

truest friend and noble helper" was never more applicable than now and at home. I appeal to you as men of science to lend a helping hand and bring forth the truth to a receptive humanity.

RELATION OF SCIENTIFIC ORGANIZATIONS TO MANUFACTURERS.

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In looking over the constitution and by-laws of this organization, I find stated among its objects the following: "To assist by investigation and discussion in developing and making known the material, educational and other resources and riches of the State. To arrange and prepare for publication such reports of investigation and discussions as may further the aims and objects of the Academy as set forth in these articles."

Being identified with the manufacture of certain food products, and being a member of this organization, has induced me to give some thought to the results which might be produced if there could be consummated a closer relationship between this society and manufacturers. In suggesting that a movement of this kind be inaugurated, I am taking it for granted that the paramount motives of this organization are for the enlightenment of the public at large, and the advancement of science in general.

It is a fact that there is a certain amount of prejudice on the part of manufacturers against scientists, which I believe to be directly due to a lack of understanding and coöperation. There is, in fact, too much antagonism between manufacturers and our health officers. This is, perhaps, due, to some extent, to impractical and incompetent men being placed in these positions. It may, indeed, be laid in some cases to the fault of the laws they are trying to enforce. And, though I whisper it, it may be due to a desire on the part of some manufacturers to use fraudulent methods in the sale of their goods.

It is a belief too primary to question that science in the hands of men of genius has been directly responsible for nearly all great improvements in the production of pure foods. We have to but mention such names as Appert, Pasteur, Liebig, Hansen, Jorgensen and others and investigate their works to substantiate this assertion.

There have recently been some efforts made on the part of organized manufacturers of food products to utilize the services of some chemists and bacteriologists to solve certain scientific problems bearing on processes for canned goods. All such efforts have, however, been spasmodic and have been dropped; the results thus being minimized. I believe that what is needed to produce real results is quiet, persistent effort, and I think necessarily on the part of an organization.

There are three ways in which manufacturers have need of organized scientific aid: First, in the practical work of production; second, regulating our food laws; third, in educating the public to the use of pure foods, and to the fact that such goods can not be produced as cheaply as adulterated ones.

While it is necessary for the manufacturer to understand the mechanical details and general processes of his factory, it is impracticable for him to become an authority on the obscure scientific details. The ordinary farmer will not leave his work to investigate the mineral constituents of certain plant cells, however great the scientific value. The brewer does not care to know whether or not the bacteria which sours his product is spore forming, so he has a method of keeping clear of them. The baker does not care what particular variety of yeast he uses if he has the right one, and it is pure enough for practical uses. Yet, the foundation of his business depends upon the separation and purity of the yeast he employs. The canner will not investigate what action sulphite of soda will have on tin until it has cost him \$60,000 in one year, as was experienced by a packer a few years ago. Thousands upon thousands of dollars have been lost because such facts as these have been unknown. In fact, the field is so broad that work in many departments of an organization would be necessary.

There is, and has been, great need in our States of a source of unprejudiced authority on the subject of foods which could be referred to in framing laws. Legislatures are fickle. Health officers are subject to political change, which makes the interpretation of the law subject to "change without notice." I am not presuming that it is the scope of this society to become a political factor, but had it been operating on the lines I have suggested it would only be a natural sequence for it to become an advisory authority for lawmakers as well as manufacturers.

In order to show some of the uncertainty the manufacturers have to deal with, I will read extracts from two different letters. One from the

Food Commissioner of Pennsylvania, the other from the Chief Chemist of the Agricultural Department, which is in answer to an inquiry made by a chemical house in New York. The following is from the Food Commissioner of Pennsylvania:

"A number of manufacturers of 'catsup' have represented that the strict enforcement, at this time, of rule No. 12, of the decisions published in Bulletin No. 30, by this department, so far as it relates to catsup, will seriously injure their business. They state that the catsup for next year's trade was manufactured before the rule referred to was issued and that the goods now contain a preservative, known as benzoate of soda, the use of which is prohibited under the law. Whilst rule No. 12 does not absolutely prohibit the use of preservatives in food, it does fix the responsibility upon the manufacturers of showing that a preservative is necessary, and in case of doubt as to its effect upon the health of the consumer, of showing that it is not injurious. Before strictly enforcing any new law, or new ruling, the Dairy and Food Commissioner has always given manufacturers and dealers reasonable time in which to be heard, and, if necessary, to get rid of adulterated goods already on the market, and this is in recognition of the fact that all reputable manufacturers and dealers desire to comply with every lawful regulation of trade for the protection of the public health, and only need to know what the law is, and be given reasonable time to adjust their business to its requirements. In order, therefore, to give time for the proper settlement of the points at issue, the enforcement of rule No. 12, so far as it relates to the use of a moderate quantity of benzoate of soda in catsup, is suspended until opportunity shall be given manufacturers to make clear the fact that its use is necessary and not injurious to health. A meeting will be arranged for in the near future, at which all who are interested can have opportunity to be heard."

It seems that the theory of the law has been reversed in this case by holding a thing wrong until it is proven right. This letter is practically a retraction, and it is very evident the law was passed without fair investigation.

The following is from a chemist, which was written in answer to a letter from a chemical house which manufactures carmine:

"I am in receipt of your letter of the 3d inst. relating to the classification of carmine. I appreciate the position in which you are placed, but do not consider that it would be permissible to class carmine with vegetable colors. Of course, it is not a coal tar derivative and has never been

alleged to be injurious except when used in the form of a tin lake. Strictly speaking, however, as I said before, it is not a vegetable color and I should not be inclined to class it as such. It is unfortunate that there is so large an element who regard all vegetable colors as harmless and all others as objectionable."

You will notice from these letters that it is almost impossible for the manufacturer to get definite lines to work to.

To kill an evil we must get at its head. The greatest excuse for adulterated goods is that the public wants something that looks nice, and, above all, something that is cheap. As long as this demand exists, it will be satisfied. It is true we have laws requiring adulterated goods to be labeled as such, but they are juggled with to such an extent that they confuse the public all the more. While these requirements are in force concerning the labeling of adulterated goods, there is no stamp of approval provided for the pure food, and, the consuming public being unacquainted with the label requirement, has to take the manufacturer's word for it.

Laws regarding adulterated foods are necessarily technical. Technicalities can not reach the spirit of a manufacturer, though he may comply with their literal requirements. Foods may be and are prepared under the most filthy and unsanitary conditions, yet fill the technical requirements of the law.

How much greater the incentive to a manufacturer if he could have his goods and methods inspected and receive suggestions from an unprejudiced organization, which, by its researches, had become thoroughly competent.

I believe the State of Indiana could not make a greater move in favor of pure foods and benefit the public more than by delegating power to the Indiana Academy of Science, if it were willing, to place on goods which had passed its inspection, its stamp of approval. While the public should be protected, the manufacturer should be encouraged. In conclusion I wish to say that the needs which I have tried to present are real and not imaginary. While there would probably be considerable apathy on the part of some manufacturers in coöperating with this movement, those who are really interested in the quality of their products will greet a movement of this kind with their enthusiastic support.