Editorial

ENGINEERING SOCIETIES AND INDUSTRY.

Periodically the question is raised either among the membership of the technical societies themselves or through the medium of the technical press as to what relationship such societies should bear to industry and to the public.

Since the outbreak of war this question has been brought before a number of important engineering societies in all parts of the world and seems to be more insistent than ever. This has been accentuated by the war, in Great Britain, the United States and in many other countries, the feeling being that technical societies should relate themselves more closely to the problems, both economic and industrial, which it is expected will arise after the war is over.

There appears to be two distinct camps on the subject —first, there are those who believe that as technical bodies, engineering societies should, for the present at least, relate themselves in a more practical way to industrial problems. Then there are those who maintain, and maintain strongly, that such societies should stick to the line of work for which they were founded, *viz.*, scientific and educational, leaving the trade and industrial problems to boards of trade, employment federations, and similar bodies in which province it is claimed they rightly belong.

While there is much to be said in favor of having the technical societies more closely identified with the industries that support them, along practical lines, there is, on the other hand, the danger that this tendency will go too far and tend to make the lecture rooms of our societies the centres around which unscrupulous manufacturers will radiate for their own selfish purposes.

If, as so many of our leaders profess, the struggle between the nations after the war is one where science is going to be the leading factor, the claim is made by many, and it would appear to be a reasonable one, that the technical societies should stick to their line and not allow their interest in things scientific to be interfered with by the consideration of purely trade problems.

CONSISTENCY OF CONCRETE.

To indicate the consistency of Concrete, most writers employ terms such as "dry," "moist," "medium," "wet," "sloppy," and the like. These terms are without definite significance, and only remain in use because there is no authoritative standard of consistency.

One of the committees of the American Society for Testing Materials recommends the following method of determining the proper consistency of concrete for use in laboratory tests:—

Mix a batch of concrete sufficient to make a 6-in. by 12-in. cylinder, and place it in a smooth metal mould in layers of 3 in. to 4 in. thick, puddling with a steel rod of ½ in. diameter. After removal of the mould from the finished specimens, the cylinder will be found to have shortened by about ¼ in. if the correct amount of water has been used.

The consistency so determined is termed "standard consistency," and it will be found that for a 1:2:4 mixture from 7 to 10 per cent. of water will be required, according to the nature and proportioning of the aggregate.

It would not be difficult to establish standards of consistency for mixtures in general use, and given such standards, other consistencies could be conveniently expressed in percentages of standard consistency, a procedure much preferred to the use of vague and meaningless adjectives.

IMPORTANT MEETING OF AMERICAN CHEMICAL SOCIETY.

The forthcoming gatherings of chemists and technical men in connection with the annual meetings of the American Chemical Society, the American Electrochemical Society, the Society of Chemical Industry, and the Technical Association of the Pulp and Paper Industry will reveal to the American public the pre-eminence of chemistry as a factor in the great national industries. The great scarcity of potash has almost crippled many of our industries, notably our fertilizer industry and some of our glass industries.

The glass used in making electric light bulbs is a very special kind of glass that must withstand sudden changes in temperature and also great pressure. Heretofore it has been thought that only glass made with a certain amount of potash was suitable.

The outbreak of the war two years ago cut off all supply of potash from Germany and threatened to make us go back to gas lighting and the kerosene lamp. However, American ingenuity and enterprise was equal to the occasion and the wizards of the wonderful research laboratories of the General Electric Company set to work to find a substitute. At the second National Exposition of Chemical Industries, which opens concurrently with the meetings of the chemical and technical societies, the accomplishments of American glass chemists will be shown.

There are a great many chemical operations in which soda and potash might be regarded as chemical cousins. Recently the research chemists of the General Electric Company have succeeded in producing a glass for making electric light bulbs by replacing potash with soda in the glass mixture. This glass has proved greatly superior to the old potash glass; so much so, indeed, that from now on potash glass will no longer be used.

The world supply of potash comes almost entirely from Stassfurt, in Germany, because the natural deposits there have been cheaper to work than any other known source.

There was a time when the American supply of potash was produced by the leaching of wood ashes. This process was expensive and cumbersome. To-day a number of large firms, among others the Armours and Swifts, of Chicago, are getting their potash from the gigantic seaweeds and kelp of the Pacific Coast. Potash is also obtained from the brines of Great Salt Lake, the deposits of alunite in Utah, and by special recovery systems from certain granitic rocks; it is also secured when the ingredients that go to form Portland cement are subjected