In Table IV the percentage composition of the saturated acids is given in Column 2, the percentages of saturated acids in the original oil in Column 3, and the equivalent percentages of glycerides in Column 4.

TABLE IV

OLIVE OIL

SATURATED ACIDS

Acid	Acids in saturated acid fraction G	Acids in saturated acid fraction %	Acids in original oil %	Glycerides in original oil %
Myristic	0.16	0.15	0.01	trace
Palmitic	79.14	73.56	6.55	6.9
Stearic	26.67	24.79	2.21	2.3
Arachidic	1.62	1.50	0.13	0.1
	107.59	100.00	8.90	9.3

Summary

The chemical composition of olive oil from Mission olives has been determined, with the following results:

	Acid	%
	Oleic	84.4
	Linolic	4.6
	Myristic	trace
Glycerides of	Palmitic	6.9
	Stearic	2.3
	Arachidic	0.1
	Unsaponifiable matter	1.0

Stearic acid constituted approximately 25% of the saturated acids. It is believed that the much discussed question regarding the presence or absence of stearic acid in olive oil has been definitely settled by this investigation.

MACADAMIA NUT AND ITS OIL

BY C. A. LATHROP

The Macadamia or Queensland Nut (Macadamia ternifolia F. v. M.) is a native of the coast district of Queensland and the north coast district of New South Wales, Australia, where it is also known as the "Bush Nut" and "Possum Nut." Seeds of this tree were introduced into Hawaii about 1883 and a considerable growth has since been developed, and it is one of the most promising of nuts for commercial cultivation within the tropics and sub-tropics.

The tree is very ornamental, has a dense foliage, attains a height of about 35 feet, and the nuts occur singly or in clusters up to as many as eight. The nuts have leathery husks which often open on the tree; the chocolate colored spherical shell is about 3 mm. thick and very hard

to crack. The kernel is white and about 19 mm. in diameter, nearly spherical or slightly flattened and often double and hemispherical.

The trees begin to bear from 3 to 8 years from planting, and the nuts fall to the ground when ripe, consequently not requiring harvesting by picking. The trees often produce nuts for more than half the year but may, however, vary greatly in respect to productivity, size of nuts, bearing age and character of foliage. The Macadamia is on the whole a very vigorous tree and not subject to much attack by insect pests.

PHYSICAL ANALYSIS

(Average of 300 husk free nuts)

	Per cent	Gm. per nut
Shells	70.9	6.00
Meat	29.1	2.47
	100.0	8.47
Size		20 to 30 mm.

ANALYSIS OF MEAT AND PRESS CAKE

	Meat %	Press cake %
Crude Protein (Nitrogen × 6.25)	8.6	35.6
Crude Fat (Ether Extract)	76.5	8.0
Crude Fiber	1.7	7.0
Ash (Mineral Matter)	1.9	7.7
Nitrogen Free Extract (Carbohydrates)	8.2	33.7
Moisture	3.1	8.0
Total	100.0	100.0
Calories per pound	3540	1627

ANALYSIS OF PRESSED OIL

Specific Gravity at 15.5°C	0.9141
Refractive Index at 15.5°C	1.4698
Saponification Number	193.7
Iodine Number	74.2
Unsaponfiable Matter	0.32%
Acid Value	0.22
Solidifying Point	−12.2°C.
Lovibond Color:	
Yellow	4.0
Red	0.6

The oil, which is over 76% of the edible portion of the Macadamia nut is quite unique, in that it does not deposit until about 0°C. is reached, does not solidify until —12°C., is almost colorless and its acid value is but 0.22. Such an oil would prove of great value for various edible purposes, particularly as a bland and delicious salad oil. The flavor and texture of the meat is more delicate than that of the Brazil nut which it more nearly resembles than any of the others in flavor.

When this valuable and productive tree becomes more generally known, and planted in quantities to be of commercial importance, it will offer a very valuable product in the way of oil, oil cake and a table nut that cannot be excelled in richness and delicacy of flavor.

It has an oil content of 76.5%, about 5% higher than the Pecan, containing the highest oil contents (71%) known in table nuts. The next highest of the commoner varieties are the Hickory and Brazil nuts with about 67%, the Filbert with about 65%, Walnut 64%, Almond 54% and Peanut 45%.

CURTIS AND TOMPKINS,
SAN FRANCISCO, CAL.

THE COMPOSITION OF MOWRAH-SEED OIL[1]

BY AUGUSTUS H. GILL AND CHAMPAK C. SHAH

Mowrah-seed oil or Mowrah butter is derived from the seeds of the Bassia latifolia, a tree widely distributed in India. It is an important food stuff in the northwest provinces of India: it is also used for candle and soap making, and medicinally as an ointment. The seeds contain about fifty per cent of oil. The oil is decidedly yellow, but not from carotin, and soon begins to bleach and finally becomes colorless in contact with the air.

The ground press cake of the seeds resembles powdered cocoa and is poisonous owing to its saponin content. It is used in India as a fertilizer and an emetic, in this country it is employed in insecticide powders on account of its poisonous properties.

No definite information regarding the composition of the oil is found in the literature. Menon,[2] found widely varying results: from 13–25 per cent of stearic acid and no arachidic acid: Lewkowitsch[3] found palmitic acid.

The oil used in this investigation was imported from Gujarat, a part of the Bombay Presidency, India, in the autumn of 1922 and was examined in 1923–1924. It was found to contain considerable free fatty acid which

TABLE I

MOWRAH-SEED OIL—CHEMICAL CHARACTERISTICS

Saponification value	206.5
Iodine number (Hanus)	57.9
Reichert-Meissl value	0.7
Polenske number	0.9
Acetyl value	3.3
Acid value	14.15
Unsaponifiable matter	0.8

[1] Contribution No. 87 from the Technical Analysis Laboratory of Mass. Inst. of Technology.

[2] *J. S. C. I.* **29**, 1429.

[3] *Oils, Fats and Waxes*, 5th ed., **II**, 518.