



# THE CHARLES BABBAGE INSTITUTE

A foundation dedicated to the history of information processing

## NEWSLETTER

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### INTRODUCING THE CHARLES BABBAGE INSTITUTE

The field of information processing has developed rapidly, with electronic computation and communication central to that development. The industry has grown at a tremendous rate, responding to the needs of a society that is quickly becoming information-based and information-dependent. We are in the midst of an information revolution. Yet at least until recently, very little has been done to document that revolution.

Feeling that there was a need to be met, Erwin Tomash founded the Charles Babbage Institute in late 1977, providing \$150,000 of seed money. Continued funding will come from private sources, both individuals and organizations.

The Charles Babbage Institute is an organization whose purpose is to engage in and to encourage and support others to engage in, the history of computers and computation and related research and educational activities and, as such, fosters and conducts a fiscally sound, multi-faceted, scholarly, interdisciplinary program in the history of information processing...

—From the Articles of Incorporation

The Institute is dedicated not only to chronicling the historical roots of information processing, but also to the establishment of modern up-to-date mechanisms for preserving the details of contemporary developments for future study. In addition, the Institute is concerned with encouraging increased awareness of the impact that the information revolution has had on society.

The founder of the Institute, Erwin Tomash, has been in the mainstream of the data processing industry for many years. Trained as an engineer, in 1946 he joined one of the first firms to be involved in computer work, Engineering Research Associates. When ERA merged into Sperry Rand, he developed that company's first west coast marketing department, one of the first computer marketing teams in the nation. In 1956, Tomash joined Telemeter Magnetics, the first independent core memory manufacturer, and six years later, he founded Data products, which has become one of the largest manufacturers of printers. Through the years, Tomash became interested in chronicling his own participation in the information revolution. Gradually, that idea grew into the concept of the Institute, an organization that would develop a broad historical view of the entire computing industry.

In March 1978, Paul Armer accepted the position of Executive Secretary of the Charles Babbage Institute. Armer

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### AFIPS BOARD ENDORSES NEGOTIATIONS WITH CBI

At the December 1, 1978 meeting in San Diego of the Board of Directors of the American Federation of Information Processing (AFIPS), a resolution was passed authorizing the entering into negotiations with the Charles Babbage Institute, the objective being that AFIPS become a major sponsor of the CBI. The role of AFIPS would be made evident by including a subtitle like "A Joint Effort of AFIPS and the Information Processing Industry."

AFIPS is a federation of scientific, educational professional societies representing individuals concerned with computers and their applications and, as such, is the leading scientific and educational organization for the information processing field. The thirteen national organizations which belong to AFIPS represent over 150,000 individuals. AFIPS is best known for the annual National Computer Conference (NCC) which it sponsors. The NCC is "the" event of the industry and attracts about 50,000 people to its exhibits and technical sessions.

AFIPS also carries out many other functions of an educational, scientific or professional nature in behalf of its member societies. For example, AFIPS gathers and disseminates information on the field and its progress to interested groups and to the general public. AFIPS represents the U.S. in IFIP, the International Federation for Information Processing.

The specific idea of AFIPS and CBI cooperating in the history area originated with Dr. Sylvia Chapp, Secretary of AFIPS, and she communicated it to Mr. Tomash at the NCC held last June in Anaheim. In September 1978, we drafted a proposal for discussion purposes.

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### AFIPS PUBLISHES ANNALS

The first issue of a new quarterly journal, *Annals of the History of Computing*, will be published by AFIPS in July 1979. A brochure on the new journal including a subscription form is enclosed with this *Newsletter*.

According to the Annals Policy Statement, "The purpose of this publication is to encourage and stimulate the creation of historical papers and records concerned with the computing and information processing fields, to make information on the heritage of the computing and information processing fields available for scholarly and educational purposes, and to provide a forum in which computer professionals and historians can interact in the development and communication of historical perspectives."

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## FROM THE EDITOR

This is the first issue of the Charles Babbage Institute *Newsletter* (which will be published on an occasional basis). I would be interested in whatever comments or suggestions you have about the content or format. Also, one major purpose of the *Newsletter* is to disseminate information on what is happening in the field of the history of information processing. Please contact me if you have data on relevant conferences, books (including theses) or articles being written on the history of information processing, other programs in the field and any activities which may be of interest to your colleagues. I also ask that you complete and return the information form inserted in this *Newsletter*.

Pamela Gullard  
Editor

## INTRODUCING THE CHARLES BABBAGE INSTITUTE

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spent most of his career at the RAND Corporation where he was head of the Computer Sciences Department. Since then, he has been associated with Stanford and Harvard Universities and with On-Line Business Systems of San Francisco. Shortly after becoming Executive Secretary, Armer opened an office at the Institute's present location in Palo Alto, California.

An Advisory Committee was formed of industrial leaders, professionals in the field of information processing and historians of science and technology. In late April, 1978 they met to plan the first steps of the Institute, agreeing that the most important task facing the Institute was to build a rich data base which would be useful in and of itself, and would also serve to attract top scholars to this area of study. Preservation and conservation were the key words. The Advisory Committee also endorsed the idea of awarding a fellowship for the forthcoming academic year. Over the next several months, the Institute's Board of Trustees was formed and they met for the first time in January 1979. Members of the Board of Trustees are listed on page 6 of the *Newsletter*.

Reception of the Charles Babbage Institute has been enthusiastic. Letters of encouragement and offers of participation and support have come from academic and industrial leaders and from professionals in the field. Clearly, the Institute is an idea whose time has come.

## AFIPS BOARD ENDORSES NEGOTIATIONS WITH CBI

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AFIPS and the Charles Babbage Institute have complementary resources to bring to an effort devoted to the history of information processing. Last year, the AFIPS History of Computing Committee was reactivated under the leadership of Jean A. Sammet and AFIPS also laid plans for a new periodical, *Annals of the History of Computing* (see stories on page 1 and page 4).

Individuals are the makers of history and are in possession of many of the documents, memorabilia and artifacts of

computing. They are highly qualified to help organize and monitor activities related to the history of the field. They represent an invaluable resource for carrying out such functions and are generally available as "volunteers." AFIPS and its member societies have excellent communications channels to these individuals via numerous journals, newsletters, meetings, etc. And as the federation representing the professional societies of the field, AFIPS lends an "imprimatur" of professionalism to any activity with which it is associated.

The Charles Babbage Institute, on the other hand, has excellent access to organizations in the information processing industry and provides a vehicle for institutional and individual involvement in history activities. In many disciplines (physics, for example) industrial organizations have played a very small role in the development of the field—the history of physics revolves almost exclusively around individuals and a few university or government laboratories. The situation is quite different for computing—industry, large and small, has played a most important role. Industry, too, possesses many of the documents, memorabilia and artifacts important to our history. Further, the history of information processing is not limited to the history of its technology. It encompasses economic, social and even political and military history and therefore involves both the public and private sectors.

The CBI has found considerable interest in the subject of computer history at the highest organizational levels in our industry. Its Board is composed in part of industrial leaders of the field, who have volunteered to serve because of their own and their corporations' sense of identification with the history of our industry. While the technological leaders of industry tend to be involved with AFIPS, computer industry top management is usually under-represented. It follows that involvement of top management with CBI means better access to support from industry, for executives, like other individuals, are more apt to support an organization with which they are involved than one with which they might feel remote. Further, industrial leaders are apt to be more cooperative in fostering and cooperating on history projects when they have some degree of personal involvement and identification.

The details of the proposed agreement are under negotiation. The proposal sent to AFIPS suggested that AFIPS contribute \$50,000 per year to the Institute, with CBI raising matching funds on a 2-to-1 basis. AFIPS would be represented on the Institute's Board of Trustees by four members or 20% of the total membership, whichever is larger.

It seems clear that the relative strengths of the two organizations mesh very nicely. If an agreement is reached, a much stronger program in the history of the field, than either can mount alone, would result.

## WILLIAM ASPRAY AWARDED FIRST CBI FELLOWSHIP

William F. Aspray, Jr., a student in the History of Science Department of the University of Wisconsin, has been awarded the first fellowship of the Charles Babbage Institute in the history of information processing. Aspray will examine the early twentieth century developments in mathematics and logic which laid the theoretical foundations for what we now call "computer science." His dissertation title is: "Logical

# INFORMATION FORM

If you are interested in the *Newsletter*, please complete either the left or right column below, fold in thirds so that our address (on the back) shows, tape or staple, and mail to us.

## DO YOU WANT TO STAY ON OUR MAILING LIST AND RECEIVE FUTURE ISSUES OF THIS NEWSLETTER?

This newsletter is being sent to a mailing list assembled from a variety of sources. We don't want to send it to individuals who are not interested in receiving it, so unless you tell us to keep you on our mailing list, this is apt to be the last issue you will receive.

You can stay on the list by returning this sheet (or a copy thereof or just drop us a note).

My name is \_\_\_\_\_  
(please print)

- Please KEEP my name on the newsletter mailing list.  
 Please REMOVE my name from the newsletter mailing list.

If you want us to make any corrections to the name and address we have used for you, please so indicate below.

- The name and address you have for me is correct.  
 The name and address should be corrected as follows:

Name \_\_\_\_\_

Position \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City, State, Country \_\_\_\_\_

Zip or Postal Code \_\_\_\_\_

## DO YOU WANT TO BE ADDED TO OUR MAILING LIST FOR THIS NEWSLETTER?

If you didn't receive your own copy of this Newsletter and would like to receive future issues, please send us the following information:

Name \_\_\_\_\_

Position \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City, State, Country \_\_\_\_\_

Zip or Postal Code \_\_\_\_\_

I am interested in the history of information processing:

- From the standpoint of someone involved in information processing.  
 From the standpoint of an historian.  
 Both of the above.  
 For other reasons.

Any reactions, comments, criticisms, suggestions, etc., about this Newsletter and our activities would be most welcomed.

## SUPPORT

If you would like to support the work of the Charles Babbage Institute, please complete the following:

I want to support the Charles Babbage Institute by becoming:

- A Founder of the Charles Babbage Institute  
(Minimum contribution of \$10,000 over five years)  
 An Associate of The Charles Babbage Institute  
(Check category below)

- My check for \$ \_\_\_\_\_ is enclosed  
 Please contact me concerning a non-cash contribution.  
My telephone number is: ( ) \_\_\_\_\_  
 My company might be willing to support the work of the Charles Babbage Institute. Please contact me. My telephone number is: ( ) \_\_\_\_\_

Associate Member Category	Minimum Annual Tax-Deductible Contribution	Cost of Lifetime Membership at the Category Level (one time payment)
<input type="checkbox"/> Regular	\$ 25	\$ 500
<input type="checkbox"/> Participating	\$ 100	\$1,000
<input type="checkbox"/> Sustaining	\$ 500	\$3,000
<input type="checkbox"/> Patron	\$1,000	\$5,000

Use this sheet as a mailer or send the above information to:

The Charles Babbage Institute  
701 Welch Road—Suite 224  
Palo Alto, CA 94304

Origins of Computer Science: The Search for Mathematical Constructibility."

At the end of the nineteenth century, due to several developments such as the introduction of infinite sets, the field of mathematics began to lose its physical foundation. Counterintuitive results appeared and paradoxes were found, triggering a conservative reaction in the field. Many mathematicians began to concentrate on beginning with familiar, accepted objects and building new objects of study by way of a finite number of steps. Partly because of this movement in mathematics, logicians began to formalize the intuitive idea of constructing functions in stages, recursive functions. Alan Turing, Emil Post, Alonzo Church and Stephen Kleene each published fundamental work in the area of recursion theory. Recursion theory has provided much of the theoretical framework of computer science. Early computer pioneers, most notably Turing and von Neumann, used this theory in the actual construction of computers, and many theoretical aspects of computer science (such as automata theory) are direct outgrowths of recursion theory. Aspray will study the foundations of recursion theory and other relevant developments in logic, and their relationship to the development of computer science.

On October 28, 1978, Aspray spoke on "Constructivist Mathematics and Philosophy of Mathematics: Kronecker to Brouwer" to the History of Science Society meeting held at the University of Wisconsin in Madison. He has also just completed a paper called "A Bibliographic Essay on Nineteenth Century Logic Machines, Together with Annotated Bibliography."

## CBI FELLOWSHIP FOR 1979-80

Announcements of CBI's Fellowship of 1979-80 were made in the Newsletters of the Society for the History of Technology and of the History of Science Society and in the Communications of the ACM. Individual notices were sent to several hundred historians of science and technology and to academic institutions having related programs.

Potential applicants were told that thesis topics related to aspects of the development of the information processing industry and topics concerned with specific technological developments in the information sciences, especially if they also deal with the economic and organizational milieu of the developments, would be given priority.

The stipend will be \$5,000 plus an amount up to \$2,500 for tuition and fees. Priority will be given to students who have completed all course work and all other requirements for the doctoral degree except the research and writing of the dissertation.

Applications are now coming in to our Palo Alto office.

## CBI PROVIDES INTERNSHIP

Under the auspices of a new program at the University of California at Santa Barbara and with financial support from CBI, Stephen Lutze is researching the history of organizations in the computer industry from 1945 to 1960. Santa Barbara's program, called "Public Historical Studies," provides an op-

portunity for selected students to serve as interns in government agencies, research institutes or private corporations after completing their course work for the M.A. or Ph.D. degree. The research they do while an intern is the basis for their thesis.

In the fall of 1978, Lutze sent questionnaires to over 130 domestic and foreign (mostly European) companies asking for information on their product histories and on the contribution of key employees. He also sent queries to a large number of individuals who had been in the industry in its early days, asking them about their own roles in the industry and about the companies they worked for. Responses to these letters continue to arrive and will be a valuable addition to our permanent records.

He has also researched the industry extensively through established archives and libraries, including a trip to the east coast to use the records of the Securities and Exchange Commission and the materials held by the Smithsonian Institution and by Harvard's Baker Library.

Lutze has nearly completed the analysis of the data base he assembled and is writing up the results. His final report will include an historical overview of the explosive growth of the computer industry after World War II, genealogies of early companies and suggestions for further research.

A number of people provided consultative assistance on this project. In particular, Erwin Tomash, Elliot Brownlee, Wesley Johnson, Nancy Stern, Henry Tropp, Paul Armer, Robert Hays, Hank Epstein and Arthur Pyster should be especially noted.

## CBI BEGINS FIRST ORAL HISTORY

In late September, 1978, the Charles Babbage Institute began a series of oral interviews of Dr. Gerhard Dirks of Los Altos Hills, California. Dirks holds a number of patents in the United States and elsewhere in such areas as discs, tapes, drums, CRT terminals and information processing systems.

The oral history is being directed by Prof. Henry S. Tropp, an historian in the Department of Mathematics, Humboldt State University. Tropp was formerly the principal investigator of the computer history project sponsored jointly by the Smithsonian Institution's Museum of History and Technology and AFIPS.

On September 22, 1978, Tropp and Paul Armer met with Dirks at his home for the first interview. Dirks was born in 1910 in Germany and educated in business and law. During World War II he worked with the German War Department as a civilian employee in scheduling, inventory control and other areas that required the use of business tabulating machines. He found the existing machines inadequate and set out to invent better ways of storing and processing information. After the war, he continued to elaborate his ideas, and he deposited descriptions of them in Germany. Later, he filed for patents in the United States. This produced a great stir in the 1950's in the patent departments of many U.S. companies engaged in the manufacture of computing machinery because prevailing American equipment included features claimed in the Dirks patent applications.

The ensuing controversy, during which Dirks was granted a number of detailed patents, is an important episode in the history of computing.

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Dr. Bernard A. Galler of the University of Michigan is the Editor-in-Chief of the *Annals*. He heads an Editorial Board comprised of a distinguished, international group of computer professionals and historians. The AFIPS History of Computing Committee will provide valuable liaison.

Speaking of the enthusiastic reception of the *Annals*, Galler says, "It is not at all surprising that a great many people in computing are interested in recording and preserving our history. After all, many have helped make that history! And it's more than just history; we can watch our efforts and those of our colleagues actually affect the lives and work of many other people and institutions around the world."

The first issue of the *Annals* will feature four articles:

"The BINAC—A Case Study in the History of Computing"

—Nancy Stern

"The History of FORTRAN I, II, and III"—John Backus

"Early Work on Computers at Bletchley"—I. J. Good

"The History of the JOHNNIAC"—Fred J. Gruenberger

In addition there will be two reports on the History of Programming Languages Conference (sponsored by ACM) which was held last June in Los Angeles, a report on the Computer Reminiscences—Pre-1954 Conference held in Washington, D. C. last October, and an article by Jean Sammet on the activities of the AFIPS History of Computing Committee, which she chairs.

In the pipeline for future issues are a paper by CBI Founder Erwin Tomash and Arnold A. Cohen, a CBI Trustee, on the early days of ERA (that's Engineering Research Associates and has nothing to do with the Equal Rights Amendment); one by Arthur Burks on ENIAC; one by Sam Snyder on contributions to computing by the National Security Agency and another by Fred Gruenberger on the history of computing in the Los Angeles area.

Each issue of the *Annals* will carry historical anecdotes, news and book reviews.

## AFIPS ESTABLISHES HISTORY OF COMPUTING COMMITTEE

In the fall of 1977, Jean Sammet was appointed chairperson of the AFIPS History of Computing Committee (HOCC). She recruited a number of active volunteers for the committee and together they have launched a number of activities concerned with the history of computing, including the development of slide presentations and a catalog of audiovisual historical material, volunteer support to the Smithsonian Institution on computing history matters (particularly involving the oral interviews and the material collected under the joint AFIPS/Smithsonian project of several years ago) and assistance to AFIPS' constituent societies on "special conferences, sessions and preservation of their own archives." AFIPS will also continue to sponsor the annual Pioneer Day program featured at each National Computer Conference.

One of their top priorities has been "the general archive problem." Consequently, a subcommittee chaired by Arnold Cohen (who is also a CBI trustee) has been studying what an archival center should do and how it might be organized. The History Committee accepted the subcommittee's plan and submitted it to the AFIPS Board. According to Jean

Sammet, such a center "will do significant work in the history of computing, which might range from archiving and cataloguing the papers of significant people, maintaining lists of where other material is, providing a place for researchers to come and do work, preparing oral histories, etc." Recently the History of Computing Committee recommended to the AFIPS Board that they accept the proposal to join the Charles Babbage Institute in the sponsorship of such a center subject to the development of satisfactory arrangements (see story which begins on page 1 of this issue of the *Newsletter*).

One of the Committee's principal current concerns is to encourage the preservation of material—both personal papers and organizational papers, *including* drafts. In the next several months, the Committee plans to publish a brochure providing guidance on the type of material to save and how and where to store it.

## PROGRAM OF THE CHARLES BABBAGE INSTITUTE

The primary objective of the Charles Babbage Institute is to chronicle the information revolution and to foster increased awareness of its impact on society. (For the complete statement of purpose as it appears in the Articles of Incorporation, see page 1). The program is based on three principles:

- It should be broadly based and involve all the elements which are part of the history of the field. That is, it should embrace individuals and institutions; companies, universities, government agencies and professional societies; engineers, programmers, executives, financiers and salesmen. It should be concerned with economic and social history as well as technological history.
- It should be scholarly.
- It should be enjoyable for those involved.

The activities of the Institute will rather naturally fall into one of two categories. The first might be thought of as "data base creation" and the second "data base utilization."

The program will include the following (the ordering of what follows is more related to when a given activity can be started than to the importance we attach to it):

- 1) Fellowships—the granting of a Fellowship is a comparatively easy thing to do and consequently was the first program activity to be undertaken. But it is also one where the dividends paid can be quite large compared to costs, particularly for doctoral fellowships. We awarded our first fellowship to William F. Aspray, Jr., (see story on page 2) for 1978-79 and announced another for 1979-80. Priority is given to thesis topics related to aspects of the development of the information processing industry and to topics concerned with specific technological developments, especially if they also deal with the organizational milieu of the developments. In the future, budget permitting, we hope to grant post-doctoral fellowships and research fellowships. The Institute will also in other ways support and encourage scholars working in the field.
- 2) Oral histories—Since the computer industry is still relatively young, many of its pioneers are still alive. It is important now for the work of future historians to conduct oral histories of those who did significant early work in the field. The Institute has begun an oral history

of Gerhard Dirks (see story on page 3) and plans to undertake several more in the near future. We must also undertake in a systematic way the identification of those individuals who should be interviewed on a high-priority basis.

And since an oral history program is an expensive undertaking, the Institute is considering developing instructional materials which individuals could use to record their own histories.

- 3) Public relations campaign to preserve historical materials—AFIPS and the Institute concur that the top priority in the field of the history of computing is to encourage preservation of historical materials. This campaign can be launched early in our program. The purpose will be to encourage individuals and institutions to refrain from discarding materials until their historical value has been assessed.
- 4) Establishment of Archives—As a result of the campaign to preserve historical materials, people are going to donate their collections to the Institute (it is already happening). Real progress here must await the selection of a host institution. Once that happens, we can receive, catalog, and store materials. We will also maintain and disseminate data on where other information and materials are located. The oral histories we develop will be part of the archives.
- 5) Publications—We hope to publish occasional papers of interest and possibly monographs when the economics of the marketplace fall short of supporting commercial publication.
- 6) Application of the tools of information processing to our "data base." It would be ironic if we failed to utilize to the fullest the magnificent tools with whose history we are concerned.
- 7) In the far future, we might foster the development of permanent and/or travelling exhibits for science museums and other educational institutions. We might promote the idea of national museums, or significant portions thereof, devoted to information processing, in the fashion of the Smithsonian's efforts in the U.S.A. concerned with space and aviation.

Above all, we want to be a catalyst and a central point of focus for all the individuals and organizations who are working on, or interested in the history of information processing. We want to be a source of encouragement and support (financial when we can—moral if we can't) and of information about who is doing what or who has certain documents or data.

## BOARD OF TRUSTEES MEETS

The first annual meeting of the Board of Trustees of the Charles Babbage Institute took place January 30, 1979 at the Smithsonian Institution's Museum of History and Technology in Washington, D.C.

The agenda item on which most of the other topics turned concerned finding an efficient way for the Institute to begin making significant progress on a program devoted to the history of information processing. It would be easy to spend much of the first several years getting organized and to

produce little else. There was considerable discussion about how to develop a program which could be implemented on a piecemeal basis as the opportunity arises prior to the move to a permanent location and the selection of a director. The ideal would be to spend time developing a program while at the same time putting parts of that program into action. This is the plan that is currently being implemented.

It is planned that CBI will be located at a major university and that its work will be conducted under the direction of a highly qualified scholar who will also most likely be or become a member of the faculty of the host institution. There was considerable discussion of the desired qualifications of the host institution and of the director and other key personnel.

It was generally agreed that the host institution should have established programs of instruction and research in the computer/information sciences and in the history of science and technology. We will need space for offices, for some archival material and possibly for a small library. The existence of adequate computer facilities and other archival activities will be of importance as will accessibility to a major airport. We will be interested in a flexible arrangement with our host.

The ideal director would be an historian with a strong background in the history of information processing and with excellent administrative abilities.

Selection of a host institution and of a Director is to be an open process. Four ad hoc committees are to be set up to carry out the following:

- |   |  |
|---|--|
| 1A Prepare a "Request for Proposal" for potential host institutions and see to the distribution of this document.                   | 1B Evaluate the proposals and recommend a host institution to the Board. |
| 2A Develop a job description for the directorship and a list of desired qualifications. Advertise the availability of the position. | 2B Evaluate the applicants and recommend an individual(s) to the Board.  |

There was discussion about appointing some interim personnel (such as an historian) during the start-up period in order to accomplish more of the Institute's goals before a permanent home and a director are selected. Several trustees emphasized that it takes considerable time for new members of an organization to establish themselves and that the resources for non-permanent personnel could be utilized best by devoting them to the support of historians and others working on specific projects rather than on the general program.

Erwin Tomash reported on the status of the negotiations with AFIPS whereby AFIPS would become a major supporter of the Institute. Considerable discussion took place on this topic. Isaac Auerbach emphasized the benefits of our getting together and the other trustees agreed. One point in discussion in the negotiations has been the name. The trustees expressed very strong support for continuation of our present name and suggested that it be changed only if it can be shown that a stronger, better Institute would result.

One important conclusion of the discussion was that the search for a site and director should get underway soon on

the assumption that we will reach an agreement with AFIPS. This will avoid a delay of several months in beginning what will be a long and involved process. We will involve AFIPS personnel in all four ad hoc committees mentioned earlier and, of course, will make no final selections while negotiations with AFIPS are unresolved.

Another important agenda item at the Board of Trustees meeting was the financial support of the Institute. The Board adopted various classes of membership for institutions and individuals which are the subject of another article in this *Newsletter*.

The Board also spent some time discussing the make-up and organization of the Board. It was decided to set the size of the Board at twenty elected members plus those to be nominated by AFIPS under the proposed agreement with them. It was decided that in addition to an Executive Committee to act in behalf of the Board between meetings, there would be standing committees devoted to Program, Membership, Nominations and Finance/Audit.

The Board was treated to a presentation by Dr. Uta C. Merzbach of the Smithsonian Institution on their activities related to the history of information processing, followed by a tour of their computer exhibits. Dr. Merzbach is Curator, Division of Mathematics, and responsible for their program in the history of information processing.

## CBI BOARD OF TRUSTEES

The members\* of CBI's current Board of trustees are listed below. Additional members will be added in time to increase membership to the full complement of twenty.

Gene M. Amdahl  
Chairman  
Amdahl Corporation

Isaac L. Auerbach  
President  
Auerbach Publishers, Inc.

William O. Baker  
President  
Bell Telephone Laboratories

Walter F. Bauer  
President  
Informatics, Inc.

James W. Birkenstock  
President  
Intercal, Inc.  
(Vice President of IBM—Retired)

Arnold A. Cohen  
Assistant Dean  
University of Minnesota

William A. Cruikshank, Jr.  
Partner  
Cruikshank and Antin

Willis K. Drake  
Chairman  
Data Card Corporation

Arthur L. C. Humphreys  
Board of Directors  
International Computers Limited  
(Deputy Chairman—Retired)

Melvin Kranzberg  
Professor  
Georgia Institute of Technology

Joshua Lederberg  
President  
Rockefeller University

Robert E. McDonald  
President  
Sperry Rand Corporation

Robert P. Multhauf  
Sr. Historian  
Smithsonian Institution

William C. Norris  
Chairman and CEO  
Control Data Corporation

Kenneth H. Olsen  
Chairman  
Digital Equipment Corporation

Clarence W. Spangle  
President  
Honeywell Information Systems

Erwin Tomash  
Chairman  
Dataproducts Corporation

\*Affiliations are shown for purposes of identification.

## FUND RAISING

### Institutional Memberships

At its meeting in January, the Board of Trustees addressed the problem of raising the financial support which the Institute must have to carry out its program. As part of its fund raising plan, the Board created Institutional Memberships and adopted the following schedule for them:

Gross Worldwide Revenue (in millions of dollars)	Minimum Annual Contribution
Less than 10	\$ 1,000
10 to 100	\$ 2,500
100 to 500	\$ 5,000
500 to 1,000	\$10,000
More than 1,000	\$15,000

As this issue of the *Newsletter* goes to press, we are pleased to announce that we have commitments from Sperry Rand, Honeywell, Control Data, NCR, Dataproducts, Bell Telephone Laboratories, Amdahl Corporation, Informatics and Data Card Corporation. Discussions are underway with a number of additional organizations.

#### Founders

A CBI Founders group was also established by the Board as another part of their fund raising activities. Founders are individuals who wish to support the program of the Institute by contributing at least \$10,000 over a five year period. The Board suggested that the Founders' contributions be used to establish an endowment fund which will provide continuity and stability to CBI in future years. To launch the program, the following have agreed to become Founders: Gene M. Amdahl, Isaac L. Auerbach, Walter F. Bauer, Frank G. Chambers, Willis K. Drake, Chester I. Lappen, Donald L. Lucas, Frank C. Mullaney and Erwin Tomash.

Because of the Institute's status as a non-profit foundation there can be tax advantages in contributing appreciated property, such as securities, to CBI as a way of paying one's Founder's dues. Our legal counsel and auditors are available to discuss the tax aspects of any gift with any individual who desires such consultation.

#### Associate Members

The Board also decided on another group of individual members to be known as The Associates of the Charles Babbage Institute (remember, they were meeting at the Smithsonian). Several categories were established:

Associate Member Category	Minimum Annual Tax-Deductible Contribution	Cost of Lifetime Membership at the Category Level (one time payment)
Regular	\$ 25	\$ 500
Participating	\$ 100	\$1,000
Sustaining	\$ 500	\$3,000
Patron	\$1,000	\$5,000

At present, the chief benefit of being an Associate of the Charles Babbage Institute is the knowledge that you are helping to support a program in the history of information processing. Also, the CBI will subscribe to the *Annals of the History of Computing* for all Associates except those in the "Regular" category. The comments made above about the advantages of contributing appreciated property, such as securities, are applicable here with respect to Life Memberships.

#### PUBLICATIONS OF INTEREST AND DISSERTATIONS UNDERWAY

In each issue, the *CBI Newsletter* will list recent publications related to the history of information processing and those currently being written. We would welcome hearing of other work that should be noted.

- "From ENIAC to UNIVAC: A Case Study in the History of Technology" (1978), a thesis by Nancy Stern, History Department, State University of New York at Stony Brook. You can obtain a copy by writing to University Microfilms, 330 North Zeeb Road, Ann Arbor, Michigan—ask for thesis #78-21846. The cost for hard copy is \$22.00. Microfiche is \$11.00.
- "The Mathematics of Brook Taylor (1685-1731)," a dissertation currently being developed by Lenore Feigenbaum, a graduate student in the History of Science Department at Yale University. Taylor is best known for the series which bears his name but little recognized for his pioneering work in the calculus of finite differences.
- "Cybernetics: The Evolution of an Interdisciplinary Science" (tentative title), a dissertation currently being developed by Walter Hellman, a graduate student in the Department of General Science, Oregon State University. He will concentrate on the events of the 1940's which culminated in Wiener's *Cybernetics*.
- A dissertation on the logic of George Boole, currently being developed by Calvin Jongasma, a graduate student at the University of Toronto, Ontario, Canada.
- "Logical Origins of Computer Science: The Search for Mathematical Constructibility", a dissertation being worked on by William F. Aspray, Jr., a graduate student at the University of Wisconsin and holder of the first fellowship of the Charles Babbage Institute (see story in this issue of the *Newsletter*).
- Paul Ceruzzi, a graduate student at the University of Kansas is writing a dissertation on the "prehistoric" era (1935-45) of the history of the digital computer before the modern design of the computer was more or less frozen in its present form. He will cover the work of Zuse in Germany and of Aiken, Eckert, Mauchly, and Stibitz in the U.S.
- A book, title not yet selected, on the interaction of Norbet Wiener and John von Neumann, written by Steven Heims of Gloucester, Massachusetts, will be published early next year by the M.I.T. Press.
- A book titled "Machines Who Think" by Pamela McCorduck of the University of Pittsburgh's Department of English will be published this summer by W.H. Freeman. It is a history of the early days of artificial intelligence. The tapes, transcriptions and supporting documents on which it is based have been stored in the archives of Carnegie-Mellon University, where they are available to other scholars.

#### PAUL ARMER SPEAKS TO ADAPSO

On November 2, 1978, Paul Armer, Executive Secretary of CBI, spoke to a meeting of the Association of Data Processing Service Organizations (ADAPSO) in Orlando, Florida about the Charles Babbage Institute. An article on his presentation appeared in the December 1978 issue of *Datamation*.



## IMPORTANT DATES IN THE HISTORY OF CBI

- November 28, 1977—The International Charles Babbage Society is incorporated by Erwin Tomash and funded by an initial gift of \$150,000 from him. The firm of Cruikshank and Antin is hired as legal counsel. Arthur Young and Company agree to set up the books and to be our auditors.
- December 1977 and January 1978— An Advisory Committee is formed.
- February 1978— Paul Armer agrees to accept the position of Executive Secretary. Progress Report #3 goes out to over 100 individuals.
- March 15, 1978— Paul Armer opens an office for the Institute at 701 Welch Road — Suite 224 in Palo Alto, CA.
- April 28, 1978— A meeting of the Advisory Committee is held at Rockefeller University in New York City.
- May 25, 1978— A fellowship is announced for a graduate student working on a thesis related to the information sciences.
- May 30, 1978— The name of the organization is officially changed to The Charles Babbage Institute.
- June 5-8, 1978— The National Computer Conference is held in Anaheim, California. Erwin Tomash and Paul Armer meet with several AFIPS Officers and Directors to tell them about CBI. Erwin Tomash describes CBI in an address before the Computer and Communications Industry Association. Dr. Sylvia Chapp, Secretary of AFIPS, suggests to Erwin Tomash that CBI and AFIPS discuss merging their history related activities.
- July 14, 1978— Paul Armer submits to the AFIPS Executive Committee a proposal for cooperation between CBI and AFIPS.
- August 7, 1978— *Computerworld* publishes a lengthy story on CBI based on an interview of Erwin Tomash by Marcia Blumenthal.
- August 31, 1978— Erwin Tomash and Paul Armer meet in San Francisco with Al Hoagland (AFIPS President), Robert Rector (AFIPS Executive Director) and Jean Sammet (Chairperson of AFIPS History of Computing Committee) to discuss AFIPS/CBI cooperation.
- September 1, 1978— William Aspray, Jr., a student at the University of Wisconsin, is awarded the first CBI fellowship. He will examine the role played by logicians such as Kleene, Rosser, Turing and Curry in the early development of computers.
- September 19, 1978—A revised proposal is submitted to AFIPS.
- September 22, 1978—Prof. Hank Tropp and Paul Armer begin CBI's first oral interview with Dr. Gerhard Dirks.
- September 27, 1978—An application is made to the IRS for "Recognition of Exemption" under 501(c)(3).
- October 18, 1978— CBI's Fellowship for 1979-80 is announced at the Society for the History of Technology meeting in Pittsburgh.
- November 2, 1978— Paul Armer describes CBI to a meeting of ADAPSO (Association of Data Processing Service Organizations) in Orlando, Florida.
- December 1, 1978— The AFIPS Board of Directors authorizes AFIPS entering into negotiations with CBI whereby AFIPS would become a major sponsor of CBI (\$50,000/year for three years).
- December, 1978— *Datamation* covers Paul Armer's talk at the ADAPSO Conference.
- January 1979— We receive our first donation of a large collection of books and files from George Glaser, a former president of AFIPS.
- January 30, 1979— The first meeting of the Board of Trustees is held at the Smithsonian Institution's Museum of History and Technology in Washington, D.C.
- Della Prather joins the Institute as a secretary.
- Steve Lutze, a graduate student in the Public Historical Studies Program of the University of California at Santa Barbara, joins the Institute as an intern to develop a genealogy of organizations in the computer field in the 1945-60 time period.



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