and the other was oil which had been heated to about 225° C. for an hour to render it permanently liquid.

It was observed that upon making several determinations of the iodine number by the Hanus method the results were influenced to an unusual degree by the weight of oil taken, the quantity of Hanus reagent used, and the time allowed for the reaction. The results of these and other experiments subsequently made are given in Table I.

TABLE I.
Iodine Numbers by the Hanus Method.

Sample	Reagent cc.	Weight of oil, Grams	Time of Reaction, Hours	Iodine Numbers
Raw oil	25	0.1090	1	146.9
Raw oil	25	0.1383	1	122.0
Raw oil	25	0.1048	2	157.0
Raw oil	25	0.1103	2	150.0
Raw oil	50	0.1000	0.5	196.0
Raw oil	50	0.1074	0.5	192.0
Raw oil	50	0.1010	2	225.0
Raw oil	50	0.1008	2	227.0
Heated oil..	25	0.1000	1	144.5
Heated oil..	25	0.1500	1	109.6
Heated oil..	25	0.1068	2	144.5
Heated oil..	25	0.1160	2	136.2
Heated oil..	50	0.1049	0.5	170.4
Heated oil..	50	0.1168	0.5	170.0
Heated oil..	50	0.1029	2	195.0
Heated oil..	50	0.1069	2	195.0

For comparative purposes similar experiments were made with linseed and perilla oils using 25 and 50 cc. of the Hanus reagent. Doubling the quantity of the Hanus reagent gave an increase of 4.8 in the iodine number of linseed oil and 1.6 for the perilla oil.

Using Kaufmann's method thiocyanogen values of 76.2 for the raw oil and 80.1 for the heated product were obtained. On the other hand it will be seen in Table I that the heated oil gave iodine numbers below those for the raw oil. These results are interesting because they indicate that although the total unsaturation of the oil was lowered by the heat treatment a small portion of the licanic acid was affected in such a manner as to make it more reactive with the thiocyanogen radical than it was in the original unheated oil, in which but one of the three double bonds of the licanic acid took part in the reaction.

In order to determine the true iodine number of the oil, which could be used for calculating the proportions of the unsaturated acids, unsuccessful attempts were made to determine by analysis the extent of substitution, if any, of halogen after the oil was allowed to react for two hours with a large excess of Hanus solution. The cause for this difficulty was not investigated. As no evidence was obtained of the presence in the oil of any unsaturated constituent other than oleic and licanic acids, it was evident that if the quantity of oleic acid could be determined, the result, together with the thiocyanogen values, could be used for calculating the quantity of licanic acid in the oil. With this in mind the controlled oxidation of the saponified fatty acids by alkaline permanganate was made according to the method of Lapworth and Mottram (J. Am. Chem. Soc. 127, p. 1628, 1925). The quantity of dihydroxystearic acid finally isolated was equivalent to 6.2 per cent of oleic acid in the total fatty acids.

Considerable difficulty was experienced with the separation of the dihydroxystearic acid owing to the formation of sticky substances during the alkaline permanganate oxidation which were probably due to the incomplete oxidation of the licanic acid. Experiments were then undertaken using much larger quantities of the one per cent solution of permanganate than that recommended by Lapworth and Mottram. This treatment prevented the formation of the sticky partial oxidation products. In cases in which known amounts of oleic acid were taken the yield of dihydroxystearic acid corresponded only to 78 per cent of the oleic acid. Applying this modified procedure to the saponified oiticica fatty acids and using the indicated correction gave 5.9 per cent of oleic acid as compared with 6.2 per cent obtained by the original method.

The quantity of licanic acid as glyceride (81.7 per cent) in the oil was calculated using the following equation: $86.8x + 86.04y = 7620$ (or $100 \times$ SCN value of oil), in which $x =$ the per cent of licanic acid glyceride and y that of oleic acid glyceride. 86.8 is the theoretical thiocyanogen value of licanic acid glyceride and 86.05 that of oleic acid glyceride.

From the percentages of licanic and oleic acid glycerides present, it was also calculated that the true iodine number of the sample of raw oiticica oil was 218. J. Van Loon and A. Steger (Rec. trav. chim. 50, 936, 1931) gave 231 as the iodine number of the oil which they investigated. It should be noted, however, that they were unable to detect the presence of any oleic acid in the oil. Apparently they considered that the 82.43 per cent of unsaturated acids which they found in the oil consisted only of what they called couepic acid.

The characteristics and composition of raw oiticica oil are given in Table II.

TABLE II.
Oiticica Oil.

Refractive index at 25° C........	1.5145
Saponification value	192.6
Iodine number (calculated)......	218.0
Thiocyanogen value	76.2
Characteristics and Composition of	
Unsaponifiable matter, per cent..	0.57
Iodine number of unsaponifiable.	111.0
Saturated acids (Bertram method), per cent	10.7
Oleic acid, per cent	5.9
Licanic acid, per cent	78.2
Glycerides of saturated acids, per cent	11.2
Glycerides of oleic acid, per cent	6.2
Glycerides of licanic acid, per cent	81.7

REPORT OF THE OLIVE OIL COMMITTEE

By M. F. LAURO, Chairman

THIS committee reports progress. A questionnaire has been sent out to sound out each member as to the advisability of including certain values in the list of specifications for olive oil and olive oil foots.

We have about completed a tentative classification for oils of the Italian and Spanish type, but work on the exceptional oils like those from Tunis and Dalmatia, which fall outside that category, depends to a large extent on our securing authentic samples from those countries. This is necessarily a slow process. A few have been received and analyzed in advance by the chairman. Since they have shown no material variations from the constants of the group already listed, these samples have not been distributed to the members.

We are of course going ahead with our schedule of drafting the proper specifications and trust to have something substantial to report at the Spring Meeting in 1936.