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NIEHS Director Awarded Toxicology Society Prize

Dr. David P. Rall, Director of the National Institute of Environmental Health Sciences, was presented the Arnold J. Lehman Award by the Society of Toxicology at its 22nd annual meeting recently held in Las Vegas, Nev.

The award, one of the society's highest, is presented annually to an individual who has made major contributions to the regulation of chemical agents based on sound scientific principles.

The award presentation cites Dr. Rall for contributions in toxicology beyond the area of regulation.

Through his positions as Director of both the NIEHS and the National Toxicology Program (NTP), the citation indicated, he has aggressively supported research and research training in toxicology, and has made significant contributions in risk extrapolation methodology and the use of animal toxicology data to predict human risk.

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Vaccines Stymie Polio in U.S. But Not in the World — Yet

Panelists at the recent International Symposium on Poliomyelitis Control are shown during the session. (L to r) they are: Dr. Ralph Henderson, WHO; Dr. Frederick C. Robbins, National Academy of Sciences; Dr. Dorothy M. Horstmann, Yale University School of Medicine; and Dr. John P. Fox, University of Washington/Seattle.

Paralytic polio has been essentially eradicated in the United States but not in 65 percent of the other nations in the world.

In the U.S., polio has been controlled mainly through the use of vaccines, most notably those perfected by Dr. Jonas Salk and Dr. Albert Sabin, both of whom attended and presented papers at the recent International Symposium on Poliomyelitis Control. The symposium was sponsored by the Fogarty International Center in collaboration with several Institutes at NIH, the World Health Organization and other groups.

At the meeting, it was concluded that polio can be controlled worldwide with the use of the Sabin and Salk vaccines, but that eradication of polio (elimination of the viruses) is not feasible at this time. However, this remains a distant though achievable goal.

At present, 1 of every 200 children born will suffer paralytic polio.

The immediate prospect for developing countries is more—not less—polio, unless and until they adopt effective control programs, it was noted. This was the pattern in developed contries prior to the widespread use of vaccines.

The symposium concluded that "the problems facing control of polio in warm countries are administrative rather than technical ... The overriding need is for political commitment to polio control."

It was recommended that countries in

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Special Handling of AIDS Suspects' Blood Recommended to Blood and Plasma Centers

Dr. Edward N. Brandt, Jr., HHS Assistant Secretary for Health, has recommended that U.S. plasma centers and blood banks begin procedures to reduce the risk of transmitting acquired immune deficiency syndrome (AIDS) through plasma, blood and blood products.

"These measures are necessary to help prevent the spread of this lethal disease while at the same time ensuring a constant supply of lifesaving blood products," he said.

"The guidelines which we are recommending are intended to serve as interim measures to protect recipients of plasma, blood and blood products until specific laboratory tests are developed to screen blood for AIDS," Dr. Brandt added.

The new guidelines recommend that plasma center and blood banks should:

- Set up educational programs to inform persons with increased risk of AIDS that they refrain from donating plasma or blood;
- Train plasma and blood bank personnel how to use medical history questions to uncover early symptoms of AIDS—such as night sweats, unexplained fever and sudden, unexplained weight loss, or exposure to AIDS;
- Establish procedures for handling and disposing of plasma and blood collected from known or suspected AIDS patients.

Plasma collected from donors suspected of having AIDS should not be fractionated into derivatives that have the potential for transmitting infectious diseases; for example, antihemophilic factor (a blood-clotting agent produced by pooling the blood of many donors).

The plasma may be used in manufacturing albumin, plasma protein fraction, globulin or noninjectable diagnostic products. Processing these products eliminates infectious agents.

Persons at increased risk of AIDS are defined as follows:

- Those with symptoms suggestive of AIDS;
- Sexually active homosexual or bisexual men with multiple partners;
- Recent Haitian immigrants;
- Present or past abusers of intravenous drugs;
- Sexual partners of individuals at increased risk of AIDS.

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See Alzheimer's Disease Story on Pages 6-7

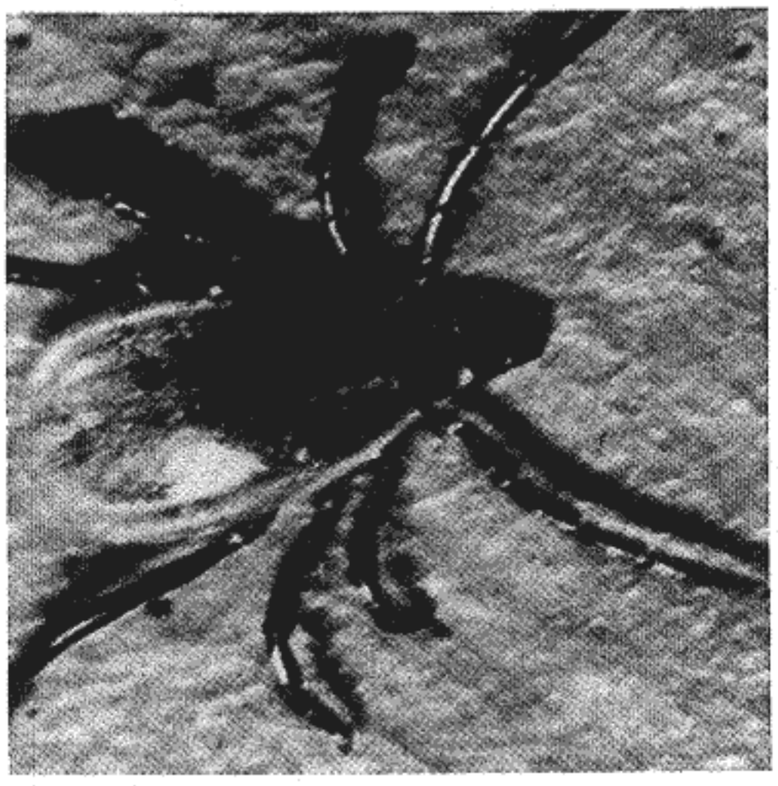
Tick-Borne Bacterial Spirochetes Confirmed as Cause of Lyme Disease

Two groups of investigators have confirmed that spiral-shaped bacteria carried by ticks cause Lyme disease, an inflammatory ailment first recognized in 1975 in Lyme, Conn. These bacteria, called spirochetes, were isolated from patients with Lyme disease and are identical to those previously isolated from *Ixodes dammini* ticks by scientists at the National Institute of Allergy and Infectious Diseases.

Since 1975, Lyme disease has been found in 14 states, in Europe, and Australia. It usually begins with a skin lesion called erythema chronicum migrans (ECM) accompanied by flu-like symptoms.

Weeks to months later, neurologic or heart abnormalities and various forms of arthritis may occur and then recur intermittently. Penicillin or tetracycline given early in the illness can speed healing of the skin lesions as well as prevent or lessen the severity of subsequent arthritis.

Outbreaks of Lyme disease are generally clustered in particular geographic areas, and investigators have suspected that it was caused by an infectious agent transmitted by a tick. In 1982, scientists, led by Dr. Willy Burgdorfer from NIAID's Rocky Mountain Laboratories, isolated a previously unrecognized spirochete from *I. dammini* ticks collected on Shelter Island, N.Y., an area where Lyme disease is endemic.



Ticks of the genus *Ixodes* carry the spirochetes that cause Lyme disease.

Two Different Groups

Working with two different investigative groups, Dr. Burgdorfer and other NIAID scientists have now isolated spirochetes from patients with the same morphologic and immunologic features as the one isolated earlier.

One group of scientists, headed by Dr. Jorge L. Benach of the State of New York Department of Health and the State University of New York at Stony Brook, tested blood samples from 36 patients with the symptoms of Lyme disease. They isolated spirochetes from the blood of two of the patients.

The second group was led by Dr. Allen C. Steere from Yale University School of Medicine. These investigators examined 142 specimens (from blood, skin lesions, cerebrospinal fluid, lymph nodes, and urine) from 56 patients with Lyme disease. Spirochetes were recovered from three patients—from the blood of one patient, the skin lesion of another, and the cerebrospinal fluid of the third.

Number Small

Results of these two studies indicate that the number of spirochetes in affected tissues is small and that isolation of the organism is probably not a good basis for diagnosis.

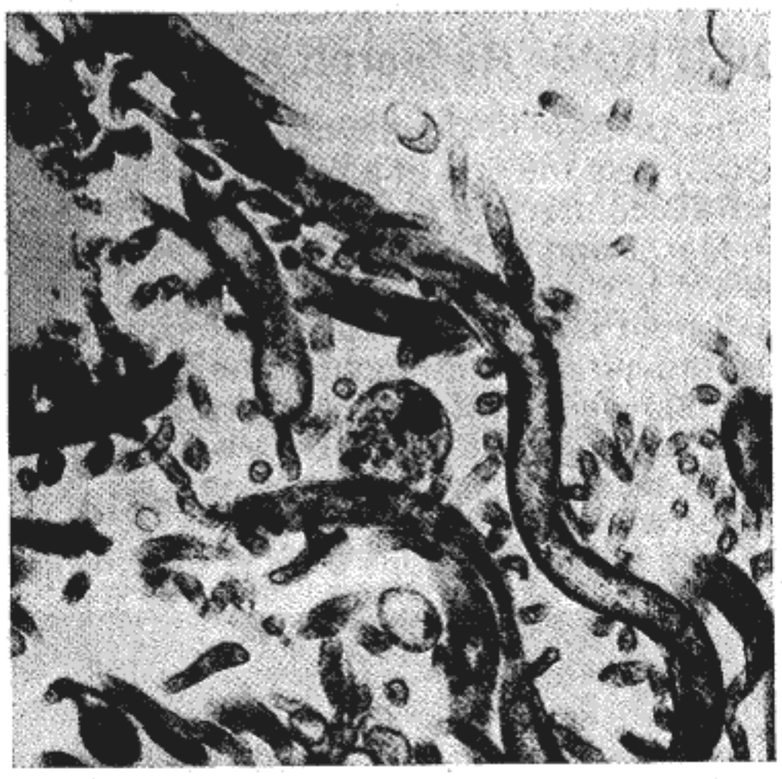
However, the studies also show that measuring levels of antibodies that react specifically against spirochetes is very helpful in establishing an accurate diagnosis of Lyme disease.

Dr. Steere and his colleagues measured antibody levels in patients with Lyme disease and in 80 control subjects without the disease. Control subjects included healthy persons and persons with illnesses that might be confused with Lyme disease, such as acute infectious mononucleosis and various types of active inflammatory arthritis.

Among 40 patients with early symptoms of Lyme disease, 90 percent had an elevated IgM level between the appearance of ECM (lesion) and recovery.

Ninety-five patients with later manifestations of the disease were tested, and 94 percent had elevated IgG levels. In contrast, none of the 80 control subjects had elevated IgG, and only three control patients with infectious mononucleosis had elevated IgM.

Reports of both studies appeared in the Mar. 31 *New England Journal of Medicine*.



A scanning electron micrograph shows *I. dammini* spirochetes, the Lyme disease bacteria, that first causes a skin lesion followed by flu-like symptoms.

An estimated 60 million Americans have hypertension. People between the ages of 45 and 74 who have hypertension are seven times more likely to have a stroke and three times more likely to have a heart attack than those with normal blood pressure. Hypertension is linked to atherosclerosis, kidney failure and eye damage. □

AIDS

(Continued from Page 1)

AIDS is a newly recognized condition that leads to a breakdown of the body's immune system and decreased resistance to serious fungus and viral infections.

The disease has primarily affected homosexual males with multiple sexual partners, abusers of intravenous drugs, and Haitians who entered the United States within the past few years.

The disease has also been observed in hemophilia patients requiring routine injections of antihemophilic factor.

Although the cause of AIDS is not known, scientists believe it is transmitted by an infectious agent. More than 1,200 cases of the syndrome have been reported since June 1981, with more than 400 deaths. □

Virologists Review Possible AIDS Causes

A scientific workshop attended by about 70 virologists and infectious disease specialists reviewed possible causative agents of acquired immune deficiency syndrome at NIH on April 5 and 6.

Sponsored by National Institute of Allergy and Infectious Diseases, the workshop included detailed discussions on the possible role each type of virus—such as cytomegalovirus or hepatitis virus—might play in AIDS.

There also were reports on current efforts to recover potential agents from patients with AIDS and a general discussion of future areas of investigation.

Following the workshop on Apr. 6, a briefing was held for science writers to summarize results of the workshop and answer questions about the disease.

Several noted scientists, including Dr. Albert Sabin, were available for the briefing.

Breast Cancer Featured In OMS Program

Breast cancer, which will be the leading cause of cancer death among women in 1983, will be highlighted during April—Cancer Crusade Month.

The Occupational Medical Service and the Division of Safety will present *Breast Cancer: We're Making Progress Every Day*, a 16-minute slide-tape developed by the Office of Cancer Communications, National Cancer Institute.

The latest information on breast cancer detection, diagnosis, and treatment are discussed in the film. Step-by-step instructions on how to perform breast self-examination are also included.

Dates and locations of presentations are as follows:

Wednesday, Apr. 13, Bldg. 13, Rm. G313, 3 p.m.

Thursday, Apr. 14, NLM, Bldg. 38A, Rm. B1N30B, 11:30 a.m., 12:15 p.m.

Tuesday, Apr. 19, Shannon Bldg., Wilson Hall, 11:30 a.m., 12:15 p.m.

Thursday, Apr. 29, Westwood Bldg., Rm. 428, 11:30 a.m., 12:15 p.m. □