787 DIAGNOSTIC OPEN LUNG BIOPSY IN CHILDREN. Wilbert H. Mason, Stuart E.Siegel, Bernard L.Tucker. (Spon. by Harry T. Wright). Dept. of Pediat. and Surgery, Childrens Hospital of Los Angeles, USC School of Medicine, Los Angeles, Calif.

Lung biopsy is often required to establish the cause of diffuse infiltrative pulmonary disease. While open lung biopsy permits better tissue sampling, controversy exists concerning potential risks of the procedure. Over a 4-year period, 35 patients ages 3 months to 18 years with diffuse pulmonary disease underwent diagnostic open lung biopsy. In 28 patients, a pre-existing malignancy was present. All biopsy procedures were performed in the operating room, with general anesthesia used in all but 1 case. Lingular biopsies were performed in the 26 patients with bilateral disease. A specific etiology was identified in 24 patients: 17 had pneumocystis carinii pneumonia; 1 fungal pneumonia; 1 bacterial pneumonia; 2 desquamative interstitial pneumonia; 1 pulmonary hemosiderosis; 1 pulmonary histiocytosis, and 1 methotrexate pneumonitis. The remaining 11 patients had non-specific pneumonitis. One patient subsequently demonstrated to have pneumocystis carinii pneumonia had a falsely negative biopsy. The only significant complications were 2 pneumothoraces requiring prolonged chest tube drainage. There were no deaths directly attributable to the operative procedure. One patient with a brain tumor died 18 hours after biopsy due to cerebellar herniation. Open lung biopsy is a safe and reliable diagnostic technique in seriously ill pediatric patients with diffuse pulmonary disease.

788 CYTOMEGALOVIRUS (CMV) INFECTION OF THE CENTRAL NERVOUS SYSTEM (CNS) OF SUCKLING MICE AND ITS PREVENTION BY IMMUNIZATION OF MOTHERS/NURSERS. Donald N. Medearis, Jr., C. Susan Chester, and Sandra Prokay, Case West. Res. Univ. Sch. of Med. at Cleve. Metro. Gen. Hosp., Dept. of Peds.,Cleveland.

A mouse model of CMV infection of the developing CNS and its prevention were studied to obtain information which might help prevent human CMV induced mental retardation. The Smith strain of mouse CMV serially passed in salivary glands of weanling mice and outbred Swiss mice (Nat:NLW (SW) BR) were employed. Suckling mice were inoculated intraperitoneally with 10^2 plaque forming units (PFU), a sublethal dose. Virus content in the spleen peaked at $10^{4.5}$(PFU/gm) on d. 5, in liver at $10^{4.0}$ on d. 10, in salivary gland on or after d. 15 at $\geq 10^8$, and in the brain at $10^{3.6}$ on d. 14. Virus ($10^{2.5}$PFU/gm) was still recoverable from the brain two months after inoculation. CNS histopathology included scattered nodules of microglia, a few mononuclear and polymorphonuclear cells, and rare typical intranuclear inclusions in the cortex. Adult females convalescent from intraperitoneal inoculation as sucklings, or those immunized as weanlings conferred protection as follows. Mortality was eliminated and virus was not recovered from liver or brain after challenge of sucklings with lethal doses (10^4PFU) if both their nurser and their mother were immune, or if their nurser was immune and their mother was not. If their nurser was not immune and their mother was, protection was significantly less. PFU reducing capacity of serum and milk, and the peritoneal macrophage, breast milk, and spleen lymphocyte response to CMV in mothers and sucklings are being determined; and the model is being adapted to C57B16/J mice.

789 DIFFERENCE IN BEHAVIOR OF INFLUENZA A AND B VIRUSES IN INFANT RATS: VIRAL MULTIPLICATION IN NASAL TURBINATES AND POTENTIATION OF BACTEREMIC INFECTION WITH H. INFLUENZAE TYPE B. Richard H. Michaels, Richard L. Myerowitz, and Frederick L. Ruben, Univ. of Pittsburgh Sch.of Med., Pittsburgh.

Previous work by Michaels, Myerowitz and Klaw (J.Infect. Dis. in press) showed that the intranasal dose of H. influenzae type b (HIB) required to produce bacteremia and meningitis in about 50% of infant rats was reduced 100-fold when animals were first given influenza A virus (Port Chalmers strain). Similar results have recently been obtained with A/England and A/Victoria viruses.

As a part of a study of virus attenuation, 2 day old rats were given 10^5-10^7 egg infective doses (EID) of either A/Victoria (A/V) or B/Hong Kong (B/HK) viruses intranasally. At 5 days of age all rats were given 10^5-10^6 colony forming units (cfu) of HIB intranasally. HIB bacteremia was found at 7 days of age in 52/97 rats given A/V virus, but in only 3/49 rats given B/HK virus. Bacteremia was detected in none of 38 control rats.

In a single experiment, 2 day old rats were given almost identical doses of virus ($10^{5.6}$ EID of A/V or $10^{5.7}$ EID of B/HK), but the virus titer in nasal turbinates 48 hours later was over 100 times higher for A/V than for B/HK virus. At 5 days of age rats were given 10^6 cfu of HIB. Subsequent bacteremia was detected in 4/9 rats given A/V and in none of 11 rats given B/HK.

The lower turbinate virus titers and lack of potentiation of HIB infection in rats with influenza B as compared to influenza A virus is consistent with epidemiologic observations suggesting that influenza B is often a mild disease in humans.

790 THROMBOCYTOPENIA IN NEONATAL SEPSIS: TIME RELATIONSHIP BETWEEN CLINICAL SIGNS, DETECTION OF THROMBOCYTOPENIA AND POSITIVE BLOOD CULTURE. H.D. Modanlou, O. Ortiz (Spon. by L.Gluck). Newborn Division, Miller Children's Hospital, Long Beach, University of California, Irvine.

Thrombocytopenia is a common manifestation of bacterial sepsis in children. A prospective study was designed to investigate the time relationship between the clinical manifestations of sepsis, detection of thrombocytopenia and the confirmation of a positive blood culture. Three groups of neonates admitted to special care were studied. Group I (16 pts) had sepsis confirmed by positive blood cultures. Group II (63 pts) were suspected to be septic but blood cultures were negative. Group III (28 pts) were randomly selected sick neonates without suspected or confirmed sepsis. Platelet counts by phase microscopy were done at the time of septic work-up and at 12, 24, 48 and 72 hours in Groups I and II and at similar intervals in Group III. Thrombocytopenia, platelets $< 100{,}000/mm^3$, were found in 63% of Group I, none in Group II and in 18% of Group III. At the above time intervals comparisons of platelet counts between Groups I and II, and I and III showed statistically significant differences at all times ($p < 0.05$). In Group I thrombocytopenia was detected at 8 ± 12 hours while the positive blood cultures were confirmed at $\overline{43} \pm 27$ hours with $p < 0.005$. This study confirms that thrombocytopenia is frequently associated with bacterial sepsis in neonates, although less frequently it may be present in clinical entities other than sepsis. The rapid appearance of thrombocytopenia, long before the confirmation of a positive blood culture, makes this test a valuable adjunct to management of septic neonates.

791 VARICELLA-ZOSTER VIREMIA: ASSOCIATION WITH PROGRESSIVE VARICELLA. Martin G. Myers (Spon. by Ronald G. Strauss), University of Iowa Hospitals, Department of Pediatrics, Iowa City.

In retrospect, progressive varicella (the clinical involvement of organ systems other than the skin, the prolonged appearance of vesicles, or clinically significant hemorrhage) is usually not difficult to distinguish from typical varicella. However this often fatal complication of varicella is difficult to anticipate even in children at high risk.

During the course of varicella, viral culture of buffy coats in human fibroblast tissue cultures were performed on 13 normal children and 15 children at risk of developing progressive varicella. Eight patients who developed progressive varicella had viremia in association with exanthem whereas no child who had a typical varicella course demonstrated viremia. In 6 patients with a progressive course, viremia was present prior to the clinical appreciation of a progressive course of the varicella infection. The viremia appeared to be cell-associated and thus may be amenable to rapid diagnosis by immunofluorescence or electron microscopy. The documentation of viremia preceeding the clinical manifestations of progressive varicella infection may allow the early recognition of those children in whom antiviral therapy may be beneficial.

792 FAILURE OF BACTERIAL GROWTH INHIBITION BY AMNIOTIC FLUID. Richard L. Naeye & Nebiat Tafari (Spon. by Nicholas Nelson) Pennsylvania State University College of Medicine, M.S. Hershey Medical Center, Department of Pathology, Hershey, Pennsylvania & Addis Ababa University Faculty of Medicine, Department of Pediatrics, Addis Ababa, Ethiopia.

The bactericidal properties of amniotic fluid normally protect fetuses from late gestational infections by bacteria of low virulence. Recently mycoplasma T-strains, an organism of low virulence was found responsible for 23 fatal infections of late gestational fetuses in Addis Ababa, Ethiopia. This prompted analyses of amniotic fluid antimicrobial activity in that city. The antimicrobial activity of 53 fluids collected at term was measured by a semiquantitative plate-count technique. In the U.S. most term fluids are bactericidal but in Addis Ababa, only one fluid was bactericidal, 12 were bacteriostatic and 40 did not inhibit bacterial growth. Underprivileged gravida had about 60% of WHO recommended calorie intake, 75% protein, 35% calcium, 15% vitamin A, 50% riboflavin and niacin, 40% ascorbic acid and >100% of iron and thiamine. Their amniotic fluids had a mean 1.9 log increase in bacterial titer in the test system. Privileged gravida had near recommended intake levels of nutrients. Their fluids had a mean 0.8 log increase in bacterial titer. In vitro increasing amniotic fluid zinc levels >2 μg/ml restored antimicrobial activity. The amniotic fluid infection syndrome is the most common cause of preterm delivery and perinatal death wherever it has been studied, including the U.S. and various sites in Africa. Nutrition of the gravida may play a role in the genesis of the disorder.