

Shanor, Department of Biological Sciences, Florida State University, Tallahassee.

Microbiology, for high-school teachers: Leslie R. Hedrick, Department of Biology, Illinois Institute of Technology, Chicago.

Biology, chemistry, mathematics, and physics, for high-school and college teachers: Paul Klinge, Coordinator for School Science, Indiana University, Bloomington.

Radiation chemistry, for high-school and college teachers: Milton Burton, Radiation Project, University of Notre Dame, Notre Dame, Ind.

Biochemistry, for high-school teachers: Leland P. Johnson, Department of Biology, Drake University, Des Moines, Iowa.

Chemistry, for college teachers: Ralph L. Shriner, Department of Chemistry, State University of Iowa, Iowa City.

Botany, chemistry, and zoology, for high-school and college teachers: John A. Greenlee, Division of Science, Iowa State College, Ames.

Chemistry, for high-school and junior college teachers: J. W. Kercheval, Science Department, Iowa State Teachers College, Cedar Falls.

Chemistry, for high-school teachers: Ray Q. Brewster, Department of Chemistry, University of Kansas, Lawrence.

Chemistry and physics, for high-school and college teachers: Thomas D. O'Brien, Director of Academic Research, Kansas State College, Manhattan.

Biology, for high-school teachers: Otto M. Smith, Director of Science Institutes, Kansas State Teachers College, Emporia.

Biology, chemistry, geology, and physics, for high-school and college teachers: John F. Christman, Department of Biochemistry, Louisiana State University, Baton Rouge.

Physics, for high-school teachers: Howard Laster, Department of Physics, University of Maryland, College Park, Maryland.

Chemistry, for high-school teachers: Lowell V. Coulter, Department of Chemistry, Boston University, Boston, Mass.

Reactor physics, for college teachers: M. L. Wiedenbeck, Department of Physics, University of Michigan, Ann Arbor.

Experimental psychology, for college teachers: W. J. McKeachie, Department of Psychology, University of Michigan, Ann Arbor.

Chemistry, for high-school and college teachers: Richard B. Hahn, Department of Chemistry, Wayne State University, Detroit, Mich.

Physics, for high-school teachers: Arthur G. Rouse, Department of Physics, Saint Louis University, St. Louis, Mo.

Chemistry and physics, for high-school teachers: James A. Bradley, Department of Chemical Engineering, Newark College of Engineering, Newark, N.J.

Engineering, for high-school teachers: Richard C. Dove, Mechanical Engineering Department, University of New Mexico, Albuquerque.

Chemistry, mathematics, and physics, for high-school teachers: Burrell L. Wood, Department of Chemistry, New Mexico Institute of Mining, Socorro.

Chemistry, for high-school teachers: Howard Tieckelmann, Department of Chemistry, University of Buffalo, Buffalo, N.Y.

Chemistry and physics, for high-school teachers: F. Gordon Lindsey, Director of Summer Programs, Clarkson College of Technology, Potsdam, N.Y.

Biology, chemistry, and agricultural science, for high-school and college teachers: Philip G. Johnson, College of Education, Cornell University, Ithaca, N.Y.

Chemistry, for high-school and college teachers: Robert L. Strong, Department of Chemistry, Rensselaer Polytechnic Institute, Troy, N.Y.

Astronomy, biology, chemistry, physics, and psychology, for high-school and college teachers: W. A. Fullagar, dean, College of Education, University of Rochester, Rochester, N.Y.

Biological sciences, for high-school teachers: Daniel M. Lilly, Department of Biology, St. John's University, Jamaica, N.Y.

Biology, for college teachers: Thelma Howell, Biology Department, Wesleyan College, Macon, Ga.; (program to be conducted at Highlands Biological Station, Highlands, N.C.).

Biology, chemistry, statistics, and physics, for high-school and college teachers: Homer C. Folks, Department of Agronomy, North Carolina State College, Raleigh.

Biochemistry, for high-school teachers: Francis A. Jacobs, School of Medicine, University of North Dakota, Grand Forks.

Chemistry, physics, and other sciences, for high-school and college teachers: Horace H. Bliss, Oklahoma Science Service, University of Oklahoma, Norman.

Biology, chemistry, and engineering, for high-school and college teachers: Robert MacVicar, Graduate School, Oklahoma State University, Stillwater, Oklahoma.

Numerical analysis, for high-school and college teachers: A. T. Lonseth, Department of Mathematics, Oregon State College, Corvallis.

Chemistry, chemical engineering and physics, for college teachers: W. C. Fernelius, Department of Chemistry,

Pennsylvania State University, University Park.

Biology and chemistry, for high-school teachers: John A. Southern, Department of Chemistry, Furman University, Greenville, S.C.

Biology, chemistry, and physics, for high-school and college teachers: H. W. Davis, Department of Chemistry, University of South Carolina, Columbia.

Botany, chemistry, geology, physics, and psychology, for high-school and college teachers: George P. Scott, Department of Chemistry, State University of South Dakota, Vermillion.

Chemistry, for high-school and college teachers: Robert L. Fischer, Division of Chemistry, Medical Units, University of Tennessee, Memphis.

Biology, chemistry, mathematics, and physics, for high-school and college teachers: Addison E. Lee, Department of Botany, University of Texas, Austin.

Biochemistry, chemistry, geology, and physics, for high-school teachers: K. LeRoi Nelson, Department of Chemistry, Brigham Young University, Provo, Utah.

Chemistry, for college teachers: W. J. Burke, Department of Chemistry, University of Utah, Salt Lake City.

Radiation physics, for college teachers: Earl L. Core, Department of Biology, West Virginia University, Morgantown.

Chemistry, chemical engineering, and microbiochemistry, for college teachers: Roy P. Whitney, Institute of Paper Chemistry, Appleton, Wis.

Biology, chemistry, and other sciences, for high-school teachers: Donald M. Bucklin, Department of Zoology, University of Wisconsin, Madison.

Early Tetrapod Life

The first tetrapods arose in the Devonian period. The evidence indicates that this was a time when the land areas in which the tetrapods evolved were subject to seasonal droughts or periods of aridity. A. S. Romer has suggested on various occasions that tetrapod limbs did not develop as an adaptation to terrestrial life itself, but, rather, as an adaptation which would assist an aquatic animal living under drought conditions to shift from drying pools to those that were less fleeting.

In a recent paper, Romer [*Evolution* 12, 365 (Sept., 1958)] emphasizes that there were two distinct chapters in tetrapod history: (i) development of limbs giving potentiality of terrestrial existence, and (ii) utilization of these limbs for life upon the land. These two events need not have occurred synchronously; in fact, Romer believes that they were separated in time by many millions of years.

The development of limbs took place during the Devonian period, when the climate and lack of available food supply on land did not favor terrestrial vertebrate life. The beginning of actual life on land did not occur until the Upper Carboniferous period, very probably during late Pennsylvanian time, when the world climate and the evolution of insects made available the supply of animal food necessary for the existence of terrestrial vertebrates.—W. L. S., JR.

AEC Technical Films

The Atomic Energy Commission has announced that the 45 technical-level, professional motion pictures first screened last September in Geneva at the Second International Conference on the Peaceful Uses of Atomic Energy are available for loan and sale. The 16mm films, most of which are in color, cover major nuclear applications and research activities.

The Geneva films, in general too technical for lay audiences or secondary-school students, bring the total of professional-level, technical films available at the commission's Washington film library to 71 titles, and at 10 field libraries to 63 titles. The Washington and field libraries also have about 70 other less technical films appropriate and available for loan to junior and senior high schools, service and fraternal organizations, industry, and other private and governmental audiences of laymen.

Inquiries for information on loan and sale of the Geneva films to foreign users may be directed to the Public Information Service, U.S. Atomic Energy Commission, Washington 25, D.C. All films are now available in English for sale to foreign applicants and shortly will be available for sale in French, Spanish, or Russian. An overseas loan program is being arranged through the United States Information Agency and its overseas posts, and also through the commission offices in London, Brussels, Paris, Tokyo, and Buenos Aires.

U.K. Atomic Information

In order to make atomic information more easily available, the United Kingdom Atomic Energy Authority has decided to make fuller use of microphotography. The effect of this will be to make all nonsecret reports that have been prepared since 1947 readily obtainable. Complete sets are also being presented to a number of other countries and to certain international agencies. In addition to this, the Authority is increasing its facilities for supplying reports in conventional form as they are prepared. Details of the new methods follow.

Effective 16 February, a large number

of unclassified and declassified reports, which have hitherto been obtainable only on loan from AEA libraries, will be available in micro form. These may be purchased from Micro Methods Ltd., of East Ardsley, Wakefield, Yorks, England. Micro Methods will provide a list of available reports on request.

In addition, paper copies of all currently issued unclassified AEA reports may now be obtained against a running account from the Library, Atomic Energy Research Establishment, Harwell, Didcot, Berks. Subscribers may order all reports issued or those in any of 19 categories, such as biology and medicine, geology and mineralogy, instruments, and so forth.

Robot Seismographic Station

The United States has successfully operated a robot seismographic station that could prove useful in policing an international atomic test ban, the Commerce Department has disclosed.

The station, near Tucson, Ariz., automatically records earth tremors and transmits the information by radio to the Coast and Geodetic Survey's Tucson magnetic observatory, 15 miles away.

The Commerce Department described the station as "among the most sensitive in the United States." It said that "it has detected many earthquakes that would otherwise have been missed."

The successful development of an unmanned seismographic station illustrates one possible method for restoring the dependability of a proposed inspection system for monitoring an atomic test ban, particularly in the detecting and identifying of underground explosions, Commerce Department officials believe.

College Enrollment

Opening fall enrollment of degree-credit students (full-time and part-time) in the fall of 1958 registered its seventh consecutive annual rise, reaching an all-time peak. The total degree-credit enrollment in the fall of 1958 came to 3,258,556—a rise of 190,139, or 6.2 percent, above the figure for the fall of 1957. First-time degree-credit students increased to 781,075—a rise of 51,350, or 7.0 percent. These figures are from the U.S. Office of Education's circular on the 13th annual survey of opening (fall) enrollment in institutions of higher education.

The data for the publication were collected, verified, and compiled in 6 weeks from the time the questionnaire was originally mailed. Usable responses were received from 1897 of the 1903 institutions addressed, a response rate of 99.7 percent.

Role of Director of Defense Research and Engineering

In a directive instrumenting an aspect of the Department of Defense Reorganization Act of 1958, Neil McElroy, Secretary of Defense, has defined the role of the Director of Defense Research and Engineering. This position, now filled by Herbert York, supersedes the old position of Assistant Secretary for Defense (Research and Engineering).

Under the new regulation, the director will supervise all research and engineering activities in the Department of Defense. This would include such major units as the Advanced Research Projects Agency and the Weapons Systems Evaluation Group. The director will have explicit authority to "approve, modify or disapprove programs and projects of the military departments and other Department of Defense agencies." In addition, the director will serve as the principal adviser and staff assistant to the Secretary of Defense in the following fields: scientific and technical matters; basic and applied research; research, development, test and evaluation of weapons, weapons systems, and defense material; and design and engineering for suitability, productivity, reliability, maintainability, and materials conservation.

News Briefs

Last month Britain signed an agreement with the six-nation European Atomic Energy Community for cooperation in the peaceful uses of atomic energy. In signing for Britain, Selwyn Lloyd, the Foreign Secretary, said the pact provided a comprehensive framework through which practical cooperation could take place not only between Britain and the community but also between institutions and industrial concerns in the two areas. The 10-year agreement provides for the exchange of unclassified information between Britain's Atomic Energy Authority and the European Community's Commission.

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Three Soviet scientists arrived in Washington on 11 February to start a 30-day survey of U.S. research developments in physiology and pharmacology of the nervous system. Late in 1958, an American neurological mission of six scientists went to the U.S.S.R. to make a similar study and will confer with the Soviet delegation during their stay in this country.

The members of the Soviet group are Sergey Viktorovich Anichov, professor, head of the department of pharmacology, Sanitary-Hygiene Medical Institute at Leningrad, and spokesman for pharmacology achievements in the U.S.S.R.;