the chemical change is minimal and not limiting upon the fauna.

Undoubtedly, dissolved oxygen plays a role in limiting sensitive benthic macroinvertebrates in certain polluted streams; however, no relationship was demonstrated in this study, because all sampling was done during daylight hours, when photosynthesis exceeded the respiratory demand.

It is hoped that the relationship established between the biotic index, the diversity index, and specific conductance in Chester County streams will stimulate further efforts in this direction. The physiologic tolerances of species to their environment, in comparison with the tolerances of higher taxa, are a vast unknown.

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"SCIENCE FOR SOCIETY" READINGS

The Commission on Science Education of the American Association for the Advancement of Science (AAAS) has published a 96-page survey of environmental literature, *Science for Society: a Bibliography.* It contains about 4,000 references, many of them annotated, to books and articles dealing with environmental subjects. The publication is designed primarily for use in physical-science and social-studies courses in high schools and colleges but would, of course, have interdisciplinary uses. Copies are available at $1 a copy, or 75¢ a copy for 10 or more, from Education Dept., AAAS, 1515 Massachusetts Ave., N.W., Washington, D.C. 20005.

Metabolism Game . . . . . from p. 78

7. Beginners commonly misunderstand the reaction catalyzed by the citrate-condensing enzyme. In order to carry out this reaction, the player must have *two* carbon atoms on "acetyl-CoA" and *four* on "citrate." On condensation, these become the *six* carbon atoms of citrate.

Uses in Teaching

The rules may seem complicated on first reading, but I have found that students learn them rapidly. I recommend supervision by the instructor while the students are learning "Metabolism."

I have used the game in two courses: a lower-division course in cell biology and an upper division course in molecular biology (fig. 3). In both, the game was enthusiastically received by the students. (I am indebted to my students for their many constructive suggestions.) I believe the game is a suitable learning device from high school through advanced-biochemistry courses. The instructor can emphasize the aspects he considers important; for example, in a high school class the names of the enzymes and the structures of substrates and products probably would not be emphasized, but in advanced courses they would be. I have found that if the game is placed in a conspicuous place in the laboratory or classroom, students will come in and play even when class is not in session.

Obviously "Metabolism" could be expanded to cover additional pathways, including biosynthetic ones. I would appreciate learning of successful modifications of the game.

Acknowledgments.—Fig. 1 and 2 photos are by Wayne Wilbanks; fig. 3 photo is by Edna Steinman.

STOPPING THE STREAM-BRUISERS

Utah's newly passed law requiring a permit before heavy equipment is allowed to muck about in state streams has been termed a landmark in fish and wildlife legislation by conservationists and legislators alike. Before any applicant can obtain a permit he must convince the state engineer in Utah's Department of Natural Resources that the project "will not unreasonably affect the natural stream environment, or recreational uses thereof."

It's hoped that the law, which one former legislator termed the most "notable achievement in environmental legislation in the past century in Utah," may spark new respect among those who have nonchalantly torn up state streams in the past.

The Utah Fish & Game Division and the Utah Wildlife Federation are credited with the successful launching of an aggressive educational drive, which spelled out why the bill was needed and what it was all about. *Conservation News*