

ments, the right to apply medical treatment to individuals. The functions of the Public Health Service are limited to interstate or foreign regulation, except in such cases where the state itself invites and authorizes the Public Health Service to perform specific functions within its territory. Neither may treatment, if it may be called such, be applied to environment or property except by due process of law, in such a manner as to duly conserve property rights.

Fallacies of this type are due to the fact that, while the medical profession is much engaged in public health work because its members have in the past come nearest to having the qualifications necessary for such work, physicians are apparently too greatly limited in their understanding of government to realize that, while public health has medical aspects of the greatest importance, nevertheless public health is a function of community life, founded upon law and our form of government. Until such time as all people will learn that the ideals of a single profession, no matter how excellent, can not be applied to people in the mass, except as such ideals are founded on the law, and are in strict accord with fundamental rights of individuals and well-defined principles of government, we may expect to find fallacies such as this continually appearing.

HAROLD F. GRAY

#### THE CENTIGRADE THERMOMETER

"No man that has any regard for his reputation will care to say that the irrational, inconvenient Fahrenheit scale ought to be maintained," is the modest and diplomatic way in which Representative Johnson, editor of a country newspaper, passes judgment on some two hundred millions of people who never knew it. As for being irrational, any heat scale is arbitrary; if inconvenient, it could never have been generally accepted. Nine tenths, probably, of the use of a thermometer is for the weather; and practically the F. degree is a convenient one, while the C. degree, being about twice as coarse, would involve fractions. Some people perhaps think that

a centigrade scale has something to do with grams and liters; but I never could see any special convenience in 15.°5 C. as a temperature reading in density determinations. A scale is convenient if you find it so; it is rational if its divisions are such that the quantities commonly used can be expressed in units.

In all English-speaking countries all technical and manufacturing work uses the F. scale; and all the common people are familiar with it. Unless there is some reason for change it should be let alone. The fact that I and a few hundred other people in this country are familiar with the thermometer used in France and Germany is no adequate reason why a hundred millions of our fellow-citizens should be put to a great inconvenience which will never benefit them or their descendants in the least. Perhaps a rose by any other name would smell as sweet; but why not keep on calling it a rose?

A. H. SABIN

FLUSHING, N. Y.,  
March 11, 1916

#### SCIENTIFIC BOOKS

*Transactions of the International Union for Cooperation in Solar Research.* Vol. IV. (Fifth Conference), Manchester, At the University Press. 1914. Price \$3.25 net.

This tri-lingual volume (English, French, German), representing the high water mark of friendly cooperation in scientific research, comes as an almost painful reminder of conditions shattered by war, of friendships replaced by enmity, of constructive science replaced by destructive art.

The Solar Union, not quite adequately described by its title, was organized, largely under American auspices, as a common meeting ground for the most distinguished students of astrophysics throughout the world. From the beginning its cosmopolitan character has been served through holding stated meetings in divers lands. The present volume contains an account of the fifth of these meetings, which was held at Bonn in the summer of 1913. In addition to reports upon the progress of mat-

ters formally undertaken by the Union at former meetings, we find a considerable number of accounts of investigations privately conducted and submitted to the Union as coming within its general province, the whole composing a *pot pourri* probably beyond the competence of any one person not a professed encyclopedist. Among the matters discussed we note, by way of illustration only, the sun's rotation; the measurement of its radiant energy; the measurement of wave-lengths; observation of sun spots, prominences and faculae; the organization of solar eclipse observations; the study of solar vortices; the refraction of light in the solar atmosphere; the sun's magnetic field; etc.

While in general the papers dealing with these several themes can hardly be regarded as addressed to the lay reader, when taken in connection with the discussions evoked, they furnish to the serious student the best available résumé of current opinion upon controverted questions relating to the sun, as well as upon certain wider aspects of general physics. The reporting appears to have been well done, although, perchance, something of geographic prophecy rather than current fact is to be found in the secretary's classification of Finland as an independent country and the assignment of Copenhagen to Norway, in the tabular list of delegates.

The personal reports of American participants in the conference confirm the impression produced by the narrative parts of the volume, that the hosts left nothing undone that could promote the social side of the conference and the enjoyment of their guests. How bitter must be to many of these the commentary of August, 1914, upon the chairman's closing words in August, 1913, "und so hoffe er dass die Bonner Versammlung nützbringend für die Wissenschaft und angenehm für die Theilnehmer werden würde, so dass sie später gern an Bonn zurückdenken könnten."

While it is not to be supposed that the present European war will end international co-operation for scientific research it has certainly placed obstacles in the way thereto, and may it not be that in the coming decade men

of divers tongues, accustomed to work together for the advancement of knowledge, may find a major line of usefulness in collectively seeking to restore good will to the world.

GEO. C. COMSTOCK

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*Representative Procedures in Quantitative Chemical Analysis.* By FRANK AUSTIN GOOCH, Professor of Chemistry and Director of the Kent Chemical Laboratory in Yale University. New York and London: John Wiley & Sons, Inc. 1916. Pp. viii + 250. Price \$2.00 net.

In the volume entitled "Methods in Chemical Analysis" published in 1912, the author gave to his colleagues a fund of material drawn from the records of a laboratory which for more than a generation has outranked most others in the development of authoritative analytical procedures. In the volume under review he writes from the fullness of his experience as a teacher of quantitative chemical analysis, one whose influence has been widely felt, through both his publications and his pupils. The manual is intended as an introduction to representative analytical procedures.

The book opens with a brief discussion of non-reversible and reversible reactions, including the mass law and the principle of LeChatelier. This is succeeded by a full consideration of the processes of weighing and measuring. The analytical procedures are, as usual, subdivided into gravimetric and volumetric analyses, the latter including brief sections upon gasometric and colorimetric methods. The concluding chapter deals with systematic analyses of brass, limestone, silicates, substances yielding ammonia, and a few applications of indirect methods of analysis. Among the volumetric procedures much space is devoted to iodometric processes, many of which have been devised or developed in the Kent Laboratory. Iodometric processes are, as the author states, among the most accurate and satisfactory available, and do not, in general, receive the recognition which they deserve.