Further examples are unnecessary, though abundantly available; the above will be sufficient to illustrate forcibly the need for such work whereby the obvious shortcomings of the laboratory departments in this field be eliminated and uniformity of results on fertilizer work be brought up to as high a plane as that to which work on meals has been developed.

In an effort to locate the causes of these discrepancies apart from the personal equation of the individual analyst, a certain small share in the responsibility may be attributed to the extreme difficulty in preparing samples on a large scale having consistent uniformity throughout. The thorough mixing of a large batch of dry material presents many practical difficulties. In spite of great care and special precautions taken in their preparation, a reasonable amount of error in their uniformity is to be expected in the case of some samples, in view of the heterogeneity of the material it is necessary to use in some cases. But, on the other hand, the greatest probable error due to even a carelessly prepared sample is far less than the variations reported from which the above quotations are taken.

Further examination of the situation appears to point to the probability of the trouble arising from the variations possible in the analytical procedure. Thus in one standard method alone for the determination of Total Phosphoric Acid no less than seven different optional methods are prescribed for the operation of getting the sample into solution. In the same method three different procedures are given for the *determination*. In this way there are 21 distinctly different methods of procedure, each one being reliably accurate for its own particularly suitable application, but presenting large possibilities for error under unsuitable circumstances. These circumstances are at the discretion of the chemist, and it may be safely said that the discretion of many chemists is unequal to the strain.

In planning the fertilizer series for the coming season these contingencies were taken into account, and provisions made to compensate for them, leaving the results of the season's work as completely dependent on the proficiency of the analyst as it is physically practicable to attain.

In the preparation of samples the moral pointed by past experience will be given a full measure of consideration. Only those materials will be used for samples whose nature is such as to allow of the preparation of dependable samples. The grinding and sifting and mixing of the material will be carried out to the most scrupulous degree in all stages of the process, special machinery having been developed to assist in attaining these ends, and recent experience has demonstrated that the equipment available is entirely adequate for the rather severe demands made upon it.

To eliminate the difficulties arising from the use of different schemes of analysis it has been decided to issue, with every sample, definite detailed directions for making the determinations called for, and each chemist participating will be required to analyze the sample in accordance with those directions, regardless of the method he may have found most advantageous in his particular line of work.

CORRECTION OF TOMPKINS' SAMPLING REPORT

On page 29 of our December issue there appeared an article by Mr. P. W. Tompkins entitled "Samples and Sampling of Vegetable Oil." Due to an error in making the drawing there are a number of discrepancies between the cut and the wording of the paper. This Mr. Tompkins calls attention to as follows:

The sketch of the official 10" sampling tubes on page 30 for the B and C tubes should be reversed. In other words, the one marked C is in reality B, and the one marked B is in reality C in all references in the article.

Also, page 31, line 2, should read:

Figure C when used as a 10" sampling tube, instead of Figure B.

Page 31, 3d paragraph, 4th line, should read:

Moves as readily as the valve in Figure E instead of Figure C, as published.

RUBBERSEED OIL

By H. P. Trevithick and M. F. Lauro, New York Produce Exchange

This oil is obtained from the seeds of the para rubber tree, a native of Brazil.

This seed has been in great demand for starting para rubber trees in the East but the demand has lessened so that the seeds are available for oil. Our sample came from the Orient:

	Per cent
Color—Reddish Brown.	
Appearance—Slightly Turbid.	
Specific Gravity at 15.5° C.....	0.9250
Iodine Value (Wijs).....	137.8
Saponification Value.....	192.2
Acid Value.....	34.3
Free Fatty Acids.....	17.14
Index of Refraction at 25° C.....	1.4733
Titre—° C.....	28.8
Unsaponifiable Matter.....	0.95
Acetyl Value.....	30.6

The oil dries fairly hard in 54 hours, but does not dry as hard as linseed oil. It should be a fair substitute for linseed oil.

MINERAL OIL CONTAMINATION OF COTTONSEED OIL

By R. H. Fash

Not infrequently samples of crude cottonseed oil are encountered, which, on refining, yield a yellow oil usually off in color and having a strong fluorescence. The presence of this fluorescent appearance has usually been considered as indicating mineral oil contamination, and has been eliminated from the oil produced by a mill by stopping lubricating oil leaks into the seeds or meats. In order to determine the amount of lubricating oil necessary to produce an off colored, fluorescent oil from a prime colored cottonseed oil, known amounts of a lubricating oil that was being used to lubricate the rolls of a mill that was producing crude cottonseed oil, which, on refining, gave an off colored fluorescent yellow oil, were added to definite quantities of prime colored, non-fluorescent yellow oil. The resultant mixtures