the USSR for research



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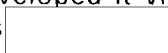


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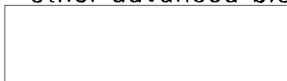


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as opposed to the Soviets having developed it via genetic engineering or other advanced biotechnical methods



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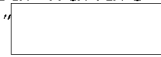
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INDONESIA: SUHARTO ENDORSES DEVELOPMENT OF BIOCHEMICAL WARFARE INDUSTRY



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The Indonesian press reports that President Suharto has endorsed a request from the Army Chief of Staff for the development of a biochemical warfare industry "because other parties are already using poisonous gas."



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Comment:

Since 1980 Indonesia has demonstrated a heightened interest in acquiring defensive chemical/biological warfare (CBW) capabilities. The reported development of a biochemical warfare industry probably pertains to the production of detection and/or protective equipment because Indonesia has almost no capability to defend itself against a CBW threat. Indonesia perceives the use of chemical warfare in conflicts in Southeast Asia and the acquisition of chemical warfare capabilities by neighboring states as a growing threat to the region



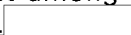
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Indonesian actions taken in response to the threat include establishing a nuclear, biological, and chemical (NBC) warfare center at Bogor, West Java; training officers in West German military schools as NBC specialists; training NBC officers domestically; announcing tenders for the purchase of gas masks for the police and armed forces; and participating actively in the negotiations on a chemical weapons ban at the Conference on Disarmament in Geneva



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Although Indonesia probably will not initiate efforts in the near future to acquire an offensive CBW capability, the developing pattern of CBW-related actions put it among the nations with a long-range potential for CBW proliferation.



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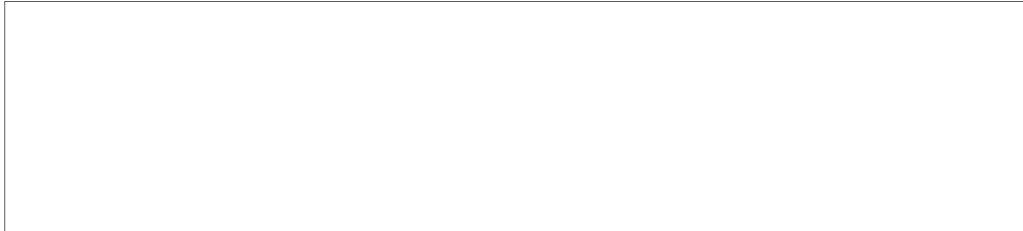
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KEY JUDGMENTS: WESTERN EUROPE: TRENDS IN BIOTECHNOLOGY COMMERCIALIZATION

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Although Western Europe currently lags the United States and Japan in biotechnology applications, we believe that recent governmental and industrial programs to promote biotechnology will enable Western Europe to become a strong worldwide competitor in health care and agricultural markets within six to eight years. West European countries having the strongest competitive positions are West Germany, the United Kingdom, Sweden, Switzerland, and France. We believe West European companies will develop significant strengths in marketing products to Third World countries.

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Although many West European firms are pursuing wide-ranging biotechnology interests, we expect competition mainly from large multinational companies in markets in which they have been traditionally strong. These markets include the four top areas for biotechnology applications: pharmaceuticals, agricultural products, large-scale process technology, and energy-related applications.

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Forecasts of annual worldwide markets for biotechnology-related products by the year 2000 range from 15 billion dollars to over 100 billion dollars in total product sales. This market projection is of the same magnitude as the current world semiconductor market, which is approximately 25 billion dollars. The estimate of the 1983 worldwide biotechnology market is about 500 million dollars. Better market predictions are not yet possible, because the critical technical, economic, and political factors affecting future markets are not yet well understood or defined.

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At present the West European countries generally have some top quality basic research foundations and some industries and engineering institutes




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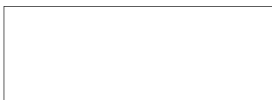
with strengths in selected areas of application. Nevertheless, biotechnology developments in Western Europe have been hampered by several problems, including:

- Shortage of qualified personnel to conduct basic and applied research, development, and engineering, caused in part by emigration of scientists and engineers.
- Difficult transitions from the laboratory to the market place.
- Relatively few firms engaged in innovative research.
- Lack of cooperation within the European Community. 

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Both government and industry are working to overcome these deficiencies; in particular, their support for applied biotechnology research has increased significantly in the past three years. Efforts to promote biotechnology in Western Europe include:

- Public funding that is probably equivalent to Japanese public expenditures and that is intended to help stem emigration of scientists as well as encourage support for commercial developments.
- Financial incentives for small applied research firms.
- Innovative cooperative ventures by industry/government/university in establishing technology parks and centers for applications development, and in investing funds.
- Programs to develop trained manpower.
- International development agreements.




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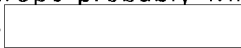
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Unlike most US Government programs supporting basic research in biotechnology, these biotechnology-related government programs in Western Europe support product-oriented R&D and are directed toward developing international competitiveness. 

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Various development agreements have contributed to the international flow of industrial proprietary information that could affect US sales. This flow of information and technology is, and probably will continue to be, a net loss to the United States. However, we believe US technology can be enhanced through selective international cooperation and exchanges that exploit West European strengths. We believe also that biotechnology applications developed in Western Europe probably will continue to be transferred to the USSR and its allies 



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