

NEWSLETTER

Issue No. 18

March 1976

FACULTY

Professor Earl L. Muetterties has received the Senior U.S. Scientist Award from the Humboldt Foundation (West Germany). This award will allow Earl to spend six months, January 29, 1977 through July 29, 1977, visiting such Universities as Bonn, Nice (France), Kaiserlautern, Gottingen, Munich and Berlin. A major portion of his time will be spent at the Anorganisch-Chem. Institut I in Frankfurt.

Professor George H. Morrison was awarded the 1975 Medal of the Society for Applied Spectroscopy, N.Y. Section for outstanding achievements in spectroscopy. During the 1974-75 academic year George was awarded a Guggenheim Fellowship for research in ion microscopy at the Laboratoire de Physique des Solides at Orsay, France. With the aid of funds from the National Science Foundation, Professor Morrison has now established an ion microprobe facility at Cornell.

Professors on leave this spring include R. C. Fay, G. G. Hammes, R. E. Hughes, F. W. McLafferty, and H. A. Scheraga.

ALUMNI

The open-house for Cornell Chemists, held in conjunction with the University Reunion Program, will be held on Friday afternoon June 11, 1976 in Baker Laboratory. Class pictures will be displayed and refreshments will be served. Please note that Lauby's Recollec-

tions in this issue points out that this is the fiftieth year of the Baker Lecture Series. The open-house this year will emphasize this aspect of Chemistry at Cornell.

VISITING LECTURERS

Professor Duilio Arigoni delivered the second part of his Baker Lectures during the second and third weeks of March (March 8-20).

Professor Jack Dunitz from ETH Zurich will present the Fall Baker Lectures during September 13 - October 29, 1976. The subject of his lectures will be "Organic Chemical Crystallography".

During the period February 24 - March 4, 1976 Professor Koji Nakanishi of Columbia University presented the Bio-organic Lectures Series. And just for a change of pace Professor Nakanishi gave his famous magic show at an S.R.O. audience in Baker 200.

Manfred Eigen, Nobel laureate in Chemistry and senior scientist at the Max Planck Institute, spoke on "Catalytic Hypercycles: The Demarcation Between Animate and Inanimate" on March 19, 1976.

Harold C. Matraw

CORNELL SOCIAL HOUR

ACS Centennial Meeting

Tuesday, April 6, 1976

WARWICK HOTEL

Sussex Room

New York City

at 5:30 PM

Chairman's Column

March finds Ithaca still enduring what has been a rather long and cold winter — although enlivened in recent weeks by some remarkably warm spring-like days. It is now over a year since the University, pressed by the steeply rising costs of electricity and fuel, sent functionaries around to remove a large fraction of the light bulbs. Fortunately, although one or two classrooms and offices have dim corners, the overall result is still to leave us with a bright and well lit chemistry laboratory. A shortage of heating fuel, which might have forced the University to close buildings, has been averted this year but a couple of power failures gave us some chilly days!

The costs of heating our laboratories, offices and classrooms does not, at first sight, fall on the Chemistry Department. However, we do bear these increasing costs in a very real way as overhead charges on all our federal research grants. The sad fact remains that the incidental costs of running a large institution such as a University seem to go up in a way beyond the control of any individuals, departments, or colleges.

These questions, of course, relate directly to the extent to which the University should, as part of its mission, support scientific and scholarly research independently of externally obtained funding. Certainly, those of us on the scientific and engineering sides of the University feel that in supporting the University Libraries centrally, some commitment to support scholarly work has been made. Unfortunately, the libraries are of most direct benefit to our colleagues in the humanities. The University's policy towards the sciences and engineering which, to my knowledge has never been stated explicitly, is much more ambiguous. Part of the problem, of course, is just the very great cost of performing first class scientific research — without massive federal support on the scale enjoyed for the last few decades, the universities could never have established the high level scientific research programs which we see at Cornell and other leading universities. But, even on an optimistic view, we are now entering into a period in our national history which is

unlikely to see the expansion characteristic of the previous era. In moving into a "steady state" situation (unfortunately with, at best, a steady inflation rate) we must find new ways for maintaining the momentum in our research and teaching. An important practical aspect of this problem concerns the replacement of aging, obsolescent, or worn-out, routine research equipment — of immediate concern to the Chemistry Department are its nuclear magnetic resonance spectrometers. Without well maintained, up-to-date equipment our graduate training and research programs suffer.

An important source of supplementary funds available to the Department are direct grants from industry. We are currently the grateful recipients of grants from Dupont, Kodak, Procter and Gamble, Shell, Gulf, Rohm and Haas, Uniroyal and Dow. These grants give us valuable flexibility in the department and have been used to support graduate students and purchase research equipment. Indeed, they play a critical role in our continued vitality and scientific good health! However, they are not by themselves large enough to enable us to undertake the systematic, long-term updating of our routine research services that is needed.

At a national level we have recently seen some widely publicized attacks on the National Science Foundation and, in particular, on its method of selecting research proposals for funding. It seems imperative that at the heart of any system of judging the merit of scientific research proposals must lie the so-called "peer review system", in which proposals are read, criticised, and assessed by experts in the relevant field, or subfield of science. To ensure continuing honesty and frankness while maintaining cordial working relations within the scientific profession, confidentiality seems essential. This has long been recognized in refereeing scientific articles for publication in the leading journals. But this principle of confidentiality has, regrettably, been under rather irrational attack. Whatever the outcome we in Baker and Olin will watch the developments with interest, since wise decisions on these policy questions will be important not only for Chemistry at Cornell but also for the general scientific well-being of the nation.

Michael E. Fisher

Lauby's Recollections

THE SEMI-CENTENNIAL YEAR FOR THE BAKER NON-RESIDENT LECTURES

1926 - 1976

In this year of the bicentennial of the United States and the centennial of the American Chemical Society, Cornell chemists have their own special anniversary to celebrate, the fiftieth year of the Baker Non-Resident Lectureships. Begun in 1926, they have continued down through the years, except for the war years of 1940 - 1947. Their impact has been important not only to Cornell but also to American science and science across the world.

Professor L. M. Dennis, "The King" to his students, achieved his dream of a fine new home for Cornell chemistry when the Department moved from the ruins of old Morse Hall to the innovative new Baker Laboratory in 1923. But the King still was not content. He wanted some way to insure having a succession of outstanding visiting scientists come to Cornell, not for just an occasional lecture or two, but each to stay long enough to really join the faculty and students in departmental activities.

So Dennis adopted a device used so successfully by President Andrew D. White when Cornell was founded. One of the most pressing problems White faced was to provide outstanding teachers for the entering host of 332 freshmen and 38 students with advanced standing who crowded to the new University at its first registration. To supplement the small number of young resident professors of exceptional promise recruited to the permanent faculty, White arranged for an additional "instant" staff by inviting noted scholars to come on leave from other universities to Cornell as Non-Resident Lecturers. For a semester or more they joined the permanent faculty to offer instruction, inspire research, and take part in the

social activities of the campus. The plan worked out most admirably. Such eminent figures as Louis Agassiz, Goldwin Smith, James Russell Lowell, etc. , established an immediate reputation for outstanding academic quality for Cornell.

Planning along similar lines, Professor Dennis appealed for help to George Fisher Baker, the benevolent New York banker who had provided \$ 1.5 million for the construction of Baker Laboratory. What better way to insure the future of the new building than to arrange for a continuing stream of innovative leaders in chemistry and related fields to contribute to the activities of the Chemistry Department? Mr. Baker approved and provided a generous endowment which, in spite of inflation, still gives sufficient income to adequately support the Lectureship.

As announced in the Cornell Daily Sun, in November, 1925, the endowment was to be used for the "benefit and advancement of teaching and research in chemistry . The gift was made to enable the University to carry out a plan formulated by Professor L. M. Dennis. Distinguished men of chemistry and other allied fields of science in this and other countries are to be invited to spend one or two semesters at Cornell delivering lectures, conducting research, and generally collaborating with the Department while in residence here". Each set of lectures was to be published as a book.

By 1926 the Chemistry Department had become comfortably settled in Baker Laboratory and the time was ripe to activate the Baker Non-Resident Lectureship. Professor Ernst Cohen of the University of Utrecht, Netherlands, was invited to come for the Spring term of 1926 as the first Lecturer. As was characteristic of the "King", the Lectureship was initiated in elegant style. Following widespread publicity, Professor Cohen was scheduled to give an introductory evening lecture on a topic of general interest and faculty, students and townspeople were invited. The lecture was preceded by a formal dinner attended by Cornell President Farrand, deans, and selected department heads and faculty. The Baker

Main Lecture Room was filled to capacity when the tuxedoed dinner guests filed in and were seated in reserved front seats. President Farrand presided. Grasping his left coat lapel in his unforgettable speaking pose, he introduced Professor Cohen in crisp urbane fashion. The introductory lecture entitled "QUA VADIMUS? WHICH WAY TO GO?", was an able and scholarly discussion of the past, present and future of scientific education and research, replete with classical quotations. It was later printed in J.A.C.S. and reprints were widely circulated.

Professor Cohen gave his regular lectures Tuesday and Thursday afternoons at 4:30. He talked about "Physico-Chemical Metamorphosis" and "Some Problems in Piesochemistry", giving 21 lectures in all. Professor Cohen gave clear and well delivered lectures in English, though he spoke with a strong accent. Those who heard him will remember his often repeated beginning phrase "Generally spoken ...". He prepared a manuscript in German, feeling this would give a more polished version. The manuscript was then translated into English by Dr. Lou Audrieth, and the first book of the Baker Lectureship series was published by McGraw-Hill, being printed in Ithaca by the Cayuga Press.

As Cohen explained in his first lecture, the possibility of a definite chemical substance existing in a number of modifications (polymorphism) had been discussed for more than 100 years and the different crystalline forms of carbon and of sulfur were well recognized, as was also true of many other substances. But with methods for determining the details of the structures of solids not yet available, the differences between polymorphs and conditions giving rise to their transformations were largely unknown. Professor Cohen had devoted his research "to establish what external conditions will induce the formation of new modifications and the consequences of the existence of a substance in a number of forms". So in the days before X-ray studies came into general use, Cohen had developed other methods for following polymorphic transformations and had established an outstanding reputation for sound research. His

lecture experiment on the polymorphism of antimony was spectacular. An unstable crystalline layer of antimony was electrodeposited on a film of graphite covering the bulb of a mercury thermometer. Placed in a projection lantern the "explosive antimony", when scratched, heated up and smoked and the mercury column rose rapidly. Sceptics were invited to touch the hot metal. I introduced this experiment into my advanced inorganic course demonstrations and for years had a bottle of antimony trichloride solution in concentrated hydrochloric acid stored for the annual show of polymorphism.

Professor Cohen also introduced the admirable custom of meeting with interested faculty and students on Wednesday afternoons for informal discussion of his lectures and related topics, one of the most fruitful features of the Lectureships.

Professor Cohen and the many topnotch scientists who followed him rapidly built up a worldwide reputation for the Lectureship and the valuable books which have been produced. The impact on Cornell has been enormous. Students during their years at the University have had the opportunity to listen to and meet with many outstanding scientists, including a considerable number of Nobel Prize winners. Our faculty has been stimulated in teaching and research by the friendships and discussions with the Lecturers. Our course offerings have greatly benefited by the introduction of material from the new areas and developments taken up in the lectures. The Lectureship has been a potent "yeast" to keep chemistry at Cornell highly active. And other universities across the country have found it very convenient to invite our Baker Lecturers for visits.

I list the succession of Baker Non-Resident Lecturer for the terms indicated for the past fifty years. Unfortunately, space limitations will not permit inclusion of their institutions nor their topics. But you Cornellians who have been privileged to hear and get to know a number of these eminent scientists during your stay on the campus will recall details.

Baker Non-Resident Lecturers — 1926 - 1976

(S for Spring term, F for Fall term)

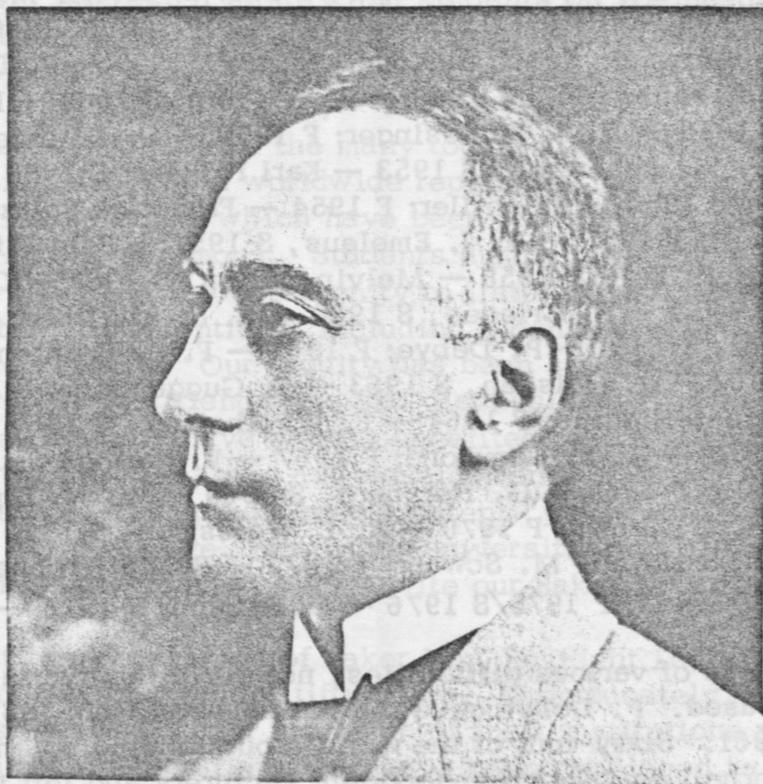
S 1926 — Ernst Cohen; F 1926 — Fritz Paneth, S 1927 — A. V. Hill; F 1927 — Paul Walden, S 1928 — George Barger; F 1928 — Hans Pringsheim, S 1929 — F. M. Jaeger; F 1929 — G. P. Thomson, S 1930 — K. Fajans; F 1930 — G. von Hevesy, S 1931 — N. V. Sidgwick; F 1931 — C. H. Desch, S 1932 — Alfred Stock; S 1933 — Otto Hahn; S 1934 — W. L. Bragg, Summer 1934 — G. N. Lewis; F 1934 — J. R. Katz, S 1935 — Farrington Daniels; F 1935 — Ross A. Gortner; F 1936 — W. K. Harkins, S 1937 — W. H. Mills; F 1937 — Linus Pauling; F 1938 — H. C. Urey, G. B. Kistiakowsky, and P. W. Bridgman, (each for four weeks); F 1939 — P. Debye; No lectures 1940 - 1947; S 1948 — P. J. Flory; S 1949 — P. D. Bartlett; S 1950 — H. I. Schlesinger; F 1950 — C. K. Ingold; F 1952 — J. M. Robertson, S 1953 — Karl Folkers; F 1953 — E. W. R. Steacie, S 1954 — Ralph Iler; F 1954 — Frederick Seitz; F 1955 — P. H. Emmett; F 1956 — H. J. Emeleus, S 1957 — Saul Winstein; S 1958 — R. P. Bell; F 1958 — Melvin Calvin, S 1959 — C. A. Coulson; F 1959 — R. Criegee, S 1960 — R. S. Mulliken; F 1960 — F. A. Kroger, S 1961 — P. Debye; F 1961 — F. S. Dainton, M. Eigen; F 1962 — R. Huisgen, S 1963 — E. Guggenheim; S 1964 — H. C. Longuet-Higgins; F 1964 — F. Westheimer, S 1965 — H. Taube; F 1965 — G. S. Hammond; F 1967 — V. Prelog, S 1968 — E. Katchalski; F 1968 — G. Herzberg, S 1969 — W. N. Lipscomb; F 1969 — H. C. Brown; F 1970 — S. I. Weissman, S 1971 — E. L. Muetterties; S 1972 — M. Swarc; F 1972 — E. Heilbronner; F 1974 — J. Lewis; F 1975/S 1976 — D. Arigoni; F 1976 — J. Dunitz.

Because of various difficulties, not all of the available terms have been used. P. Debye gave the Baker Lectures in 1939 and also again in 1961. Sixty-four of the world's outstanding scientists have come to Cornell as Baker Non-Resident Lecturers and left their marks on Cornell Chemistry. Many have returned to the campus to give occasional lectures and renew friendships.

I propose to continue to write about past Baker Lecturers in my column in the next Newsletter, recalling some of the memorable incidents of their stays on the campus. I will be very grateful for any contributions of stories about any of them and especially to receive any informal pictures you may have taken. I guarantee to return any originals you may wish to have back.

I also want to thank those who have sent me material this past year.

A. W. Laubengayer



Ernst Cohen

First Baker Lecturer — 1926

Faculty Members

(Spring Term 1976)

A. C. Albrecht
S. H. Bauer
J. M. Burlitch
B. K. Carpenter
W. D. Cooke
E. L. Elson
R. C. Fay
M. E. Fisher
J. H. Freed
B. Ganem
M. J. Goldstein

G. G. Hammes
R. Hoffmann
P. L. Houston
R. E. Hughes
F. A. Long
E. R. Lory
G. M. Loudon
H. C. Matraw
F. W. McLafferty
J. Meinwald
W. T. Miller

G. H. Morrison
E. L. Muetterties
R. F. Porter
H. A. Scheraga
F. R. Scholer
A. G. Schultz
M. F. Semmelhack
M. J. Sienko
D. A. Usher
B. Widom
J. R. Wiesenfeld
C. F. Wilcox

Emeritus Faculty

A. T. Blomquist
V. du Vigneaud
J. L. Hoard

J. R. Johnson
A. W. Laubengayer
M. L. Nichols

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