

information science. That it will take some time to link the theoretical with the practical seemed obvious to all of the participants, including the ten scholars who delivered imaginative and frequently entertaining critiques of the eight formal papers. It is presently anticipated the symposium papers will be published some time during the first half of 1966.

The symposium was supported by the National Science Foundation and the Syracuse University Division of Summer Sessions.

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### **Iroquois Research**

A tradition begun in 1945 when students of the various aspects of Iroquois culture, history, and prehistory first met was revived this year at the 1965 Conference on Iroquoian Research held at Glens Falls, New York, 15–17 October. Again, as in the past, the usefulness of an informal research conference at which ideas may be exchanged and results of recent research presented was affirmed.

The meeting opened with reports on the changes on the Allegany Reservation brought about by the imminent flooding of a substantial part of the reservation by the reservoir of the Kinzua Dam. William N. Fenton (New York State Museum) reported on the adjustments made by some 130 families when they moved from their old houses into new ranch-style houses in two relocation centers. He noted that this was not the first time the Senecas had radically and successfully adapted their housing to the changing times. George Abrams (State University of New York, Buffalo) reported on the moving of the fire from the old Coldspring Longhouse, now torn down, to the new Longhouse, an occasion on which Iroquois from the various reservations met to affirm their faith that the Longhouse rituals at Allegany will continue in the new setting.

Reports on Iroquois settlement patterns were made by William A. Ritchie (New York State Museum), James A. Tuck (Syracuse University), Robert Funk (New York State Museum), Marian E. White (State University of New York, Buffalo), and Charles F. Hayes, III (Rochester Museum).

The diversity and quality of the other reports indicated also the intensity with which studies on the Iroquois are still being carried on. James F. Pendergast indicated how recent archeological work in eastern Ontario may change certain older ideas of Iroquoian prehistory. Alan McPherron (University of Pittsburgh), using archeological data obtained in recent excavations at the Straits of Mackinac, suggested how any analysis of pottery might show not only changes in spheres of influence, but also changes in residence patterns. James V. Wright (National Museum of Canada) argued for the utility of analysis of pottery in terms of attributes for the understanding of Iroquois prehistory. Gordon N. Day (National Museum of Canada) presented materials indicating that the usually accepted etymology of the word "Iroquois" was probably in error and suggested a more plausible origin. Cara Richards (Ithaca College) presented evidence from historic documents indicating that the 17th century Iroquoians did not have a customary rule of matrilineal residence as has been generally assumed. Thomas Abler (University of Toronto) traced the history of the change from hereditary chiefs to elected councillors during the first 20 years after the establishment of the Seneca Nation, indicating that this change was not accomplished without considerable wavering between the two factions. Charles H. Torok (Northeastern University) discussed acculturation on the Tyendinaga Reserve, indicating that on this reserve the usual indices of Iroquois conservatism (use of an Iroquois language, participation in Longhouse, clan affiliation, support of hereditary chiefs) are not applicable and that one must speak of two polarities—middle class and rural ideals—rather than levels of acculturation. Barbara Graymont (Columbia University) spoke on the interest the Tuscaroras currently have in reviving the use of their language. Harold Blau (Brooklyn Community College) described the meetings of the moieties held to influence the outcome of the Bowl Game played during the midwinter ceremonies at the Onondaga Longhouse in New York State. His paper indicated that the Bowl Game is more important in the ritual of the Onondagas than it is among the Senecas.

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### **Learning, Remembering, and Forgetting**

The behavioral processes of learning, remembering, and forgetting were the topics of discussion at a conference held in Princeton, New Jersey, 3–6 October 1965.

W. Grey Walter (Burden Neurological Institute, Bristol) reported that in human subjects a specific electrical effect appears if, and only if, a significant degree of signal association has been established and the person feels involved in some way. This phenomenon has been called the contingent negative variation or expectancy wave; it reflects very accurately the degree of expectancy felt by a person that one event implies another to which he should respond in some way. The wave behaves as if it were the outward and visible sign of a short-term memory.

Donald B. Lindsley (University of California, Los Angeles) continued the discussion by questioning what fraction of a neural discharge, initiated by light stimulus bearing information, is required to transmit the information, commit it to temporary storage, and permit its recognition or recall. He illustrated the role of vigilance and selective attention (central factors), in addition to peripheral or stimulus factors, relative to reception, storage, and recall. Attention and inattention were differentiated by magnitude of average evoked potentials corresponding to behavioral indices of detection and reaction time. Additionally, averaged evoked potentials reflected expectancy or anticipation, a response like that to a visual flash was noted even when no such flash occurred. This phenomenon appears to be related to the data described by Walter.

Two non-neurological models of the memory mechanism were described in detail. Edward A. Feigenbaum (Stanford) described his work with computer stimulation, and Richard Atkinson (Stanford) presented a mathematical model. Feigenbaum presented an information processing theory of a three-level memory. The three levels were: immediate memory (a small capacity, buffer storage mechanism); acquisition memory (an intermediate size "working memory" in which discrimination, learning, and familiarization take place); and a long-term store (permanent storage by association of the internal representations of familiar-

ized objects). Storage and retrieval processes for these memory levels, and the functional and process interactions between the levels, were discussed. Like Feigenbaum's model, Atkinson's distinguished between short-term and long-term memory systems and covered much data usually subsumed either under "learning" or "memory" but not both.

Autonomic indices of attention, readiness, and rejection of the external environment, were discussed. John Lacey (Fels Research Institute) demonstrated the relation among measures of heart rate, blood pressure, galvanic skin response, and respiration in a variety of situations. These and other data, both from human and animals, were discussed in the context of possible feedback of these effects into the central nervous system.

The conference was held under the auspices of the Interdisciplinary Communications Program of the New York Academy of Sciences, and was supported by the Office of Naval Research and the National Aeronautics and Space Administration. The proceedings of this conference, edited by Daniel P. Kimble, will be published under the auspices of the New York Academy of Sciences. The first volume, *The Anatomy of Memory*, is now available from Science and Behavior Books, Palo Alto, California.

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## Forthcoming Events

### February

22-24. **Offshore Exploration**, 1st conf., Long Beach, Calif. (P.O. Box 88, 2550 Via Tejon, Palos Verdes Estates, Calif.)

22-26. Canadian Assoc. of **Radiologists**, 29th annual, Montreal, Quebec. (The Association, 1555 Summerhill Ave., Montreal)

23-25. **Biophysical Soc.**, 10th annual mtg., Boston, Mass. (J. Baruch, Bolt, Beranek and Newman Inc., 50 Moulton St., Cambridge, Mass. 02138)

24-26. American Acad. of **Forensic Sciences**, Chicago, Ill. (S. R. Gerber, Law-Medicine Center, Western Reserve Univ., Cleveland, Ohio 44106)

24-26. Interdisciplinary Aspects of **Radiative Energy Transfer**, Philadelphia, Pa. (J. J. Welsh, Space Sciences Laboratory, General Electric Co., Box 8555, Valley Forge, Pa.)

25-26. **Thoracic Soc.**, spring mtg., London, England. (H. M. Foreman, Sully Hospital, Sully, Glamorganshire, England)

27-3. Society of **Economic Geologists**,

annual mtg., New York, N.Y. (J. Kallikoski, Dept. of Geology, Princeton, N.J.)

27-3. American Inst. of **Mining, Metallurgical, and Petroleum Engineers**, annual mtg., New York, N.Y. (The Institute, 345 E. 47 St., New York 10017)

27-4. International **Anesthesia Research Soc.**, Bal Harbour, Fla. (A. W. Friend, 227 Wade Park Manor, Cleveland, Ohio)

28-4. **Aerial Triangulation**, symp., Urbana, Ill. (M. B. Scher, Intern. Soc. for Photogrammetry, Commission 3, 9701 East Light Dr., Falls Church, Va.)

28-4. American **Crystallographic Assoc.**, mtg., Univ. of Texas, Austin. (W. L. Kehl, Gulf Research and Development Co., P.O. Drawer 2038, Pittsburgh, Pa. 15230)

28-4. American Assoc. of **Junior Colleges**, 46th annual conv., St. Louis, Mo. (The Association, 1315 16th St., NW, Washington, D.C. 20036)

### March

1-2. **Dairy Engineering**, natl. conf., Michigan State Univ., East Lansing. (C. W. Hall, Agricultural Engineering Dept., Michigan State Univ., East Lansing)

1-3. **Space Maintenance** and Extra-Vehicular Activities, natl. conf., Orlando, Fla. (M. B. Goldman, Mail No. 302, Martin Co., Baltimore, Md. 21203)

1-10. **Industrial Development** in the Arab Countries, regional symp., Kuwait. (Intern. Agency Liaison Branch, Office of the Director General, Food and Agriculture Organization, Via delle terme di Caracalla, Rome, Italy)

2-4. **Air Pollution** Medical Research, AMA conf., Los Angeles, Calif. (Dept. of Environmental Health, American Medical Assoc., 535 N. Dearborn St., Chicago, Ill. 60610)

2-4. **Plasmadynamics**, conf., Monterey, Calif. (American Inst. of Aeronautics and Astronautics, 1290 Sixth Ave., New York 10019)

2-4. **Scintillation and Semiconductor Counters**, 10th symp., Washington, D.C. (W. A. Higinbotham, Brookhaven Natl. Laboratory, Upton, L.I., N.Y.)

3-4. Louisiana Soc. for **Electron Microscopy**, 3rd annual symp., New Orleans. (W. R. Goynes, Southern Regional Research Laboratory, Box 19687, New Orleans)

3-5. **Pb-Zn-Barite-Fluorite** Symp., New York, N.Y. (C. H. Behre, Jr., Behre Dolbear & Co., 11 Broadway, New York 10004)

3-5. Central **Surgical Assoc.**, Chicago, Ill. (C. E. Lischer, 457 N. Kingshighway, St. Louis 8, Mo.)

4-5. **Cineradiology**, 5th symp., Rochester, N.Y. (R. Gramiak, Div. of Diagnostic Radiology, Univ. of Rochester Medical Center, Rochester 14620)

4-6. American Assoc. of **Pathologists and Bacteriologists**, 63rd annual mtg., Cleveland, Ohio. (P. Fitzgerald, Downstate Medical Center, 450 Clarkson Ave., Brooklyn 3, N.Y.)

5-10. International Acad. of **Proctology**, 18th annual conv., Miami Beach, Fla. (A. F. Cantor, 147-41 Sanford Ave., Flushing, N.Y. 11355)

6-11. American Soc. of **Photogrammetry**, Washington, D.C. (C. E. Palmer, 5917 Brookview Dr., Brookland Estates, Alexandria, Va.)

7-9. Fundamental **Cancer Research**, 20th annual symp., Univ. of Texas, Houston. (M. Mandel, Dept. of Biology, M. D. Anderson Hospital and Tumor Inst., Univ. of Texas, Houston 77025)

7-9. **Electric Propulsion**, 5th conf., American Inst. of Aeronautics and Astronautics, San Diego, Calif. (A. T. Forrester, Electro-Optical Systems, Inc., 300 N. Halstead St., Pasadena, Calif. 91107)

7-9. **Space**, 3rd congr., Cocoa Beach, Fla. (R. M. Barnes, PAA-Guided Missiles Range Div., Bldg. 423, MU 111, Patrick Air Force Base, Fla.)

7-11. American Soc. for **Metals**, western metal and tool exposition and conf., Los Angeles, Calif. (The Society, Metals Park, Ohio)

7-11. Society of **Plastics Engineers**, 22nd annual technical conf., Montreal, P.Q., Canada. (G. L. Bata, Union Carbide Canada, Ltd., P.O. Box 700, Pointe-aux-Trembles, P.Q.)

7-12. Inter-American **Nuclear Energy** Commission, 6th mtg., Washington, D.C. (J. D. Perkinson, Jr., Pan American Union, Washington 20006)

8-3. World **Meteorological Organization**, commission for synoptic meteorology, 4th session, Wiesbaden, Germany. (WMO, 41, avenue Giuseppe Motta, Geneva, Switzerland)

9-11. **Ethics in Medical Progress**, Ciba Foundation symp., London, England. (Ciba Foundation, 41 Portland Pl., London W.1)

9-13. Teaching Machines and **Programmed Instruction**, intern. symp., Nürtingen, Germany. (Arbeitsgemeinschaft Programmierte Instruktion, Inst. für Kybernetik, Pädagogische Hochschule Berlin, Malteserstr. 74-100, 1 Berlin 46)

10-11. **Heat Transfer** to Non-Newtonian Fluids, 12th annual heat transfer conf., Oklahoma State Univ., Stillwater. (J. D. Parker, Dept. of Mechanical Engineering, Oklahoma State Univ., Stillwater 74075)

11-13. National Council of **Teachers of Mathematics**, San Diego, Calif. (J. D. Gates, 1201 16th St., NW, Washington, D.C. 20036)

11-13. National **Wildlife Federation**, annual mtg., Pittsburgh, Pa. (T. L. Kimball, 1412 16th St., NW, Washington, D.C. 20036)

12-13. **Linguistics**, 11th natl. conf., Linguistic Circle of New York, N.Y. (L. Pap, State Univ. College, New Paltz, N.Y. 12561)

14-16. Society of **Toxicology**, annual scientific mtg., Williamsburg, Va. (C. S. Weil, Mellon Inst., 4400 Fifth Ave., Pittsburgh, Pa. 15213)

14-16. **Wildlife and Natural Resources**, 31st North American conf., Pittsburgh, Pa. (C. R. Guterth, Wildlife Management Inst., Wire Bldg., Washington, D.C.)

14-20. **Obstetrics and Gynecology**, 8th Australian congr., Hobart. (J. F. Correy, 173 Macquaire St., Hobart)

14-6 May. Extraordinary Administrative **Aeronautical Radio Conf.**, 2nd session, Geneva, Switzerland. (Intern. Telecommunication Union, Place des Nations, Geneva)

15-16. **Flame Resistant Polymers**, conf., London, England. (Secretary, Plastics Inst., 6 Mandeville Pl., London, W.1)