

of the 'firm' pork.\* Accordingly, the olein in the dry, filtered fat was estimated, and it is from the figures so obtained that the percentages of olein and palmitin and stearin in the bacon, given above, were calculated. The detailed analyses of the pure fats and the ratio of the olein to palmitin and stearin contained therein are given in table II.

TABLE II.—Composition of Fat from 'Firm' and 'Soft' Bacon.

	Firm.		Soft.	
	Loin.	Shoulder.	Loin.	Shoulder.
	p. c.	p. c.	p. c.	p. c.
Olein (calculated).....	63.71	64.40	79.95	80.18
Palmitin and stearin.....	36.29	35.60	20.05	19.82
Ratio of palmitin and stearin to olein.....	1 : 1.76	1 : 1.80	1 : 3.99	1 : 4.02

These figures show very clearly that the fat of the 'soft' bacon contains a much larger proportion of olein than that of the 'firm' bacon, accompanied necessarily by a correspondingly decreased proportion of the solid fats, palmitin and stearin. We have in this fact—the large percentage of olein—the explanation of the peculiar and characteristic flabbiness of 'soft' pork. We also have afforded us in this discovery, through the estimation of olein, a ready means of tracing the effect of any particular food or condition on the pork produced.

Table III sets forth certain determinations made on the pure, filtered fat. Though of a strictly scientific character, they are of considerable importance, since they allow us to make deductions easily understood and of a practical character regarding the nature of the fats.

TABLE III.—Physical and Chemical Constants of Fat from 'Firm' and 'Soft' Bacon.

	Firm.		Soft.	
	Loin.	Shoulder.	Loin.	Shoulder.
	p. c.	p. c.	p. c.	p. c.
Melting point.....	37° 6' C.	37° 75' C.	27° 4' C.	28° 2' C.
Specific gravity at 96° C.....	.8668	.8859	.8678	.8740
" " 100° F.....	.9009	.8980	.8970	.8988
Sapon. equivalent.....	285.3	282.3	287.3	286.0
Reichert number.....	.408	.714	.408	.663
Iodine absorbed.....	55.3	55.9	69.4	69.6

\*In addition to olein, no doubt a certain proportion of linolein—also a fluid fat—occurs in the fat of soft pork, and especially in that produced from corn. It will be seen from the present investigation that not only is there a close relationship between the consistency of a fat and its composition, but also that the food has a marked effect upon that composition, and hence upon its consistency or relative firmness. The oil of corn possesses more or less of this fluid fat linolein, which finds its way in part through the animal economy into the body fat. In the method of analysis employed, advantage was taken of the fact that these fluid fats are unsaturated and combine with iodine, and in this respect differ from palmitin and stearin, the solid fats. From the amount of iodine so absorbed, the fluid fat present was calculated, which, for the sake of simplicity, has been recorded in this bulletin as olein. Wherever the term olein is used, it is intended to include all fluid fats present.