however, in this commodity to merely take borings, but it is necessary to break a large number of cakes and examine the fractured surfaces for indications of mould, both of the active green variety and dry mould mustiness and bad flavor.

SEED, HULLS AND LINT

I shall leave the report on sampling these materials largely to Mr. Hamner as, naturally, we do not come in contact with Hulls and Lints in this district.

We have found that in the sampling of almost all kinds of Seeds it is satisfactory to draw a five per cent sample, using a thief of proper size to permit the seeds to flow freely into it, and to reach well beyond the center of the container. In drawing percentage samples, samplers should be instructed to note whether or not the material from different containers runs with a fair degree of uniformity, and to note by use of the physical senses whether mould, must, worms, vermin, etc., are present in any of the containers sampled. If there is any doubt as to the presence of these it is then desirable to dump out some of the bags full and look them over carefully.

In sampling peanuts, all samples are drawn by hand, as sampling by thief tends to split the peanuts and this affects their value. This does not refer to bulk peanuts sold for crushing purposes. It would be satisfactory to sample these by thief.

We do not have peanuts in bulk, and while it is to be presumed that bulk peanuts could be sampled after the same fashion as under any similar commodity, I would be glad to have Mr. Hamner outline procedure employed by the crushers in the South in sampling large lots of peanuts as they are obtained from the growers.

MISCELLANEOUS PRODUCTS

We have been advised by Mr. Hanks that nothing has been brought to his attention coming under the caption of "Miscellaneous Products" that is not already included in the above report, which meets with his approval.

MEMBERS ENROLLED SINCE MARCH

By Thos. B. Caldwell, Sec'y., Wilmington, N. C.

ACTIVE MEMBERS

Harrison E. Howe, Editor, Ind. and Eng. Chem., 810 18th St., N.W., Washington, D. C.

Edward Vernon Kyser, Station W., Winter Place, Cincinnati, O.

Chas. Newel Huggins, Portland Vegetable Oil Mills Co., Portland, O.

Wayland D. Hutchins, Southern Cotton Oil Co., Savannah, Ga.

Bernard John Russell, 346 W. Grand Boulevard, Detroit, Mich.

Frank A. Lee, 1713½ Young St., Dallas, Texas.

G. Vernon Green, 2802 S. Kilbourne Ave., Chicago, Ill.

Jacob Monroe Carter, Liberty Cotton Oil Co., Texarkana, Texas

CORPORATION MEMBERS

Victor Labadie, Traffic Mgr., Willits and Patterson, No. 1 Drumm St., San Francisco, Cal.

Cia. Industrial Jabonera de Laguna, S. A., Gomez Palacio, Durango, Mexico.

The Duriron Company, Dayton, Ohio.

Henry W. Peabody and Co., 64 Pine St., San Francisco, Cal.

AMMONIA COMMITTEE REPORT 1921-1922

By H. C. Moore, Chairman, Armour Fertilizer Works, Chicago

The Ammonia Committee for the year 1920-1921, requested all collaborators in the check meal work, by means of a questionnaire, to state the details of their procedure in making determinations for ammonia. The same Committee also studied, by means of co-operative work, the relative merits of the Gunning-Mercury vs. the Gunning-Copper Method. The report of this work appeared in the October and November numbers of the COTTON OIL PRESS.

The Ammonia Committee for the current year decided to study only one important factor, namely, the standard solutions and particularly the standard acid solution, using in this connection the two standard chemicals recently prepared especially for the American Oil Chemists' Society. The standards, namely—Sodium Carbonate and Ammonium Sulfate—were manufactured by the General Chemical Company, the preparation being arranged for by the writer and the purchase by the late Dr. F. N. Smalley.

The Sodium Carbonate was made from the bi-carbonate by the method described in Scott's "Standard Methods of Chemical Analysis" page 501. Synthetic ammonia was used in the manufacture of the ammonium sulfate. Several hundred pound lots of these chemicals were made and each thoroughly mixed to insure uniformity before packing in ¼ lb. bottles.

A letter was sent on December 9th, 1921, to the 88 collaborators reporting ammonia determinations on the check meal samples, inviting their co-operation, first, by purchasing from Mr. Herbert S. Bailey the Standard Chemicals above named and making the following determinations:

SODIUM CARBONATE

Heat a small quantity in a platinum dish or crucible for five or ten minutes to only a dark red. Cool in a desiccator and determine the per cent of sodium carbonate by means of your standard acid solution, using the method described on page 30 of the COTTON OIL PRESS for October, 1921, as follows:

"Transfer 0.7897 gram or 1.3197 gram sodium carbonate (equal respectively to 29.80 cc. and 49.80 cc. half normal solution) preferably into a 500 cc. Pyrex Erlenmeyer flask and add 50 to 100 cc. of distilled water. The acid solution approximately half normal, 30.00 cc. or 50.00 cc. is carefully run in and the solution heated gently to boiling, continuing boiling for 15 minutes to expel CO₂. A small filtering funnel inserted in the neck of the flask prevents loss during boiling of acid and carbonate mixture. Add from one-half to one cc. phenolphthalein and add caustic soda solution N/4 or N/10 until a faint permanent pink is obtained. If N/4 caustic soda is used, the number of cc. required, divided by two and added to 29.80 or 49.80, gives the equivalent in terms of N/2 solution of the quantity of acid solution taken. Phenolphthalein solution contains one gram of the powder per liter of grain or denatured alcohol. In case denatured alcohol is used formula No. 30 is preferable."

NOTE: For the titration Pyrex Glassware is recommended. Instead of the small funnel to be inserted in the neck of the flask to prevent spattering during boiling, a reflux condenser made of a glass tube about 1-1.5 cm. diameter, fitted into a rubber stopper and of such length that during boiling to expel the CO₂, no vapor passes from the end of the tube, is also suggested.

AMMONIUM SULFATE

Pulverize a quantity in an agate mortar and dry in an oven at 100° to 130° C. After cooling in a desiccator make determinations by the three methods as described