Ben Schneider, 88

8-7-78

Was consulting engineer

A memorial service will be conducted Saturday at 4 p.m. in the Winchester Congregational Church, Winchester, for Ben R. Schneider, 88, retired consulting engineer with the Lowell Hoisery Mills. He was a resident of Ledgewood road, Winchester, and died Tuesday in a Lexington nursing home.

Mr. Schneider was born in Summit Hill, Pa., and was a graduate of Mercersburg (Pa.) Academy and the University of Cincinnati. He was a consulting engineer with the Procter and Gamble Co. in Cincinnati before settling in Winchester in 1929.

He was employed by the Lowell mills for more than 20 years before his retirement in 1957.

He was a member of the Winchester Board of Selectmen from 1940 to 1943 and served as chairman for one term. He was a member of the Winchester Country Club and was a former chairman of the Winchester Boy Scout Committee. He was a former member of the Town of Winchester finance committee and the Winchester Rationing Board during World War II.

He leaves his wife, Jean (Taylor); two sons, Prof. Ben R. Schneider Jr., a member of the English department of Lawrence University in Wisconsin and David T. Schneider, US Ambassador to Bangladesh. There are seven grandchildren.

Lawrence Man Publishes Book

Dr. Schneider Writes About Wordsworth's Days at Cambridge

Dr. Ben Ross Schneider, Jr., instructor in English at Lawrence college, has been notified his book "Wordsworth's Cambridge Education" has been accepted for publication by the Cambridge University press in England.

The book, which will run about 250 pages, was done as the thesis for his doctor's degree, received last year from Columbia university.

The work shows the influence on Wordsworth of his college textbooks and the political radicalism of his college associates, and is a general study of the background of his poetry.

Dr. Schneider spent a year at Cambridge, as a member of Wordsworth's own college, St. Johns, and was able to do his research on primary source materials. The student period is least documented in the poet's life, for he kept no diary, and so this book fills a historic gap.

Worked From Reports

The Lawrence faculty member worked from tutor's examination reports, which are kept on all Cambridge students for centuries. The tutor's reports were made public for the first time in 1950, so although they are not original discoveries by Dr. Schneider, he is among the first to utilize them in research. The tutor's reports tell what books were assigned to students and how well they did at them. The conclusion on Wordsworth: he didn't do very well.

One of the most important source materials contained in

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jor Cities

equivalent of $22.01 on that city's equalized local tax rate, local taxes River Hills property owners didn't have to pay.

There has been no change since 1969 in the several formulas by which state aids and shared taxes are distributed, Jansen explained. He furnished comparisons of the county, schools and municipal rates required by the state's largest cities, which go toward making up the total local tax rates.

Oshkosh, ninth city in size this year, has a tax rate 13th in size. The equalized $33.13 local tax rate includes almost the lowest county tax rate, equalized at $4.06, of the 21 largest cities; a school district tax of $18.83, 10th largest in the state and four cents lower than Appleton's; a vocational school tax next to the smallest and a city rate ninth in size.

State income tax revenues to Oshkosh in 1969 totaled $1,183,595 or $22.56 per capita, lowest of the 22 largest cities. Corporate income taxes amounted to $526,828, putting Oshkosh in 16th place on the per capita receiving roster of the state's big cities. Shared utility taxes came in that year at $352,225, matching Appleton's $10.04 per capita receipts.

New formulas for distribution of state aids and shared taxes to local communities are "the only way Oshkosh and other cities of our size can survive," Jansen warned.

Cheerleading
Tournament
At Green Bay

Reviewing a Printout of the "London Stage, 1660-1800" to be entered in a computer at the Institute of Paper Chemistry are, from left, John Church, associate director of the institute's computer center; Will Daland, programmer-analyst, and Ben R. Schneider, Lawrence professor and project director.

Lawrence Takes Big Computer Step

BY BOB SHELDON
Of Lawrence University

A computerized information bank, apparently the first of its kind in the field of literary history, is being established at Lawrence University.

Director of the project is Ben R. Schneider, professor of English at Lawrence, who within three years plans to have on computer tape the entire 11-

ence work, ironically, has one serious drawback. Without mechanical methods, the search for information in its pages is sometimes so extensive that the researcher can't justify the investment of time required.

Once the reference work is put on tape, however, scholars will be able to obtain compilations of data that otherwise would take weeks or months to assemble by turning pages and filling out filing cards.

certain the information bank will be used.

"In recent years, literary journals have published an increasing number of articles based on information gathered from "The London Stage," he said.

He estimates that if all the scholars who used "The London Stage" for articles in 1969 had access to an information bank such as he is developing, there would have been about three

computer programmer-analyst Will Daland in the pilot phase of the data bank project. Together, Schneider and Daland are working out programs for retrieval of various kinds of information available in "The London Stage," using a 100-page sample of the material. They are doing their work on the third generation IBM-360 computer at the Institute of Paper Chemistry, which Lawrence uses on a shared basis.

Police & Fire Beat

Two women were injured, one seriously enough to be hospitalized, when their cars collided at Randall Avenue and Union Street late Friday morning.

Appleton police said Gladys E. Koerner, 1518 N. Union St., suffered a bruised ankle and Patricia Colson, 1514 N. Morrison St., was taken to Appleton Memorial Hospital with a cut knee and a head bump.

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Mary S. Lutz, 506 E. Spring St., was taken by ambulance to Appleton Memorial Hospital Friday afternoon after she suffered a right knee injury when her car and one driven by Joan E. LaRock, 1343 W. Rogers Ave., collided at Spencer and Locust streets in Appleton.

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Four units of the Appleton Fire Department were sent to the Harold Seubert home, 719 W. Packard St., Saturday evening on a report of an oven fire. Although the fire was out when they arrived, fire fighters used a smoke ejector to clear the house.

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A three-car accident Friday afternoon at Newberry Street and Telulah Avenue resulted in a possible back injury for James Clark, 28, 115 Gardners Row. He went to Appleton Memorial Hospital.

Appleton police identified others involved in the accident as Richard Brooker, 17, 929 N. Owaissa St., and Patricia Kokke, 251 S. Helen St., Kimberly.

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A burglary at Midland Outagamie Co-Op, 3011 W. Wisconsin Ave., Friday night resulted in the loss of about $15 in change.

Outagamie County authorities, who were notified Saturday, said entry into the building was

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ence work, ironically, has one serious d r a w b a c k : Without mechanical methods, the search for information in its pages is sometimes so extensive that the researcher can't justify the investment of time required.

Once the reference work is put on tape, however, scholars will be able to obtain compilations of data that otherwise would take weeks or months to assemble by turning pages and filling out filing cards.

"Sorting, counting and tabulating is the proper work of computers," Schneider s a y s . "Computers can accomplish in minutes what would otherwise be a time consuming, boring and painstaking task."

"Add to this the fact that computers make no mistake in transcribing data and no mistakes in carrying out orders, and it becomes evident how computer management of the information in 'The London Stage' will increase its value to researchers," he said.

Schneider, o n e of whose major scholarly interests is 18th century drama, knows first hand what a valuable tool the computer can be for tabulating data from "The London Stage."

He used one in preparation for a book entitled "The Ethos of Restoration Comedy" to be published in the spring.

Using 30,000 IBM c a r d s punched with data from "The London Stage," the professor compiled a survey of 1,127 characters in 83 plays from 1660-1730; a feat which would have been extremely difficult if attempted w i t h o u t mechanical help.

Schneider has received substantial financial support for the London Stage Data Bank project from several foundations, but the cost of the total project is still to be met. The largest anticipated expense, he said, will be the cost of transferring data from the printed page to magnetic tape. Estimating the cost of a number of available methods is a major task of the

certain the information bank will be used.

"In recent years, literary journals have published an increasing number of articles based on information gathered from "The London Stage," he said.

He estimates that if all the scholars who used "The London Stage" for articles in 1969 had access to an information bank such as he is developing, there would have been about three inquiries per week.

"That's without even considering other types of research which might be stimulated if the data bank were available," he said.

"I'm sure that researchers in history, e c o n o m i c s and sociology also would find the information bank useful. It could, for example, answer questions about political trends, class mobility, availability of leisure time, and many other areas of interest as revealed in the tastes of theater-goers of the period."

An international a d v i s o r y committee is overseeing the London S t a g e project. The committee includes the four editors of "The London Stage" — professors William Van Lennep, Emmett Avery, Arthur Scouten and George Winchester Stone. Stone is chairman of the advisory committee, which also includes several British scholars, such as Professor Cecil Price and Miss Sybil Rosenfeld, editor of "Theatre Notebook" and honorary secretary of the Society for Theatre Research.

During the current academic year, Schneider is working with

computer programmer-analyst Will Daland in the pilot phase of the data bank project. Together, Schneider and Daland are working out programs for retrieval of various kinds of information available in "The L o n d o n Stage," using a 100-page sample of the material. They are doing their work on the third generation IBM-360 computer at the Institute of Paper Chemistry, which Lawrence uses on a shared basis.

The major task of typing "The London Stage" onto magnetic tape is scheduled to take place during the 1972-73 academic year, after which the information bank is expected to become operational and largely self-supporting.

"Lawrence, with its exceptionally strong theater department, provides an ideal setting f o r the information bank," Schneider said.

"The university would not only have an internationally known center for information on theater and drama, but it would have an information retrieval system that would serve as a model for many kinds of research in the humanities and social sciences."

Schneider a d d e d that the project would help to acquaint students and teachers in the humanities with c o m p u t e r methods applicable in their fields.

"Most science majors are acquainted with the potential of computers," he said. "It would be tragic if technology's answer to the information explosion were not utilized by those outside the sciences."

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Male Singer

(AP) — Elvis Pres-
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New Musical Ex-
It was his 12th time
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Appleton p o l i c e identified others involved in the accident as Richard Brooker, 17, 929 N. Owaissa St., and Patricia Kokke, 251 S. Helen St., Kimberly.

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A burglary at Midland Outagamie Co-Op, 3011 W. Wisconsin Ave., Friday night resulted in the loss of about $15 in change.

Outagamie County authorities, who were notified Saturday, said entry into the building was gained after breaking a glass in an overhead door. An inventory was planned to determine if any merchandise was taken.

Offer $6,000 in Prizes
At Oshkosh Fisheree

OSHKOSH — Approximately $6,000 in prizes, including a 1971 automobile, a new snowmobile and a trip to Las Vegas or Fort Lauderdale, will be awarded at the ninth annual fisheree of the Otter Street Fishing Club. The program, scheduled Sunday, will be conducted on Lake Winnebago.

Tickets for the drawing are $2 per family and can be purchased at Jerry's Tavern, Oshkosh.

Retarded Children's
Association to Meet

OSHKOSH — The Winnebago County Association for Retarded Children will conduct its monthly meeting at 7:30 p.m. Monday in the special education room of Oshkosh High School.

Albert Goerlitz of Gillingham School, Neenah, will speak on camping for the mentally retarded.

English prof in 'microland'

11-19-84 PC

How is a lifelong student of Romantic poetry doing in the high-tech world of computers? Very well, thank you.

Ben Ross Schneider Jr., English professor emeritus at Lawrence University, has written a book that is unique in its field. His book, "My Personal Computer and Other Family Crises" or "Ahab and Alice in Microland," is not simply a "how-to" book, or buyer's guide, or impact study, or philosophical analysis.

The difference is that he covers all these topics in the course of an entertaining illustrated narrative.

"There are too many computer books on these things," says Schneider, "but no one has tried to tell what it is really like to live with a microcomputer. I wanted to give full meaning to the word 'personal' as used in the term 'personal computer.'"

Schneider

While he and his computer accompany his family from their academic base to summer cottage, London residence and other locales, he doggedly pursues his software project.

Sometimes he seems to be Melville's Captain Ahab, hunting his ephemeral white whale in single-minded frenzy. At others he is Lewis Carrol's Alice, groping hopelessly for solid ground in the zany world in which he finds himself.

In the course of Schneider's narrative, the reader can learn much about word processors, Microsoft BASIC, S-100, Z80, CP/M, RSTS, machine code, string functions, peripheral interfacing, floppy disks, 220-volt conversion and other mysteries of microcomputing.

The book concludes with a reflective chapter in which Schneider applies his literary learning and philosophical speculation to his 17 years of experience with computing.

In his first project Schneider used an IBM 1620 to analyze the repertoires of more than 200 actors on the London stage from 1660-1730 who played 1,027 roles in 63 plays according to 113 characteristics.

In the '70s, Schneider computerized an 11-volume reference work called "The London Stage, 1660-1800."

Schneider will autograph copies of "My Personal Computer" at Conkey's Bookstore from 10:30-11:30 a.m. and 1:30-2:30 p.m. Saturday.

BY JANE DWYRE GARTON
Post-Crescent staff writer

Ben Ross Schneider Jr. is the Saul Bellow of computerland.

Bellow has a Pulitzer in his pocket, but Schneider has classics in his computer.

With wit and detail, Schneider, a professor of English at Lawrence University, tells about his seven-year, $200,000 project to produce an index to the 11-volume reference work, "The London Stage, 1660-1800," an index annotation which has, in turn, produced a data bank of information unparalleled for that period of history in the British theatre.

"I simply thought the thing wouldn't be done if it weren't done by computer," Schneider said.

Camera-ready copy for the entire index was completed last weekend. The copy will go into an index book for the original reference work, which is found in about 1,000 libraries throughout the world.

"But there is a great deal more information on the computer than what is in the index," Schneider explained.

Exhaustive cross-referencing has resulted in storage of information from the period about any theatre, title, performance, performer, name or title in commentary or any combination of those elements. There is also computer capacity to tell trends in such things as theatre offerings or ticket prices, stage career of actors, royal patronage and role histories.

At Lawrence, an information referral service will be established so that theatre historians and teachers of 18th century English can find accurate information for their research.

Schneider wrote "Travels in Computerland" in 1974 to describe the process adopted for indexing and computerizing "The London Stage."

His book earned him the Bellow-compliment via a review in a computer newsletter. A second edition of that book is now planned.

What Schneider, as director and administrator of the work, has done is provide a new reference to London life in the 18th century and to the social, economic, legal, artistic, and dramatic history produced on stage in that period.

"We can bring more information to bear than we could before. Scholars are bound to use it because it's there. With this new information available, modes of operation for research have changed," said Schneider.

Theatre historians, he said, are quite slow to use computer methods. But the more that is available to know, the more they will need to know.

"My feeling is that as soon as a few people start doing this, everyone will need to," said Schneider.

All scholars will need to do is contact the London Stage Project office at Lawrence and, according to Schneider, "vague references can be turned into specifics; impressions can be turned into facts."

To date, the project has been supported by grants from the National Endowment for the Humanities, the American Council of Learned Societies, the American Philosophical Society, the Andrew Mellon Foundation, the U.S. Steel Foundation, the Billy Rose Foundation, Lawrence University and individual gifts.

Costs have reached $200,000 for the project started in 1971.

"If Lawrence had charged for computer time, the figure might have been double," said Schneider.

. For the future of the project, Schneider would like to have a part-time secretary who doubles as a computer operator. But a salary for that position

will have to come from fees charged for the information referral services.

He estimates that an average fee will run $100 to $150. It will be related "to the time we save the scholar," according to Schneider.

Also taken into consideration will be how much text is searched, how long a list is printed, how much page scanning is done and "how much note-taking and filing he (the scholar) doesn't have to do."

Schneider says the fees will not be "a large price to pay for a great saving in scholarly time.

"Querying the London Stage information bank will cost him less than visiting a distant library," said Schneider.

There are some 200 books and articles written annually on this period of theatre history in London. Of those, Schneider estimates that the information available through the Lawrence computer would be useful to 150 of those works.

"Every day I pick up an article that someone did by hand or did crudely," he said.

The information bank can end those incomplete attempts at research.

Computer people are also expected to be interested in the system.

The combination of the scholarly material and the precise programming has made the project difficult to describe.

"It's very hard to explain what you're doing. It takes about half an hour. People don't wait," Schneider said.

"If you haven't had hands-on experience with a computer, you overrate the difficulty. You suppose some unimaginable mystery is involved that will be difficult to understand," said Schneider.

Computer theater

Professor Ben Ross Schneider indexed "The London Stage" on computer. Included in the book is any conceivable information concerning the stage from 1660-1800. This first edition completed, a second is in the plans. Looking at the volumes are, from left, Cathy Steiner, Cathy Boggs and Ruth Steiner. (Post-Crescent photo)

Computerized Shakespeare

BY JANE DWYRE GARTON
Post-Crescent staff writer

Ben Ross Schneider Jr. is the Saul Bellow of computerland.

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Computer theater

Professor Ben Ross Schneider indexed "The London Stage" on computer. Included in the edition completed, a second is in the plans. Looking at the volumes are from left, Cathy

Schneider finishes stage index

By Pam Marshak

The London Stage, 1660-1800, is an eleven volume calendar of performances. It took its five editors thirty-five years to compile. It took Professor B.R. Schneider, with the help of students, seven years to index. On April 3 the index was completed. It contains all references to each name and title appearing in the calendar in one merged index. Schneider estimates the cost of his project at close to $200,000. Several grants as well as private gifts financed the index.

The index will be published by Southern Illinois Press as a companion volume to The London Stage. But the published index is not the only result of seven years of dedication. Schneider and his associates have also created The London Stage Information Bank.
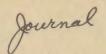
The information bank, stored in Lawrence's computer system, contains additional information which is not available in the index. With the information bank, such things as an actor's repertoire or the history of a specific role can be obtained. Schneider has recently had a request for information pertinent to the social history of 18th century London.

The information bank is available, at a cost, to interested scholars everywhere. Schneider has sent out newsletters which specify the abilities of the information bank and the cost of using it. So far, however, "business is very slow," Schneider commented. He feels certain that once scholars begin to utilize detail in modern theater scholarship, they will all have to and both the index and the information bank will be in great demand.

Schneider feels that the use of the computer is what made the index and the bank possible. The number of references, 505,000, reveals that if the computer was not employed, there is little chance that seven years would have made a dent in the time required to compile the index. He also noted that the cost of printing the index without the computer would have substantially raised the total cost of the project.

Over the years nineteen students were involved with Schneider's project. Student editors include Cathy Boggs, Cathy Steiner, Marc Weinberger, Joe Jacobs. Other students contributing to the project were Suzanne Fusso, Melinda Young, Connie Hansen, Sarah Larsen, Laurie Johnson, Sue Koch, Pete Pretkel, Lynn Seifert, Louise Freiberg, Elizabeth O'Brien, Jan Surkamp, Mark Burrows, Kathy Rosner, Debbie Watts, Ben Ross Schneider III, and Scott Farnsworth.

Computers need a human touch

Appleton, Wis. —UPI— Traversing the centuries via microchips has meant a professor of old English drama a new modern career as a computer philosopher.

But Ben Ross Schneider says if he had given it proper thought, he probably would have been more afraid when he plunged into the relatively primitive world of computers in an effort to organize information for a complicated research project.

Twenty years have passed since he punched his first computer card. During that time, the retired Lawrence University professor has made it his business to interpret the world of data processing to novices and remind the computer industry that ordinary people are their main customers.

In his recent book, "My Personal Computer and Other Family Crises," he details the trials and tribulations of actually learning to live with a a piece of equipment that seems to take on a life of its own.

"No one has tried to tell what it is really like to live with a microcomputer," he said. "I wanted to give full meaning to the word 'personal' as used in the term personal computer."

Slow learner

In his book, Schneider muses about confronting computer use for the first time, philosophizes about the impact of computers on individual lives — including his tales of lugging his computer around the globe for research — and levels his share of criticism at the computer industry.

Although he admits he likes machines, Schneider did not intend to become a computer expert. In 1965, he began a project to analyze interpretations of Restoration plays based on the types of actors who played various roles.

To do this, Schneider needed a system of complicated cross-referencing of actors, their characteristics, roles and plays — about 10 million facts. At the time, tedious punching of individual data processing cards was the only means of putting such information into a computer.

He stumbled many times in his first adventure in computing — once literally, and he dropped a box and scattered hundreds of carefully organized data cards all over the floor.

Compiling a data base took nine years. Schneider just now is beginning to use and analyze the information.

Know what you want

Along the way, he developed some strong opinions about computers and the people who make them.

Schneider believes the computer industry started out backwards, assuming incorrectly that the machines would be used mostly for complicated accounting and scientific formulas. It took computer manufacturers decades to realize that the needs of ordinary people were for word processing and storing information, he said.

"I think they know what we need now, but they're too busy beating each other to give it to us," he said.

Computer designers also have trouble relating to the non-scientific community, he said.

"I think they want to be friendly, but they don't know how," Schneider said. "They're a bunch of engineers and what they think they know about the user isn't true."

In his effort to educate them, Schneider has become a regular writer in a number of computer industry magazines.

To those thinking, but nervous, about buying a computer, Schneider advises that not everyone needs one. Those who believe they do should think and study first, he said.

"Forget the price, forget the brand, forget everything except what you want to do with it," he said. "Look for the software first. Find someone who is doing with their computer what you want to do and ask them."

Despite its shortcomings, Schneider thinks computers, with the vast amounts of information they can process, will benefit the individual in the long run.

"A whole lot of people who never dreamed of being experts in anything, can become Michelangelo."

Professor and Computer Collaborate on New Book

A collaboration between Dr. Ben R. Schneider Jr., associate professor of English at Lawrence University, and Lawrence's IBM 1620, a small scientific computer, has produced a new book, "The Ethos of Restoration Comedy." Dr. Schneider gathered information for the book during sabbatical leave last year in London. (Post-Crescent Photo)

BY M. K. REED

Dr. Ben R. Schneider Jr., associate professor of English at Lawrence University, had several theories about patterns of characterization and plot in English Restoration comedy. He couldn't, however, prove them.

While on sabbatical leave last year in London, he gathered information about 85 plays, 1100 different characters in the plays and 400 actors who filled the roles. He presented the data to the Lawrence computer, which not only confirmed his theories but also opened up for him new insights into the subtleties of characterization.

Ideal Assistant

Lawrence's IBM 1620, a small scientific computer, proved an ideal research assistant. In less than an hour it could, for example, provide the complete repertoires of 400 individual actors or report how frequently the protagonist of the comedies was also a rich man.

The computer has spent so far about 235 hours going through 27,000 data cards. Of the machine's ability to answer the questions he poses, Dr. Schnei-

tails on plays, performances, theatres, actors and repertoires. He then took the 1100 characters found in the 85 plays and graded each one on a possible 113 characteristics. Was the character male or female, antagonist or protagonist, fop or prude, rich or poor, old or young, honest or hypocritical?

"I was attempting to learn what you could say about these plays as a whole," Dr. Schneider explained. "I wondered if they were written according to certain formulas, and I found out they were."

By analyzing the attitudes of the characters and the way in which certain types were either rewarded or punished, Dr. Schneider was able to define a standard of ethical behavior.

"In these plays, for example," he continued, "thrift was considered a vice and the spending of money a virtue. This ethical outlook reflects a conflict in society between the new Puritan merchant class and the old feudal landed aristocracy, between the values associated with the accumulation of capital and those associated with the trusteeship of land."

Meaning of Character

Another problem for the computer to consider

BY M. K. REED

Dr. Ben R. Schneider Jr., associate professor of English at Lawrence University, had several theories about patterns of characterization and plot in English Restoration comedy. He couldn't, however, prove them.

While on sabbatical leave last year in London, he gathered information about 85 plays, 1100 different characters in the plays and 400 actors who filled the roles. He presented the data to the Lawrence computer, which not only confirmed his theories but also opened up for him new insights into the subtleties of characterization.

Ideal Assistant

Lawrence's IBM 1620, a small scientific computer, proved an ideal research assistant. In less than an hour it could, for example, provide the complete repertoires of 400 individual actors or report how frequently the protagonist of the comedies was also a rich man.

The computer has spent so far about 235 hours going through 27,000 data cards. Of the machine's ability to answer the questions he poses, Dr. Schneider says admiringly, "It can't possibly miss."

What made it possible for the computer was the information collected and sent back to Appleton by Dr. Schneider; the work of his student assistant, who transferred the data to cards, and the supervision of John O. Church, director of the computer center, who helped plan the programs. One result of their combined efforts is Dr. Schneider's just-completed book, which he has titled, "The Ethos of Restoration Comedy."

The Lawrence professor chose as the basis of his study 85 of the most popular and typical plays of the period from 1660 to 1722. The era began with the restoration of King Charles II after the collapse of the Commonwealth. The London theatres reopened, and audiences flocked to the witty, clever, frequently ribald comedies of such writers as Dryden, Wycherley, Congreve and Fahrquhar.

Working in the British Museum, Dr. Schneider used as his source a reference work called "The London Stage 1660-1800," from which he collected details on plays, performances, theatres, actors and repertoires. He then took the 1100 characters found in the 85 plays and graded each one on a possible 113 characteristics. Was the character male or female, antagonist or protagonist, fop or prude, rich or poor, old or young, honest or hypocritical?

"I was attempting to learn what you could say about these plays as a whole," Dr. Schneider explained. "I wondered if they were written according to certain formulas, and I found out they were."

By analyzing the attitudes of the characters and the way in which certain types were either rewarded or punished, Dr. Schneider was able to define a standard of ethical behavior.

"In these plays, for example," he continued, "thrift was considered a vice and the spending of money a virtue. This ethical outlook reflects a conflict in society between the new Puritan merchant class and the old feudal landed aristocracy, between the values associated with the accumulation of capital and those associated with the trusteeship of land."

Meaning of Character

Another problem for the computer to consider was whether the actor who played a role could indicate anything about the meaning of the character.

"Let's say," Dr. Schneider went on, "that parts which are played consistently by Boris Karloff might indicate something to a 20th century audience. Does the fact that the head highwayman in 'The Beaux' Stratagem' was always played by actors who portrayed fops indicate how the role was interpreted at the time?"

Using the same 85 plays, Dr. Schneider compared repertoires of various actors, the dominant characteristics of the roles each actor played and how the roles compared with the choice of parts available to him.

"This is something no one would even dream of doing without a computer," he acknowledged.

His conclusion is that the actor who plays the role does influence the interpretation. "But I'm not prepared to say how much," Dr. Schneider added. "That's something we're still working on."

Chrononhotonthologos: The London Stage

by Ben Schneider
Professor of English

People who are hunting for the Slavic Department and accidentally wander into the London Stage Project next door, are often unable to conceal their curiosity about what they see: one or more students marking up computer printouts spread over large tables; a large cabinet stuffed with computer tapes, printouts, IBM cards; stacks of printouts reaching the ceiling; and, way in back, a typewriter with a TV screen for a page at which another student or a professor is banging away.

What can possibly be going on here? Well, with the help of student assistants Cathy Boggs, Joe Jacobs, Cathy and Ruth Steiner, and Marc Weinberger, and I, B.R. Schneider, professor of English, am attempting to convert **The London Stage, 1660-1800,** "A Calendar of Plays, Entertainments, and Afterpieces together with Casts, Box-Receipts, and Contemporary comment, Compiles from the Playbells, Newspapers and Theatrical Diaries of the Period," by William van Lennep, Emmett L. Avery, Arthur H. Scouten, George Winchester Stone, Jr., and Charles Beecher Hogan, Southern Illinois University Press, 1960-1968, 11 volumes, 8,000 pages, into a computer-accessible data bank for theatre historians and other scholars.

This answer causes all but the very bravest to back away and get back to looking for the Slavic Department. If they are still curious, the next question is of course, "Why are you doing it?" the short answer to this one is the same as the answer to "Why do you climb Mount Everest?", (which I now think I would rather do, as a matter of fact). The long answer is a 244-page book I wrote called **Travels in Computerland.** Short of that, one might counter with "Why did five scholars spend 30 years compiling the 11

EDITORS MARC WEINBERGER, Ben Schneider, Joe Jacobs, and Cathy Boggs, can be found in MH-427 at almost any hour of the day or night.

Photos by Nancy Gazzola

volumes, 8,000 pages, into a computer-accessible data bank for theatre historians and other scholars.

Research, one of the half dozen journals who publish on the topic, and about half of these articles and books do, could, or should consult the **London Stage.** Twenty-three such scholars have made enquiries, and three are already using our services for a mammoth **Biographical Dictionary of Actors and Actresses,** 1660-1800 — now in its fourth volume (Corye to Dynion). The sheer amount of information available to theatre historians invites computer processing. for example, the 8,000 pages of cast lists have no index to the names and titles they contain. There are about five index items per line in the work, more than one million altogether. The London

Johnson's plays would generate 7,000 items, and Shakespeare's five times that much. And yet some analysis of these is necessary if one wants to do a history of Shakespeare's plays on the stage.

Numbers is also our answer to why so many have been editing the computer version of **The london Stage** for so long. We've been at it three years and we'll be lucky if we finish this summer with six editors on the job. first there were the typographical errors - the whole thing had to be typed for the computer - and there were 21,000,000 characters to get wrong. The typos are nearly gone and "standardizing

bibliographies, have a conventional order and punctuation, but deviations can cause the computer to make horrible mistakes. For instance, the source tells us when a song or dance took place in a performance - "End of Act II", "Before the Afterpiece", etc. Two thirds of the original puts a colon after such "time notations," but the last third puts nothing. Ergo, we are putting six thousand colons into the last third. And that's only a small problem. We have 11 pages of syntax description and ten pages of continually expanding editing rules. So editing is what is going on in MH-427 at almost any hour of-the day or night.

Lawrence's PDP-11 for revising the computer version of **The London Stage.** Our CRT, besides enabling us to insert, delete, and write over text on its screen, commands a set of 15 programs known as SITAR (System for Interactive Text-editing, Analysis and Retrieval) by means of which we get text from computer storage and put it back, find any root, word, or phrase in the text, count how many times it occurs, replace a recurrent character string with another string; copy, truncate, delete and enter text, load it from and unload it to magnetic tape. Central to SITAR is the notion of quoting the string of text you want to work with on the CRT screen, with the important refinement that ellipses (dots) may be used for any part of the string. To get the next sentence in a file containing the words "Lawrence" or "Lawrentian" we would command 'EDIT'. . . . Lawren. . . " " (assuming that a sentence ends with a period and two spaces). With TECO, the computer manufacturer's editing product, which he advertises as "very powerful", one has to write the following line of symbols: "SLawren$s. $.UAS. $QA,.T$$."

Editors have various reasons for sticking at what might normally' be considered very dull work. Cathy Boggs, who has been with the project for two years, enjoys the commentary, as for example, during the wars with France, when it is recorded that an English patriot chases a French dancer off the stage with his sword, or when a drunk cut down a chandelier that nearly destroyed the leading lady when it fell. Marc Weinberger, who manages the work, finds it remarkable how easily a Lawrence student without previous computer training can learn the system and 'live" in the computer world. Our favorite play title is **Chrononhoton**

Professor of English

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bibliographies, have a conventional order and punctuation, but deviations can cause the computer to make horrible mistakes. For instance, the source tells us when a song or dance took place in a performance - "End of Act II", "Before the Afterpiece", etc. Two thirds of the original puts a colon after such "time notations," but the last third puts nothing. Ergo, we are putting six thousand colons into the last third. And that's only a small problem. We have 11 pages of syntax description and ten pages of continually expanding editing rules. So editing is what is going on in MH-427 at almost any hour of-the day or night.

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Photos by Nancy Gazzola

EDITORS MARC WEINBERGER, Ben Schneider, Joe Jacobs, and Cathy Boggs, can be found in MH-427 at almost any hour of the day or night.

SCHNEIDER, BEN   p. 2

Hanoi Claims
Pilot Captured

Toyko, Japan—Æ—Hanoi radio reported Sunday the capture of one United States air force pilot and the shooting down of another.

The official Vietnam n e w s agency (VNA) identified the captured pilot only as Lt. Flom, and said he had belonged to a unit commanded by Maj. James H. Kasler, the Korean conflict ace who was reported captured last Aug. 8, along with Capt. Wiley Shattuck.

VNA said also that North Vietnamese aircraft shot down in F-105 Thunderchief piloted by a Lt. Diamond on July 19 while flying in a formation commanded by Kasler. The agency did not say whether Diamond was killed or was in North Vietnamese hands. It did not identify him further.

—August 22, 1966

**The long wait is over,
Fred Flom '63 is home**

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Ben Schneider

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Computers and the humanities: Sorting fact from fiction

By Ben R. Schneider, Jr.
Professor of English
Lawrence University

People often ask me how it is that a professor of English can bring himself to devote so much of his time to the multitudinous details, errors, accidents, and expenses of a four-year computer project having the goal of providing a machine accessible calendar of such an unlikely document as *The London Stage, 1660-1880,* "A Calendar of Plays, Entertainments & Afterpieces, Together with Casts, Box-Receipts, and Contemporary Comment, Compiled from the Playbills, Newspapers, and Theatrical Diaries of the Period, edited by William van Lennep, Emmett L. Avery, Arthur H. Scouten, George Winchester Stone, jr., and Charles Beecher Hogan."

What do you do with such a thing after you get it into a computer?

Professors of English, theatre, and drama, after all, do research, just as chemists and psychologists do, and they publish the results of their research for the general advance of knowledge of their subjects. Their works, though numerous, are rarely read by laymen. But they have scores of special journals and write hundreds of books yearly.

In fact, annual bibliographies show that about 200 books and articles are published yearly dealing with London Theatre in the 18th Century, and about 100 of their authors did consult or should have consulted *The London Stage*, in most cases in a way that would entail either a painful line-by-line search or making and sorting hundreds or thousands of note cards. It is not surprising, therefore, that although our data bank is only half built we have already received a number of inquiries for information. I shall list some of them to give an idea of the possibilities for machine-assisted research in this vast collection of facts about the London stage: the identity of Mrs. Mirthwit, for an edition of *Moll Flanders;* the location of a quotation from Dryden; facts about the misbehavior of law students at the theatres; casts of Sheridan's plays; evidence about the staging of Shakespeare's plays; a list of all the role names in all the plays; evidence of French, Italian, Spanish and Polish influence; statistics on popularity of plays, types of plays, and plays by particular authors; information about the character of a theatre's repertoire; information about singers, dancers, composers, musicians; materials for a series on the Social History of English Theatre; 18th century words, for a dictionary.

Humanists, by definition almost, have a natural antipathy to machines and resist the adoption of computer methods in their research. Part of the reason for this, I would say, is simple ignorance: computers suggest computation, formulas, equations, graphs. Humanists have always been opposed to "counting things" and they are usually not very good mathematicians.

But calculation is not a necessary adjunct of computing. The French, indeed, call the machine an "ordinateur," and it is in re-*ordering* material, as we do in the London Stage project when we compile the facts about who played Romeo in the 18th Century, that the computer may help the humanist most, with his catalogues, bibliographies, handlists, dictionaries, encyclopedias, public records, archives, and collections. It takes forever to find things on disorderly lists. I

Grants help move data bank
to 1974 project completion

Professor of English Ben Schneider has been developing a computerized London Stage Bank at Lawrence for the past three years.

The information bank is based upon an 11-volume, 8,000-page work entitled *The London Stage 1660-1800*, which is an exhaustive calendar of plays and other stage activities compiled by five scholars over a period of 30 years.

In Phase One of the project, all 11 volumes of The London Stage were converted to computer tape and programs were written for locating errors, identifying items, and for retrieving and sorting information that would otherwise take weeks, or even years, to compile.

In Phase Two, currently under way, a major task is the development of a system by which the converted text of the 11-volume work may be edited on a cathode ray tube terminal (a typewriter with a TV screen for a page), so that one may insert, delete or change text without reinscribing whole passages of "good" sections. Also in Phase Two, existing programs will be refined, enabling researchers using the information bank to find needed information more accurately and readily.

Since undertaking the London Stage project, in cooperation with an advisory board which includes editors of the original reference work along with other scholars in theatre history, Schneider has received substantial financial support from numerous sources.

Last year, the National Endowment for the Humanities awarded a $40,000 grant for the project provided matching funds could be obtained from other sources. In November, the London Stage project received $40,000 in support from the Andrew W. Mellon Foundation. Together with funds received earlier, the matching grant totaled $85,000.

The London Stage project has generated considerable interest, not only among many theatre historians and students of dramatic literature, but also people who see it as a technical model rather than simply a source of information. Computer people at a number of colleges and universities have asked for information about the data bank, in order to adapt computers to a wide variety of other projects.

For the future, there is currently discussion of the possibility of establishing a London Stage Information Bank in England to facilitate efficient access for British Scholars. And, already under way in Phase Two, is the expansion of the data bank to include other works dealing with English theatre in the period 1660-1800.

"When Phase Two officially ends September 1, 1974, Schneider said, "we will be able to offer a retrieval service at Lawrence capable of finding any kind of thing that can be classified as some kind of thing from The London Stage and two additional bibliographies."

do not rule out "counting things" altogether. Many scholars are interested in such things as the popularity of Shakespeare during a given period, or pantomimes, or singing between the acts. No conclusion on such matters can be made without counting things.

Part of the difficulty in accepting the computer as a tool of humanistic research is the widespread mythology that has developed around it. This mythology characterizes the device either as an astoundingly omniscient and wise being or as an unbelievably stupid and

impersonal machine. As long as these contradictory exaggerations prevail, the ways in which computers may help research in the humanities (or help humanity) will not reveal themselves. It is also generally believed that computers are too difficult for ordinary mortals to understand. This is a most dangerous myth because it prevents people from interfering with computers constructively, when they misbehave.

Since a computer never fails to do exactly what it is told, computers are

> *"It may be that without computerization our institutions cannot survive the overpowering onslaught of facts that modern civilization produces . . ."*

never to blame for the stupid mistakes they make, however evil or ridiculous they may seem to be. When they make mistakes, either they have been told to do the wrong thing or they have been fed erroneous information. A programmer or keypunch operator is the culprit. The almost universal tendency to blame computers for human errors is as dangerous as it is silly. When a train plows into a stopped train ahead of it doing 90 miles an hour, killing scores of people, we do not say "the train made a mistake." Blaming computers excuses and encourages irresponsibility in those who really are to blame.

We repeatedly hear the tale told of a person who promptly pays a bill to a large corporation only to get the same bill over again the next month, with dire warnings from the computer about what will happen if the bill isn't paid. The accused writes a note on the bill protesting his innocence and sends it back, but the computer continues to dun him month after month, threatening ever-increasing penalties until at last his credit rating is taken away and he is handed over to ruthless bill collectors. If he seeks justice, like as not the huge corporation, while it sympathizes no end, professes helpless innocence: "It was the computer's fault."

Impossible. The corporation has simply failed to build into its computer billing system any allowance for human error. The customer's remonstrances are ignored because nobody's job depends on their being dealt with. The computer has been trusted too much.

The reason for computer atrocities like this, perhaps, is management's belief in the opposite myth about the computer's infallible wisdom. This is the computer of our jokelore. A typical story goes like this: A young business executive in Chicago confronted his firm's computer with the challenge, "If you're so smart, tell me what my father is doing now." With the speed of light, the computer's typewriter banged out the answer. "Your father is playing golf at the Idlewild golf course in Jamaica Plain, Massachusetts."

"Ha, ha, got you there," said the young man. "My father is in Buffalo. I just talked to him on the telephone."

"Yes," typed the computer, "that is your mother's husband. Your father is playing golf at the Idlewild golf course in Jamaica Plain, Mass."

There is some truth in the story, to be sure. The young man is indeed some sort of an abomination for entrusting a computer with such delicate questions as paternity. His getting what he deserves is the joke within the joke. But the machine has no supernatural powers and giving customers credit when credit is due, which is almost but not quite simple enough for them to accomplish, is not a joking matter.

To some academicians and many students the computer has become a symbol of all that is impersonal, mechanistic and de-humanizing in our society. Demonstrators pin IBM cards to their shirts. But computers, for very good reasons, will not go away; they, like pollution and ghettos, are a component of our environment, and the academic community must come to terms with them, indeed even in order to come to terms with pollution and ghettos.

Men like C. P. Snow have warned how ignorance of scientific and technological development endangers society, and with good reason. As populations and complications increase, technology becomes more and more important if human dignity is to be maintained. I shall confine myself to the potential contribution of computers.

There are two answers to the problem of increasing population. One is regimentation as practiced in those totalitarian countries that have chosen to solve the increasing problem of individual differences by making them illegal. The other answer is for governments to increase their capacity to collect, cope with, and adjust to individual differences. If they cannot do this, they must treat people more and more as if they belong to an ever-diminishing number of classes or general types, until individual differences are no longer collected and recognized in the application of policy, and structure is imposed rather than derived.

Contrary to the popular myth that computers force us into rigid molds, they actually in the end allow for greater individualization of service simply because of their tremendous capacity to do infinitesimally detailed clerical work in finding, updating and filing immense numbers of records with the speed of light. It may be that without computerization our institutions cannot survive the overpowering onslaught of facts that modern civilization produces and demands attention to.

For instance, in the manufacture and distribution of goods, in the rationing of

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scarce items, in the conduct of financial affairs, in military service, communication, civic administration, and education, standardization will have to increase with numbers unless means of coping with numbers are developed and flexibility is preserved. Large universities even now may find it easier to meet the needs of students as individuals, by using computers to analyze student records and make suggestions than by relying on the overworked and distracted faculty adviser, who for want of time to look up the facts, gives all students the same advice. Mass production gave us the single model-T Ford; modern information-handling systems make it possible to offer perhaps as many as several thousand different kinds of Fords, when you consider all the different breeds and the scores of options for each. Mechanical fact-handling does not reduce variety by any means.

In the light of these developments it becomes the responsibility of those whose special interest is the development and transmission of the human values embedded in the great Western tradition to understand what computers actually do, to penetrate beyond the science fiction myth of a thing almost mystically omniscient and wise or one that perpetrates unbelievably monstrous and inconsiderate mistakes. Because of the part played by computer techniques in coping with the pressure of numbers, some understanding of computers ought to characterize every truly educated man in this century. Even to cope with the dangers of misused computing power (as in a police state) an understanding of this machine is a requirement.

Just as the telephone, automobile and airplane extend the human individual's spatial scope, the computer extends his memory. Books enable us to extend our knowledge far beyond what can be derived from our experience. Computers, because they "read" at the speed of light can, if properly applied, further multiply the amount that a person can know in the span of life allotted to him. As the world increases in numbers and complexity, our need to know becomes greater and so does the difficulty of finding out. The computer is the machine of the hour. But like any invention that radically alters the conditions of existence, its potential for ill is as great as its potential for good. We must cultivate peaceful uses of computers.

His lawyer, in hollow phrases, proclaims his entire unawareness — one of two **Rouault** prints donated to Lawrence.

Rouault prints donated

Two original prints by Rouault from his famous Miserere Series have been donated to Lawrence University by Leonard Scheller.

Scheller, a copy editor for The Milwaukee Journal, has been an admirer and collector of Rouault graphics for more than 10 years. Over the years, he has donated original prints of the Rouault Series to more than 40 colleges and universities throughout the United States.

His only stipulation is that "the pictures be framed and hung where there is considerable student traffic."

"Student appreciation of the work of Rouault is the reason for my donations," he said.

Both for scope of conception and splendor of execution, Twentieth Century art offers few parallels to Rouault's accomplishment in creating the series of 58 plates for the Miserere Series in aquatint and etching. The prints were the result of 15 years intermittent labor between 1916 and 1931. Rouault, perhaps the greatest of all experimenters in black and white, displays in his work a baffling variety of techniques in achieving his characteristic tonal qualities.

Scan Data 300 making history

A British bureau, Computer Services Centre of Wembley, Middlesex, is being used by an American professor of English literature in an analysis of London theatre events in the seventeenth and eighteenth centuries. The work is based on the use of a Scan Data 300 optical character recognition system.

Professor Ben Schneider of Lawrence University, Wisconsin, is engaged in transferring the 11 volumes of *The London Stage*, a calendar of events at London theatres from 1600 to 1800, into a computer-based data bank for theatre historians. Edited text of the publication is being typed in Hong-kong and converted to magnetic tape at Wembley; final processing will be done at Lawrence.

The London Stage data bank marks an unusual exercise for CSC, the bulk of whose work consists of standard package programmes for accountancy and analysis. Using the Scan Data 300 for input and an ICL 1909 computer for processing, the bureau provides an integrated service for a variety of customers. Originally designed for universities, the 1909 is a large computer system approximately equivalent to the better known 1905 in power.

Other CSC package programmes cover share registration, patent renewals, wholesaling, insurance and typesetting services.

from Column on Business page.

Great Britain

Keeping tabs on Turks and Thespians

THE optical data preparation service of Computer Services Centre, Wembley, North London, is currently involved in two academic computer projects which are aimed at providing a databank for theatre historians and in making up for a paucity of Turkologists.

Ben Schneider, a professor of English literature at Lawrence University, Wisconsin, is transferring the 11 volumes of The London Stage, which provides a chronicle of events at London theatres between 1600 and 1800, to magnetic tape.

Edited text of the publication is being typed in Hong Kong and converted to magnetic tape using the Computer Services Centre's Scan Data 300 OCR system. Computer analysis to determine, for example, all the parts played by a particular actor, is being done at Lawrence University.

In the other project Alan Jones, a lecturer in Islamic studies at St Cross College, Oxford, is engaged in analysing samples of modern Turkish, a language which, for a variety of reasons such as official policy and Western influence, has changed considerably since its alphabet was Romanised in 1928.

Thousands of Arabic and Persian loan-words have been dropped after being used in Turkish for hundreds of years, and they have been replaced by newly-coined words formed from old Turkish roots and suffixes or by loan-words from Western languages, particularly French.

A sample of 320,000 words taken from seven newspapers and one magazine over a recent 12-month period and a similar sample taken from literary works during the same period is being analysed for word frequency. The work will guide teachers of Turkish outside Turkey, aid literacy programmes in Turkey itself, and in the longer term will allow investigation of the changes in syntax taking place.

The samples are converted to magnetic tape by the Scan Data 300 and processed by the COCOA concordance generating system of the Atlas Computer Laboratory, Chilton, Berks, to which St. Cross College has a teletype link.

The primary role of Computer Services Centre's Scan Data 300, which was installed in 1969 (CW, May 8, 1969), is data preparation from typed sheets or adding machine rolls for the company's financial accounting and analysis and other commercial packages which are run on its ICL 1909.

But it is also being increasingly used for data preparation applications which for reasons of technical complexity or confidentiality are better done by optical scanning. These include putting on magnetic tape the statute books of the UK Atomic Energy Authority (CW, February 12, 1970) and patent information for the Inspec information service of the Institution of Electrical Engineers.

The expansion plans of the company include marketing the OCR data preparation service in the Merseyside area through its Liverpool punching bureau. To supplement the 1909, which is a machine similar to the ICL 1905, CSC will shortly take delivery at Wembley of an ICL 1903 as an interim measure and intends to install a larger machine later in the year.

LU to house *The London Stage* data bank

A computerized information bank, apparently the first of its kind in the field of literary history, is being established at Lawrence through the efforts of Ben Schneider, professor of English.

Within three years, Project Director Schneider plans to have on computer tape the entire 11-volume, 8,000 page, three-million word reference work entitled *The London Stage 1660-1800*.

The London Stage is an exhaustive calendar of plays and other stage activities from 1660-1800. Since its publication, scholars have been able to turn to its pages with the confidence that whatever is missing concerning the performance of plays in London during the period covered almost certainly does not exist.

one serious drawback

The magnitude of the reference work, ironically, has one serious drawback. Without mechanical methods, the search for information in its pages is sometimes so extensive that the researcher can't justify the investment of time required.

Once the reference work is put on tape, however, scholars will be able to obtain compilations of data that otherwise would take weeks or months to assemble by turning pages and filling out filing cards.

"Sorting, counting and tabu-

acters in 83 plays from 1660-1730; a feat which would have been extremely difficult if attempted without mechanical help.

Schneider has received substantial financial support for the London Stage Data Bank project from several foundations, but the cost of the total project is still to be met. The largest anticipated expense, he said, will be the cost of transferring data from the printed page to magnetic tape. Estimating the cost of a number of available methods is a major task of the pilot project.

"In recent years, literary journals have published an increasing number of articles based on information gathered from *The London Stage*," he said.

Once established, Schneider is certain the information bank will be used.

He estimates that if all the scholars who used *The London Stage* for articles in 1969 had access to an information bank such as he is developing, there would have been about three inquiries per week.

"I'm sure that researchers in history, economics, and sociology would also find the information bank useful. It could, for example, answer questions about political trends, class mobility, availability of leisure time, and many other areas of interest as revealed in the tastes of theatregoers of the period."

editors oversee project

THE CONTENTS OF THOSE 11 VOLUMES of The London Stage 1660-1800, *drawing the attention of John Church, associate director of the Institute of Paper Chemistry's computer center, Will Daland computer programmer-analyst, and Ben Schneider, professor of English, will eventually be transferred to computer tape. Project Director Schneider is currently working on the pilot phase of the*

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"Sorting, counting and tabulating is the proper work of computers," Schneider feels. "Computers can accomplish in minutes what would otherwise be a time consuming, boring and painstaking task."

Professor Schneider, one of whose major scholarly interests is 18th Century drama, knows first hand what a valuable tool the computer can be for tabulating data from *The London Stage*. He used one in preparation for a book entitled *The Ethos of Restoration Comedy* to be published in the spring. Using 30,000 IBM cards punched with data from *The London Stage,* Schneider compiled a survey of 1,127 char-

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An international advisory committee, including the four editors of *The London Stage* — Professors William Van Lennep, Emmett Avery, Arthur Scouten, and George Winchester Stone, is overseeing the project. Stone is chairman of the advisory committee, which also includes several British scholars, such as Professor Cecil Price and Miss Sybil Rosenfeld, editor of *Theatre Notebook* and honorary secretary of the Society for Theatre Research.

During the current academic year, Professor Schneider is working with computer programmer-analyst Will Daland in

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the pilot phase of the data bank project. Together, Schneider and Daland are devising programs for retrieval of various kinds of information available in *The London Stage,* using a 100-page sample of the material. They are doing their work on the third generation IBM-360 computer in the Institute of Paper Chemistry, which Lawrence utilizes at the institute on a shared basis.

The major task of typing *The London Stage* onto machine readable magnetic tape is sched-

uled to take place during the 1972-73 academic year, after which the information bank is expected to become operational and largely self-supporting.

"Lawrence, with its exceptionally strong theatre department, provides an ideal setting for the information bank," Schneider said.

"The university would not only have an internationally known center for information on theatre and drama, but a working information retrieval system in our midst would provide a model for many kinds of research in the humanities and social sciences."

Schneider added that the pro-

ject would help to acquaint students and teachers in the humanities with computer methods applicable in their fields.

"I believe it is imperative that college graduates today know something about what computers can and cannot do. Most science majors are acquainted with the potential of computers," he said. "It would be tragic if technology's answer to the information explosion were not utilized by those outside the sciences. Computers now affect and will increasingly affect every aspect of life. We can no longer say that a man who knows nothing about them is truly educated."

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