College of Literature, Science, and the Arts

South and Southeast Asian languages are taught. In its first year, the department offered courses in Hindi-Urdu, Sanskrit, and Thai, and the next year added Indonesian. At present, on foundation money from the Center for South and Southeast Asian Studies, the department is offering Tagalog and Tamil. Burmese, Marathi, and Pali and Prakrit have also been offered occasionally on a special basis, and Old Javanese is offered in connection with the Indonesian program. The department also offers courses on the literatures and religions of the South and Southeast Asian area. The department's work in modern South and Southeast Asian languages involves close cooperation with the Center for South and Southeast Asian Studies, which administers the fellowship program in these languages funded by the federal government and provides major support funding for instruction.

Since the beginning, the department has been regarded as the proper home for instruction in any language which does not fall within the scope of the language departments. It has also offered instruction from time to time in a disparate range of languages including Hungarian, modern Irish, Lithuanian, and Yiddish. Remedial English as a foreign language has been offered regularly since 1966. Finally, since 1973 the department has had a regular program in Ojibwa, offered in cooperation with the Ann Arbor Native American community.

Kenneth Hill

DEPARTMENT OF MATHEMATICS

The manpower and research demands of the Second World War and immediate postwar years (1941-50) affected the University in many ways. The loss of mathematics enrollment in normal undergraduate programs was offset by the fact that many of the military training programs established on the campus had a mathematics component. This was true of the Air Force's Meteorology Program, the Army Specialized Training Program and the Guided Missiles Program, the Navy's V-12 and Reserve Officers Naval Architecture Groups, as well as of the Engineering Science and Management War Training Program under which government sponsored extension courses
were taught out-of-state.

The war tapped the University's mathematics staff as well as its students. As a result it was necessary to supplement the campus staff with teachers from the astronomy, chemistry, history, mineralogy, and philosophy departments as well as from other institutions.

The pressure on the department's teaching capacity continued after the war as the veterans, supported by the government, turned to higher education. Refresher classes in the late summer were instituted. Interest in mathematics and science was high, and the students were serious and hard-working. The staff, student body, course offerings, and seminars all expanded.

The role of the University of Michigan as a center for mathematical conferences and symposia had been initiated in 1940 when Professors R. L. Wilder and W. L. Ayres directed a topology conference. This type of activity resumed in 1949. The Third Symposium in Applied Mathematics of the American Mathematical Society was held in Ann Arbor with Professor R. V. Churchill as its director.

Military and space research since World War II has attracted strong national support. In 1950, the National Science Foundation was established, and the mathematics department, from its earliest day, has been a recipient of N.S.F. support in many ways. In 1953, concerned that there was a shortage of up-to-date instructors in the nation's colleges, the National Science Foundation commissioned Professor R. L. Wilder and two other mathematicians to design and operate a "refresher" Summer Conference in Collegiate Mathematics in Boulder, Colorado. The following summer Professors T. H. Hildebrandt and P. S. Jones directed an N.S.F-supported program on our campus. Later N.S.F. extended its support to institutes for secondary and elementary teachers of science and mathematics. Professors Phillip Jones, Charles Brumfiel, and Eugene Krause directed a variety of academic-year, summer, and in-service programs for elementary and secondary teachers in the years 1961 to 1971.

Professor R. M. Thrall's wartime work in operations
analysis stimulated his interest in interdisciplinary problems and teaching. This led to joint work with Professor Coombs of Psychology, to a Summer Institute in Mathematics for Social Scientists in 1955 supported by the Ford Foundation and sponsored by the Social Science Research Council, and, in 1966, to a National Institute of Health sponsored institute on mathematics for life scientists. Courses in operations analysis and linear programming, the latter cross-listed with industrial engineering and business administration, are evidence for the broadening utility of mathematics and its recognition at Michigan. Classical and pure mathematics continued to be of major importance in the department, however, as was demonstrated in 1953 by a Conference on Complex Analysis organized by Professors Wilfred Kaplan, Maxwell Reade, and Gail Young.

This was also a period of tremendous growth in electronic digital computers and their use. Dr. H. H. Goldstine became a major contributor to their development as a result of his wartime assignment to the Aberdeen proving ground. John W. Car III worked with the engineers who developed and built MIDAC at Willow Run. A strong advocate of the training of students in the use of computers, he was instrumental in the decision to acquire an IBM 650 in 1955 for the Statistical Research Laboratory on campus, directed by C. C. Craig. In 1959 the Ford Foundation supported a Project on the Use of Computers in Engineering Education. R. C. F. Bartels and Bernard A. Galler were members of the Committee responsible for that project. Bartels became the director of the computing center set up that year. Elementary courses relating to the use of the digital computer were initially taught solely in the Mathematics Department. In 1961-62 the department roll listed 57 teaching fellows plus an additional 11 at the computer center. A separate Computer and Communications Science graduate program was organized in 1957. Computer and Communication Science became a separate department of the College of Literature, Science, and the Arts in 1965.

The actuarial-science program maintained an active role in the department and developed relationships with the School of Business Administration by joint faculty appointments, cross-listed courses, and joint administration of fellowships and student placement. An Actuarial Science Fellowship Fund, established in the mid-1950s, is supported by a number of leading insurance organizations to promote graduate study.
in the field. A number of memorial funds are designated for the support of actuarial students.

The Michigan Mathematical Journal finally came into being in 1952 under the editorship of G. Y. Rainich. George Piranian took over as editor with the 1953-54 issue. Mathematical Reviews, the international abstracting journal owned by the American Mathematical Society, moved to Ann Arbor in 1964 under an agreement with the University which provides it with space and access to our library.

Probably the single most representative characteristic of the department in the postwar years has been the parallel expansion of graduate instruction and faculty research. Graduate enrollment peaked in 1964 with 332 students. Professor G. E. Hay was named to a five-year term as chairman in 1957, renewed for a second five years in 1962. At this time an associate chairmanship was authorized to share the growing administrative load.

The period 1951-65 had its trauma. One arose when Dr. H. Chandler Davis was suspended because of his refusal to testify before the Un-American Activities Committee of the House of Representatives. Many department members supported Dr. Davis, who has continued to be a useful and respected member of the mathematical community since leaving the University. Although occasional losses continued, fine additions have been made to the staff. In 1975, 66 percent of the staff received some extra-university research support from N.S.F. and other sources. The Ziwet Lecturer Program has been maintained. This uses endowment money to bring to campus a distinguished mathematician for a week or two of lecture on his specialty. Since 1936, there have been twenty Ziwet lecturers.

The nearly fifty-year-old tradition of extensive seminars for faculty and advanced students has been maintained: the monthly meetings of the Mathematics Club continue, but now require a small University lecture room. There are two colloquia weekly. The succession of nationally and internationally sponsored conferences, begun in 1940, expanded in this period to include: Group Theory (1968); a Regional American Mathematical Society Conference on Complex Analysis (1969); a Conference on Optimal Control (1969), sponsored by the Society for Natural Philosophy; a Number Theory Summer
Research Institute (1973) sponsored by N.S.F.; and a Complex Variables Conference. The first (1966) of an annual series of actuarial research conferences, international in scope, was held in Ann Arbor under the direction of Professor Cecil J. Nesbitt and Mr. Edward A. Lew of the Metropolitan Life Insurance Company.

The actuarial faculty have continued to be active in consulting with reference to insurance and pension programs as well as in contributions to actuarial research, and to the profession as a whole. Professor Donald A. Jones administers the Actuarial Research Clearing House, a distribution service centered at Michigan for actuarial research in preprint form, and Professor Nesbitt has been active in the development of an Actuarial Education and Research Fund, a joint undertaking of the actuarial profession in Canada and the United States.

Other administrative and educational changes during this period were the splitting off of the Statistics Department in 1969, the initiation in 1973 of a graduate program for training teachers for two-year colleges, and the authorization of additional associate chairmen in 1968 and 1973.

Phillip S. Jones

DEPARTMENT OF NEAR EASTERN STUDIES

Known as the Department of Oriental Languages and Literatures since 1930, the department over the years has accumulated numbers of valuable Babylonian, Aramaic, Coptic, Arabic, Persian, Turkish and Ethiopic manuscripts, tablets, papyri and artifacts, still today the basis for research, teaching, and museum exhibits.

World War II saw the permanent addition of Chinese and Japanese to the department's offerings. With the retirement of Chairman Leroy W. Waterman in 1945 and of Chairman William H. Worrell in 1948, the department underwent a major restructuring resulting in its transformation into two new departments: Far Eastern Languages and Literatures, with Associate Professor Joseph K. Yamagiwa as chairman, and Near