cutting was then set in each mixture, and toxicity to the cutting was observed after 18 hr. A positive nitroprusside test in solutions containing cysteine or glutathione with lycomarasmin and ferrous (but not ferric) ion indicated that free SH groups were still present after 18 hr, which was at least twice the time required for the cutting to absorb a toxic dose of the lycomarasmin-iron complex.

The toxicity to tomato cuttings of the ferro- or ferri-lycomarasmin complex was not decreased by glutamic acid, glutamine, glutathione, or cysteine. This was true regardless of the order in which reagents were added. Evidently lycomarasmin is unable to react with metabolites containing SH groups, such as cysteine or glutathione, and is not an antimetabolite for glutamic acid, glutamine, or glutathione.

A. E. DIMOND
P. E. WAGGONER
The Connecticut Agricultural Station
New Haven

References

1. CLAUSON-KAAS, N., PLATTNER, P. A., and GAUMANN, E. *Ber. schweiz. botan. Ges.*, **54**, 523 (1944).
2. WOOLLEY, D. W. *J. Biol. Chem.*, **176**, 1291 (1948).
3. *Ibid.*, **166**, 783 (1946).
4. ———. *A Study of Antimetabolites.* New York: Wiley, 145 (1952).
5. ALBERT, A. *Selective Toxicity.* New York: Wiley, 56 (1951).
6. MIESCHER, G. *Phytopathol. Z.*, **16**, 369 (1950).
7. GAUMANN, E. *Advances in Enzymol.*, **11**, 401 (1951).

Book Reviews

Natural Communities. Lee R. Dice. Ann Arbor: Univ. Michigan Press, 1952. 547 pp. Illus. $5.50.

If it does nothing else, Dr. Dice's book should impress a reader with the extent and complexity of the subject of plant and animal communities. Characterized by a multiplicity of subheads, generalizations, and brief examples and discussions, its purpose is to introduce the student to principles of ecology and to stimulate further investigations of the little-understood relationships existing wherever life is maintained.

Although I am not sure that it is or ever will be within the ability of any one person to write of the broad field of ecology with more than passable adequacy—irrespective of how much space be used—the author has put forth such a comprehensive outline that it is hard to conceive of wholly complete omissions. He has, indeed, touched upon just about everything ecological that ecologists commonly think of! Furthermore, his treatment of most of the elementary material, and of at least some of the more advanced, seems to me unusually lucid, and particularly appropriate for undergraduate teaching.

My chief criticisms have to do with what might be called some of the more modern concepts. Certain shortcomings in this respect may be attributed in part to the natural difficulties of condensation and of keeping up with the accelerating progress of ecological and associated sciences in late years, but not all may thus be accounted for. As concerns various aspects of community equilibria, population dynamics, etc., I am disappointed that Dice has not recognized the increasingly voluminous evidences of resilience and compensatory or automatic adjustments that represent substantial departures from conventional ideas of the impact of living things upon each other. Instead of his depicting natural relationships as being so intermeshed that every change in the population status of organisms has its repercussions on all members of a community (the Darwinian view, in short), I think that he could well have shifted more emphasis to discussions of the remarkable facility with which populations often adapt to year-to-year changes in food supply, gross habitat, reproductive rates, and kinds and amounts of mortality. Better distinctions between the factors that truly delimit populations and those that operate only incidentally to population phenomena would have been highly desirable, in my opinion.

PAUL L. ERRINGTON
Agricultural Experiment Station, Iowa State College

Radio Astronomy. Bernard Lovell and J. A. Clegg. New York: Wiley, 1952. 238 pp. Illus. $4.00.

This book meets the need for an introductory text in radio astronomy. The reader is introduced to this new science by a pair of very able authors who have long been actively engaged in theoretical and experimental research in the field. Their writing style is lucid and concise. Mathematical treatment is held to a minimum but is adequate for a text of this type.

Most of the important work in radio astronomy has been performed since the end of the second world war. As stated in the preface: "The fundamental discoveries in this new science were made nearly twenty years ago, but it was the rapid development of refined radio techniques and the experience which physicists obtained in radar during the war, which eventually led to its sudden emergence from obscurity after 1945." During the past seven years a vast amount of work has been performed in this field by outstanding research teams in the British Commonwealth, the United States, and in other countries. There has been a steady flow of reports on radio meteors, radio stars, solar and cosmic radio noise, etc. Unfortunately, however, this wealth of information has been so widely dispersed among the scientific publications of the various countries that it has become increasingly more difficult to keep abreast of new developments.

The authors have succeeded rather well in organ-