

WORK DURING PREGNANCY AND WEIGHT  
OF THE CHILD

General observation indicates that the children of working women are well developed and as strong or even stronger than the children born to women of leisure, i. e., provided the women are not too heavily taxed during the last months of pregnancy. The mothers also pass through labor as easily and safely as those who have been spared every hardship. The influence of the pregnant woman's occupation and mode of life on the intra-uterine development of the child, however, is a matter of great practical importance. Is the child of a woman who works through pregnancy actually less well equipped in the struggle for life than the child of a woman who has been able to pass through her pregnancy without hard physical work? The literature which is usually quoted seems to show the importance of rest during the last months of pregnancy. Thus Pinard gives as the average weight of the babies of women who worked up to the time of delivery, 3,010 gm. (about 6½ pounds), while the average for those born of women who had been in a maternity home for two or three months before delivery was 3,290 gm. (about 7¼ pounds), a difference of 280 gm. The statistics of Italian women given by Bordè show the same difference in favor of the resting mothers. The average of the weight of babies of Italian working women is 2,855 gm. (about 6¼ pounds), for those of women who had rested twenty-five days it is 3,218 gm. (about 7 pounds), and for those of women who had rested sixty days, it is 3,345 gm. (about 7¾ pounds). Recently, however, Bondi<sup>1</sup> has disputed these conclusions and has maintained, partly on the basis of fat analyses of placentas, that the fetus develops independently and draws nutrition from the maternal body quite unaffected by the condition of the latter. He shows that corpulent women often bear small children, and vice versa. He failed in several cases to reduce the weight of the fetus by the use of the Prochownik diet. He admits, however, that disease of the mother may exercise an influence in reducing the size of the fetus.

A thesis on this subject has just appeared from the seminar of social medicine of the University of Vienna, written by Sigismund Peller<sup>2</sup> under the direction of L. Teleky, one of the foremost authorities on industrial hygiene. Peller contends that the authors who have discussed this subject heretofore have ignored several essential considerations. In the first place their results are not controlled; they draw conclusions from the examination of women of the working classes only without making a comparative study of women of the well-to-do, the leisure class. In the second place, they do not take into consideration the difference in development between

1. Bondi: Wien. klin. Wchnschr., 1913, No. 25.

2. Peller, Sigismund: Der Einfluss sozialen Momente auf den körperlichen Entwicklungszustand der Neugeborenen, Sonderabdruck aus dem Beheft der Wochenschrift Das österreichische Sanitätswesen, 1913, No. 38

girl babies and boy babies, and between first-born and later born. As Issmer has shown, there is a great advantage on the side of boy babies and of children of later birth, and errors inevitably arise when these differences are not considered. Peller points out the bearing this has on the assertion that illegitimate children average lower in weight at birth than do children born in wedlock. It is an undeniable fact that the proportion of first-born to later-born is very much greater among illegitimate children than is the proportion of first-born to later-born among legitimate children, for unmarried women do not tend as a usual thing to bear many children. Peller's own tables demonstrate this fact. Of the illegitimate male children 58.03 per cent. were first-born, of the legitimate only 29.83 per cent.

Peller's material was drawn from two sources, a sanatorium for women of means with 612 patients, and a large clinic for poor women with 4,875 cases.<sup>3</sup> He divided the poor women into two classes, those who came to the hospital just before confinement and those who were received more than a week before. In this way he could study the effect of long-continued leisure and of a more or less brief period of leisure on the weight of the new-born baby.

Leaving out of consideration the age of the mother, he finds that the first-born boy babies of well-to-do women average 120 gm. heavier at birth than those of poor women, the girl babies 92 gm. heavier. The difference is greater between children of later births. Boys of the third and fourth births in the sanatorium are 136 gm. heavier, and girls as much as 288 gm. heavier than children of the same order in the hospital. This proves the influence of social surroundings on the development of the child. Even more striking is the contrast if the Jewish sanatorium children are eliminated, for Peller found that the average weight of Jewish boy babies is 96.02 gm., and of girl babies 71.54 gm. less than that of the non-Jews, and as there were almost no Jewish babies born in the hospital, the effect was to lower the average of the sanatorium babies. Comparing the non-Jews only, the superiority of the babies of rich women over the babies of poor women who had worked up to confinement was found to be 215 gm. for boys and 150 gm. for girls.

The influence of even a short respite from hard work and probably also from anxiety and suspense is shown in the greater weight of babies born to women who came early to the hospital as compared with those of women who came just before delivery, and it must be remembered that the former were the most destitute class of all, being chiefly unmarried girls, who had no other refuge than the hospital. The difference here depends only on the care given during the last part of pregnancy, and this difference is greater than that between legitimate and illegitimate children. In a comparison

of the first-born children of hospital women with those of women coming to the hospital just before confinement, the boy babies of the former are shown to average 118.11 gm. heavier and girl babies 126.42 gm. A careful tabulation of the weights of babies of hospital women shows that there is not much to be gained by keeping the mother for a long period in the hospital before confinement. What counts is the last fortnight of pregnancy. The advantage gained during these two weeks of rest from hard work is practically as great as that gained by a longer period.

The order of weight is the following: at the top the babies of the sanatorium; next the babies of hospital inmates, chiefly illegitimate; next lower, the legitimate children of women not inmates of a hospital and lowest of all, the illegitimate children of women not inmates of a hospital. So short a stay in the hospital as two weeks is sufficient to bring about the change from fourth to second place.

Several other interesting facts are brought out in this study. The most favorable age for child-bearing is apparently between 25 and 35 years, which shows that the eugenic legislation of the Spartans, which established 25 years as the age for the beginning of child-bearing, was founded on close observation. Peller's figures show that the male first-born of poor mothers between 14 and 16 years of age average only 3,124.39 gm. (about 6 $\frac{7}{8}$  pounds) in weight, while the same class of children of the same class of mothers between 30 and 35 years of age average 3,310.44 gm. (about 7 $\frac{3}{10}$  pounds).

The difference between legitimate and illegitimate children shown in Peller's tables is not so great as has been supposed. Comparing the legitimate and illegitimate of the same sex and order of birth he finds very insignificant differences, not to be compared with the difference between illegitimate children of mothers who could rest during pregnancy and those of mothers who were forced to work. The proportion of premature children is, as would be expected, highest among the unmarried mothers who worked up to the time of confinement.

The result of such a study as this should be to encourage the provision of prenatal care in hospitals and maternity homes which now too often admit the expectant mother only for actual confinement.

3. Craniotomies and multiple births were ruled out, and premature births were listed separately.