

ment of *Patella* as described by Patten.<sup>2</sup> The shell first appeared on the second day, and by the seventh day resembled closely the shell of small metamorphosed specimens collected in the field.

Considerable material and data are at hand and it is hoped that the work may be resumed, and that a full report on the embryology and larval development of this species can be presented at a later date.

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### A BOX TRAP FOR COTTON RATS<sup>1</sup>

THE demand for wild caught cotton rats of the genus *Sigmodon* for research on the chemotherapy of filariasis has stimulated the trapping of these animals in various southern localities. The box trap shown in Fig. 1 has proved sufficiently successful in practice as

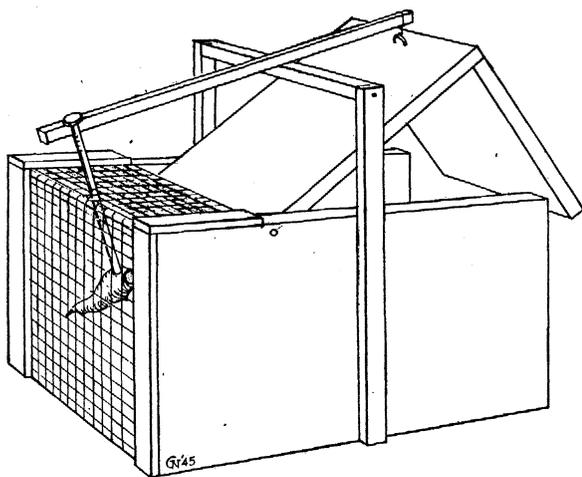


FIG. 1

to warrant making its description available to others. Made of  $\frac{3}{4}$  inch lumber, its outside dimensions are  $12 \times 6\frac{1}{2} \times 6\frac{1}{2}$  inches. The handle, which also serves to support the trigger mechanism, increases the overall width by 1 inch and makes the total height  $9\frac{1}{4}$  inches. The door is made of two pieces of wood nailed together so as to comprise the front and two thirds of the top of the box. Two nails are passed through

holes drilled in the sides of the box, and driven into the top of the door near the back edge to form a hinge. A cross piece just behind the door gives rigidity to the box in addition to that supplied by the handle, and furnishes a support for the edge of the galvanized hardware cloth (one-third inch mesh) covering the balance of the top as well as the back of the cage. This wire, the edges of which are covered with wood strips so as to protect the operator's hands, makes it possible to see what is in the trap, and also provides a base for the trigger, which consists of a 20d nail and a piece of wood  $\frac{1}{2} \times \frac{1}{2} \times 11$  inches, the latter loosely wired to a staple driven into the front edge of the top of the door. A notch, one-sixteenth inch deep, is cut into the nail with a hacksaw  $1\frac{1}{2}$  inch from the head, and is filed to a taper on the upper side only. Since the nail head under which the lever supporting the door is placed, is slightly curved and the notch in the nail shallow, the mechanism releases at the slightest touch, but is not too sensitive to jarring. The bait, such as a piece of carrot or bread crust, is placed on the point of the nail. The possibility of hooking the nail to either side of any one of the squares of the wire mesh is of great convenience when the effect of the weight and varying center of gravity of the bait is considered.

Trapping on the mainland of Galveston County, Texas, has proved best in fields which have neither been plowed, burned nor pastured for several years. The labyrinthine runs can be located under the lodged dead grass of a previous year. Those in current use are easily recognized by the absence of green growth or debris in the center of the run. Traps are set to the side of the run with the door facing the run, a convenient location being where the run crosses a rabbit trail. In carefully chosen fields about one trap in five can be expected to yield a rat each night of trapping.

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## DISCUSSION

### THE SUPPORT OF EDUCATION IN A DEMOCRACY

IN an article in the June 22, 1945, issue of SCIENCE Dr. E. V. Cowdry points out that private institutions

<sup>2</sup> W. Patten, *Arb. aus d. Zool. Institut. der Univ. Wien*, Bd. 6, 1885, pp. 149-174.

<sup>1</sup> The work which formed the basis of this paper has been supported in part by a grant from the John and Mary R. Markle Foundation for the study of filariasis.

of higher learning are finding it increasingly difficult to survive because of financial difficulties engendered by a number of causes. Among these causes may be listed a diminution of donations, decrease of income from investments and dependency of private institutions upon students' fees.

Dr. Cowdry offers three reasons for the support of private institutions: their training of leaders in business, in the professions and in science and letters;

their preservation of the freedom of higher education; and their stimulus to public-supported institutions, both in competition and in the exchange of personnel and ideals.

The suggested remedy is to give private universities and colleges the privilege of purchasing high-interest bearing bonds from the government on the basis of educational service rendered. The author summarizes his ideas in one succinct sentence: "It would simply be the right of *all private institutions of higher education listed in the U. S. Office of Education* to avail themselves of this federal aid *in proportion to the educational service they perform*" (italics mine).

Here Dr. Cowdry offers a means of determining who should receive aid and how much aid should be given. It seems necessary to clear up this point, because Mr. Harold R. Rafton, in the August 3, 1945, issue of SCIENCE, confuses the conditions of the aid with federal control.

Mr. Rafton lays down a number of restrictions to insure that the aid goes where it should go. The first two of these are good, in so far as they provide an objective means of evaluating the educational service rendered, by considering the teaching facilities and the number and abilities of the students of institutions.

These restrictions do not imply federal control in the sense that is undesirable, that is, that the government run the universities or lay down their policies or favor ideologies that are false.

The third restriction suggested by Mr. Rafton implies a misunderstanding of the services rendered by sectarian or religious schools. It reads "(3) the institution shall not be controlled by or affiliated with any religious sect or organization, shall not require any religious qualifications of any of its governing personnel or boards, or of its faculty, or of its student body, and shall not require attendance at any course in religious instruction, or at any religious services."

The fundamental objection of Mr. Rafton is that sectarian institutions do not provide a secular education but exist to perpetuate a religion. He says, "To the non-legal mind, at least, the granting of such a subsidy to sectarian institutions seems to contravene the spirit, if not indeed the letter, of the constitutional provision against the establishment of religion."

Actually what the establishment of religion means is the creation of a state religion, where the government decides what the national religion shall be, regulates the religion, and pays for the upkeep of churches, seminaries and the salaries of ministers. Wisely the writers of the first amendment provided a check against this, so that people of many faiths, or even no faith at all, can live together harmoniously. This

was not meant to shackle religion but to prevent intolerance.

Religious institutions do not say that there is anything wrong with secular education in itself, but that it lacks something, namely, religious training. What the sectarian schools teach is not something other than secular education, but they teach the entire secular curriculum plus religious training. In other words, they provide all the educational services that non-sectarian institutions provide, and, in addition, to those who wish it they give religious training.

Surely, if the purpose of the plan is to foster private educational service, there is no good reason to discriminate between those curricula that include religious training and those that do not.

In short, the principal objection to Mr. Rafton's third restriction is that it judges institutions, not on the basis of educational service rendered but on the personal beliefs of the governing body and because of courses or training offered above and beyond the usual educational services. For example, it reads that "the institution shall not be controlled by or affiliated with any religious sect or organization." This discriminates against an *educational institution*, not on the basis of its teaching facilities nor of the abilities of its professors nor of the courses that it offers but solely on the basis of its creed. This is contrary both to the spirit and letter of democracy.

Following the same line of thought, one might add a fourth restriction, covering not the religious beliefs of the men who control the institution but their race or color. Such reasoning has been followed in totalitarian countries.

In the rest of the restriction the government tells the institution how it should be run, no matter how much or how good the educational service which it renders. This is the very essence of regimentation. As a matter of fact, most sectarian institutions more or less fulfil the rest of the restriction, with the obvious exception of not handing control of the sectarian institution into non-sectarian hands.

The objection—"what equity could be claimed for a scheme which would tax the greater part of our population without religious affiliation to provide support for religious institutions of the lesser part?"—misses the point; for the scheme asks support for educational service and not for religious institutions as such—churches and seminaries and missions.

This brings up a strong argument in favor of the scheme. All contribute in taxes for the support of public institutions of learning, but many attend private institutions, saving the government the expense of their education by not attending a public institution and thereby paying twice for education, once in taxes, again in fees and tuition. What equity can be

claimed for a scheme that taxes all the citizens for educational purposes but makes some of those citizens pay a second time for an education although those same citizens thereby save the government money?

If all the private institutions of learning were to close their doors to-morrow, it would cost the government tremendous sums of money to purchase or replace their buildings and laboratories and libraries and to pay their faculties, in order to provide facilities for the students who attend the private institutions. The private institutions, sectarian and non-sectarian, are rendering the same service as the public; they both operate for the common weal; the work and expense of the private institutions would have to be borne by the public institutions if the private did not exist. Yet only the public institutions are supported by the government, whereas the private institutions must support themselves, although the students of private institutions have already paid for education with taxes. Is this equity?

Dr. Cowdry has suggested a federal subsidy to aid private institutions of learning in their financial difficulties. Mr. Rafton has suggested some stipulations for the subsidy. However, since private institutions render educational services the same as public institutions render and which are just as much for the common weal, since public institutions would incur the work and expense of private institutions if the latter were to fail, since the students of private institutions have paid taxes for their education anyway, it is suggested that the government (federal, state or local as the occasion demands) defray the expenses of the private institutions in the same manner that it supports the public institutions. The criterion for government aid shall be the amount and quality of educational service provided. To safeguard against undemocratic discrimination among institutions, only educational service shall be considered and not the creed nor race nor color of the leaders of the institutions. To obviate government control, the government may investigate private institutions to see that the claimed educational services are performed but may not appoint the leaders nor direct operation of the institutions.

To sum up: In a democracy, private educational institutions, inasmuch as they perform the same service that public institutions do, promote the common good, save public institutions the work and expense of education already paid for in taxes, should be supported by the government, federal, state or local, according to circumstances, both as a matter of equity and practical policy, without regard to creed, race or color represented by the institutions.

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## THE ORGANIZATION OF BIOLOGISTS

AMERICAN biologists who have been aware of the inefficient way in which the potential contributing power of biologists was utilized in our recent war effort have had forcefully called to their attention one of the serious consequences of lack of general organization. Even more impressive indications of the need of organization, since they concern not the past but the future, are such matters as (1) the immediate need of more intimate international relations of scientific societies to parallel international cooperation along other lines, and (2) the prospects of the availability for distribution shortly of large federal funds for the furtherance of scientific training and research. Biologists now constitute the only major scientific group lacking a strong unifying organization. Their present organization consists of dozens of small societies, each concerned with a highly restricted area of biology and acting independently of most of the others. They lack entirely any body that can speak and act authoritatively for biologists as a whole.

The following are a few of the more obvious needs of American biology which could be furthered by a general organization, listed roughly in their order of relative importance:

- (1) A public relations office to give biology legitimate publicity.
- (2) Representation of the interests of biology in governmental and intra- and international scientific relations.
- (3) Reduction in cost of, and increase in efficiency of, biological publications.
- (4) Encouragement of the maintenance of balance in research and training among the various biological fields.
- (5) A clearing house for the effective placement of biologists.
- (6) Machinery for closer cooperation between biology and industry.
- (7) Administration of fellowships and scholarships.

In view of the several abortive attempts by small groups of biologists during the past thirty years to set up an organization which would be capable of performing such valuable functions, one hesitates to propose any specific plan for doing so. It does appear, however, that the following would be a reasonable series of steps to take:

- (1) Enlist the interest and support of the current officers of the various existing biological societies.
- (2) Call a meeting of society representatives at the earliest feasible date.
- (3) Present to the latter group for discussion a tentative plan of organization after consultation with officials of the American Chemical Society and the American Institute of Physics.