

## Hodgkin's in Ohio: Evidence for virus?

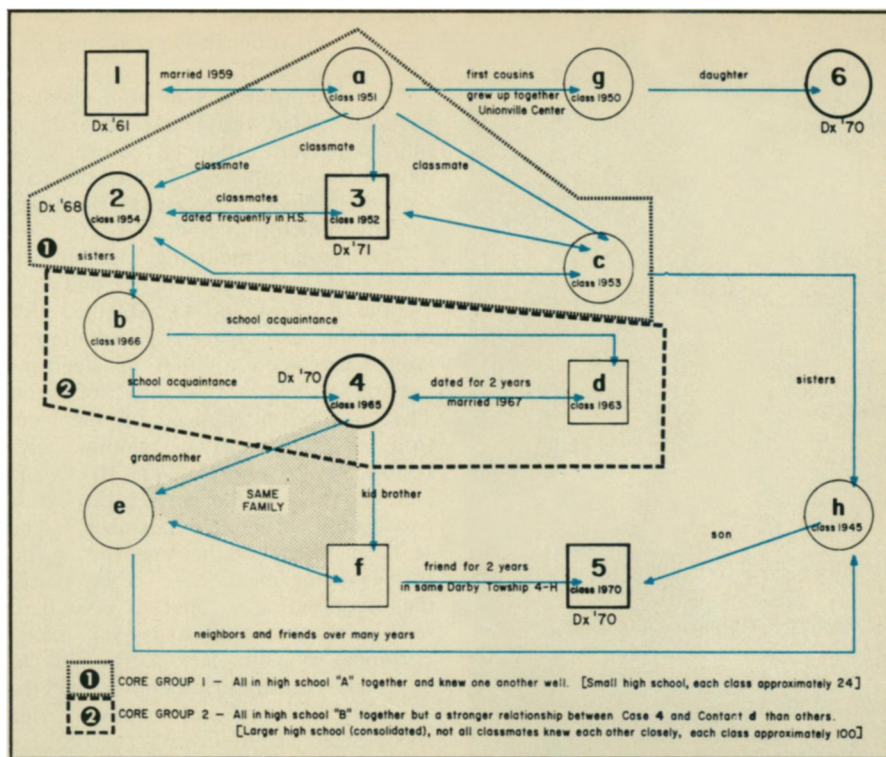
Is there really such a thing as a human cancer virus? Animal evidence suggests there is and biologists have been turning up bits and pieces of data that tend to support the virus theory. Outside the test tube, however, there is another body of evidence that could implicate viruses as causes of some human cancers.

In June 1971 three researchers reported that Hodgkin's disease (a form of cancer that attacks the body's lymphatic system) may be an infectious disease condition with a carrier state and a long incubation period (SN: 6/19/71, p. 421). Nicholas J. Vianna of the Center for Disease Control in Atlanta and Peter Greenwald and J. N. P. Davies of the New York State Health Department investigated the apparent high frequency of Hodgkin's disease among the 1954 graduating class of a certain high school in upstate New York. Inquiring among friends and relatives, the researchers turned up 11 cases of the disease. None of the patients had a family history of Hodgkin's or of any form of cancer, but all patients were interrelated as classmates, neighbors, friends or friends of friends. Not all contacts were on a one-to-one basis, but evidence of indirect associations suggests that a carrier state might be involved. An incubation period lasting from 3 to 13 years prevented the apparent epidemic situation from being recognized sooner.

The close relationship of the cases in this epidemic suggested that a transmissible agent might be involved in Hodgkin's disease. The conditions could possibly be explained by the existence of a transmissible cancer virus.

In a previous study the same researchers published data demonstrating that removal of the tonsils takes away a protective barrier that may leave a person vulnerable to Hodgkin's disease (SN: 3/20/71, p. 197). In a controlled study they found that the risk of developing Hodgkin's disease is almost three times as great after tonsillectomy as before. This, they concluded, is because the tonsils can act as filter

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Klinger and Minton/Lancet

*Infectious pattern was revealed by linking six cases of Hodgkin's disease.*

barriers to infective or disease-producing agents. Again, a virus could be implicated.

John P. Minton and Robert J. Klinger of Ohio State University Hospitals in Columbus have turned up additional evidence. Their work is reported in the Jan. 27 LANCET. Three cases of Hodgkin's disease in the small rural township of Darby, Ohio, were brought to the attention of the researchers. Investigation revealed a total of five cases, four since 1968—an attack rate equivalent to 77 per 100,000 per year, or 18 times the rate for the country as a whole. During the field work a sixth case was discovered. This patient had never lived in Darby but was linked to the other cases by family association.

Inquiries among patients, friends and family members revealed a pattern similar to that of an infectious disease. Further investigation showed that in three of the six linked cases tonsillectomy and adenoidectomy had been performed before the onset of Hodgkin's disease. These findings, together with those from the New York study, add to the growing amount of evidence that Hodgkin's might be spread by person-to-person contact with transmission of some infective agent. "Suspicion," Minton and Klinger say, "is increasing that Hodgkin's disease may result from one or more viral agents, notably of the herpes group."

But Minton warns this is still only a suspicion. He points to the possibility, that there may be some latent agent that causes the disease to occur. There is evidence that this agent might be

a virus, but, in his view, there are no hard facts.

Minton supports the basic idea of a human cancer virus in the Darby case but believes that much more work is needed before anyone can say a virus is obviously involved. Local pollutants, background radiation and genetic similarities, he explains, are only a few of the many possible ways of explaining the clustering of the Hodgkin's cases. "Let's get the environmentalists in on it," he told SCIENCE NEWS, "and search a little harder to find out what really is the cause." □

## States held to original Clean Air Act deadline

While admitting that Environmental Protection Agency Administrator William Ruckelshaus had acted "in the best of faith" by granting 17 states two additional years to comply with the Clean Air Act of 1970, the U.S. Court of Appeals for the District of Columbia Circuit has ruled his action a violation of the statute. It ordered the states to comply with the act's stated deadline.

The ruling will mean that the states involved, comprising most of the nation's industrial regions, will have less than three months to submit complete plans for complying with standards of the Clean Air Act by the original 1975 target date. The standards involve ambient levels for six atmospheric pollutants, including soot, smog, sulfur oxides, carbon monoxide, hydrocarbons and nitrogen oxides. □