daylight, consists of a constant source of light which is independent of weather conditions, and time of day, and a tube which allows a more careful measurement of the column of oil.

While personally, I have made no comparison of the color of oil read with this instrument and the old type, the results I have seen indicate that the Greiner tintometer readings are lighter than those obtained with the daylight type.

The following are some suggested changes which would improve the instrument:

The inside of the metal tubes through which the oil and glasses are observed should be coated with a non-reflecting black paint to remove reflected light.

Have the tubes in which the sample is held slightly longer so as to facilitate removal of tube from instrument.

Have the tubes marked at $5^1/_4''$ all around for ease in determining height of oil column.

Have an eye piece to cut out side lights.

Have a source of standard glasses so as to eliminate variations in glasses.

Committee: DAVID WESSON (120 Broadway, N. Y. City), H. P. TREVITHICK, A. W. PUTLAND, E. M. JAMES, J. F. LAYER.

BASIC RESEARCH COMMITTEE WORK

BY DAVID WESSON

Most of the work in this connection has been done in the Oil Fat and Wax Laboratory and the Protein Investigation Laboratory of the Bureau of Chemistry.

A visit to the Bureau of Chemistry on January 29th showed that Dr. Jamieson was engaged in the examination of the organic phosphorous compounds which occur in crude cottonseed oil. He has now found that the oil contains a small amount of plant lecithin in addition to the inosite phosphate previously reported. It should be observed that the plant lecithins differ in composition from the egg and other animal lecithins in that they (the former) contain a carbohydrate (glucose or galactose) group. From the present investigation it is apparent that the larger part of the phosphorus present in the oil exists in the form of plant lecithin or similar compound. He has extracted from the crude oil by means of methyl alcohol a phosphatide whose cadmium chloride salt is soluble in ether. The corresponding salt of egg lecithin on the other hand is entirely insoluble in ether. It is possible that he has isolated a phosphatide which might be called a plant or vegetable cephalin. The cadmium chloride salt of animal cephalin is characterized by being soluble in ether. It is hoped that this matter may be definitely settled before long. He has

identified a vegetable mucilage in the crude oil and he cannot obtain any evidence of the presence of a true gum.

Some further work is being done with the resin present in the crude oil. Dr. Jamieson expects to be able to make an interesting report at the coming New Orleans Meeting.

A visit with Dr. Jones of the Protein Investigation Laboratory, elicited the information that Dr. Jones has been doing a lot of work on the proteins of cottonseed meal.

He finds them to be complete proteins from the nutritional point of view. A commercial process for separating them, however, has not yet been devised although he has prepared some very large samples in the laboratory.

Experiments have also been made on the effect of gossypol on digestion *in vitro*.

Some interesting experiments are being made on peanuts from which the oil has been removed by expression. Apparently the peanut kernel contains a food element which is necessary for the ultilization of the peanut protein in the nutrition of animals. This substance occurs in the aqueous extracts of the defatted kernels, and is present in its nutritional effects in small quantities. The nature of this factor has not yet been determined.

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(A CONTRIBUTION FROM THE OIL, FAT AND WAX LABORATORY, BUREAU OF CHEMISTRY, U. S. DEPARTMENT OF AGRICULTURE)

CONSTITUENTS OF CRUDE COTTONSEED OIL

BY GEORGE S. JAMIESON AND WALTER F. BAUGHMAN

Further progress in the investigation of the constituents of crude cottonseed oil which was assigned to this laboratory at the conference of the Basic Research Committee and the U. S. Department of Agriculture, September, 1921,* is reported in this paper.

The previous report was devoted chiefly to the results of the examination of the acetone-insoluble portion of the settlings obtained from the oil when it is held several weeks before refining. An analysis for acids and bases of this portion of the settlings gave the following results:

	Per cent
Chlorides	0.00
Silica	0.60
Phosphorus pentoxide	6.14
Sulphates	0.00
Calcium oxide	0.26
Magnesium oxide	1.46
Potassium oxide	1.79

* Previous reports, *The Cotton Oil Press*, 6 (No. 4) 33, 7 (No. 2) 35, 7 (No. 5) 29.