National Library Week

The AAAS joins with many national service, professional, and industrial organizations to support the second National Library Week, 12–18 April 1959. Organized under the joint sponsorship of the National Book Committee, Inc., and the American Library Association, its objectives are to encourage reading by Americans in all walks of life and to promote the use and support of libraries of all kinds—in the home, in communities, in schools, and in colleges.

The value of good library collections and facilities is recognized by all scholars and professional scientists. So far as the general public is concerned, a greatly increased awareness of the role of the school library in education is needed. High-school libraries are a fairly common adjunct of the public educational system, but many of them are not good, and all too often they are in the charge of an over-worked teacher instead of a trained librarian. A still smaller percentage have adequate collections of up-to-date science and mathematics books. A survey of the library holdings of approximately 1000 representative American high schools conducted by the AAAS during 1958 disclosed that only 5.1 percent of the books were devoted to science and mathematics. Considering the portion of the school curriculum devoted to science and mathematics, not less than 20 percent of a high-school library’s holdings should be in this area.

The importance of good library facilities is recognized in Title III of the National Defense Education Act of 1958 (Public Law 85-864, 85th Congress; 72 Stat. 1590) which makes funds available for “acquisition of . . . printed materials (other than textbooks) for use in providing education in science, mathematics, or modern foreign language, in public elementary or secondary schools, or both, . . .” Standards for the improvement of instruction in science, mathematics, and modern foreign languages formulated by the Council of Chief State School Officers emphasize “that the provision of better materials and equipment would result in more efficient learning and better adaptations of the educational programs to individual differences, both for the academically gifted and for those whose talents lie in other fields.”

The AAAS Traveling Science Library Program, supported by an annual grant from the National Science Foundation, is immediately concerned with the improvement of school libraries and the enlargement of their role in science education. The Traveling High School Science Library, received currently by 1309 senior high and private preparatory schools, is enriching science and mathematics courses and accelerated and honors programs for gifted students.

Plans are now being developed to initiate a Traveling Elementary Science Library Program in the fall of 1959 which will be made available to 1000 selected elementary and preparatory schools, particularly those that are giving special consideration to the gifted student. Science Service, in administering the Westinghouse Science Talent Search and the National Science Fairs, has determined that the majority of the winners developed their science interests before they entered junior high school.

The celebration of National Library Week is indeed appropriate, but achievement of lasting results in education will come about when every week is National Library Week.—HILARY DEASON, AAAS
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Meetings
Seaweed Symposium

The third international seaweed symposium was held in Galway, Eire, on 13 to 19 Aug. 1958. It differed from its predecessors in that four formal lectures were delivered by invited speakers and in that an exhibition of commercial seaweed products was organized. Previous symposia were held in Edinburgh (in 1952) and in Trondheim (in 1955).

The participants, who came from 22 countries, numbered 207. The symposium was opened officially by Sean Lemass, Minister for Industry and Commerce. All scientific sessions were held at University College, Galway. In addition there were excursions into the surrounding country, either to collect algae or to visit the seaweed factories at Kilkeerin and Ballyconneely.

The symposium was organized under the auspices of a small international advisory committee through the Irish National Committee, but most of the work was done by a local committee in Galway with T. Dillon as chairman and G. O'hEocha as secretary. The program was divided into three sections: botany, chemistry, and applied industry, with a special session on intertidal ecology. Special lectures were given by R. D. Preston (England), on "Biochemical and biological aspects of some seaweeds"; by E. L. Hirst (Scotland), on "Seaweed mucilages"; and by H. M. Ulrich (Austria), on "Alginate esters and altered alginate fibers." A. Walford (United States) delivered a public lecture on "The sea as a potential source of food."

Some 20 communications of original work were made to the chemistry section. Wickberg (Sweden) reported the isolation of O-α-D-galactopyranosylglycerol, O-α-D-galactopyranosyl-(1-6)-O-β-D-galactopyranosyl(1-1)-α-D-glyceritol, mytilitol, and 2-L-amino-3-hydroxy-1-propanesulfonic acid and an N-substituted taurine from various red seaweeds. The presence of unidentified phenolic compounds in Ascophyllum nodosum has been detected by Haug and Larsen (Norway). These workers also determined that the seasonal variation of nicotinamide in some of the Fucaceae is between 15 and 35 micrograms per gram of dry matter, in autumn and spring, respectively. Turvey and Rees (Wales) described the major water-soluble polysaccharides of Porphyra as floridean starch and a galactan sulfate, containing galactose, methyl galactose, and anhydrogalactose. O'Donnell and Percival (Scotland) reviewed the polysaccharides in green seaweeds and described especially a heteroglycan sulfate from Spongamarpha which contained glucose, xylose, rhamnose, and glucuronic acid. The hydrolysis of the sulfate ester linkage in fucoidin, chondroitin sulfate, and keratosulfate by an esterase in Patella vulgata was reported by Lloyd and Lloyd (Wales). A preliminary description of the polysaccharide sulfate from Fucus serratus was given by Clancy, Walsh, O'Colla and Dillon (Eire). Young and Smith (Nova Scotia) reported analyses of the free amino acids, peptides, and proteins of Chondrus in which some peptides contained citrulline and ornithine and in which about 50 percent of the protein was present in an insoluble form, the distribution of amino acids being very similar to that of other algal proteins.

About ten papers on the utilization of marine algae were read. A critical appraisal of laminarin sulfate as a blood anticoagulant was given by Burt (Scotland); she stressed the fact that this ester is of lower potency and of much greater toxicity than heparin, on prolonged administration to rabbits and dogs. Seaweed meal can be fed to chickens, hens, and sheep without detrimental effects, according to Jensen (Norway), and with beneficial effects when it constitutes 5 to 7 percent of the basal ration, according to Höje and Sannan (Norway).
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The Beginnings of Embryonic Development

AAAS Symposium Volume No. 48 Published July 1957

Edited by Albert Tyler, California Institute of Technology
R. C. von Borstel, Oak Ridge National Laboratory
Charles B. Metz, The Florida State University

6 x 9 inches, 408 pages, 132 illustrations, references, subject and author index, clothbound

Price $8.75, AAAS members' prepaid order price $7.50

A symposium on "Formation and Early Development of the Embryo", held 27 December, 1955, at the Second Atlanta Meeting of the AAAS, served as the basis for this volume. Emphasis was placed on the problems of early development and of the initiation of development. The investigations presented in the various communications cover both descriptive and experimental work on the biological and chemical levels. Apart from their intrinsic interest and the measure of progress that they provide, the specific discoveries and analyses presented serve to exemplify various approaches toward the understanding of the manner in which sperm and egg contrive to produce a new individual.

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About 27 papers were read in the botany section. From experimental work Jacobs (United States) reported that the controlling factors in wall formation and regeneration in Caulerpa prolifera must be in the cytoplasm close to the cell wall, rather than in the streaming cytoplasm. Segi (Japan) discussed the commercial cultivation of Monostroma in Japan.

Boalch (England) described changes in the proportions of prostrate and erect systems in pure cultures of Ectocarpus confervoides, and changes in shape and size of cell, which resulted from changes in salinity, illumination, and temperature. The study throws some doubt on the reliability of current taxonomic criteria. Dixon (England) discussed confusion in the taxonomy of Pterocladia pinnata caused by morphological variation as a result of differing ecological factors. Müller-Stoll (Germany) reported on the ecology, internal anatomy, and biochemistry of Fucus vesiculosus in the western Baltic. In deeper waters this species grows to a length of 7 meters and lives 7 years or more. Powell (Scotland) discussed his proposal to reduce the 15 or more species of Fucus now listed to about five.

Baardseth (Norway) described a method of physode estimation and reported that the percentage of physode volume varied with the species and, in Ascophyllum, was related to salinity.

Haxo and Neushal (United States) have studied the growth and differentiation of young specimens of Macrocystis pyrifera and described an ingenious apparatus for growing and observing these plants at depths of 30 to 100 feet. This technique permits analysis of the effects of various environmental factors. Fogg (England) reviewed the technology of mass culture of microscopic marine algae but concluded that harvesting difficulties make such culture commercially uneconomic at present. Von Stosch (Germany) compared the leucosin of diatoms and chrysomonads with laminarin and adduced evidence for their close relationship.

Kanwisher (United States) described a new method of determining the photosynthetic and respiratory capacity of several intertidal algae. He reported that freezing and drying on the shore have similar effects in depressing respiration. Provasoli (United States) has observed the response of Ulva lactuca to various hormones added to bacteria-free cultures. His study suggests strongly that the level of auxin and gibberellin controls speed of growth and size of crop in the coastal zone.

Allen (United States) has induced several fresh-water, nitrogen-fixing species of blue-green algae to become adapted to marine conditions. Growth was somewhat retarded, but their ca-
Capacity to fix nitrogen under these conditions was studied.

Grenager (Norway) described a method of predicting the distribution of Laminaria digitata and Ascophyllum nodosum in unknown areas by study of charts only. A forecast was checked later by a field survey and found to deviate by only a few percent for each species.

The abstracts of most communications and of two of the formal lectures have been printed in a small volume of 92 pages, which may be purchased from Dr. C. O’H-Eocha, University College, Galway, Eire. No further printing of the proceedings is anticipated. The next symposium will be held in Paris in 1961, under the chairmanship of A. D. de Virville.

Constance I. MacFarlane
E. Gordon Young
Atlantic Regional Laboratory,
National Research Council,
Halifax, Nova Scotia

Youth Conference on the Atom

A national Youth Conference on the Atom, the first meeting of high-school science students and teachers for discussion of the peaceful uses of nuclear energy, will be held at the Claridge Hotel in Atlantic City, N.J., 30 April-1 May. The attendance of approximately 500 junior and senior high-school science students and teachers at the conference will be sponsored by 60 or more electric utility companies throughout the country. Organizations cooperating in the conference include the AAAS, Atomic Industrial Forum, Future Scientists of America Foundation, National Science Foundation, National Science Teachers Association, and Science Clubs of America.

John A. McCone, chairman of the Atomic Energy Commission, will deliver an address on 30 April. Other speakers will be Norman C. Hilberry, director of the Argonne National Laboratory; Charles E. Robbins, executive manager of the Atomic Industrial Forum, who will tell the young scientists about industrial uses of the atom; Cyril Comar, director of the Laboratory of Radiation Biology at Cornell University, who will describe the use of the atom in agriculture; and John Laughlin, chief of the division of physics at the Sloan-Kettering Institute for Cancer Research, who will speak on the uses of the atom in medicine.

Forecasts of the atom and the world of tomorrow will be presented by Francis K. McCune, vice president of the General Electric Company, and Charles H. Weaver, vice president of the Westinghouse Electric Corporation, who are in charge of atomic activities at their respective companies. Ben D. Wood, director of the Bureau of Collegiate Educa-
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Operational Research

The second International Conference on Operational Research, organized by the International Federation of Operational Research Societies, will be held in Aix-en-Provence, France, 5–10 September 1960. The program committee would welcome suggestions for papers (or groups of papers) to be presented at the conference. Suggestions should be sent to the Secretary of IFORS, 11 Park Lane, London W.1, England, before 1 May 1959, with a copy to the secretary of the Operational Research Society of the country of origin. Manuscripts will be required by 1 December 1959 in order that preprints can be made available before the conference.

The International Federation came into existence in January this year, having as its objects “the development of operational research as a unified science and its advancement in all nations of the world.” The first international conference on the subject was held at Oxford in 1957.

Prague Antibiotics Conference

A symposium on antibiotics with international participation will take place in Prague, Czechoslovakia, 17–23 May. The proceedings will be divided into three sections: (i) problems of the bio-synthesis of antibiotics, (ii) the scientific pathophysiological basis of antibiotic therapy, and (iii) the problems of fermentation technology and nonmedical use of antibiotics.

Further information will be furnished upon request by the secretary of the symposium, Dr. M. Hřeřanský, Antibiotics Research Institute, Roztoky near Prague, Czechoslovakia.

Forthcoming Events

May

10–15. Society of American Bacteriologists, St. Louis, Mo. (E. M. Foster, Univ. of Wisconsin, Madison 6.)
11–12. Practical Problems of Coordinating and Integrating All Services Related to the Treatment, Training and Management of the Mentally Retarded,
conf., Vineland, N.J. (J. D. Eadline, Training School, Vineland, N.J.)

17-20. American Inst. of Chemical Engineers, 40th natl., Kansas City, Mo. (F. J. Van Antwerpen, AICE, 25 W. 45 St., New York 36.)

17-21. American Ceramic Soc., 61st annual, Chicago, Ill. (C. S. Pearce, ACS, 4055 N. High St., Columbus 14, Ohio.)

17-21. Institute of Food Technologists, 19th annual, Philadelphia, Pa. (C. S. Lawrence, IFT, 176 W. Adams St., Chicago 3, Ill.)

17-22. Antibiotics, intern. symp., Prague, Czechoslovakia. (M. Heřmanský, Antibiotics Research Inst., Rotozky near Prague, Czechoslovakia.)


18-20. Instrumental Methods of Analysis, 5th natl. symp., Houston, Tex. (H. S. Kindler, Director of Technical and Educational Services, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

19-23. American Assoc. of Mental Deficiency, Milwaukee, Wis. (N. A. Dayton, Mansfield State Training School & Hospital, Mansfield Depot, Conn.)


21-23. American Assoc. for the History of Medicine, 32nd annual, Cleveland, Ohio. (Miss E. H. Thomson, Yale Univ. School of Medicine, New Haven, Conn.)

21-27. Veterinary Cong., 16th intern., Madrid, Spain. (J. Jensen, General Secretary of Permanent Committee, Belstraat 168, Utrecht, Netherlands; or W. A. Hagan, Dean, Cornell Univ., New York State Veterinary College, Ithaca, N.Y.)

24-27. Chemical Inst. of Canada, 42nd annual conf., Halifax, Nova Scotia. (Chemical Inst. of Canada, 18 Rideau St., Ottawa 2, Ontario.)


24-29. Social Welfare, natl. conf. and annual forum, San Francisco, Calif. (National Conference on Social Welfare, 22 W. Gay St., Columbus 15, Ohio.)


25-27. American Inst. of Chemical of Canada, 42nd annual conf., Halifax, Nova Scotia. (Chemical Inst. of Canada, 18 Rideau St., Ottawa 2, Ontario, Canada.)


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- **Potentiometer Checker** consists of a ten-turn master potentiometer mechanism for coupling the potentiometer under test, a recorder, drive mechanisms and trimming adjustments for zeroing and error, and a calibration source. The master-potentiometer output voltage is a linear function of test-potentiometer shaft rotation with accuracy ranging from 0.01 percent for the one-turn output shaft to 0.003 percent for the 15-turn output shaft. (Analog Controls, Inc., Dept. 734)

- **Amplifiers** for oscillograph recorders drift less than 0.5 mv equivalent input per hour and will operate from 115v ±5v power lines without additional regulation. Input impedance is 2 megohm. Frequency compensation for galvanometer characteristics is designed for plug in. Automatic signal overload protection prevents galvanometer burnout. (Epsco, Inc., Dept. 723)

- **Vacuum Pumping System** is a 3-in. system with a separate roughing line for initial evacuation of the bell jar. Pumping time to 10^-4 mm-Hg is 20 min. Ultimate pressure is 5 x 10^-6 mm-Hg. Ionization and thermocouple gages measure vacuum. (Bon-De Electronic Laboratories, Inc., Dept. 731)

- **Digital Recorder** is a self-balancing, null-type indicator recorder for full scale of 0 to 100 mv. Minimum printing cycle is 3 sec, and full-scale response time is 3 sec. Accuracy is ±0.5 percent. (Research Appliance Co., Dept. 729)

- **Power-Density Meter** measures power density of high-level microwave fields. The meter reads directly from 1 to 20 mw/cm^2 with accuracy of ±0.3 ±2 db. Three standard types cover the frequency ranges 2700 to 3300, 5200 to 5900, and 8500 to 9600 Mcy/sec. The meters are battery-operated and self-calibrating. Total weight is 6 lb, including batteries. (Sperry Microwave Electronics Co., Dept. 732)

- **Phase Meter** for the frequency range from 15 to 500 Mcy/sec consists of a phase-indicator unit and a time-delay unit. The former indicates when input signals are in phase or 180 deg out of phase. Minimum input signal is 1 v r.m.s. with panel meter or 20 µv with external receiver detector. Accuracy is ±0.05 deg or ±1 percent up to 200 Mcy/sec and ±2 percent at 500 Mcy/sec. (AD-YU Electronics Laboratory, Inc., Dept. 733)

Joshua Stern
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<td>PIPETTE (1 ml in 0.01) (Serological)</td>
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<td>PIPETTE (5 ml) (Volumetric)</td>
<td>1.19</td>
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<td>PIPETTE (1 ml) (Ostwald)</td>
<td>1.14</td>
<td>1.28</td>
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<td>CENTRIFUGE TUBE (15 ml)</td>
<td>1.28</td>
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<td>FLASK (100 ml) (Glass Stoppered)</td>
<td>2.73</td>
<td>3.01</td>
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<td>CYLINDER (100 ml) (Squibb)</td>
<td>2.71</td>
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Letters

Presentation before Publication

It was a surprise to me to find that the editorial entitled "Behind the Times" [Science 129, 301 (1959)] suggested a journal policy of refusal to release any information to newspaper reporters prior to publication of an article. In many cases the researcher, or member of the research team, has already released such information in full by presentation at national conventions, regional meetings, or state-level programs. Large professional gatherings have established press rooms where abstracts or manuscripts originally submitted to the program committee have been made available to journalists.

To further temper journalistic extrapolation with scientific caution, interviews have been arranged between speakers and reporters.

The editorial writer noted "... that journals are not the only means of communication in the scientific world. Consequently, on occasion a reporter will come upon a piece of research that he finds newsworthy, but which ... has not yet appeared [in print]." The phrase on occasion seems too limited; often or frequently would seem to be better choices.

A previous editorial [Science 127, 1145 (1958)] reminded us that science did not exist until communication was established among scientists. Denial of scientific information to the wide audience covered by newspapers may possibly hamper the development of science. For surely scientists today do not wish to communicate exclusively with their colleagues. Hyperspecialization has made that undesirable. What scientists read in their professional literature may contain no more information than what they hear at their periodic assemblages. Since reporters are encouraged to attend many such gatherings, it seems churlish to deny them access to the contents of journals prior to publication.

The responsibility for an accurate report lies with the scientist. The responsibility for an accurate interpretation lies with the reporter, whether he reads a manuscript, hears a paper, or studies an article.

Dell Lebo

Child Guidance and Speech Correction Clinic, Jacksonville, Florida

The Word "Ecology"

It has been stated by a number of historians of science that the word ecology was coined by the German naturalist and Darwinian Ernst Heinrich Haeckel (1834–1919). Indeed, the Oxford English Dictionary attributes the first use of the word to Haeckel's The History of Creation (1875), quoting both from the preface of this work (in translation, "The great series of phenomena of comparative anatomy and ontogeny ... chorology and ecology") and from Haeckel's Evolution of Man (1879) ("All the various relations of animals and plants to one another and to the outer world, with which the Oekology of organisms has to do ... "). The Encyclopedia Britannica says in its article on "Ecology": "In 1869 Ernst Haeckel stated that the individual was a product of co-operation between the environment and organismal heredity. This relation was called 'ecology.'" Paul B. Sears in his book Charles Darwin: The Naturalist as a Cultural Force (Scribner's, 1950) writes (page 42): "Haeckel's grasp of the problems of living nature is suggested by the fact that he coined the word 'ecology,' now 'ecology,' to cover the study of the broad configurations which exist within and among communities of organisms," and in the same work (page 56) Sears pinches down the date of this coinage to the year 1866. George Sarton, in A History of Science (Harvard University Press, 1952), repeats this attribution to Haeckel.

Recently, in reading The Correspondence of Henry David Thoreau, edited by Walter Harding and Carl Bode (New York University Press, 1958), I came across a use of the word ecology antedating Haeckel's by several years. In a here-tofore unpublished letter to his cousin George Thatcher, of Bangor, Maine, dated 1 January 1858, Thoreau wrote: "Mr Hoar is still in Concord, attending to Botany, Ecology, &c with a view to make his future residence in foreign parts more truly profitable to him." Edward Hoar was Thoreau's Concord neighbor and his companion on several trips, including the famous journey to the Maine woods in 1857. The casualness with which the word ecology would certainly indicate that it was not of his own mintage and that his cousin would understand it. The inference, too, is that Hoar knew it also.

Thoreau was a wide reader in the literature of natural history. He had read The Voyage of the Beagle and quotes it in his Journal. We have no record that he had read Haeckel. In fact, in 1858 Haeckel was only 24 years old, probably then studying medicine, with his biological career still ahead of him.

So, who did coin the word ecology? And where did Thoreau and Hoar pick up the word? It would be interesting to know, for Thoreau was certainly an ecologist and possessed a fundamental understanding of the principles of ecology, though it did not attain the stature of a recognized science until long after his day.

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