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...

Reference: D. H. Spackman, W. H. Stein, and S. Moore, "Automatic Recording Apparatus for use in the Chromatography of Amino Acids", Anal. Chem., 30, 1190-1206, 1958.

Beckman Spinco Division Beckman Instruments, Inc. S-6442

Chart at left is analysis of amino acids found in protein hydrolyzates: top run on 150-cm column at 50°C and pH 3.25 buffer, with changeover to pH 4.25 buffer at 6 hours; lower run on 15-cm column at 50°C and pH 5.28 buffer

ACIDIC AND NEUTRAL AMINO ACIDS

Constant C

1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 -

<sup>B</sup>-ALANINE

TYROSINE, PHENYLALANINE <sup>3</sup>-AMINOISOBUTYRIC ACID, GLUCOSAMINE

ALLOHYDROXYLYSINE

ORNITHIN

ETHANOLAMINE

AMMONIA

LYSINE

1-METHYLHISTIDIN

HISTIDINE

ANSERINE

CARNOSINE

CREATININE

350 ml Y-AMINO-N-BUTYRIC ACID

HYDROXYLYSINE

C

ASPARTIC ACID

THREONINE

GLUTAMIC ACID

ALANINE

VALINE

METHIONINE

PHENYLALANIN

LYSINE

HISTIDINE

AMMONIA

50 C

100 ml

150 ml

C

PROLINE

CYSTINE

(PH 4.25 BUFFER BREAK-THROUGH)

20

250

SERINE

Chart at right shows components in physiological fluids: 50-cm column at 30°C and pH 4.26 buffer, with changeover to 50°C at 14 hours. Results are reproducible to better than 3 percent.

## 27 November 1959, Volume 130, Number 3387

# SCIENCE

Editorial	Cranberry Smash	1447
Articles	"On the Origin of Species": An Unpublished Version: R. C. Stauffer The uncompleted draft of the longer work establishes new facts about the evolution of Darwin's thought.	1449
	Darwin or Spencer?: G. K. Plochmann	1452
	Introducing Industry in Peasant Societies: <i>M. Nash</i>	1456
Science in the News	American Group Studies Soviet Programs for Disseminating Scientific Information; United Nations Assembly Asks All States To Halt Atom Tests	1462
Book Reviews	A. P. Okladnikov's Ancient Population of Siberia and Its Cultures, reviewed by C. S. Chard; other reviews	1467
Reports	Eastern Equine Encephalitis Virus Isolated from <i>Culex nigripalpus</i> in Trinidad: W. G. Downs, T. H. G. Aitken, L. Spence	1471
	The Clock Paradox: M. L. Boas	1471
	Serological Procedure for the Detection of Antibodies to Penicillin: M. Epp	1472
	Field of Doctorate Specialization as a Function of Size of High-School Graduating Class: L. R. Harmon	1473
	Enzymatic Factors in Experimental Galactose Cataract: S. Lerman	1473
	Requirement of Bound Calcium for the Action of Surface Chemoreceptors: H. M. Lenhoff and J. Bovaird	1474
	Molting of Preadult Nematodes of the Genus <i>Paratylenchus</i> Stimulated by Root Diffusates: <i>H. L. Rhoades</i> and <i>M. B. Linford</i>	1476
	Growth of Tobacco Mosaic Virus Particles: G. W. Sears	1477
	Induced Synthesis of Liver Microsomal Enzymes Which Metabolize Foreign Compounds: A. H. Conney et al.	1478
Association Affairs	Programs Planned for the AAAS Chicago Meeting	1480
Departments	New Products	1487
Cover	Julian S. Huxley, noted British biologist, editor, writer, and grandson of T. H. Huxley, "Darwin's Bulldog," in the library of Charles Darwin's home at Down, Kent, England. [From "The Ladder of Life," one of the Columbia Broadcasting System's weekly tele- vision shows in the <i>Conquest</i> series]	





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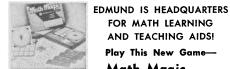
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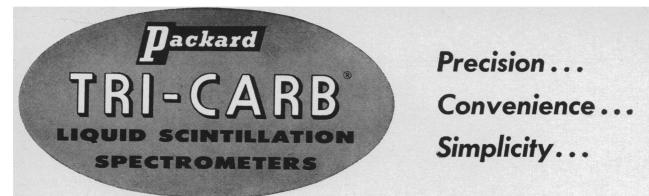
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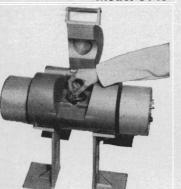


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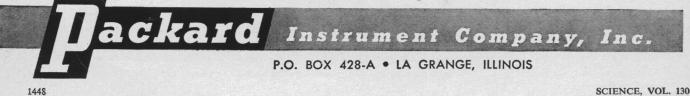
#### Manual

Model 314 is for laboratories not anticipating increased counting in the near future. Even this model, however, can be converted to fully automatic operation, if and when required. This is done by replacing the manual with the automatic sample chamber and shield and by adding the digital printer and transistorized automatic control cabinet.

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c/o AAAS Convention Booth 93 Morrison Hotel Chicago, Ill. Robert A. Bullington, Northern Illinois University; William C. Forbes, Oakland County Schools, Michigan; Kenneth E. Vordenberg, Cincinnati Public Schools: Milton O. Pella, University of Wisconsin; James A. Rutledge, University of Nebraska; J. Donald Henderson, University of North Dakota; Peter M. Dean, Wayne State University; John G. Navarra, Jersey City State College; Albert Piltz, Detroit Public Schools; Robert A. Rice, Berkeley Public Schools, California; Sylvia S. Neivert, Bayside High School, New York; Edmund T. Burke, Montgomery County Schools, Maryland.

Part III; Summary of Round-Table Discussions; Donald G. Decker, presiding.

Conference on the Future Scientists of America Program; 30 Dec.; Zachariah Subarsky, Bronx High School of Science, presiding.

American Nature Study Society. Session on "Natural History of the Chicago Area"; 27 Dec.; Stanley B. Mulaik, University of Utah, presiding. Papers on reptiles and amphibians of the Chicago area (James A. Fowler, Cranbrook Institute of Science); plant life of the Chicago area (Floyd A. Swink, Forest Preserve District of Cook County); native grasses and ecology of the Illinois prairie (Alice Goodrich, Chicago); Chicago and the rest of the universe (Daniel Q. Posin. DePaul University); the dunes area (Terzo P. Amidie, Gary, Ind.).

Session on "Contributions of Research toward a Better Interpretation of Nature"; 28 Dec.; Emery L. Will, New York State University, College of Education, presiding. Papers on interrelationships of biological and physical sciences in ecological studies (Ted F. Andrews, Kansas State Teachers College); the naturalist and the scientist (Harlow B. Mills, Illinois State Natural History Survey); natural history research for the layman (Verne N. Rockcastle, Cornell University); importance of scientific accuracy in field studies for better nature interpretation (Howard H. Michaud, Purdue University).

Session on "Reaching the Public-Problems Ahead"; 28 Dec.; H. Raymond Gregg, National Park Service, presiding. Papers on public information program for adults (Roland F. Eisenbeis, Forest Preserve District of Cook County, Ill.); nature study in tomorrow's schools (John W. Brainerd, Springfield College); the fight for wilderness in an urban society (William J. Beecher, Chicago Academy of Science); the National Park Service prepares for the future (John E. Doerr, National Park Service); reaching America's youth through the Boy Scouts of America (E. Laurence Palmer, Ithaca, N.Y.).

Session on "Nature Writing for the Present and Future"; 29 Dec.; S. Glidden Baldwin, Danville, Ill., presiding. Papers on an author looks to the future (Robert M. McClung, Chevy Chase, Md.); writing for today's children (Dorothy M. Matala, Iowa State Teachers College); royalty, retirement, and rebellion: three R's of nature writing (E. Laurence Palmer); watching the birds with a million readers (Anne Douglas, Gary, Indiana).

Banquet; 29 Dec.; arranged by Elizabeth Blair, Barrington, Ill., with Stanley B. Mulaik, University of Utah, presiding. Address: "Adventure in Africa," by Murl Deusing, Museum of Science and Natural History.

Joint Sessions of the Four Science Teaching Societies. General session on "Man and Space Travel"; 27 Dec.; arranged by Robert H. Carleton, National Science Teachers Association, who will preside. Papers on surface of the moon (John A. O'Keefe, National Aeronautical and Space Administration); the place of planetaria in teaching space science (James A. Fowler, Cranbrook Institute of Science).

Elementary-Junior High School Science Assembly; 29 Dec.; J. Myron Atkin, University of Illinois, presiding. Papers on the building of science programs: kindergarten-grade 8 (Ernest Bonhivert, Glencoe Public Schools. Illinois); teaching about chemical changes (Kenneth George, Midlothian Public Schools, Illinois); teaching modern concepts in astronomy (Fred Wilkin. Highland Park Public Schools, Illinois): teaching about insects (Alvin Quinn. Lincolnwood Public Schools, Illinois).

#### **Programs of General Interest**

Academy Conference. Junior Scientists Assembly, four sessions at the Chicago Museum of Natural History; 29 and 30 Dec.; arranged by M. B. Sailsbury, Evanston Township High School. Illinois. Many selected students from the Chicago area, who are interested in science as a career, have been invited to the Assembly. The program will consist of a series of meetings on different frontiers of science with emphasis on science projects in order to assist students in choosing a project on which they may work. At each session different outstanding completed projects will be shown.

Junior Academy session; 27 Dec.: Elnore Stoldt, Jacksonville Illinois High School, presiding; H. Neil Hardy, Ohio State University, recorder. Papers on a brief review of former Junior Academy sessions (H. Neil Hardy); the Louisiana Junior Academy Project supported by the National Science Foundation (Harry J. Bennett, Louisiana State University); the Tennessee Junior Academy Program supported by the National Science Foundation (M. S. McCay, University of Chattanooga); the Young Naturalists'



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### GRASSLANDS

Editor: Howard B. Sprague 1959

6" x 9", 424 pp., 37 illus., index, cloth. Price \$9.00, AAAS members' cash orders \$8.00. AAAS Symposium Volume No. 53.

This volume is intended as a review of knowledge on many aspects of grasslands resources. The 44 authors were selected by their own professional colleagues as being particularly competent to present the respective subjects. Thirty-seven papers are arranged under these chapter headings:

- 1. Sciences in Support of Grassland Research
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- 3. Engineering Aspects of Grassland Agriculture
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- 7. Ecology of Grasslands
- 8. Range Management

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and Young Technicians' Circles—Soviet counterpart of the Junior Academy of Science (C. Leplie Kanatzar, MacMurray College).

Business meeting and reports; 28 Dec.; A. M. Winchester, Stetson University, presiding. Papers on the do's and don'ts of applying for National Science Foundation and other grants (John A. Yarbrough, Meredith College); Academy utilization of AAAS grants over the past ten years (Clinton Baker, Southwestern at Memphis).

Panel discussion on current senior academy problems; 28 Dec.; John G. Arnold, Jr., Loyola of New Orleans, presiding. Discussion on membershiphow to increase it (Kenneth B. Hobbs, Ohio Academy of Science); attendance -how to stimulate it (W. C. Oelke, Grinnel College). There will be a debate on the topic "Academies of Science should establish permanent headquarters and obtain full time executive leadership." The affirmative will be taken by Robert C. Miller (California Academy of Sciences) and Harold W. Hansen (Minnesota Academy of Science); the negative by P. H. Yancey (Alabama Academy of Science) and Wavne Taylor (Michigan Academy of Science).

Academy Conference Dinner and Presidential Address: "Tribulations of the Science Textbook Author," by A. M. Winchester, Stetson University; 28 Dec.; John A. Yarbrough, presiding.

American Council on Women in Science. Conference on Encouraging the Participation of Women in Science, cosponsored by Sigma Delta Epsilon; 28 Dec.; keynote speaker, Alan T. Waterman, National Science Foundation. There will be three panel workshops following Dr. Waterman's address: motivating women to select and advance in scientific careers, problems of the working woman scientist, undergraduate and graduate training for women in science.

Conference on Scientific Communication. Symposium: "Research in Documentation and Communication"; 29 Dec.; Joseph Gray Jackson, William Steell Jackson and Sons, presiding. Papers on semiautomatic indexing and encoding (Julius Frome, U.S. Patent Office); metallurgical document classification, storage, and retrieval (Marjorie R. Hyslop, Metal Progress); storing numerical values in an inverted file for mechanized information retrieval (D. D. Andrews, U.S. Patent Office); machine literature searching in science (Allen Kent, Western Reserve University).

Symposium: "International Communications in Science"; 29 Dec.; J. George Adashko, Soviet Physics, presiding. Papers on going abroad for translations (W. E. Sievers, National Science Foundation); who is winning the information war? (G. H. Rostky, *Electronic* Design); tracking the Russian satellite and rocket literature (I. Hersey, American Rocket Society); a combination translation and abstracting program (G. Herrmann, Columbia University).

Session on the Principles of Communication, cosponsored by Science Service; 30 Dec.; writing and science presentation by Watson Davis, Science Service.

Conference on Scientific Manpower. Two sessions: "Higher Education and Training in Emerging Fields of Science and Technology," cosponsored by the Engineering Manpower Commission, the Scientific Manpower Commission, the National Research Council, the National Science Foundation, and AAAS Section M-Engineering; 28 Dec. Part I; papers on engineering programs in the light of new technology (Harold L. Hazen, Massachusetts Institute of Technology); graduate training and the space sciences (John P. Hagen National Aeronautics and Space Administration); education and manpower problems in oceanography (Gordon A. Riley, Yale University).

Part II; S. B. Ingram, Bell Telephone Laboratories, presiding. Papers on implications of nuclear sciences developments for graduate training (Charles W. Shilling, Atomic Energy Commission); graduate training for metallurgy (Walter R. Hibbard, Jr., General Electric Company); graduate training requirements in chemical fuels (Richard D. Geckler, Aerojet-General Corporation).

Honor Society of Phi Kappa Phi. Triennial meeting; 30 and 31 Dec.

National Association of Science Writers. Business meeting; 28 Dec. Reception and dinner, by invitation; 27 Dec.; presentation of AAAS-Westinghouse Science Writing Awards; Pierre C. Fraley, Philadelphia Bulletin, presiding.

Scientific Research Society of America. Annual convention; 29 Dec. There will be a joint luncheon with the Society of the Sigma Xi; 29 Dec. Scientific Research Society of America address and award of the William Procter Prize will follow the luncheon.

Sigma Delta Epsilon. National Council and Board of Directors Meeting; 27 Dec.; Esther S. Anderson, Bureau of the Census, presiding.

Annual dinner and grand chapter meeting; 29 Dec.; Esther S. Anderson, presiding.

Luncheon for all women in science and address: "Science in Education and Education in Science," by Delaphine Rosa Wyckoff, Wellesley College; 30 Dec.; Esther S. Anderson, presiding.

The Society of the Sigma Xi. Sixtieth Annual Convention; 29 Dec.

Address, jointly with Phi Beta Kappa: "Adventure in Learning," by Lee A. DuBridge, California Institute of Technology; 29 Dec.