determine the nature and extent of these changes in plasma and red cell volume.

Five short-haired, white dogs were irradiated abdominally with the "Pan Ray" carbon arc with dosages of 70 to 83 g. cal. per sq. cm. at intervals varying from 3 hours to 6 days for a total of 15 separate exposures. Total plasma volume was obtained by the dye method, using brilliant vital red; specific gravity by the falling drop method of Barbour and Hamilton; Hb by the Newcomer method and hematocrit according to Van Allen. Total cell volume was calculated indirectly from the hematocrit reading. The results, with minor exceptions, are uniform and confirm the previous evidence that the primary result of irradiation is an increase in plasma volume of 6 to 37%, depending on the dosage and the interval between successive exposures. The dilution usually reaches a maximum in each animal which is maintained but not exceeded by subsequent irradiation, except when massive exposures are given. In 2 such experiments where the animals were irradiated twice for 53 minutes at 80 cm. (each dose equivalent to 83 g. cal. per sq. cm.) with an interval of 3 hours between exposures, there was evidence of slight concentration at the end of the second irradiation following the usual previous dilution. Red cell destruction is frequently observed in preparations made immediately following massive irradiation. The increase in red cell number, volume, and Hb previously reported is independent of the blood volume changes and indicates a real stimulus to the hematopoetic organs as a result of the irradiation.

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Ratio of Urea Nitrogen to Total Non-Protein Nitrogen in the Blood in Pregnancy.

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In normal whole blood the urea nitrogen usually accounts for about 50% of the total non-protein nitrogen, although the variations found in this ratio (35-55)[1] scarcely justify the practice oc-

casionally seen in hospital laboratories by which the concentration of urea nitrogen is calculated from the non-protein nitrogen or vice versa.

The fact seems well established that in the blood of patients with nitrogen retention of considerable magnitude the relative concentration of urea nitrogen may be increased as high as 75% of the non-protein nitrogen.[2] On the other hand, the finding of a lowered ratio to non-protein nitrogen which has been noted by certain investigators to occur in the blood of pregnant women has not received universal confirmation, for while certain observations would indicate that this lowered ratio is found in the blood in normal pregnancy,[3] others have found this relative decrease in the urea fraction only in abnormal cases.[4] The records of still other observations would indicate that the ratio of urea to non-protein nitrogen is the same in the blood of non-pregnant and of pregnant subjects.

We have carried out a series of observations concerning the ratio urea nitrogen: total non-protein nitrogen and for this purpose have analyzed 316 samples of blood taken from 162 normal pregnant women, from the first to the ninth month of gestation, 55 samples of blood taken from 55 women from 11 hours to 5 months after delivery, and (as a check on our analytical technique) 14 samples of blood from 14 non-pregnant individuals, 4 women *(nullipara)* and 10 men. The determination of urea and of non-protein nitrogen were made by the methods of Folin and Wu[6] on oxalated blood. The results may be summarized as follows:

Ratio of urea-nitrogen to non-protein nitrogen in the blood—

	Average	Max.	Min.
In 162 normal pregnant women	33.1	52.0	22.2
In 55 women 11 hrs. to 5 months after normal delivery	42.6	51.1	27.8
In 4 normal non-pregnant women	45.6	53.1	42.5
In 10 normal men	48.5	56.1	44.5

The above results would appear to indicate that the per cent of non-protein nitrogen present as urea nitrogen is lower in the blood of normal pregnant women than in that of non-pregnant individuals. In a few cases we have been able to obtain monthly samples of blood during all or a considerable portion of the period of gestation and have been able to observe the gradual decrease in the ratio during the later months of pregnancy.

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A Differential Plating Medium for Lipase-Producing Bacteria.*

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A need for a differential plating medium for lipase-producing bacteria was felt when a study was begun a year and a half ago for the purpose of classifying the bacterial flora of the gastro-intestinal canal in certain diseases possibly due to bacteria present there; *i. e.*, pellagra, sprue and pernicious anemia. Since diet has such an important bearing upon these diseases, it was decided to try as a basis for classification, in part at least, the action of the various bacteria present on certain fundamental elements of food, *i. e.*, fats, starch, protein. This seems practicable only by means of differential plating media.

The medium under discussion has been in use for more than a year and only a partial study of its possibilities has been made. However, since it might be useful to others, it was thought well to publish a description at this time. The composition of the media is as follows: Sugar free meat digest fluid, 1,000 cc.; Di-basic sodium phosphate, 5 gm.; Agar, 30 gm. Melt, clear, adjust for final pH of 7.6. Autoclave. Add 0.125 gm. nile blue sulphate in 100 cc. 25% ethyl alcohol. Tube in 6 to 7 cc. amounts in tubes already sterile. Arnold for 15 minutes. Store. To use, the agar is melted and cooled to 45°-50° C. A sterile emulsion of fat is added to about 10% volume; 0.7 cc. for 7 cc. tube. We use either cream or one of cotton seed oil made according to directions in U. S. Pharmacopeia for codliver oil except 25% more water is used than prescribed. The

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