



Badger chemist : a newsletter from the Department of Chemistry of the University of Wisconsin. Newsletter 13 Winter 1966

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BADGER CHEMIST

A Newsletter from the Department of Chemistry of the University of Wisconsin

Newsletter 13

Winter, 1966



ARCHITECTS' PERSPECTIVE OF THE NEW CHEMISTRY BUILDING

The two-story unit in the lower right faces University Avenue. Making a right angle with it is the Mills Street facade of the Department's new home. Behind it and dominating all the units shown in the picture is the nine-story—and the largest—member of the complex. The smaller unit behind and attached to it is the Chemistry Research Building on Johnson Street.

BADGER CHEMIST

Privately published by the Department of Chemistry of the University of Wisconsin, Madison, with the assistance of its alumni.

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Aaron J. Ihde, Ph.D. '41

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(Ohio State '42)**

Villiers W. Meloche, Ph.D. '26

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Editor's Column

In newsletter 11 Professor Schuette announced his second retirement, this time retiring as editor of the Badger Chemist. Last year we paid tribute to him stating that the editor's work for newsletter 12 was almost all due to Professor Schuette. It has been even more so for this issue. Without his undiminished enthusiasm and tireless efforts this publication date would have been in the distant future. With your next contribution I urge each of you to include a word of appreciation to Professor Schuette for his devotion to these 13 issues of Badger Chemist.

E.D.F.

The New Chemistry Building

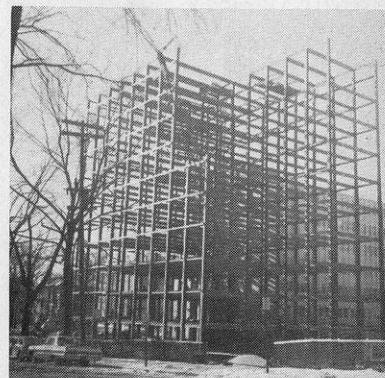
Our new nine-story building is rising in the area bounded by University Avenue on the north, Mills Street on the east, and Johnson Street on the south. It will take up most of the east half of the block and will connect with the Chemistry Research Building which was occupied in the summer of 1962. Precast concrete panels and brick matching that on the chemistry research unit will cover the steel framework of the building. Some 220,000 square feet of floor surface will be made available upon completion of the building which will cost almost \$7,000,000.

The State of Wisconsin is supplying about 76% of this sum; the National Science Foundation (NSF) has made a grant sufficient to cover 15.5% of the cost of the whole project; The National Aeronautic Space Administration (NASA) has contributed 5%; and the U.S. Office of Education (OF) grant completes the sum.

In a partial sub-basement, the basement itself, and on floors one and two will be found the quarters for teaching laboratories, classrooms, study halls, the library, lecture rooms, administration, and services. There will be three lecture rooms with capacities of 400, 300, and 150 and each will have access to a central preparation room. Above this teaching and administration area will be a smaller seven-story research tower, about

75 × 180 ft., to give a building rising nine stories above ground level. Floors in the research area will be occupied as follows: third, analytical and physical; fourth, physical; fifth, organic; sixth, organic and inorganic; seventh, inorganic. The Theoretical Chemistry Institute group will occupy all of the eighth floor and some of the ninth floor.

Prof. M. Leslie Holt served as chairman of the building committee. He was assisted by Professors Ferry, Larsen—he brought to this group the experiences which he had gained as chairman—of the committee responsible for Unit I (the present research building), Blaedel, Cornwell, and Lester of the Theoretical Chemistry group. Grellinger-Rose Associates Inc., Milwaukee, Wisconsin are the architects.

**Our Newest Alumni**

Exactly 127 names were added to the Department's Badger Chemist list during calendar year 1965. Making up this number were the 57 upon whom was conferred the bachelor's degree, the 31 who received the master's degree, and the 39 whose formal education came to a close as Doctor of Philosophy. The latter number reveals a 56 per cent increase over the year 1964. It is ten points above the average for the last decade which is 28. The 31-member master's group raises the number of the recipients of this degree since 1886 to some 970; and if the rate of increase in this category continues, some member of the class of 1966 could well be the 1000th Badger chemist upon whom Alma Mater will have conferred this degree.

Some 30 colleges and universities—five of them are in foreign countries—are represented in the list of schools whose graduates comprise our Ph.D. class. The Master's group is made up of graduates of 28 schools, four of which are in foreign lands (Germany, England, India).

The senior class was a "home-grown" group in that only about six were not Wisconsin residents. Some 80 per cent of the class were certified to the American Chemical Society as having met its requirements for membership therein. The other 20 per cent were disqualified because of the foreign language requirement. Five seniors had been selected for distinctive scholastic achievement. One of

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With the Professors . . .

PROMOTIONS, TRAVEL, OFF-CAMPUS LECTURES

Graduate School Dean **Robert A. Alberty**, Ph.D. '47, delivered the Schweitzer-Marple Memorial Lecture on January 14, 1965 at Northwestern's Technological Institute. His lecture dealt with temperature-jump studies on the reaction of metmyoglobin with ligands.

Some 25 members of the University's faculty have been honored, it has been reported, by election to the National Academy of Science; and six of them are, at this writing, members of the Department's staff. The latest addition to group is Badger chemist **R. A. Alberty**, Ph.D. '47.

Prof. **Frank C. Andrews** will spend the school year 1966-67 in research at the Clarendon Laboratories, Oxford, England, on an Alfred P. Sloan Research Fellowship.

Prof. **Richard B. Bernstein** gave the Reilly lectures at the University of Notre Dame last March on molecular beam scattering. Like Professor Brown he too was an invited guest speaker of the Faraday Society in mid-September at the University of Bristol.

Jerome A. Berson lectured on molecular rearrangements as visiting professor at the University of Cologne, Germany, during July 1965. During the same month he also lectured on this subject at Zurich, Goettingen, Braunschweig, and Marburg.

Prof. **Walter J. Blaedel** is continuing his work on continuous analysis with publications and lec-

Newest Alumni

(Continued from page 2)

them now wears a Phi Beta Kappa key and four were made members of Phi Kappa Phi.

As of school year's end in June, 1965, 17 seniors reported that their objective was graduate work elsewhere as teaching assistants and NSF trainees, one at this writing is at the University of Marburg in Germany on a Fulbright grant. Postdoctoral work either in this country or abroad will be the lot of one-half of the Ph.D. group; industry has attracted nine; seven begin careers as educators; three are active in government-supported laboratories; and the Armed Forces have taken one.

tures. Lectures given include Penn State University Chemistry Colloquium, Loyola University, Alpha Chi Sigma professional fraternity at Purdue, and the American Chemical Society Section at Washington, D.C. An extra-curricular publication of his "Our Warped Educational System" appeared in The Clearing House for December, 1965. He served as chairman of the 18th Summer Symposium on Analytical Chemistry, held at Madison during June, 1965; has been elected to the Committee on Postdoctoral Fellowships of National Academy of Sciences; and the 1966 chairman of the Wisconsin Section of the ACS.

Four members of the staff received promotions as of September, 1965. Made a full professor was **W. Byers-Brown** of the Theoretical Chemistry Institute. An advancement to an associate professorship came to physical chemist **Larry A. Haskin**, and organic chemists **Peter S. Wharton** and **Howard W. Whitlock, Jr.**

Prof. **W. Byers-Brown** was one of the four lecturers at the University of Wyoming-sponsored quantum chemistry Summer School on Medicine Bow Mountain near Laramie. He took part, by invitation, in a meeting sponsored by the Faraday Society at the University of Bristol, England, in September, 1965. The title of his paper: Interatomic Forces at Very Short Range. He is spending the spring semester of the current school year with Dr. Laurens Jansen at Battelle Memorial Institute, Geneva, Switzerland.

Professors **Bydalek**, **Evans**, and **Lemal**, have left the staff to take positions in the order named, at the University of Minnesota, Worcester Polytechnic Institute, and Dartmouth College.

Prof. **C. Daniel Cornwell** spent the summer of 1965 at the University of Colorado as visiting lecturer in physical chemistry.

Prof. **Lawrence Dahl** is serving as advisor of the Formosan Club. This club is one of some 18 student foreign cultural and educational groups on the campus each offering an opportunity to know the people, customs, problems, and points of view of other lands.

Emeritus Professor **Farrington Daniels** was the featured speaker

of the Beta Chapter of Phi Lambda Upsilon honorary chemistry fraternity at its December 7 meeting in Madison. His subject: "Methods of Science and Possible Applications of Solar Energy". He is continuing his experiments on the applications of solar energy at the University of Wisconsin Engineering Experiment Station and is doing additional work on solar distillation at Lake Michigan and Arizona. His book, "Direct Use of the Sun's Energy," is a recent publication of Yale University Press. Besides giving ten lectures on solar energy around the country, he lectured at a Notre Dame University symposium on the subject "Science and the Future of Mankind" and gave a lecture at Stanford on "Early History of Thermoluminescence Dosimetry". He has been elected president of the Solar Energy Society for 1965-67 and served as national president of the Society of Sigma Xi for 1965.

On the Department's faculty roster for the first semester of the current year appeared the name of a distinguished member of the organic chemistry staff of Switzerland's Technische Hochschule in Zurich: Dr. **Albert Eschenmoser**, visiting Brittingham professor. His presence on the campus was made possible by a fund bearing the family name of those who over the past half-century have been most generous in their contributions to the University in those areas where the tax dollar was not—and could not be—touched. Their gifts include, among others, a seven-digit contribution for the Elvehjem Art Center which is now on the drawing boards, the gift of the Lincoln statue on the hill, and the family home "Dunmovin" in Madison's suburbia, the Scandinavian fellowships, and visiting professorships. Homeward bound upon completing his assignment in the Department's organic division, Dr. Eschenmoser stopped in Pittsburgh during the Spring meeting of the American Chemical Society to receive the ACS-administered Fritzsche Award of \$1000 and gold medal for his pioneering contributions in the field of organic chemistry.

The Polish edition of Viscoelastic Properties of Polymers by **John D. Ferry** has just been published. Russian and Japanese editions also have previously appeared. The "Viscoelastic Properties of Dilute Polymer Solu-

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Professors

(Continued from page 3)

tions" was the subject of a lecture delivered by Professor Ferry at a United States-Japan joint seminar on polymer physics in Kyoto, Japan, during the month of October, 1965. He also presented a lecture before the Japanese Society of Rheology, Sendai, Japan, entitled "Slow Relaxation Processes in Cross-Linked Rubbers". Other honors coming to Professor Ferry include election to membership in the American Academy of Arts and Sciences and award of the American Physical Society prize in high polymer physics, sponsored by Ford Motor Company. It was presented in March of 1966.

Prof. Emory D. Fisher, Ph.D. '35, is the chairman of the Chemistry and Physics Departments of the University's Center System. These "two-year" (Freshman-Sophomore) centers—they were formerly called extension centers—bring our University to nine communities of the state where the student, on the successful completion of his studies, may then continue his college education as a Junior on the Madison campus. Nine centers at present make up this group which includes Green Bay, Kenosha, Manitowoc, Marinette, Marshfield, Menasha, Racine, Sheboygan and Wausau. Janesville and Waukesha will become part of the system this year. Under the center tradition, physical facilities are constructed and, to a considerable degree, maintained by local communities (counties, cities, or combinations of them). The University provides and pays for the educational program and equipment.

Prof. Joseph O. Hirschfelder, of the Institute of Theoretical Chemistry has been named to receive the Peter Debye Award in Physical Chemistry. It is sponsored by Humble Oil & Refining Company. Another recognition which came to him was election last summer by the Norwegian Royal Society of Science to a foreign membership in this academy.

Prof. M. Leslie Holt took part in the electrodeposition conference sponsored by the Electrochemical Society at its August, 1965, meeting at Pennsylvania State University. The title of his paper: Electrodeposition of Metals from Organic Solutions.

The year 1965 was an eventful one for Prof. and Mrs. Aaron J. Ihde. They welcomed their first grandchild, a boy, in January, and a granddaughter in April. In August they flew to Warsaw, Poland, where Doctor Ihde read a paper, pertinent to analysis and the development of biochemistry, at the International Congress of the History of Science. Their ten-day stop in London was given over to sight-seeing, visits to the theater and ballet, and side trips to Oxford and Farnham. After four days in West Berlin, they went through the Wall and emplaned for Warsaw. As a prelude to the Congress they joined some sixty other delegates for a five-day, history-rich, bus tour of Northern Poland—the Frambork Cathedral where Copernicus spent the last thirty years of his life and where he wrote "The Revolutions of the Heavenly Bodies." The last half of the Congress was held in Cracow, the home of its six-century old University of which Copernicus is an alumnus. The closing banquet of the Congress was held in a ten-century-old salt mine at which some 600 people were served. The formal activities of the Congress completed, the Ihdes joined a group for a tour of Southern Poland, and visited a resort town in the Tatra Mountains near the Czech border. Their visit to these areas drew to a close with a raft trip through the Dunajec River gorges. It ended in Copenhagen as the guests of a Danish historian of chemistry.

Prof. E. M. Larsen was the principal speaker at the New England Association of Chemistry Teachers' annual meeting held in Boston at Simmons College August 16-20. At the Gordon Inorganic Research Conference held the following week at New Hampton, New Hampshire, he was elected chairman of the 1966 Conference. He has been appointed to the Advisory Council on College Chemistry for a 3-year term. He is author of the recently published Benjamin paperback, "The Transitional Elements".

For the third time since 1959 Professor Robert West visited Japan for the purpose of lecturing there. He spent two months during the summer of 1962 at the University of Washington learning the language which he was later to use and then, in the fol-

lowing September, he took part in Tokyo in an international symposium on molecular spectroscopy and structure. As a Fulbright lecturer in organometallic and inorganic chemistry he returned to Japan—this time to Kyoto University—on leave for the first semester of 1964-65. During the summer session of 1965 he was visiting lecturer on Organo-metallic Chemistry at Michigan State University. In September of 1965 he attended the International Symposium on Organosilicon Chemistry at Prague, Czechoslovakia, and presented the opening lecture entitled, "Recent Research on Two Classical Problems in Organosilicon Chemistry".

Professor A. L. Wilds was on research leave for the second semester of 1964-65. Substituting for him was Dr. Gerhard Quinkert of the Braunschweig (Germany) Technische Hochschule.

Professor John E. Willard was guest speaker of the Central Ohio Valley Section of the American Chemical Society early in March, 1965. His topic: "Hot Atom Chemistry."

Two members of our emeritus faculty attended the ACS meeting in Atlantic City, N.J., last September (1965) on extra-curricular missions and for both of them it was an occasion for renewing contacts with some of the Department's graduates. Professor Daniels had been called there because of committee meetings and Professor Mathews by invitation to accept an award from Alpha Chi Sigma professional chemistry fraternity and to bring Wisconsin alumni attending the meeting up to date on campus changes—faculty and physical plant.

Two members of the Department's faculty each lost a sister in the year 1965. Professor Schuette's twin sister Marie passed away in Green Bay on 9 March and Professor Meloche's sister Gladys died on 22 May. Both women were retired educators. Miss Schuette was a member of the music faculty of New York State Teachers College, Potsdam, and Miss Meloche was a member of Wisconsin's School of Home Economics.

Professor Hans Muxfeldt was chairman of a meeting of the German Chemical Society and delivered a lecture, "A Key Reaction for the Total Synthesis of

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This 'n' That About Our Alumni

John G. Albright, Ph.D. '64, has returned to the States from post-doctoral studies "down under" at Australian National University in Canberra.

John N. Ashworth, Ph.D. '48, has been appointed Chief of the Division of Biologics Standards' Laboratory of Blood and Blood Products, National Institute of Health.

David E. Barnes, B.S. '50, has joined the product development staff of the Ansul Company in Marinette, Wisconsin, and in doing so he found among the upper echelons of management Badger chemist **Wm. R. Rinelli**, B.S. '33, who is a vice-president of the company. David will be remembered by his professors as the young man who worked his way through college while supporting a family of several children; then, on his own efforts again, earned his Ph.D. degree at the University of Florida in organic chemistry and plant pathology, after which he joined the chemical staff of U.S. Rubber Company—his first assignment was to its rubber plantations in Malaya and Indonesia. He later left his Passaic, N.J.-based job with the company to become a resident of Wisconsin. We understand that he will work on the development of agricultural products in international markets.

The **Klaus-Jochen Behling** family, Ph.D. '65, spent the 1964 Christmas holidays in Germany where they had gone to introduce their small son to his grandparents. Their visit completed, they returned to the States. The senior Behling joined Du Pont's research group in the industrial and biochemicals department of the Experimental Station in Wilmington, Del.

Faculty

(Continued from page 4)

"Tetracycline Antibiotics", some time during the month of September, 1965, in Bonn, Germany.

Professor **Irving Shain** spent the summer of 1965 as visiting lecturer at Lawrence Radiation Laboratory, Livermore, California.

Professor **Worth E. Vaughan** gave the introductory lecture at the Gordon Conference on Dielectric Phenomena, Andover, New Hampshire, during June 1965.

University of Chicago alumnus **Walter K. Benn**, Ph.D. '56, sometime research assistant and then holder of a Standard Oil fellowship in the Department, is a senior research investigator with G. D. Searle Company, Chicago. His service record with the Armed Forces consists of two one-year periods, 1945 and 1951, respectively.

Bernard C. Bergman, B.S. (ChC) '53, and Belle B. Prettyman, exchanged marriage vows on 26 June, 1965, in Black Earth, Wis. He is a development engineer at Ray-O-Vac, Division of Electric Storage Battery Company, Madison, Wis.

We are grateful to Du Pont's **Arthur A. Pavlic**, Ph.D. '42—at last report (1963) he was vice-president of the socially oriented Wilmington, Delaware Club—for his assistance in locating a fellow Icelander whose name, as we had known him, was not to be found in our mailing list. Quite unknown to us he had shortened his name "fore and aft" by dropping the first syllable and shortening the last by deleting one letter. The result, with benefit of court action, we suspect, is now A (for August) S. **Bjornson**, B.S. Chemistry Course '44. Then came the master's degree on the other campus in biochemistry. The next datum point in his formal education beyond the high school diploma is a Ph.D. degree in organic chemistry, conferred in 1948 by the University of Kansas. He is now employed by Du Pont in a responsible position as an electro-chemist. We understand that he frequently regales the alumni club of Delaware with Icelandic folksongs.

"With a \$1.2 million total, givers top their goal by \$78,671," reported a Madison newspaper at the close of the local 1965 United Givers Fund campaign last October. General Chairman of the drive was chemistry major **A. Paul Bowman**, B.S. '49, an Oscar Mayer vice president and general manager of the Madison region. (We need an individual of Paul's executive ability to take care of our Badger Chemist fund in the hope that he would improve its "hand-to-mouth" existence. HAS. Ed.)

Yale alumnus **David A. Brant**, Ph.D. '62, some-time NSF fellow

in the Department, has a new address: from Stanford University to the University of California where he holds an assistant professorship. His address is Irvine, California 92650.

Gottfried Brieger, Ph.D. '61, has left the California coast for the Midwest and, as of July, 1964, has been living at 374 Boyd Street, in Pontiac, Michigan. He is a member of the Chemistry staff of Oakland University in Rochester, Michigan.

We have learned that the **Robert Briodys**, Ph.D. '64, are now living in a "nice big brick ranch-style house" in Corpus Christi, Texas, 78411. Their address: 625 Williamson Street.

Du Pont retiree **Albert S. ("Nick") Carter**, Ph.D. '27, has informed us that he has settled down in a new house in Ft. Lauderdale, Florida, and that he is looking forward to many years of boating, fishing, gardening, and philately. His address: 5550 Bayview Drive, 33308.

We understand that **M. S. Chandrasekharaiyah**, Ph.D. '59, "hopes" to be at Argonne National Laboratory for another year before returning to India.

Ruby Wong Chiang, M.S. '49 is pursuing graduate studies again, this time, however, not on the Madison campus but on one which is in commuting distance from her home in Durham to the University of North Carolina in Chapel Hill. Ruby has a public health fellowship in its Department of Environmental Health and Engineering.

Kenneth E. Collins, Ph.D. '62, is a member of the faculty of the University of Buffalo, where he is teaching nuclear and radio chemistry and advanced analytical chemistry. His wife Carol—she was once doing post-doctoral work in the Department—has a research position at Western New York Nuclear Research Center.

From **Robert E. Conary**, Ph.D. '38, comes word that his family is nearing the end of its second-generation college education. A daughter holds a degree from the University of Rochester—she has a position with the Department of Defense in Washington, D.C.—and their son is a third year student at the University of Delaware. Bob is manager of Texaco's Beacon research laboratories Research and Technical Department.

For the second time since 1963 **Ralph Connor**, Ph.D. '32, has been the recipient of an award given

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This 'n' That . . .

(Continued from page 5)

him by his fellow chemists in recognition of his long and fruitful service to applied chemistry. The first one was the gold medal of the American Institute of Chemistry, and the most recent award was that of the Chemical Industry Medal of the American Section of the (British) Society of Chemical Industry. Ralph is the 32nd recipient of this medal.

Chemistry Courseman Terrance

E. Cooprider, B.S. '61, enrolled in our graduate school after graduation to pursue studies for another degree. An M.S. was conferred upon him in 1962 after he had served Professor Williams as a research assistant. At last report he had a Neenah, Wisconsin, residence. His address: 127 Law Street.

"Same old work in new product development in industrial and packaging adhesives," writes Chemistry Course graduate **A. A. Crowell, Jr.**, '28, from Waltham, Mass., where he is serving Union Paste Company as vice-president and general manager. His work appears to be to his liking for he closed his note with the observation that work keeps us "oldsters young".

Du Pont's senior research chemist, Plastic Department, **Stephen Dal Nogare**, Ph.D. '48, is serving the Journal of Gas Chromatography as a member of its thirteen-member editorial advisory board. Steve is the joint author (with Richard S. Juvet, Jr., University of Illinois) of Gas-liquid Chromatography, Theory and Practice. This 450-page comprehensive survey of the field in question is from the press of Interscience Publishers, Division of John Wiley & Sons, New York-London. Last, but not the least, of his accomplishments during the year 1965 is his nomination among that of 23 others, to receive an award—in his case it was the Lab-Line, Inc.—sponsored Award in Chromatography and Electrophoresis.

Two-degree Badger chemist **Glenn H. Damon**, M.S. '27 and Ph.D. '32, is research coordinator-explosives, on the staff of the Director of Coal Research in the Bureau of Mines, U.S. Department of the Interior at Washington, D.C. His son, Keith G.—he is an alumnus of Rensselaer Polytechnic Institute holds a fellowship in

Department Host to Symposia

Current research in a rapidly growing field in chemistry attracted some 250 scientists to the campus last summer for the Second International Symposium on Organometallic Chemistry. Fifty of them had come from foreign countries: Austria, Belgium, Eire, France, Germany, Israel, Japan, Switzerland, and the United Kingdom.

An organizing committee of 14 under the chairmanship of our department's Prof. R. West had made the plans for the symposium. Assisting him, among others were Hercules senior research associate **Howard G. Tennent**, Ph.D. 42, and Professors **L. F. Dahl** and **P. M. Treichel**.

Although lack of space precludes an analysis or interpretation of the program, one by a faculty member and his research assistant Patricia A. Carney of Hyannisport, Mass., merits mention because it suggests the high quality of the papers presented at the symposium. A local newspaper reported that a new compound which "may be the start of a whole new field of chemistry" had been synthesized in the department. When this is translated into the jargon of the laboratory the compound in question turns out to be perlithiopropyne. It is an unusual one in that all four of its hydrogen atoms have been replaced with lithium.

chemical engineering at our University.

We have learned that **Guido H. Daub**, Ph.D. '49, and his wife, the former **Katherine Powell**, M.A. '48, are living in their new adobe house—it is Spanish Colonial—at 2212 Dietz Place, N.W. in Albuquerque.

Chemical and Engineering News announced another promotion for **James D. D'Ianni**, Ph.D. '38. He is now director of research at Goodyear Tire and Rubber, Akron.

The 75th anniversary of North Dakota State University, Fargo, was marked by the dedication of Dunbar Laboratories, a 1.25 million dollar addition to existing facilities. **Ralph E. Dunbar**, Ph.D. '33, taught at Fargo for over 20 years and was dean of the college of chemistry at the time of his

Bioanalytical techniques were discussed at the 18th Annual Summer Symposium on Analytical Chemistry which was held on the campus, June 8 to 11. Some 230 individuals from 30 states had come to Madison for the meeting, which had been sponsored by the Analytical Division of the American Chemical Society, to hear about new developments in histochemical techniques, enzymatic analysis, amino acid chromatography, electrophoresis, thin-layer chromatography, radio chemistry, and automation as applied in biochemistry. A special symposium was devoted to papers contributed by undergraduates in six midwestern schools describing student research projects.

On the social events program for the distaff registrants there were scheduled half-day tours to Little Norway (a replica of a Norwegian Village, with museum) and New Glarus (a Swiss community with a lace factory). And for everybody there was an alfresco supper on Picnic Point on the University campus and, at symposium's end, a banquet at which the featured speaker, Prof. A. D. Hasler, Director of the University's Limnology Laboratory spoke. His subject: "Guideposts of Migrating Fishes."

Chairman of the symposium was Dr. W. B. Mason of the School of Medicine and Dentistry, University of Rochester, Rochester, N.Y., and our Prof. W. Blaedel served as local arrangements chairman.

death in 1960. To our knowledge this is the first instance of a chemistry building bearing the name of a Badger chemist.

William D. Ehmann, M.S. '54, Ph.D. Carnegie Institute Technology '59, is now associate professor of chemistry at the University of Kentucky. He has just returned from 9 months in Canberra, Australia, where he was a Fulbright research scholar at the Australian National University.

Manager of Administrative and Laboratory Service Division, Chevron Research Company, Richmond, California, is the new title of **Dorr H. Etzler**, B.S. '35.

Katherine F. Faville, M.S. '16, retired at school year's end in 1965 after having served Wayne University in Detroit, Michigan, for some twenty years as dean of its

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We Introduce Our New Staff Members

The Department lost three members of professorial rank during the present fiscal year and added seven for a net gain of four. The seven in question are pictorially—and biographically—introduced in the pages which follow. Harvard, Massachusetts Institute of Technology, and Illinois are represented by two each; and the University of Indiana completes the count.

DONALD F. GAINES Assistant Professor



Professor Gaines is a native of Idaho. He received his B.S. degree from the College of Idaho in 1958. The University of Indiana conferred the doctorate upon him in

1963. He joined our staff in 1965 after having spent two years in post-doctoral studies, one at Indiana and one at the University of Manchester in England. His research interests include boron hydrides and boron nitrogen compounds.

He married the former Nancy M. Hill of High Point, North Carolina. The Gaines are the parents of two daughters, Elizabeth 4, and Mary 2.

RICHARD H. HOLM Associate Professor



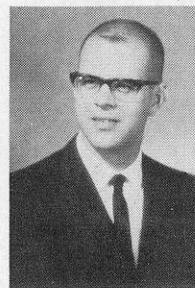
Bostonian Holm received his post-high school training in two Massachusetts schools; its University which granted him his first degree in 1955 and the Institute of

Technology (MIT) which conferred upon him the doctorate in 1959. In 1960 he joined Harvard's chemistry department with the rank of instructor, two years later came promotion to assistant professor, and in 1964 election to an Alfred P. Sloan fellowship. He joined the Department's staff in

1965. His research interests lie in inorganic chemistry with special reference to the synthetic structural and electron properties of transition metal complexes.

He is married and is the father of three children.

JOHN P. WALTERS Assistant Professor

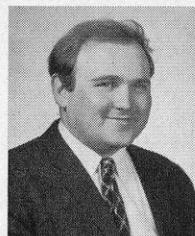


Professor Walters joined the analytical staff in September, 1965. After undergraduate training at Purdue he received his Ph.D. from Illinois in 1964, and remained

there for a year of postdoctoral work. His research interests are in optical spectroscopy, discharge mechanisms, and spectroscopic instrumentation.

The Walters (Barbara Auble of Elgin, Illinois) have a son John Anthony, 2½ years of age.

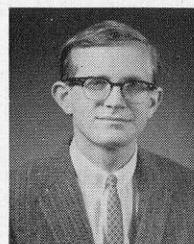
ARNOLD C. WAHL Assistant Professor



Another Chicagoan on the staff is Professor Arnold C. Wahl. He received his B.S. in chemical engineering from Rensselaer Polytechnic Institute in 1959 and the Ph.D. in chemical physics from the University of Chicago in 1964. Before joining the staff of the physical chemistry division and that of the Theoretical Chemistry Institute, he was a research associate at Argonne National Laboratory. He is interested in the development of realistic mathematical models of molecules by use of large high-speed electronic computers. By-products of his studies are "pictures" of molecules sketched by computers.

In 1964 he married Dr. Maria Teresa Fernandez of Buenos Aires, Argentina. They have one daughter, Anna Katerina, age at this writing 6 months.

STEPHEN F. NELSEN Assistant Professor



Native Chicagoan Nelsen became a University of Michigan alumnus in 1962 and then enrolled in Harvard's graduate school as a candidate for the doctorate. That phase of his

higher education completed in 1965, he returned to the midwest to join the Department's organic chemistry division. His research interests lie in the field of radical chemistry; his extracurricular activities are in archeology and ancient history.

In 1962 he was married to Adrienne Housour of Sturgis, Michigan. The Nelsens have a daughter, Erika Christine, born on July 26, 1965.

JOSEPH H. NOGGLE Assistant Professor



Professor Noggle joined the physical chemistry staff in July 1965. After graduating with a B.S. from Juniata College, Huntingdon, Pennsylvania, 1960, he received his

Ph.D. from Harvard in February of 1965. Before joining our staff he was a postdoctoral fellow at Harvard for several months. His research interest is in double resonance and relaxation effects in nuclear magnetic resonance.

He married in 1960 Carol Innis of Lewiston, Pennsylvania.

BARRY M. TROST Assistant Professor



A native of Philadelphia, Professor Trost received his B.S. from the University of Pennsylvania in 1962. With a National Science Foundation predoctoral fellowship he received his Ph.D. at the Massachusetts

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This 'n' That . . .

(Continued from page 6)

College of Nursing. We understand that she will continue to make her home there and that she expects to work as a volunteer in some of the local civil rights and anti-poverty activities of that city.

Garry N. Fickes, Ph.D. '65, at last report was doing postdoctoral research at Harvard. His address at that time: 117 Museum Street, Somerville, Mass.

Jeremy R. Fox, B.S. '54, is following, in a sense, his father's footsteps. His dad holds a professorship in our School of Commerce and Jerry began this current school year with assistant professor's rank in Northern Michigan State University at Marquette. His graduate studies at Illinois had been temporarily halted by a tour of duty in the armed forces. His Illinois-granted Ph.D. degree dates from 1965.

We reported in the 1964 issue of the newsletter that the **Francisco Gil-Armos**, M.S. '61, homeward bound to Caracas, Venezuela, as the possessors of Wisconsin diplomas, expressed the hope that some day they would return to the campus for more graduate work—and another degree. That wish became a fact last September when a research assistantship for him under Professor Larsen came his way and a subsidy from their government made resumption of her graduate studies under Professor Dahl of our Department possible.

Paul K. Glasoe, Ph.D. '38, professor of chemistry at Wittenberg University served as chairman of the Columbus, Ohio, Section of the American Chemical Society.

Associate professor **Adon A. Gordus**, Ph.D. '59, has been appointed associate director of the honors program at the University of Michigan.

The name **Gralow** (for **Ray C.** B.S. '34) appears in the student directory for the second time in some 30 years. The family name

In Memoriam

Carleton College alumnus **George W. Batchelder**, M.A. '30 and Ph.D. '32, some-time assistant in analytical chemistry, and before retirement associated with the airplane industry on the west coast—on 29 May, 1965, in Santa Monica, Calif.

Chemistry Course graduate **Frederick W. Bentzen**, B.S. '11, research chemist with Kimberly-Clark Company on 24 June, 1965, in Neenah, Wis.

Harry E. Carswell, Ph.D. '27, an educator for some 19 years as a member of the Medical School faculty of the University of Louisville, Ky., who in 1946 returned to his boyhood home, the Wisconsin City of Richland Center, to head its hospital—unexpectedly 20 November, 1965, at age 67.

Phillip J. Hickey, B.S. '18, M.S. '20, whose career as an educator began in the Department as a teaching assistant and continued in the public school system of St. Louis, Mo., where he rose from the ranks in 1942 to that of superintendent of education—on 20 March, 1965.

Winfield S. Hubbard, Ph.D. '12, some-time assistant when the late Richard Fischer headed the organic chemistry division—August, 1965 in Sturgis, Mich. His wife was the former Gladys Sutherland, a 1912 alumna of our University.

Rudolph A. Karges, Ph.B. '06, Ph.D. '31 (Iowa), some-time principal of a Ripon, Wisconsin, high school, and, at the time of his death, a member of the faculty of Wisconsin State University, River Falls—on 2 December, 1964, while watching a basketball game.

Alfred D. Ludden, M.S. '23, some-time lecture assistant to the late Professor Louis Kahlenberg,

past chairman of the Lake Superior Section, ACS, extracurricularly active in amateur dramatics and named in his day as a National Collegiate Player—in Duluth, Minn., where he was a high school science teacher—28 July, 1965.

Mary M. McCalmont, M.S. '21, chairman of the chemistry department of Stout State University (Menomonie) until her retirement in 1952—on 4 July, 1965.

Ray V. Murphy, M.S. '16 and Ph.D. '23, and until his death owner of Perfecopy Co.—on 17 June, 1965, in Hinsdale, Ill.

Chester A. Pierle, Ph.D. '19, some-time instructor and, until his retirement in 1953, professor of chemistry at West Texas State Teachers College, Canyon, Texas—on 18 March, 1965.

Wesley R. Peterson, Ph.D. '29, some-time teaching assistant in the Department, a recipient in 1940 of the Modern Pioneer Award of the National Association of Manufacturers and, since 1957, patent and trade mark coordinator with Minnesota Mining and Manufacturing Company—on 2 August, 1965, in St. Paul.

George G. Town, B.S. '18, Ph.D. '22, who once served the University in the dual capacity as chairman of the chemistry department of the old Milwaukee Extension Center there and the state-wide Extension Division—on 13 July, 1965, in Santa Barbara, Calif. He had retired in 1961.

Harold F. Wakefield, M.S. '23, a Union Carbide Corporation's retiree, a some-time chairman of a Gordon summer conferences on adhesion, recipient of several cash awards, medals, plaques, or citations, and at the time of his last retirement active in a research project with Evans Research Development Corporation in New York City—on November 18, 1965, in Upper Montclair, N.J.

now identifies his daughter, Mary L., who began the current year at Wisconsin as a junior in medicine.

Arthur E. Grosser, Ph.D. '63, returned to the campus as postdoctoral project associate to Professor Bernstein for the school year 1964-65. His previous year was spent with Professor Margrave at Rice University.

Lawrence T. Hallett, Ph.D. '28, has retired as editor of Analytical Chemistry. Members of the Advisory Board include **Gilbert H.**

Ayers, Ph.D. '30, and **G. A. Harlow**, Ph.D. '34.

Three Badger chemists attended the International Congress on the History of Science at Warsaw, Poland, during August 1965: **Aaron J. Ihde**, Ph.D. '41; **Erwin N. Hiebert**, Ph.D. '54, and **Charlene Steinberg**, M.S. '48. Miss Steinberg presented a paper, "The Research Activities of Aleksandr Abramovich Voskresenskii".

For the third time since 1963 (Continued on page 9, col. 1)

Trost

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sets Institute of Technology in April of 1965. He includes the synthesis of natural products, compounds of theoretical interest, sulfonylids, and chemistry of diazo compounds among his research interests.

This 'n' That . . .

(Continued from page 8)

physical chemist Takeru Hiquchi, Ph.D. '43, has received recognition for his research activities. On the national area are two administered by the American Pharmaceutical Society and, on the local scene, his appointment in 1965 by Wisconsin's Board of Regents as Edward Kremers Professor of Pharmacy. Professor Kremers was a Wisconsin alumnus, B.S. '88, and, at the time of his death had served his Alma Mater for some 43 years, or practically all of his active years, as head of the pharmacy department.

Some 63 members of the far-flung Jones family are listed in the University's current student directory. The reader interest for the Department's historian in this otherwise dull statistic is enhanced by a sentimental one. It lists the name of one of our Ph.D. alumni: Illinois alumnus (B.S. '42) Robert H. Jones, Ph.D. '49, whose son, Hartley M. (ChC 1), is apparently following in his father's footsteps. The senior Jones is now Vice-President—development with W. R. Grace & Co. The family is living in Ellicott City, Md.

Some thirty-three years ago Ph.D. classmates Nels Minne and Ray C. Houtz, bid each other good-bye. Two years ago they were, in a sense, united again—and on the same campus—in Winona, Minnesota. Both began their respective careers as teaching assistants in the Department. For the first of the pair his Wisconsin introduction to the academic life in time became the prelude to his present position: president of Winona State College in Minnesota. He had previously served the college for some twelve years as a teacher of physics and chemistry. As for the other Badger chemist the interlude in his career from the time that he left the campus to the present—spelled a 22-year association with Du Pont and some ten years with Toni of Chicago. His return to the fold as an educator began with his temporary affiliation with Northwestern several years ago; it became a fact last year when promotion to full professor at Winona State was given him. He is teaching organic, biochemistry, and industrial chemistry there.

Oberlin alumnus (B.A. '52) Reed A. Howald, Ph.D. '55, is a

ARTHUR C. COPE Doctor of Science



For the fourth time in 37 years the University invited a Badger chemist to return to the campus at Commencement time to receive an honorary degree. Like the first in the list he, too, is a Ph.D. alumnus. His predecessors held Wisconsin bachelor degrees and had earned their respective higher degrees elsewhere.

Said the chairman of the Honorary Degrees Committee in the citation which she made to President Harrington:

"Arthur Clay Cope, head of the Department of Chemistry at the Massachusetts Institute of Technology since 1945, received his Ph.D. degree at Wisconsin in 1932 as a student of Professor S. M. McElvain. Through the years he has maintained close contact with the Wisconsin Department of Chemistry, and there has been a steady interchange of graduate students between our laboratories and his. Professor Cope has published over two hundred scientific papers, including two well-known discoveries which bear his name in textbooks.

member with professorial rank of the chemistry staff of Montana State College, Bozeman. He had previously served the University of California (Los Angeles), Harvard, Oberlin, and St. John's University.

Gretchen (Gericke) Hylton, B.S. '62, is now working for the department of Medical Physics, University of California at Berkeley. The Hyltons are living at 3016 Glynnis Drive, Richmond.

Chemistry Course graduate Daniel F. Juers, B.S. '64, is serving our University's Marathon County Center at Wausau as instructor in chemistry.

Lee H. Kalbus, Ph.D. '54, has a new address—from Wisconsin State University, Oshkosh, to California State College, San Bernardino.

Word has come that Fred K. Kawahara, Ph.D. '48, is now a staff member of Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio.

"He has been a member of the National Academy of Sciences since 1947, and has received many honors including the U.S. Government Certificate of Merit. During the last War he played an important role in the National Defense Research Committee as Section Chief in Chemistry. Since then his public service has been concentrated on the American Chemical Society. It is very rare that one individual can combine creative scientific accomplishment, effective administration, and broad influence in the development of his profession, as Professor Cope has done. He is probably the best-known American organic chemist, and one of the best-known organic chemists in the world.

Said President Harrington, on conferring the degree,

"Arthur Clay Cope, because you are a creative leader in chemistry and a successful administrator, I am happy to confer upon you the honorary degree of Doctor of Science."

Other honors coming to Professor Cope since our last issue include a sixth term as chairman of the Board of Directors of the American Chemical Society and appointment as the Camille Dreyfus professor of chemistry at Massachusetts Institute of Technology, the first endowed chair in this school.

John A. Keenan, B.A. '30, Ph.D. (biochem) '34, president of Standard Packaging Corporation until December, 1964 is now president and member of the Board of Directors of the Shaeffer Pen Company, Fort Madison, Iowa.

Word has come to us that Chemistry Courseman Allen R. Kittleson, '37, now has a Junior research associate rating at Esso Research and Development. He has a Westfield, N.J., address.

Some-time assistant director of Wisconsin's Theoretical Chemistry Institute Daniel D. Konowalow, Ph.D. '61, has left our campus for that of State University of New York, Binghamton, where he holds an assistant professorship.

From Roy F. Korfhage, Ph.D. '27, has come word that on retirement in January, 1964, as technical director of Milwaukee's Ambrosia Chocolate Company, he and his wife took up residence in Charlotte, North Carolina, at 4147

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This 'n' That . . .

(Continued from page 9)

Chelmsford Road. The Korfhages took advantage of Roy's freedom now to travel by making a trip to Europe where they visited eleven countries. Their son Robert, we have learned, earned his Ph.D. at Michigan in 1960. He is teaching logic and computer at Purdue.

Ludwig C. Krchma, B.S. '31, is with Mobil Oil Company, a Division of Socony Mobil Oil Company, Inc., in Kansas City, Mo. His title; Market Development Manager in the Special Products Department.

Sheldon F. Kurath, Ph.D. '54, has left the Institute of Paper Chemistry and his part time teaching position at the Fox Valley Center of the University of Wisconsin to become assistant professor at Wisconsin State University-Oshkosh.

Ohio State University conferred the Ph.D. degree upon Chemistry Course graduate **Jerold A. Last**, '59, in 1965. At this writing he holds a postdoctoral fellowship there in biochemistry but awaiting him in January 1966 is a two-year appointment in New York University under Prof. S. Ochoa.

The promotion of **Paul M. Laughton**, Ph.D. '50 to the rank of professor was announced last summer by Carlton College of Ottawa, Canada. Paul holds two degrees conferred by Canadian universities: B.A. Toronto in 1945 and M.Sc. '47, Dalhousie. He was a research associate in the Department for a short time before his return home to serve the National Research Council as Fellow. His climb up the academic ladder began as an assistant professor in 1951. Promotion to associate professor rank came seven years later. His military record spells service as an officer in the Royal Canadian Air Force.

A Badger chemist now heads Yale University chemistry department. Promotion to the rank of professor and designation as chairman came to **Philip A. Lyons**, Ph.D. '48, at school year's end in June 1965.

Emeritus Professor **Mathews** became a great-grandfather some time during the month of October, 1964. His daughter, Marion, is the little girl's grandmother. The newest addition to the Mathews' family tree is Kimberley Hicks. The senior Mathews are alumni of our

Happy Landings

The **Paul E. Aldrich's**, Ph.D. '58, of Wilmington, Del., announced the birth of their first child, Craig William, on 1 August, 1965.

Irvis and Duff S. Allen Jr., Ph.D. '60, on 29 April, 1965, announced the birth of a daughter, Cori Meitus. Her brother—a third-generation son—carries on his grandfather's surname.

The **Robert G. Briody**, Ph.D. '64, family became a three-boy unit on 13 May, 1965, upon the arrival of Mark Edward.

Word came on 15 July, 1965, from Carolyn and **Adlai Kan'an**, Ph.D. '63, of the arrival of their first child, a boy, on 15 July, 1965, in Houston, Texas. His father is now a member of the chemistry staff of Western Michigan University, Kalamazoo.

Robert G. Lewis, Ph.D. '65, and his wife Susan, announced the birth of their second son, David Glenn, on 9 December, 1964.

From the **Roger A. Lovalds**, Ph.D. '65, came word, late last summer, of the arrival of Jean Susan on 12 September, 1965. Jean was born in Abington Memorial Hospital. Her father is a research chemist with Rohm & Haas Company, Philadelphia.

University, B.S. '03 and B.A. '09, respectively.

Loyola University alumnus **Richard Markuszewski**, M.S. '65, who once served the Department as a teaching assistant, now has a Columbus, Ohio, address as a member of Chemical Abstracts' Staff.

We have learned that **Lt. Col. Dick R. Markwell**, Ph.D. '56, has been assigned to the U.S. Army Research Office, office of the Chief of Research and Development, Washington, D.C. Before reporting for duty there early in November, 1965, he will have completed a brief tour of duty in Vietnam.

Frank T. McClure, Ph.D. '42, received the John Scott Award for 1965 given by the Philadelphia Directors of City Trusts. The award is for his invention of the Satellite Doppler Navigation System for fixing positions of ships at sea. Dr. McClure is chairman of the research center at Johns Hopkins Applied Physics Laboratory.

Chemistry Course graduate (B.S. '46) **Albert J. Milun**, Ph.D. '51, has been named head of Gen-

Roy L. and Marina Orvis, Ph.D. '66, announced the birth on 9 October, 1965, of a daughter, Carey Lynne, in Rochester, New York.

Donald and Marie Mercury Roth, Ph.D. '44 and '52, respectively, are now the parents of four children. Nancy Ellen joined her sisters Catherine and Joanne and her brother Charles on 26 July, 1965.

Professor and Mrs. **Paul M. Treichel**, B.S. '58, welcomed their second child, a son, David Alan, to the family circle on 11 March, 1965.

The **Eugene R. Wagners**, Ph.D. '64, became the parents of a son, Paul Eugene, on 17 December, 1964.

The **Kenneth L. Williamson**s, Ph.D. '60, on 9 February, 1965, announced the birth of a second son, Kevin Keith. Theirs is now a three-child family; Christopher, age 5, and Tonia, age 4. Their dad is a member of the Mt. Holyoke College faculty.

The stage was set on 28 December, 1964, for a series of future parents' wedding anniversary observances and a daughter's birthday day when baby Susan—she is their second girl—was welcomed into the family of **Walter A. Vredenburg**, Ph.D. '59, that day.

eral Mills' analytical department. We understand that Albert, along with others on his staff, has played a very active part since 1956 in adapting what was once deemed to be a research novelty to the practical solution of the numerous analytical problems arising in the development of General Mills' long list of food products. He is the father of five children, four girls and one boy.

From **Marjorie Gilbert Moldenhauer**, B.S. '52, comes word that her husband's work has taken the family to the brushy foothills of Ojai, California, where her husband, a Badger physicist, and his cohorts are building a manned under-water observatory for the U.S. Navy; and that she is the mother of two girls, Kari (1960) and Wilki (1961).

Leroy S. Moody, Ph.D. '44, has been named managing director of the N.V. Polychemie A K U G E, a new company jointly set up by General Electric and *Algemene Kunststijde Unie*, N.V., in Arnhem, the Netherlands.

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This 'n' That . . .

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Richard D. Mullineaux, Ph.D. '51, is manager of the Aromatics Department at Shell Wood River Refinery. They are now living at 15 Cornflower Court, Florissant, Missouri.

Lowell E. Metherton, Ph.D. '50, is now associate director in charge of analytical and chemical engineering research with Wyandotte industrial chemicals research and development division, Wyandotte, Michigan.

James C. Nichol, Ph.D. '48, is now serving as chairman of the Lake Superior Section of the American Chemical Society.

The Madison water utility main station, North Hancock Street, has been officially renamed the Dr. M. Starr Nichols Station. Badger chemist **M. Starr Nichols, B.S.** '16, Ph.D. (physiological) '26, has been a member of the board of water commissioners since 1951.

Michigan State alumnus (B.S. '42) **John R. Pailthrop, M.S.** '47, upon completing his tour of duty in the Armed Forces, enrolled in our Graduate School. Badger chemist status achieved, he became a DuPont employee as a research chemist in its Jackson Laboratory. Milestones in his career since then are research supervisor, research division head, and, in 1960, manager, development section, Research and Development.

David Perlman, B.A. '41, Ph.D. (biochemistry) '45, research associate at Squibb Institute for Medical Research, is the 1965 chairman of the American Chemical Society's Division of Microbial Chemistry and Technology.

Ralph H. Petrucci, Ph.D. '54, is chairman of the Department of Physical Science, New State College, San Bernardino, Calif.

Duncan F. Poland, Ph.D. '63, may be addressed at Sonoma State College, Cotati, California. He is on the staff of the department of chemistry and physics with professorial rank. President of the college is Badger chemist **Ambrose K. Nichols, Jr., Ph.D.** '39, some time chairman of the Chemistry Department of San Jose State College.

Oscar T. Quimby, Ph.D. '38, of Procter Gamble, was given the 1965 Cincinnati Chemist award of the A.C.S. Cincinnati Section, for outstanding contributions to the

Kuebler Award To Professor Mathews



The Alpha Chi Sigma dinner last September in Atlantic City, N. J., which was held there at the time of the meeting of the American Chemical Society had much of special interest for Badger chemists. A Badger chemist—he holds two Wisconsin-conferred degrees (B.S. '03 and M.S. '05)—was the honored guest of the evening; a past chairman of the Department, who had taught physical chemistry to a host of students on their way to become Badger chemists, made the formal presentation of that guest; and a Badger chemist, Graduate School Dean R. A. Alberty, Ph.D. '47, served as master of ceremonies of the evening's activities.

When Emeritus Professor **J. H. Mathews** was asked to come forward to receive the fraternity's John R. Kuebler Award, he quipped with the remark that seldom is a man honored for something that he had done 63 years ago. Fraternity history that dates from early 1902 tells us that he and classmate **Joseph G. Holty, B.S.** '03, conceived the idea of starting a fraternity among men of like scientific interests. Seven others were invited to join the group and these nine individuals, in a sense, are deemed to be the founding fathers of a professional fraternity that has achieved national recognition as "one of the best organized, best conducted, and most influential of the professional fraternities."

Emeritus Professor Farrington Daniels on presenting Doctor Mathews to the dinner guests

physical inorganic chemistry of phosphates.

Robert B. "Judge" Reynolds, Ph.D. '28, informed us that he has a new address because of the sale of his country home (January '65) in southern Alabama. The Reynolds are still Alabamans and are now living in the residential area of Montrose on the eastern shore of Mobile Bay, across from the city of that name.

William P. Reimen, Ph.D. '55,

made mention of his early scientific researches which stemmed from his pre-doctoral training under the late Prof. T. W. Richards of Harvard University, and he pointed out also that much of his data on the precise measurements of the heats of vaporization of liquids, which he had obtained in the best Richards' tradition as to accuracy, had later appeared in the International Critical Tables. He reminded his audience, also, that Doctor Mathews had in his day carried out pioneering researches in the then newly developing fields of photochemistry and colloid chemistry, and that he had organized the first symposium on campus in this field in 1923, and that his main life work has been his development of the Department whose chairman he had been for a record number of 33 years. Much appreciated on the civic scene is his 16-year service on Madison's Police and Fire Commission. On his retirement in 1953 there passed into history his course in the Sociology Department on the scientific detection of crime. One statistic is missing in this story: the number of times he has been called upon to discuss his work and the mileage involved in doing so. He avers that he has never kept a record. (We suspect that it is "near-astronomical" and know that his voice appears to have been affected because of it).

On the hand-lettered richly embossed scroll given Doctor Mathews is the following meaningful citation:

"The Alpha Chi Sigma Fraternity commemorates by this scroll the 1965 presentation of the John R. Kuebler Award to Joseph Howard Mathews for his distinguished services to advance the Fraternity and the Chemical Profession. Presented at the Alpha Chi Sigma Dinner held during the meeting of the American Chemical Society in Atlantic City, New Jersey, on Sept. 14, 1965."

formerly of the Institute of Paper Chemistry, is now an assistant professor at the Green Bay Center of the University of Wisconsin.

Robert W. Rosenthal, Ph.D. '49, is now a Senior Research Chemist at Gulf Research and Development Company, Harmarville, Pa. He writes us that he recruited on the Madison campus in the fall of '64 and expects to continue this practice regularly.

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This 'n' That . . .

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Another Badger chemist serving as local chairman of an A.C.S. Section is **E. Earl Royals**, Ph.D. '54, of the Pensacola, Florida, Section. Dr. Royals is now a research associate with Heyden Newport Chemical Corporation.

Virginia Schelar, M.S. '53, has a new address: from Madison, Wisconsin, to Saint Petersburg, Florida. She is a member of the faculty of the Junior college there which is named after that city.

Robert E. Seybold, B.S. '56, is now living in Madison and is a chemist with the Wisconsin Board of Health.

Wisconsin's History of Science department chairman **Robert Siegfried**, Ph.D. '53, is co-author of a Harper & Row publication, "Concepts in Physical Science."

The **James M. Sprague**, Ph.D. '34, lecture series for 1965 was presented by Harvard's Prof. Paul D. Bartlett.

Marshall R. Sprinkle, Ph.D. '32, writes that he is enjoying Professor Ihde's new book "The Development of Modern Chemistry". Marshall retired from Shell Chemical Company in December, 1964, after thirty-two years of service. The Sprinkles are now living on a farm near Charlottesville, Virginia.

Two business cards each bearing the name **J. Dan Stice**—he is a Badger chemist, M.S. '52—have recently come to hand. One describes him as a new product consultant living in Stillwater. The other shows that he is a member of a group identifying themselves as University Patents, Inc., of Illinois. We understand that among the clients of this organization are the University of Illinois, the University of Chicago, and the Illinois Institute of Technology Chicago.

Albert W. Stout, Ph.D. '36, has been transferred by Georgia-Pacific Corporation, Portland, Oregon—he had served his employer as chief of its chemical division—to its laboratory in Bellingham, Washington, which had

In Retirement . . .

We have learned that two retired Badger chemists have turned an avocation into a vocation. They are not the first in our book to have done so. Some 15 years ago and apparently in anticipation of his retirement at Carleton College, the late Prof. **A. T. Lincoln**, Ph.D., 1899, began experiments whose object was the development of weather-resistant inks and plastic tags to meet the needs of fruit and vegetable growers. The small business which he later set up to make these tags continued until his death. After serving 28 years as chairman of the chemistry department at the University of Puget Sound, **Philip R. Fehlandt**, Ph.D. '34, has retired from academic life. Growing orchids was his hobby, a most successful one. During his many years of work he has been able to develop very effective culture media and techniques for germination of orchid seeds. He is a recognized specialist in this field. Now Phil and his wife, Thelma, plan to devote all their working hours to orchid culture.

been enlarged by the acquisition of the facilities of the Puget Sound Pulp and Timber Company. Plans made by the Stout family earlier in the year for a summer visit to our campus with its enlarged physical plant were changed for one to New Haven, Conn., in June for Yale's Commencement activities. His daughter Margaret—she is the wife of the Rev. David Steward—was one of the graduate students upon whom the Ph.D. degree was conferred.

From sources which we deem to be authoritative, we have learned that Utah alumnus (B.A. '41 and M.A. '43) **Verner L. Stromberg**, Ph.D. '49, has joined the research and development staff of Pet Milk in Greenville, Ill., as a section chief for chemistry. Some six years ago we reported him as having a senior chemist rating with Petrolite Corporation and a Webster, Missouri, address.

The Sixth Annual Extractive Metallurgy Lecture 1964 was presented by **Philip I. Stroup**, Ph.D. '29. The subject, "Carbothermic

A 33-year association with **J. C. Johnson & Son, Inc.**, Racine, Wisconsin, ended last summer for **E. S. McLoud**, M.S. '35, when he retired as its basic research director. An early interest in forest land began with the purchase of 240 acres of land in Wisconsin's Forest and Portage Counties. The reforestation of this land stems from a hobby. His holdings at last report have been enlarged to three thousand acres on which there are growing some 150,000 trees. The management of the enlarged property in time made it difficult to assign the activities to others, we understand, hence his early retirement—and reason enough for turning an avocation into a new vocation. Appreciation of his services to "Johnson Wax" some years ago brought him the company's Carnauba Palm Award. Elbert does not plan on a complete separation from the chemical and other technical applications to industry. Successful chemists often become consultants, and that he plans to do, his growing forests permitting.

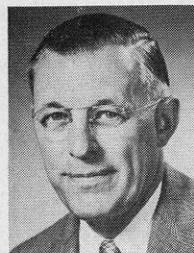
"Smelting of Aluminum", marked the 75th birthday of the Aluminum Industry. Dr. Stroup is assistant director of research with the Aluminum Company of America.

One of 12 scientists honored at the Notre Dame Centennial of Science celebration was Badger Chemist Nobel Prize winner **Edward L. Tatum**, B.A. '31. Dr. Tatum is now with the Rockefeller Institute, New York City.

Joliet, Ill. native **Warren E. Thompson**, B.S. '51, went on to Harvard for his higher degrees: the A.M. and the Ph.D. The latter was conferred upon him in 1956. A Fulbright scholarship then made it possible for him to pursue post-doctoral studies at the University of Leyden, the Netherlands. That assignment completed, he joined the chemistry staff of the University of California (Berkeley) with instructor's rank. Promotion to that of assistant professor came in 1959. Our last information is that he is in Cleveland on the chemistry staff of Case School of Applied Sciences.

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Dr. Lloyd W. Covert



Dr. Lloyd W. Covert, director, member of the executive committee and vice president of Rohm and Haas Company, died in the crash of a Canadian Pacific Airlines plane in Tokyo,

Japan on March 4. He was accompanied by his wife, Leone, who also died in the accident.

Born in Velva, North Dakota in 1906, Dr. Covert was graduated from Oregon State College in 1929. In 1932 he received the Ph.D. in chemistry from the University of Wisconsin. He joined Rohm and Haas as a research chemist later that year.

In 1939 Dr. Covert was made assistant director of research for the company and in 1941 was promoted to become assistant to the president. He was elected a director and vice president of the company in 1944. His initial assignment as vice president was in charge of both production and research. In later years, as the company grew in size, his responsibilities were broadened to cover production and engineering for the parent company. In mid-1965 he assumed a new position as vice president in charge of engineering for the company and its subsidiaries, and was on his way to visit an installation of an affiliated company in Tokyo when the accident occurred.

Dr. Covert was a member of various professional societies including the American Chemical Society, and the American Association for the Advancement of Science. He was a member of the Philadelphia Rotary Club and chairman of its Education Fund Committee. He was also a trustee of Beaver College, Jenkintown, Pennsylvania and a trustee of the Abington Memorial Hospital, Abington, Pennsylvania. He was a member of the Grace Presbyterian Church at Jenkintown, Pennsylvania.

Dr. Covert was married in 1932 to Leone Elliott. Dr. and Mrs. Covert resided at 1419 Lindsay Lane, Meadowbrook, Pennsylvania. A married son, James E., lives in Pontiac, Michigan, and a daughter, Ellen E., is a student at the University of Wisconsin.

Our Fellowship Program Is Growing

Some 76 years ago when the student population was less than 900 and the University's fellowship program was still in its infancy, our Department became one of the twelve in the College of Letters and Science to which a fellowship having "an annual value of \$400" had been assigned; history and political economy fared better in that they received two each.

The fellowship situation eventually began to change for the better. In 1919 E.I. du Pont de Nemours & Company provided the funds necessary to implement the Department's first industry-subsidized fellowship; and the honor of being our first Du Pont fellow belongs to **F. L. Browne**, Ph.D. '21.

Some 34 years later the number of this type had reached the all-time high of 17. At this writing there are seven of them: Du Pont, American Oil Foundation, Dow Chemical Company, Minnesota Mining & Manufacturing Company, Procter & Gamble, Shell Oil, and Stauffer Chemical Company. One graduate of each of the following schools is pursuing advanced studies here because of the generosity of their sponsors. Their respective alma maters are California Institute of Technology, University of Southern California, University of Pennsylvania, Lehigh University, Carleton and St. Olaf Colleges, and Wisconsin State University (Stevens Point).

The Danforth Foundation sponsors a Luther College graduate, and the Woodrow Wilson Foundation one who earned her first degree at the University of New Hampshire. The Wisconsin Alumni Research Foundation (WARF) fellows, of whom there

are five, include two from Iowa State University; one from the Milwaukee campus of our University; and one each from the University of Illinois and Michigan. The National Aeronautics and Space Administration (NASA) had provided fellowships for three graduate students, one each from Oklahoma State University, the University of Chicago, and the University of Southwestern Louisiana. The Agency for International Development (AID) underwrote the graduate studies of a student from the Banding Institute in Indonesia.

The preceding list requires the addition of two other types of fellowships as to origins. One is the National Science Foundation (NSF) which accounts for the 14 graduates listed in this category and the 18 in the National Institutes of Health (NIH) group. These are interesting statistics in themselves but of greater interest is the fact that all of the 32 graduates in question voluntarily chose our Department as the "point of departure" in their quest of a higher degree. They had come from 22 different colleges, universities, and institutes. Michigan leads the list with four representatives, Harvard follows with three, and California, Illinois, Minnesota and Washington are represented by two each. Exactly 16 other schools, each with one representative, accounts for the rest of the list.

Currently the fellowship registration in the Department is 50. Our fellowship program has come a long way since the early days of the university, when this form of graduate instruction became a part of the curriculum, and a Badger chemist was appointed its first fellow. His name: **LOUIS KAHLENBERG**, B.S. '92, M.S. '93.

This 'n' That . . .

(Continued from page 12)

James Y. Tong, Ph.D. '54, sometime postdoctoral research associate at the University of Illinois, is now serving the Chemistry Department of Ohio University, Athens, as associate professor. The Tong's are the parents of 3 daughters, ages 12, 9, and 5.

We have learned that Illinois Institute of Technology alumnus

(Stephen W. Tobey, Ph.D. '65, will serve Harvard during the first semester of 1966-67 as visiting professor in inorganic chemistry. His employer, Dow Chemical Company, has given him a leave of absence for this period.

Shell Development's research chemist **Hervey H. Voge**, M.S. '32, has made a hobby of mountain climbing, an activity which brought him the editorship of the Climbers' Guide to the Sierra (Continued on page 14, col. 1)

This 'n' That . . .

(Continued from page 13)

Nevada of California. It was published by the Sierra Club. On the other side of his activity record is his research on hydrazine: the development, we understand, of a catalyst for its decomposition when used to produce the thrust, alter the course or position of space craft.

Former teaching assistant **Joseph Walker**, Ph.D. '50—he is a Beloit College alumnus B.S. '42—on achieving Badger chemist status became an employee of Pure Oil Company. Fifteen years later—and after some five promotions—he was made director of research at the company's research center in Crystal Lake, Ill. The latter position became short-lived, however, when Pure Oil, by merger, became a Division of Union Oil Company of California last summer and the center passed into history. In his new position he is now an associate director of research, the youngest of five in this category. Joe did a three-year stint in the U.S. Navy, Lt. (jg), following his graduation from Beloit. He married a college classmate who was also a chemistry major. Both were elected to Phi Beta Kappa and were prominent in extra curricular campus activities. Joe, in his graduate days at Wisconsin, added to this recognition election to Phi Lambda Upsilon and Sigma Xi. His extra curricular activities in Crystal Lake included a five-year membership on the local board of education—all but one as president—and a four-year service on the local village board. The Walkers are the parents of four children ranging in age from that of a college junior (Illinois) to that of a first grader. In January of this year they left the mid-west for the west coast with a California—here-they-come good-bye from their friends. Fullerton, the site of the new California State College, is their new address.

For the second time since its establishment in 1943 the Ipatieff prize—it is worth \$3000 to its recipient—was given in 1965 to a Badger chemist. His name: **Robert H. Wentorf**, Ph.D. '52. It was awarded him in recognition of his outstanding chemical research in catalysis. As a research associate

Wedding Bells

In the presence of the immediate families **Robert Lesh Baldwin**, B.A. '50, claimed as his bride Anne Norris, daughter of Mr. and Mrs. Robert Fogg Norris, Philadelphia, Pa. The ceremony took place 28 August, 1965, in Palo Alto, California. The Baldwins are making their home at 1243 Los Trancos Road, Portola Valley, California.

Gene Andrew Hiegel, Ph.D. '65, and Maruta Edite Neimaniv exchanged marriage vows on 30 January, 1965, in the Latvian Lutheran Church, Milwaukee.

A wedding with a predominant Wisconsin background as to principals and attendants took place in Madison's First Baptist Church on 18 December, 1965, when Virginia Allen, a 1964 graduate in occupational therapy became the wife of University of North Dakota alumnus (B.S. '61) **Ray A. Dickie**, Ph.D. '65. Ray, who was a research assistant himself in his pre-doctoral days, chose men serving the University in the same capacity to be members of his wedding party. University of Western Ontario graduate Douglas E. Goldsack served as best man, Yalem Ralph G. Mancke and John D. Hostettler of Monmouth College were groomsmen, and Herbert J. Sipe, Jr. whose undergraduate degree makes him a Juniata College alumnus was an usher.

at General Electric's laboratories he, alone or with associates, has produced new forms of matter by high-pressure processes (newsletter 5) among which are two new forms of silicon, a new form of boron, a new form of carbon intermediate characterized as being between graphite and diamond, and high-density forms of boron arsenate and boron phosphate. He was a protege of our Prof. J. O. Hirschfelder.

Kenneth C. Williamson, Ph.D. '60, and his wife, were in Tokyo, Japan, last summer. He had been invited to read a paper there at an international symposium on nuclear molecular resonance. "Ken", on completing his mission,

moved on with his family to Osaka where he gave two lectures. He is scheduled, at this writing, to serve as a visiting professor at Cornell for the second semester before returning to his post at Mt. Holyoke College.

Edwin O. Wiig, Ph.D. '27, has retired after 33 years of service on the University of Rochester faculty. He was departmental chairman from 1955 until retirement. Professor Wiig was cited in 1963 by the Manufacturing Chemists Association for his outstanding contributions to the teaching of chemistry. Recently he has served on the A.C.S. Committee on Professional Training.

Richard H. Wiley, Ph.D. '37, last year became the 21st individual to have received the Midwest Award of the St. Louis Section of the American Chemical Society. The award, a gold medal, was formally presented him at a banquet closing the day's activities at which time Badger chemist Wiley was the featured speaker at a symposium—it was held in his honor—on recent advances in polymer chemistry. He was cited by the Section as "A gifted research chemist and teacher who had accepted the additional challenge of administering and developing a chemistry department", specifically that of the University of Louisville. He is a member of the chemistry staff at Hunter College in New York City and, we understand, executive officer of the doctoral program at City University of New York.

Karen R. Walter, B.S. '65, is pursuing graduate studies abroad on a Fulbright grant. Karen—she is a graduate of our Chemistry Course—is attending the University of Marburg, Germany, as an advanced student in the laboratory of Dr. Hans Musso. She is one of the 14 graduates of our University who have won this grant for foreign study during the academic year 1965-66.

Pei Wang, Ph.D. '52, has been with Sylvania Electric Products, Semiconductor Division since '53 and is now manager of the Department of Material Research. He is also one of divisional editors of the Journal of the Electrochemical Society.

Interdisciplinary Research in Theoretical Chemistry



Theoretical chemistry seeks to determine the physical and chemical properties of materials, to relate these macroscopic properties to the individual molecules, and to determine the structure and properties of the individual molecules. At the present time, *all* of the required fundamental laws of nature are sufficiently well known. Thus, we can write down the mathematical relations which describe the physical and chemical properties. Then the problem becomes one of determining the solutions of the mathematical equations. Because of the development of new methods of solution of non-linear mathematical problems; because of a greater insight into the basic workings of molecular quantum mechanics and the kinetic theory of gases; and because of the availability of gigantic high speed computing machines, theoretical chemistry is making very rapid and exciting progress.

Theoretical chemistry is a natural focal point for interdisciplinary research since its problem areas overlap with physics, mathematics, astronomy, meteorology, chemical engineering, mechanical engineering, etc. In relating the macroscopic properties to the properties of the individual molecules, we serve as the "middlemen" between the theoretical physicists and the practical engineers and experimental scientists. Under normal experimental conditions with normal substances, the usual engineering equations suffice. But the usual engineering equations do not suffice under extreme conditions, such as are encountered in: (1) the highly ionized almost vacuum of the upper atmosphere, (2) the high temperature shock wave preceding a re-entering nose cone, (3) high pressure high temperature combustion gases in a rocket motor,

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(4) the partially ionized plasma of a nuclear reactor motor, or (5) metal fatigue. Under extreme conditions, where reliable experimental data is hard to obtain, theoretical predictions are useful. Under extreme conditions, the coupling becomes strong between the macroscopic and the molecular properties.

Our group at the University of Wisconsin contains 9 professors, 10 post-doctoral research associates, 26 graduate students, and 4 computing programmers. Our staff contains experts in quantum mechanics, statistical mechanics, electromagnetic theory, molecular beams, biochemistry, and numerical analysis. The quantum mechanics is used to determine the structure and properties of the molecules. The statistical mechanics determines the coupling between the molecular and macroscopic properties. The electromagnetic theory is required for plasma and radiation problems. The molecular beams furnish the simplest examples of chemical reactions and simulate the sort of collision processes that occur in the upper atmosphere. Our biochemical program (supported by NIH) is intended to apply molecular theory to biological systems. The numerical analysis is required for the solution of a large percentage of our complex problems. At the present time our emphasis is on improving the mathematical

methods. Gradually, as our understanding and techniques improve, we hope to shift the emphasis towards the applications.

We believe that there are two principal advantages in having a group as large as ours: First of all, we can provide broad training for our students so that they become familiar with each of the many steps required to apply theoretical physics to practical chemical and physical problems. Secondly, when difficulties are encountered, we can get help from a colleague. Our people enjoy talking to each other and they stimulate each other. This is probably the best indication of the success of our group organization.

Training in theoretical chemistry provides a broad foundation for research in a wide variety of fields. There are many theoretical chemists who have shown great breadth of interests—for example, Peter Debye, Henry Eyring, Jack Kirkwood, Ilya Prigogine, and George Kimball. Actually, I am amazed at the variety of accomplishments of some of my former students:

(1) R. H. Wentorf invented the process for synthesizing diamonds at General Electric. Subsequently he discovered borazone, a substance harder than diamonds. And now he is being awarded the Ipatieff prize of the American Chemical Society.

(2) F. T. McClure was awarded by President Kennedy NASA's most distinguished medal for inventing the *Transit* navigational satellite.

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From Your Christmas Letters . . .

We learned in 1964 that Kathora Remy, M.A. '31, sometime principal of a large Mexican school in her home town of San Antonio, Texas, is now science consultant for the schools there; that G. A. Harlow, Ph.D. '51, and his family are back in California after a wonderful year in Amsterdam—Jerry served as an exchange scientist between Shell Development's Research Center in Emeryville and SIRM—and that the family had found time while over there to tour Europe; that Ann Ratcliff Bergen (Mrs. J. V.) B.S. '57, the Department's chemist-librarian in the late fifties—she holds the master's degree in library science—is the wife of the dean of the College of Pharmacy of Idaho State University, Pocatello,

and that John is serving also as chairman of the school's Division of Medical Arts; and that Ann has taken on the challenging job as president of the Pocatello Gamma Phi Alumnae group; that Albert W. Stout, Ph.D. '34, is now a grandparent via his daughter, a Yale Ph.D. '65; that the Stephen Dal Nogare's, Ph.D. '47, early in September 1964 took off for a four-week trip to Europe on Du Pont business and that their itinerary included visits by car in England, Holland, Belgium, Switzerland, Germany and Italy (Rome, Florence, Ferrara and Padua); that William D. Lewis, M.S. '47, has been named Chairman of the Fresno subsection of the Northern California Section, A.C.S.

Interdisciplinary Research

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(3) Paul Knaplund, Jr. has become Vice-President of I.B.M. in charge of Advanced Research.

(4) Sam Loshaek has become Research Director of Borden Company.

(5) Don Jepsen has been working with Montroll at I.B.M. on applying statistical mechanics to traffic control problems.

(6) Hugh Hulbert, John Dahler, and R. B. Bird have become very distinguished professors of chemical engineering at Northwestern, Minnesota, and Wisconsin respectively. Howard Palmer is Professor of Combustion Technology at Penn State and Roger Strehlow is Professor of Aeronautical Engineering at Illinois. Alfred Ingersoll is Dean of Engineering at the University of Southern California and James Hornig is Dean of Research at Dartmouth.

During World War II, many of us worked on military problems. We were assigned to task forces composed of engineers and scientists having very different backgrounds. We pooled our knowledge and know-how and solved problems that none of us individually could have coped with. For example, a large group headed by Charles Curtiss, Richard Kershner, and myself developed the first system of interior ballistics of guns which was thermodynamically consistent. We took into account the heat transfer from the powder gas to the surface of the bore—this is not important in a large cannon, but in an elephant rifle 30 times as much energy can go into heating the bore as goes into pushing the bullet! Later, at Los Alamos, John Magee and our Weapons Effects Group studied the kinetics of for-

mation of industrial carbon black, the micromeritic behaviour of different types of smoke, and the physics of the blown sand over the Sahara desert. Thus we were able to make an accurate prediction of fall-out while the first atom bomb was still on the drawing board. At Bikini, as Chief Phenomenologist, I had to work with military and scientific groups to predict the blast pressure as a function of distance, the light intensity as a function of time, the effects of nuclear radiation on beer, etc. Enrico Fermi felt very strongly that *all* scientists should be trained as phenomenologists—men who can apply logical scientific analysis to unfamiliar problems.

Now, in our universities, we tend to be segregated into departments and the types of problems that we can solve are greatly restricted. NASA is helping with their Institutional Grants to break down these departmental barriers. Our Theoretical Chemistry Institute is already inter-disciplinary and works informally with many departments.

An Institute For Catalysts In the Making

The name of a Badger chemist appears in the list of eleven individuals representing industry who comprise the present—and first—board of directors of the new National Institute for Catalysis. The personnel of the board was announced at the meeting of the American Chemical Society last September in Atlantic City, N.J. The aim of the institute is, we understand, to perform and promote fundamental work in this

field in the United States by affiliation with one or more universities and in collaboration with them in carrying on a graduate program in catalysis. The considered judgment of the board, reportedly, is that several years of intensive "spade work" will be required to bring the proposed institute to a "centralized form". The Badger chemist in question is a North Dakotan by birth, a graduate of a small Wisconsin high school (Milltown) and the Chemistry Course, '42, who partly supported himself at our University with the proceeds of a La Vern Noyes scholarship awarded him during his undergraduate years and by working as a refreshment vendor at home athletic events. His name: Robert P. Eischens. Robert has made outstanding contributions to the fundamental knowledge of catalysts as it relates to petroleum and its products. He began his association with the petroleum industry immediately upon graduating from Wisconsin. His first job was with the Sinclair Refining Company in a field which was eventually to take him into studies on high-pressure catalytic processes. After about three years of this he enrolled at Northwestern for graduate work as the first recipient of a Sinclair fellowship in chemistry, with the Ph.D. degree as his objective. The degree was conferred upon him in 1949. He then joined Texaco's Research Center in Beacon, N.Y.; and he is still there in this company's Development unit. Honors and recognitions have come his way— intra- and extra-company. In the latter category is the \$1000 Precision Scientific Company Award and a certificate in Petroleum Chemistry.

NEW CHEMISTRY BUILDING TO HAVE A FACULTY CONFERENCE ROOM

A recent decision of the State Building Commission assures the construction of a faculty conference room on the ninth floor of the new Chemistry Building. An area of some 2600 sq. ft. which had been originally assigned to a cooling tower has been released because of a change in plans with respect to air-conditioning of the whole structure. Under construction is a detached control chiller facility, and the Department gains space because of it.

Plans in the making provide for a faculty conference room of some 1650 sq. ft., a seminar room, a small kitchen which, it is expected, will serve when Departmental social events, such as the annual reception for the staff sponsored by Chem Femmes, are held.

Some of the additional costs of converting the whole area to the new needs of the Department, such as walls, ceiling and plumbing, will be paid for from building contingency funds. At this writing no funds are available for furnishing of the large conference room and the kitchen. A beginning was made several years ago to meet the problem when Mrs. E. D. Botts made an unsolicited and unrestricted gift of \$3000 in memory of her late husband Elbert D., Ph.D. '24. The Department then decided to put this money aside until a suitable occasion for its use should arise. And that time has come. Yes, now is the time for all good Badger Chemists to come to the aid of the project. Other gifts will be welcomed from the Department's alumni.