

A SYMPOSIUM ON INFORMATION PROBLEMS
IN THE BIOLOGICAL SCIENCES

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On December 18 through 20, 1967 the Universidad Nacional Autónoma de México and the Smithsonian Institution jointly sponsored a Symposium on Information Problems in the Biological Sciences. The objective of the symposium was to provide a focus for exchange of ideas in the use of information processing tools in the biological and geological sciences, particularly those institutions whose primary responsibility is in serving as informational repositories. The Symposium, held at the University, was attended by over 90 persons and a total of 29 papers were submitted, of which 27 were presented at the meetings. Technical, Botanical, Zoological and Geological sessions were scheduled for three days. The program, as presented, follows, giving titles of papers, the contributors, and their affiliations. Abstracts of the papers follow the program with abstracts arranged alphabetically by author. Because many of the papers will be published in full elsewhere, only the abstracts are being published as a record of the symposium.

Objectives of the symposium were to increase the communication between persons engaged in the development of information storage and retrieval systems and to place priorities upon certain cooperative endeavors. In the latter objective, it was resolved among representatives of larger herbaria attending the meeting that an international effort to catalogue type specimens of plants would be undertaken.

Sesión Técnica - 1 / Technical Session - 1

1. Squires, D. F. (Smithsonian Institution, Washington, D. C., U. S. A.)
Information Problems and Museums.
2. Creighton, R. A. (Smithsonian Institution, Washington, D. C., U. S. A.)
An Information Storage and Retrieval System for Biological and Geological Data-Design Considerations.
3. Peters, J. A. (Smithsonian Institution, Washington, D. C., U. S. A.)
Preparación y Manipulación de Claves Sistemáticas Utilizando Computadoras de Tiempo Compartido.
4. Rogers, D. J. (University of Colorado, Boulder, Colorado, U. S. A.)
A Computerized Information Retrieval System for Taxonomy.

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Sesión Técnica - 2 / Technical Session - 2

5. Daniels, G. S. (Hunt Botanical Library, Pittsburgh, Pennsylvania, U. S. A.)
Computer Applications in Taxonomic Literature.
6. Hutchinson, G. K. (Computer Center, Texas Tech, Lubbock, Texas, U. S. A.)
A Language for On-Line Information Retrieval.
7. Suszynski, N. J. (Smithsonian Institution, Washington, D. C., U. S. A.)
Telecommunication and On-Line Access to Computers.
8. Ricciardelli, A. F. (University of Oklahoma, Norman, Oklahoma, U. S. A.)
The Oklahoma Museum Inventory Project.
9. Estabrook, G. F. and R. C. Brill (University of Colorado, Boulder, Colorado
U. S. A.)
Compressed Characteristic Functions as Inverted Information Files.

Sesión sobre Botánica - 1 / Botanical Session - 1

10. Kozak, C. F. (Washington State University, U. S. A.) K. W. Finaly.
(University of Adelaide, Australia), B. Sigurbjornsson
(International Atomic Energy Agency, Vienna, Austria) and G. Delhove
(FAO, Rome, Italy).
A World Plant Germ Plasm Record System.
11. Scheinvar, L. A. Gómez-Pompa y L. Alonso (Instituto de Biología, UNAM,
México)
Proyecto Piloto de Recuperación Automática de Información del Herbario Na-
cional, UNAM.
12. Beschel, R. E. (Queen's University, Kingston, Ontario, Canada)
Hardware and Software in the Herbarium of Queen's University (with special
reference to multivariate procedures). Paper not read.
13. Taylor, D. and R. E. Beschel (Queen's University, Kingston, Ontario, Canada)
Data Files for Continuous Updating, Multiple Access and Immediate Re-
trieval in the Queen's University Herbarium. Paper not read.
14. MacDonald, R. D. (University of Tennessee Arboretum, Oak Ridge, Ten-
nessee, U. S. A.)
The International Plant Records Center Project.
15. Ahumada, S. R. (Centro de Cálculo Electrónico, UNAM, México) and S. G.
Shetler (Smithsonian Institution, Washington, D. C., U. S. A.)
Una bibliografía automatizada para la Flora de Norteamérica.
16. Morse, L. E., J. H. Beaman (Michigan State University, U. S. A.) and S. G.
Shetler (Smithsonian Institution, Washington, D. C., U. S. A.)
Preparation of Identification Keys by Computer for Flora North America.
17. Soper, J. H. (National Museum of Canada, Ottawa, Canada)
The Use of Data Processing Methods in the Herbarium.

Sesión sobre Botánica - 2 / Botanical Session - 2

18. Olson, J. S. (Oak Ridge National Laboratory, Oak Ridge, Tenn., U. S. A.)

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- M. F. Olson (National Academy of Science) and G. Christofolini (Botanical Institute, University of Trieste, Italy)
Computer Processing of Information on Ecological Systems.
19. Solbrig, O. T. (University of Michigan, Ann Arbor, Michigan, U. S. A.)
Computer Simulation of Evolutionary Processes and their Application in Teaching.
 20. Thomas, J. H. (Stanford University, Stanford, California, U. S. A.)
Correct Determinations and the Use of Automated Data Processing in Systematic Collections.
 21. Gómez-Pompa, A. y S. Olvera F. (Instituto de Biología, UNAM, México)
Procesado de datos para la Flora de Veracruz.

Sesión sobre Zoología / Zoological Session

22. Roberts, L. A. (Texas Tech. College, Lubbock, Texas, U. S. A.)
The Future Taxonomic Bank.
23. Perring, F. H. (Nature Conservancy, Huntingdon, England)
The British Biological Recording Network.
24. King W. B. and M. Esterline (Smithsonian Institution, Washington, D. C., U. S. A.)
Automatic Data Processing in the Study of Seabird Distribution.
25. Van Gelder, R. G. (The American Museum of Natural History, New York, N. Y., U. S. A.)
A Retrieval System for Zoological Collections.
26. Dowling, H. G. and I. Gilboa (The American Museum of Natural History, New York, N. Y., U. S. A.)
A Punch-card Approach Toward the Retrieval of Information in Herpetology.

Sección sobre Geología y Paleontología / Geology and Paleontology Session

27. Robinson, S. C. (Department of Energy, Mines and Resources, Ottawa, Canada)
Storage and Retrieval of Geological Data. Paper not read.
28. Cutbill, J. L. (Cambridge University, Cambridge, England)
Some Requirements of Data Processing Systems for Geology and Paleontology.
29. MacDonald, J. R. and E. D. MacDonald. (Los Angeles County Museum of Natural History, Santa Monica, California, U. S. A.)
The Data Set Format vs. I/O Formats for Vertebrate Paleontology and "Infinitely" Variable-Length Logical Records.