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An Introductory Course in Summer Field Biology

Virginia Jeffries

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VIRGINIA JEFFRIES
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INTRODUCTION

For more than a quarter of a century, the writer has been sharing science experiences in field biology with students — kindergarten through grade twelve — in the public schools of Iowa. This experience in teaching science to a wide variety of age groups, together with observations of student interests in science over the years have led the writer to believe as do Benton and Werner in their book **Principles of Field Biology and Ecology** when they say that "The world of nature is too great to encompass in a single book or a single lifetime; but no study is more rewarding". [1]

Mrs. Jeffries

THE PROBLEM

The writer's problem was to compile resource materials for an instructor to use in teaching an introductory summer field biology class for ninth-grade students in the Chariton Community Schools. The problem presented itself as an outgrowth of the combined efforts of the Superintendent, the Board of Education, and the science teachers of the Chariton schools in their desire to meet more adequately the needs of the students.

There were two principal reasons why a summer field biology course for ninth grade seemed a logical part of the revision that the science curriculum at Chariton has been undergoing during the past three years: (1) the Chariton Schools operate on one-hour periods, which proved last year to be of insufficient length for field trips in both general science and biology, and (2) students at the eighth-grade level showed a special interest in their unit on plants and animals.

PURPOSE OF THE STUDY

The purpose of this study was to prepare resource material for an instructor to use in teaching a summer field biology class in the Chariton Community Schools. "Biologists today tend to be highly specialized, and their books follow the same trend."[1] This statement (from the preface of a field biology workbook by Allen H. Benton and William E. Werner, Jr.) states precisely the situation encountered by the administration and the instructors of the Chariton Community Schools when they attempted

[1]Allen H. Benton, and William E. Werner, Jr. **Workbook for Field Biology and Ecology.** (Minneapolis: Burgess Publishing Company, 1958) p.v.

to choose materials for a beginning field biology course for the ninth-grade students. Those concerned with this study are in agreement with Louis Agassiz's motto, "Study nature, not books"; however, it was felt that a flexible written plan should be prepared, too. After conferences with Dr. Leland P. Johnson, Chairman of the Biology Department at Drake University, four topics were selected for study and investigation: (1) algae, (2) protozoa, (3) insects, and (4) spiders.

PROCEDURE

Resources on hand in the Chariton Community School were reviewed in detail. Materials available in the Drake University Library were surveyed. Both new and old texts, manuals, and workbooks were examined. Popular, non-technical books were checked. Monographic and specific group studies were read. Notes taken in all previous field courses were reread. Conferences were held with local conservation officers, park custodians, and the local forester in order to learn of services available. Letters were written to departments of the federal government, state government agencies, commercial organizations, and special-interest organizations for free and inexpensive material pertinent to field biology.

All of the material pertinent to the four areas selected was organized. It was then found necessary to subdivide each area. The subdivisions were made after a detailed study of the biology texts used in this area, specifically Lucas County.

[1]Allen H. Benton, and William E. Werner, Jr. **Workbook for Field Biology and Ecology.** (Minneapolis: Burgess Publishing Company, 1958), p.ii.

It was found that each text covered the topics in point very briefly, with a short history, general information, simple divisions, where the organism might be found, and vocabulary. The workbooks and laboratory manuals to accompany the texts added some information concerning procedures.

The investigator, after consulting all science teachers and supervisors in the system, decided to sub-divide each major area in the following manner: (1) historical background, (2) basic criteria for the organism as a group, (3) divisions of the group, (4) simple key, (5) equipment for study, (6) where to look and how to collect, (7) laboratory techniques, and (8) vocabulary.

It will be noted that each major division contains a key. The simplest key that could be found in the available resources was used. Keys have been used in the teaching of biology for many years at both the elementary and the secondary level; but in the Chariton school system, however, keys are just now being introduced, with difficulty, at the seventh-grade level.

This summer course, then, would stress the use and the making of keys in identifying specimens found in the field, and thereby help strengthen the student's ability to use keys in all science classes.

Since the biology texts contained such a limited amount of material, most of the information compiled had to be obtained from books on the specific subjects.

To adequately cover the material in the four major areas selected, a summer biology course of at least six weeks in length would be required for

students to cover the material.

SUMMARY

The material, then, was planned to include four major divisions: (1) algae, (2) protozoa, (3) insects, (4) spiders, and the following areas were developed for each division:

1. Historical background
2. Basic criteria for the organisms as a group
3. Divisions of the group
4. Simple key
5. Equipment for study
6. Where to look and how to collect
7. Laboratory techniques
8. Vocabulary

In the actual planning and organizing, it was found that the free and inexpensive material available was of little or no use. It was not specific enough on any subject. The conservation officers interviewed would be of excellent help in carrying out a summer course but not in the planning of one. Books on the specific topics involved proved to be the most useful in organizing the material of each division. The books used for reference were not written on a ninth-grade level; therefore, the material had to be suitably adapted for use at that level.

CONSTITUTION OF THE IOWA SCIENCE TEACHERS SECTION

Section 3. The Vice-President

The vice-president shall perform the duties of the president whenever the president is absent or unable to function.

He shall assume the office of the president should that office become vacant during the period between annual fall meetings.

He shall serve as chairman for the fall meeting committee.

He shall be a member of the Policy and Resolution Committee.

Section 4. The Secretary

The secretary shall maintain an accurate and correct record of all business meetings of the section.

He shall submit offical minutes of these meetings to the editor for pub- in the journal or for release in a separate mailing to the membership.

He shall maintain a correct membership list with the aid of the membership chairman.

He shall serve as secretary of the Executive Committee.

He shall be a member of the Membership Committee.

Section 5. The Treasurer

The treasurer shall work with the membership chairman in collection of dues.

He shall keep records of all financial transactions of the section.

He shall collect payments for advertisements in the journal.

He shall direct pay for all legal obligations of the association.

He shall prepare an annual fiscal report to be presented at the fall business meeting.