

to the University of Illinois to be professor of pomology and chief of the department there.

APPOINTMENTS have been made to the directing board of the Buenos Aires Medical School as follows: Drs. Castex, Tamini, Speroni, Acuna and Elizalde, by the professors; Drs. Ivanissevich and Usolenghi, by the students.

DISCUSSION AND CORRESPONDENCE

PHOTOGRAPHY OF SHADOW BANDS

As numerous inquiries and press notices have appeared concerning the photography of shadow bands at the eclipse of January 24, 1925, some statement as to the method employed at Middletown by the members of our party may be of interest to readers of SCIENCE.

The success of the undertaking was due primarily to the special method and camera devised and provided by Professor A. E. Douglass, of the University of Arizona, at whose instigation this part of the program was carried out.

The camera consisted of a 13-inch concave mirror and film carrier with focal plane shutter so placed as to operate about six inches outside the focus. The mirror was directed to the sun and a series of exposures made on the out-of-focus image of the slender crescent for a few minutes before and immediately following totality. The method is identical to that used by Professor Douglass in the photography of artificial shadow bands as explained by him at the Washington meeting of the American Association, December, 1924, but so far as known has never before been used at any previous total eclipse.

The most satisfactory exposure was made about five seconds from totality. It shows the bands as atmospheric Schlieren sufficiently distinct for enlargement and reproduction. Measures of the photograph when reduced give for the distance between adjacent bands 2.5 inches, in close agreement with estimates from visual observations. The camera was set up and operated by Mr. D. W. Mann, mechanic at the Jefferson Physical Laboratory, to whose skill much credit is due.

It is of further interest to remark that in contrast to the conspicuous display of shadow bands at Middletown, Conn., Mr. R. F. Field, of the Department of Physics at Harvard, reported no shadow bands whatever visible in open country some twenty miles south of Providence, R. I. This emphasizes the local and atmospheric character of the phenomenon which so far as is known has eluded all attempts at photography until the last eclipse.

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SMITHSONIAN WEATHER FORECASTS

IN SCIENCE for October 2, 1925, Dr. C. G. Abbot, acting secretary of the Smithsonian Institution, comments adversely concerning a recent review of Smithsonian Publications on "Forecasting Weather." Dr. Abbot says three papers were reviewed; but he is in error, for four papers were included and their titles and serial numbers given. He enters a disclaimer regarding long-range forecasts, adding that "no person connected in any way with the Smithsonian has ventured any such excessively long-range forecasts or knows of any method of making them." It was far from the reviewer's mind to discredit work done by Abbot and Clayton, and I am sorry if injustice has been done to these gentlemen through any text of mine. During the spring and summer, however, we received forecasts from a high official source in New York and were told and our informant so believed that these were forecasts of the weather for New York City, based upon Smithsonian work. Dr. Abbot has stated that for more than a year "definite forecasts of New York temperatures, three, four and five days in advance; average weekly temperature departures forecast two days before the beginning of each; and average monthly temperature departures forecasts two days before the beginning of each month" were made and forwarded daily to the Smithsonian Institution. Our mistake was natural.

His chief objection to the review, however, is that in work of this nature there should be no humor. In my opinion he is unduly sensitive and has taken certain pleasantries about the "unhappy lot of the forecaster" (the heading of the article to which he objects) as applicable to himself. It was not so meant. For example, in speaking of a state of mind bordering on what the Scotch call "feckless indecision" we mentioned that a peace-loving community had served up to them recently the following official forecast:

WEEK-END FORECAST FOR E. AND S. E. ENGLAND.—*Indications are now less definite for unsettled weather though they are not yet definitely favorable for settled fair weather.*

Now it was the people of London, not the citizens of Washington, who had to bear up under this infiction. Surely Dr. Abbot will permit us to see the humor of the situation.

There is an old, old story, which I may be forgiven for repeating here, of the New England farmer who returned from a visit to Boston and proudly showed his wife a barometer. "Well, what good is it,

Hiram?" said the old lady. "Why, now I can tell when it is going to rain!" "Hiram," said she, "I am truly ashamed of you. What do you suppose the good Lord gave you your rheumatism for?"

Aerographers are in a way like the old lady. We would like to ask the Smithsonian investigators "What do they think the good Lord gave us an atmosphere for?" This great thermal engine, so well described by Sir Napier Shaw in his last paper on "The physical structure of the atmosphere." Are we no longer to study from a dynamical point of view the transfer and transformation of energy? The work of years on the convergence of air streams, the development of areas of turbulence and discontinuity—is all this to be relegated to the rear and an undetermined variation in the value of the solar constant of radiation outside the atmosphere to be given first place in forecasting weather?

Dr. Abbot tactfully omitted reference to the serious side of the review, which was to the effect that the results given in the publications seemed to the reviewer to have no substantial basis as factors of value in forecasting. The results negative the claims made.

Dr. Abbot says that perhaps I failed "to see the forest because it was obscured by the trees." Oh! well! I was not looking for forests or even trees, only searching with wistful eye for some sign of vegetation in a dry and thirsty land.

ALEXANDER MCADIE

BLUE HILL OBSERVATORY

AN APPEAL FOR SIMPLIFIED LITERATURE CITATIONS

THE average editor and the average publisher of scientific literature is ultra-conservative with respect to the form of reference citations, whether these be in terminal bibliographies, footnotes or text references to places of publication of technical names. This same statement may also apply equally well to the average author of scientific papers; although usually the author has no choice, being obliged to follow established usages no matter how antiquated and cumbersome these may be, in order to conform to editorial mandates. Forms adopted many years ago are currently followed and in many cases little or no attention is given to utility or to simplification. In some scientific periodicals, the use of the cumbersome Roman numerals for indicating volume numbers has been abandoned, but in a very high percentage of modern periodicals, including a number of recently established ones, this ancient form is still used. It may be doubted if editors, publishers or authors give much attention to these seemingly small details, being

more apt to follow the line of least resistance and past or current usage.

The conciseness, clearness and utility of indicating the volume number by black-faced figures **38** as compared with the Roman characters XXXVIII is manifest. With the use of the black-faced figures it is not necessary to stop to translate, as is frequently the case when the cumbersome Roman system is used. We are all more or less familiar with the lower numbers in the Roman series from long usage, but few can rapidly translate the more complicated higher figures. In this age of rapid publication shall we go to the extreme, when called upon to cite such a publication as Bulletin **1348** of the U. S. Department of Agriculture by translating the simple figures into the cumbersome MCCCXLVIII? In a larger number of modern serial publications this absurd procedure becomes necessary because of usage and established editorial custom and is pedantic in the extreme.

There is little uniformity in scientific literature in reference to the form of citation. It not infrequently happens that an author in preparing a paper for submission to a certain journal follows the form approved for that serial, but if he changes his mind and later desires to submit the paper to some other serial, he frequently has to rewrite considerable parts of the manuscript in order to bring it into conformity with the style followed in the second one. This is especially true if the paper happens to be a taxonomic one with numerous literature citations or one with an extensive bibliography.

In several modern standard review publications the conciseness and utility of the simplified form of citation has been amply demonstrated, but editorial usage in review publications has had little or no influence on the forms used in established technical periodicals, while the editorial staffs of newly established serials frequently give no consideration to the matter. We are all familiar with review literature, but most of us are impervious to the manifest advantages of the simplified citation forms adopted by the majority of them. The simplified form adopted by several standard review publications is given below:

Chemical Abstracts: 24, 57-70 (1925).

Science Abstracts: (—24. pp. 57-70, Feb., 1925).

Botanisches Centralblatt: 1925, 24, 57-70.

Botanical Abstracts: 24: 57-70. 1925.

In order to indicate the wide range of variation in reference citation, even where the Roman system of indicating volume numbers is not used, the following data have been compiled from the same reference in four different periodicals: