

An Oklahoma Plan for University and High School Exchange of Biological Information and Specimens

LAVON P. RICHARDSON, Oklahoma State University

The need for vertical interchange of materials and ideas became apparent in 1955 when I reflected upon a field zoology course previously taught by me, and during discussions with Miss Barbara Riley, then a graduate student in the Department of Parasitology, School of Veterinary Medicine, Oklahoma State University. The idea has been presented to a number of people, but this constitutes the first formal public exposition of the idea.

Let us picture a high school teaching situation (or a terminal biology course in college). The biology teacher often finds it more convenient to order the pickled animals needed for student observation and dissection, or what is worse, he may find it expedient to use only charts and models. When parasites are discussed, pickled worms are presented. When bac-

teria are studied, commercial cultures are made available. The students are exposed to the science of life through the medium of dead materials. The student may have difficulty in visualizing the ecological relationships of frog, worm, and bacteria.

If these students collected their own animals (frogs, for example), they would learn more about the habitats and habits of the frog as a living animal in the actual student's environment. They would need to learn taxonomic relationships of frogs. They would seek references only to find that available keys are made for frogs of New York or California, or for certain representative types.

It is proposed that a key to Oklahoma frogs, with the known geographic distribution of each species, be made available to these teachers. An additional advantage would accrue to the maker of the key, the University authority concerned, in that unidentifiable specimens or species found beyond their published ranges could be reported to this authority, thus increasing his pool of data.

When these budding biology students consider parasites, they could isolate parasites from the frog or other animal, identify these parasites, and investigate their characteristics. For this they would need simplified keys, and lists of parasites known to be present in the species concerned. Again, there would be vertical exchange and mutual benefit.

The objectives of the Oklahoma Plan. The three primary objectives of the plan are to increase the availability and to encourage the use of:

- (1) biological materials and specimens;
- (2) teaching techniques and laboratory procedures; and
- (3) rosters of biological science personnel, indexed by geographical area and field of biology.

The scope of the Oklahoma Plan.

- (1) Gather and collate information regarding the locations of caves, fossil deposits, and specific flora and fauna with interest and application to the high school biology program.
- (2) Index common parasites as to hosts found in certain areas, list methods of maintenance and preservation, and list techniques for identification, with simplified keys.
- (3) List sources of specimens and materials that can be procured at little or no expense. (example: —disposable test tubes, syringes, plastic tubing, etc., from hospitals;
 - excess herbarium specimens;
 - discarded bacterial cultures;
 - discarded fruit fly cultures.
- (4) Compile a scientific manpower roster of biologists in Oklahoma, with the following information:
 - (a) indexing by area;
 - (b) indexing by field of specialization;
 - (c) indicating the willingness of the scientist to lecture on topics designated by him; his willingness to conduct classes on tours or to accept superior students and teachers for on-the-job training without pay, while they assist in the work in progress;

- (d) listing the availability of museum specimens or scientific displays for student tours or field trips.

There has been some expression of interest in this plan. Since various members of the Oklahoma Academy of Science would be individually involved in such a plan, your evaluation and criticism of this plan is solicited. If sufficient interest is expressed in the Oklahoma Plan, as modified by evaluations tendered, nominal financial support may be expected from various sources. It is felt that this plan could greatly enrich the biology programs in Oklahoma High Schools through the sharing of resources of materials and techniques.