years the institute has lost an unusually large number of outstanding chemists. In spite of vigorous efforts it was impossible to replace these men by other men of approximately similar distinction. Consequently, two presidents of the institute have made every effort to encourage the younger members of the chemistry staff and to add to that staff young men of promise. The result of this policy has been increasingly evident in recent years. Similar factors have been at work at several of the other institutions which show large numbers of "nominations." On the other hand, many of the institutions which have no representatives or only one already have large numbers of their members "starred." Consequently, the possibility of finding a suitable member without a "star" is smaller in those institutions.

Dr. Browne is right in only one point, namely, that there is a chance of the accidental omission of the name of a deserving young scientist by the group which makes the preliminary nominations from which the "voting list" is drawn up. I have thought about this for many years and am now emboldened to make a suggestion which has been running through my mind for some time—that is, that the editors of the directory before asking for nominations from those already having "stars" in a given field write to the heads of important institutions, whether they are starred or not, asking for suggestions. To this plan could be added Dr. Browne's plan of including a certain number of scientists on the basis of what might be called their "bulk productivity" over a definite period of years. This preliminary list could be assembled and sent to the "starred" scientist with a request that he check not over twenty-five of the names and add enough nominations of his own to make a total of twenty-five indicated as his preference. Then the selection could go ahead as in the past. Another suggestion is that an additional balloting be taken so that the cutting down of the number of nominees should be made more gradually and consequently more selectively. I would insist that the final choice should be continued as at present, namely, by those already "starred." It is not possible to obtain any impersonal method which is a substitute for judgment.

F. C. WHITMORE
PENNSYLVANIA STATE COLLEGE

I HAVE followed with some interest the comments concerning the methods of "starring" in "American Men of Science" which have appeared recently in SCIENCE. The remarks by C. A. Browne in the September 24th issue are well taken, but it seems to me that he too has missed the crux of the problem.

I presume most scientific men use the directory for the same reasons that I, as a publisher, do—as a work of reference and information and not as a book which grades scholarship. In this connection, the remarks of the editor in the preface to the first edition concerning the process of "starring" are singularly pertinent.

It would seem that the "starring" was meant to be the basis of an original study and inquiry for the purpose of securing data for a statistical study of the conditions, performance, traits, etc., of a large group of men of science, and these results were to be included in the first edition of "American Men of Science." It is probably fortunate that they were not included. Even more, it was probably impossible to combine the two aims, which are diverse and should remain so. A volume such as "American Men of Science" should be more factual and informative than critical, more descriptive than analytical. A certain discrimination in the selection of individuals must, of course, be exercised and the editors must reserve the right to select the form of the biographical notices and what facts should be included in each biography, such as the vital statistics, education, memberships, institutional connections, and a general statement, in very brief form, of research.

"American Men of Science" should be a directory and record.

RICHARD W. FOSTER
LEA AND FEBIGER,
PHILADELPHIA

SCIENTIFIC BOOKS

ORNAMENTAL PLANTS

Diseases and Pests of Ornamental Plants. BERNARD O. DODGE and HAROLD W. RICKETT. 638 pp. Illus. The Jaques Cattell Press. 1943. $6.50.

IN the course of the past six or seven decades an extensive literature has accumulated concerning the diseases and pests of cultivated plants and forest trees. Many books in the English language, both popular and technical, relating to the enemies of certain plant groups, *e.g.*, cereals, vegetables, fruits and shade trees, are available, not to mention the hundreds of bulletins and circulars issued by various governmental agencies. Yet, despite the universal culture of flowers and other ornamental plants by homemakers and the tremendous investment involved in commercial floriculture, only a few bulletins relating specifically to the troubles of ornamental plants, and no comprehensive books in English, have been available. Ornamental horticulturists and scientists, who have long felt the need for such a book, will therefore welcome the work of Dodge and Rickett,

which, in a single volume, discusses the pests, diseases and physiological troubles affecting most of the cultivated ornamental plants.

The book is divided into two parts, part one including an elementary discussion of the symptoms associated with disease and insect injury, a description of the various disease organisms and pests producing such injury and an outline of the methods and materials used in control. Intended for the grower with little or no training in biology, this section is well illustrated by numerous line drawings and photographs which will help to carry the novice through an otherwise forbidding array of fungi, insects and unfamiliar technical terms. The chapter on control methods presents fundamental information which will be helpful to the amateur gardener. The importance of correct cultural methods and garden sanitation is given due emphasis, and many of the standard sprays, dusts and fumigants are discussed. A useful appendix summarizing the common units of measure follows the chapter on control. (Note, however, that the *common* teaspoon, which would be used by most gardeners, holds $\frac{1}{6}$, not $\frac{1}{8}$, fluid ounce.)

Part two of the book lists and discusses briefly most of the known diseases and pests of over 500 genera of ornamentals, including not only herbaceous and shrubby plants, but shade trees as well. This extensive coverage will be appreciated by grower and scientist alike since it brings together, however briefly, information scattered in hundreds of garden magazines, trade journals and scientific papers, many of which are either unavailable or are obtained only with difficulty. This section reflects the author's experience with an unusually wide variety of ornamental plants and many of the diseases and pests which affect them.

The amateur gardener will find in the book a store of information concerning the many pests which vie with him for mastery of his coveted ornamentals. He will find many suggestions which will help him to obtain the upper hand over these enemies. To the professional floriculturist and ornamental horticulturist the volume will prove useful in identifying many of the diseases and pests which reduce the profit of his operations. However, although directed primarily to the amateur and commercial grower, the book will probably find its greatest market among professional entomologists and plant pathologists who will find it a helpful reference work.

Any book of such ambitious scope, designed to meet the needs of both amateur gardener and professional grower and to be of use to the plant pathologist and entomologist as well, is bound to meet some criticism from all groups. The amateur may hesitate to invest a considerable sum in a book discussing the troubles of 500 plants when his interests might best be served by a more exhaustive treatment of the relatively few ornamentals which he cultivates and in which he is interested.

The commercial grower will in many cases find control recommendations too sketchy, and will be disappointed by the lack of information relative to many up-to-date procedures and modern materials. In discussing fumigants, for example, the authors fail to mention the use of methyl bromide, which has already come into popularity and will probably see very extensive use after the war. Likewise, naphthalene fumigation and its offshoot, Liquid Fulex fumigation, which is very widely and effectively used for the control of red spider mites on greenhouse carnations, are not discussed. Yet Campbell's Patent Sulfurizer for volatilizing sulfur, made in England, not readily available in this country and of questionable value, is described and illustrated. The carnation grower will also fail to find any mention of the dinitrophenol materials which have proved exceptionally effective for the control of red spider mites during the past three or four years. In the general discussion of mites, however, we find a paragraph discussing the reported effectiveness of phthalic glyceryl alkyl (alkyd; SCIENCE, 94: 212, 1941) resin for red spider mite control, though the use of that material appears, even to its manufacturers, altogether impractical. The commercial greenhouse rose grower will be surprised to find that, in the discussion of rose troubles, his greatest enemy, the red spider mite, is given only eight lines and that the rotenone materials are not even suggested for control.

Plant pathologists and entomologists will doubtless agree that, to them, the usefulness of the book would be greatly enhanced by the inclusion of key references to the literature pertaining to the various diseases and pests discussed and by more consistent reference to their geographical distribution. The omission of certain diseases and pests of considerable importance will be noted. While the authors discuss and illustrate the stem nematode disease of phlox, which occurs rarely in this country, the ubiquitous red spider mite and the common Verticillium wilt receive no mention as parasites affecting phlox. Nor do we find reference to mites or powdery mildew on saintpaulia, nor the stunt disease of cyclamen. The professional plant pathologist and entomologist will be puzzled and disturbed by certain control recommendations. In discussing the control of Verticillium wilt of chrysanthemums, for example, the authors suggest that "If cuttings from infested plants are desired, the plants may be treated for half an hour with water heated to 120° F., . . ." This treatment, if indeed it is effective in the control of Verticillium wilt, has not previously been reported so far as the reviewer is aware. At the same

time, the authors, while very briefly alluding to hot-water treatment for the control of leaf nematodes on chrysanthemums in their general discussion of control practices, fail to mention this experimentally tested and published method in their specific discussion of the control of chrysanthemum leaf nematodes.

To the specialist in the field covered by the book, the inaccuracies and omissions may assume an exaggerated importance, yet he will appreciate the difficulties involved in preparing a complete and up-to-date presentation in a field so wanting in critical literature. Despite its shortcomings, the book in its present form is a work for which its authors may be commended.

A. W. DIMOCK

CORNELL UNIVERSITY

RAYS

These Mysterious Rays. By ALAN L. HART, M.D. New York: Harper and Brothers. 1943.

THIS fascinating book describes some of the uses of x-ray, radium and ultra-violet radiation for diagnostic and therapeutic procedures in medicine. It is based upon the author's wide experience in the practice of radiology and his equally wide knowledge of the work of the leaders in this field of medicine.

This book is written for the layman. It describes, by simple theoretical discussions and very often by interesting examples, the apparatus and the technical procedures which the radiologist employs. The clarity of presentation is enhanced by reproductions of photographs of x-ray apparatus and of roentgenograms of several parts of the body.

It appears to the reviewer, an electrical engineer who has had the privilege of working with radiologists, that Dr. Hart has effectively and cogently described radiology for the layman, and that the layman is likely to be a more cooperative and understanding patient if he reads this book.

S. REID WARREN, JR.

MOORE SCHOOL OF ELECTRICAL ENGINEERING,
UNIVERSITY OF PENNSYLVANIA

REPORTS

A PROGRESS REPORT ON THE CONSTRUCTION OF POPULATION AND PHYSIOGRAPHIC MAPS FOR THE STATE OF MISSOURI[1]

A FEW years ago plans were laid to construct twin wall maps for the State of Missouri; namely, one showing the physiography, the other showing the distribution of population (1940) within the state. The project is one of compiling and of mapping data and analyzing the distribution of population in Missouri in terms of the physiography of the state. This report indicates the work already done, and the steps to be taken in the future in order to complete the project.

POPULATION MAPS

A map, scale of 1:500,000, published by the U. S. Geological Survey, has been used for the work-sheet maps. This map with rather complete drainage, rail and town patterns provides a convenient size suitable for reproduction as a wall map or even for reduction to desk-size maps.

A map of Missouri has been completed showing the variations in sizes of incorporated places according to 1940 Census data. Circles for cities were left open so that dots representing rural population near cities will show through where necessary. Nine categories of incorporated places from "Under 500" to "cities over 100,000" were set up for the classification of incorporated places. A fairly uniform distribution exists throughout the state except in the south central portion where a wider spacing exists and in the St. Louis area where the suburbs form quite a cluster.

Mimeographed forms were set up on which were tabulated total population by minor civil divisions; incorporated populations by minor civil divisions; unincorporated population for each minor civil division; and the area and density per square mile for the unincorporated population for each minor civil division. All population and area data by minor civil divisions were obtained from the Bureau of the Census. Student assistance was possible through NYA and an university research grant.

The terms "incorporated" and "unincorporated" have been used in place of "urban" and "rural" in order to recognize as many settlements as possible in addition to those listed under the census classification of "urban." In addition the plans call for an isopleth inset map of the unincorporated population. This density map will be developed on a basis showing the urban areas by size categories and the density of rural population per square mile by density categories.

PHYSIOGRAPHY MAP

The physiographic map of Missouri on the scale of 1:500,000 has been partially completed. Contours from the many topographic sheets of the state were pantographed on an interval of 100 feet. The coloring of the map, however, has been on the basis of a

[1] No illustrations accompany this considerably condensed article because the maps and tables are not ready for publication or release to the public.