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.

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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:

	Number of Characters
(1) *Experiment Station Record:* (Ann. Appl. Biol., 24 (1923), No. 2, pp. 151–193, pls. 3, figs. 31).	56
(2) *Journal of Agricultural Research: In* Ann. Appl. Biol. v. 24, 1923, p. 151–193, pl. 1–3, fig. 1–31.	52
(3) *Philippine Journal of Science:* Ann. Appl. Biol. 24 (1923) 151–193, *p. 1–3, fig. 1–31.*	45
(4) *Botanical Abstracts:* Ann. Appl. Biol. 24: 151–193. *3 pl. 31 fig.* 1923 [or *pl. 1–3, fig. 1–31.* 1923].	40–46

In No. 1, with 56 characters, no data except the irrelevant "No. 2" are given that are not included in the shortest form utilizing but 40 characters. Two pairs of parentheses, "No. 2," "pp." and several commas are redundant. There is no differentiation in type; that is, nothing to catch the eye.

In No. 2, with 52 characters, the following are redundant: "In," "p," "v" and several commas. There is no differentiation in type.

In No. 3, with 45 characters, the parenthesis is redundant, owing to the place of the date of publication. There is, however, proper differentiation of type as to volume, plates and figures.

In No. 4, with 40 characters in its simplest form, there are no redundant letters, figures or punctuation marks, the latter being reduced to a single colon and several periods. The volume number, page, plate and figure references are properly differentiated. Nothing essential is left out. It is the easiest to read and to proof read; the easiest to write, whether long hand or on the typewriter; and what is still more important presents a minimum chance of error. These points are perhaps matters of slight importance in short papers having only a few references but become of very great importance in those works having hundreds and even thousands of references.

There is little force in the argument that type of different styles such as black face, Roman and italics should be avoided in the same line. Most modern composition work is done on the linotype or monotype machine and with these machines the use of different fonts is practically as simple from the standpoint of the compositor as it is for a copyist to operate the shift key on a typewriter for upper case characters.

Merely because an established form of citation has been followed for many years is no reason why a change should not be made, especially if the change still makes the reference entirely clear and eliminates useless characters. Utility, simplicity, clarity and brevity should be the criteria, not past or current custom. The general adoption of the concise form utilized in *Botanical Abstracts* by publishers, by responsible editors of technical literature and by authors of technical papers is greatly to be desired.

This appeal for the simplified form of citation is primarily directed to publishers, editors and members of editorial staffs. Unless the initiative be taken by these, the individual author is powerless in the matter. Scientists are frequently accused of not being practical, but here is an opportunity of demonstrating on a small scale a distinctly time-saving device that would in the long run make our published data simpler, clearer and more attractive. I venture the prediction that no author who has once prepared a paper in which the simplified form of citation herein discussed is used will voluntarily revert to the more ancient complicated forms that still prevail in the majority of our technical publications, whether these be in serial form or individual volumes.

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THE EFFECT OF MINERAL SUPPLEMENTS ON REPRODUCTION OF THE ALBINO RAT

FAILURE of growth in the second generation of rats on a ration of corn and peanut meal supplemented with acid phosphate was reported last year.[1] The basal ration was later fortified with dried meat and cod liver oil. When the improved ration, consisting of white corn 30, wheat 30, peanut meal 25, dried meat 12, and cod liver oil 3, was supplemented with 1.0 per cent. of NaCl and 1.5 per cent. of acid phosphate, reproduction was not more successful than on the acid phosphate ration in the former experiments. The females on this ration farrowed normal numbers of young; but they apparently furnished very little milk and the pups soon became thin and scrawny. Many of the pups were eaten by the dams. None of the litters reached the age of weaning.

The addition of sufficient $NaHCO_3$ (0.5 per cent. of the total ration) to neutralize the excess of H_2SO_4 carried by the phosphate resulted in marked improvement. We now have young rats, representing the third generation on this ration, that are being raised successfully.

Other investigators have shown that the pig, goat, cow, rabbit and monkey are able to combine ingested mineral acids with ammonia and excrete the ammonium salts through the urine. Some of their experiments have shown that protein storage on a normal level of protein intake or growth through a considerable period of time was not interfered with. It has not been shown, however, that normal repro-

[1] Salmon, SCIENCE, 60, 457, 1924.