Meetings and Societies

National Science Teachers

The fifth annual convention of the National Science Teachers Association, an affiliate of the AAAS and a department of the National Education Association, was held in Cleveland, Ohio, 20–23 Mar. The theme for the sessions was "New frontiers for science teachers." Each day of the convention brought into focus a different facet of this general theme.

On 20 Mar. attention was centered on "Frontiers in national security." The keynote speaker was Arthur S. Flemming (U.S. Office of Defense Mobilization). "Science and the social frontiers" was the theme for the second day's sessions. I. Bernard Cohen (Harvard University) spoke on "The impact of science on society."

The third day of the convention had as its theme "Frontiers in scientific research." The main feature of this day's general session was a symposium, with presentations by Dennis Flanagan (*Scientific American*), Paul B. Sears (Yale University), and Elmer Hutchisson (Case Institute of Technology). Each of these speakers contributed his viewpoint on new developments in scientific thinking and their implications for science teaching. This was followed by a panel discussion and by questions from the floor. Members of the panel represented science teaching at levels of elementary, secondary, and higher education. The last day of the convention centered on the theme "New responsibilities for science teachers." Paul L. Dressel (Michigan State University) delivered the keynote address.

Each of the programs was followed by a series of panel discussions or work-discussion groups, which provided participants with a chance to share ideas related to the theme and the keynote address of the day. These opportunities to discuss implications for science teaching were not the only rewards for the nearly 1300 science educators who attended, from all parts of the nation. They also had ample opportunity to bring themselves up to date through addresses such as "The space satellite" and the "International Geophysical Year," delivered by Jason J. Nassau (Warner-Swasey Observatory, Case Institute of Technology). This address was followed by a series of special demonstrations in the fields of physics, chemistry, biology, and general science. The highlight of the annual banquet was a presentation by Laurence H. Snyder (University of Oklahoma). In his paper on "The rationality of some intuitive foundation stones," Snyder showed how recent developments in genetics and biochemistry lend convincing support to theories that were formerly based on uncannily shrewd intuitive hypotheses.

Popular features of the convention included industrial and educational tours in the Cleveland vicinity, commercial exhibits of scientific supplies and resources, and "Here's how I do it" sessions—exchanges of practical, down-to-earth ideas for teaching science more effectively. A successful new feature was the "Curbstone clinic," which provided an opportunity for conferees to engage in informal group discussions with informed consultants of their choice in more than a score of related fields.

Election of new officers for the coming year was held. Convention members were told of plans that are already under way for the sixth annual NSTA convention, to be held in Denver, Colo., 26–29 Mar. 1958. Donald Decker (Colorado State College of Education) will be the host chairman.

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Society Elections

■ Society for Investigative Dermatology: pres., Walter C. Lobitz, Jr., Hanover, N.H.; v. pres., Hermann K. B. Pinkus, Monroe, Mich.; sec.-treas., Herman Beerman, Society of Investigative Dermatology, 255 S. 17 St., Philadelphia 3, Pa.; directors, 1957–62, Eugene M. Farber, San Francisco, Calif., and Albert M. Kligman, Hospital of the University of Pennsylvania, Philadelphia, Pa.

■ National Association of Biology Teachers: pres., John Breukelman, State Teachers College, Emporia, Kans.; past pres., John P. Harrold, Midland High School, Midland, Mich.; pres.-elect, Irene Hollenbeck, Southern Oregon College, Ashland; 1st v. pres, Howard E. Weaver, University of Illinois, Urbana; 2nd v. pres., Frances L. Hall, Columbia University, New York, N.Y.; 3rd v. pres., Robert L. Smith, DeKalb High School, DeKalb, Ill.; sec.-treas. Paul V. Webster, Bryan City Schools, Bryan, O.

■ American Surgical Association: pres., John H. Mulholland, New York University College of Medicine, New York, N.Y.; 1st v. pres., Richard K. Gilchrist; 2nd v. pres., Henry N. Harkins; sec., William A. Altemeier, Christian R. Holmes Hospital, Cincinnati, Ohio; treas., John C. Burch.

■ National Association of Science Writers: pres., Milton Silverman, San Francisco *Chronicle,* San Francisco, Calif.; v. pres., John Troan, Pittsburgh *Press,* Pittsburgh, Pa.; sec.-treas., Pierre C. Fraley, Science Editor, Philadelphia *Bulletin,* Philadelphia, Pa.

Forthcoming Events

August

5–6. Experimental Psychology and Animal Behavior Section of Internatl. Union of Biology, Brussels, Belgium. (H. S. Langfeld, Dept. of Psychology, Princeton Univ., Princeton, N.J.)

5–11. Pan American Cong. of Pediatrics, 5th, Lima, Peru. (C. F. Krumdieck, Washington 914, Lima.)

5–17. Curare and Curare-Like Agents, internatl. symp., Rio de Janeiro, Brazil. (C. Chagas, Instituto de Biofisica, Universidade do Brasil, 458 Avenida Pasteur, Rio de Janeiro.)

6–9. Poultry Science Assoc., annual, Columbia, Mo. (C. B. Ryan, Texas A.&M. College, College Station.)

6–16. World Conf. against A and H Bombs and for Disarmament, 3rd, Tokyo, Japan. (K. Yasui, Tokyo Univ., Tokyo.)

7–9. Industrial Applications of X-Ray Analysis, 6th annual conf., Denver, Colo. (J. P. Blackledge, Metallurgy Div., Denver Research Inst., Univ. of Denver, Denver 10.)

7–9. International Union against the Venereal Diseases and the Treponematoses, 31st general assembly, Stockholm, Sweden. (Secretary General, Institut Alfred Fournier, 25, boulevard Saint-Jacques, Paris 14e, France.)

8–15. International Statistical Inst., 30th, Stockholm, Sweden. (Secretary General, ISI 30th Session, Fack, Stockholm 5.)

8–15. International Union for the Scientific Study of Population, Stockholm, Sweden. (F. Lorimer, c/o American University, Washington 16.)

11–14. Heat Transfer, national conf., University Park, Pa. (G. M. Dusinberre, Pennsylvania State Univ., University Park.)

11–16. Canadian Pharmaceutical Assoc., 50th anniversary convention, Montreal, Quebec, Canada. (A. F. Larose, Faculty of Pharmacy, Univ. of Montreal.)

11–17. World Federation for Mental Health, 10th annual, Copenhagen, Denmark. (Miss E. M. Thornton, 19 Manchester St., London, W.1, England.)

12–16. Canadian Teachers' Federation, annual, Edmonton, Alberta, Canada. (G. G. Croskery, 444 MacLaren St., Ottawa 4, Ont.)

12–18. Theory of Functions, internatl. colloquium, Helsinki, Finland. (B. Eckmann, Ecole Polytechnique, Federale, Zurich, Switzerland.)

12–25. International Soc. of Soil Mechanics and Foundation Engineering, 4th Conf., London, England. (A. Banister, Institution of Civil Engineers, Great George St., London, S.W.1.)

18–21. American Astronomical Soc., Urbana, Ill. (J. A. Hynek, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 38, Mass.)

19–21. National Council of Teachers of Mathematics, Northfield, Minn. (M. H. Ahrendt, NCTM, 1201 16 St., NW, Washington 6.)

19–22. American Veterinary Medical Assoc., annual, Cleveland, Ohio. (J. G. Hardenbergh, AVMA, 600 S. Michigan Ave., Chicago 5, Ill.)

19–23. Clay Conf., 6th natl., Berkeley, Calif. (Dept. of Conferences and Special Activities, Univ. of California Extension, Berkeley 4.)

19–23. Clinical Chemistry, 2nd international European cong., Stockholm, Sweden. (K. Agner, Box 12024, Stockholm 12.)

19–23. Plant Science Seminar, 34th annual, Montreal, Quebec, Canada. (F. L. Mercer, St. Louis College of Pharmacy, St. Louis 10, Mo.)

19–24. Finite Groups, internatl. colloquium, Tübingen, Germany. (H. Wielandt, Faculty of Mathematics and Natural Science, Eberhard-Karls-Universität, Tübingen.)

19–24. High Energy Physics Symp., Oak Ridge, Tenn. (University Relations Div., Oak Ridge Inst. of Nuclear Studies, P.O. Box 117, Oak Ridge.)

19–24. New England Assoc. of Chemistry Teachers, 19th summer conf., Waterville, Maine. (Rev. J. A. Martus, College of the Holy Cross, Worcester 10, Mass.)

19–24. Origin of Life, internatl. symp., Moscow, U.S.S.R. (G. A. Deborin, Inst. of Biochemistry, U.S.S.R. Acad. of Sciences, B. Kaluzskaya 33, Moscow, B.71.)

20–22. Liquid Scintillation Counting Conf., Evanston, Ill. (C. G. Bell, Jr., Technological Inst., Northwestern Univ., Evanston.)

20–23. Western Electronic Convention, annual, San Francisco, Calif. (D. B. Harris, Electron Tube Research, General Electric Microwave Lab., Palo Alto, Calif.)

21–24. Pi Lambda Theta, New York, N.Y. (C. Johnson, Pi Lambda Theta, 307 Portland Bldg., 1129 Vermont Ave., NW, Washington 5.)

22–5. International Scientific Radio Union, 12th general assembly, Boulder, Colo. (K. A. Norton, Boulder Laboratories, National Bur. of Standards, Boulder.)

24–26. International Soc. for Biological Rhythm, 6th conf., Semmering, Austria. (A. Sollberger, Anatomical Department, Karolinska Institutet, Stockholm 60, Sweden.)

25–27. Pacific Division-AAAS, annual, in conjunction with American Inst. of Biological Sciences, Stanford, Calif. (R. C. Miller, California Academy of Sciences, Golden Gate Park, San Francisco, Calif.)

25–28. American Farm Economic Assoc., natl., Asheville, N.C. (L. S. Hardin, Dept. of Agricultural Economics, Purdue Univ., Lafayette, Ind.)

25–29. American Institute of Biological Sciences, annual, Stanford, Calif. (H. T. Cox, AIBS, 2000 P St., NW, Washington 6.)

26–28. Gas Dynamics Symp., 2nd, Evanston, Ill. (A. B. Cambel, Technological Inst., Northwestern Univ., Evanston.)

26–29. Boundary Layer Research, internatl. symp., Freiburg, Breisgau, Germany. (H. Görtler, Mathematisches Institut der Universität, Hebelstrasse 40 Freiburg, Breisgau.)

26–29. Mathematical Assoc. of America, 38th summer, University Park, Pa. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

26–30. American Mathematical Soc., 62nd summer, University Park, Pa. (J. H. Curtiss, AMS, 190 Hope St., Providence 6, R.I.)

26–30. Infrared Spectroscopy Inst., 8th annual, Nashville, Tenn. (N. Fuson, Infrared Spectroscopy Inst., Fisk Univ., Nashville 8.)

26–31. Low Temperature Physics and Chemistry, 5th internatl. conf., Madison, Wis. (J. R. Dillinger, Dept. of Physics, Univ. of Wisconsin, Madison 6.)

27. Society for Industrial and Applied Mathematics, summer, University Park, Pa. (D. L. Thomsen, Jr., 807 Enquirer Bldg., Cincinnati 2, Ohio.)

27–29. American Sociological Soc., annual, Washington, D.C. (Mrs. M. W. Riley, ASS, New York Univ., Washington Sq., New York 3.)

27–30. Biological Photographic Assoc., 27th annual, Rochester, Minn. (S. J. McComb, Section of Photography, Mayo Clinic, Rochester.)

28–30. Gas Chromatography, internatl. symp., East Lansing, Mich. (H. J. Noebels, IGC Symp., Instrument Soc. of America, 313 Sixth Ave., Pittsburgh, Pa.)

28–31. Soil Conservation Soc. of America, annual, Asilomar, Calif. (H. W. Pritchard, 838 Fifth Ave., Des Moines 14, Iowa.)

28–3. Cell Biology, 9th internatl. cong., St. Andrews, Scotland. (H. G. Callan, Dept. of National History, Bell Pettigrew Museum, The University, St. Andrews, Fife.)

29–30. Computers and Data Processing, 4th annual symp., Denver, Colo. (J. M. Cavenah, Denver Research Inst., Univ. of Denver, Denver 10.)

29–30. Econometric Soc., European meeting, Luxemburg, Duchy of Luxemburg. (Econometric Soc., Box 1264, Yale Station, New Haven, Conn.)

29–31. Group Psychotherapy, 2nd internatl. cong., Zurich, Switzerland. (S. Lebovici, 3, Avenue President Wilson, Paris 16e, France.)

(See issue of 21 June for comprehensive list)

LETTERS

The editors take no responsibility for the content of the letters published in this section. Anonymous letters will not be considered. Letters intended for publication should be typewritten double-spaced and submitted in duplicate. A letter writer should indicate clearly whether or not his letter is submitted for publication. For additional information, see Science **124**, *249 (1956) and* **125**, *16 (4 Jan. 1957).*

"Clocking" Horse Races

The articles by M. H. Lietzke [*Science* **124**, 178 (1956)] and by George P. Meade [*Science* **124**, 1025 (1956)] deal with measuring athletic performance and, in particular, consistent running records by time-distance measurements.

In my research in the field of racing prepotency of Thoroughbred horses, I have found that racing performance of horses cannot be measured sufficiently accurately by time-distance measurements. Horsemen have long known that no two tracks are equally fast, that no single track is consistently fast from day to day and often from hour to hour, and that trackmasters can and do vary track conditions at will, within certain limits.

Moreover, nearly all time measurements of athletic events are made by manually operated stop watches. I do not believe that there is any fixed way in which timers operate their stop watches. The turnover in personnel is large. In 1955 there were 98 official timers, only 21 of whom had served for as long as 6 years. During the 40-year period covered by the data on stakes races and the longer period covered by the data on track records, the individual timers must have numbered in the thousands. Consequently, it is not likely that there is a universal, systematic method of timing. Time measurements are likely to be inaccurate to at least one interval of measurement (usually 1/5 second, which is equivalent to 10 to 12 feet in horse running races) as a result of human psychological aberrations.

Fractional-second times for Thoroughbred running races for the period 1910–1949 are given by the *American Racing Manual* (Triangle, Chicago, 1950) as follows: (i) Track records through 1949 on all listed tracks (1416 races): 1/5 second, 16.9 percent; 2/5 second, 19.5 percent; 3/5 second, 19.9 percent; 4/5 second, 16.7 percent; even seconds, 27 percent. (ii) One hundred major stakes events (3183 races): 1/5 second, 16.1 percent; 2/5 second, 19.2 percent; 3/5 second, 19.8 percent; 4/5 second, 17.3 percent; even seconds, 27.6 percent.

These data show that "clockers" dislike timing races in the fractional intervals and prefer even seconds. There is a small net change of actual times from