stead of Sonoran Gopher Snake. The fact that since 1941, when the *Field Book of Snakes* was published, systematists have reduced *sayi* from a full species to a subspecies does not seem to justify a Bull Snake suddenly becoming a Gopher Snake, at least in common parlance.

Would it not be better, in works intended for the intelligent section of the general public, to list all the subspecies of *P. catenifer* simply as "Bull Snake or Gopher Snake," being content to let each person make his own choice, depending on local usage in his area? The principle is widely applicable.

Smith and Kennedy (*Herpetologica,* 7, [3], 93 [1951]) have recently proposed that *P. catenifer* be merged with *P. melanoleucus,* the Pine Snake. Should this proposed change in nomenclature win acceptance, fresh difficulties in the matter of common names within the genus appear certain to arise just as soon as compilers and revisers of general manuals catch up with the change. This prospective situation further emphasizes the desirability of trying to keep common names truly common, and of refraining from coining them where they do not already exist in actual use. If this recommendation were followed, new, common name difficulties would not arise whenever the systematists revise their schemes of classification.

Nomenclature is fundamental to an orderly knowledge of any faunal group, so let us by all means have recognized names, including standardized common names; but let us also have common sense along with them.

HOWARD CAMPBELL
New Mexico Department of Game and Fish
Albuquerque

Problems Involved in a World-Wide Soil Survey

WITH the increasing realization of the important part that certain metallic elements, present in trace concentrations in soils, play in plant, animal, and human nutrition, it is but natural that suggestions should be made for a world-wide soil survey in order to determine the extent and location of deficiencies. This is the subject of a short article by K. Starr Chester entitled "Trace Minerals in Food Production and Health" in this journal (SCIENCE, **115**, 3 [Jan. 11, 1952]). He has discussed the project in general terms, pointing out the advantages of a central laboratory employing spectrographic methods for the chemical analyses. This is unquestionably our most efficient tool for such a survey, but I would like to discuss some of the practical considerations of time, instruments, and personnel involved in such a program.

The nonmetallic minerals of which soils are composed require the carbon arc as the source for spectrochemical analyses. Such considerations as ease of handling and representativeness of sample indicate a sample weight of 10–20 mg. A sample of this size requires an exposure of about 2.5 min, so that about 25 can be exposed in 1 hr. This figure determines the maximum output of the spectrograph. For such a routine a laboratory crew of about 8 is needed, for such operations as preparing the samples and electrodes, attending the spectrograph, measuring, and calculating. For the field work of collecting, quartering down, and dispatching of samples, a unit of 3 should be able to handle about 50 samples/day, or a total of 12 people for the 200 samples required each day. For personnel, therefore, a total of 20 is needed to serve one spectrograph for each 8-hour day. For maximum use of the laboratory, operations should be on a two-shift basis; this will double production to 2,000/week, or 100,000 samples/year, with a working force of 40.

At this point an estimate must be made of the average sampling density, which, as we do not yet know the degree of variability of the trace element concentrations, must be a guess. Too high a density would be wasteful of time and labor; too low would endanger the worth of the whole survey. It would vary with locality, and adjustments will be made as data accumulate. Assuming, therefore, a density of 1 sample/5 acres, the annual output of one spectrograph will then survey half a million acres.

In the continental U. S. there are approximately 350 million acres in crops alone, excluding pasture, woodland, and forest. Working with one spectrograph, therefore, this limited survey will require 700 years! Obviously, we must enlarge our thinking on this problem; what is required is not a small group operating one or two spectrographs but a huge establishment of a thousand people operating a battery of 20 or 30 instruments, with costs running to several million dollars per year.

MORRIS SLAVIN
Department of Chemistry
Brookhaven National Laboratory

An Improved Moist Chamber

BIOLOGISTS make frequent use of moist chambers in the course of their investigations. The usual moist chamber consists of 2 loosely fitting glass dishes superimposed upon each other to form a closed chamber, which is humidified by lining the bottom of the lower dish with wet filter paper, paper toweling, etc. Mycological investigations carried out by the writer have been hampered by the ability of fungi and bacteria to contaminate otherwise isolated test specimens by growing across the dampened surface.

This difficulty has been overcome by using cellulose sponge yarn[1] as the humidifying agent. This material is made up of cellulose sponge molded in a circular cross-sectional pattern around a solid core and extended into various lengths. The yarn has a high water-holding capacity and is easily cut and handled. A piece of yarn can be arranged around the inner wall of the moist chamber bottom clear of free water. Water may be added to the yarn periodically to main-

[1] This yarn was provided for experimental purposes by the Film Division of E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.

tain the desired humidity in the moist chamber, and the yarn may be reused after sterilization.

WILLIAM A. FEDER
Ornamentals Laboratory, Cornell University
Farmingdale, Long Island

Dissa and Data

FOR nearly 20 years I have recommended to students my opinion that (1) the word "data" should be related to a plural verb form, as "the data are;" and that (2) the word "disinterested" means impartial or unbiased.

If recent publications are evidence of common usage, "data" can be used with either singular or plural verb form. It appears that this is a result of "growing pains" of our language. Are we all agreed to accept?

"Disinterested" has been often used recently in place of "uninterested." To this I object—probably ineffectually. "Disinterested" was a useful word, and I do not like losing it.

Shall I continue my former practices of instruction, or shall I stop being a bigot and forget?

S. REID WARREN, JR.

The Moore School of Electrical Engineering
University of Pennsylvania

EDITORIAL NOTE: *The editors subscribe to Dr. Warren's bigotry and will continue to correct these errors whenever they are made in manuscripts. They also object to the use of "presently" for "now," and "while" for "whereas" or "although." They are also disturbed because of (not "due to") the adverbial misuse of the adjectival expression "due to."*

Book Reviews

Taxonomy of Vascular Plants. George H. M. Lawrence. New York: Macmillan, 1951. 823 pp. $7.95.

Modern botanical research has repeatedly substantiated the old taxonomic practice of treating the vascular plants as a major unit. Although many manuals and floras contain descriptions of all vascular plants found in a given area, they are rarely treated together in textbooks of systematic botany. Actually, *Taxonomy of Vascular Plants* is the first modern textbook of this kind and is eloquent testimony of the present tendency toward dealing with all vascular plants under the name Tracheophyta. Yet the author deliberately adopted the last published version (1936) of the widely used Engler system of classification, with its obvious shortcomings, as the basis for the systematic section of the book (Part II, pp. 333–72), because it is still the most carefully elaborated system available.

Other conspicuous changes in comparison with existing texts of systematic botany are seen in the elimination of all floral diagrams and formulas, the replacement of chapters dealing with the organography of vascular plants by an illustrated glossary of taxonomic terms (Appendix II, pp. 737–75), the introduction and consistent use of the term "taxon" (taxa), and the consolidation in Part I (pp. 1–331) of 14 chapters on "Principles and Practices of Plant Taxonomy." Appendix I (pp. 733–36) represents a "Suggested Syllabus for an Elementary Course in Taxonomy" for those who wish to use the book as a text in a one-term course. This syllabus proves that it is much more than an elementary textbook in both scope and contents. Thus it is not only the most inclusive textbook of systematic botany in English (or any other language) but also a convenient and indispensable reference work for the advanced student. The latter will find in it well-balanced discussions of all major controversial aspects of phylogeny, along with informative chapters on field and herbarium techniques and other important principles and practices of taxonomy currently in use. The same is true of the systematic part with its enumeration of 264 families of vascular plants "known to grow as indigens or exotics in North America north of Mexico." The account of each family includes a technical description, enumeration of important genera, distributional data, discussion of morphological characteristics and assumed phylogenetic relationships, key references, and representative figures, many from L. H. Bailey's *Manual of Cultivated Plants* (1949). Completely extinct groups like the Pteridospermae are excluded.

A few interesting details may be singled out for comment. Under Ginkgoaceae five of the seven references deal with the spelling of the generic name *Ginkgo,* which should be corrected to *Ginkyo*. The future alone will tell how soon and how widely this spelling will be accepted. It is regrettable, however, that so much attention is being given to a problem of nomenclature when this important taxon is in such dire need of a synoptic treatment of its fossil forms. The recently proposed family Sarcopodaceae, here provisionally listed under the Gnetales (p. 368), has been rescinded, now that the genus *Sarcopus* has been identified with *Exocarpus* (Santalaceae). The Compositae are regarded as the largest family, with 950 genera and 20,000 species, thus rivaling or exceeding the Orchidaceae, here credited with 450 genera and 10,000–15,000 species, but considered to be the largest family by other authorities. Most likely, both families are larger than the remainder, containing numerous species, many of which may prove to be referable to others once critical studies of large genera are carried out.