Functional Aspects of Eclampsia and Pre-Eclampsia: Salt and Water Balance, Endocrinological and Biochemical Aspects – Physiopathologie: métabolisme des sels et de l'eau, endocrinologie et biochimie – Pathologische Physiologie: Salz- und Wasserstoffwechsel, endokrinologische und biochemische Fragen

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Experimental Induction and Control of “Toxaemia of Pregnancy” in Sheep

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A syndrome termed “toxaemia of pregnancy” occurs naturally in sheep and is associated with polytocous pregnancies and a high conceptus weight (see Parry, 1950). The clinical signs are lassitude with motor seizures and defective vision. Blood pressure is normal; blood sugar is reduced and blood ketones increased. The kidney may show marked pallor of the cortex, while the glomerular filtration rate and renal blood flow are about half the normal values (Parry and Taylor, 1956). Liver changes have been followed by serial biopsies; carbohydrate is depleted very rapidly and fat accumulates, changes which are reversed by parturition or foetal death in utero (Parry and Shelley, 1957). The adrenal glands are enlarged, but their ascorbic acid and cholesterol contents are not changed. There are no gross changes in the placenta.

The syndrome can be induced experimentally (Parry, 1954) by allowing the ewe to make excessive weight-gain during early and mid-pregnancy and then subjecting her to nutritional and psychological stresses late in pregnancy. The mortality from the natural disease has been reduced over 5 years from 15–20 per 1000 ewes at risk to about 1 per 1000 by ante-natal care designed to limit weight-gain early in pregnancy and to provide an adequate food-intake and a suitable environment during late pregnancy (Parry, 1956).

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