

Summary of the Informal Discussion on Virus Factors

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The informal discussion voiced a real concern as to what the epidemiologist can do to further the testing of hypotheses on the viral etiology of human cancer. DR. CLEMMENSEN suggested the need for refinement of cancer registries so that potentially important observations will not go unnoticed; as he phrased it, "The meshes in our statistical network may be too big." He particularly noted that hypothesis-oriented registries could furnish virologists access to cases in an early stage, could call attention to unusual occurrences such as a recent case of development of lymphosarcoma in clear relationship to a mosquito bite, and could call attention to (and make more meaningful analysis of) "microepidemics." DR. HAMMOND suggested an additional type of registry, the long-term follow-up of blood donors and recipients, on the hypothesis that any correlation in subsequent cancer experience in donor and recipient would point to viremia with an oncogenic virus.

The difficulty of interview testing of viral hypotheses was underscored by DR. WYNDER. He described negative results of attempts to find correlation between breast cancer occurrence and breast feeding and between lung cancer and history of influenza. Referring to the former study, DR. BRYAN pointed out that the result is essentially invalidated by the mouse mammary cancer model, in which a single drop of milk is sufficient to transmit the virus, and histories of breast feeding could not be sufficiently accurate to eliminate this degree of exposure. Regarding the influenza study, the objection was raised

that clinical disease is such an insensitive measure of viral infection that it is not valid to conclude that influenza virus infection does not predispose to lung cancer, but only that clinically severe influenza does not.

DR. BILLINGHAM advanced an interesting hypothesis that could be tested by both epidemiologists and laboratory workers, that is, that suppression of immune responses may occur during certain virus infections and could lead to the emergence of previously suppressed malignant foci. DR. FOULDS added that this suggestion would indicate that the influenza studies mentioned above should have taken into account persons who do not manifest disease reaction during epidemics.

Perhaps one of the most important features of the discussion was the magnitude of the gaps between workers in different areas of cancer research and the potential importance of bridging these gaps. This was apparent in regard not only to the familiar difficulty of being reliably informed of the major developments in the various areas but, more disturbingly, to the difficulty of placing other fields in perspective. In particular, DR. SHUBIK pointed out the urgent need for cross fertilization between the fields of virology and chemical carcinogenesis; this deficiency was particularly noticeable in the tendency for discussions to indicate an attitude of mutual exclusiveness between the 2 fields. This tendency underscored the need for conferences such as this where basic orientation and perspectives, rather than specific recent findings, are discussed by a multidisciplinary group.