5 hr at 56° in order to destroy reaginic activity led in most cases to diminished inactivation in mothers' and infants' sera, indicating that a certain amount of the antibody is reaginic in type. Absorbing the sera on anti-IgE-sepharose prior to testing confirmed that in those sera in which there were heat-labile penicillin antibodies, there were also IgE penicillin antibodies, and there was a good relationship between the amount of antibody found by the two methods. Some infants showed the presence of IgE penicillin antibodies whilst their mothers had none, indicating the fetus' ability to produce IgE antibodies. One mother had IgE penicillin antibodies while her infant had none, indicating that these antibodies did not pass through the placenta. Antibodies to DNP in a titre 25 times that of penicillin were found in all mothers and infants studied. It is concluded that the modified phage technique as an ultrasensitive method for antibody assay has advantages over other assay methods, and by using this technique we have shown that actively produced penicillin IgE antibodies may be found in newborn sera, and that IgE penicillin antibodies probably do not pass the placenta from mother to infant.

24. Skin reactivity in childhood—phytohemagglutinin(PHA) skin test and streptokinase(STK) skin test. G. R. Burgio, E. Curtoni, R. Genova and U. Magrini. *Univ. of Pavia, Italy.*

With advancing age there is a gradual increase of skin reactivity to PHA and to STK up to the youth and adult life [1, 2]. Some biopsies carried out in adolescents and adults demonstrated that the histology of both the skin reactions to STK and to PHA corresponds to that of delayed hypersensitive reactions [3].

The present investigation deals with the histology of skin reactions to STK and PHA in childhood. The following results were obtained: (*a*) in the first 2 years of life the positive reactions to STK are unusual and feeble. In this period of life the histology of the positive reactions assumes an aspecific pattern; it does not correspond to that of the delayed hypersensitive reactions. On the contrary, from the 6th to 8th year of life delayed hypersensitive reactions were obtained, comparable with those observed in adults. (*b*) As regards PHA, the reactions are always positive and many are very strong, during the 1st year of life. Nevertheless, the first small perivascular infiltrates of lymphomononuclear cell may be observed only from the 6th to 8th year of life; furthermore, this finding is much weaker than in adult life.

The results confirm the age dependency of skin reactivity and suggest the possibility of understanding why some reactive diseases have a different behavior at different ages.

1. Lancet, *ii:* 411 (1968).
2. Mschr. Kinderheilk. (in press).
3. Pathol. Eur., *4:* 138 (1969).

25. Immunological deficiency syndrome in nonidentical twins: attempts at treatment with transplantation of bone marrow and fetal thymus. H.-D. Flad, U. Genscher, G. Hochapfel, D. Krieger, E. Treffel, M. Dietrich, T. M. Fliedner, and W. Teller. *Univ. of Ulm, Germany.*

This report describes nonidentical male twins with an immune deficiency syndrome, which can not be classified into the known categories. The defect in cell-mediated immunity was characterized by lymphopenia, diminished response of lymphocytes to phytohemagglutinin (PHA) and allogeneic cells in culture, negative skin tests to various antigens, delayed rejection of a second set skin graft from a HLA-nonidentical donor. Humoral immunity was deficient in terms of diminshed production of IgG, IgA, and IgM, of isoagglutinins, and of antibody against poliovirus vaccine and tetanus toxoid. There were no plasma cells in the bone marrow. The children were kept within a sterile plastic isolator and maintained in a gnotobiotic state by antibiotic treatment from the early days of their life. In one child two thymus transplants induced a transient rise of peripheral lymphocyte count and of the response of lymphocytes to PHA. It was concluded that a humoral factor of the thymus was operative, since no cells of HLA type of the donor were found in the recipient. The second child received bone marrow cells from the mother separated in an albumin density gradient according to the method of Dicke and Van Bekkum. Fraction 3, containing 40×10^6 cells with a markedly reduced lymphocyte component was injected intravenously in this child treated before with ALG. There were no signs of secondary disease following transplantation. A transient rise of PHA response of lymphocytes, a temporarily positive skin test to DNCB, and an increased production of IgG were observed.

26. Studies on tumor-specific transplantation antigens in childhood leukemia. W. Plenert, F. Zintl, and G. Aurich. *Children's Hosp., Univ. of Jena, German Democratic Republic.*

The indirect immunfluorescence technique was applied to test vital leukemic cells (blasts from peripheral blood and bone marrow) for the existence of tumor-specific transplantation antigens on their membranes. The studies were carried out in homologous as in autologous systems. Sera gathered from leukemic children in different phases of the disease were tested for antibodies against autologous blasts in time of relapse and against homologous blasts. The sera of adult contact persons were tested for antibodies against the cells of childhood leukemia using parablasts. Antibodies were found in 11 out of 28 tested sera (11 28), monocytoid blasts (5 21), and paramyeloblasts (1 10). In relapse autoantibodies against parablasts could not be found (4 children). These are preliminary results of studies going on at the time of print.

27. Resistance mechanisms of Friend virus induced leukemia. J. M. Dupuy, O. Stutman, and R. A. Good.

Immunological resistance against Friend virus seems to be primarily mediated by antibody formation. No cell-mediated immune response against the virus was found in immunized mice. Besides immunological basis, other mechanisms play a major role in resistance and susceptibility. The possibility of a "target cell" capable of virus binding in the hematopoietic tissues of susceptible mice was studied by using a new technique. Known numbers of focus units (FFU) of Friend virus B (passaged in DBA 2 mice) were incubated with variable amounts of cells from different origins. After 30 min of incubation, the supernatant was injected intravenously in DBA/2 susceptible mice. Nine days later, the spleens were removed and the number of surface foci was counted after immersion in Boutin's fixative. The number of foci observed in these animals represents the number of FFU left in the supernatant after incubation. Controls were injected with unabsorbed virus kept for 30 min at room temperature. Using this method, we found that the Friend virus was adsorbed by spleen, bone marrow, or thymus cells of mice from susceptible strains, *e.g.*, C3H or DBA/2, but was not adsorbed by other tissues from the same strains. By contrast, when spleen or bone marrow cells from resistant strains were incubated, *e.g.*, C57BL/1, C57BL/6, C58, the virus was not adsorbed and the original number of FFU was obtained in the supernatant. These date strongly