

cosity of two fluids under similar conditions, the value of one of which is already known.

As furnished at present it will handle rapidly and easily tests from far below zero, in laboratories equipped for such work, up to 400° or 500° F. Also certain improvements are now being perfected by the manufacturers to extend the range of the instrument to viscosities much higher than could heretofore be measured, and to include means for testing the set of glue and similar materials.

The action of the machine depends on two laws, namely, that under similar circumstances:

(1) Deflection is proportional to speed.

(2) Deflection is proportional to viscosity.

When used as directed within the limits outlined above, there will be found to hold true with sufficient accuracy for a very wide range of practical purposes.

R. F. MACMICHAEL

CONSOLIDATED KANSAS CITY SMELTING AND REFINING CO.
EL PASO, TEXAS
April 12, 1920

Editor of the Journal of Industrial and Engineering Chemistry:

In reply to the criticism of Mr. R. F. MacMichael, concerning my article in the March issue of THIS JOURNAL, the following points may be offered:

As shown in Equation 10 there is not a constant ratio between poises and deflection, so that a machine graduated for direct reading in poises could not have a uniformly graduated scale. A more serious objection is that the graduation in poises must be based on the following assumptions if a single scale is used:

(1) That density is constant, or that the effects of its variation are negligible.

(2) That the variations of speed are negligible.

(3) That the clearance between the bottom of the disc and the bottom of the oil cup is not changed by removing and replacing the wire.

(4) That only one diameter of wire is used.

It is not believed that these assumptions are permissible, but that frequent recalibrations are necessary, and it is highly desirable purposely to vary the speed and the diameter of the wire in order to increase the range of measurable viscosity.

That the deflection is proportional to the speed and to the viscosity is, of course, true under certain conditions of speed, viscosity, and degree of accuracy required.

WINSLOW H. HERSCHEL

BUREAU OF STANDARDS
WASHINGTON, D. C.
May 27, 1920

THE EFFECT OF AIR IN STEAM ON THE COEFFICIENT OF HEAT TRANSMISSION—CORRECTION

In an article of the above title [THIS JOURNAL, 12 (1920), 644] a printer's error was made in the final equation of that article, page 646. The equation as printed read:

$$\log_{10} h = 1 + 6.0240x$$

It should have read:

$$\log_{10} h = 1 + 0.0246x$$

C. S. ROBINSON

CAMBRIDGE, MASS.

WASHINGTON LETTER

By J. B. McDONNELL, Union Trust Building, Washington, D. C.

INDUSTRIAL ALCOHOL SITUATION

Laboring under the excessively stringent regulations imposed under the prohibition enforcement act, which is administered by the Internal Revenue Bureau of the Treasury Department, the industrial alcohol industry found itself in an increasingly difficult situation. This was laid before Bureau officials at a conference held in June, attended by representatives of the alcohol, chemical, and drug industries, and by representatives of the War and Navy Departments.

Because of the illness of Commissioner Williams at the time, Paul Myers, assistant to the Commissioner, presided at the conference, at which several other Bureau officials were also present. The statements made were prepared in the form of a complete report for Mr. Williams. Improvement in his condition, however, has not occurred as rapidly as was expected and the whole question has not yet been passed upon by him. It was suggested that a special officer of the Bureau, having a technical knowledge sufficient to meet the situation, be appointed to undertake direct supervision of the enforcement of the law as applied to industrial alcohol. In this manner the industry would be relieved from hampering restrictions and red tape, now surrounding it as the result of its coming under the general enforcing squadron and many minor officials.

As a further aid the visitors suggested the appointment of an advisory board from the membership of the various organizations most closely interested.

Realization of the seriousness of the situation was expressed by Revenue officials, and there is little doubt that some action will be taken to relieve it. Just what this will be, of course, cannot be said at this time, inasmuch as Commissioner Williams, who will decide what is to be done, has not yet returned to his desk. Relief must and will be granted, other officials have stated, and it would not be surprising if the recommendation of the conference were adopted. Action is looked for within the next ten days or two weeks.

It was stated at the conference that, with a production capacity of 650,000 gal. of industrial alcohol, per day, the industry was producing only about 46 per cent of its capacity, and a serious shortage was threatened, with a curtailment in prospect.

With petroleum occupying such a prominent place on the industrial stage at present, it is not perhaps remarkable that some attention, whether wise or not, should have been turned to alcohol as a possible substitute for gasoline. Prior to adjournment of Congress, Representative Knutson, of Minnesota, introduced a resolution providing an appropriation for the Bureau of Chemistry of the Department of Agriculture to undertake a study to ascertain if alcohol could be turned to such a use. Later, Dr. Manning, until recently head of the Bureau of Mines of the Department of the Interior, questioned the good judgment of the Minnesota member in proposing to turn the investigation over to the Bureau of Chemistry. The Bureau of Mines should conduct the investigation and experiments, if made, Dr. Manning declared. The resolution, however, was lost in the shuffle among the many thousands that met a similar fate.

While there has not been any extensive investigation as a result of that resolution or a similar one, it apparently is the opinion of Government chemists here that alcohol is not destined to become a substitute for gasoline. It would be necessary to introduce other chemicals into it, and even then the price would be high, and doubt is expressed as to the possibility of turning it out in sufficient quantity. Its use would not be practicable, furthermore, without material changes being made in the motors built to consume gasoline.

BUREAU OF CHEMISTRY INVESTIGATIONS

Interesting developments with regard to the manufacture of dyestuffs from furfural, obtained from corn cobs, very probably will result from experiments which are being conducted by Dr. Johns, in charge of the color laboratory of the Bureau of Chemistry of the Department of Agriculture.

Experiments are now being conducted by the Bureau to ascertain the contents of the solutions resulting from washing of wool. Wool grease, it has been found, contains potash as well as nitrogenous substances. Samples of the liquids from wool washing establishments all over the country have been obtained by the Bureau, and analysis has definitely established the presence of these substances. Work is now progressing toward a method of extracting and separating them for commercial purposes.

LEGAL MATTERS

The suit instituted by Merck & Co. against the Alien Property Custodian for several thousands of dollars was dismissed by the court upon motion of the Government when the case came up for hearing here. It was shown that the company had not complied with all the legal technicalities required of it. Request by the company representatives that they be heard resulted in permission by the court to file a brief. This has not yet been filed.

Announcement was made the first of July by the Department of Justice of the commencement of a suit in equity, under the Sherman anti-trust act, against twelve of the principal manufacturers of linseed oil. The Government charges that the defendants had entered into an unlawful combination in October 1918 to enhance the price of their oil and to prevent lowering of prices. This was achieved by means of a so-called "Open Price Plan," the Department said. "The complaint shows that this 'Open Price Plan' includes the continuous interchange among the defendants of information as to their quotations, and as to the prices received by them in actual sales," the Department stated. "The Department of Justice has declared that the practice of keeping up prices by such 'plans' is not to be excused because the participants may have lodged information as to their 'plans' in the offices of governmental bureau or departments, or because of other like reasons. The Department of Justice has also stated that it will, if necessary, begin proceedings of an appropriate character to enforce the law against such practices." Reference is made to the "Open Competition Plan" of the American Hardwood Manufacturers' Association, which brought about prosecution and injunction against its use pending an appeal to the Supreme Court.

MISCELLANEOUS MATTERS

Investigation of public clinics established for the treatment and cure of drug addicts has been undertaken by the Government. Establishment of such clinics, it was announced recently, "hereafter will not have the indorsement of the Bureau of Internal Revenue." The Bureau is charged with administering the Harrison Anti-Narcotic Law, and its attitude was expressed in a letter sent out to all agents by Prohibition

Commissioner Kramer, who said, "The net results obtained through the operation of such public clinics appear to have demonstrated conclusively that the cure of drug addiction through such means is a failure, and that hereafter no similar institution should have the endorsement of this Bureau."

The War Trade Board during the latter part of June sent out to consumers of dyestuffs its second questionnaire preparatory to issuing licenses for the importation of a six months' supply of such German dyestuffs as are needed. Consumers were warned by the Board that any requests for what appeared to be an undue amount would lead to delay, inasmuch as all such requests would be held up, pending complete and thorough investigation.

What action is to be taken in connection with German chemical reparations drugs apparently has not yet been decided by the Board. Although there has been some discussion of the subject, it has resulted for the most part in disagreement. It has been suggested that the Textile Alliance should handle these drugs, as it is handling the German dyestuffs. St. John Perret, however, is still in Europe, and War Trade Board officials here seem not to know when he expects to return.

Apparently the vacancies on the United States Tariff Commission have not yet been filled, in spite of the fact that the President gave recess appointments as members of the Commission to Prof. Marston T. Bogert, of Columbia University, and former Governor Samuel W. McCall, of Massachusetts. Both Professor Bogert and Governor McCall have signified their intention of declining the appointments at this time, but both would accept, it is understood, if assured that the appointments would be confirmed by the Senate. No salary attaches under a recess appointment unless such appointment is submitted later to the Senate and confirmed. Governor McCall was here a short time ago and conferred with Chairman Page of the Commission, and is understood to have explained during this visit that he did not feel free to accept the post under existing conditions. A similar attitude is believed to have been expressed by Dr. Bogert, who was hailed as one familiar with chemicals, at a time when such knowledge would be greatly needed in the work of the Commission.

July 16, 1920

LONDON LETTER

By STEPHEN MIALI, 28, Belsize Grove, Hampstead, N. W. 3, England

It is a great honor to be invited to write some notes on matters of interest to chemists in the two great English speaking countries for the *Journal of Industrial and Engineering Chemistry*, and in this, my first contribution, I approach the subject with considerable diffidence. But I know, nevertheless, that on your side of the water you will be to my faults a little blind, and that both there and here we are confronted with similar problems and difficulties, and that a common effort will in the future, as in the past, enable us in time to solve them in a successful manner.

A PERIOD OF CHAOS

In applied chemistry we are faced in Great Britain with a state of uncertainty and chaos without parallel in the recollection of any of us. No one can form any just estimate of the future supply or price of coal or other fuels; no one has any sure data upon which to base an opinion as to the future of the principal metals and other raw materials. Accounts from Germany and Austria are singularly conflicting and it is not easy for us to know whether in chemical industry we are to export to those countries at a reasonable profit or whether we shall suffer from acute competition from those countries. And in our own financial state nothing seems certain beyond the fact that grievous and necessary taxation will continue for a long period and will hamper the development of business and the starting of new enterprises. We have recently lived through times infinitely more anxious, and our neighbors in France and Italy have far more difficult problems to solve than we have. Our anxieties are as nothing to theirs and the state of political industrial and financial chaos in Germany, Austria, and Russia is such as to be beyond conception. We are not merely perplexed by this; the aspect continually changes and it is hopeless for us to try and imagine what will happen in the east of Europe. In time some sort of settlement or stability will be achieved, but the details of the process are beyond the wit of man to imagine.

NITROGEN FIXATION

The general uncertainty, the enormous burden of taxation, the dearth of money and the unsettled state of labor, all contribute to restrict developments in chemical activity. Only one new enterprise of any magnitude is receiving attention here, and that is the erection at Billingham in the County of Durham of a considerable works for the fixation of atmospheric nitrogen by a modification of the Haber process. The company engaged in this work, Synthetic Ammonia and Nitrates, Ltd., is largely owned by Messrs. Brunner Mond and Co., Ltd., and the new works will have the coöperation of some of the leading manufacturers of explosives. As their consulting engineer and some others connected with the company have recently visited America, probably many of your readers are fairly familiar with the general nature of the proposition. In the works now being erected it is intended to manufacture upwards of one hundred tons of ammonia per day, and it is hoped that a large quantity of chloride of ammonia will be available as a fertilizer.

CHEMICAL SOCIETIES

In common with some other countries, we are here facing the problem of adjusting the needs of the various chemical societies to the new conditions under which we live. The cost of printing and paper has advanced rapidly and shows signs of yet further advancing. Chemistry is growing in bulk; the need for specializing is obvious and so the number of chemical societies steadily increases; the cost of managing each society also increases and the surplus income of each individual member is now so reduced by high prices and high taxation that he can ill spare the subscriptions necessary to maintain the usefulness of the various societies. There is a good deal of overlapping in the British chemical societies, and in a small country like ours a comparatively small number of chemists is called upon to take an active part in the management of several of these societies. "Many shall run to and fro and knowledge shall be increased," say the Scriptures, and assuredly there is much running to and fro in