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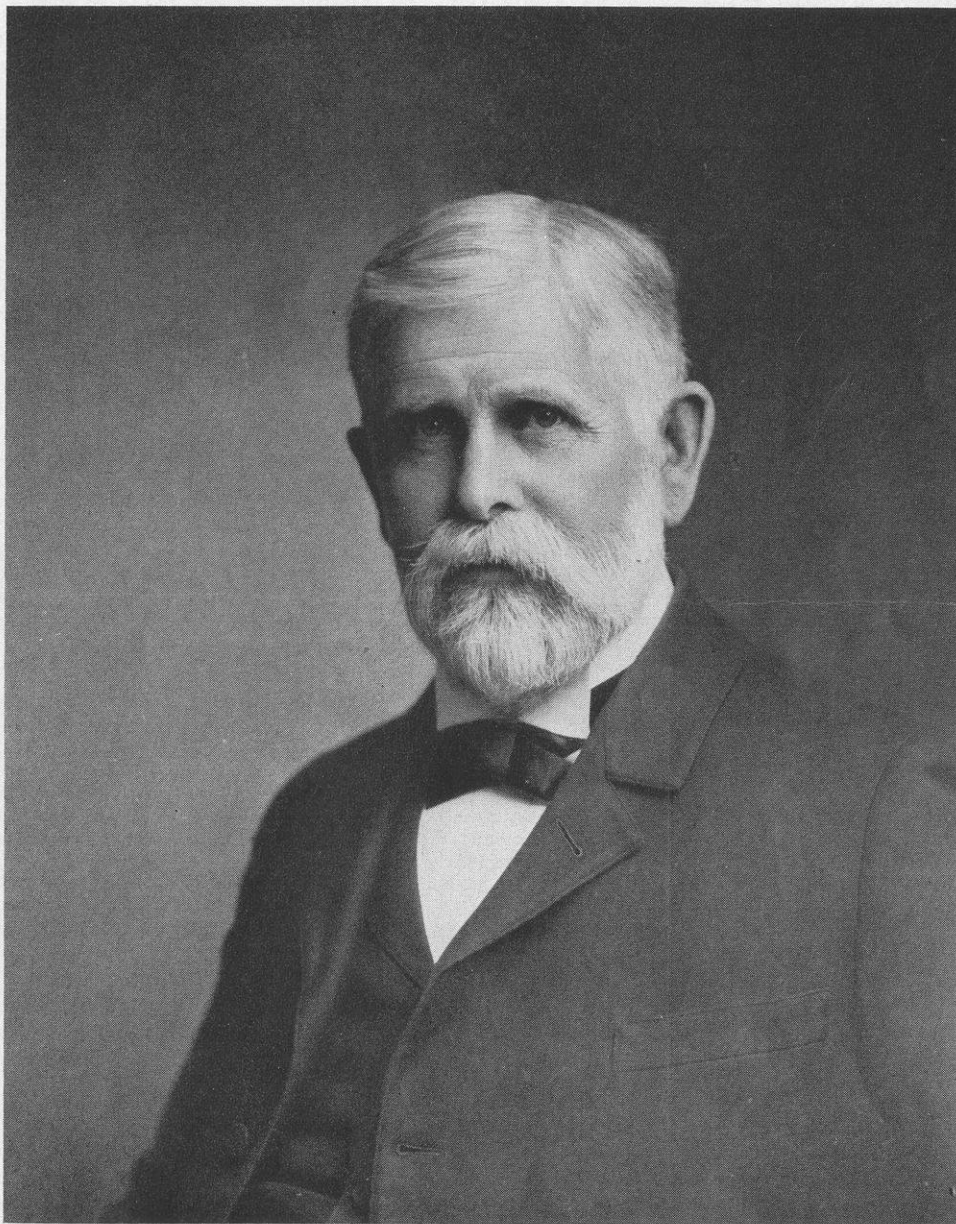
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BADGER CHEMIST

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

Newsletter 14

Winter, 1967



WILLIAM WILLARD DANIELLS

Wisconsin's First Professor of Chemistry

Elsewhere on these pages appears an announcement pertinent to one of the senior members of the Department's staff who had been named William Willard Daniells Professor of Chemistry. The position is a memorial set up to honor the Department's first professor of chemistry.

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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Henry A. Schuette, Ph.D. '16

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Associates

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Aaron J. Ihde, Ph.D. '41

Edwin M. Larzen, B.S. '37, Ph.D.
(Ohio State '42)

Villiers W. Meloche, Ph.D. '26

C. Harvey Sorum, Ph.D. '27

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Madison, Wisconsin 53706

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Editor's Column

During the fall of 1966 the Badger Chemist mailing list was used in requesting financial aid for the furnishing of a conference room on the top floor of the new chemistry building. More than three hundred letters were returned to the sender. This means that the same number of Badger Chemists were lost in the mail the past year. Please help us keep the mailing list up to date by notifying us of any change in address. At the same time you can supply information of news value for the next issue.

At the risk of being repetitious, I should say that most of the credit for this issue again belongs to Editor Emeritus Henry A. Schuette.

—E. D. F.

William Willard Daniells

The University as we know it now was but a small college when in 1868 he was called to Madison to serve as professor of agriculture. His duties could not have been very arduous at that time, for a year later the words "and analytical chemistry" were added to his title. In this dual capacity he served until 1880 at which time he was named professor of chemistry. At the time of his retirement in 1907 he had completed a distinguished forty-year service to Wisconsin as a teacher with part of this time as State Analyst.

The Daniells family originated in Scotland, the name being McDaniells. Professor Daniells' father was a Michigan farmer whose wife bore him seven children; Willard, born 10 March, 1840, was the fourth in the family. He prepared for college at Lansing Academy and in 1864 received the B.S. degree from Michigan Agricultural College, the M.S. followed three years later. His Alma Mater conferred the honorary Sc.D. degree upon him in 1898: and by this degree he was known to the end of his days.

During the forty years that he had been associated with the Uni-

versity he made it his practice to meet personally the young men and women in classroom and laboratory. They found in him a kind, sympathetic, helpful teacher who took an interest not only in their progress in academic work, but also in their home life and activities outside of the classroom. It was in this way that a strong, pure, lovable, Christian character, like that of Professor Daniells, had been able to exert a powerful influence for good upon all who had come into his classes. His biographer said of him that in all questions he stood firmly for the things that ought to be and that he did this without ostentatious display. He had won the highest respect and regard of students and faculty. His faculty colleagues entertained the highest respect for Professor Daniells and his students loved him. One alumnus of his day reportedly said he remembered Dr. Daniells as his ideal of what a professor ought to be.

Chemistry students of his day called him—privately, of course—"Danny", a nickname laden with respect, pride, and affection.

—H. A. S.

FACULTY-ALUMNI ROOM

The new chemistry building will have a special room where faculty, returning alumni and graduate students can gather for seminars, conferences and social contacts. Located on the ninth floor, it has a good view east to downtown Madison and the lakes and will be known as the Faculty-Alumni room. This large room became available when space required for air-conditioning equipment was released because the University decided to install a central chilling facility.

The funds for furnishing this room comfortably and attractively with chairs, sofas, tables, carpets and draperies, and special equipment must come from private donations. A committee was appointed to raise funds consisting of Farrington Daniels, John D. Ferry, J. H. Matthews, V. W. Meloche and Henry A. Schuette. This committee sent out an appeal in December to all Badger Chemists whose addresses were known.

It was hoped to raise a fund of \$25,000, large enough to permit the inclusion of a small endowment for the continuing upkeep of the room. The fund started with a gift of \$3,000 from the estate of Elbert D. Botts, Ph.D. '24, and at the end of February stands at about \$11,000. There have been contributions from about 300 chemistry alumni and faculty. Over fifty contributors have given \$50 or more, of whom seventeen have given \$100 or more.

If you did not receive a letter from the committee, because of a change of address, or if you have mislaid it, you may still send your contribution, which is deductible for income tax purposes, made out to the University of Wisconsin Foundation, marked "for the Chemistry Department" and mailed to Box 5025, Madison, Wisconsin 53706. The room will display a list of all who have contributed to the fund and there will be an area of special interest to alumni with a file of the Badger Chemist, historical documents, and a visitors' book.

The new chemistry building will be occupied late this summer and the old building, used so long by many chemists, will be vacated by the Chemistry Department.

ABOUT OUR FACULTY . . .

A survey of the extra-curricular activities of our faculty for the year 1966 reveals a considerable amount of off-campus lecturing at home and abroad; some leaves of absence; recognitions in the form of awards and, in one case, an honorary degree; an increase in the number of Department's emeritus professors; and staff changes.

Robert A. Alberty, Ph.D. '47, professor of chemistry, and dean of the graduate school since 1963, resigned February 1 in order to accept a position as dean of the school of science at Massachusetts Institute of Technology. Other resignations include Professor **Muxfeldt**, now at Cornell University, Ithaca, N.Y. and Professor **Wahl**, now at Argonne National Laboratory.

Dr. **Richard B. Bernstein** has been named William Willard Daniels Professor of Chemistry. This position was set up as a memorial to the Department's first professor of chemistry, 1880-1907. Professor Bernstein gave lectures on molecular beam scattering, this past year, for the Mack Lectureship at Ohio State University, and the F.M.C. Lectureship at Princeton.

"Memory Effects in Multiple Carbonium Ion Rearrangements" was the title of a lecture given by Professor **Jerome Berson** at the Bürgenstock Conference on Stereochemistry held in Switzerland in May, 1966.

Professor **Blaedel's** activities this past year have included more lectures on continuous analysis presented at local A.C.S. sections, service on the N.S.F. committee for postdoctoral fellowships, and, last, but not least, a back-pack trip with his three sons into a primitive area of the Canadian Rockies.

Five universities—one of them is a foreign school—have conferred the honorary Sc.D. degree upon Professor **Daniels**. The five are Rhode Island, Minnesota, Dakar U. (Africa), Louisville and Wisconsin.

The Wisconsin citation follows: "Farrington Daniels, professor emeritus and some-time chairman of the Chemistry Department of the University of Wisconsin, servant, and leader of the University during a vital career of thirty-nine years; teacher, administrator, scientist with original contributions to eight scientific fields; responsible and active president and

member of professional societies and academies; adviser to national and international commissions, creator and seeker of the power of the future in the zestful years of his nominal retirement. With gratitude and in honor of his many honors, his service to the University and to the whole world of practical knowledge, the degree of Doctor of Science."

Professor **Richard Fenske** presented a paper "Parameter Free Molecular Orbital Calculations" at the International Symposium on Theoretical Aspects of Coordination Compounds held at Venice, Italy, September 1966. A highlight of their European trip for Professor and Mrs. Fenske was an audience with Pope Paul.

Professor **Ferry**, the Department's chairman, was one of two members of the senior staff to have received awards during the past year. In his case it was the Ford Motor Company-sponsored High-Polymer Physics Prize of \$1,000 of the American Physical Society given him at its March meeting in Durham, N.C. His citation: "for his experimental researches on the influence of molecular structure upon the Viscoelastic properties of high polymers, involving mechanical relaxation and the principle of temperature frequency superposition".

Professor **Ferry**, accompanied by Mrs. Ferry, spent the three-week period following 21 September in Japan on an extensive lecture tour, his third visit to this country. He participated in the international symposium on macromolecules in Tokyo and Kyoto and served as one of the official representatives from our country. In Nagoya he gave a public lecture which has been sponsored by the Society of Polymer Science.

Associate Professor **Emory D. Fisher**, Ph.D. '35, chairman of the chemistry and physics departments of the University Center System, was promoted to full professor last year (see Newsletter 1964).

Professor **John Harriman** was invited to present a paper at the International Colloquium on Magnetic Hyperfine Interactions held in Paris, June 1966.

Associate professor **Larry A. Haskin** is on leave for the 1966-67 school year at the Max Planck Institut für Kernphysik of Heidelberg, Germany. There he is collaborating with Dr. O. Mueller in

developing a neutron activation analysis scheme for determining the concentrations of as many trace elements as possible in geologic samples. Also, he is continuing his research on the rare earths in meteorites and tektites while in Germany.

The **Hirschfelders** summarized their activities of the year 1966 in the family newsletter by stating that the highlight of the year was their Easter week in Taormina, Sicily, followed by the Pontifical Academy of Science conference on Intermolecular Forces at the Vatican and, later, a "second helping" of Italian hospitality in Padua. Then, in chronological order, follows the "log" of their activities: January, Janibel Island, Florida, for a quantum chemistry meeting; February, more quantum chemistry at the University of Florida—as visiting professor, we presume —; March, the ACS meeting in Pittsburgh where the Humble Oil and Refining Company-sponsored Peter Debye Award in Physical Chemistry was given Joe; April, Sicily and Rome; May, the Symposium on Reaction Kinetics at Padua; June, the Gordon Conference in New Hampshire; August, Berkeley, San Francisco and the Sir Alfred Edgerton gold medal from the Combustion Institute in recognition of his "important contributions to the theory basic to the understanding of the propagation of flames and to the quantitative treatment of combustion processes"; December, rest and relaxation in Antigua, British West Indies.

Professor **Ihde** presented a paper dealing with the history of free radicals at the International Symposium on Free Radicals in Solution, held at the University of Michigan in August, 1966. A paper "Free Radicals and Moses Gombert's Contribution" appeared in *Chemical and Engineering News*, October 3, 1966. Professor Ihde is author of a chapter on Chemistry in a book edited by R. Taton, "Science" in the Twentieth Century". In February 1966 he presented three lectures at the University of Georgia.

In May, 1966, Professor **Byron Kratochvil** gave a lecture in the "Frontiers in Chemistry" series at Wayne State University, Detroit, on the subject "Metal Ion Reactions in Non-Aqueous Solvents".

Professor **Larsen** and family are spending the current academic year

(Continued on page 4, col. 1)

Faculty

(Continued from page 3)

in Vienna, Austria. He is researching in the laboratory of Viktor Gutman at the Technical Institute of Vienna and is presenting a series of lectures on selected topics in inorganic chemistry.

Emeritus Professor **Mathews** was given a certificate of merit by the A.C.S. Division of Colloid and Surface Chemistry at the 40th National Colloid Symposium at its meeting on the campus last June.

The certificate reads:

"This award is given not only in recognition of his many years of enthusiastic and sustained service to the Division, as an active member, scientific contributor, representative to the Society in numerous capacities, but also to show appreciation for his pioneer planning and organizing of the first National Colloid Symposium. The success of this symposium, held at the University of Wisconsin in 1923, led to the institution of the National Colloid Symposium, as an annual event and, in 1926, to the organization of the Division of Colloid Chemistry."

Three heart-warming events in the year 1966 provided the prelude for Professor **Meloche's** last year of university teaching and committee activities. His retirement dates from school year's end in June. First was the surprise dinner given him by his former graduate students on 22 February in Pittsburgh at the time of the conference on Analytical Chemistry and Applied Spectroscopy. Then in May followed the Department's dinner honoring him as a dedicated—and a popular—teacher who throughout his entire association with the University served beyond the call of duty. Finally, in June, the Athletic Department honored him for his years of faithful service on the Athletic Board.

The year 1966 marked another milestone in the life of Emeritus Professor **Schuette**. Already a member of the University's Half Century Club,—he earned his first degree in 1910—he matched that record with his Ph.D. degree as of 1916. A grandson, **F. Chandler Young, Jr.** graduated last June as a Badger chemist.

"Adsorption Effects in Stationary Electrode Polarography" was the title of a paper presented by Professor **Irving Shain** at the Fourth International Polarographic

Congress, Prague, Czechoslovakia, during July, 1966. The Congress was in honor of Heyrovsky's 75th birthday. Last September Professor **Shain** was in Kyoto, Japan, and presented a lecture on the kinetic investigation of the cadmium cyanide system using stationary electrode polarography.

Professors **Robert West** and **Paul Treichel** are collaborating in an American Chemical Society Short Course entitled "Bonding in Organometallic Compounds". For the first semester courses have been offered at San Francisco, New Orleans and Syracuse. More are planned for the second Semester.

"Chemical Education in Japan" appearing in *Chemical and Engineering News*, January 31, 1966, is the result of a survey made by Professor **West** during his stay in Japan in 1964-65 and in August 1966.

A mountain climbing expedition led by Professor **West** and including his wife, their two children and four U.W. graduate students, made successful ascents of ten previously unclimbed peaks in the Selkirk Mountains of British Columbia. They traveled to their base camp by helicopter.

Professor **Peter S. Wharton** spent the first semester of the current academic year in postdoctoral research at the University of Sussex, England.

An invitation from the International Atomic Energy Agency to participate in a conference on research reactor utilization in the Far East late in February and early in March of 1966 took Professor **J. E. Willard** to Sydney, Australia. While there he participated in research discussions at the University of New South Wales and the University of Sydney. On this trip "down under" he lectured also at the University of Auckland and Victoria University of Wellington, in New Zealand; from there he went on to Hong Kong where he lectured at Chung Chi College; and, on completing this mission, he moved on to Japan. Here he was a guest lecturer, in turn, at the University of Tokyo, the Tokyo Institute of Technology, and the Tokyo Institute of Physical and Chemical Research. Badger chemist **Willard**, Ph.D. '35, was the guest also of research groups at Kyoto University and Nagoya where problems of mutual interest to all were discussed. Mrs. Willard accompanied her husband on this most interesting trip.

Wedding Bells

Badger chemist **Edward A. Birge**, B.A. '65, great-grandson and namesake of the late Dr. E. A. Birge, former president of our University, claimed Miss **Lynn E. Weber** of Elm Grove as his bride in the Wauwatosa (Wisconsin) Congregational Church on 20 August, 1966. Edward, at last report, was a teaching assistant in zoology with the Ph.D. degree in molecular biology as his objective. Both husband and wife are members of Phi Kappa Phi national scholastic honor society and Mrs. Birge "made" Phi Beta Kappa.

Kenneth F. Keller, B.S. '51, and M.S. (lib. sci.) '65, and **Mildred E. North**, M.S. '67 (lib. sci.) exchanged marriage vows on 9 December in the Wisconsin Lutheran Chapel, Madison. Kenneth is in charge of the Department's library.

Walter A. Koehler, Ph.D. '24, and Mrs. N. O. Gunderson exchanged wedding vows in Madison on 14 January, 1966, in the chapel of Bethel Lutheran Church. They will take up residence in Madison after February 1 upon their return from Hawaii. She is a graduate of the University of Maryland School of Nursing, Baltimore, and of the George Peabody College for Teachers, Nashville, Tenn. Now retired, he formerly was professor of chemical engineering and dean of the graduate school at the University of West Virginia in Morgantown.

St. Norbert College Alumnus, **Sterling Randall**, M.S. '50, on 6 December, 1966, exchanged marriage vows with **Donna S. Zywicki**, M.S. '58; both are members of the faculty of a University of Wisconsin Center, she in Green Bay and he in Wausau.

Du Pontier **Robert E. Tarney**, Ph.D. '58, and **Corlinda Alfoncia Margot Maggitti** exchanged marriage vows on 20 November, 1966, in St. Anthony's Church in Wilmington, Delaware. After the afternoon wedding a reception honoring the young couple was held at Hotel Du Pont.

Professor **Willard** returned to the Pacific area in the following May to attend a U.S. Japan conference on radiation chemistry at the East-West Center in Honolulu. The conference was held under the aegis of the National Science Foundation.

This 'n' That About Our Alumni

David F. Akeley, Ph.D. '53, at last report, was employed by Du Pont, pioneering research division, textile fibers.

Clyde L. Aldridge, Ph.D. '52, is employed by Esso Research and Engineering Co. in Baton Rouge, La., as a research associate.

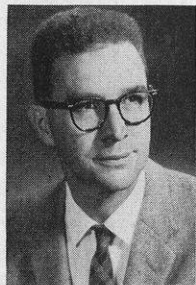
Duff Allen, Ph.D. '60, added the following note to his 1965 Christmas cards: "After almost three years as a group leader at Lederle, I was relieved of my command last week and given a new job—department head, Organic Chemical Process, Research. In general, I'll be doing the same type of work I've been doing for the past four—just more of it—but have four groups (some 40 people) to help me."

Ann Baker, B.S. '64, at last report, was pursuing graduate work at Harvard in biochemistry.

Word has come that **Russell A. Bell**, M.S. '60, is now a member of the staff of the Chemistry Department, McMaster University in Hamilton, Ontario, Canada.

Herbert L. Benson, Ph.D. '61, is serving Shell Oil as research chemist. His address: 8311 Rockhill Drive, Houston, Texas, 77017.

William F. Benusa, M.S. '59—he holds the B.S. degree—is a member of Gulf Research and Development Company's staff in Pittsburgh, Penn.



Announcement was made last December by the director of corporate research and development of United States Rubber Company's Research Center in Wayne, New Jersey, of the appointment of **Edward M. Bevilacqua**, Ph.D. '49, as research associate. Edward, who is a graduate of Rensselaer Polytechnic Institute, is deemed to be an authority, with an international reputation, on the mechanism and prevention of the oxidative deterioration of rubber. He is the author of some fifty scientific articles and patents and the editor of *Rubber Chemistry & Technology*, a widely circulated journal devoted to polymer science. He has been active in community affairs in his home town of Allendale,

New Jersey, serving as treasurer of the Parent Teachers Association, chairman of the Planning Board, chairman of the Property Committee, and a member of the Board of Public Works. He has also served as president of both the Allendale, New Jersey, Garden Club and the Ramsey, New Jersey, Fyke Nature Association. He is a member of the Sierra Club, the Appalachian Mountain Club and the Peace and Service Committee of the Ridgewood, New Jersey, Friends Meeting. He was a campus visitor by invitation to address the Department's special seminar on 21 April, 1966. His topic: "Chemical Factors in Elastomer Failure Mechanisms."



Northwestern University alumnus (B.S. '37) **Robert B. Blodgett**, Ph.D. '40, was named, last April, vice-president, research, by the Okonite Company, Passaic, New Jersey, wire and cable fabricating subsidiary of Ling-Temco-Vought, Inc. He had begun his formal education at the graduate level first as a WARF scholar and completed it as a Department fellow. On achieving Badger chemist status he joined the research staff of Du Pont's Rayon department in which he was advanced to a research supervisorship in cellophane in 1946. His next post was with Robbins Mills, Inc., in Clarksville, Va., as chief chemist. He joined Okonite's research staff in 1954 as manager of paper cable research. Promotion to director—research followed in 1961. Since that time, we understand, he has made a significant contribution to the new rubber and plastic insulations on cables up to 35,000 volts and the development of the components of the first 345,000 volt underground power cable.

Our last information on the activities of **Edward G. Bohlman**, M.S. '41—some eight years ago—was that he was a member of the staff of Battelle Memorial Institute in Columbus, Ohio, serving as associate director of its Corrosion Section, Reactor Experimental Engineering Division. He has come to

Battelle upon completing, in 1948, a five-year term of employment as a research group leader in Oak Ridge National Laboratory.

Gerald S. Brenner, Ph.D. '61, is a member of the research staff of Merck, Sharp & Dohme, Rahway, N. J.

Some-time instructor in the Department **William E. Caldwell**, Ph.D. '30, has been a member of the chemistry faculty of Oregon State University for 36 years. Promotion to full professor came to him in 1945. He appeared on the Wisconsin scene as an alumnus of Montana School of Mines with a major in metallurgical engineering. His interest in this field has never left him in that he lists as one of his hobbies field trips to mineral prospects. He is the author of several "Frosh" chemistry text-books which appear to have been very well received. His stay at Oregon State has been unbroken except for a short tour of duty with C.W.S. during WW II.

John E. Castle, Ph.D. '44, is now the director of Du Pont's electrochemical laboratory in the Experimental Station.

William D. Closson, Ph.D. '60, is serving State University of New York at Albany as an associate professor of chemistry.

Illinois alumnus (B.S. '29) **Ralph Connor**, Ph.D. '32—he is vice-president for research and chairman of the board at Rohm & Haas—is the first Badger chemist, if our memory serves, selected by the American Chemical Society to receive its highest award: The Priestley medal. It is granted for "distinguished services to chemistry." One of Dr. Connor's most significant pieces of research was done while he was working with the Department's late Homer Adkins. They discovered that a particular combination of copper and chromium oxides was superior to any previously known catalyst for the hydrogenation of several types of organic compounds. (The job was so well done, we understand, that only minor improvements in this catalyst have been made in the past 30 years). This is not the first recognition that Ralph has received. To the current one, for the record, must be added the honorary D.Sc. degree from the Philadelphia College of Pharmacy and Science, the gold medal from the American Institute of Chemistry, and the

(Continued on page 6, col. 1)

This 'n' That . . .

(Continued from page 5)

Medal of the Society of Chemical Industry, American Section.

S. Dal Nogare, Ph.D. '48, was a campus visitor last November at which time he was a guest lecturer in a gas chromatography workshop conducted by the University's Extension Division. Steve is now a Senior research chemist in Du Pont's Plastics Department. Earlier in the year he was a guest of the gas chromatography group of Hoffmann-La Roche, Inc., Nutley, N. J.

Some-time Weyerhaeuser fellow **Stuart M. Davis**, M.S. '66, at last report, was a member of the Bjorksten Research Laboratories' staff in Madison.

Word has come that **Irving I. Domsky**, Ph.D. '59, who is now with Abbott Laboratories has been named secretary of the Chicago Gas Chromatography discussion group. This group, we understand, is active in making knowledge of this analytical technique available to scientists in the Chicago area.

We have learned that **Max Douglas**, M.S. '57, expects to be in Burg-hausen, Germany, for several years where his employer, Marathon Oil Company (formerly Ohio Oil) is, at this writing, building a refinery.

John O. Edwards, Ph.D. '50, has been a member of the chemistry faculty of Brown University with professorial rank for some 14 years. He is the author of a book "Inorganic Reaction Mechanisms". The Edwards—she is the former Ruth Christofferson, B.S. '44—are the parents of two daughters, Kathleen, 14, and Joan, 12.

We have learned that **H. R. Eisenhauer**, Ph.D. '53, has made a change in jobs: from Du Pont of Canada to the Public Health Engineering Division, Department of National Health and Welfare, Government of Canada. He, with research scientist rank, is working in the field of water pollution abatement. His address: 281 Kingston, Ontario.

An association with the petroleum industry which was made when Ohio State University alumnus (B.A. '34, cum laude) **Robert E. Ewell**, Ph.D. '39, became a Badger chemist after having served the Department as a teaching assistant, has remained unbroken to date. Robert's first job was with Shell Oil Company at its Wilmington, California, refinery. He has held a variety of technical

assignments during that association each of which spells recognition by his employers of the high quality of his work and the excellent training which he had received at Wisconsin. From San Francisco he had been sent to The Hague on a foreign assignment for a temporary period with Shell associates; then Shell's head office called him to New York City; and transfer to the Wood River, Illinois, refinery as a special process engineer followed that move. Last August he became a Texan—by adoption, that is. He is, at this writing, a special process engineer in the Houston refinery in Shell's Computer Applications Group.

Illinois alumnus **Norman Fogel**, Ph.D. '56, joined the chemistry staff of University of Oklahoma, Norman, with professorial rank, on completing his formal education at Wisconsin. His post-high school record spells a three-year tour of duty with the U.S. Army, his first Wisconsin degree conferred in 1951, and an association with the University's Extension Division.

Former president of the American Chemical Society and currently president of Stanford Research Institute **Karl A. Folkers**, Ph.D. '31, was one of 24 individuals and research teams receiving from The National Association of Manufacturers last January (1966) its Modern Pioneers in Creative Industry Award given in recognition for outstanding scientific contributions to modern industry. Last November announcement was made that he had been nominated to receive on 10 March 1967 in New York City the William H. Nichols Medal of the ACS Section and that he would be cited for his work on vitamins. For Karl this is one of some seven awards which have come his way. We know of no other Badger chemist who can match this record.

Sydney J. French, Ph.D. '28, retired in 1964 as Dean of Academic Affairs at the University of South Florida, Tampa. He has been doing some part-time teaching since then in science-education and has been directing a six-college project in the area on college teaching, supported by the U.S. Office of Education. He and his wife, the former **Florence Felten**, M.A. '28, have done a bit of foreign travel during the past summers: the Orient and more recently Spain and Portugal.

Albert J. Fry, Ph.D. '64, is serving Wesleyan University, Middletown, Conn., as assistant professor of chemistry. He and Melissa Betton exchanged wedding vows on 30 July. They spent the month of August in Europe on their honeymoon.

Washington State University alumnus **Gary L. Grunewald**, Ph.D. '66, is now a member of the staff of the School of Pharmacy, University of Kansas, with assistant professor rank.

Esso Research and Engineering Company's board of directors in September, 1966, announced the election to the company's number two post of **Neil V. Hakala**, Ph.D. '43, as executive vice-president. Neil, who holds a bachelor's degree in chemical engineering from Michigan College of Mining and Engineering, joined ERE on becoming a Badger chemist. He has held a variety of posts, including that of Products Research director and European vice-president, being named deputy refining co-ordinator for Jersey. He held the latter post until rejoining ERE as vice-president for petroleum research in February, 1966.

Nancy H. Headen, B.S. '65, is serving Parke-Davis as a research assistant. She has an Ann Arbor, Michigan, address.

Marlene A. Hennig, B.S. '66, has joined that group of Badger chemists which is now on the scientific staff of Rohn & Haas and quartered in their research laboratories in Spring House, Pennsylvania.

Erwin N. Hiebert, Ph.D. '54, Professor of History of Science at Wisconsin, last spring (1966) at the University of Heidelberg addressed a symposium honoring Ernst Mach on the 50th anniversary of his death.

U.W.—M. alumnus **Gene A. Hiegel**, Ph.D. '65, is now a member of the chemistry staff—he has assistant professor rank—of California State College, Fullerton. Gene had previously spent a year in postdoctoral research at Columbia University with Badger Chemist **Gilbert J. Stork**, Ph.D. '45.

Announcement was made last autumn of the resignation, effective in September, 1967, of **Takeru Higuchi**, Ph.D. '43, as Professor of Pharmacy at our University for a like post on the faculty of the University of Kansas.

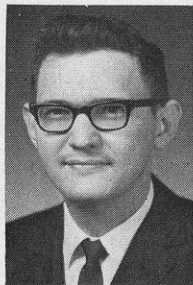
Ralph M. Hill, Ph.D. '38, wrote us last May to report his change in address: from London, as a repre-

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New Faculty Members

JAMES W. TAYLOR

Assistant Professor

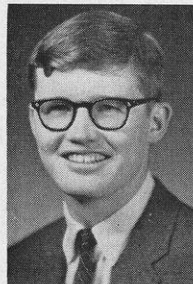


A native of Newton, Mississippi, B. A. Vanderbilt, M. S. Georgia Tech, and Ph.D. '64, Illinois, Professor Taylor became a member of our analytical staff in June, 1966. Before coming to Wisconsin, he was a development chemist with Mobil Chemical Company, Beaumont, Texas, and was an assistant professor at Tulane University from 1964-1966. Mass spectrometry, isotope kinetics, rates and reaction mechanisms are his special research fields.

In 1957 he married Carolyn Love of Jackson, Mississippi. The Taylors have a daughter, Lisa, 7 years of age.

DENNIS H. EVANS

Assistant Professor



Professor Evans joined our staff in June, 1966, as an assistant professor of analytical chemistry. Born in Grinnell, Iowa, he has a B.S. degree from Ottawa University, Ottawa, Kansas, and received his A.M. and Ph.D. from Harvard. From 1964-1966 he was a member of the Harvard staff as instructor in chemistry. His research interests are in electro-analytical and organic electro-chemistry.

In 1958 he married Ruth Turnbull of Alton, Illinois. They have two children, Susan Katherine, 3 years old, and John Hyde, 1 year.

This 'n' That . . .

(Continued from page 6)

sentative of Esso Research, Ltd., to Brussels 5, Belgium, at 2 Rue de l'Aurore.

Paul F. Hoglund, Ph.D. '45, is serving Du Pont as assistant district sales manager—industrial chemicals. He is attached to its Industrial and Biochemicals Department and has a New York, N. Y. address.

Mrs. Thomas E. Hovde, B.S. '64, the former **Susan M. Fisher**—she was married on 3 July, 1965—is a patent researcher at Shell Development, Emeryville, California.

Canadian **John Howatson**, Ph.D. '50, became a B.S. alumnus of the University of Washington in 1943, spent a year with Corning Glass, served Columbia University as a teaching assistant and then enrolled in our Graduate School. He left the campus upon completing his formal education. At last report he was a member of the faculty of the University of Wyoming with professorial rank.

It came to our attention last May that **Harry N. Huntziker**, Ph.D., '32, a former vice-president of Martin Marietta Corporation and president of its construction division, has been elected president of Portland Cement Association.

Former Milwaukeean **Arthur G. Jelinek**, Ph.D. '44, spent the first year after graduation as a chemist in the employ of Wisconsin's Fox River Paper Company. Then he enrolled in our Graduate School and served the Department as a teaching assistant for three years. His formal education completed, he joined Grasselli as a research chemist. Five years later he was serving Du Pont in its Industrial and Biochemicals Department.

George O. Johnson, Ph.D. '31, briefly described his days as an educator in these lines: "Following my finally qualifying for my degree in August, 1931, I came to Culver Military Academy to teach preparatory school chemistry, punctuated with occasional offerings of a college level course. Although I originally planned on college teaching, a considerate administration along with progressive changes in course offerings and facilities resulted in my staying on until my formal retirement after the 1962-63 term. Although I have enjoyed two years of the more carefree life, I have been back in part-time teaching since Septem-

ber, 1965, and found satisfaction in being academically useful again." The Johnsons met when both were in Graduate School. Marriage followed in 1933. They are the parents of a son and a daughter. Their two grandchildren are, we understand, the "usual reason for vacation trips to get re-acquainted".

Kenneth E. Keller, B.S. '51, spent his first ten years as a Badger Chemist in the employ of a Madison meat packer and then taught school for two years before enrolling in Wisconsin's Library School as a candidate for our M.S. in library science. That objective reached, he spent one year on the campus in the employ of the recently-established Industrial Relations Research Institute. Last summer he became the Department's second graduate to serve as our librarian.

Kenneth E. Kirk, Ph.D. '64, took a position at the National Institute of Health in Bethesda, Maryland, sometime in mid-October, 1965. He took a three-week vacation in Europe before joining NIH.

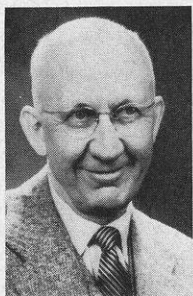
Some time ago—it was in 1956—we reported that Chemistry Course graduate **Allen R. Kittelson**, '37, had joined Esso Research and Engineering Company upon graduation from college; had taken time out for service with the Armed Forces; and, upon return to Esso, had been assigned to research on an agricultural project. That report now needs revision: Al has held the title of senior research associate in the chemicals research division since 1954; has been granted some 26 U.S. patents; he is credited with the invention of a world-famed fungicide which to the man-on-the-street is known as "Captain". For the inquiring minds of fellow chemists it is N-trichloromethylthiotetrahydrophthalimide. Esso made the 175th anniversary of the signing of the first patent law the occasion for a dinner commemorating this event and honoring him for his outstanding achievements as an inventor.

Alfred E. Koehler, B.S. '18, sometime instructor in physiological chemistry in the "Med" School earned his doctorate in '21 and then, three years later, a Harvard-granted M.D. At last report he was living in retirement in Santa Barbara, California.

Chemistry Courseman, **Carl J. Koehler**, '32, on graduation took the first step in a career which was to center on nutrition. To that end

(Continued on page 9, col. 1)

The Late Professor Adkins Honored



Our University's campus was enlarged within the last few years to include an area once zoned as residential.

It is bordered by University Avenue on the north, extends to Dayton Street

on the south and reaches from Park Street to Frances Street. And on this new campus stands a twenty-million dollar group of four high-rise buildings locally referred to as the Southeast campus. These structures house 3,200 students. Each floor of the living units is named after someone closely identified with the University. Our Department has contributed one to the list, his name: **Homer B. Adkins**. His name appears in one of the 'houses', honoring the late Frederic A. Ogg, some-time professor of political science.

Professor Adkins, a distinguished and beloved member of the Department for thirty years, died unexpectedly on 10 August, 1949, at age 57. He had joined our faculty with assistant professor rank in 1919; promotion to full professor came nine years later. The citation reads:

HOMER B. ADKINS 1892-1949

"A scientist of the greatest distinction, Homer Burton Adkins found honored place among the leaders of the Twentieth Century renaissance in organic chemistry.

"Graduate of Denison University, Professor Adkins received his Master's degree from Ohio State University in 1916 and his Ph.D. from the same institution two

years later. The balance of his career was lived out within the environs of University of Wisconsin laboratories.

"Workers within the field of organic chemistry came to know him as the world's leading authority on the hydrogenation of organic compounds. They knew him also for significant contributions on chemical equilibrium, rates of reaction, and molecular structure, all of which made possible a better understanding of the fundamental principles of chemical reactivity.

"In the role of teacher, the indefatigable scientist was a master of exposition, relating the complex findings of his laboratory investigations with the greatest clarity. At the lectern, his presentations were at once lucid and absorbing, witty, and critical—were occasionally even caustic. However, Professor Adkins welcomed discussions with people with whom he disagreed.

"Heavy responsibilities for his nation's defense were borne by Homer Adkins throughout World War II. For his services with the Office of Scientific Research and Development the Medal for Merit, presented by President Truman, was awarded to the Wisconsin chemist.

"No stranger to honors, he had received the honorary Doctor of Science degree from his alma mater in 1938 and had been elected to the National Academy of Sciences in 1942. At the time of his death he was a nominee for the high office of president of the American Chemical Society. An enthusiasm which illuminated all he touched went with Dr. Adkins' membership in a host of professional organizations.

"Given his name, this house commemorates a man who showed the way to excellence."

From Your Christmas Letters . . .

We have learned that **Ann Ratcliff Bergen** (Mrs. J. V.), B.S. '57, is having an interesting year as president of the Idaho State University Faculty Wives Club; that **Roger M. Christenson**, Ph.D. '44—he is now Director of Resin Research at Pittsburgh Plate Glass—has a son who is a first year student in Allegheny College; that the three children of **Henry A. Vogel**, Ph.D. '41—he is serving PPG as its Director of Consumer

Products Research—are either in college or have graduated; that **Stewart W. Gloyer**, Ph.D. '39—he is at PPG as Director of Coating Application Research—has a son who is pursuing graduate work at Michigan; that **Dalton Shinn**, Ph.D. '35, has been with Crown Zellerbach Corporation, Camas, Washington, since September, 1935, in its Central Research Division which has grown from 12 employees to about 150 during that time and, as

Society Honors 50-Year Members

The names of three Badger chemists were among the list of 89 members of the American Chemical Society honored last spring on reaching the half-century mark. One member of the trio—see the In Memoriam column—died before the formal presentation of his certificate. Both of the survivors are retired educators. Their names, together with a brief summary of their rise on the academic ladder are **Paul W. Boutwell**, M.A. '12, Ph.D. '16, (agricultural chemistry) and **Alvin Strickler**, Ph.D. '21. Beloit College conferred the bachelor's degree upon Paul in 1910 and called him back to the campus ten years later to serve as an associate professor of chemistry in preparation, apparently, for promotion next year to full professor and the headship of its chemistry department. Paul has received several citations for his accomplishments, not the least of which is the honorary D.Sc. degree from his Alma Mater. Some-time instructor Alvin, after a brief service in the Department joined the chemistry staff of Evansville College, Indiana. Retirement in about 1954 ended a 33-year association with the college.

for Dalton, we understand, his work has gradually "drifted" from chemistry to physics, electronics, instrument design, new testing methods, process trouble-shooting in the mills, and machinery improvement; that **Renata Bangert Coombs** (Mrs. Robert), Ph.D. '64, and her husband have appointments as post-doctoral fellows in the newly-established Synvar Research Institute in Palo Alto, California; that **Harry P. Schultz**, Ph.D. '42, was named "Outstanding Teacher" by the faculty of the University of Miami in 1966, an honor, we understand, which he prized far more than the monetary award which accompanied it; and that for **Sally Fisher**, Ph.D. '49, "the most glamorous part" of last year was her trip from Amsterdam during the course of which she attended the Water Control meetings in Munich, made a trip down the Rhine, visited Innsbruck and Zurich and, before emplaning for home, spent ten days in Holland, getting acquainted with its art museums, its flowers and its concert halls.

In Memoriam

Andrew I. Andrews, a Badger chemist who left the campus after having earned two degrees and then completed his formal education at Ohio State University in 1924, head of the department of ceramic engineering at the University of Illinois until his retirement in 1963—on 31 January, 1966, in Champaign.

George Alfred Ballam, B.S. '24 and M.S. '25, some-time teaching assistant in chemistry and officer in W.W. I—24 August, 1964. Last known address: Sells, Arizona.

Gerald T. Borchardt, Ph.D. '37, a Du Pont since 1939, at the time of his death associated with its Plastics Department, locally known for his interest in music; instrumental in forming the Rhythm Doctors, an orchestra composed of chemists who had played in orchestras during their college days; a leader in his church and community services, Boy Scouts, The American Field Service; a tree farmer by avocation—unexpectedly, at age 54, and with no previous record of a heart ailment, on 7 May, 1966.

Two-degree Nebraska alumnus (B.S. '23 and M.S. '24) **George M. Buffet**, Ph.D. '33, whose career as an industrial chemist spells a practically lifetime association with Pittsburgh Plate Glass Company—unexpectedly, on 18 September, 1966, in Milwaukee, Wisconsin.

Jay W. Butts, M.S. '40, teacher in Milwaukee's Boy's Technical High School—on 5 November, 1966.

William T. Byrns, Ph.D. '39, some-time resident of Chicago Heights, Illinois—on 19 February, 1963.

Arthur C. Cope, the first Badger chemist to serve the American Chemical Society as its president and the Department's fourth Ph.D. ('32) alumnus to have been invited to return to the campus to receive

an honorary D.Sc. degree; an educator who, upon graduating from Butler University, began his career as a teaching assistant in chemistry on the Wisconsin Campus and continued in this field on other campuses (Bryn Mawr, Columbia, Harvard, Massachusetts Institute of Technology); an individual who successfully combined creative scientific accomplishment, effective administration and broad influence in the development of his profession; a busy chemist who gave freely of his time to the affairs of our Society on the local, the divisional, the regional and the national level—unexpectedly on 4 June, 1966, in Washington, D. C. He was serving his seventh term as Chairman of the ACS Board of Directors at the time of his passing and had been head of the chemistry department of MIT. He was named over a year ago as MIT's first Camille Dreyfus Professor of Chemistry there.

Ronald C. Crozier, M.S. '28—he had done his undergraduate work at Beloit College—some-time Abbott Laboratories employee and, at the time of his death, a resident of Greenwich, Conn., on 20 April, 1963.

Harold E. Eggers, B.S. '03 (M.D. Rush Medical '09), some-time chairman of the University of Nebraska's pathology and bacteriology department from 1919 until his retirement in 1947, a co-founder of Alpha Chi Sigma chemistry fraternity and, in his active days, a cancer control consultant to the Nebraska Health Department—on 17 November, 1966, after a long illness, in Omaha.

Mark Wendell Farlow, Ph.D. '35, research chemist at Du Pont—12 November, 1962.

University of Akron alumnus **Carl E. Frick**, Ph.D. '23, some-time instructor in the Department and, in his day, an employee of rubber products manufacturer Van

Cleef Brothers, which was later to become a unit of Johns-Manville as its Dutch Brand division; in Chicago, 6 March, 1966. He had retired at age 72 as the director of its chemical and technical services in the field of pressure-sensitive tapes.

Western Electric Company retiree, **Frank C. Gutsche**, M.S. '16, in his active days section chief of analytical laboratories—unexpectedly, 9 November, 1966, in La Grange Park, Ill.

Chemistry Course graduate, '14, **William A. Hadfield**, M.S. '15, Pennsalt Chemicals retiree since 1956 and some-time chairman of the scientific committee of the disinfectants division of the Chemical Specialties Manufacturers Association—on 25 May, 1966, in Upper Darby, Michigan.

DePauw University alumnus (AB '20) **Arlie P. Julien**, Ph.D. '24, some-time research director at Solvay Process Company and, after his retirement, author of a plan for a research center for retired chemists—in Syracuse, N.Y., on 25 January, 1966.

Word came last summer from **Paul J. Kropp**, Ph.D. '62, of the untimely death on 9 July, 1966, of Donna, the wife of a Procter & Gamble colleague of his. Her husband, **Edward J. Conklin**, M.S. '60, completed his formal education in about 1963 at Stanford University. Survivors, besides Ed, are three sons ranging in age from about twelve to two years. Badger Chemist extends its heartfelt sympathy to the family on its loss.

Clarence W. Muehlberger, Ph.D. '23, some-time Michigan State toxicologist, and director of its State Crime Detection Laboratory—unexpectedly, 2 September, 1966, in Lansing.

Beloit alumnus **Ralph Sayre**, M.S. '15, research chemist with American Cyanamid, New Haven, Conn., on 10 July, 1964.

This 'n' That . . .

(Continued from page 7)

he transferred to "the other campus" as a teaching assistant in what was then known as agricultural chemistry. (Some 30 years ago the name was changed to biochemistry). Upon completing his formal education in 1936, he left the Wisconsin campus for the south there to join the faculty of Alabama Polytechnic Institute with

associate professor of nutrition rank. Promotion to full professor came in him in 1946. At this writing he is associated with U.S. Army's Surgical Research Laboratory in Brooke Army Medical Center, Ft. Sam Houston, Texas.

Ambrosia Chocolate Company, Milwaukee, retiree **Roy E. Korfhage**, Ph.D. '27, at this writing is serving the American Association of Candy Technologists as its president.

St. Norbert College alumnus **Robert D. Kralovec**, Ph.M. '39, is one of the many Badger chemists in the employ of E. I. du Pont de Nemours & Company. His business card states that he is on the staff of its Industrial and Biochemical Department, sales technical laboratory.

For the first time in the history of the Geological Society of America (Continued on page 10, col. 1)

Minne Recognition Dinner

A 35-year association with Minnesota's 107-year old Winona State College—22 of them as president—drew to a close last January for Nels Minne, Ph.D. '32, when some 350 guests from the city's town and gown population paid him a fitting tribute at a "thank you" dinner with a post-prandial program of impromptu reminiscences by faculty and former students, the reading of congratulatory messages, and the presentation of a gift to Dr. and Mrs. Minne: a transistorized, portable television set. From Vice-President Hubert H. Humphrey came the following message: "WSC has certainly made tremendous progress in the 22 years that Dr. Minne has been at the helm. I am indeed pleased to know that he will continue this contribution to the field of education at WSC." Rep. John A. Blatnik, who spent his undergraduate years at WSC, wrote "Please express my sincere and genuine ap-

preciation of the remarkable work which Dr. Minne has done over the years in expanding both the facilities and the curriculum of the college and in establishing new high standards of excellence that have placed Winona among the front ranks of the liberal arts colleges." From another non-academic source came "Dr. Minne has served the community and state with distinction, and he richly deserves the tributes extended him tonight. During his 22 years as president of WSC that institution has enjoyed a remarkable growth period. Not only have the physical facilities been greatly expanded, but the faculty has been strengthened." Master of ceremonies for the evening Adolph Bremer, city editor of the Winona Daily Sunday News summed it up by saying, "For the College Dr. Minne has pursued a course of excellence and growth. This is the best testimony. We really cannot add to it."

This 'n' That . . .

(Continued from page 9)

ica, a Badger chemist at last report was serving it as president. **Konrad B. Krauskopf**, B.A. '31, was the 1966 incumbent of the office. Konrad is currently Professor of Geochemistry at Stanford University of which he is a Ph.D. alumnus, '39, five years before the University of California had conferred upon him the doctorate in chemistry.

Robert F. Landel, Ph.D. '54, has been named senior research fellow in materials science, engineering division of Cal Tech. He continues as manager of the polymer research section at Cal Tech's jet propulsion laboratory.

University of North Carolina alumnus **Leslie C. Lane**, Ph.D. '42, arrived on the campus in 1937 with an appointment as teaching assistant in his pocket. His objective achieved, after having served the Department for four years, he took a job as a research chemist with American Cyanamid. Successive promotions—they began at the group leader level—at last report brought him to the position of assistant director of the company's Stamford research laboratories.

Word came from Pittsburgh Plate Glass last July that St. Olaf College alumnus **Elmer C. Larsen**,

Ph.D. '39, had been appointed general manager of its Coatings and Resins Division and had been elevated to a vice-presidency.

Chemistry Course graduate **Elmer J. Lease**, '31—he and his wife, the former **Jane Germer**, both are Ph.D. alumni of the Biochemistry Department—has joined the staff of the University of South Carolina, Columbia, S.C., as a research associate in the School of Pharmacy there. His research interests in nutrition include, among other problems in this field, the enrichment of cereals.

To Badger chemist **Samuel Lenher**, B.A. '24—he is also a Ph.D. alumnus of University College, London—Badger Chemist extends a congratulatory hand on his election as a fellow of this British School. The title, we understand, is given to former students who have attained distinction in science, art, literature or public life.

University of Paris alumnus **Pierre M. F. Mangin**, M.D. '62, has sent word from France that he has a new address: "Le Meyran", 13-Martiques. Pierre, while on the Wisconsin campus, held an International Scholarship.

From Mirror, Alberta, Canada, to Wilmington, Delaware, where he is now associated with Du Pont, is a long journey, and for **William B. McCormack**, Ph.D. '48, it was one

Our Cradle Roll

The **Robert L. Baldwin's**, B.A. '50, last summer announced the arrival of their first child, David Norris, on 17 June in Palo Alto, California.

Ann Ratcliffe Bergen, B.S. '57, and her husband announced the birth of their second daughter, Rebecca Janice, on 2 May, 1966, at Pocatello, Idaho.

Correction: re the **Allen S. Duff**, Ph.D. '60, family. We learned, too late to make the correction, that Cori is a boy's—not a girl's—name. The corrected item will then reveal that the Duffs have, at this writing, three boys.

The **Jeremy Fox**, B.S. '54, family of Marquette, Michigan—both are Wisconsin alumni—announced the birth of a daughter, Erica, on 23 May, 1966.

The **Jack D. Graybeal**, Ph.D. '56, family on 15 May, 1966, became a three-boy unit with the arrival of Dale K. Dale's father is a member of the chemistry staff with associate professor rank of the University of West Virginia, Morgantown.

The **Paul J. Kropp**, Ph.D. '62, family now numbers two children, a boy and a girl. Sonia arrived on 12 July, 1966.

The **David C. Remys**, Ph.D. '59, announced the arrival of their "little astronaut", Eric David, on 13 January, 1966. Little Eric is their first child.

marked by several biographical milestones: B.S. '44 from the University of Alberta; service in the Canadian Royal Air Force; U.S. citizenship in 1945; appearance on the Wisconsin campus for graduate work (WARF fellowship); employment as a research chemist in Du Pont's Jackson Laboratory in 1948; promotion to a research supervisorship in 1953; and advancement to research associate in 1955.

Stanley B. Mirviss, Ph.D. '51, heads the organic chemical research activities of Stauffer Chemical Company, at Dobbs Ferry, N.Y.

Therald Moeller, Ph.D. '38, is the joint author of a chemistry text "University Chemistry", which was published by D. C. Heath and Company in February, 1965. We understand that it is already being used in over 100 colleges and universities.

Patricia A. Mondloch, B.S. '65—she is the former Patricia A. Bu—
(Continued on page 12, col. 1)

You Said . . .

"I thoroughly enjoy reading my copy of Badger Chemist. Keep up the good job." Michael J. Curry, Ph.D. '48.

"I certainly enjoy Badger Chemist. It is one of the few ways I can maintain a knowledge of the Chemistry Department." S. E. Freeman, Ph.D. '35.

"I have enjoyed receiving and reading the annual issues of Badger Chemist. Dr. Schuette has done an excellent service to the graduates of the Chemistry Course and the graduate students of the Department in keeping everyone in touch with one another. It is also good to learn about the new buildings and the faculty." William A. Hadfield, M.S. '15.

"Enclosed is my contribution to the support of the Badger Chemist which I very much appreciate receiving. I can well imagine the difficulties involved in gathering information and putting it together—plus all the details of organizing, printing and mailing. Congratulations on a job well done." Ralph M. Hill, Ph.D. '38.

"I have been the grateful and interested recipient of Badger Chemist newsletters 1-13 and have greatly enjoyed all of them. During all this time no evidence of gratefulness has been forthcoming. So now this is it—by way of enclosed check." George O. Johnson, Ph.D. '31.

"Two and a half years of experience have not in the least dampened my enthusiasm on retirement. So far as a useful and remunerative position is concerned I can think of nothing which I have enjoyed and found to be as interesting and pleasant as that which I had with Du Pont but this present life of busy leisure suits me to a T." Raymond J. Kepfer, Ph.D. '30.

"I am pleased to send the enclosed check—to help finance newsletter 14. Please extend my sincere appreciation to Professor Schuette and to other members of the editorial staff for all of their services in this effort. It is a contribution for which you all should derive a large measure of satisfaction." Harold W. Knudson, Ph.D. '39.

"I'd like to express my appreciation for the Badger Chemist. Every issue has been extremely enjoyable. Colleges and universities have become so large that most alumni publications rarely mention anyone you have known personally. This is

what makes the Badger Chemist such a splendid idea. Every issue has been full of news about classmates, professors, and even students in whom I am still interested after a period of more than ten years." W. Luker, Ph.D. '55.

"Thanks for your No. 13 edition (of Badger Chemist)—always enjoy receiving the issue." William J. Mountain, B.A. '22.

"I have enjoyed all 13 issues of Badger Chemist. It is far more interesting than any other alumni publication that I receive." Patricia Krecker Moyer, Ph.D. '54.

"It is always a pleasure and a reminder of some wonderful experiences in the Chemistry Department when I receive Badger Chemist. We certainly appreciate this periodic news and want to thank you and your associates for making it possible. The enclosed check will help defray expenses. Thank you again." William R. Rinelli, B.S. '33.

"I am happy to enclose my check—to enhance the solvency of Badger Chemist. The last issue was indeed interesting, and you're off to a good start in maintaining the very high standards set by Dr. Schuette." Lester S. Sinness, Ph.D. '35.

"Dear Professor Schuette: I just wanted you to know how much we all appreciate your efforts in training Badger Chemists all those years, and more recently, in keeping us informed by means of the Department's newsletter." Newell Sjolander, B.A. '34.

"I have just read with considerable satisfaction the latest issue of Badger Chemist. I and my Wisconsin associates here in our laboratories get considerable pleasure out of reminiscing over items that you call to our attention." James M. Sprague, Ph.D. '34.

"I was pleased to receive a copy of Badger Chemist today. Although it has been many long years since I was in school, I always find some bits of news about classmates and teachers." Jane Ehrlinger Taylor, B.A. '31.

"I certainly appreciate the effort that you have put into editing Badger Chemist. It is a pleasure to read it." Charles C. Templeton, Ph.D. '48.

"Congratulations on the 13th newsletter—the best yet. My regards to Dr. Schuette—he has done a fine job in keeping us Wisconsin chemists in touch." Vanderveer Voorhees, Ph.D. '24.

Badger Chemists Serve ACS

Three Badger chemists are serving the American Chemical Society this year; two are Division chairmen and one heads a local Section. **Ivan A. Wolff**, Ph.D. '40, who is chief of the industrial crops laboratory at USDA's Northern Regional Research Laboratory, is the 1967 chairman of the Peoria Section. **John E. Castle**, Ph.D. '44, is the chairman of the comparatively young Fluorine Chemistry Division. John, a B.A. '40 Carleton College alumnus, is director of the electrochemicals department laboratory at Du Pont's Wilmington Experimental Station. He joined Du Pont as a research chemist in 1943 and was named to his present position in 1965. **Gilbert J. Stork**, Ph.D. '45, is chairman of one of the Society's oldest Divisions: organic chemistry. He enrolled in our Graduate School as an alumnus of the University of Florida (B.S. '42), began his career as an educator in 1946 at Harvard with the rank of instructor, resigned seven years later as an assistant professor, and then made an association with Columbia University in 1953 where he is now professor of organic chemistry. He is one of three former students of Emeritus Professor McElvain who have received the ACS Award in Pure Chemistry. The number of "off-campus-by-invitation" lectureships which he has held numbers, to the best of our knowledge, some seven.

Our Newest Ph.D. Alumni

The graduating Ph.D. class of 1966 set a new record for size. The doctorate was conferred upon 53 young men and women—the men, understandably, outnumbering the ladies by 52—at the three degree-periods in the University's calendar year (January, June and August). This number reveals a 35 per cent increase over the year 1965. The last five-year average was 25; the sum total since the inception of this phase of the Department's graduate instruction program in 1899 is now 1141.

This 'n' That . . .

(Continued from page 10)

kovic—at last report was employed by Rahr Bio-Technical Laboratories. Her address: 1171 Manor Parkway, Sheboygan, Wisconsin.

Announcement was made by Esso Research and Engineering Company on 7 June, 1966, that **Leonard F. Moody**, Ph.D. '44, had been named Director and Vice-President, corporate and technical planning, of Esso Eastern Chemicals, Inc., a newly formed subsidiary of Esso Chemical Company. Len's headquarters will be in New York City.

We understand that **Stephen D. Morton**, Ph.D. '62, will return to the campus for the 1966-'67 school year for postdoctoral research in chemical engineering. He is a member of the chemistry staff of Otterbein University.

The **Richard D. Mullineaux**, Ph.D. '51, family has a new address: 24 Hendrie Avenue, Riverside, Conn. 06878. Dick's association with Shell Oil began in 1951 at Emeryville, California, in the company's refinery there. Some eight years later he was transferred to the midwest as manager of its aromatic department in the Shell Wood River refinery in Illinois. His most recent promotion finds him on the Atlantic coast in Shell's head office in New York where he is assistant department head, Manufacturing Technological Department. His special job, we understand, is the planning of long-range Shell expansion.

Chemistry Courseman **R. A. Myren**, B.S. '48, is a member of the faculty, with professorial rank, of the School of Criminal Justice, State University of New York, in Albany. He is serving the school as its dean.

Emeritus professor of sanitary engineering **M. Starr Nichols**—he is a '16 Chemistry Course graduate who made physiological chemistry in the "Med" school his field of concentration for the doctorate—received official recognition in September 1966 by the members of Madison's Water Board for his 15 years of service to the community.

Stephen W. Nicksic, Ph.D. '52, wrote us last Christmas season that he had been transferred to the La Habra laboratory of Chevron Research Company: a change in name for the company and a change to the Los Angeles area for him. He described his assignment as research in producing tech-

nology (oil field) or, more specifically, well-stimulation mechanisms.

James R. Owen, Ph.M. '37, at our last report was employed by Phillips Petroleum Company, Bartlesville, Oklahoma, in its Patent Division with senior development engineer rating.

Honors graduate **Edward J. Panek**, B.S. '63, is pursuing graduate work in organic chemistry at the Massachusetts Institute of Technology. His objective: the Ph.D. degree.

Emory University Alumnus (B.S. and M.S.) **Philip H. Parker**, Ph.D. '56, is now a senior research associate in polymer chemistry with Chevron Research Company, a subsidiary of Standard Oil Company of California, Richmond. Organic chemist Parker since joining Chevron has made his field of concentration the chemistry of polymeric systems. He has helped in the development of systems of polymers and procedures for consolidating certain oil-bearing formations which prevent sand from entering well bores. We understand that the process has been successful in the field and is resulting in increased oil production. As an "extra curricular" activity he conducts a course in plastics, rubber, and fiber chemistry in the University of California Extension Division.

Illinois alumnus and some-time research assistant **Richard G. Peterson**, Ph.D. '66, is now associated with the sales and development group of Rohm & Haas in its home office, Independence Mall West, Philadelphia.

No biographical sketch of Chemistry Courseman '38 **Russell W. Peterson**, Ph.D. '42, would be complete without a reference to his home city of Portage in Wisconsin's history-rich area. (The Wisconsin and Fox rivers flowing within a short distance of each other once made at this point a convenient place for the early voyageurs to carry their canoes from one waterway to the other when enroute to the Mississippi.)

Russell became a Du Pont as a research chemist upon completing his formal education at Wisconsin. At last report, he is the director of the research and development in Du Pont's Development Department. The milestones in his rise to his present position are market research supervisor, research manager, technical superintendent Dacron polyester fiber plant, assistant plant manager, director Dacron research, merchandising manager, research director, textile and in-

dustrial products. He is widely known for civic and political activities in Delaware. Last February (1966) he and a local priest each received a brotherhood-citizenship award from the Delaware Chapter, National Conference of Christians and Jews. Even before the above-mentioned accolade was given him, he had gained recognition for his leadership as chairman of the neighborhoods and housing committee of the Greater Wilmington Development Council. He has also been the recipient of numerous honors for community service, including the Vrooman Award of the Correctional Society. He has held several key jobs in the Delaware Republican Party. The Peterson family has four children.

Daniel S. Polcyn, Ph.D. '65, has been named senior electrochemist at Gould-National Batteries, Inc., R & D lab. Minneapolis.

Robert S. Powers, Ph.D. '60, at last report, is a Denver resident in the employ of the National Bureau of Standards.

We have learned that the **Allen Prince's**, Ph.D. '56, are preparing to send their first-born daughter to college next year.

Oscar R. Rodig, Ph.D. '55, is a member of the chemistry staff of the University of Virginia, Charlottesville.

Robert W. Rosenthal, Ph.D. '49, is serving Pittsburg Section of A.C.S. as the chairman of its organic chemistry group.

The list of Badger chemists in the employ of Rohm & Haas was increased at least three during the year 1966. **Kenneth F. Rubenstein**, Ph.D. '66, completes the count.

John C. Safranski, Ph.D. '50, is now a laboratory division leader in Dow Chemical's research department.

Donnie J. Sam, Ph.D. '66, joined the research staff of Du Pont's experimental station, Wilmington.

Word came last July from Du Pont **George N. Sausen**, Ph.D. '53, that he is now in his employer's explosives department; that he commutes daily "across the river" to Gibbstown, N.J.; that his family had increased in number to five in 1965 (a daughter brought up the count); and that **G. Robert McKay, Jr.**, Ph.D. '56, has been transferred by the company to a post in Geneva, Switzerland.

Professor of Chemistry at Florida's University of Miami **Harry P. Schultz**, Ph.D. '46, in commenting on his associations with the De-

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partment's staff of his college days recalled a situation in which he and Professor Schuette were the main actors. Wrote Harry: "He was the first professor I came in contact with when in 1938 I entered the University for he was my advisor from Frosh through Senior years. And later, when in 1946 I received my Ph.D. hood, Dr. Schuette was my escort. In a way, Dr. Schuette was the alpha and omega of my professional training."

Chemistry Course graduates, '65, **Roger C. Simurdak** and **Jerold O. Bahls** are pursuing graduate work at Minnesota on NASA trainships under Badger chemist, Prof. **Wayland E. Noland**, B.A. '48, Ph.D. (Harvard) '52. **Edward A. Lanis**, B.S. '65, makes it a trio of Wisconsin classmates studying there for a higher degree.

For the second time since 1964, **Victor G. Soukup**, Ph.D. '53, has attended, as a delegate, a foreign meeting of the International Standards Organization, Technical Committee 61 (plastics). The committee, we understand, is concerned with liquid resins and reinforcements used for the production of reinforced thermoset resin laminates. The committee in question met in Stockholm in 1966 and Budapest in 1964.

Word has come from **Leo H. Spinar**, M.S. '53, that he is now a member of the chemistry staff of South Dakota State University in Brookings. He had previously held an associate professorship at the University of Missouri.

It has come to our attention that another honor has come to **James M. Sprague**, Ph.D. '34 (see Newsletter, 1958); and that recognition was officially made at a banquet on 26 January of this year when Jim was named recipient of the Proctor Award of the Philadelphia Drug Exchange. Accompanying the Award was the following citation: "For outstanding achievements which have beneficially affected the health of the public and helped advance the progress of the health professions in the pharmaceutical industry." He is the executive director of medicinal chemistry at Merck, Sharp & Dohme research laboratories, West Point, Pennsylvania.

Shell Chemical retiree **Marshall R. Sprinkle**, Ph.D. '32, is now making his home in Rochelle, Va. His

address: Route 4, Box 60, his ZIP code number is 22738.

Jeannie M. Stellrecht, B.S. '65—she is now the wife of Lewis L. Karstenschmidt—is listed in the University's staff directory as a project assistant in plant pathology.

University of California, Los Angeles, retiree **Hosmer W. Stone**, Ph.D. '21, has served as a fellow on at least two occasions, as visiting fellow or professor in Taiwan (1963-64) and in Alexandria, Egypt (1963-66).

From sources which we deem to be reliable, we have learned that Columbia University's professor **Gilbert Stork**, Ph.D. '45, is the seventh winner of the annual Edward Curtis Franklin Memorial Award sponsored by Phi Lambda Upsilon honorary chemical fraternity at Stanford University. He had, also, been chosen to deliver the Foster lecture series in the chemistry department of State University of New York at Buffalo late in April of 1966.

The name **Templeton** appears twice on Badger Chemist's list and, by what seems to be an unusual coincidence, both are Ph.D. alumni. They, apparently, are not known to be related to each other. **Charles C. Templeton**, '48, a 1942 graduate of Louisiana Polytech, after a brief service with Shell Oil, began a tour of duty with the U.S. Navy. That four-year service completed, he enrolled in our Graduate School, became a two-degree Badger chemist—an M.S. degree was conferred upon him in '47 and the doctorate in physical chemistry followed a year later. Then in 1948 he joined the faculty of the University of Michigan. This association was short-lived, however, because Shell Oil called him back in 1950 as research chemist in its exploration and production research laboratory in Houston, Texas. A one-year exchange assignment to the Royal Dutch Shell Laboratory in Amsterdam took him abroad in 1955. He has been active since 1950 in research related to the oil field of Shell's business. At various times he has worked on multiphase fluid (oil, gas, water) flow through porous rock formations, gamma-ray spectroscopy logging of oil wells, and chemical treatment of producing wells to maintain oil output. He, reportedly, has been especially interested in the deposition of inorganic scale from aqueous systems in hot downhole equipment and in the steam injection

method of producing high-viscosity oils. He, as the father of four sons, has been active in Boy Scout work for the last ten years. His oldest son, at this writing, is a Freshman at Stephen F. Austin State College, Nachodoches, Texas.

Word has come that **William F. Unziger**, B.S. '49, has joined the plant technical services department of American Potash & Chemical Company, Trona, California, as a senior process engineer. Badger Chemist had previously been sent him at Corvallis, Oregon, and Richland, Washington.

J. Wade Van Valkenburg, Jr., M.S. '51, is a group leader in plant science research and development at Dow Chemical.

The Department's first Rhodes scholar **Frank H. Verhoek**, Ph.D. '33, is now the academic vice-chairman of Ohio State University's chemistry department.

The letterhead of **Vanderveer Voorhees**, Ph.D. '24, reads: consulting chemical engineer, patent attorney. His consulting work on the west coast, we understand, has kept him busy since coming to Los Altos, California, from Chicago in 1959.

Walter A. Vredenburg, Ph.D. '59, has left Monsanto and is now with Pennsylvania Industrial Chemical Corporation which he is serving as its manager of rubber products in the research and development department.

Howard M. Waddle, Ph.D., '40, heads the chemistry department in the research division of West Point Manufacturing Company, a Division of West Point-Pepperall, Inc., of West Point, Georgia. Howard's staff is working, we understand, on cross-linking reactions on cotton cellulose as well as on problems relating to chemical finishing of textiles.

Chin Hsuan Wei, Ph.D. '63, is a member of Oak Ridge National Laboratory staff, Biological Division, Oak Ridge, Tennessee.

General Electric's **Robert H. Wentdorf**, Ph.D. '52, at this writing is back on the campus with faculty status. For the first semester he was visiting Professor of Chemical Engineering Research. He is completing the college year as Professor of Chemistry.

The business card of **Philip L. Weyna**, Ph.D. '58, reads "Research Supervisor in Polymers, Morton Chemical Company, Division of Morton Salt Company, Woodstock, Illinois."

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We learned after press-time last winter that (see last newsletter) **Richard A. Wiley**, Ph.D. '37, had been appointed assistant editor of the **Journal of Chemical and Engineering Data**. We surmise that this post is an extra-curricular activity with respect to his teaching duties at Hunter College in New York City.

Robert E. Wilfong, Ph.D. '44, is serving Du Pont as director of research in one of its Fiber Divisions.

Writing from Capristano, California, where he is now making his home, **Marvin O. Winkler**, Ph.D. '28, says that it is "wonderful" to find in his mail his copy of *Badger Chemist* because it brings back warm memories of his four years on the Wisconsin campus. The Winklers have a daughter who lives in San Jose.

Thirty years ago a Cornell graduate arrived on the Wisconsin scene with an appointment as teaching assistant in his pocket. In 1940 **Badger chemist** standing achieved as a Ph.D. alumnus, he became a Du Pont research chemist. Last September the family name again appeared in our University's academic staff directory and this time, likewise, as a teaching assistant recruited from Cornell University. The student's name: **Warren D. Woessner**.

Some three years ago **Abbott Laboratories** of North Chicago, Ill., announced the promotion of **Eugene L. Woroeh**, Ph.D. '48, to group leader. Last year Gene was moved up another step: manager of its organic chemical research department.

A fifty year membership certificate in the American Chemical Society was presented to **Walter T. Schrenk**, Ph.D. '22, at a local section meeting of the American Chemical Society in Rolla, Missouri. **Walter** retired in 1961 after

38 years service as professor and head of the department of chemistry and chemical engineering at the University of Missouri, Rolla. **William H. Webb**, Ph.D. '49, presented the award. Bill is currently professor of chemistry and department chairman at the same school.

Further recognition comes to **Gilbert Stork**, Ph.D. '45, in his reception of the American Chemical Society award for Creative Work in Synthetic Organic Chemistry during the current year. This is an award sponsored by the Synthetic Organic Chemical Manufacturers Association.

Gordon G. Hammes, Ph.D. '59, received the 1967 A.C.S. Award in Biological Chemistry, an award earned by his contributions to the study of enzyme mechanisms and macromolecular structure. The award is sponsored by Eli Lilly and Company.

W. B. Thomas, Ph.D. '34, professor of chemistry at Bates College, is currently serving as chairman of the Maine Section of the A.C.S.

The History of Chemistry Program at the University of Wisconsin

Contrary to frequently expressed beliefs, historians of chemistry do not expect to make rediscoveries of forgotten facts that might be useful in the solution of present day problems. Rather, they seek to preserve knowledge of the growth of the discipline of chemistry, shed light on the process of discovery, understand the role of human beings in the growth of science, and examine the impact made by chemical knowledge on human activities. History of chemistry takes within its province the whole of chemistry, its origin and its impacts.

Courses in the history of chemistry have a long history in the University of Wisconsin. The first such course was offered in 1908 by **Edward Kremers**, Professor of Pharmaceutical Chemistry and Director of the Pharmacy Course, who met ten students in his home one evening per week during the fall semester. **Kremers** had already started a similar course in the his-

tory of pharmacy the previous year. These two courses were given at regular intervals during the next decade and they gradually became more formal in character. By 1914, history of chemistry carried two credits, was listed as Chemistry 107, and was given every fall. In 1920, when **Kremers** was on leave of absence for the year, Chemistry 107 was entrusted to **Louis Kahlenberg** of the Chemistry Department. To **Kremers'** dismay, **Kahlenberg** refused to give up the course and continued to offer the subject in fall semesters until his retirement in the spring of 1940. During much of this period, Chemistry 107 was a required course for chemistry majors but the requirement was dropped in 1937.

Kahlenberg also introduced a second course, Chemistry 209, "The Lives of Great Chemists", which was taught on an intermittent basis and was organized in the form of a seminar, students studying and reporting on the lives of assigned chemists. Generally, after such a report, **Kahlenberg** held forth for the remainder of the period discussing the work, personality, and foibles of the chemists under consideration.

Following **Kahlenberg's** retirement, Chemistry 107 remained in the college catalog. It was assigned to Professor **N. F. Hall**, but during these war years the course was never given. In the summer of 1946, with the encouragement of the Chairman of the Chemistry Department, **J. H. Mathews**, the course was revived by the writer and it has been given regularly in the spring semester ever since.

In 1963, Chemistry 107 was abandoned, being replaced by two courses. Chemistry 501, "The Foundations of Chemistry", deals with the developments in technological arts, Greek philosophy, alchemy, and medicine which laid the foundations for the modern science of chemistry. This course begins with antiquity and ends in the last quarter of the eighteenth century with the Chemical Revolution.

Chemistry 502, "The Development of Modern Chemistry", picks up the subject with the work of **Lavoisier** and brings the discipline up to the present day, emphasis being placed on the growth of chemical concepts, the rise of specialization in chemistry, and the impact of chemical knowledge on other sciences and on industry. Although the two courses follow a

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chronological pattern, they are independent of each other and may be taken separately.

Although the history of chemistry preceded the study of general history of science at Wisconsin, the development of the History of Science Department from 1941 has significantly stimulated growth of the history of chemistry. The History of Science Department was founded at Wisconsin with the coming of Henry Guerlac who had recently received his doctoral degree in history at Harvard. Guerlac taught courses in introductory history of science and initiated research work, but his stay at Wisconsin was cut short when he was called to Washington in connection with wartime historical studies. When the war ended, he accepted a chair at Cornell University and has developed the history of science program there. Robert C. Stauffer, also a Harvard graduate, came to Wisconsin in January 1947 and revived the history of science program. He was joined in September 1947 by Marshall Clagett. About that same time Erwin Ackerknecht was appointed to a chair in the history of medicine and George Urdang to a chair in the history of pharmacy. This group accepted me into their midst where I was close to the development of these various disciplines and was encouraged by them to expand work in history of chemistry. Chemistry 107 was cross-listed as History of Science 107 and a seminar in history of chemistry was started in 1957.

Toward the end of the 1940's, graduate students began to develop an interest in certain fields of history of science and a Ph.D. program was developed. The Graduate School, as is commonly done with young departments, permitted work toward the doctorate when the work was done as joint major with one of the established departments. In due time the history of science department was granted the privilege of granting degrees directly.

The first student to complete requirements for a history of science doctorate was Robert Siegfried who received the degree with a joint major in chemistry and history of science in 1952. The second doctorate went to Glenn Sonnedecker shortly thereafter, jointly in pharmacy and history of science. Dr. Sonnedecker remained at Wisconsin, taking over Dr. Urdang's chair in the history of pharmacy upon Urdang's retirement in 1952. Sonnedecker later succeeded Urdang as Director of the American

Institute of the History of Pharmacy which Kremers and Urdang founded in 1941. The third doctorate in history of science went to Erwin N. Hiebert in 1953, jointly in chemistry and history of science.

Very soon after I began teaching history of chemistry it became apparent that there was no textbook adequate for the kind of course that I wished to give. As a consequence, I spent many years seeking to create a book that would be suitable for the course. This ultimately led to publication of *The Development of Modern Chemistry* by Harper and Row in 1964. This book differs from the earlier histories of chemistry in that all chemical activities before 1750 are summarized in the first chapter and the rest of the book deals with chemistry since that time. Almost all histories of chemistry have failed to deal significantly with the twentieth century. My book is unique in devoting ten chapters to developments of the last 60 years, a period in which chemistry has progressed further than it had during the entire previous history of man.

It may be of interest to list students who have received Ph.D.'s in the history of science on the basis of dissertations dealing with the history of chemistry or a closely related field. Their dissertation title follows immediately after their name.

Robert Siegfried, "A study of American research publications before 1880" (1952). Dr. Siegfried subsequently taught at Boston, Arkansas, and Illinois before returning to Wisconsin in 1963. He is presently chairman of the History of Science Department.

Erwin N. Hiebert, "The Development of the Concept of Mechanical Work to 1750" (1953). Dr. Hiebert subsequently taught at San Francisco State, Max Planck Institute in Göttingen, and Harvard, and has done research at the Institute for Advanced Study in Princeton. In 1957 he became a member of the history of science department at Wisconsin.

Frederick A. White, "Significant Contributions of American Industrial Research Laboratories in the Development of Analytical Instruments for the Physical Sciences, 1900-1950" (1959 under Professor Hiebert). Dr. White is now jointly employed by the General Electric Company and Rensselaer Polytechnic Institute.

Albert B. Costa, "Michel Eugene Chevreul and the Chemistry of

Fatty Oils" (1960). Dr. Costa is presently a member of the history department at Duquesne University, Pittsburgh.

Victor A. Triolo, "Systems of Renal Physiology before Malpighi" (1962). Dr. Triolo is now at the Temple University Medical School, Philadelphia.

Ollin J. Drennan "Electrolytic Solution Theory, Foundations of Modern Thermodynamic Considerations" (1961 under Professor Hiebert). Dr. Drennan is now Director of General Studies in Science and Associate Professor of Physics at Western Michigan University, Kalamazoo.

Clifford F. Maier, "The Role of Spectroscopy in the Acceptance of an Internally Structured Atom, 1860-1920" (1964 under Professor Hiebert). Dr. Maier is chairman of the Science Department of Montclair College, Wayne State University, Detroit.

A. Albert Baker, Jr., "The Development of Understanding of Unsaturation in Organic Chemistry in the Nineteenth Century" (1964). Dr. Baker is chairman of the Chemistry Department of Grand Valley State College, Allendale, Michigan.

Reese V. Jenkins, "Some Interrelations of Science, Technology, and The Photographic Industry in the Nineteenth Century" (1966). Dr. Jenkins is currently a member of the history department at Northern Illinois University, De Kalb, but will join the department of history of science and technology, Case Institute of Technology, Cleveland, next summer.

In the fall of 1966 I was joined by my first post-doctoral student, Owen Hannaway. Dr. Hannaway received his degree in the University of Glasgow under Andrew Kent, presenting a dissertation dealing with early university courses in Chemistry. In September Dr. Hannaway will join the history of science department in Johns Hopkins University, Baltimore.

It is also of interest to call attention to books which have resulted from activity of students in this area. Professor Hiebert's thesis was published by the Wisconsin Historical Society under the title, *Historical Roots of the Principle of Conservation of Energy*, in 1962. The same publisher brought out Dr. Costa's thesis in the same year under the title, *Michel Eugene Chevreul, Pioneer of Organic Chemistry*. Dr. White's thesis led to the publication, *American In-*

dustrial Research Laboratories, Public Affairs Press, Washington, D.C., 1961. Dr. Baker's thesis is forming the basis of a book, *The History of the Double Bond*, which is to be published by Houghton-Mifflin. In addition to the above, the master's dissertation of Edward Beardsley, who took his degree in the History Department but with a minor in history of science, has led to the publication of *The Rise of the American Chemistry Profession, 1850-1900* by University of Florida Press in 1964.

The return of Dr. Siegfried in 1963 gives Wisconsin a particularly strong group in history of chemistry with good balance between fields. Dr. Siegfried is interested in developments of the eighteenth and early nineteenth centuries, the formative period of the science when alchemical concepts were being discarded and a sound understanding of the weight relations in chemical combination was being developed. Dr. Hiebert's interest in the development of energy concepts concentrates his research in the physics and physical chemistry of the nineteenth and twenti-

eth centuries. My own interest in the interplay between fundamental knowledge and its application leads me to stress nineteenth and twentieth century developments in analytical, organic, biological, and industrial chemistry.

Research in history of chemistry at Wisconsin has been stimulated by an enlightened acquisitions policy by the University Libraries. More than a century as a leading American university means that we not only have comprehensive holdings of current scientific books and periodicals, but have long runs of leading publications, usually back to the first volume, e.g., JACS (1879), Chem Abstracts (1907), Liebig's Annalen (1832), Ann. de chimie (1790), Berzelius' Jahres-Berichte (1822-1850), Trans. of the Royal Society of London (1665), Berichte (1865), Centralblatt (1832). The library has also purchased several book collections of major significance to the history of chemistry. The Thordarson Collection, purchased in 1948 brought the University extensive early scientific works, particularly works of the early British scientists. The Duveen Collection (1950) contained

over 3000 items dealing with alchemy and early chemistry. Two Sinclair Collections (1953) contained virtually everything published by Robert Boyle and Joseph Priestley. Gaps in these collections have been filled by systematic purchase of out-of-print books as they become available on the market. A catalog of *Chemical, Medical and Pharmaceutical Books Printed before 1800* in the UW collections was published in 1965 by the University of Wisconsin Press. It was edited by John Neu, librarian in charge of science acquisitions.

It is evident from the above survey that history of chemistry has grown from inauspicious beginnings in 1908 to vigorous activity 59 years later. The discipline serves as a basis for integrating the various fields of chemistry and causes the student to view chemistry as a whole rather than as a collection of independent specialties. It also provides an opportunity to examine the interrelations between experimental and theoretical chemistry and the impact of this knowledge on the economic, political, and social realms.