



The Charles Babbage Institute
For the History of Information Processing
Sponsored by AFIPS and the information
processing community
University of Minnesota
104 Walter Library
117 Pleasant Street, S. E.
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CULTURAL CORPORATION

The Charles Babbage Institute Newsletter

Volume 2, Number 3

20 October 1980



Location of CBI's new headquarters at the University of Minnesota.

FROM THE CBI ACTING DIRECTOR

The transplantation of The Charles Babbage Institute for the History of Information Processing to the University of Minnesota is a momentous event, and opens up an exciting opportunity to both institutions to work together, cultivating a field of central importance in our world today. The words of the distinguished physicist O. R. Frisch, written shortly before his recent death, come to mind: "Although we hear and talk a lot about computers, I am convinced that most of us are nowhere near to understanding their full importance. Two hundred years from now historians will say that the computer changed our world as much as the steam engine did two hundred years previously, if not more so." The true measure of our success in carrying out the programs of the CBI at the University of Minnesota will be the judgment of those future historians.

The bricks for CBI's foundation at the University of Minnesota are now being assembled: The space in Walter Library is being prepared, and the formal

agreement, which provides for joint staff support and a joint governance structure, is in the final stages of refinement. More important than the bricks, however, is the mortar: mutual goodwill, enthusiasm, and above all commitment to a vision, to an ideal. If everyone can agree that the CBI represents the cultural home of the information processing community on an international scale, then the bricks and mortar of its foundation will firmly join, and as the house itself is constructed by carrying out CBI's programs, it will be gradually transformed into a mansion keyed for many people of differing tastes.

We are living today in the midst of the information processing revolution. We have a deep responsibility to future generations to record its roots and to begin to analyze its consequences. The Charles Babbage Institute provides the structure for accomplishing these objectives. Everyone is invited to enter and help build toward its success.

— Roger H. Stuewer
Acting Director, CBI

NOTE—CBI HAS NEW ADDRESS

A primary purpose of this issue of the *Newsletter* is to notify our readers of CBI's new address. Please address future correspondence to:

The Charles Babbage Institute
University of Minnesota
104 Walter Library
117 Pleasant Street, S. E.
Minneapolis, Minnesota 55455

The new telephone number is: (612) 376-9336. If you don't succeed in reaching us at this number, probably because the telephone has not been installed yet, try Roger Stuewer's office number, (612) 376-7023.

FROM THE EDITOR

The Charles Babbage Institute will be moving from temporary headquarters in Palo Alto, California to its permanent location at the University of Minnesota in early November, 1980. This move caps the start-up phase. CBI will now have the facilities to continue developing its programs into a comprehensive resource for the study of the history of information processing.

Pamela Gullard
Editor



Klaus Samelson

ORAL INTERVIEWS

CBI's oral history project now includes taped interviews with twenty-three individuals who played key roles in the development of the field. A list of those interviewed to date was included in the last issue of the *Newsletter* (Vol. 2, No. 2).

Two important additional oral histories were taken this summer. Nancy Stern, Associate Professor of Administrative Computer Systems at Hofstra University, interviewed Arthur Burks, one of three authors of the classic 1946 paper, "Preliminary Discussion of the Logical Design of an Electronic Computer Instrument," along with Herman H. Goldstine and John von Neumann. In August, Erwin Tomash and Roger Stuewer interviewed James Birkenstock in Wallingford, Connecticut. Birkenstock was a senior administrator at IBM during the crucial period when that company entered the electronic computer business, and, he was instrumental in IBM's growth into international markets. The interview focussed on the early days of IBM and on Birkenstock's career at the company, where he was initially hired as a tabulating machine salesman and eventually became vice president.

In late fall, 1980, Nancy Stern and I. Bernard Cohen (CBI Trustee) will interview Mina Rees, a mathematician who is President Emeritus and Professor Emeritus of the Graduate School and University Center of City University of New York. Dr. Rees's particular involvement with computer development occurred chiefly from 1943 to 1953 when she served in various administrative capacities in the Office of Scientific Research and Development and the Office of Naval Research, becoming Director of the Mathematical Sciences Division in 1949. The Office of Naval Research was very important in the funding of basic science research after World War II, including numerous computer-related projects, such as Project Whirlwind at MIT.

KLAUS SAMELSON DIES

The renowned computer scientist and mathematician, Klaus Samelson, died of cancer on 25 May 1980 in Munich, West Germany.

Klaus Samelson was born on 21 December 1918 in Strasbourg, Bas-Rhin (Alsace), France. He went to school in Breslau, Silesia (now Wroclaw, Poland) and studied mathematics, physics, and astronomy at the Technical University of Munich (TUM) from 1946 until 1950, receiving his doctorate in 1951.

In the 1950's Samelson worked with the Munich computer pioneers Hans Piloty and Robert Sauer. From 1952 until 1956 Samelson was a member of TUM's digital computers working group, and for the next two years was a staff member of TUM's computing center. From 1958 until 1963 he was an Associate Professor of Mathematics at the University of Mainz, then became a Professor of Mathematics at TUM, where in 1976 he changed to a chair in mathematics and computer science.

Klaus Samelson's contributions to computer science are well known. He has worked on efficient methods of compilation. The Bauer-Samelson algorithm, co-authored with his TUM colleague F. L. Bauer, is a fundamental result in the evaluation of expressions.

Perhaps Samelson's greatest pioneering efforts were in the definition and development of a universal programming language. Samelson was co-editor (with A. J. Perlis) of the *Report on the International Algebraic Language* (IAL, or, as it is popularly known, "ALGOL 58"). He was also one of the thirteen co-authors of the ALGOL 60 reports. He was part of the original ALGOL Group, and was a member of the I.F.I.P. Working Group on ALGOL from the time of its formation. In fact, Samelson gave the family of languages its name by suggesting the acronym, *ALGO*rithmic Language.

—George Ledin, Jr.
Department of Computer Science
University of San Francisco

PAUL ARMER WILL MOVE WITH CBI

Paul Armer will see the Charles Babbage Institute through its transition to the University of Minnesota, having accepted an offer from the University of a position as Associate Director of the Charles Babbage Institute and Adjunct Professor of the History of Science and Technology.

CBI FELLOWS

Both CBI Fellows have completed their doctoral theses; William Aspray's dissertation is on the logical origins of computer science and Paul Ceruzzi's is on the prehistory of the digital computer. We will notify you as soon as these papers are available from University Microfilms.

As mentioned in the last *Newsletter*, Aspray has accepted a position in the mathematics department at Williams College in Williamstown, Massachusetts. Ceruzzi has recently joined the history department at Texas Tech University in Lubbock, Texas.

WHERE AND WHEN WAS CHARLES BABBAGE BORN?

In the last issue of the *Newsletter*, we noted that there has been some controversy over the place and year of Charles Babbage's birth. We received very interesting comments on this question from three distinguished scholars: Norman T. Gridgeman, Anthony Hyman, and Hank Tropp.

To make a short story longer, the two places mentioned in our sources as possibilities for Charles Babbage's birthplace were London and Totnes in Devon. Hank Tropp wrote in to say that the *Dictionary of Scientific Biography* lists Babbage's birthplace as

Teignmouth. So now we had three possibilities, rather than two.

So, we wrote to Norman T. Gridgeman, author of the article in the *Dictionary of Scientific Thought*, asking for more information. He replied, "Yes, the puzzle over where...CB was born. I settled on Teignmouth...because that is what the Britannica, the Americana, and the Dictionary of (British) National Biography give. But I was wrong, doubly wrong. I'm sure that Anthony Hyman's finding is correct, if only because it rests on a baptism entry... CB himself used to say he was born in London. Still, it's curious how Teignmouth and Totnes got into the act. I guess the family had a home in one of these small country towns."

Now about the date. All our sources agreed that the day of birth was December 26. All good and well. But, about half the references on Babbage list the year of birth as 1791; the other half list it as 1792.

Since Anthony Hyman's research on both the place and year of birth appears conclusive, let us finally hear from him. He writes:

"I was most surprised to see in the Newsletter, 2 no. 2 that the place of Babbage's birth is still considered to be in question. The evidence is implied, even if not explicitly stated, in my little book: Computing; a Dictionary of Terms, Concepts, and Ideas. The entry for 6 January, 1792 in the Baptismal Register of St. Mary Newington, gives: Charles Babbage, son of Benjamin and Betty Plumleigh Babbage. As the birthday of December 26 is not in question the date is established. I ascertained the address in Crosby Row from the parish rate-books.

There has never been a scrap of evidence that Babbage was born anywhere else. The establishment of a museum in Totnes has always seemed to me to be comical: five minutes to glance at the Totnes baptismal register suffices to dismiss the idea as the Babbages were a good C of E family. Maboth Moseley's statement that Babbage did not know where he was born is fatuous. The reference you give to Babbage's note in old age of 1792 might refer to the date of baptism and is not entirely clear. When he was younger he several times gave 1791 as a date of birth. I have for some years urged that a plaque should be erected to commemorate his birthplace, although the house was destroyed when Larcome Street was made. The Borough of Southwark would, I understand, be agreeable if the finance could be raised."

So now, unless someone else steps forward with further evidence, we shall lay the matter to rest. Charles Babbage was born 26 December, 1791 in what is now the Borough of Southwark, London.

In his letter, Hyman also challenged the caption, "Charles Babbage's Analytical Engine," which we used with the picture on page 4 of our last *Newsletter* in the article about Babbage. The caption is clearly wrong. But, that's another interesting story we'll take up in our next issue.

INVISIBLE COLLEGE DEPARTMENT

"Invisible College" is a term which refers to a set of individuals working in a specialized field of knowledge who, despite varied geographical locations, slowly get to know one another and begin exchanging ideas and information about their field. As a clearinghouse, the Charles Babbage Institute has catalyzed the growth of the invisible college of individuals interested in the history of computing. This department of the Newsletter is designed to introduce our readers to the work of other individuals in the field. We hope that you will get in touch with each other directly, or by writing to the Institute about a particular item.

The Digital Equipment Corporation's Digital Computer Museum (see *CBI Newsletter* Vol. 2, No. 1, January 31, 1980) is sponsoring a Lecture Series featuring talks by pioneers and other scholars of the computing field. On November 11 at 5:00 p.m., John Atanasoff will speak on the Atanasoff/Berry Machine; in January, 1981, J. H. Wilkinson will discuss the ACE (the National Physics Laboratories pioneer computer); and on March 4, 1981, Konrad Zuse will describe the various calculator and computing machines he designed.

Past Digital Computer Museum events have included lectures and demonstrations on computer art and talks by George R. Stibitz, the inventor of Bell Labs Relay Computer Model I; Maurice V. Wilkes, from Cambridge University in England; and Jay Forrester, inventor of core memory. Each presentation in the Lecture Series is available at the museum on videotape.

The museum seeks donations or loans of punched card equipment, early teletype and telegraphy equipment, the Anita Electronic Calculator, the electrified version of the Millionaire, and other artifacts.

For more information, contact Jamie Parker at the Digital Computer Museum, One Iron Way, Marlboro, MA 01752 or call (617) 481-9511 ext. 4036.

Allan Bromley, Professor in the Basser Department of Computer Science at the University of Sydney, has prepared a collection of artifacts illustrating aspects of the evolution of scientific calculating devices from their earliest origins to the present day. He is interested in receiving other materials concerning calculating devices, especially those materials that would enhance the teaching possibilities of the collection. (See last issue of the *CBI Newsletter* re Bromley's work with Babbage's drawings and notebooks at the Science Museum in London.) To contact Bromley, write to:

Dr. Allan Bromley
Basser Department of Computer Science
Madsen Building F09
University of Sydney
NSW, 2006

Paul Armer, CBI's Executive Secretary, is now in correspondence with S. R. Mikulinsky, Director of the Institute of the History of Science and Technology of the USSR's Academy of Science and corresponding member of the Academy. The Institute as it is now constituted was created in 1958 when the Institute for the History of Natural Science was united with the Academy's commission on the history of engineering. Mikulinsky writes, "In our institute research into the history of computers and data processing has been carried on since the second half of the 1960's." L. E. Maistrov directs the research on pre-electronic computers and I. A. Apokin directs the studies of electronic computers. The most important document resulting so far from their work is a monograph, *The Development of Computers*, I. A. Apokin and L. E. Maistrov (Moscow: Nauka Publishers, 1974). Other publications include papers by V. L. Chenakal, A. Belii, and I. S. Adlin on subjects such as Charles Babbage's machines, the work of I. L. Tschebechev (a mathematical pioneer), and the work of John Atanasoff. Mikulinsky has sent CBI reprints of these papers. All are in Russian save one describing the Institute of the History of Science and Technology.

Nancy Stern, Associate Professor of Administrative Computer Systems at Hofstra University, recently received a National Science Foundation Research Grant to study John von Neumann's computing work at the Institute for Advanced Study, 1946-1952. Stern will examine the primary source material, and also interview many people associated with von Neumann during that period. With the permission of the interviewees, edited transcripts of the interviews will be turned over to the Charles Babbage Institute and will be made available to qualified scholars.

Paul Ceruzzi, CBI Fellow, and Cathy Ceruzzi had a daughter, Carla Marie, on October 1, 1980. The baby weighed 8 pounds, 6 ounces at birth. Everyone is doing well. Congratulations!

Clark A. Elliott is Associate Curator of the Harvard University Archives and he also serves as chairperson for the Society of American Archivists' Committee on the Archives of Science, Technology, and Medicine and is a representative for the History of Science Society on a Joint Committee on the Archives of Science and Technology, which includes representatives from SAA and the Society for the History of Technology. He writes that the Joint Committee has been studying the nature and dimensions of the problems posed by twentieth-century "sci-tech documentation" and that a report will soon be issued which outlines some strategy for further research and action in this area.

Elliott also reports that the Harvard Archives currently hold the papers of Howard Aiken as Director of the Computation Laboratory. These papers are in various stages of processing, and some of them cannot be perused without written permission of the current head of office whose records are involved.

In addition, Elliott and six other individuals interested in the history of U.S. science have formed a coordinating group to publish an annual newsletter, "History of Science in America — News and Views," which will focus on "the study of science within the social, political, and cultural context of the past, as that multifaceted experience was played out within the American geographical setting." Articles and information about this field are solicited. If you wish to receive the newsletter, an initial \$5.00 contribution is urged. Checks should be made payable and sent to the editor:

Clark A. Elliott, Editor
 University Archives
 Pusey Library
 Harvard University
 Cambridge, Massachusetts 02138

The National Endowment for the Humanities and Intel Corporation, a large manufacturer of micro-electronic components located in Santa Clara, California, are providing a total of \$35,000 to the Association of Science-Technology Centers (ASTC) to plan a traveling exhibition on microelectronics. The show, called "Computer in Your Pocket... An Exhibition Exploring the Social Impact of Microelectronics," will be designed to provide direct experiences with microelectronic devices, interpretation of their nature and function, and insight into how they may affect American social institutions in the next decades. The exhibit is scheduled to travel to 12-14 museums across the United States starting in September, 1982. Sheila Grinell, ASTC Traveling Exhibition Service Coordinator, will be responsible for the overall management of the exhibition. She can be reached at: Association of Science-Technology Centers, 1016 Sixteenth Street, N.W., Washington, D.C. 20036.

Following a distinguished career in mathematical and technical education, William Hawkins, 73, is completing his Ph.D. thesis on, "The Mathematical Work of John Napier (1550-1617)" at the University of Auchland. But that's not the interesting part. In the course of his research, Hawkins translated, from Latin, Napier's texts, *De Arte Logistica* and *Rabdologiae*, and in the latter, Hawkins discovered detailed plans for what may well be the first calculating machine, what Napier called the "lighting calculator." The machine had much greater capacity and was quicker to use than Napier's well-known "bones."

Intrigued with the design of the machine, Hawkins had the engineering school at the university build a recreation of the invention. Hawkins has since demonstrated the machine, which Napier called the "Promptuary," at the University of Edinburgh and other institutions in the United Kingdom and in the United States. Hawkins can be reached at: Department of Computer Science, University of Auchland, Private Bag, Auchland, New Zealand.

Mark G. Graff, a systems analyst at the Philip Morris Research Center in Richmond, Virginia, has made a preliminary study of Howard Aiken's papers located at the Harvard University Archives. Graff has uncovered numerous interesting artifacts, including a 1950 report which contains a detailed description by Aiken of the state of the art of the computer industry.

Graff is interested in hearing from "Aiken alumni." He can be reached at (804) 271-5348.

Readers are reminded that CBI is supported solely through private financing. If you would like to contribute to the promotion of the history of computing, join our Associates program. Associates receive at no charge a subscription to the *Annals of the History of Computing*. The schedule for contributions is as follows:

Associate Member Category	Minimum Annual Tax-Deductible Contribution	Cost of Lifetime Membership at the Category Level (one time payment)
Regular	\$ 40	\$ 650
Participating	\$ 100	\$1,000
Sustaining	\$ 500	\$3,000
Patron	\$1,000	\$5,000

Please make your check payable to the Charles Babbage Institute and mail to: CBI, University of Minnesota, 104 Walter Library, 117 Pleasant Street, S.E., Minneapolis, MN 55455

PUBLICATIONS

There are two publications that we would like to bring to your attention in this issue of the *Newsletter*:

- N.T. Gridgeman writes that B. V. Bowden's book, *Faster Than Thought: A Symposium on Digital Computing Machines* (London: Pitman, 1957), is "by far the most entertaining account of the Babbage and Lady Lovelace cooperation."
- The Table of Contents of the July 1980 issue of the *Annals of the History of Computing* is:
 - Eloge: Herman Lukoff, 1923-1979 — Albert B. Tonik
 - History of Mechanical Computing Machinery— George C. Chase
 - Optimization of Boolean Expressions— Jack Minker and Rita G. Minker
 - Installation of the German Computer Z4 in Zurich in 1950—Konrad Zuse
 - The Relay Calculator Z4—A. P. Speiser
 - History of Digital Computing in Southern California—Fred J. Gruenberger
 - History of Eighteen Symposia— Fred J. Gruenberger
 - Early Electronic Computer Developments at IBM—Byron E. Phelps

ERRATUM

In the last *Newsletter* we failed to mention that the fine photograph of Antonin Svoboda, which appeared on page 6, was taken by Robina Mapstone, who did an oral interview of Svoboda last November.

NEW TRUSTEES NAMED

CBI's Executive Committee has recently named three individuals to the Board of Trustees, bringing the total number of Board members to twenty-five. The new Trustees are: C. Peter Magrath, Daniel D. McCracken, and Roger W. Staehle.

Peter Magrath has been President of the University of Minnesota and Professor of Political Science since 1974. From 1972 to 1974, he was President of State University of New York at Binghamton and Professor of Political Science there. His many publications include, *Morrison R. Waite: The Triumph of Character* (Macmillan Company, 1963).

Daniel McCracken is a consultant in the computer industry and he is the author of numerous texts and other works on computer subjects. His book *Digital Computer Programming* (Wiley and Sons, 1957), was the first textbook on the subject. His latest work is, *A Guide to NOMAD for Applications Development* (Addison-Wesley, 1980).

Roger Staehle is Dean of the Institute of Technology at the University of Minnesota. Before coming to Minnesota in 1979, he was a Professor of Metallurgical Engineering at The Ohio State University. The author and/or editor of numerous books and articles, he was elected to the National Academy of Engineering in 1978.

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