Subsequent to the extraction phase of the Wood-Roschen method, the following procedure was used for recovering the unsaponifiable matter from the petroleum ether solution.

PROCEDURE

Transfer the Soxhlet flasks containing the petroleum ether extract to a steam bath, and evaporate to dryness under filtered air. Transfer to 101° C. oven and dry for fifteen minutes. Remove the flasks and allow them to cool. Take up the unsaponifiable matter in 50 ml. of petroleum ether and filter the solution into a tared beaker, taking care to wash the filter paper free of unsaponifiable matter. Transfer the beaker containing the filtrate to a steam bath, evaporate to dryness, and dry to constant weight in an oven at 101° C. Calculate the weight of the residue directly to percentage unsaponifiable.

DISCUSSION

Results obtained with this procedure, as compared with those obtained using the regular 10% alcohol washing procedure, are shown in the table. It will be noted that the correction for fatty acids in the extract has fallen to negligible amounts in all cases where the proposed procedure was used. The values given for unsaponifiable matter in this tabulation are corrected for fatty acids in the case of the 10% alcohol washing procedure and uncorrected for these fatty acids in the proposed procedure.

It will be noted that these two groups of values are in good agreement, the maximum divergence being 0.18%.

It is felt that the modified procedure for unsaponifiable matter proposed in this paper will considerably simplify the method described by Wood and Roschen[1] and result in considerable economy in time required for the determination.

REFERENCES

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Fat From Locusts

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THE locust, a name common to several orthopterous insects, is divided into two families: 1. Locustariae, embracing grasshopper-like species which have very long, slender antennae and four-jointed tarsi. 2. Acyrydii, embracing very numerous species which have a large head, short and stout antennae, very strong hind legs, and three-jointed tarsi. Locusts are found in almost all parts of the world, but they abound chiefly in tropical and subtropical countries, and most of all in Arabia, Africa, and parts of South America where the Migratory Locust does immense injury to vegetation, literally devouring everything green.

Not only are live locusts a menace to man and his crops, but after the death of an army of locusts, the putrefaction which arises from their inconceivable number is so great that it has been the cause of the depopulation of whole districts of country.

However, the locust has been found of some use in spite of its general undesirability. Even in Biblical times we find mention in the Bible of locusts being used as a common food. Locusts are still eaten in many countries, roasted, or fried in butter. They appear, it is stated, in the markets of Arabia and Egypt and are even exported as an article of commerce.

Only very recently have locusts been used as a commercial source of fat, but as long ago as 1887 William K. Kedric, an American, isolated oil from the American locust. In 1893, Dubois extracted the oil from the locust eggs during a locust invasion of Algeria. This oil, he described as resembling egg oil, having a good flavor when freshly extracted but rapidly increasing in acidity, and acquiring the odor of a very sharp codliver oil. Apparently this oil from the eggs of locusts was not extracted in commercial quantities and was not put to any use.

Recently we received a sample of locust fat extracted from adult South American locusts. This sample was dark brown in color, had about the consistency of cottonseed fatty acids, and had a rank, pungent odor. It was a fairly clean fat having about 0.01% insoluble impurities and 0.92% moisture. The chemical and physical characteristics were found to be as follows:

Characteristics of Locust Fat	
Moisture	0.92%
Insoluble Impurities	0.01%
Unsaponifiable Matter	1.83%
Free Fatty Acids (Oleic)	27.7 %
Titre	39.0° C.
Color (FAC)	45
Color (Lovibond-½" cell)	250 Yellow-72 Red
Total Fatty Acids (Pet. Ether)	92.5 %
Iodine Number (Wijs)	65.2
Saponification Number	191.4
Iodine Number Fatty Acids	68.2
Saponification Number Fatty Acids	194.5
Unsaponifiable Matter Fatty Acids	1.4 %
Solid Fatty Acids (Lead Salt Ether) uncorrected	36.4 %
Liquid Fatty Acids (Lead Salt Ether) uncorrected	54.7 %
Iodine Value (Wijs) Solid Acids	13.45
Iodine Value (Wijs) Liquid Acids	100.9
Thiocyanogen Value Solid Acids	11.5
Thiocyanogen Value Liquid Acids	78.7
Solid Fatty Acids (Corrected)	31.5 %
Liquid Fatty Acids (Corrected)	59.5 %
Specific Gravity at 50° C.	0.8948

Assuming the absence of linolenic acid in this sample, the analysis indicated that the fat contained the following percentages of fatty acids:

Oleic Acid	43.1%
Linoleic Acid	16.4%
Saturated Acids	31.5%
Unsaponifiable Matter	1.4%