

to be made of gentian violet. Although the work has only just begun, enough information has already been obtained so that certain public statements can safely be made.

In the first place, it has been learned that there is no justification for implicit faith in the Grüber stains. They are apparently not nearly as pure as those that are now made in America. It has for a long time been well known that certain Grüber stains were cut with inert material such as dextrin or salt, and the recent chemical tests that we have made show very plainly the greater percentage of color in nearly all the American samples examined. Possibly in some cases the greater concentration of the American stains may have been the cause of the poor results obtained with them, since the directions for preparing staining solutions are all based upon the Grüber stains. In the second place, it has been found that the Grüber stains are not as constant or uniform as it used to be supposed. Some examples of Grüber's methylene blue for example are entirely satisfactory for staining dried milk smears, while other samples, the authenticity of which can not be questioned, have the property of dissolving casein and washing the milk smears off of the slides. Furthermore, certain Grüber samples of orange G prove entirely satisfactory in the Fleming triple stain while other samples are very unsatisfactory, ranking with the poorest American samples in this respect. It has been noticed with much interest that when an investigator has been using for histological purposes a sample of some Grüber stain from his own laboratory, and also various unknown samples sent to him, in which another Grüber sample was included, he has invariably reported his own sample of the Grüber stain as much superior to the unknown sample. From this it has been concluded that the Grüber stains vary as much as the American stains and that a histologist naturally reports best results with that particular sample with which he has had experience.

As to the qualities of American stains, it can be said without hesitation that they are in general very good. This is particularly true

of the bacteriological stains, to which for one reason or another the manufacturers have given most attention. Certain American methylene blues, in particular, are decidedly superior to any we were used to before the war. This statement is made on the basis of very severe bacteriological tests and of chemical analyses as well. There seems to be no question but that it will be possible to find American-made stains of practically all kinds desired by biologists as good or even better than those obtained from abroad.

The chief uncertainty in the situation at present is whether the producers of the stains will stay in the business. This matter may be settled one way or the other by action of Congress before this paper appears in print; but whatever is done in the matter, it is decidedly to be hoped that certain of the American stains which some of us biologists now invariably choose in preference to the Grüber products, will continue to be available to us.

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SCIENTIFIC EVENTS

THE STANDARDIZATION OF INDUSTRIES

BILLIONS of dollars can be saved by American industry if a comprehensive program of standardization is carried out, according to E. C. Peck of Cleveland, O., chairman of the standardization committee of the American Society of Mechanical Engineers. Mr. Peck writes:

The German work is of special interest to those responsible for the management of American industries, not only because of its importance, but also because of the similarity in the historical conditions surrounding the national standardization movements in Germany and in America.

Mr. Peck says that mass production is no longer primarily an American development, but that the lesson of the war has brought home to European countries realization of its significance, so that to-day in these countries far reaching programs of industrial standardiza-

tion are being carried out. These countries are employing systematic cooperative effort of industries functioning through national industrial associations, technical societies and government bureaus.

It behooves managers of American industries to intensify their efforts toward standardization or they will be left behind in the competition for world commerce. It is not enough that there be standardization work done by sections of industries and by individual firms, although such work, prior to the war, made possible a considerable amount of mass production, which attracted the attention of European industrialists.

To reap the full benefits the work must be broadened and intensified, and made national in its scope. This requires the joint effort of manager and engineer, of producer, distributor, consumer and independent specialist, all speaking through the organized bodies which represent their interests.

The many benefits of standardization are by no means limited to the production side. In the long run standardization is bound to be of even greater importance in the reduction of distribution and selling costs,—perhaps the most important problem of our economic system. A comprehensive program of standardization planned and carried out by our great national industries will mean the saving of hundreds of millions—even billions of dollars.

The American Society of Mechanical Engineers will take up the question of standardization and research at a five-day meeting to be held in Atlanta, Ga., beginning on May 8. The society in its statement on German progress says:

The standardization movement in Germany is particularly significant, since Germany is one of the three leading industrial countries. The industries of Austria, Holland, Sweden and Switzerland are so intimately related to those of Germany on account of geographical and other relationships that they are necessarily affected very largely by developments in Germany.

It appears that the work is being woven very intimately into the industrial fabric. The very large number of standards purchased by the industry, and the fact that the central organization has 5,000 firms which are cooperating members, are a sufficient indication of this.

There seems to be a striking analogy between the present standardization movement in Ger-

many and the research movement developed there a generation ago. Whatever estimate one may place upon the rôle it played in German industries generally, every one agrees that research was fundamental in the development of their great chemical industries. The rôle which the Germans are expecting standardization to play in all their industries would be not unlike the rôle which research has played in their chemical work.

MORE "GLASS FLOWERS" AT HARVARD

THE *Harvard Alumni Bulletin* states that Rudolph Blaschka, the artist who, at Harvard, with his father, modelled the famous "glass flowers" in the Botanical Museum at Harvard University, has begun work on a supplementary collection of glass models of grasses and sedges, which will be displayed on their completion in a room adjoining the Ware collection of glass flowers. Walter Deane, 70, formerly president of the New England Botanical Club, has consented to aid in providing Herr Blaschka with American material for the construction of the new models.

The Ware collection now on exhibition will be practically complete when twenty models and fifty magnified anatomical details, now in the artist's studio in Germany, have been transported to this country. It is unsafe to transport them under existing conditions, especially since their removal to Boston cannot yet be secured "in bond." Up to the time of the war the glass flowers were shipped direct to Boston and then, by the courtesy of the Custom House officials, were carried directly to the Museum in Cambridge and were unpacked safely at the University.

The collection now illustrates 160 families of flowering plants, 540 genera, and 803 species, and there are more than 3,200 analytical magnified details. The range of the exhibition is sufficiently extensive to give a clear idea of the relations of these important families and species to each other. The skill which has copied in glass every minute detail of structure of the plants has been devoted solely to Harvard University. All of the specimens which have been made since 1895 are the artistic handiwork of Rudolph Blaschka, who has carried on all of his study and his modelling single-handed in his studio in Germany.