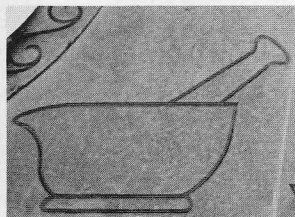
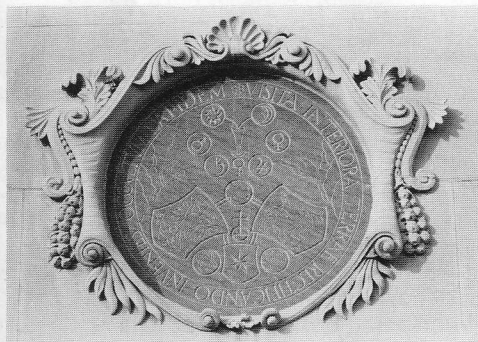
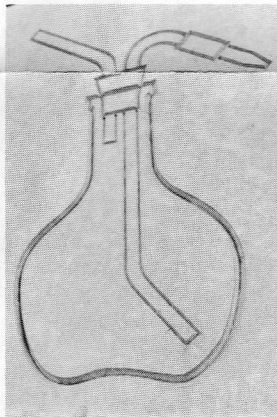
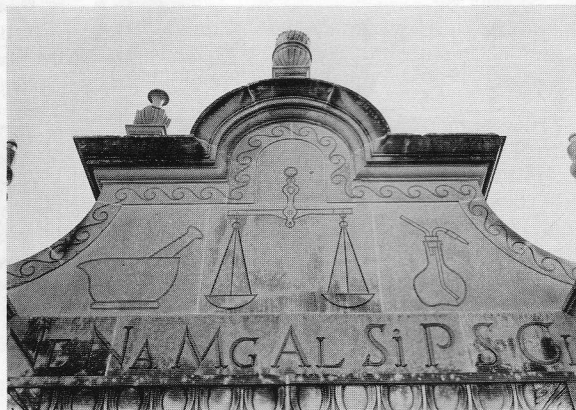
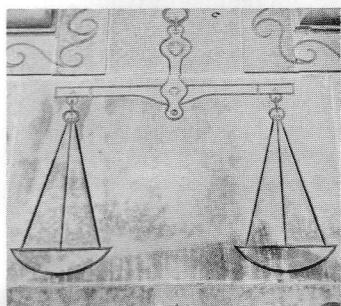


the Test Tube

THE CHEMISTRY DEPARTMENT NEWSLETTER 1984
Texas Tech University Lubbock, Texas

Editor: Henry J. Shine

Editorial Assistant: Jane Bradley



To Our Readers:

As you read through this fifth edition of our departmental newsletter, I'm certain you'll agree that for us, 1983 was an exciting year. I hope that the past year was also a good one for you.

In August, three new faculty members joined the department: Dan Armstrong, Russ Larsen, and Bob Walkup. Each of these new members has already made important contributions to our teaching and research programs.

Searches are currently in progress for faculty additions to the Biochemistry and Physical Chemistry Divisions. The former will have research expertise in molecular biology and the latter in picosecond spectroscopy and the dynamics of extremely rapid reactions. These openings are created by the retirement of "Mac" McPherson and the coming retirement of Barney Guerrant during the current academic year. The efforts of this dynamic duo in the general chemistry program will be difficult to replace.

In other faculty news, departmental members received two of the nine Texas Tech University development leaves for 1983-84. David Knaff spent the fall semester in the Biophysics Department of the University of Leiden in The Netherlands, while Dick Redington is spending his leave at the NSF Center for Laser Spectroscopy of MIT.

New bachelor's degree programs for the Department of Chemistry have been submitted for approval. Beginning in the fall of 1985, we hope to offer both the Bachelor of Science and Bachelor of Arts Degrees in Biochemistry. Strong student interest in biochemistry and molecular biology led to the proposed new curricula.

In the area of scientific instrumentation for instruction and research, we made important progress. A Hewlett Packard 5995 GC/MS has been purchased and is in operation. Donations of gas chromatography instrumentation from Varian Instruments and Hewlett Packard are gratefully acknowledged.

Although problems will always remain, I'm very optimistic for the continued development of both the undergraduate and graduate programs in the Department of Chemistry.

Richard A. Bartsch

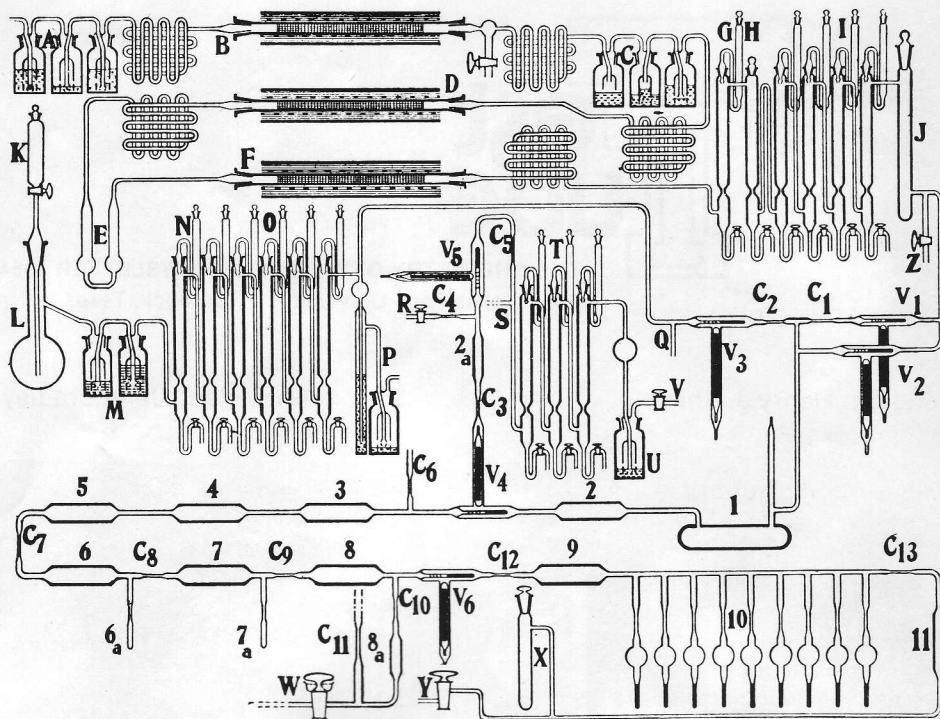
Richard Bartsch
Chairman, Department of Chemistry.

Prof. William Moore Craig

This issue of our Newsletter is dedicated to Prof. W. M. Craig who died on May 24, 1983, in a nursing home in Hereford. It is a natural, if sad, phenomenon that those of us who struggle in the present tend to lose sight of those who struggled in the past, and on whose shoulders we stand. W. M. Craig came to Texas Technological College in 1926 when virtually little existed in the way of higher education but the spirit to build. He remained with the department for 32 years, retiring in 1958 as professor emeritus. He kept in touch with the department and was a familiar figure on the campus for many years thereafter.

We bring Prof. Craig back into our memories first by featuring on our cover an oft-unnoticed part of our old, original building. The symbols of the periodic table and of the alchemical past were cut into the face of that building from Craig's designs. The building was constructed during Craig's early years on the faculty, in a time when chemistry was taught, like all other subjects, in what is now called the Administration building. Chemistry was in its basement. Of lesser-known history, the same symbols were cut first into the facade of another chemistry building, also constructed during Craig's tenure on the faculty, namely that of the then Rice Institute, now Rice University. The same architect designed both buildings, and Craig, teaching at Rice during 1922-1925, was the consultant for the facade's decoration. His interest in alchemical symbols was developed while a student at Harvard, doing research in atomic-weight determinations.

W. M. Craig was born in the small community of West (near Waco) in McClennan County, Tx. At the age of eight his family moved to Georgetown, the home of a, then, leading school in the state, Southwestern University, from which Craig obtained the B.A. (1906) and M.A. (1907). He was at that time the youngest person to graduate from Southwestern. After graduation Craig taught at Hendrix College (Ark.) for one year and in the Wichita Falls and Waco high schools for six years. In 1914, wishing to up-date his knowledge of chemistry he entered UT (Austin) and obtained an M.S. degree in 1916. He remained as a tutor at UT until the fall of 1917, enlisted in the US army in the summer, 1918, and served in a newly-founded OTC chemical warfare group until the spring, 1919. The few years at UT were to prove decisive in Craig's and TTU's life. Among the group of MS students with Craig at UT were William T. Read and William L. Ray, who were to become the first head and full professor, respectively, of chemistry in the infant Texas Technological College. Craig was brought to TTC in 1926 by Read.



DESIGNED, BLOWN, MANIPULATED AND DRAWN BY PROF. WILLIAM M. CRAIG
TEXAS TECH UNIVERSITY

FROM: THE ATOMIC WEIGHT OF GALLIUM

T. W. RICHARDS AND W. M. CRAIG, *J. Am. Chem. Soc.*, 45, 1155 (1923)

Reproduction of figure from the 1923 JACS paper. The photograph and lettering used for this cut were made by Prof. M. Kasha, Florida State University, in 1970 and presented by him to Prof. Craig.

Craig entered Harvard in 1919 and began research with T. W. Richards on the atomic weight of gallium, the work which, in part, was to bring Richards the Nobel Prize for atomic weight determinations. Gallium, a little-known element was obtained from the residues of lead remaining from the distillation of zinc ore near Bartlesville, Okla. The definitive paper on The Atomic Weight of Gallium by Richards and Craig [*JACS* 45, 1155-1167 (1923)], describes Craig's work-up of 60 Kg of lead to obtain 60 g of gallium. The paper says "during the electrolysis (of crude gallium salts) traces of arsine were evolved and much of the arsenic remaining in the preparation was eliminated in this disagreeable and unwholesome fashion." It was this disagreeable fashion which kept Craig in and out of hospital for one year with arsenic poisoning during his graduate work. Craig obtained the Ph.D. degree in 1927 after returning to Harvard during 1925-1926 and after his studies were interrupted by illness and by his teaching, first at Rice and next at TTC. We reproduce here the drawing of Craig's gallium-purification line, all of which was built from his own glassblowing. Research did not come easily, apparently,

even at Harvard in those years. Nor, in fact, was it always funded, for Craig journeyed to Bartlesville to buy lead residues for his work out of his own pocket.

If research was difficult at Harvard how difficult was it then on the South Plains? Dr. Joe Dennis has described how Craig was devoted to research as a personal pursuit, paying for it again from his own funds. Research was carried out in addition to heavy teaching loads in analytical, general, and physical chemistry, both on the graduate and undergraduate level. Craig's principal interest was in emission spectrography. Among his M.S. degree students were John R. Bradford (1948), long-time Dean of Engineering and now V.P. for Development at TTU; George W. Drake (1932), later, Professor of Chemistry, University of Houston; Howard H. Hurmence (1938); Clarence E. Rannefield (1940); Rector P. Roberts (1935); and John W. Sheehan (1940).

It was Prof. Craig's practice to make a photograph of each of his classes. Many of these photographs are now on file in the archives of TTU's Southwest Collection. Some of the photographs hang, still, in the second-floor hallway of

our old building. It is opportune to reproduce from one of these the photograph of C. M. McPherson in this issue.

Craig has been described as a precise person who fostered and required precision in and from his students. He was a staunch and loyal friend, impatient of slack behavior and intolerant of dishonesty. Outside of his professional life he was, as a young man, a pole-vaulter of considerable skill. He loved to sing and was regularly a member of his church choir.

Prof. Craig retired from TTC in 1958, four years after he interviewed in NYC and attracted to Texas Tech your hon. ed., who having accepted the job, had to go to the NYC 42nd Street Library to find out the location of Lubbock. All of us owe to him (and his early co-workers) the unrepayable debt for planting the seeds of our department. To Joe Dennis we leave the summing up: "In no small measure W. M. Craig was responsible for keeping the flame of research alive at Texas Tech in those days when it faced tremendous odds and was often flickering at best."

Prof. and Mrs. (Elizabeth) Craig built a home on 18th St. in 1929, where Mrs. Craig lives still, a continuing member of our departmental family.

Faculty News

Dr. Joe A. Adamcik has been elected to another 3-year term on the Board of Directors of the American Chemical Society. Dr. Adamcik serves as Chairman of the Board Committee on Professional and Member Relations, and as a member of the Society Committee on Chemical Abstracts Service. Board duties took him to Washington, D.C., in September and December, 1983. In December he was elected to the Executive Committee of the Board. Dr. Adamcik is also hard at work devising computer assisted instruction for his classes.

Dr. John A. Anderson presented a paper "Conversion of Elymoclavine to Paspalic Acid by a Particulate Fraction from an Ergotamine-producing Strain of *Claviceps sp.*" at the FABS meeting, San Francisco, June, 1983.

Dr. Daniel W. Armstrong presented papers on his research at the Pittsburgh Conference on Analytical Chemistry, Atlantic City, N.J. (March 1983), the National ACS meeting, Seattle, Wash. (March 1983), the Eastern Analytical Symposium, New York, N.Y. (Nov., 1983), and the USA/Brazil Symposium on Micelles, Vesicles, and Microemulsions, Campinas, Brazil (August, 1983). In 1983 he gave seminars also at Boston, Rutgers, Virginia Commonwealth, and East Texas State Universities, and the Food and Drug Administration, Washington, D.C. Dr. Armstrong has also been involved in



Dr. Robert D. Feltham (facing camera) and Dean Lawrence Graves (now retired) at the reception for Dr. Feltham, March 7, 1983.

network promotions of science. He appeared in a 30-minute TV movie for the ACS "Chemistry, the Endless Frontier", which was released in October 1983. The ACS radio show "The Chemistry of Clean Clothes" featuring Dr. Armstrong was released nationwide on a regular series called "Dimensions in Science". Apart from these activities and his teaching and research supervision Dr. Armstrong kept himself occupied by consulting for Whatman Corp., N.J., Advanced Separation Technologies, N.J., and The Brunswick Corporation, Defense Division, Marian, VA. From these industrial companies he has received unrestricted funding (\$3000) for research in chromatography.

Dr. Richard A. Bartsch presented a paper "Solvent Extraction of Metal Ions by Ionizable Crown Ethers" at the 1983 International Solvent Extraction Conference, Denver, Colo. (August). He presented also an invited plenary lecture "Complexation of Alkali Metal and Alkaline-Earth Cations by Lipophilic Ionizable Polyethers" at the 7th Symposium on Macrocyclic Compounds, Provo, Utah (August, 1983).

Dr. "Sandy" Dasgupta has recently demonstrated the superior mass-transfer efficiency of annular flow systems, especially when the flow is helical. This is regarded as of fundamental importance by colleagues in the field. The application of this concept toward a continuously generated ion-exchanger, comprised of an annular helix made from an ion exchanger membrane tube will be published in *Analytical Chemistry* in 1984.

Dr. Robert A. Holwerda presented a paper "Spectroscopic, Electrochemical, and Reactivity Studies of Type 2 Copper-Depleted Laccase" at the National ACS Meeting, Washington, D.C., September, 1983. Dr. Holwerda and graduate student, Randy Johnson, have recently completed the interfacing of their stopped-flow and Lambda-5 UV-VIS spectrometers with Apple II Computers.

Dr. John L. Kice has completed his 3-year term on the Executive Committee and Governing Board of the Council for Chemical Research. In January-February, 1983, Dr. and Mrs. Kice spent three weeks in Japan, where Dr. Kice was a Fellow of the Japan Society for the Promotion of Science. In Japan he gave a plenary lecture at 11th Symposium on Organic Sulfur and Phosphorus Chemistry, Tsukuba. He gave seminars also at Osaka City, Kyoto, Tsukuba, Hokkaido, Tokyo Metropolitan, Tokyo, and Keio Universities, and the Gifu College of Pharmacy. A self-trained computer programmer, Dr. Kice is also assisting lesser mortals (namely, your hon. ed.) in interfacing our new mass spectrometer for high-speed disc drive data handling capability.

Dr. David Knaff spent part of the summer and all of the fall semester in Holland as a Visiting Professor of Biophysics at the State University of Leiden. Dr. Knaff was on sabbatical leave, called here development leave, from TTU. While on leave Dr. Knaff presented papers at the 6th International Photosynthesis Congress in Brussels (August 1), and at the annual Dutch Bioenergetics Meeting in Lunteren (November 17). He gave research seminars in Holland (Leiden, Groningen, and Wageningen), Germany (Marburg, Konstanz, and Bochum), Switzerland (Zürich and Neuchâtel), Italy (Bologna), and France (Paris), all of which represent a mighty interesting lot of development.

Dr. Richard L. Redington was also awarded a developmental leave and spent it doing research with Prof. Robert Field at MIT. There, Dr. Redington studied laser spectroscopy of high-energy vibration-rotation transitions in the ground



Mr. Michael Campbell, Banquet awards, April 28, 1983.

electronic state of molecules, using the stimulated emission pumping (SEP) method. The method is based on the use of two tunable die lasers.

Dr. Robert W. Shaw has been elected to associate membership in the American Society of Biological Chemists.

Dr. Henry J. Shine and Mrs. Shine were in Poland and England (where else?) during September, 1983. In Poland Shine visited the Technical University, Wroclaw, and the University of Katowice, from which came the large proportion of Polish post-doctoral fellows in our department. In England Shine attended the 3rd European Symposium on Organic Chemistry (ESOC-III) held in the University of Canterbury, and presented a paper on "Electron Transfer Reactions between Azoalkanes and Thianthrene Cation Radical." Dr. Shine was elected to membership in the Faculty Senate, the wisdom of which (his election, not the Senate) he sometimes questions. Shine was also appointed to membership on the College of Arts and Sciences Research Council.

Dr. Pill Soon Song has been reappointed for his fourth term (1984-87) as editor-in-chief of *Photochemistry and Photobiology*. He was an invited speaker at the International Conference on Photochemistry and Photobiology, Alexandria, Egypt, in January, 1983, and at the International Symposium on Blue Light Effects, Marburg, Germany in July, 1983. During 1983 he also gave seminars on phytochrome at Johns Hopkins University and four "Chevron Lectures" on photochemistry at the University of Nevada.

Dr. Wayne Smith left the department at the end of the summer, 1983, and is now on the research staff at Los Alamos National Lab.



Dr. Roy E. Mitchell, Banquet speaker, April 28, 1983.

Energy-Conservation Renovations

The extensive renovations (one megabuck plus) described in Newsletter 4 are just about complete. Some bugs are yet to be worked out, such as the need to wear sweaters and scarves (no gloves) in the building when outside temperatures plummeted just before Christmas. Come to think of it, that was energy conservation. If we do not report on the renovations in Newsletter 6 you may regard that as (a) a sign of a delicate situation, (b) the banishment of hon. ed. or, maybe (c) that all is well. With bated, if frigid, breath we wait to see.

News of Faculty Emeritus

The two "senior" members of emeritus professors continue in their wonderfully productive habit. Welch Professor emeritus Charles Shoppee works at the bench in his lab at LaTrobe University, Melbourne, Australia where, taking up the challenge of a problem begun many years ago he has finally synthesized the lactone of gamma-hydroxyperbromofumaric acid, and shown that it is also formed by photochemical oxidation of tetrabromofuran. By the time this newsletter reaches its lucky public Professor Shoppee's 80th birthday (February 24, 1984) will have arrived. We tip our hats in fond salute. Shoppee has not retired completely to the laboratory, though. In the early Fall 1983 he took off for mainland China and has written of his gustatory experiences therein, during a three-week tour.

From closer to home in Albuquerque Prof. Morris Stubbs writes of his giving his 88th talk on science and energy since his retirement. But, the retirement he means is from the University of Albuquerque to which he went after retiring from TTU to which he came after retiring from the School of Mines of Socorro. Vivat Morris! Vivat Charles!

Here, at home, Professors Joe Dennis and Margret Stuart rejoin the departmental family occasionally, most recently at the farewell bash for Mac McPherson.

Mass Spectrometer (At Last)

We are happy to report that after long and painful years of gestation the department was delivered of a new mass spectrometer in December, 1983. Funds approximating \$100,000 were provided by TTU for the purchase of a Hewlett-Packard quadrupole instrument, model 5995B, with an HP computer upgraded by a Winchester hard-disc drive. The department expresses its gratitude to Dean William Conroy, Vice President for Research J. Knox Jones, and Academic Vice President John R. Darling for this handsome financial backing. The HP 5995B is a routine mass spectrometer but is capable of GC/MS, Chemical Ionization (CI/MS), Selected Ion Monitoring (SIM) and Direct Insertion Probe Mass Spectrometry (DIP/EI). The new instrument brings much relief to the strain on the department. Yet, it is only a beginning, and does not bear comparison with facilities available in our sister institutions in Texas. In that regard we have many a long mile yet to go.

Welch Foundation News

Two Welch Foundation lectures were given in 1983. On March 7, Prof. Robert D. Feltham, University of Arizona (see cut) spoke on "Structure, Bonding, Reactivity Relationships in Metal Nitrosyl Complexes". On October 20, Prof. Colin Eaborn, University of Sussex, England spoke on "Novel Organosilicon Compounds and Reactions."

Scholarships and Awards to Undergraduate Students, 1983

The Samuel Hunt Lee Memorial Award (to an outstanding freshman chemistry major), Victor Akin.

The CRC Press, Inc. 35th Annual Freshman Chemistry Achievement Award, (to an outstanding student in freshman chemistry), Robert Colla.

American Chemical Society Student Affiliate Scholarship (to an outstanding sophomore chemistry student), Stephen Hall.

The *Analytical Chemistry* Award (to the best junior chemistry major in analytical chemistry), Tracey Price.

The Texas Institute of the American Institute of Chemists, Student Award (for outstanding accomplishment in a baccalaureate program in chemistry or chemical engineering, and potential as a professional chemist), Stephen Stults.

The *Merck Index* Award (for outstanding achievement by a graduating senior), Lyndra Bills.

The Weymouth-Campbell Scholarships: for superior performance (as a freshman chemistry major), Victor Akin, Jerry McLaughlin, Jonathan Metzler (as a sophomore chemistry major), Quinn Bligh, Stephen Hall, Susan Jack (as a junior chemistry major), Gene McDonald, Karen Mikkelson.

Teaching Assistant Awards to Graduate Students

Texas Tech University Outstanding Graduate Student Teacher Award: Jesse Yeh.

Department of Chemistry Award for Superior Performance as a Teaching Assistant:

David Babb
Clinton Anderson

Scholarship Awards to Graduate Students

The Weymouth-Campbell Scholarships:
James Smith



David Babb and Clinton Anderson receive outstanding TA awards from Dr. Bartsch, April 28, 1983.



Scholarship and Prize Awardees, April 28, 1983. Front: Lyndra Bills, Stephen Stults, Jesse Yeh; Middle: Stephen Hally, David Babb, Clinton Anderson; Top: Victor Akin, Robert Golla.



Weymouth-Campbell Scholars 1983-1984 with Mike Campbell. L to R: Karen Mikkelson, Jerry McLaughlin, Victor Aikin, Stephen Hall, Susan Jack, Quinn Bligh, and Gene McDonald.



Weymouth-Campbell scholars 1982-1983 with Mike Campbell. L to R: Stephen Stults, David Womack, Lyndra Bills, Floyd Barry and Ricky Matos.

Chemistry Department/American Chemical Society Annual Awards Banquet

The Department and the South Plains Section of the ACS joined in their annual banquet, April 28, 1983. The banquet speaker, Dr. Roy E. Mitchell (see cut) regaled the crowd with a description of his research in wine making in collaboration with the experimental vineyards of the University of Texas which are now dotting the oil lands of the Permian Basin. UT is planning for the day when oil runs dry, it seems.

The banquet served for awards of prizes and scholarships and also to introduce the faculty and students to Mr. Michael Campbell, who came to Lubbock to award the year's Weymouth-Campbell scholarships.

Graduate Degrees 1983

John D. Clemmer, III, M.S. (Dr. Holwerda).

Alan P. Croft, Ph.D. (Dr. Bartsch), "A Mechanistic Study of Complex Base-Promoted 1,2-Elimination Reactions."

Ronald H. Erickson, Ph.D. (Dr. Marx), "Approaches to the Synthesis of Gnididone."

Tae-Ryong Hahn, Ph.D. (Dr. Song), "Molecular Differences Between the Physiologically Active (Pfr) and Inactive (Pr) Forms of Phytochrome."

Gwi-Suk Heo, Ph.D. (Dr. Bartsch), "Synthesis of Functionalized Crown Ethers and Cation Complexation by Crown Ethers."

Hoon Hwang, M.S. (Dr. Dasgupta), "Microdetermination of Sulfate in Environmental Samples."

San Ihn Kang, Ph.D. (Dr. Bartsch), "Ionizable Crown Ethers for the Separation of Alkali and Alkaline Earth Cations. Synthesis and Applications."

Young Hee Kim Kang, M.S. (Dr. Kice), "Studies of the Chemistry of Selenosulfonates."

Il-Kyun Kim, M.S. (Dr. Song), "Further Characterization of Photosensory Transduction in *Stentor coeruleus*."

Sou-Un Kim, Ph.D. (Dr. Anderson), "In vivo Metabolism of Agroclavine and Elymoclavine in *Claviceps Sp.*"

Yung Liu, Ph.D. (Dr. Bartsch), "Synthesis and Applications of Functionalized Crown Ethers."

Thomas H. Lyster, M.S. (Dec. 1982) (Dr. Smith), "The Electrochemical Synthesis of Organometallic Nickel Compounds with Chemical Applications."

Koon Ha Park, Ph.D. (Dr. Shine), "Heavy-atom Kinetic-Isotope Effects in Solving Mechanisms of Benzidine Rearrangements. Hydrazobenzene and 2,2'-Dimethoxyhydrazobenzene."

Hermanta K. Sarkar, Ph.D. (Dr. Song), "Hydrodynamic Properties and Molecular Topography of Phytochrome."

Richard M. Wynn, M.S. (Dr. Knaff), "Biochemical Modification and Reactivity Studies of the Metalloenzyme Laccase."

Undergraduate Degrees 1983

Robert H. Behal, B.A.

Lyndra J. Bills, B.S.

Caroll A. Burke, B.A.

Lisa L. Burns, B.S.

Robert D. Chance, B.A.

Eric J. Coll, B.A.

Robin L. Cooper, B.S.

Steven S. Gates, B.A.

Lee Anne Haltom, B.A.

Michael P. Hannusch, B.A.

Jose R. Matos, B.S.

Marita A. Mercurio, B.S.

David M. Morris, B.A.

James L. Myers, B.S.

Jon L. Pearce, B.A.

Sheryl A. Presnal, B.A.

David C. Riojas, B.A.

James F. Ryder, B.A.

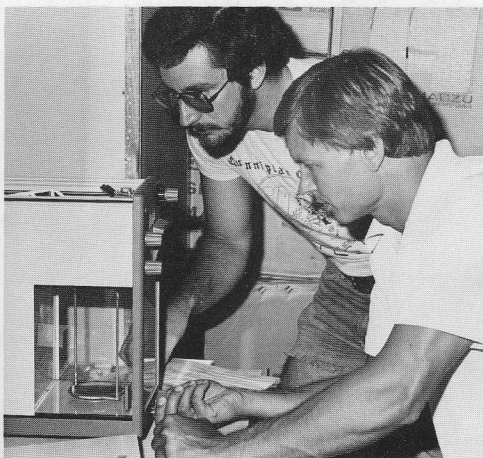
Leonard B. Somnitz, B.A.

Stephen D. Stults, B.S.

Rob M. Tschauer, B.S.

David S. Womack, B.S.

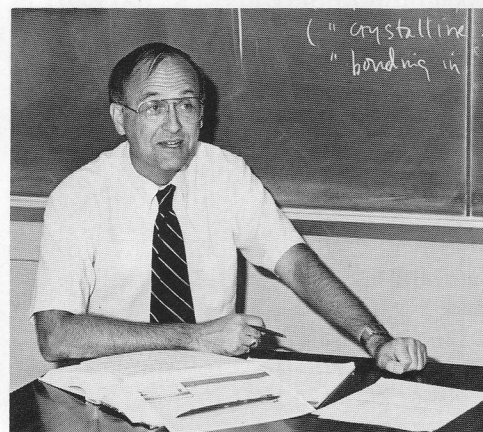
More on New Faculty



Dr. Daniel W. Armstrong, analytical chemistry, works the balance while grad student, Larry Spino, watches.



Dr. Robert D. Walkup, organic chemistry.



Dr. Russell D. Larsen, coordinator of general chemistry.

In our last Newsletter we reported that three new appointments had been made to our faculty. Drs. Dan Armstrong, Russell Larsen, and Robert Walkup joined us in the Fall, 1983. We can now show you their pleasant physiognomies and tell you a little more about them.

Dan Armstrong was born in Fort Wayne, Indiana in 1949. He received the B.S. degree in Interdepartmental Science and Math from Washington and Lee University in 1972, the M.S. in Chemical Oceanography, 1974, and Ph.D. in Chemistry, 1977, from Texas A&M. He stayed at TAMU for postdoctoral research until September 1978, and then held assistant professorships at Bowdoin (1978-79) and Georgetown Universities (1980-83), when he joined our department as Associate Professor of Analytical Chemistry. His research interests are in chromatographic separations, phase transfer catalysis, surfactants, and pseudophase liquid chromatography. Dan has about 40 publications in these fields and has given over 50 lectures and seminars on these topics in universities and industrial laboratories in the USA and abroad. Dan and Linda Armstrong have two sons, Lincoln Thomas (8) and Ross Alexander (6).

Bob Walkup was born in Asheville, N.C. in 1952. He received the B.S. degree with honors in chemistry from the University of Delaware in 1974, and the Ph.D. from Stanford in 1981. After a postdoctoral fellowship with Al Meyers at Colorado State University (1981-83) he joined our department as an assistant professor in organic chemistry. Bob's research interests are in synthetic methodology and total syntheses in organic chemistry and also in biochemical adaptations of marine organisms. During the summer, 1980, he was a visiting instructor in the latter subject at the UT Marine Laboratory, Port Aransas, TX. Bob and Deborah Walkup have two sons: Carlos Keating (3) and Joshua Lamb (1).

Russell Larsen was born in Muskegon, Michigan in 1936. He received the B.A. degree from Kalamazoo College in 1956, and the Ph.D. from Kent State University in 1964. Russell was a postdoctoral fellow at Princeton (1964-65) and Rice University (1965-66). He held assistantship professorships at Illinois Institute of Technology (1966-72) and TAMU (1972-76), associate professorships at the University of Nevada, Dartmouth College, and the University of Michigan until the Fall, 1983, when he joined TTU as the Coordinator of General Chemistry. His research interests are in signal processing and data analysis, Walsh functions, spline presentations, maximum-entropy analysis, and chemometrics, and, of course, chemical education. He has published 24 papers in these fields. Russell has also consuming interests in airships and is a member of the Sons of the Desert, an association devoted to memorabilia of the old-time movie greats, Laurel and Hardy. Russell would like to establish a chapter (called a "tent") of Sons of the Desert in Lubbock. Count me in Russ. He and Juanita Larsen have two children: Erik (18) and Susan (14).

News of Alums

Clinton Anderson (M.S. '83) has accepted a position with Safeway Corp.

Dr. Dong Hak Bae (Ph.D. '82) returned to Texas Tech in January 1983 for post-doctoral research with Dr. Shine. During 1982 Dr. Bae was a post-doctoral fellow with Dr. E. C. Ashby at Georgia Tech. At TTU Bae is doing research in electron-transfer reactions and assisting in the supervision of graduate students in the group. The Baes returned to Lubbock just in time to bring another Texas resident into the world: Marianne Bae, to keep brother Leon company.

Capt. Richard G. Carmichael (M.S. '76) has returned from overseas assignment in Wiesbaden, Germany, and is now at Fitzsimmons Army Medical Center, Department of Pathology, Aurora, Colo.

Dr. Michael M. Chau (post doc with Dr. Kice '76-'77) has been named Research Associate at the Pittsburgh Plate Glass Coatings and Resin Division, Allison Park, PA. Dr. Chau joined PPG in 1977. His contributions in their pioneer polymer research department, particularly in the area of waterborne polyurethane technology, have led to the promotion to his new position. Congratulations Mike!

Dr. Alan P. Croft (Ph.D. '83) is employed by Dow Chemical Co., Freeport, TX.

Dr. Tae Ryong Hahn (Ph.D. '83) is now a post-doctoral fellow at Yale University.

Roseanne Woo Haltresht (B.S. '77) is continuing to do market research with Diamond Shamrock, but in a joint venture with a Swiss firm, created in some reorganization in Diamond Shamrock. Roseanne's work now emphasizes acquisition analyses rather than R and D programs. In the evenings she is a graduate student at Case Western Reserve studying operations research, preparing her for strategic planning. The corporate world has thus taken Roseanne a long way from basic chemistry, but that's not an uncommon experience nowadays. Husband Micahel Haltresht is a database administrator for a Cleveland, OH., consulting firm.



Thanksgiving luncheon, November 21. Graduate students Andrea Cobb (biochemistry) and Maria Garcia (inorganic).



Thanksgiving luncheon. Former editorial assistant Sharon Grant, now secretary to attorneys Bass and Hobbs, Lubbock, joined us for lunch.

Dr. and Mrs. Bartsch and Dr. Dan Armstrong, at the Thanksgiving luncheon.

Dr. William R. Heineman (B.S. '64; Ph.D., U. N. Carolina '68) returned to the department on December 7 to visit and give a seminar on his research. Bill is Professor of Chemistry at the University of Cincinnati. His father, professor of mathematics emeritus of TTU, and mother still make their home in Lubbock.

Dr. Gwi Suk Heo (Ph.D. '83) is a post-doctoral fellow with Prof. J. Keana, University of Oregon.

John R. "Bobby" Hudgins (B.A. '78) is a senior medical student at UT Galveston with graduation set for May, 1984. During 1978-80 he worked as an environmental chemist for the Texas Department of Water Resources in Austin.

Dr. Sang Ihn Kang (Ph.D. '83) remains at TTU for post-doctoral research with Prof. Kice.

Dr. Il-Hyun Kim (M.S. '83) is an assistant professor at the Korea Military Academy, Seoul, Korea.

Dr. Soo-Un Kim (Ph.D. '83) is now a postdoctoral fellow with H. G. Floss in the Chemistry Department, Ohio State University.

Cathy Wilhite Lester (B.S. '69; M.S. TAMU '74 in horticulture) is a Technician II (part-time) in the Big Spring, TX, field station, working in wind erosion. After leaving TTU and before entering TAMU Cathy worked for Cosden Oil and Chemical Co. in Big Spring. The TAMU experience led to work as a grower-propagator of foliage plants and woody ornamentals. Cathy married in 1976 and is settled in Big Spring.

Dr. Yung Liu (Ph.D. '83) is working with the Water Resources Center at TTU as a research chemist.

Harvey Mallory, III, (B.S. '60, M.S. '61) came back to Texas from Delaware briefly in 1983 to help son, Harvey IV, enroll in UT Austin, where he has been awarded an Engineering Foundations Scholarship for studies in Aerospace Engineering. Harvey III,

is with the industrial fibers division of duPont doing technical marketing with their Kevlar aramid fiber. This work gives ample opportunity for travel, but so far the market in Lubbock for Kevlar hasn't brought HM III, our way. Don't wait until we who-where-here-when are retired before dropping in to see us.

Christopher R. Mann (B.A. '82) is now in his second year at the Texas College of Osteopathic Medicine, Fort Worth.

Dr. Koon-Ha Park (Ph.D. '83) is a postdoctoral fellow with Dr. Marye Anne Fox at UT Austin.

Dr. Alan R. Puls (B.A. '76) finished his internal medicine residency in Oklahoma City in June 1983, and began a cardiology residency in July, 1983.

Dr. Hemanta K. Sarkar (Ph.D. '83) is a post-doctoral fellow at the Roche Institute of Molecular Biology, Nutley, N.J.

Dr. K. Jane Scott (B.S. '77) has established medical general practice in Denver City, Texas.

Dr. Juanita "Nita" Silber (Ph.D. '72) has written from the Universidad Nacional de Rio Cuarto, where she is Professor and Chair of the Chemistry Department. Nita is very active in teaching and research, the latter covering organoelectrochemistry of amines in non-aqueous solvents, and complexes between amines and aromatic acceptors. We, at Texas Tech, remember the two somewhat overwhelmed and bewildered Silbers, Nita and Ernesto, who arrived in Lubbock in the Fall, 1967, and went on each to earn the doctorate. Ernesto Silber died in the period of political turmoil in Argentina. Nita is now married to a colleague, an electrochemist. Nita asked for news of former co-workers Charles Ristagno, Carole Schoening, Richard Goodin, and Charles Baldwin. Write to her at F. Q. Porreca No. 320, Rio Cuarto, Argentina.

Dr. James E. Watson, Jr., (B.A. '29) is a general surgeon with offices in the Hermann Professional Bldg., Houston, TX.

Dr. B. W. Williams (B.A. Chem '50; M.D., UT-Galveston '56) writes from Las Cruces, N.M. that daughter Karen is a medical student at TTUSM.

From Bishop, Tx., comes news of two exes. Leanne Mayerle Harvey (B.S. '75) writes of returning to her position as Group Leader over the Special Problems Section at Celanese Chemical. Leanne and husband Mike brought a new Texan into the world on August 2, 1983, Jennifer Denise. Leanne's return to work followed her maternity and vacation leave. News also of John Clemmer at Celanese, who will soon transfer to the vinyl acetate unit as a process support chemist after a three-year stint in the butanol and propanol units. John and Grace have two children, Mary (4) and Rebekah (3).

Research Grant News. Grants Awarded for 1984.

Dr. Robert Holwerda
"Reactivity Studies of Transition metal Ions," Welch Foundation, 6/84-5/87, \$60,000.

Dr. David Knaff
"Electron-Transfer Mechanisms of metallo-Proteins," Welch Foundation, 6/84-5/87, \$60,000.

Dr. John Marx
"Synthetic Routes to Sesquiterpenes," Welch Foundation, 6/84-5/87, \$60,000.

Dr. Henry Shine
"Radical and Cation Radical Reactions at Nitrogen Centers," Welch Foundation, 6/84-5/87, \$81,000.

"Energetics, Transition States, and Mechanisms of Aromatic Rearrangements and Cation Radical Reactions," NSF, 1/84-12/86, \$357,000.

"Energy Surfaces and Heavy-Atom Kinetic Isotope Effects in Photochemical Reactions," PRF, 4/84-8/86, \$35,000.

"Matching Funds," CER/TTU, \$20,000.

Dr. Pill-Soon Song
"Excited States and Photochemistry of Photobiological Molecules," Welch Foundation, 6/84-5/87, \$63,000.

Dr. Robert Walkup
"Synthetic Studies Directed Toward (+)Osillatoxin-A and Related Natural Products," Welch Foundation, 6/84-5/87, \$60,000.

Research Grant News. Grants Active in 1983

Dr. John Anderson
"Biosynthesis of Fungal Pigments," Welch Foundation, 6/83-5/85, \$35,000.

Dr. Dan Armstrong
"Use of Functionalized Surfactants in Flame and Luminescence Analysis," DOE 11/83-12/86, \$65,000.
"Pseudophase Liquid Chromatography," NSF 8/83-6/84, \$25,416.

"Research in Analytical Chemistry," Whatman Chemical, 8/83-8/84, \$2,000.

Dr. Richard Bartsch
"Synthetic Macrocyclic Multidentate Compounds," Welch Foundation, 6/83-5/84, \$17,000.

"Complexing Agents for Metal Ions," Serpentix Conveyor Corp., 9/83-8/84, \$20,000.

"Ion-Selective Compounds," Miles Laboratories, 6/83-5/84, \$15,750.

"Crown Ethers for Determination of Sodium and Potassium in Blood," Technicon Instruments Corp., 4/83-5/84, \$52,260.

"Complex Base Promoted 1,2-Elimination Reactions," PRF, 5/83-8/84, \$4,000.

"Minority High School Student Research Apprentice Program," NIH, 3/83-2/84, \$4,500.

"Ionic Crown Ethers," DOE, 4/83-12/84, \$138,500.

"Biomedical Research Support Grant," PHS, 4/83-3/84, \$19,209.

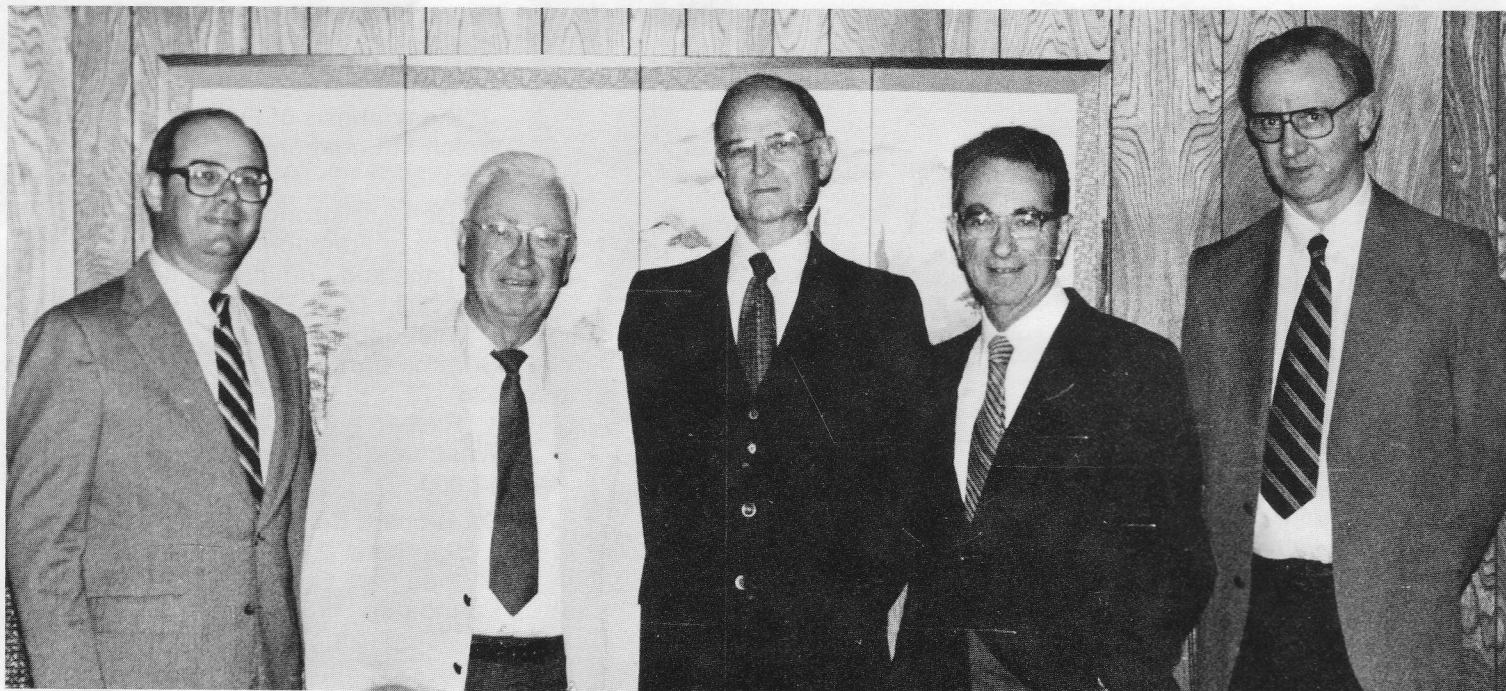
Dr. Walter Chesnavich
"Periodic Trajectories in Atom Diatom Exchange Reactions," Welch Foundation, 6/83-5/84, \$18,000.

Dr. Sandy Dasgupta
"Continuous Determination of Ambient Hydrogen Peroxide, Formaldehyde, and Sulfur (IV) in Gas-Phase and Cloud Water," US EPA, 10/83-9/85, \$90,103.

"Matching Funds," Center for Energy Research, TTU, \$20,000.

Dr. Robert Holwerda
"Reactivity Studies of Transition Metal Ions," Welch Foundation, 6/83-5/84, \$19,500.

"An Ethanol-Based Fuel Cell," CER/TTU, \$17,000.



"Mac" McPherson as he is now, and surrounded by the four departmental chairmen with whom he served: Richard Bartsch, Joe Dennis, Henry Shine, John Kice. Reception, December 10, 1983.

Dr. John Kice

"Mechanisms of Reactions of Organoselenium Compounds," NSF, 3/83-8/84, \$38,300.

"Mechanisms of Reaction of Organic Sulfur Compounds," Welch Foundation, 6/83-5/84, \$28,000.

Dr. David Knaff

"Electron Transfer Reactions of Copper-Containing Proteins," Welch Foundation, 6/83-5/84, \$18,000.

"Protein-Protein Complexes in Photosynthetic Electron Transfer Reactions," USDA, 9/83-8/85, \$80,000.

"Electron-Flow and Metabolite Uptake in Photosynthetic Organisms," NSF, 6/83-11/84, \$50,000.

Dr. John Marx

"Synthetic Routes to Sesquiterpenes," Welch Foundation, 6/83-5/84, \$17,500.

Dr. Jerry Mills

"Stereochemistry and Coordination Chemistry of Some Group Va Compounds," Welch Foundation 6/83-5/84, \$19,000.

Dr. Roy Mitchell

"Optimum Vinification," UT, 9/83-8/84, \$65,000.

Dr. Richard Redington

"Vibrational Analysis of Hydrogen-Bonded Molecules," Welch Foundation, 6/83-5/84, \$20,000.

Dr. Wilse Robinson

"Robert A. Welch Chair in Chemistry," 6/83-5/84, \$80,000.

"Subnanosecond Primary Events in Biology," NIH, 7/83-6/84, \$37,412.

"Chemical Reactions in Condensed Phase," NSF, 5/83-11/84, \$61,000.

Dr. Robert Shaw

"The Role of Metal Ions in the Mechanisms of Enzymatic Reactions," Welch Foundation, 6/83-5/84, \$15,000.

Dr. Henry Shine

"Studies of Radical and Cation Radical Intermediates in Organic Reactions," Welch Foundation, 6/83-5/84, \$27,000.

"Role of Cation Radicals in Organic Reactions," NSF, 3/83-1/84, \$71,300.

"Seed Grant," CER/TTU, \$10,000.

Dr. Wayne Smith

"Electrochemical Investigation of the Catalytic Properties of Palladium and Platinum Polypyridyl Complexes," Welch Foundation 6/83-5/84, \$14,000.

Dr. Pill-Soon Song

"Primary Molecular Processes of Photomorphogenic Receptor: Phytochrome," NSF, 6/83-11/84, \$50,000.

"Aneural Photosensory Transduction in *Stentor Coeruleus* NIH, 8/83-7/84, \$35,879.

"Excited States and Photochemistry of Photobiological Molecules," Welch Foundation, 6/83-5/84, \$21,000.

Dr. Richard Wilde

"Solid State Studies," Welch Foundation 6/83-5/84, \$20,000.

Au Revoir "Mac" Dr. C. M. McPherson Retires

A long, long association with the Department came to an end on December 17, 1983, with the end of the Fall semester. Or, should we say that a long, long association entered yet another phase? That very colorful character, Dr. C. M. McPherson, has retired from our faculty. A farewell party was held at the Bartsch's house in Mac's honor on December 10. Hundreds (thousands!) of freshman chemistry students have encountered the man we all know as "Mac," either in the laboratory or in the classroom. Hundreds of pre-nursing (a strange name, that) students have gone through his chemistry-for-nurses classes on their way to nursing school. All of them will remember the informality of the teacher who treated chemistry as if it were as informal as himself and delivered it to his students often in the vernacular of West Texas.

"Mac" can claim the longest association with the Department of any of the current faculty. He first entered the Department as a student in the Fall, 1938, to major as a chemical engineer. In those days, as many of you know, chemical engineering and chemistry were one department. Mac almost made it, but in the Fall, 1941, the long arm of Uncle Sam claimed him for service in World War II, and placed him in the U.S. Air Force. By September, 1942, our West Texas colleague was flying missions "over the Hump", taking supplies from bases in Assam, northeast India to the U.S. bases in Kunming and Luchow, China. The "Hump" was the Himalaya mountains. Mac, like so many modest people of those days rarely speaks about this period of service. A popular WWII History says: "Only men of special caliber could live up to the demands placed on them by the Hump." Mac was a navigator in the 24th Combat Mapping Unit, and soon after 1942 was flying over Burma, China and India, from bases in China and India, mapping future battle areas photographically.

When the war ended Mac returned to TTU in the Fall, 1946, and graduated in the Spring 1947, making up the semester he lost five years earlier. After running a small manufacturing company until the Fall, 1949, he joined the Slaton High School as an instructor in science, serving also as the bus driver for inservice training for the school teachers in Slaton. This brought the teachers to TTU, so during this time, also, Mac took summer courses in chemistry and education, and received the M.Ed. in 1953.

In 1956 Mac was invited to join our Department as an instructor, with the privilege of carrying out research in the efficacy of using visual aids in teaching freshman chemistry. This work gained him the Ed.D. degree in 1959. At the same time he was the supervisor of freshman chemistry labs, and prepared lecture demonstrations for use in the freshman courses. How many students remember the hydrogen canon and the thermite volcanoes? Thereafter Mac taught in the nurses chemistry and freshman chemistry programs, as mentioned earlier. He was made assistant professor in 1961 and associate professor in 1977.

During these years the training in photography Mac gained in WWII came to the aid of our department. Slides made by Mac have been used by Chemistry's faculty all over the world in symposia and meetings. We will miss that friendly service, and how. And that brings us to another side of McPherson. In 1969 Mac bought 10 acres of land south of Lubbock on Quirt Ave. His cohort, Prof. Reed of the Horticulture Department, bought five acres. Together they began growing grapes for wine, experimentally, importing vine stock from many parts of the USA. A winery, called, aptly, Llano Estacado Winery, was constructed in the Spring, 1976, in a limited partnership with outside financial backers. In the Fall, 1976, 1600 gallons of wine was produced from grapes grown in and around the Lubbock area. Wine production and the winery have grown ever since. In



"Mac" McPherson as he was then: Physical Chemistry 441, 1940. Photo by the late Prof. W. M. Craig.

1980 son Kim McPherson took over the management of the winery and, as Mac puts it, became the only enology college-trained wine maker in Texas. Llano Estacado wines are now becoming known, not only in Texas but, of all places, in California. Some of the winery's wines have taken gold medals in State competitions, particularly the 1980 Cabernet Sauvignon, of which sad-to-say none remains. Mac has his retirement plans centered on the vineyard and enology. He plans to uproot his vineyard and replant with cabernet sauvignon only. Apparently he knows a good thing when he sees it. The grapes won't be ready for stomping for several years, but when they are we hope Mac will remember us and invite us out for a grape-stomping fandango. Meanwhile, to Mac, we say thanks for the memories, and, as Chaucer said: "eu'aulle coome-y-backe."

Non-Profit Org.
U.S. Postage
PAID
Lubbock, Texas
Permit No. 719

Texas Tech University
Department of Chemistry
Lubbock, Texas 79409

We would be very pleased to hear from the Department's graduates. Send us your updated address and description of what your are now doing professionally or otherwise. If there is a particular inquiry you may have for news of the Department, let us have it please.

Name: _____

Date of Graduation (or Association with Department): _____

Address: _____

Current Position: _____

Item of news for us: _____

Inquiry of news from us: _____

Send Response to: Professor H. J. Shine, Editor
Dept. of Chemistry
Texas Tech University
Lubbock, Texas 79409

**Name-the-Newsletter
Competition**

The name of the Newsletter was chosen with inspiration and sentiment for our Double-T heritage. If you can think of a better one let us know, too, and win \$25. Send your replies to the Editor either "for" the current name or with suggestion(s) for a new one. All valid suggestions will be voted on by members of the department. The best suggestion for replacement will win \$25, whether or not the sentiment is "for" the "Test Tube." Results will be published in Newsletter 6.