

## Introduction

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SLOW, or persistent, or both? They are not quite the same. Hepatitis B virus infection can persist for life, but with an incubation period of months rather than years it can scarcely be regarded as a 'slow' infection compared with diseases such as kuru, scrapie, Creutzfeldt–Jakob disease or sub-acute sclerosing panencephalitis (SSPE), in all of which the incubation period can run into years. Moreover it may not be appropriate to label a virus as 'slow' when it can, in fact, cause acute disease. Most infections with hepatitis B virus cause acute hepatitis with no subsequent chronic infection and most infections with measles virus result in acute florid measles and not SSPE. Creutzfeldt–Jakob disease too can sometimes strike very quickly. But 'persistent' can be applied to all these infections though in some, such as Creutzfeldt–Jakob Disease, it is not sure what it is that persists.

There may be, perhaps must be, some host factors which affect or determine the nature of these infections. The agent of mink encephalopathy for example can be transmitted to the ferret; the ferret recovers but the agent persists and can be transmitted back

to the mink. So it may be that, in nature, viruses may be latent and inactive in some hosts but capable on transfer of setting up slow but lethal infections in a different host. The agent itself may change: the genetic information expressed in cells infected with measles or SSPE virus is almost identical, the only odd difference being that the SSPE virus contains about 10% more information. Could this result from recombination of the measles with some other virus, the infective process then continuing as a slow virus infection? Perhaps it could, and the rarity of such viral recombination might explain the rarity of SSPE as the outcome of measles virus infection.

All this is conjecture. The factors underlying persistence of infection, 'slow' or otherwise, are far from being understood. Research proceeds but progress in research may be as slow as the viruses themselves. This symposium surveys several diseases: some like hepatitis and brucellosis are persistent but not slow; some like SSPE and Creutzfeldt–Jakob disease are both, while among diseases caused by herpes viruses some are persistent, some slow and some neither. The survey is a wide one.