tions of the respiratory tract in infants. They, however, are of the opinion that further evidence is necessary to establish whether these viruses are really responsible for the illness. Type 3 adenovirus has been found to be the cause of epidemic outbreaks of pharyngoconjunctival fever, sporadic cases of catarrhal conjunctivitis, non-bacterial pharyngitis and acute undifferentiated respiratory disease in military recruits. Hilleman has shown that Types 4 and 7 account for the majority of respiratory illnesses among newly recruited soldiers while the infection is rare among seasoned soldiers. He has demonstrated that the administration of a vaccine containing both the types produced antibody response sufficient to protect against specific infection. It has been found by Rowe *et al.* that Types 6 and 10 appear to be ætiologically related to simple catarrhal conjunctivitis, while Type 8 is associated frequently with severe keratoconjunctivitis. No data are available regarding the other serotypes and their possible role in human disease.

Chanock has reported the high incidence of CA (croup associated) virus infections in infants with croup suggesting that this virus may be at least one of the ætiological agents of this clinical syndrome. The Sendai virus has also been shown to be responsible for acute respiratory disease in man.

ECHO Viruses.—The name stands for Enteric Cytopathogenic Human Orphan viruses. This group of viruses produce cytopathogenic effects in monkey-kidney tissue culture which are not neutralized by poliovirus antisera to Types 1, 2, 3, singly or combined and by Coxsackie antisera to Types B 1 to B 5 and A 9. Further, they do not cause illness in suckling mice.

The evidence presented by Kibrick *et al.*, Meyer *et al.*, Karzon, Svedmyr, Rhodes and Beale and Habel *et al.* indicate that ECHO Type 6 virus is one of the causes of the syndrome described as aseptic meningitis, which is clinically indistinguishable from non-paralytic poliomyelitis. Also, there is presumptive evidence that Types 2 and 7 may be associated with the condition.

Ramos-Alvarez has reported that ECHO viruses are significantly associated with summer diarrhœa in infants and children up to 4 years of age.

Werner has isolated a cytopathogenic transmissible agent from material collected from cases of erythema infectiosum. The exact relationship of this agent to the disease is not clear.

Viral Identification.—Melnick deals with the manner in which new virus isolates are handled and the problems associated with their identification. The biological and physical properties of the adenoviruses are discussed by Ginsberg while Ackermann deals with the mechanisms of persistent and masked infections in tissue culture. Hull and Minner describe several new viral agents from tissue cultures of kidney cells of apparently normal monkeys and emphasize the importance of these agents to investigators employing primary monkey-tissue cultures for their studies.

Criteria for Aetiologic Association.—In an excellent article entitled 'The Virologist's Dilemma', Huebner draws attention to the various pitfalls in deciding the ætiological relationship of newly discovered viruses to disease and lays down the minimum criteria necessary for the purpose.

The papers presented at the Conference are of a highly technical nature and are definitely intended for the specialist in virology. A rather detailed summary has been given with a view to provide the general reader with a bird's eye view of the advances in the field. The volume which contains a fund of information, some of it unpublished, will be invaluable to all those interested in intestinal and respiratory viruses.

N. VEERARAGHAVAN.

RADIATION CONTROLS TITANIUM FURNACE

GAMMA RAYS from radioactive cobalt are being used to detect and control the level of molten titanium in a new titanium furnace. The titanium furnace in question is a major installation at the Westinghouse metals development plant of Westinghouse Research Laboratories at Blairsville, Pennsylvania, U.S

Successful operation of this new titanium furnace requires exact control of the molten surface of the titanium ingot inside it at a temperature of more than 3,000° F. The gamma rays passing through the furnace are detected by means of two 'scintillation counters' and electrical pulses from the counter after amplification are fed to electronic circuits which drive a hydraulic system that raises or lowers the titanium ingot as desired.

The system is claimed to be highly reliable and is capable of maintaining the level of the titanium within one-hundredth of an inch of its ideal operating condition. This type of control can be used on other types of furnaces.