AMATEURS AND SCIENTIFIC EXPERIMENTS

O. J. EIGSTI and BARBARA TENNEY[1]
University of Oklahoma, Norman

The amateur has played an important role in the development of the present day body of scientific knowledge. Attention is directed to the contributions of the public official, Isaac Newton, the work of Leeuwenhoek, a Dutch merchant, and the classic studies of Gregor Mendel, an Austrian monk (Thomas 1942). These and numerous others were not considered professional scientists, but their contributions to science are noteworthy.

As a result of the wide publicity given to the discovery of colchicine, its effect upon plants and the possibilities of producing new varieties of economic plants, numerous amateurs or laymen experimenters became interested and even intrigued by the possibilities set forth. Directions for experiments with colchicine were designed to meet the requests of amateurs who wished to work with this drug (Eigsti 1941). Three specific objectives set forth in the initial plan were 1) the production of new varieties of plants of economic importance, 2) the determination of the effectiveness of colchicine as a tool for inducing changes in plants, and 3) the exploitation of the educational values of such experiments in fostering appreciation for the methods of science and in creating better understanding between amateur and professional investigators.

The promotion and direction of laymen's interests in science has received considerable attention in two specific metropolitan areas, viz., in Philadelphia by the Committee on Education and Participation in Science of the American Philosophical Society (Thomas 1942) and at Cleveland, Ohio, by the Committee on Private Research (Dix 1943). Other groups could be mentioned such as The Plant Culture League at San Pedro, California, and the American Institute Science Laboratory, 310 Fifth Avenue, New York City.

The third year of this Co-operative Research Project, as conducted at the University of Oklahoma, has been concluded (Eigsti 1941, Eigsti and Tenney 1942, Tenney 1942). It is now possible to evaluate the project in terms of the three original objectives. No new varieties of plants of economic importance have been produced, hence, the first objective has not as yet been realized. Approximately 28 percent of the experimenters have been successful in producing new types of plants, thus we feel that

[1] Contribution from the Laboratory of the Department of Plant Sciences, University of Oklahoma, No. 82.

colchicine can be used with some degree of success oy laymen. It is difficult to measure the educational value of this work. Among the responses received during the past three years some outstanding accomplishments can be cited. There are those who have benefited by these experiments, and undoubtedly have developed a greater appreciation for the methods of science. On the other hand not all of those participating in the project carried the experiments to a successful conclusion. In fact, some of them have not responded to requests for reports on their work. Table I presents a summary of the results of the project during the past two years.

This project was made possible by a grant-in-aid from the Carnegie Corporation of New York.

LITERATURE CITED

Dix, W. S. 1942. The amateur spirit in scholarship. 96 p. Cleveland, Ohio: Western Reserve University Press.

Eigsti, O. J. 1941. Botanical research survey. Univ. of Okla. Bull. 841.

Eigsti, O. J., and B. Tenney. 1942. A report on experiments with colchicine by laymen scientists during 1941. 32 p. Norman, Oklahoma: University of Oklahoma Press.

Tenney, B. 1942. A report on experiments with colchicine by lay scientists, 1941. Proc. Okla. Acad. Sc. 22: 38-40.

Thomas, W. S. 1942. The amateur scientist: science as a hobby. 291 p. New York: W. W. Norton and Company, Inc.

TABLE I

SUMMARY OF AMATEUR CO-OPERATIVE RESEARCH PROJECT 1941 and 1942		Number of experiments		Percent of total number		Percent of completed experiments	
		1941	1942	1941	1942	1941	1942
EXPERIMENTS COMPLETED	SUCCESSFUL noticeable change produced report turned in seed samples turned in	26	26	7.1	8.7	19.4	28.0
	PARTIALLY SUCCESSFUL changes produced	41	36	11.1	12.0	30.6	38.7
	UNSUCCESSFUL no changes produced	67	31	18.1	10.3	50.0	33.3
EXPERIMENTS REPORTED BUT INCOMPLETE seeds not mature at time of report		24	10	6.5	3.3		
EXPERIMENT NOT PERFORMED		23	43	6.2	14.3		
NO REPORT RECEIVED at time of preparation of this summary		188	154	51.0	51.3		
TOTAL NUMBER		369	300				