Canadian records is particularly striking—and regrettable, in view of the apparent significance of holarctic migrations in the past. Omissions seem very few, considering the magnitude of the work. I note the absence of certain published records, *e. g., Sciocoris microphthalmus* (Palæarctic), *Zelus socius* (Me., Mass.), and a scarcity of Maine records before page 151.

It is an especial pleasure to report the extreme care which the author has evidently taken to avoid minor errors, clerical and typographical. This class of mistakes, though hardly susceptible of complete extermination, has been reduced to an attenuated minimum, contrasting most favorably with much past and contemporary work. *Dictyonota tricornis americana* page 815, occurs in Maine, not "Mo." *Lethiini* (properly *Lethœini*) on page 196, and *Systelloderus* (properly *Systelloderes*) on page 225, are lonesome examples of misspelling, I believe.

The typography calls for a special word of praise. The choice of types and the arrangement of the matter on the page are unexceptionable and aid the eye greatly in making quick reference, quite in contrast to the arrangement adopted in the author's check list.

The species are numbered in agreement with the check list, additions being indicated by fractions, a detail which will serve the convenience of collectors, though it conveys a wrong impression regarding the number of species comprised in the various groups. The author gives 3,198 as the number of North American species now included in the order (three families excepted), a net gain of 253 since the check list appeared in 1916. Of this total the Heteroptera number 1,629, the Homoptera 1,569.

A publication of this type must appeal to a far wider circle than that of the comparatively few specialists to whom it is of most immediate and intense interest, since every biologist has frequent occasion to ascertain the present taxonomic status or the known distribution of some form with which he may be concerned. Entomologists will at once perceive the value of Mr. Van Duzee's work—to others it may be recommended unreservedly as authoritative and reliable in the highest degree.

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SPECIAL ARTICLES

REPORTING MOISTURE RESULTS[1]

THE following quotations[2] is explantory of the soil physicists' use of the term percentage in connection with weight determinations of moisture.

> Suppose a certain soil in field condition weighs 100 pounds to the cubic foot and carries 10 pounds of water. Obviously it would contain 10 per cent. of water by the wet method of calculation, or 11.1 per cent. of water using the absolutely dry soil as the basis. . . . In ordinary calculations of water, . . . the percentage by dry weight is generally used because of its simplicity and the facility of expression that it affords.

Analyses are reported by chemists both on the wet and dry bases. The form in which an analysis is usually stated is as follows:

TABLE I

Soil Analysis

	Wet Basis, Per Cent.	Dry Basis, Per Cent.
Moisture	20.0	
Volatile matter	20.0	25.0
Ash other than silica.	10.0	12.5
Silica (SiO_2)	50.0	62.5
Total	100.0	100.0

It is noted that the per cent. of moisture contained is not included in the dry basis analysis.

To ascertain if the practise of stating the amount of water, present for every 100 parts of dry material, as "per cent. of moisture on the dry basis" leads to false interpretations the following data was given to several chemists and to three soil physicists:

[1] Contribution from Research Chemistry and Bacteriology Laboratories of department of horticulture, Purdue University Agricultural Experiment Station, Lafayette, Indiana.

[2] "Soils, their Properties and Management," 1915 edition, by Lyon, Fippin and Buckman.

TABLE II

Soil Analysis Calculated to Dry Basis

	Per Cent.
Volatile matter	25.0
Ash other than silica	12.5
Moisture in sample	20.0

Wanted the percentage composition of the soil as submitted to the analyst in percentages of moisture, silica, ash other than silica and volatile matter.

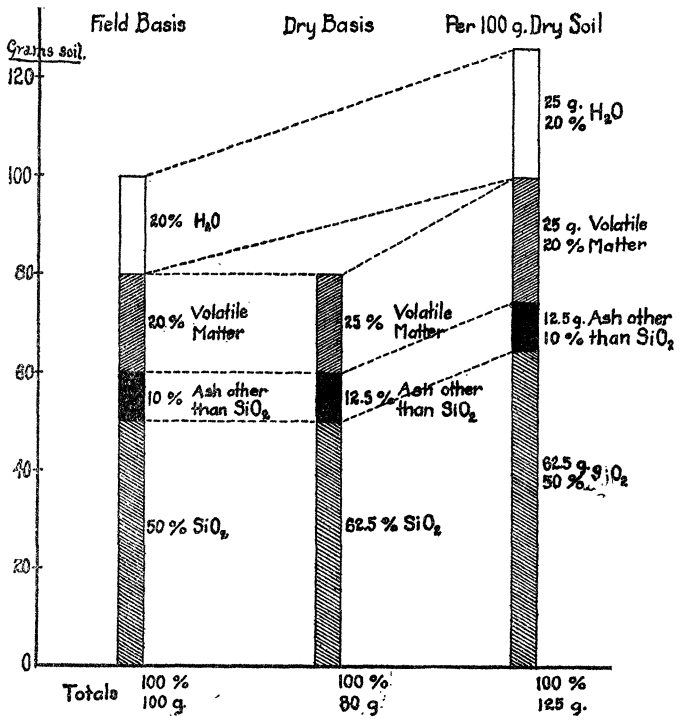

FIG. 1.

TABLE III

Interpretation of Soil Analysis

	Soil Physicists, Per Cent.	Chemists, Per Cent.
Moisture	16.0	20.0
Silica	52.5	50.0
Ash other than silica.	10.5	10.0
Volatile matter	21.0	20.0
Total	100.0	100.0

The above table is evidence that the practise of stating moisture as "per cent. on the dry basis" has caused the soil physicist to regard analyses to mean different percentages than the chemist, *who made them,* found in the analyses he made. Soil physicists are apparently not the only class who are denoting the moisture present in certain materials as "per cent. on the dry basis." Different individuals and laboratories have been observed when making moisture determinations to report, for example, 33.3 per cent. moisture when the material under analysis contained 25 gm. of moisture in every 100 gms. of material. Here the phrase, "per cent. of moisture on the dry basis" was not included, for they consider that analyses should be taken as on the dry basis, unless it is specified otherwise. The interpretation to be given incomplete analyses must be based on a knowledge of the reporter's method of calculating moisture. This often has to be learned through correspondence.

It is said that "usage dictates." In this connection there are different uses made of the word per cent. The analyst is not the one to

determine the basis on which soil physicists and certain others must compare soils. It is contended, however, that the soil physicist should not be allowed to express ratios as percentages unless the substances so reported are actually contained in the material in the condition reported upon. The analyst does not include the moisture in a dry basis analysis for the object of the dry basis analysis is to eliminate the moisture so that the constituents of the material may be readily compared in amounts with those in other materials.

Speaking of the per cent. of moisture in moist soil the following quotation is made:

> For example, 100 grams of wet soil containing 5 per cent. of water would consist of 5 grams of water and 95 grams of soil, a ratio of 1 to 19. If the soil contained instead 25 per cent. of water, the ratio would be 1–3 instead of 1–3.8 as the percentages would naturally lead one to expect.

In speaking of the particular objection referred to above the same authors write:

> In using a percentage of moisture based on the dry soil instead of on the wet, the first of the above objections is eliminated. Consequently this method of expression is perfectly legitimate as long as soils having about the same specific gravity are compared.

The above is taken to signify that the soil physicist has decided that the weight of water present with each 100 parts of dry soil gives him a better basis of comparing soils than he would have if he stated the same result in terms of percentage composition: example, that 100 grams of dry soil will take up 50 grams of water is a better basis of comparison for the soil physicist that the soil contains 33.3 per cent. of moisture when saturated.

If those, including in addition to soil physicists, chemists, botanists and general agriculturalists, who have been reporting moisture as "percentage on the dry basis" would substitute something for the WORDS per cent. or percentage in this connection all would interpret moisture results as they were intended to be interpreted.

The following phrases which serve the case equally well are suggested:

1. Ratio of water to 100 parts of dry soil.
2. Parts of water with 100 parts of dry soil, under conditions specified.
3. Moisture with 100 parts of dry soil.
4. Grams moisture per 100 grams of dry soil.

H. A. NOYES

PURDUE UNIVERSITY

THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY

THE annual meeting of the Federation of American Societies for Experimental Biology, which includes The American Physiological Society, The American Society of Biological Chemists, The American Society for Pharmacology and Experimental Therapeutics and The American Society for Experimental Pathology, held its annual meeting at the University of Minnesota, December 27 and 28, and at The Mayo Foundation, Rochester, Minnesota, December 29. 1917. The meetings were very well attended and the scientific interest was unusually strong. Every one voted the sessions an unqualified success.

The meeting opened with a joint session of the societies on Thursday morning and closed with similar joint sessions at Rochester, Saturday morning and afternoon. Friday afternoon was given to joint demonstrations and the Saturday morning session opened with surgical and scientific laboratory demonstrations at Rochester. The physiologists held three special sessions, the biochemists and pharmacologists each two special sessions, and the pathologists one special session. Some 265 guests were present at the joint dinner provided for the federation, the anatomists and the zoologists given at the Hotel Radisson, Thursday evening, December 27. The local committee provided very convenient arrangements for the meetings in Millard Hall, University of Minnesota Medical School. The membership of the society is indebted to the local committee for the very pleasant smoker and buffet luncheon Friday evening.

A special train carried the visitors to the last day's session at Rochester. A very pleasant interval was the noon-day luncheon by the hospitality of Dr. and Mrs. William J. Mayo at their home in Rochester. The session closed with a dinner under the auspices of the Mayo Foundation staff at the Hotel Zumbro and a social and smoker which followed at the Mayo Clinic assembly hall.

The officers and members of the American Federation feel under special obligation to the local committees at Minneapolis and Rochester for the