

# Why College Coordinators of Science Education?

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Dick Weaver was another good friend of Dick's who enjoyed the verbal jousts they had with each other. It was always interesting to stand by and listen to their sparring. At meetings one could always find the two arguing about a variety of subjects. They had many things in common, but one was the welfare of NABT. This they both fought for. Professor Weaver is Associate Professor of Conservation and Education at Michigan.

Only a few universities and colleges have full-time science coordinators. Purdue University was one of the first large universities to establish such a position and in fact has two—one in physical science and one in biological science. More recently Indiana University created a position of science coordinator, followed closely by Michigan State University.

Where colleges have had strong science education departments, many responsibilities given to coordinators are handled by science education staff members. Schools such as Cornell University, Harvard University, University of Florida, Florida State University, Ohio State University, Atlanta University, and the University of Wisconsin have been able to provide strong college leadership and coordination. Iowa State Teachers College, Kansas State Teachers College at Emporia, several of the University of New York Teacher Training Units, and several in California have likewise provided strong science education leadership, which have served the college well and also provided national leadership in professional organizations and projects.

## Qualifications Needed

Those science educators who have made significant contributions in their institutions and nationally have usually had strong science backgrounds. This has been matched by first hand experiences in public schools and an understanding of public school problems and methods of teaching.

In some cases college scientists or educators have tried to serve in one of these positions without public school experience but usually without great success.

A doctoral degree is now almost a prerequisite for such positions.

An ability to work well and easily with people of varied interests, abilities, and views is also a prerequisite.

Not all college coordinators have been given the same kind of responsibilities, but some of the things which need to be done or are being done by some will be described.

## Institute Leadership

One of the newer responsibilities has grown out of the National Science Foundation supported institutes for science teachers and high school students. The preparation of proposals to the Foundation and the directing of the institutes or coordinating the work with students have been handled by science coordinators.

Usually this work involves committees or at least meetings of representatives of various science fields or departments.

## Science Methods Courses

Since science methods courses need instructors with strong science backgrounds as well as public school experience and understanding, the science coordinators, if chosen with this combination, are likely the best qualified to teach them. Several do teach such courses.

## Science Education Majors

Many times the undergraduate science education majors receive their counseling from college instructors unfamiliar with public schools. Science coordinators and educators should handle these wherever possible.

Likewise in schools without science education departments, the people desiring to do graduate work in science education often have difficulty finding adequately trained and experienced advisors. The science coordinator would be especially well qualified to serve in this capacity in the absence of a science education department.

The science coordinator could work with high schools in the service area of the college to locate and supervise practice teachers in science. Of course, where science education departments are organized this is usually handled by these staff members.

#### Science Materials Center

Many uses can be made of a science materials center. Teachers in preparation and those in-service need access to the newest in printed and audio-visual science materials and science equipment. Librarians, curriculum committees, administrators and many others will use and appreciate such a center. The science coordinator can organize and supervise such a center.

Purdue University has two centers, one in physical science and one in biological science. This can easily be justified in larger universities. In fact a third one to cover the earth sciences might be feasible.

If courses of study in science, syllabi, and units in science are collected many public school curriculum committees would find it very helpful.

#### Curriculum Advice and Help

In addition to supplying the above materials, the science consultant or educator should be able to work with public school Curriculum Committees in evaluating their science programs and revising them, or building one if a program has never been designed for all of the grades.

Likewise the science consultant should be able to work with staff members or committees from the various science departments to prepare plans for suitable science instruction for teachers. Coordinators trained and experienced specifically in physical, biological, or earth sciences are likely to be more able to help plan specific courses.

#### College-Wide Committees

Many larger universities where separate colleges and schools operate almost inde-

pendently of the other units have special problems which usually need a school-wide committee to resolve. The science coordinator can help establish such a committee and serve as the catalyst to keep it operating effectively, either as chairman, secretary, or project or program director.

Such coordination has been needed in situations such as at The University of Michigan where staff members trained and experienced as science educators located in the School of Public Health, the School of Natural Resources, and the Medical School have desired to help with training high school science teachers, but no coordinating committee was available to permit discussions, planning, and evaluating.

Where teacher-training committees exist, perhaps sub-committees on science education could be established.

#### Extension Courses in Science

If the college or university is engaged in an extension program, the science coordinator can work with the various science departments and the extension service to see that a rich offering of suitable science courses is offered to teachers at the various centers.

The National Science Foundation has been sponsoring special science courses during the school year which can be offered on Saturdays or in the evenings. The science coordinator can help design the program and assist in the execution.

#### Professional Leadership

The relatively few science coordinators on campuses have given liberally of their time and services to assist state and national organizations, federal programs, and state science committees. They have held many positions of responsibility and leadership. Colleges and universities have achieved recognition in science education as a result of this service.

#### Role of National Science Foundation

The National Science Foundation could serve a very useful function by helping colleges and universities without science coordinators or science education services to establish such positions for a three-year period. Colleges could be stimulated to consider the merits of such work by offering financial inducement for the initial period. This would

help the institutions plan more specifically for long-range objectives and not be limited to short-range stop-gap projects.

#### Conclusion

It is obvious that one person serving as science coordinator could not possibly handle all of the responsibilities described above. He could be very effective in handling some of them and in getting most of the others satisfactorily handled by others. His success might

well be judged by the degree to which he could work himself out of the various responsibilities.

The pioneering work of Dick Armacost at Syracuse University and more recently at Purdue University in showing how effectively science coordinators can guide the science education on a large campus will be long-remembered and respected by all of us engaged in science education.

## Book Reviews

GENERAL BIOLOGY, 5th edition, William C. Beaver, 775 pp., \$6.75, C. V. Mosby Company, St. Louis, 1958.

The presentation of subject matter has been arranged into six parts and numerous chapters so that selections and omissions may be made. Emphasis has been placed on various phenomena including embryonic development and morphogenesis in plants and animals; physiology of muscle contraction; hormones and insect activities; biochemical and biophysical phenomena; genetic improvements; evolution; interdependence among organisms; pebble culture man; diseases; national parks. 445 illustrations.

WOODY PLANTS, IN WINTER, Earl L. Core and Nelle P. Ammons, 218 pp., \$2.75 paper; \$4.00 cloth, The Boxwood Press, Pittsburgh 13, 1958.

A manual to identify trees and shrubs in winter. Profusely illustrated with line drawings. Covers the northeastern parts of the United States and southeastern Canada. The limits are from the southern boundaries of Virginia and Kentucky, the western boundaries of Missouri and Iowa, and the 49th parallel of latitude through Quebec and Ontario to the northwestern corner of Minnesota.

THE UNCONSCIOUS IN HISTORY, A. Bronson Feldman, 269 pp., \$4.75, Philosophical Library, New York, 1959.

These essays are an effort to work out the chief motives of human development. The volume opens with a contribution to analytic theology, exploring the conversion of the Western world to "salvation of the Jews," inquires into the modern mythology of revolution and war as shown by the popular cult of Lincoln the Liberator. There follows a study of character and conscience in nationality and a searching of the hidden springs of social devotion and political pride.

MANAGEMENT OF ADDICTIONS, edited by Edward

Podolsky, 413 pp., \$7.50, Philosophical Library, New York, 1955.

This volume is a discussion of addictions to alcohol and various drugs by leading authorities in the field. The mechanisms of addiction are thoroughly explored and methods of therapy are presented in detailed form. While this book is intended primarily for physicians, it will also prove of interest to psychologists, sociologists, and others interested in the problem of addiction.

ELEPHANTS, Richard Carrington, 272 pp., \$5.00, Basic Books, Inc., 59 Fourth Ave., New York 3, 1959.

This well documented account—rich in anecdotes—relates the natural and evolutionary history of the elephant and describes its role in ancient warfare, in art, religion and folklore, in commerce, and in show business. This is a survey of elephantology told with warmth and humor, coupled with scholarship which will engage the general reader as well as the palaeontologist, the naturalist, and the social historian.

INSIDE THE LIVING CELL, J. A. V. Butler, 174 pp., \$3.50, Basic Books, Inc., New York, 1959.

This noted biophysicist and chemist has reduced the many sided inquiries on the nature of life, heredity, growth, old age, disease, death, and the activities of the human brain into a fascinating story. He presents a clear, non-technical account of the make-up of cells, the mechanisms by which they function, their reactions to radiation and other foreign influences, their transformation into the malignant cells of cancer, and their manifold forms of organization and roles in the body.

DICTIONARY OF DIETETICS, Rhoda Ellis, 152 pp., \$6.00, Philosophical Library, New York, 1956.

A compilation of terms and references related to diet and diet therapy. Particular emphasis has been placed on the practical application of diet with respect to the background, food habits, economic status, as well as the physiological needs of people inside or out of the hospital environment.