made precisely the same observations on the behavior of colonies of the same species of harvestmen (Phalangidæ) in the neighborhood of Austin, Texas. These colonies are not uncommon, nesting in masses on the lower surfaces of overhanging rocks along the canyons of the Colorado River and its tributaries and in the Edwards Plateau region. The colony described by Newman was unusually large, as I do not recall seeing any that were much more than a foot or a foot and a half in diameter and comprising, perhaps, between two and three hundred individuals. The rhythmic, simultaneous, up and down movement of the creatures on their long sensitive legs, when disturbed, is very striking. Merely approaching the spot where the Phalangids are congregated is sufficient to set the whole assemblage vibrating. The stimulus in this case is probably the air-current produced by the sudden approach of the observer and is probably propagated, as Newman suggests, by contact among the interlaced legs. In many cases of synchronic behavior, however, other stimuli must be assumed. In fireflies the initiation of the simultaneous flashes must be due to optic stimuli, as it is in people endeavoring to keep in step with one another, but the continuation of the established rhythm would seem to depend on a kind of "Einfühlung." Such is undoubtedly the impression produced on one who witnesses the rapid wheeling movements of a herd of prong-horned antelopes on our western plains or the flight of certain birds. Some years ago I observed that pelicans flying in single file over the Bay of Panama exhibited a very pronounced synchronism in the beat of their wings. In this case I was led to assume that after the members of a flock had established the synchronism, probably by visual stimuli, it was kept up by a fine sense of rhythm on the part of each individual.

W. M. Wheeler

Bussey Institution

MORE COMPLETE TITLES

To the Editor of Science: When the student of the structure or the functions of animals needs to consult the literature dealing with any form on which he has worked, he meets at the outset with the difficulty that a large number of papers to which he turns fail to show in their titles the names of the animals that were used.

In view of this familiar, but none the less unfortunate, state of affairs, I wish to inquire through your columns whether there is any valid objection to the suggestion that authors in some way incorporate in their titles the names of the animals used for their investigations.

In some cases common names would answer, but more often the binomial Latin form would be required. In the case of little known forms, and especially in the case of insects, it would be of great help if the family or order were also given.

Should there be no serious obstacle to the step here suggested, the improvement could easily be inaugurated by the concerted action of the editorial boards of our several biological journals and those heads of departments and bureaus through whose hands forthcoming manuscripts naturally pass.

Henry H. Donaldson

The Wistar Institute,
Philadelphia, Pa.,
February 3, 1917

SCIENTIFIC BOOKS

Milk and Its Hygienic Relations. By Janet E. Lane-Claypon, M.D., D.Sc. Longmans, Green & Co. 1916.

This admirable book has been published under the direction of the Medical Research Committee (National Health Insurance, England). The chief aim of the author "is to present a survey of the existing knowledge upon such aspects of the milk question as hitherto has been inaccessible or difficult to obtain by most of those desiring it."

The scope of the book includes a consideration of the composition, "biological properties," and cellular content of milk; the nutritive value of raw, boiled and dried milk; the presence of organisms liable to cause disease, and milk-borne epidemics; the sanitary production of milk, types of bacteria, methods of

heating milk and the presence of pathogenic bacteria in butter and cheese.

Foreign sources have been drawn upon exhaustively, and complete bibliographies are listed at the end of each chapter.

Of special interest are the chapters dealing with the nutritive value of raw, boiled and dried milk in infant feeding. A strong case is made in favor of boiled milk, which will be a matter of gratification and confirmation to pediatricians who are championing this cause in America. The evidence for dried milk is not convincing, but in general is favorable.

The chapters on the production of milk and "Methods Commonly Used in Heating Milk" are disappointing. In the former we are surprised to learn that in England "there are no means for keeping milk cool during transit" and the author does not insist upon the need for this. So important a matter as the grading of milk is relegated to the appendix! Pasteurization is inadequately treated. The practise is exceptional in England, but this seems no excuse for not presenting a fuller discussion.

The text includes 348 pages and 8 plates. Non-technical summaries of each chapter precede the more detailed discussion, which is a great convenience to the reader. The book is a most valuable contribution to our literature on milk.

C. M. HILLIARD
SIMMONS COLLEGE

Fungoid and Insect Pests. By F. R. PETHERBRIDGE. Edited by MESSRS. T. B. WOOD and E. J. RUSSELL, under the Farm Institute Series, 1916. Pp. 174. Cambridge University Press.

This little book is well printed and well illustrated but is not extensive enough as to the number of diseases and pests discussed to justify the title. It can hardly serve as a very general reference for farmers and market gardeners as the authors have hoped. The life histories and remedial measures for some fungus and insect pests are taken up. As a short reading text or bulletin to familiarize the public with mycological methods and to indicate possible remedial measures for control of a few pests, it contains interesting matter.

In their introductory parts—1 and 2—the authors have not drawn as close distinctions as to what constitutes diseases as might be wished. It is now hardly allowable to teach that plant diseases may be caused by "unsuitable surroundings such as unfavorable conditions of soil or weather," nor have they made very clear the distinction between infectious diseases and the ravages of animal or insect pests. Note for example: "We have dealt with some of the plant diseases caused by fungi and will now turn our attention to those caused by members of the animal kingdom. By far the greater number of these diseases are due to the ravages of insects."

Insects are effective carriers of disease, but it is safe to say that there are few farmers who would think of the work of the cabbage-leaf butterfly, the wire worm, the army worm, the May beetle or of grain weevils as diseases.

The strongest feature, perhaps, consists in the suggestive statement of remedial measures associated with each disease or insect under consideration. The facts are, generally, well grouped, though in some cases the subjects of chapters and the text overlap, as in Chapters 2 and 3. On page 46 there is a particularly good photograph of common potato scab over the legend: "Figure 15. Potato Scab—the cause of which is not known." No other discussion is given upon this disease and thus the facts are not properly conveyed. Bearing further on the limited scope of the text, no mention is made of any diseases of small fruits or of orchard and shade trees and but slight attention is given to the commonest garden crops.

H. L. BOLLEY
NORTH DAKOTA AGRICULTURAL COLLEGE

SPECIAL ARTICLES

IS SPECIES-SPECIFICITY A MENDELIAN CHARACTER?

IN a recent book[1] the writer raised the question whether or not the phenomena described

[1] "The Organism as a Whole," G. P. Putnam's Sons, New York, 1916.