THE INFLUENZA VIRUS

FOR the last ten or twelve years influenza virus has been a favourite object of study for those who are interested primarily in the nature of viruses rather than in the diseases for which they are responsible. This virus has two qualities which make it particularly suitable for such studies. The first is that it can be grown very readily in the cavities of the chick embryo, the allantoic fluid of which then provides a relatively concentrated and conveniently handled form of virus. A second, and even greater, advantage to the experimenter is that the concentration of virus in such fluids can be accurately and simply titrated in the test-tube by utilizing the virus's power of agglutinating red blood cells—the hæmagglutination phenomenon of G. K. Hirst.

These properties facilitate investigations necessary to establish the physico-chemical nature of the virus particles and to determine, at least in outline, the course of their multiplication in the cell. These investigations have in fact been made, and at least as much is now known about the nature and activities of a typical influenza virus, such as the standard American strain PR 8, as about any other animal virus. As this knowledge accumulated, it gradually became clear that although the particles of influenza virus are well-defined, functional units with characteristic antigenic, enzymic and genetic qualities, chemically they cannot be differentiated from fragments of the cytoplasm of the cells in which they are parasites.

Considered apart from the specific patterns carried by the macromolecules concerned, any type of influenza virus particle is like any other, and distinguishable from a fragment of host-cell cytoplasm only by a moderate regularity of size and shape. Some of the proteins, however, have new specific patterns replacing —or perhaps additional to—the patterns characteristic of host proteins, and we can feel certain that the vital 0·8% of RNA carries a code that differs sharply from that of the cytoplasmic RNA from which it must be derived. The possibility that the large amount of lipid in the particle also has its own series of specific patterns is something that must await the emergence of the appropriate technical approach. On this view, then, the influenza virus is no more than a fragment of living matter carrying patterns—patterns which determine whether the particle is, like most laboratory strains, virulent only for the chick embryo or, at the other extreme, capable of initiating a deadly pandemic-like that of 1918. (*Endeavour*, January 1955.)

OBITUARY

PROFESSOR J. J. ASANA

WE regret to report the death of Prof. J. J. Asana, former Professor of Biology, Gujerat College, Ahmedabad, and late of the Bombay Educational Service, at the age of 64 on December 16, 1954, at Poona.

J. J. Asana was born in Broach on July 30, 1890 After taking the M.A. Degree in Baroda College, he started his career in 1915 as Assistant Professor of Zoology at the Gujerat College, Ahmedabad, where he organised the new zoological laboratory and the museum, and enriched the latter considerably by his skill in Taxidermy. He proceeded to the University of Cambridge, England, in 1922, and took the tripos in Zoology in 1924. On return he occupied himself actively with research and organised a well-equipped cytological laboratory.

Asana's scientific researches were concerned with the life-history and development of reptilia and with the chromosomes of plants, reptilia and orthopteroid insects; his extensive work on orthopteroid insects was reviewed in Demerec's *Advances in Genetics*, Vol. IV, 1951. His zeal for research was an inspiration to his students and colleagues, and he took great pride and spared no pains in making his cytological preparations himself. The latter were greatly appreciated by co-workers in the U S A. and Japan, with whom he carried on extensive correspondence with a view to widening the scope of his investigations. In this connexion he also took a short trip to Japan in 1937 at his own expense, and visited several important Institutes and Universities.

Prof. Asana was not only a devoted and selfless seeker after truth, but also a humanist with wide sympathies, transparent sincerity and a kindly, unassuming temperament. He donated his valuable collection of books and scientific journals to the library of the Maharashtra Association for the Cultivation of Science, Poona.