

# Field Trips—Why and How?

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The author uses the following for class directions. It was presented at the Biologists' Conference held last spring at Diablo College under the sponsorship of NABT. In the paper, Mr. Ruth emphasizes the necessity of observation in biology and sees in it the prime reason for field trips. A definite plan for field trips is presented.

Field trips are supplements to the classroom curriculum; they are not just frills. They are necessary and indeed should be encouraged and required to gain actual first-hand contact with the subject of study—nature out-of-doors. We can view motion pictures and kodachromes, spray the classroom with canned scents, and fill the air with recorded cries of birds and frogs. The students will learn something, it is true, but not what they will in direct contact with the real thing. That is not to say that both methods do not have their place in any practical curriculum—they do. It is the proper balance of values toward which we must strive.

Natural history and ecology are built upon field observations. Only through field experience can our students visualize the true scope of ecologic observation of local problems in the field. Survey your local streams for sources of pollution and discuss ways and means of correcting the condition. Do we have enough park acreage to handle our increasing population? Where are the parks; how are they equipped; where can we find land for more? All these are important topics for which there is no substitute for field trips.

The responses of students themselves in post-field trip discussions reveals the extent of their development of insight. "Never have I known how much I have been missing." "Conservation is much more than just a good word now." "Our vacation trips will have more meaning." "I always thought the desert was just a sandy waste." "Imagine! All this in our city parks!" "Why, the beach is not just sand dunes—it's alive!" "Our classroom discussions mean much more to me now that I have seen the real thing."

The following is from a mature student after experiencing a two-day marine field trip: "The aim of education should not

merely be to increase the knowledge of the student but rather in increasing his desire for knowledge. A field trip, such as ours, where living specimens are studied and collected in their natural habitat, cannot but stimulate the student's desire for more. He asks questions, and he finds the answers! A field trip which includes not only working together but playing together and living together contributes a great deal more than mere knowledge in the subject matter. Our cultural knowledge, both esthetically and historically, is augmented as well as our knowledge and practice of social amenities and group interaction."

We do not think there will be any disagreement as to the values, briefly hinted at above, that students derive from field trips. However, the method of leading a field trip is not always systematically approached and sometimes creates difficulties that could easily have been avoided with planning. The author would like to offer here an outline for planning and leading a field trip, compiled through experience and group discussion over the years. It is believed that using this outline as a basis, any natural science instructor will have no difficulty in organizing and leading a successful field trip, and will find that, while the difficulties are small, the rewards are great.

- I. Advance trip preparation
  - A. Have definite objectives
  - B. Leader's preparation
    1. Scout area in advance
    2. Consider weather, tide, transportation, safety, rest stops in selection of route
    3. Have an alternate activity or destination in case of foul weather or mechanical breakdowns
  - C. Preliminary instructions to participants

1. Discussion of:
  - a. Purpose of trip and destination
  - b. Time of departure and return
  - c. Proper wearing apparel
  - d. Equipment needed
  - e. Safety precautions
  - f. Behavior patterns expected of participants
  - g. Necessity of keeping together and with leader
- D. Seek out new places for future trips
- II. Trip procedure
  - A. Be enthusiastic
  - B. Create a good teaching situation
    1. Determine experience level of group and teach at that level
    2. Voice of leader must be clear and loud enough to be heard by all
    3. Encourage questions
      - a. Make sure that all hear and understand questions and answers
    4. Repeat important points for emphasis
    5. Give more than the name about each specimen
      - a. Point out distinguishing characteristics
  - C. Make the most of unexpected occurrences of learning value
  - D. Emphasize principles of conservation on every trip
    1. Soil and water—examples of erosion and run-off
    2. Plants—examine and photograph rather than picking in quantity
    3. Animals—food relationships, competition with man and with each other
  - E. Summarize at end of trip
    1. Discuss the highlights with group participating in review
    2. Repeat most important findings
    3. A written report required for certain groups

### Grant for Photobiology

The Charles F. Kettering Foundation has made a three-year grant of \$24,000 to the National Academy of Sciences for the use, as needed, of the Committee on Photobiology of the Division of Biology and Agriculture. The grant will be used to support meetings of the Committee, and of small groups to discuss advances in photobiology, and to foster the development of international cooperation and exchange of information in this field.

### Mexican Science Teaching

Ing. Eugenio Mendez, Director General of the Instituto Politecnico Nacional, and Dr. Victor Flores Maldonado, Director de la Escuela Superior de Fisica y Matematicas, Instituto Politecnico Nacional, both of Mexico City, have been appointed by the Secretary of the Mexican Department of Public Education to improve science education in Mexico. They have indicated that they would be most happy to receive any assistance which American teachers and scientists might be able to give for initiating their Science Fair program

as well as materials and advice which might be used directly in high school teaching. Visiting American scientists and teachers are urged to get in touch with these two men for whatever assistance can be given. Also, any literature, materials, and instructional devices which might be useful in the Mexican Science Fair and in science instruction may be sent to one of these two men. Here is a real and tangible way in which the United States may help the science instruction of one of our Latin American neighbors.

### Recent Publication

A new edition of *Atomic Energy Commission Research Reports*, the semi-annual price list of all unclassified AEC research reports for sale by the Office of Technical Services, Business and Defense Services Administration, U. S. Department of Commerce, Washington 25, D. C., has just been published. The 50-page list includes more than 3500 AEC reports in the OTS collection as of July 1961. The new list may be obtained free by requesting *AEC Research Reports Price List No. 36* from the above office.