the periodic-acid-Schiff stain showed considerable increases in maternal sera as compared with corresponding cord sera or normal sera. These findings parallel the glucosamine and non-glucosamine polysaccharide content of maternal and cord sera(5). This does not necessarily indicate that the same materials are being demonstrated by the different technics. The periodic-acid-Schiff stain yields positive results when materials contain vicinal OH or NH_2 groups which can be oxidized to aldehyde. In serum only the high molecular weight substances (*i.e.* protein-bound polysaccharides and glycoproteins) possessing these characteristics are likely to be present in adequate amounts to give visible color.

Summary. Zone electrophoresis was carried out on 15 pairs of maternal and cord sera. Qualitative differences between all maternal and cord bloods were observed in electrophoretic patterns stained for proteins and protein-bound polysaccharides. Maternal sera consistently showed decreases in albumin and gamma globulin and increases in alpha and beta globulins. Corresponding cord sera exhibited decreases in alpha and beta globulins and an increase in gamma globulin. Protein-bound polysaccharides associated with alpha and beta globulins were markedly increased in mothers' sera but were decreased below normal in the corresponding cord serum specimens.

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C-Reactive Protein during Pregnancy and in Cord Blood. (22366)

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C-reactive protein (CRP) an abnormal constituent of human serum(1,2), is found in a variety of pathologic conditions(3,4). This protein, considered as a very sensitive index to inflammation or tissue destruction(5,6), has been crystallized and shown to be a beta globulin(7,8). CRP has been reported to be present in the late months of pregnancy (9,10).

The purpose of the present study was to examine the occurrence of CRP in a larger series of pregnant women and to see whether it passes the placental barrier. Since antistreptolysin O was found to occur in cord blood at a titer comparable to that of the maternal blood(11,12), determination of antistreptolysin O in maternal and foetal blood was included for purpose of comparison. CRP was also determined in a limited number of very young babies.

Materials and methods. Ninety-one women in the 2nd and 28 in the 3rd trimester of pregnancy together with 71 women in labour, were examined for the presence of CRP in their serum. Their ages varied from 19 to 42. Only healthy persons were included. Blood was taken during labour *i.e.* 2-12 hours before delivery and before the start of any necessary intervention. Concomitantly cord blood was also examined. As there were 2 pairs of

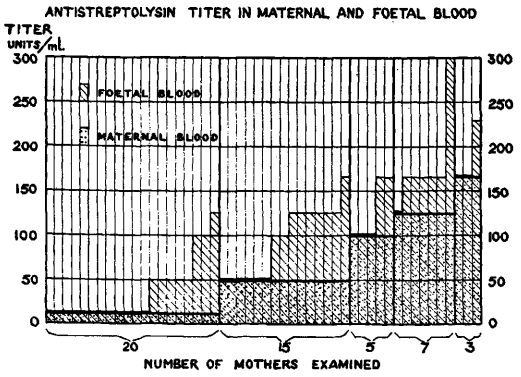

FIG. 1.

twins the number of cord samples examined reached 73. CRP determination was performed by the capillary precipitin method of Anderson and McCarty(13), employing commercial CRP antiserum.* Each millimeter of precipitate was considered as 1+. The degree of precipitation (1+ to 6+) was read after 2 hours incubation at 37°C and overnight at 6°C. Antistreptolysin O titer was tested in the sera of 50 of the above mentioned mothers and cords. The technic of the test was that described by Rantz and Randall(14). Bacto-Streptolysin O reagent was used.

Results. Results of the CRP tests are summarized in Table I.

TABLE I. C-Reactive Protein in Sera of Pregnant Women and in Cord Blood.

	2nd trimester of pregnancy	3rd trimester of pregnancy	During labor	Cord blood
No. of sera examined	91	28	71	73
No. positive	23	9	47	1

CRP was found in 25% of sera taken in the second trimester and in 32% from the third trimester of pregnancy. The percentage of positives was 66% during labour. Of the 47 positive sera, 24 gave 1+, 9 gave 2+, and 11 gave 3+ to 5+. The results were not influenced by age or number of pregnancies. Of 73 samples of cord blood only one gave a positive (2+) reaction. In this case labour lasted 48 hours and an amniotic infection occurred. The baby was delivered by forceps and developed conjunctivitis after birth. Maternal blood taken before delivery gave a 2+ result.

Antistreptolysin O was present in all 50 cord bloods examined. Fig. 1 shows that the antistreptolysin O titer was the same as in maternal blood in 24 samples and even higher in 26, in some of these significantly so.

CRP in babies. A limited number of tests showed that CRP can be produced by very young babies. CRP in amounts of 1+ to 4+ was observed in a blood sample of a baby 2 days old suffering from pemphigus neonatorum, and in a blood sample of a baby 2 weeks old with staphylococcal pneumonia. Blood from the heart of 2 babies who died at the ages of 2 and 3 weeks from pneumonia, gave positive CRP reactions. CRP was also found in 2 pyrexial babies 5 and 6 months old.

Comment. CRP was found in the blood of women in the third trimester of pregnancy in the same percentage as by Shetlar *et al.*(10). Two-thirds of women developed CRP during labour. CRP levels run roughly parallel with erythrocyte sedimentation rate (ESR) in inflammatory processes(13), but there was no correlation between increase in the rate of sedimentation (Westergren) and degree of CRP positivity in the 71 women examined before delivery. The ESR was raised in 70 of them. The occurrence of CRP in only one of 73 cord samples examined, indicates that this protein does not pass the placental barrier. The absence of CRP even in cord bloods when maternal blood yielded 2+ to 5+ levels antepartum, was the more striking when compared with the high antistreptolysin O titer of the cords. In the one case in which CRP was demonstrated in foetal blood this protein was apparently formed by the foetus itself due to infection *in utero* during the protracted 48 hours labour. The occurrence of CRP in very young babies accords with the view that CRP is not an antibody (15,16) and its production does not require therefore the maturity of antibody forming mechanism.

Summary. 1. The sera of 119 pregnant

* Obtained from Schieffelin & Co., New York.

women and 71 women in labour were examined for C-reactive protein. 25% to 32% of the pregnant women and 66% of the women in labour showed positive results. 2. Only one of 73 cord bloods examined showed the presence of C-reactive protein. 3. Antistreptolysin O was present in all 50 cord bloods examined, frequently at a titer higher than that in maternal blood. 4. C-reactive protein was found in blood of very young babies suffering from bacterial infections. 5. It is suggested that C-reactive protein is not transferred across placental barrier.

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Cytoautoradiography Fe^{59} Uptake by Bone Marrow Cells. I. Normal Human Erythroblasts and Young Erythrocytes.* (22367)

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In vivo Fe^{59} uptake was first demonstrated in rat bone marrow by stripping film cytoautoradiography of marrow smears after injection of considerable amounts of radioiron (1).

The present paper reports the *in vitro* uptake of Fe^{59} by normal human erythroblasts and young erythrocytes during incubation with small amounts of radioiron.

Method. Human bone marrow from normal and pathological subjects was obtained by sternal aspiration with oxalated or heparinized syringes. Samples of 0.5-1 ml marrow were quickly suspended in a buffered solution of Ferrous^{59} citrate containing 3-5 μc, specific activity 3.79 μc/μg Fe. The tubes were incubated at 37° for 1-2-4-6-9-12-24 hours, then centrifuged at low speed. The supernatant fluid was then discarded and the cells washed twice with normal saline solution. This procedure usually removed the excess radioiron but sometimes damaged the cells. The following alternative procedure was later adopted. The marrow-radioiron solution was put into vertical sedimentation rate pipettes and incubated at 37°. After the desired time, thin smears were prepared from the upper part of the cellular layer, where the marrow particles are easily recognized. With this procedure the Fe^{59} background obtained is only slightly higher than with the washing method. The smears, dried at room temperature and fixed with pure methanol, were treated with the usual stripping film pro-

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