and placing a paper bag of suitable size over the inflorescence of each when ready to begin flowering, as the plants self-fertilize perfectly when thus treated.

In order to share in this distribution of material, applications should be made promptly, stating the number of parcels which the applicant is prepared to grow.

GEO. H. SHULL

PRINCETON, NEW JERSEY

THE PRESENT STATUS OF THE METRIC SYSTEM

IN SCIENCE, September 5, 1924, Professor Satterly, of the University of Toronto, takes exception to any plea for extended use of the metric system. His concluding argument is: "The trouble with men like Mr. McAdie is that because they like a thing they think all the world must agree with them." The professor doubtless means that some men when they have a good thing like to share it; and for the implied compliment we return thanks, although not sure we deserve such unstinted praise—and in public, too.

"I have been teaching physics in Toronto for the last twelve years and have introduced (*sic*) the English units more and more," says Professor Satterly. If his students are submissive, certainly others should not object. May the progress continue until the table of linear measurement beginning "three barley corns make an inch" is reached. Clean, dry, medium-sized corns, laid end to end. Later it can be determined how many corns make a yard, a rod, a rood, a perch, a pole or a chain.

The professor also prefers pounds, shillings and pence to the decimal money in use in Canada. He asks, "And how is it that the quarter is so popular?" The profound truth is—it is easier to get than a dollar; but if given a choice between accepting a quarter or a dollar, I know which one I'll take; and I fancy Professor John will do the same.

ALEXANDER MCADIE

BLUE HILL OBSERVATORY

HAVING been an interested reader of the various recent comments regarding the present status of the metric system as printed in SCIENCE, one or two additional observations may aid in clarifying the situation.

In the first place, why does not such a highly organized scientific group as that of the United States Weather Bureau discard the Fahrenheit thermometer with its freezing point 32 degrees above a zero which has no scientific meaning at the present time? A step in the right direction was shown in the weather map of the northern hemisphere prepared by the Weather Bureau during the early months of 1914 and suddenly discontinued on August 2 of that year when the warring nations of Europe stopped sending in the necessary data. Why not resume the publication of these maps and then adopt the same temperature scale or the common Celsius scale for the United States maps also?

Professor McAdie's arguments in SCIENCE for June 13 will be accepted without dispute by scientific workers. However, it should be borne in mind that the "cooks" and "carpenters" use the system taught them in the public schools and that very little attention is given to the metric system in the arithmetic classes of the common schools. This is due partly to the fact that a very large percentage of the teachers are not sufficiently familiar with that system to teach it effectively and in a larger degree it is neglected because neither teachers nor school supervisors have ever been convinced of its practicability and adaptability to everyday affairs. The metric system will never be generally adopted until the masses of the people are convinced of its practical value. The masses can most easily be reached through the rising generation in the common schools. The teachers can most easily be "sold" to the system if we can convince them that its use would save about a year's time in compound numbers in arithmetic. Men like Professor McAdie, who know the working advantages of the metric measures from constant daily use, have a real responsibility in bringing the matter to the attention of grade teachers, taking advantage of every opportunity that presents itself in normal schools, teachers' institutes and teachers' associations.

J. C. JENSEN

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GERMAN BIOLOGICAL PUBLICATIONS

THE claim is made that the price of German biological publications is no higher than many American and not so high as the English. May I ask SCIENCE to publish data that show the average cost per page of this library's most recent subscriptions to serial publications issued in four countries?

Country	Average Cost per page	No. Journals in estimate
America, U. S.	$.010	27
England	.0111 +	17
France	.006	8
Germany	.016 +	29

PRISCILLA B. MONTGOMERY

LIBRARY OF THE MARINE BIOLOGICAL LABORATORY,
WOOD'S HOLE, MASS.

THE PAN-PACIFIC RESEARCH INSTITUTE

A STATEMENT in SCIENCE for August 29, page 195, quoted from the press, to the effect that I "have tentatively accepted the directorship of the Pan-Pacific

Research Institute" at Honolulu, needs a word of correction. In case the hopeful project develops as expected, I may become for a time honorary president. In this case my chief duty would be to assist in finding a suitable young man as director. This may involve visits to Honolulu, but not continuous residence.

DAVID STARR JORDAN

SCIENTIFIC BOOKS

ANIMALS OF THE YOSEMITE

ONE of the most complete of local faunas, a monumental model of accuracy, fullness, clear expression and typographical excellence, has been lately issued by the University of California under the title of "Animal life in the Yosemite." The authors are Dr. Joseph Grinnell, curator of the Museum of Vertebrate Zoology, and his associate, Tracy Irwin Storer. This contains all that is known of the life history and habits of the 331 species of animals found in the Yosemite. This list includes 95 mammals, 54 of them being rodents, 231 birds, 22 reptiles and 13 amphibians. Each is accompanied by a compact description of "field characters," color, measurements and traits not demanding dissection, and a full record of all traits of behavior, distribution and relative abundance, together with excellent photographs and paintings. Nothing as satisfactory of its kind has ever been accomplished before. The authors observe that "every precaution has been taken to insure accuracy of fact and correctness of inference. No sacrifice of precision has been made consciously with the end merely to afford attractive reading. . . . Ideally we have tried to present our science, perfectly good science, in attractive form."

A single example may serve to show the method. The Tahoe Chipmunk (*Eutamias speciosus frater*) is one of seven species of these dainty little squirrels found in the Yosemite district. Seven pages are devoted to its behavior and distribution. From this I quote a single paragraph:

> The fact that the Tahoe Chipmunk is the only one of seven local species which habitually climbs high in the trees is a point of evidence that restriction to a particular type of habitat or mode of behavior does not always rest upon the possession of conspicuous special structural features of an adaptive nature. So far as can be seen by an examination of specimens in hand, none of the other species of chipmunks is physically incapacitated for tree climbing; in fact, individuals of these others are occasionally observed well up in the trees. There doubtless *are* minor features of structure, associated with a different psychology, which account for the differing traits indicated. Age-long segregation, in separate areas of differentiation, of the several stocks may be the basis of this divergence of habitat preference. The shifting of climatic barriers, with the resulting migrations of populations, has thrown the species together as very near neighbors or as actual companions. Fatal competition is prevented as a result of these initial predilections, whereby *frater* favors the trees, *alpinus* the rocks, and *senex* and *quadrimaculatus* the brush patches and logs.

The introduction closes with a fine plea for the study of living organisms, not as a substitute for anatomy, cytology, genetics and the like, but as a worthy end in itself and as the natural beginning for the development of naturalists. In the present "dry rot of academic biology," it is well to realize that animals and plants exist in nature and through knowing them students find their most attractive introduction to the study of biology.

Dr. Grinnell remarks:

> The study of natural history should develop the power of insight, keenness, not only in seeing what animals do, but in determining why these things are done.
>
> The interrelations between any animal and its environment are exceedingly manifold and vital. To understand these brings into play a superior type of intellectual activity, and, we believe, leads to enhanced powers of perceiving and solving human problems.

The authors may be sincerely congratulated on a noble piece of constructive work, and the university they represent on the far-sighted generosity which has permitted its completion, the Museum of Zoology itself being built up chiefly on the appreciative gifts of Miss Annie Alexander.

DAVID STARR JORDAN

STANFORD UNIVERSITY

SPECIAL ARTICLES

A TENTATIVE INTERPRETATION OF THE RADIOMETRIC DATA ON VENUS

IN a recent communication in this journal were given the results of new radiometric measurements on Mars and Venus. For the sake of brevity no interpretation was then given to these data. It now seems desirable to add a few comments on our results, which, as previously stated, show that the unilluminated surface of Venus emits a relatively intense infra red radiation, that the southern hemisphere is hotter than the northern, and that the radiation emitted is highly selective. How are we to account for this condition? Water vapor is supposed to be absent; and if it were present it probably could not strongly emit radiation of wave lengths 8–15μ. Of the gases present only CO_2 and ozone could emit strongly in the region of 10.5μ. The rest must emanate from the solid surface of the planet.