30 per cent. lard diet, an average liver fat value of 0·52 g. per 100 g. body weight was obtained. On the same basal diet, in experiments conducted during the months of March, April and May, the hottest time of the year, a mean liver fat value of 1·04 g. per 100 g. body weight was obtained. Similarly on a 5 per cent. casein 40 per cent. lard diet, the values for liver fat obtained were 1·13 g. in February and 1·50 g. in April. The differences between the mean temperatures in May and December in Bombay do not ordinarily exceed 10° F., but there seems to be higher variation between the maximum and minimum temperatures in December (about 23° F.) than in May (about 13° F.).

These findings are in accordance with the results of Sellers and You,[1] who have found a very much lower level of fat (7·2 ± 1·24 per cent.) in the livers of rats fed *ad libitum* on a diet deficient in choline and its precursors when the rats were kept at a temperature of 2·5° C. than (24·8 ± 4·9 per cent.) when kept at room temperature of 25 ± 2° C. The same authors reported in a recent paper[2] that when a hypolipotropic diet of moderate fat content (20 per cent.) is fed to rats exposed to a temperature of 1·5 ± 1° C, excessive deposition of fat in the liver is prevented. The comparative inefficiency of fat in the production of fatty livers at lower temperatures may be due to (1) greater utilization of fat at low temperatures, to satisfy the calorie requirements so that less of the fat is available for fatty infiltration or (2) higher requirements for many of the B vitamins, especially choline[3,4,5] at higher temperatures, thus putting a greater demand for choline on hypolipotropic diets and bringing about a more acute deficiency of the vitamin. It is to be mentioned, however, that there was a difference in temperature of 20° C. in the experiments of Sellers and You, but they get a percentage liver fat difference of more than 15 per cent.; whereas in our experiments for a difference of temperature of, say 6° C. approximately, the differences in liver fat percentages do not exceed 4·7 per cent. on a 10 per cent. casein diet and 2·5 per cent. on a 5 per cent. casein diet. The detailed account will be published elsewhere.

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INFLUENCE OF ENVIRONMENTAL TEMPERATURE ON THE DIETARY PRODUCTION OF FATTY LIVERS

Of the various factors involved in the dietary production of fatty livers, the role of the environmental temperature is probably the least studied. It was noticed by us that the extent of fatty infiltration of the liver (as evidenced by measurement of liver fat content) produced in animals at different times of the year varied considerably, though in all cases, the same basal dietary regimen was employed. At first these results were inexplicable, but a closer study showed that under the same dietary conditions, the fatty infiltration produced in animals during summer was higher than that produced in winter.

In experiments conducted during November and December on the production of fatty livers in rats by dietary means on a 10 per cent. casein

1. Sellers, E. A. and You, R. W., *Science*, **1949, 110,** 713. 2. —, *Biochem. Jour.*, 1952, **51,** 573. 3. Mills, C. A., *Am. Jour. Physiol.*, **1941, 133,** 525. 4. —, *Arch. Bio.*, **1942, 1,** 73. 5. —, *Ibid.*, **1942, 2, 333.**