more characteristic for many oils than some of the other values usually determined.

From a study of the lead salt-ether method for making this separation the authors have developed several modifications which it is believed increase the accuracy of the results.

This method is based on the solubility of the lead salts of the liquid unsaturated acids, oleic, lineolic, linolenic, and clupanodonic, in ether, in which the lead salts of the solid saturated acids, myristic, palmitic, stearic, arachidic, lingnoceric, etc., are practically insoluble. Satisfactory results cannot be obtained with cocoanut, palm kernel and similar oils which contain lauric, capric, caprylic and caproic acids because the lead salts of these acids are appreciably soluble in ether.

**THE EFFECT OF NITRATES APPLIED AT DIFFERENT STAGES
OF GROWTH ON THE YIELD, COMPOSITION,
AND QUALITY OF WHEAT.³**

By Jehiel Davidson.

[ABSTRACT.]

THE period between the resumption of growth of wheat in the spring and the time of heading was divided into three sub-periods. Each of three corresponding sets of plots received nitrates at one of these sub-periods. The results thus obtained show that:

1. The effectiveness of nitrates in increasing yields decreases consistently as the time of their application approaches the stage of heading.
2. The effectiveness of nitrates in increasing the protein content ($N \times 5.7$) of the grain increases as their effectiveness in increasing the yield decreases.

ANALYSES OF AUTHENTIC PEANUT OILS.⁴

By George S. Jamieson and Walter F. Baughman.

[ABSTRACT.]

It is important for those interested in the fatty oil industry to know the limits of the variations in the chemical and physical characteristics of oils. The many results recorded in the literature

³ Published in *J. Am. Soc. Agron.*, **14** (1922), 118.

⁴ Published in the *Cotton Oil Press*, **6** (1922), 34.

show wide variations, but in many cases information on the treatment of the samples or on their authenticity is lacking. The composition of some may have been modified by storage. For these reasons the American Oil Chemists' Society requested the Bureau of Chemistry to determine the chemical and physical characteristics of authentic samples of the important commercial oils. Among the oils analyzed were 22 samples of authentic peanut oils collected during 1920, 1921, and 1922. The results show that there is a distinct difference between the values for oil from Virginia type peanuts and those for oil from Spanish type peanuts. The results for each type, however, are uniform. The averages of the results are given in the following table:

	Titer.	Refractive index at 20° C.	Specific gravity, 25/25°C.	Iodine number (Hanus).	Saponi- fication value.	Saturated acids.	Unsatu- rated acids.	Iodine number of unsatura- ted acids.
All Samples	31.3	1.4691	0.9133	93.2	187.3	Per ct. 18.0	Per ct. 77.3	118.9
Variation:								
High	32.0	1.4720	.9148	98.2	188.4	20.6	79.5	125.6
Low	30.5	1.4670	.9123	89.0	186.6	15.3	74.2	109.0
Virginia type Samples				92.0		16.1	79.1	114.4
Variation:								
High				96.8		16.6	79.5	121.1
Low				89.0		15.3	78.7	109.0
Spanish type Samples				93.7		20.1	75.2	122.7
Variation:								
High				96.2		20.6	76.6	125.6
Low				90.1		18.7	74.2	120.2

A New Apparatus for the Demonstration of Gravitational Attraction. T. WULF. (*Physikal. Zeit.*, April 1, 1922.)—The Cavendish apparatus, consisting of a bar suspended by a thin wire and swinging in a horizontal plane furnishes a method of measuring very small forces. At the end of the bar is a metallic sphere which is attracted by a mass placed near it, with the result that the bar is turned from its original position. In the skilled hands of C. V. Boys and of Burgess, wonderfully accurate determinations have been made, but the instrument requires careful handling. Boys found it necessary to instal his experimental group in a cellar and was compelled to dedicate the hours of the early morning to it in order to avoid the upsetting effect of the traffic of London. The present experimenter is not desirous of making a new determination of the Gravitational