

then turns upward to form a lever arm. Fastened to the condenser tube about midway is a small wire hook which engages the lever arm when the support is up.

The safety bulb and thistle tube are held rigid by means of an iron band which is fastened around the condenser tube.

The advantages of the apparatus described are as follows:

(1) The block-tin tube cannot be bent in removing the flasks, for the flasks are removed by lowering the supports.

(2) The flasks cannot be bumped off the supports, for the tension of the wire framework holds the flasks tight against the stoppers.

(3) The flasks are easily removed.

(4) There is little danger of losing a determination through leakage at the stopper, for any tendency on the part of the stopper to come loose is overcome by the constant pressure of the flask against the stopper.

(5) All operations are carried on in front of the apparatus.

(6) The apparatus can be fastened to the wall and is thus out of the way.

(7) The different parts are held rigidly in place, and this adds to the appearance of the apparatus.

CHEMICAL LABORATORIES,
WASHINGTON STATE EXPERIMENT STATION,
PULLMAN, WASH.

COMMITTEE REPORTS

COMMITTEE ON FERTILIZER LEGISLATION. FERTILIZER DIVISION.¹

To the Executive Committee and Members of the Division of Fertilizer Chemists:

Your committee has not been very active during the past year and can make only a brief report. Ever since fertilizers were first manufactured, fertilizer legislation has received a great deal of attention from our state representatives and, contrary to what might reasonably be expected, is now receiving more attention than ever before. There is hardly a session of our state legislatures where fertilizers are largely used at which there are not one or more fertilizer bills introduced. Some of these measures are impartial and protect both the manufacturer and consumer, but usually they embody principles which are impracticable and if enacted would impose unnecessary burdens upon the manufacturer. There is no doubt that in many cases the authors of these bills have good intentions, but being entirely ignorant of the fertilizer business, the proposed regulations are unreasonable and impossible of fulfilment. It is also not improbable that in some instances the authors wish to have it appear that they are doing a service to their constituency.

As an example of the class of legislation to which I specially refer I will quote briefly from a bill which was introduced into the Georgia legislature at the last session:

"SECTION 1. Be it enacted by the General Assembly of the State of Georgia, and it is hereby enacted by the authority of the same, that all commercial fertilizers containing or which are designed to develop, as plant food, phosphoric acid, potash and nitrogen which are sold or offered for sale in this State, shall, in addition to the present provisions and requirements of the laws of Georgia, have plainly marked or branded upon each sack or package thereof the sources and ingredients from which the available phosphoric acid, potash and nitrogen, respectively, is generated and obtained, and no contract either

written or by parole for the purchase and sale of such fertilizers shall be enforceable in any of the courts of the State against the purchaser of such fertilizers in favor of the vendor or his endorsees, transferees, or assigns, unless such fertilizers are marked or branded as herein required.

"SECTION 2. Be it further enacted by the authority aforesaid, that if any commercial fertilizer or fertilizer material sold in this State, shall prove deficient in any of its ingredients as guaranteed or branded on the sack or package containing the same, and if, by reason of such deficiency, the commercial value of such fertilizers shall fall more than one per cent. below the guaranteed total commercial value of such fertilizers or fertilizer materials, then any note or obligation given in payment therefor shall be collectable by law only for one-half of the amount of such note or obligation; provided, further, that any person, firm or corporation who sold any fertilizer or fertilizer materials that shall prove deficient in any of its ingredients as guaranteed and branded on the sacks or packages containing the same so that by reason of such deficiency the commercial value of such fertilizers shall fall more than three per cent. below the guaranteed commercial value of such fertilizer or fertilizer material, shall be guilty of a misdemeanor.

"SECTION 3. Be it further enacted by the authority aforesaid, that any manufacturer, manipulator, dealer or vendor of commercial fertilizers in this State, who published by branding or who permits to be published by branding, upon the sacks or packages of fertilizers a false or incorrect analysis of the components and ingredients thereof, shall be liable in law to any and every purchaser of such falsely and incorrectly branded fertilizer for all expense, loss and damage sustained by such purchaser by reason of the purchase and use of such fertilizer, the amount of damage, loss and expense recoverable, however, in no case to be greater than 25 per cent. of the original purchase price of such fertilizer.

A deficiency of more than three per cent. below the guaranteed analysis of the fertilizer as published and branded on the sacks or packages thereof shall be

¹ Presented at the forty-fifth meeting A. C. S., Washington, December, 1911.

held and declared by the courts of the State to constitute a false and incorrect publishing and branding within the intent, purpose and meaning of this Act."

It is not necessary to discuss the features of this proposed measure to you who are familiar with the fertilizer business. If we should compile the different laws which have been enacted and the bills which have been proposed in the different states we would not only have an enormous volume, but it would appear that fertilizer manufacturers are about the most unscrupulous class engaged in business. It is of course necessary to have adequate laws to protect consumers and the legitimate manufacturers are heartily in favor of such legislation.

With the years of legislation which have preceded, it would appear necessary only to make some slight modifications from time to time to meet existing conditions, but our representatives seem to have different views.

The main question for this committee to consider is how to meet the conditions as they exist and see that only such laws are enacted as will be impartial and protect both manufacturer and consumer. The question of National legislation has been proposed for the control of interstate business; it is argued that this would serve as a model for the different states. The manufacturers, however, feel that it would have but little influence on the State legislatures and are, as a rule, opposed to National legislation. A committee appointed by the A. O. A. C., who served for several years, compiled the provisions of an admirable law with a view of having a model for the different states, but so far as I know it has not been adopted by a single state.

There is no possible way that I can see of getting a uniform law in all the different states; whatever is accomplished will have to be brought about through the influence of the State Agricultural Departments. These departments are supported by the manufacturing interests, and it should be as much their duty to assist and protect the manufacturer as it is the consumer. The state chemists probably understand the situation better than the other state officials and the manufacturers should have their support and I believe do in most instances, but nevertheless nearly every time the legislature meets it becomes necessary for the manufacturing interests to appear before the legislative committees to enter their protests against unreasonable legislation.

The members of this division should co-operate with the Official Agricultural Chemists for the purpose of obtaining as far as possible some legislative enactments which relate to the analysis and sale of commercial fertilizers.

Another subject which is attracting the attention of fertilizer chemists at the present time and which this division has already had under consideration is the probability of future legislation requiring a statement of Available Ammonia. This would need give us no concern if some chemical method could be devised which would give reliable and concordant results in the hands of different analysts on all classes

of ammoniates or even as desirable as the present method for the determination of Available Phosphoric Acid, but the methods now in use, it is generally admitted, do not fully meet the requirements.

Inasmuch as there is still considerable uncertainty about the actual crop value of certain organic materials and the question of analysis presents difficulties which have not yet been overcome, it is to be hoped that our law-makers will not attempt legislation in this direction. With the consumption of fertilizers increasing each year, unless the manufacturers are allowed some latitude in the use of organic materials the farmer will have to pay more dearly per unit for such ammonia as he uses. Chemists have worked out processes whereby many waste nitrogenous materials have been rendered available and we, as fertilizer chemists, should continue this work until there are no waste nitrogenous products not utilized. There are still laws in some of the states prohibiting the use of leather and other similar materials, while it is generally recognized that if properly treated these substances form valuable sources of nitrogen. Instead of prohibiting the use of certain materials, those in authority ought to encourage the working out of methods whereby these materials could be used under certain limitations, if it is necessary to put limitations on ammoniated materials.

I wish to say in conclusion that the writer has, during the past year, had considerable correspondence with reference to fertilizer legislation in some of the Southern States and has personally appeared before legislative committees upon several occasions; the observations and information gained from these sources have formed to a large extent the basis for the comments in this report.

F. B. CARPENTER, *Chairman*.

COMMITTEE ON POTASH. FERTILIZER DIVISION.¹

The Potash Committee takes pleasure in reporting that the work which has been carried on by them has been recognized by the A. O. A. C. and the modification of the Official Method for Potash determination in mixed fertilizers has been adopted as official, which, according to their constitution, must lay over one year.

The modification is as follows: Weigh 2.5 grams onto 11 cm. filter and wash with small portions of water into 250 cc. flask to about 200 cc. of filtrate; add 2 cc. concentrated hydrochloric, ammonia and ammonium oxalate, cool, make to mark, filter and proceed as usual.

The committee this past six months has analyzed three samples of potash salts by the Official Method for Potash salts and by the Official Method for mixed fertilizer. Some work was done a few years ago by the A. O. A. C. and the referee recommended more work.

In order to establish clearly to our own minds be-

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