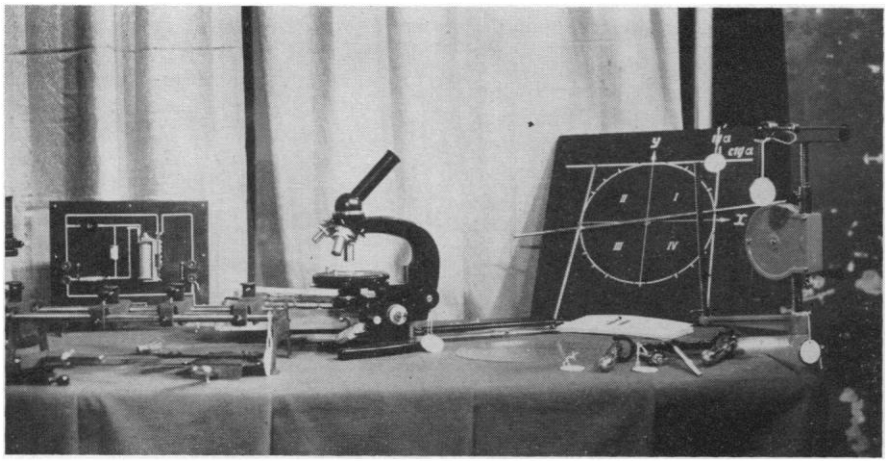

Soviet science teaching equipment

New York meeting, Brown made the following statement for the committee.

"American manufacturers of equipment for teaching physics in schools and colleges are moving to meet the challenge of Russian-produced equipment, but much remains to be done if the United States is to gain world leadership in this field. Not only a greater industrial effort is needed, but public support for physics laboratories should be increased as a part of the general strengthening of American education.

"Russian-built equipment for teaching physics in secondary schools is being exhibited by a commercial importer at the current meetings of the American Association of Physics Teachers and the American Physical Society. The Russian equipment is inferior in quality to the best equipment produced here, but it is better than much of the equipment in our smaller high schools. There is evidence that the Russians are prepared to sell such equipment at low cost in the tens of thousands of items for trade and propaganda purposes all over the world.

"The Committee on Apparatus of the American Association of Physics Teachers has encouraged American manufacturers of teaching equipment to produce high-quality physics apparatus. The committee made a market study two years ago, pin-pointing the items of equipment most needed by physics teachers. The results were made freely available to the apparatus industry. Expert consultants are available to the industry upon request. At the AAPT meeting this year, an apparatus contest with cash prizes has been arranged by the Committee to bring new forms of apparatus to the attention of teachers and manufacturers.

"American manufacturers are starting to respond to the demand for new and better apparatus. At the meeting now going on, approximately seven pieces of physics equipment not hitherto available commercially from U.S. companies are being exhibited. Several other pieces of equipment are being worked on and should soon be available. Although this indication of progress is encouraging and should be commended, much remains to be done. American physics teachers must be able to purchase top-quality lecture and laboratory apparatus if our physics students are to receive the best scientific education in the world. The Committee on Apparatus urges the apparatus industry to continue working toward this objective."

Manufacture of science teaching aids in this country is limited to a relatively small group of companies and protected by a steep tariff, the same tariff that is imposed on industrial apparatus. At one time equipment for educational purposes was exempt; but, partly through lobbying in Washington, the tariff was extended. The tariff has helped keep some reportedly excellent European equipment out of American schools.

Research Participation for Teacher Training

The National Science Foundation has announced the award of 56 grants totaling approximately $800,000 to 54 educational institutions for the purpose of conducting programs in research participation for teacher training in the summer of 1959. These programs will provide research experience for about 550 teachers of science and mathematics. About 400 of these will come from secondary schools; the remaining 150 will come from junior colleges and small colleges without appropriate research facilities. The foundation is supporting these experimental programs to provide further opportunities for teachers during the summer, in addition to the summer institutes for high-school and college teachers which has been so successful for several years and which will be continued this year.

Teachers will participate directly in scientific research in the laboratories of universities and colleges, or in field research programs, alongside experienced scientific investigators. This research experience will be supplemented by seminars and lectures on research methods and advances. Participating teachers will receive stipends of up to $75 per week plus allowances for travel and dependents. The programs will vary in length from 6 to 12 weeks.

Teachers will be chosen by the individual universities and colleges. Inquiries and applications should be addressed to the directors of the programs in the following list. Early inquiry is advised, for many teachers will be appointed in the latter part of March.

Biology, chemistry, mathematics, and physics, for high-school teachers: A. B. Weaver, Department of Physics, University of Arizona, Tucson.

Engineering and physics, for high-school teachers: Earl R. Parker, Institute of Engineering Research, University of California, Berkeley.

Marine biology, for high-school and college teachers: Joel W. Hedgpeth, Pacific Marine Station, Dillon Beach, Calif.

Chemistry, for teachers in junior colleges: C. Freeman Allen, Department of Chemistry, Pomona College, Claremont, Calif.

Biochemistry, for high-school teachers: Robert H. Maybury, Department of Chemistry, University of Redlands, Redlands, Calif.

Chemistry and physics, for high-school and college teachers: Norman Kharasch, Department of Chemistry, University of Southern California, Los Angeles.

Chemistry and physics, for high-school and college teachers: Bert M. Tolbert, Department of Chemistry, University of Colorado, Boulder.

Astronomy, for college teachers: Donald E. Billings, High Altitude Observatory, University of Colorado, Boulder.

Biology, chemistry, mathematics, and physics, for high-school and junior college teachers: Merle G. Payne, Department of Chemistry, Colorado State University, Fort Collins.

Chemistry and physics, for high-school and college teachers: Clarence M. Knudson, College of Engineering, University of Denver, Denver, Colo.

Biology, chemistry, and physics, for high-school teachers: J. C. Kakavas, School of Graduate Studies, University of Delaware, Newark.

Biology, chemistry, and physics, for high-school teachers: Lloyd N. Ferguson, Department of Chemistry, Howard University, Washington, D.C.

Biology, chemistry, geology, psychology, meteorology, and physics, for high-school and college teachers: Leland

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.