

realize that we must "build the ladder by which we rise." Each of us finds that he is but one of a vast army of patient plodders, seekers after truth. We become more and more willing to do that which is close at hand, to seize small opportunities as they pass, rather than waste time looking for the great opportunities of our dreams. Darwin was one of our great speculative philosophers, but his philosophy was founded upon an amazing array of facts, and his experience as an observer of details, especially that gained in his classic taxonomic investigation of the barnacles, contributed in no small degree to the soundness of his philosophical judgment.

Though the realm of botany, as a whole, is too great for any one individual to comprehend all its branches, and each must confine himself to one or two branches, the sympathy of each may and should extend to every branch. Finally, the ideal of taxonomy is the utilization of the results obtained by all the branches of botany; it is the expression of the sum of the knowledge to which all contribute; it is the philosophy of botany in that it correlates the parts into a harmonious and ever growing whole.

A. S. HITCHCOCK

U. S. DEPARTMENT OF AGRICULTURE

### THE CENTIGRADE THERMOMETER

THE Hon. Albert Johnson, member of Congress from the third district of the state of Washington, under date of January 12, addressed to members of the American Association for the Advancement of Science the letter which follows:

A reprint of my speech "Abolish the Fahrenheit Thermometer," dealing with Bill H. R. 528, introduced by me on December 6, 1915, is sent herewith to all members of the American Association for the Advancement of Science.

The speech is followed by extracts from letters, and I profit by this opportunity to express my sincere thanks to the writers of those letters for the

valuable aid which they have rendered. I request that this acknowledgment be accepted in lieu of a personal reply, which I am reluctantly compelled to forego, owing to lack of time and clerical help.

The labor and expense involved in this undertaking will at best be considerable. Already the expense for printing exceeds \$150. While every step should be taken with due deliberation, any unnecessary delay would involve a regrettable increase of labor and expense. If no action is taken at this session of congress, much of the work will have to be done over again at some other session. No man that has any regard for his reputation will care to say that the irrational, inconvenient Fahrenheit scale ought to be maintained; the only question is, how soon it should be abolished. An amendment lengthening the transition period to 8 or 10 or 15 years may be worth considering, but we should ill deserve our reputation as a progressive nation if we delayed to *set a date* for the abolition of a daily felt nuisance. As pointed out by several correspondents, it ought to have been done long ago. The change will necessarily be attended with considerable inconvenience, but this will not be lessened but increased by delay. We have already earned enough ridicule by clinging so long to the worst thermometric scale.

Every man in a responsible position now has a chance to gain credit by doing his best to facilitate the change. If any should feel tempted to advocate delay, they ought to consider that they would thereby gain not credit but discredit, because the change is sure to be made in the near future.

The Pan-American Scientific Congress has twice recommended "the establishment of the Pan-American Meteorological Service." Evidently the first requisite for that purpose is the abandonment of the Fahrenheit scale.

It appears that the government departments have authority, under existing law, to discontinue the use of the Fahrenheit scale. In publications designed for the scientific public, many bureaus do use the centigrade exclusively. However, as regards publications intended for the general public, it is evident that the departments would expose themselves to severe criticism if they made the change without an express mandate from congress. Congress evidently will not act except in response to an unmistakable demand on the part of the scientific public.

All progressive scientists, therefore, should unite to rid American science of this "iron shirt of

habit." By a resolute simultaneous effort at the first onset, when interest is fresh, we may avoid the necessity of spending ten times the amount of labor in wearisome and costly agitation. No earnest man should excuse himself on the plea that "the others" will push the bill through without his help. If every man took that attitude, there would be no "others."

At my request a committee, under the chairmanship of Dr. S. W. Stratton, Director of the Bureau of Standards, has been appointed by the American Association for the Advancement of Science to take charge of the bill. This committee, located at Washington, within easy reach of congress, will serve as the natural center of a nation-wide organization. All communications on the subject should hereafter be addressed to "Thermometer Committee A. A. A. S., Bureau of Standards, Washington, D. C."

It is recommended that local committees, as branches of a national organization, be formed in all the states, to bring the subject to the attention of the press and to secure the adoption of resolutions by scientific and educational organizations, faculties of universities, firms, corporations, etc. Copies of such resolutions—the briefer the better—should be sent to as many individual members of congress as possible.

The American Association for the Advancement of Science, with nearly 9,000 members, might itself be deemed fairly representative of the American scientific public. Nevertheless, in order to avoid the criticism that this measure was pushed through congress without adequate consultation of those concerned, I shall be glad to send this circular and the reprint of my speech to other societies, if their secretaries will express a wish to that effect. As the type is kept standing, it will be easy to order new editions as fast as the demand for them arises. By thus submitting the question, as nearly as possible, to a popular vote of all those who are competent to express an opinion, all semblance of arbitrary action may be avoided.

Meantime it is hoped that the present circular and accompanying speech will be reprinted and discussed as widely as possible in the scientific and popular press, so that any one who cares to raise objections may have a chance to do so. Clippings containing such printed discussions will be thankfully received by the above-named committee.

For the present you can render valuable aid by

answering the questions on the enclosed question sheet and mailing it in the enclosed envelope, which requires no postage. Unless you express a wish to the contrary, it will be assumed that you permit the publication of your remarks entire or in extract.

The questions are as follows:

1. Should the use of the Fahrenheit scale be discontinued?
2. Can you suggest arguments in addition to those contained in the accompanying documents?
3. Can you suggest amendments to the bill? (Text of bill on page 3 of speech.)
4. What length of time should be allowed before the use of centigrade degrees, with or without the addition of the equivalent in Fahrenheit degrees, becomes obligatory in government publications?
5. What length of time should be allowed before the use of Fahrenheit degrees in parentheses after centigrade degrees is discontinued?
6. In case you were invited by the Committee on Coinage, Weights and Measures to state your opinion orally before them, would you be willing to come to Washington for that purpose?
7. Do you know of any organization that might be willing, on invitation by the committee, to send delegates to Washington for the same purpose?
8. Are you willing to work in behalf of this movement—by writing, lecturing, organizing state committees and other committees, securing resolutions from societies, faculties of universities, etc.?
9. Can you suggest other methods of work?
10. Can you give the names and addresses of secretaries of societies whose members ought to receive the circular and other documents?

#### SUMMER "ASSEMBLY IN SCIENCE" AT THE SCRIPPS INSTITUTION

THE experiment of holding a "Summer Assembly in Science" at the Scripps Institution for Biological Research at La Jolla, on the sea coast near San Diego, will be tried by the University of California this summer for the first time. The purpose is to disseminate among teachers of biology and physical geography and others interested in modern science the discoveries and new points of view which are resulting from the investigations of this research department of the university, and to