

extraction techniques were used (Kies & Carnegie). The encephalitogenic activity of all the preparations isolated was tested in rats and guinea pigs. Guinea pig brain encephalitogenic proteins were highly active in both guinea pigs and rats. The bovine encephalitogenic fraction induced EAE in guinea pigs only. The guinea pig brain protein encephalitogenic fraction induced experimental encephalomyelitis in rats of the inbred Lewis strain. After a single dose of encephalitogenic antigens, EAE developed in 80—85% of the animals in the control group. Methotrexat was used to suppress EAE: this was administered intraperitoneally in the early and late stage of immunization and after the clinical manifestations of EAE were fully developed. In the early and late stage of development of experimental encephalomyelitis, Methotrexat inhibited development of the clinical signs of the disease in a total dose of 600  $\mu$ g—1.5 mg and reduced the incidence of EAE to 22%. In the stage of clinically developed EAE, Methotrexat shortened its duration from eight to 3—5 days.

*The Immunological Response of Newborn and Young Piglets to Infection with an Avirulent Strain of Teschen Disease Virus (TDV).* B. KORYCH, F. PATOČKA, Institute of Medical Microbiology and Immunology, Charles University, Medical Faculty, Prague.

Groups of newborn piglets from sows with a massive circulating antibody level (titer 128—512 against 1,000 TCID<sub>50</sub>) were infected intranasally and perorally with 10<sup>8.3</sup> TCID<sub>50</sub> of the avirulent clone A3b of Teschen disease virus (TDV). (1) Piglets infected before suckling responded by an increase in the antibody titre, which reached maximum values by the 12th day, irrespective of the later passive transfer of high antibody titers. Their antibody response was the same as that of older (21 days, 2 months) non-immune piglets. (2) Infection after suckling and the transfer of colostrum antibodies produced no immunological response. (3) In newborn and older piglets in which the antibody titer fell to 16 or less, infection with TDV/A3b led to the same antibody response as before suckling. (4) Unlike older piglets, in which intranasal administration of the virus produced a significantly better immunological response than peroral infection, no difference was found in newborn animals. (5) The data obtained on the colostrum antibody titer and on the antibody response of piglets to the administration of TDV/A3b allowed determination of the serum antibody titer which was sufficient for inhibiting virus replication at the site of primary multiplication, and which thus limited antibody production. A titer of 16 is regarded as the limit value for obtaining a successful immunological response to the administration of TDV and also for the possibility of participation in virus infection.

*Pathological, Immunomorphological and Immunological Response of Pig Foetuses to Differently Attenuated Strains of the Virus of Aujeszky's Disease.* A. SOKOL, O. JAMBICOVÁ, F. HRUŠOVSKÝ, Faculty of Veterinary Medicine, Košice.

Pig foetuses (87—89 days) were infected intraperitoneally with two differently attenuated strains of the virus of Aujeszky's disease in doses of  $8 \times 10^1$ — $4 \times 10^5$  TCID<sub>50</sub>/0.4 ml. (1) Infected foetuses displayed on a marked scale on the 14th day after infection, but by the 21st day only on a small scale, signs of diarrhoea, gelatinous swelling of the mesentery of the large intestine and serous infiltration of the interlobular septa of the lungs. These changes were most pronounced in foetuses infected with the strain BUK (Škoda) (625th chick embryo passage) and were also manifested in higher mortality in this group. (2) Compared with the controls, intensified subepithelial diffuse and focal lymphoid infiltration, together with isolated primary lymph nodules, was present in the tonsils, the wall of the terminal ileus, the lymph nodes of the caudal mesentery and the bronchial lymph nodes in infected foetuses on the 14th day. On the 21st day, marked secondary lymph nodules were also found in the above organs in infected foetuses. Development of these changes was more pronounced after infection with the strain BUK (Žuffa) (900th chick embryo passage). (3) Immunoglobulin response on the 14th day in the serum of foetuses infected with the strain BUK (Škoda) was manifested in only a weak, diffuse precipitation line localized near the wells, which led in the direction of the cathode as far as the fused beta<sub>1</sub>S precipitation arc. In foetuses infected with the strain BUK (Žuffa), however, it led towards the cathode almost as far as the junction of the IgA precipitation arcs. No neutralizing antibodies were detected. On the 21st day, in the few foetuses which survived infection with the strain BUK (Škoda), the IgM and IgG precipitation lines were fully developed and in position and mobility resembled the immunoglobulins in the maternal serum, though without possessing neutralizing properties. In the serum of all foetuses infected with the strain BUK (Žuffa) the diffuse precipitation line, on the 21st day, was in a cathodically prolonged IgM position and extended beyond the fused IgA arc. The sera of these foetuses possessed marked neutralizing activity.

*Determination of the Sensitivity of the Neutralization Reaction.* P. HÁJEK, Institute of Microbiology, Czechoslovak Academy of Sciences, Prague.

Precipitation, as the least sensitive serological reaction, requires 3—20  $\mu$ g AbN/ml serum. A value of 0.1  $\mu$ g AbN/ml is given for sensitivity of the complement-fixation reaction, while bacterial agglutination is somewhat more sensitive (0.05  $\mu$ g