UFO Trouble in Science

AAAS President Roberts assures me that the columns of Science are available for a reply to its article, “UFO project: Trouble on the ground” (26 July, p. 339). The article is gossip. It is so essentially trivial that the nonfacts, anonymous opinions, and unsupported statements and misstatements it contains are of no particular importance.

At one point, its author declares with unconscious irony that “it is difficult to know what to make of the Colorado fracas.” It is at least as difficult to know what to make of Science’s editors sending a reporter to Boulder to gather such immaterial and solemnly spread it on your pages. This tittle-tattle is what now passes for scientific journalism?

Evidently we have lost touch out here in Colorado with the mainstream of science. We still think that facts, rather than what “some observers believe” are the stuff of science. This being so, we are concentrating attention on preparation of the report on Colorado University’s substantial investigation of unidentified flying objects. We have a large volume of data to process and analyze, so the report will take some time to complete. When it is released, we trust the editors of Science will read it, and, if they have some lingering respect for scientific method, comment upon it. Meanwhile, they and the readers of Science, can profitably concern themselves with matter of more import than alleged “fracases.”

E. U. Condon
University of Colorado,
Boulder 80302

Scope of State Research

A news item “State research aid,” states that the Pennsylvania Science and Engineering Board “claims to be the first state-sponsored science board with funding capabilities” (19 July, p. 247). Sapolsky, in his article “Science advice for state and local government” (19 Apr., p. 280), lists four state agencies which fund research projects. These include the Connecticut Research Commission, the Louisiana State Science Foundation, the New York State Science and Technology Foundation, and the North Carolina Board of Science and Technology. Since March 1964, the North Carolina board has made grants totaling $1,781,325 from state funds for the support of 94 research projects which are expected to benefit the state. These include a regional nuclear structures laboratory, marine geological research, a multiuniversity computing center, and studies of air and water pollution.

Peter J. Chenery
North Carolina Board of Science and Technology, Research Triangle Park 27709

. . . The Connecticut Research Commission has been making research grants for several years. For example, during the fiscal year ending 30 June, it funded 42 projects with a total value of $1,270,328.

John S. Burlew
Connecticut Research Commission, 18 Trinity Street, Hartford 06115

University of Delaware’s Independence

Boffey’s article on the University of Delaware (10 May, p. 628) was interesting, but parts of it might give a misleading impression. The fracas between the university and the state budget director was less a demonstration of the university’s independence from state control than a richly earned rebuff to the budget director, a staff aide to the Governor. Had the Delaware legislature, where state power is vested, or the Governor himself attempted to control university policy through oversight of its spending, there might or might not have been the same result. But for the budget director to attempt such control is considered a usurpation of power which does not belong to him. The legislature’s action in this matter was deeply appreciated by many people. . . .

Marion C. Stewart
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Purchase of Computers: Cost and Size Criteria

Mathews’ article “Choosing a scientific computer for service” (5 July, p. 23) should serve as a useful, dispassionate counterpoint to the dissonant clamor of competing equipment salesmen and the “buy by brand name” attitudes of many administrators.
But one factor Mathews fails to stress—memory size and the length of the machine's internal word unit—strengthens the case for the large computer. Many practical research problems, especially in the social sciences, demand for their solution core storage capacities in excess of those commonly provided by small or medium machines. Larger computers are designed to operate efficiently with large memory arrays while optional hang-on units for smaller machines can create inefficiencies. Partitioning a large problem (involving either complex processing or large data sets) to make it fit on a small machine increases processing time. It also demands programming talent which, as Mathews notes, is in short supply. The successful implementation of time-sharing also demands large internal memories.

While smaller computers can offer savings for engineers and for student use in classes, the case for a proliferation of such machines in an organization of moderate to large size is weak, especially if the machines are disparate in size and come from different manufacturers. Most organizational users would, I think, find it more efficient to have the energies of the local programmers focused on maintaining and improving the services of a central large machine.

Finally, one can only say amen to Mathews' plea to keep old computers around until the natural processes of decay (of machine and of its users) permit graceful retirement.

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Pennsylvania State University,
University Park 16802

It is unfortunate that Mathews found it necessary to force the reader to indulge in a guessing game as to the actual identity of the computers mentioned. A table basically equivalent to his Table 1 for all commercially available computers would be a very useful addition to the annual Guide to Scientific Instruments. Numerous laboratories have already had to duplicate the work of gathering just such facts for the purpose of determining where to start in the search for the computer best meeting their needs. Of course any such table is bound to be incomplete (as Mathews has stressed) in its characterization of the machines. Anybody who has looked at the field can suggest alternative measures in place of those used by Mathews. The great virtue of Mathews' presentation is that he oversimplifies the complex structure to a set of members which fit in one table easily. Once the most general features are located in such a table the procedures Mathews describes for gathering more details become usable.

ROBERT G. GLASSER
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Research and Education:
IUBS Resolution

The International Union of Biological Sciences at their General Assembly in September 1967 passed unanimously the following resolution submitted by Paul Weiss (United States) and P. Chouard (France):

Considering that
1) The growing momentum of knowledge in the biological sciences and its fundamental bearing on human welfare and destiny calls for increasing efforts at further broadening and strengthening both basic and applied research in biology and its branches;
2) This task requires high-quality education of mounting numbers of qualified students in close contact with the sources and practitioners of advancing knowledge;
3) Emphasis on quality, rather than sheer proliferation, of both workers and publications seems of paramount importance for maximum efficiency in this progress;

The IUBS resolves,
1) That research and education be carried on in the closest possible association;
2) That trends toward divergence between the activities of advancing and of disseminating knowledge be vigorously counteracted;
3) That talented research workers be expected to take an active part in the educational process, and that the exemption of research workers from educational functions be made an exceptional dispensation for special cause, rather than a reward for excellence; and
4) That teachers be given opportunities for conducting research by time allowed from their full duties.

To this, F. W. G. Baker, secretary of the International Council of Scientific Unions, added the following postscript: "The possible effects on teachers and research workers throughout the world are eagerly awaited."

PAUL WEISS
Rockefeller University,
New York 10021

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Focus on Ultramicrotomy

This is the second of a series presenting the LKB Ultrotome III by explaining its ability to solve problems in Ultramicrotomy.

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The American Association for the Advancement of Science will hold its 1968 Annual Meeting in Dallas, Texas, 26–31 December. The Adolphus (1321 Commerce), Baker (1400 Commerce), Sheraton-Dallas (Southland Center), and Statler-Hilton (1914 Commerce) hotels will be used for housing. All the hotels will have Registration Centers.

### HOTEL RATES* (Per Day)

<table>
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<th>HOTEL</th>
<th>SINGLE</th>
<th>DOUBLE</th>
<th>TWIN</th>
<th>SUITES†</th>
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<tr>
<td>Sheraton-Dallas</td>
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<td>Statler-Hilton</td>
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*All rooms are subject to a 3% city transient room tax.
†Rates for suites, parlor and one to three bedroom.
There is a charge of $4.00 for cots.
ADVANCE REGISTRATION FORM

MAIL TO: American Association for the Advancement of Science
Dept. R, 1515 Massachusetts Ave., NW, Washington, D.C. 20005

☐ Enclosed is $10 Registration Fee (Program and Convention Badge)
☐ Enclosed is $15 Registration Fee (including spouse) (Program and Convention Badges)
☐ Enclosed is $5 Student Registration Fee (16 years and older) (Program and Convention Badge)
☐ Enclosed is $5 for the Program only

PLEASE PRINT OR TYPE

NAME: ____________________________  ____________________________  ____________________________
(Last)     (First)     (Middle Initial)

MULTIPLE REGISTRATION: ______________________________________________________
(List student’s full name. Attach list if space is insufficient.)

MAILING ADDRESS: ___________________________________________________________
(For receipt of Program)  (Street)  (City/State)  (Zip Code)

INSTITUTION OR COMPANY AFFILIATION: __________________________________________

(City)  (State)  (Zip Code)

FIELD OF INTEREST: __________________________________________________________

CONVENTION ADDRESS: ______________________________________________________

APPLICATION FOR HOTEL RESERVATIONS

Please print or type and mail to: AAAS Housing, Dallas Convention Bureau, 1507 Pacific Avenue, Dallas, Texas 75201
(Reservations received after 13 December cannot be assured.)

CHOICE OF HOTEL: First ____________________________  Second ____________________________  Third ____________________________

ROOM:   ☐ Single   ☐ Double   ☐ Twin   ☐ Suite   Preferred rate $____________

Number in party _________ sharing this room will be (list name and address of each person, including your own):

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ARRIVAL: Date ____________________________  AM, ____________________________  PM

DEPARTURE: Date ____________________________  AM, ____________________________  PM

NAME: ____________________________  (Individual requesting reservation)

ADDRESS: ________________  ________________  ________________
(Street)  (City and State)  (Zip Code)
Preliminary Program
135th Annual Meeting, Dallas, Texas
26–31 December 1968

(General Chairman: Hon. J. Erik Jonsson, Mayor of Dallas)

AAAS Invited Lectures and Panels
- Special Lecture I (26 Dec.). To be selected.
- Special Lecture II (26 Dec.). To be selected.
- Distinguished Lecture (27 Dec.). James A. Shannon (Director, National Institutes of Health).
- Frontiers of Science Lecture I (27 Dec.). To be selected.

RESA Annual Address and Panel Discussion (28 Dec.).
Aldelstan Spilhaus (President, Franklin Institute).

George Sarton Memorial Lecture (28 Dec.).
Owsei Temkin (The Johns Hopkins University).

Address of the Retiring AAAS President (28 Dec.).
Don K. Price (Harvard University).

Sigma Xi–Phi Beta Kappa Lecture (29 Dec.). To be selected.

Frontiers of Science Lecture II (29 Dec.).
Robert B. Livingston (University of California at San Diego).

Frontiers of Science Lecture III (30 Dec.).
John B. Calhoun (National Institutes of Health).

Panel Discussion on Science Technology and Latin American Development (30–31 Dec.).
Harrison Brown, Chairman (California Institute of Technology).

Panel Discussion on the Financial Crisis in Science (31 Dec.).

AAAS Committee Symposia
- Committee on Science in the Promotion of Human Welfare and Scientists’ Institute for Public Information
  • Unanticipated Environmental Hazards Resulting from Technological Intrusions (28–29 Dec.).
- Committee on Arid Lands
  • Water Importation into Arid Lands (30–31 Dec.).

General Symposia
- Genetic Technology: Some Public Considerations (26–27 Dec.).
- Sports and Its Participants
  I. The Scientific Basis for Athletic Performances (26 Dec.).
  II. Conditioning the Human Body: Fitness for Sports and Life (27 Dec.).
  III. Girls and Women in Play and Sport (27 Dec.).
  IV. Psychology and Sociology of Sport (28 Dec.).
  V. Sport and Games (28 Dec.).
- Global Effects of Environmental Pollution (26–27 Dec.).
- Arts and Science—Will there be a Difference? (29 Dec.).
- Interface—Art and Technology (30 Dec.).
- Space Applications: Earth-Oriented Applications of Unmanned Satellites (28–29 Dec.).
- Art and Science: The Analysis of Communication of Form (30 Dec.).
- Review of United States Science Policy (29 Dec.).

Symposia of AAAS Sections
- Mathematics (A)

- Section Program
  • Vice Presidential Address, "Connection Between Variational Principles and Stability Phenomena," A. H. Taub (29 Dec.).
  • Comparison of Einstein Theory of Gravitation and Observation (29 Dec.).

American Mathematical Society
- Third Annual Symposium on Some Mathematical Questions in Biology (27 Dec.).

- National Council of Teachers of Mathematics
  • Mathematics Education (27 Dec.).
Physics (B)

- American Fisheries Society
  - Cytogenetics of Fishes
    I. Hybridization and Speciation (27 Dec.).
    II. Cytological Studies (27 Dec.).
    III. Biochemical Studies (28 Dec.).

- American Society of Naturalists
  - DNA Content and Gene Multiplicity in Higher Organisms (30 Dec.).

- American Society of Zoologists
  - Past Presidents’ Symposium (29 Dec.).
  - Cellular Aspects of Control of Color Change (29 Dec.).
  - Contributed Papers on Comparative Endocrinology (27–28 Dec.).
  - Contributed Papers on Comparative Physiology (26–30 Dec.).
  - Contributed Papers on Developmental Biology (28–31 Dec.).
  - Turnover in Biological Systems (28 Dec.).
  - Biology of Unpolluted Streams (27–28 Dec.).
  - Ecology and Origin of Species (30 Dec.).
  - Penetration of Calcium Carbonate Substrates by Lower Plants and Invertebrates (28–30 Dec.).
  - Contributed Papers on Invertebrate Zoology (26–27 Dec.).
  - Functional Morphology of the Kidney (29 Dec.).
  - Contributed Papers on Vertebrate Zoology (30–31 Dec.).
  - Contributed Papers on Miscellaneous Subjects (26–28 Dec.).

- Animal Behavior Society
  - The Use of Space by Animals and Men
    I. Relation of Territoriality to Dominance (29 Dec.).
    II. Factors Influencing Intraspecific Contact (29 Dec.).
    III. Population Density and Crowding (30 Dec.).
    IV. The Role of Distance in the Evolution of Communication (30 Dec.).
    V. Environmental Conditions and Human Behavior (31 Dec.).
  - Contributed Papers (27–31 Dec.).

- Ecological Society of America
  - Adaptations of Intertidal Organisms (27–28 Dec.).
  - Contributed Papers (27–30 Dec.).
  - Physiological Ecology of Amphibians (29–30 Dec.).

- Herpetologists’ League
  - Contributed Papers (28–29 Dec.).

- Society of Systematic Zoology
  - Systematic Significance of Vertebrate Brain Structure (27 Dec.).
  - Problems in Systematics of Parasites (27 Dec.).
  - Marine Burrowing Organisms (27 Dec.).
  - Contributed Papers (29 Dec.).
Botanical Sciences (G)

- Grasslands of Southern Central North America (27 Dec.).
- Ecological Consequences of Widespread Uses of Herbicides and Defoliants (29 Dec.).
- Biosatellite II Experiments and Results (28 Dec.).

Anthropology (H)

- Vice Presidential Address, "Physical Anthropology: The Search for General Processes and Principles," Gabriel W. Lasker (27 Dec.).
- Anthropology of Bone (27 Dec.).
- Environment and Prehistory from Woodlands to Desert (28 Dec.).
- Contributed Papers (29 Dec.).
- Problems of Relationship between Nutrition and Culture (30 Dec.).
- Ideology and Social Change in Latin America (31 Dec.).

Psychology (I)

- Vice Presidential Address, Delos D. Wickens.

Social and Economic Sciences (K)

- Vice Presidential Address, "A Critique of Theories of Claude Levi-Strauss and Talcott Parsons in the Light of Comparative Investigation," Guy E. Swanson (28 Dec.).
- Review of the United States Science Policy (29 Dec.).
- Science and Public Policy Workshop (30 Dec.).

American Sociological Association

- Comparative Sociology and Contemporary Social Issues
  I. Theoretical and Methodological Issues in Comparative Sociology (28 Dec.).
  II. Cross-National Comparisons of the Generation Gap and the Growth of Civil Protests and Political Participation (29 Dec.).
  III. Comparative Analysis of Social Inequalities (29 Dec.).
  IV. Socialization for Achievement: Cross-Culture and Cross-Class Comparisons (30 Dec.).

American Society of Criminology

- Criminology and Corrections: Bridging the Gap between Theory and Practice (28 Dec.).
- Research Papers in Juvenile Delinquency (28 Dec.).

National Institute of Social and Behavioral Science

- Contributed Papers (28 Dec.).

Society for the Scientific Study of Religion

- Values and Metaphysics in Science (30 Dec.).
- Measuring Individual Differences in Religion (30 Dec.).

History and Philosophy of Sciences (L)

- Vice Presidential Address, "Review of the History of the Development of the Energy Concept up to the Publication of Lagrange's 'Mecanique Analytique' (1788)," Robert Bruce Lindsay (28 Dec.).
- Energy and Society (28 Dec.).

History of Science Society

- The Occult Sciences and the History of Science (28 Dec.).
- Science and Society in Nineteenth-Century Britain (29 Dec.).
- Genetics in the Late Nineteenth and Early Twentieth Century (29 Dec.).
- Work in Progress (30 Dec.).

Society for the History of Technology

- Topics in the History of Technology (27 Dec.).
- Industrial Archeology (27 Dec.).
- Technology and Values (29 Dec.).
- Technology as a Social Process (29 Dec.).

Society for General Systems Research

- Social Systems in the General Systems Spectrum (27 Dec.).
- The Problem of Verification (27 Dec.).
- Analogues of Organizational Dynamics (28 Dec.).
- The Analysis and Evaluation of a Scientific Field (28 Dec.).
- Systems Research in Organization and Management (29 Dec.).
- General Systems and Urban Systems (29 Dec.).
- Conflict Resolution and Arms Control (30 Dec.).
- Meta Language Dialogues and Meta Theoretical Synthesis in Education (30 Dec.).

Engineering (M)

- Space Applications: Earth-Oriented Applications of Unmanned Satellites
  I. Earth Observation (28 Dec.).
  II. Earth Resources (28 Dec.).
  III. Communications, Navigation and Traffic Control; National and International Aspects (29 Dec.).
  IV. Panel Discussion and Summary (29 Dec.).

Medical Sciences (N)

- The Control of Fertility (27 Dec.).
- Molecular Approaches to Learning (30-31 Dec.).

American Association of Bioanalysts

- Some Concepts and Trends in Clinical Bioanalysis (28 Dec.).

American Psychiatric Association

- Aggression (29-30 Dec.).

Dentistry (Nd)

- Mucous Membranes and Their Secretions (27 Dec.).
- Physiology of Oral Mucous Membranes (28 Dec.).
Pharmaceutical Sciences (Np)

Section Program
- Luncheon and Vice Presidential Address, Andre Archambault.
- Contributed Papers (27–28 Dec.).
- Distinguished Lecture, Arnold Welch (28 Dec.).

Agriculture (O)

Section Program
- Research for the World Food Crisis (27 Dec.).
- New Frontiers of Agricultural Research (28 Dec.).

Industrial Science (P)

Section Program
- Luncheon and Retiring Vice Presidential Address, “Evaluating Research Results—Before and After,” Allen V. Astin (30 Dec.).
- Technical Obsolescence and Continuing Education for Engineers (28 Dec.).
- Current State of Research Management (30 Dec.).
- The Current State and Outlook for Research-on-Research (30 Dec.).

Education (Q)

Section Program
- New Developments in Education Technology (26–28 Dec.).
  I. Computers in Education (26 Dec.).
  II. Communication and Multi-Media in Education (27 Dec.).
  III. Individualized Instruction (28 Dec.).
- Education and Societies in Transition (27 Dec.).
- Joint Session with AERA (28 Dec.).

Alpha Epsilon Delta
- Career Opportunities in the Health Professions (28 Dec.).

American Institute of Biological Sciences
- Biology and Society (27 Dec.).

American Nature Study Society
- Science, Education, and Society
  I. Unified Knowledge of Man and Environment (27 Dec.).
  II. The System, Socio-Economic-Political, and Ecosystems (28 Dec.).
  III. Tailoring Outdoor Programs to Community Needs (29 Dec.).

Commission on Undergraduate Education in the Biological Sciences
- Issues in College Biology Teaching (28–29 Dec.).

National Science Teachers Association
- Developing Scientific Literacy in College Science Courses (28 Dec.).
- A Systems Approach to Science Education (29 Dec.).

Science Teaching Societies
- The Role of Science Education in an Urban Environment (29 Dec.).

Science Courses for Baccalaureate Education
- Integrated Science as Base for General and Cultural Program (30 Dec.).

Information and Communication (T)

Section Program
- Vice Presidential Address, J. C. R. Licklider (30 Dec.).
- TV in the Southwest (28 Dec.).
- Scientific Films in Communication (28 Dec.).
- Science-Knowledge Communications Interface (30 Dec.).

Statistics (U)

Section Program
- Vice Presidential Address, “Problems of Communications Between Biologists and Statisticians,” Charles I. Bliss (30 Dec.).
- New Methodology in Classification (28 Dec.).
- Empirical Sampling Studies (28 Dec.).
- Statistical Theory (29 Dec.).
- Biological Rhythms (30 Dec.).
- Radio-Immuno Assays (30 Dec.).

Biometric Society
- Random Counts in Scientific Work (26–27 Dec.).

General Science (X)

Academy Conference
- Dinner and Presidential Address, John H. Melvin (27 Dec.).
- Funding Academies (27 Dec.).
- Collegiate Academies (27 Dec.).
- American Junior Academy of Science Papers (28 Dec.).

Cooperative Committee on the Teaching of Science and Mathematics
- Science for Our Time—Relevance or Rebellion (29 Dec.).

Sigma Delta Epsilon
- Problems in Feeding the Hungry (29 Dec.).