months after the injection. After a single small dose of cells, anti-Rh can usually not be detected serologically, but its presence is indicated by the diminished survival of a second dose of Rh-positive red cells, followed by the appearance of readily detectable antibody.

There is evidence that the minimum effective dose for primary Rh immunization is less than 0.1 ml of red cells; if so, more than 20% of Rh-negative women receive an adequate primary stimulus during a pregnancy with an Rh-positive foetus.

SUPPRESSION OF PRIMARY RH IMMUNIZATION

Recent work suggests that with doses of red cells between 13 and 200 ml, 25 µg of anti-Rh per ml of cells is effective in suppressing immunization (Dr W. Pollack, personal communication). For 1 ml of red cells, 15 µg seems to be only partially effective and 75 µg to be completely effective; intermediate doses have not been tested. Only about 2% of women have a 'TPH' of more than 1 ml of red cells.

There is no decisive evidence to show that either IgG or IgM anti-Rh, when given with Rh-positive red cells, augments the immune response.

Under conditions which have been shown to result in suppression of Rh immunization, only about 5% of the Rh antigen sites on the red cell are covered by antibody. This finding suggests the possibility that anti-Rh may exert its suppressing effect simply by causing the destruction of red cells, and so of antigen, rather than by 'masking' of antigen sites. On the other hand, ABO incompatibility, which also results in destruction of antigen, protects only partially against Rh immunization, supporting the idea that the role of 'passive' antibody is specific.

Liquor Examination in the Management of RH Isoimmunization

W. WALKER (*Royal Victoria Infirmary Newcastle-upon-Tyne*)

Liquor examination, particularly for the presence of bile pigment, is widely used in the management of pregnancies complicated by Rh-isoimmunization. Neither the source nor route of entry of this pigment is known but high liquor levels are often associated with severe haemolytic disease of the newborn, nonetheless, application in management is essentially empirical. The purpose in forecasting severity is that

premature induction or intrauterine transfusion may be carried out to try and prevent intrauterine death.

Intrauterine death is relatively rare and both forms of treatment are relatively dangerous so that accuracy of prediction is essential and risks of amniocentesis must be minimal.

Various different methods of quantitating bilirubin in liquor amnii are employed. No method is significantly superior to the other and errors in prediction are rarely due to errors in detecting bilirubin, provided precautions are taken in the collection and preparation of the specimen.

A major source of error is in assessing gestation accurately, for the bilirubin value is closely related to this. It may also depend on variations in the value of other constituents of liquor, and some have been estimated in order to try and improve its predictive value.

The pattern of liquor bilirubin in normal pregnancy and those complicated by Rh isoimmunization will be considered, and mention will be made of other constituents. Particular reference will be made to cases in which wrong forecasts have been made.

Abnormalities of the Lower Spine and Spinal Cord in Manx Cats

B. E. TOMLINSON (*Newcastle-upon-Tyne*)

The 'tailless' Manx cat occurs in two forms, one with a very short tail and known on the Isle of Man as a stumpy, the other with no apparent tail (a rumpy). Tailless Manx cats are commonly described as having a characteristic rabbit or hopping gait, though many actually show severe physical disabilities, particularly incontinence of urine and faeces and hind-limb paralysis.

The lower spine and spinal cord of 13 Manx cats have been examined.

Three possessed short tails (stumpies), and all were said to be free from disability. Grossly the spinal cords and lumbosacral vertebrae were normal the only abnormality being the reduced number (four to six) of caudal vertebrae. Histologically the spinal cords were normal in two, but one showed severe hydromyelia of the sacro-coccygeal segments.

Nine of 10 rumpies showed other abnormalities in addition to absent or rudimentary caudal vertebrae. Five of these nine showed sacral dysgenesis, and all nine showed spinal cord abnormalities. In three the filum terminale and in five the lower sacral or coccygeal cord was attached to the dura beyond the sacrum and covered only by subcutaneous tissue and fur.

Traction on the rump fur pulled down the lower cord. Two animals had 'meningocoele'-like cysts, four showed intradural fat masses (lipomas), one had a split lower cord (diastematomyelia), and two lumbosacral degenerative cord lesions with cavitation. Only one rumpy showed no apparent spinal cord lesion.

Leucocytic Infiltration of the Placenta: Clinico-pathological Study

H. FOX AND F. A. LANGLEY (*Manchester*)

Leucocytic infiltration of the placenta of membranes was found in 24.4% of a series of 1,000 placentas. The only clinical factor significantly related to placental leucocytic infiltration was prolonged rupture of the membranes. Other clinical factors such as premature onset of labour, artificial rupture of the membranes, prolonged pregnancy, pre-eclamptic toxæmia and prolonged labour showed an apparent relationship to placental leucocytic infiltration but this was due to the high proportion of cases in these groups in which prolonged membrane rupture occurred; if this factor was taken into account there was no significant relationship with these clinical factors. Placentas from hypoxic foetuses were more commonly infiltrated by leucocytes than were those in which there was no evidence of hypoxia. This was related to the high incidence of foetal hypoxia in cases in which there was prolonged membrane rupture, and analysis showed that, if this was taken into account there was no significant association between the placental lesion and foetal hypoxia. Similar findings were found in 6.6% of cases in which leucocytic infiltration of the cord was present.

It is concluded that leucocytic infiltration of the placenta, membranes, or cord is indicative of bacterial infection and is not related to foetal hypoxia.

Quantitation of Tissue Components in the Bronchi in Chronic Bronchitis and Emphysema

G. R. MASSARELLA (*Royal Postgraduate Medical School, London*)

Bronchi from lungs obtained at necropsy from patients known to have had obstructive airways disease and from a control group of 16 patients were examined. The mean Reid index for the groups was 0.5 and 0.36 respectively. The area of the bronchial lumen, mucous glands, cartilage and connective tissue (all tissue compo-