Current Literature.

BRANDT, A. Bacilltypene ved menneske-tuberkulose i Norge. [**Types of Tubercle Bacilli in Human Tuberculosis in Norway.**] *Norsk. Vet. Tidsskr.* 1940, No. 6, 234. [Summary taken from *Vet. Bull.* 1941, June, v. 11, No. 6, 351. Initialled J. E.]

A detailed description is given of Brandt's method of preparing cultures on Petragnani's solid medium with or without glycerin, and of the cultural characters of the three types of tubercle bacilli grown thereon.

It is stated that TB. in cattle is rare in Norway (0·15 per cent among 1½ million cattle slaughtered from 1931-38), but is more common in pigs and poultry. Of 160 tuberculous pigs examined, 80 per cent were infected with the avian type bacillus, 17·5 per cent with the human type, and 2·5 per cent with the bovine type.

Among 1,224 specimens of sputum, etc., from cases of human pulmonary TB., only two were of the avian type infection and none of the bovine type; there were two cases of bovine type infection among 265 cases of bone and joint TB., one bovine type among 23 cases of lymph node TB., and one avian type among 42 cases of skin TB., all the remainder being of the human type.

Reprinted from "Bulletin of Hygiene," Vol. 16, No. 9.

FRANCIS, T., Jr. **The Problem of Epidemic Influenza.** *Trans. & Studies of College of Physicians of Philadelphia.* 1941, Feb., v. 8, No. 4, 218–27, 2 charts. [40 refs.]

The author briefly reviews the main epidemics of influenza which have occurred since the discovery of a causative virus in 1933 and gives an account of the present position with regard to the two types of influenza virus, A and B. For a time it was thought that a single virus might be responsible for all epidemic influenza, because the many strains isolated in different countries and at different times all showed a close antigenic relationship to the original WS virus. It is true that antigenic differences could be demonstrated by refined serological methods but the antigenic factors common to all were sufficiently dominant to justify the acceptance of all known strains as variants of a single virus. This virus is now known as Influenza A virus.

The possibility that other viruses might have equal claims to aetiological significance in influenza was recognized in 1936 when a widespread epidemic of acute respiratory disease occurred in California. This outbreak had all the clinical and epidemiological features of typical influenza, but no virus could be recovered from any of the patients, nor did serum antibodies against Influenza A virus develop during convalescence. This experience was repeated in 1940 during an epidemic in the south-eastern zone of the United States; here again all attempts to incriminate Influenza A virus failed. Fortunately about this time a virus was recovered from a small institutional outbreak of acute respiratory disease and a re-examination of acute and convalescent sera, derived from patients of the 1936 and 1940

epidemics, showed that these major outbreaks must have been caused by the new virus which is now known as Influenza B virus. It was also found that some previous epidemics of the period 1933-40 must have been of mixed character, including both A virus and B virus cases.

No antigenic relationship could be demonstrated between the A and B viruses by cross neutralization tests, complement fixation tests and cross immunization experiments in mice; they must therefore be regarded as two distinct viruses, either of which may give rise to true epidemic influenza. [See also *Bulletin of Hygiene*, 1941, v. 16, 379, 380].

WILSON SMITH.

Reprinted from "Bulletin of Hygiene," Vol. 16, *No.* 9.

BURNET, F. M. & FOLEY, M. **Two Methods for the Detection of Influenza Virus in Human Throat Washings without the Use of Ferrets.** *M. J. Australia.* 1941, Jan. 18, v. 1, No. 3, 68–72, 2 figs. [16 refs.]

Several workers in England and in the United States have experienced difficulty in obtaining strains of influenza virus by ferret inoculation from apparently typical human cases, especially during inter-epidemic periods.

Methods of isolating influenza virus independently of the ferret would be of special value in such cases, and would be cheap and convenient. Two such methods are described in this paper. One of them—the "amniotic inoculation method"—has already been described by Burnet [*Bulletin of Hygiene*, 1940, Vol. 15, 696]. In the second method, filtered garglings are inoculated intranasally into mice which are subsequently tested for the development of immunity.

A 10 c.c. gargling is mixed with 5 c.c. of broth and filtered through paper; 0·05 c.c. of the paper filtrate is instilled into the nose of each of a batch of mice some of which are re-inoculated fourteen days later with stock virus, while others are bled and their sera titrated. The rest of the paper filtrate is passed through a Gradocol membrane of pore diameter 0·8μ, and then injected in 0·25 c.c. quantities into twelve-day chick embryos. Four days later, these are examined for lung lesions and changes in the tracheal fluid.

Of three members of a hospital nursing staff who developed influenza, two were sampled forty-eight hours after the commencement of their illness and one as soon as the illness started. Ferrets inoculated with filtered garglings from the first two cases failed to show any reaction, but virus was recovered from both by the amniotic injection method, and mice inoculated with washings from these two patients developed some immunity. Virus was not obtained from the third patient by any method.

The two new methods may, therefore, succeed when ferret inoculation fails.

Both of the virus strains obtained differed from the strains prevalent in Melbourne, showing a closer affinity with the "W.S." strain. A method of testing the antigenic affinity of a strain by active immunization of mice is described.

E. T. C. SPOONER.

Reprinted from "Bulletin of Hygiene," Vol. 16, *No.* 9.