

the Test Tube

THE CHEMISTRY DEPARTMENT NEWSLETTER 1985

Texas Tech University Lubbock, Texas

Editor: Henry J. Shine

Editorial Assistant: Jane Bradley

To Our Readers:

In many ways 1984 was a banner year for the Department of Chemistry. In this sixth edition of our departmental newsletter we would like to share with you the reasons for our excitement.

During the 1983-1984 fiscal year, departmental faculty were awarded more than \$1.4 million in research grants and contracts. This is an all-time high for the department and we are proud of our increasing competitiveness in the research funding arena. Support is being received from a variety of Federal agencies (EPA, NIH, NSF, Department of Energy, Department of Agriculture), private foundations, and institutes (Welch Foundation, Petroleum Research Fund, Electric Power Research Institute), and several industrial concerns.

In other faculty news, Ed Quitevis, an experimental physical chemist, joined us in August. His interests are in the dynamics of extremely rapid reactions in solution and at liquid-solid boundaries. We have recently concluded the search for a third member for the Analytical Chemistry Division and are very pleased that Willie Hinze will be joining us next fall. Art Draper will retire at the end of the summer, 1985. We will miss his contributions to the physical and general chemistry teaching programs.

On the instructional front, our proposed Bachelor of Science and Bachelor of Arts in Biochemistry degree programs have been approved. We will begin to offer these new degree programs in the fall of 1985. Student interest in these new programs has been very high.

Very shortly the Board of Regents will appoint the architect for renovation of the original portion of the Chemistry Building. Plans are to retain the exterior but to remodel the interior completely in a multi-million dollar project. It is anticipated that construction will begin in early 1986.

Within this next year Texas Tech University plans to launch a major capital campaign. Success of this campaign will reduce our almost total dependence upon State appropriations. Incidentally, current forecasts are for reductions from current budget levels for the next biennium. Thus it appears that we will need your support more than ever before.



Richard A. Bartsch

Richard Bartsch
Chairman, Department of Chemistry.

Faculty News

DR. JOE A. ADAMCIK continues his service to the American Chemical Society. During 1984 he has served as Chairman of the ACS Board Committee on Professional and Member Relations. He served also as a member of two other ACS committees: the Society Committee on Chemical Abstracts Service, and the Executive Committee of the Board. In the course of this service at the national level, Adamcik attended the ACS meetings in St. Louis (April) and Philadelphia (August) as a member of the ACS Board of Directors. In that capacity he also attended Board Meetings in Baltimore (June) and Washington, D.C. (November).

DR. JOHN A. ANDERSON attended the International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii (December), and presented a paper on "Cell-free Conversion of Emodin and Emodinanthrone to Chrysophanol." This meeting brought together scientists from countries bordering the Pacific Ocean, including Canada, USA, Mexico, Chile, Japan, Korea, China, Australia and New Zealand. It was pretty smart of them to choose Hawaii in December.

DR. DANIEL W. ARMSTRONG was a session chairman for the Symposium on "Advances in Chromatographic Detection and Separations" at the 23rd Eastern Analytical Symposium, New York (November), and also presented a paper on "Reverse Phase LC of Polymers" at the Symposium. He was also the Chairman of the Symposium on "Analysis of Polymers" at the 40th Southwest Regional ACS meeting held in Lubbock (December) and presented two papers at that meeting. Dr. Armstrong is an active speaker for the department, having given six other seminars at universities and industrial research laboratories during 1984. His expertise in analytical chromatography has been recognized by his being appointed to the editorial board of the *Journal of Liquid Chromatography*.

DR. RICHARD A. BARTSCH attended the DOE Membrane Technology Research and Development Workshop in Clemson, S.C., (October) and presented a paper on "Coupled Metal Ion Transport Across Bulk Liquid and Emulsion Membranes by Ionizable Crown Ethers." Dr. Bartsch was also the Program Chairman for the highly successful 40th Southwest Regional ACS Meeting in Lubbock and the organizer in that meeting of the three-day symposium on "Macrocyclic Ligands: Synthesis and Application," in which he presented a paper on "Alkali Metal Extraction and Transport by Ionizable Crown Ethers."

DR. WALTER CHESNAVICH and his research students presented four papers at the recent 40th Southwest Regional ACS Meeting in Lubbock.

DR. ROBERT A. HOLWERDA served as publicity organizer and as coordinator for all papers in the general sessions on inorganic chemistry for the 40th Southwest Regional ACS Meeting. At this meeting he and his research students also presented six papers.

DR. JOHN L. KICE has been appointed to a two-year term on the University-Industry Interaction Committee of the Council for Chemical Research. Taking time out from his busy administrative life Kice went to the International Symposium on Oxygen and Sulfur Radicals in Chemistry and Medicine, Fumo, Italy (August) to give an invitational plenary lecture on "Studies with Simple Model Systems of the Mechanisms of Reactions of Organoselenium and Organosulfur Compounds of Biological Importance."

DR. DAVID KNAFF returned in January 1984 from his six-month Faculty Development Leave at the University of Leiden (Netherlands). The wrench proved too great apparently, for he returned to Leiden in April for three weeks to complete some experimental work and, we hear tell, to see the tulips. While on the other side of the ocean Knaff also journeyed to the Biochemical Institute, Zürich University, to give a seminar on "Electron Transport Pathways in Purple Photosynthetic Bacteria" and to start a collaborative research program with members of the Institute, suggesting that the way is paved for further flights to Zürich. Knaff presented papers also at the Biophysical Society meeting in San Antonio (February), the Gordon Research Conference on Biochemical Aspects of Photosynthesis in New Hampshire (August), and at the 40th Southwest Regional ACS Meeting. He has been appointed to the NSF Plant Biology Study Section, to the USDA Photosynthesis Competitive Grants Panel, and, on the local scene, to the College of Arts and Science's Research Council and the University's Biotechnology Study Committee.

DR. ALBERT KOVELESKY, visiting assistant professor, presented a paper at the 40th Southwest Regional ACS Meeting on research carried out at Northeast Louisiana University.

DR. RUSSELL LARSEN has been appointed as a member of the ACS Study Task Force for the International Chemistry Olympiad. In this role he will be coaching local high school students as candidates for possible selection to the US team for the Olympiad, which will be held in Holland in the summer, 1985. Dr. Larsen is a Co-Feature Editor for "Chemical Principles Revisited" in the *Journal of Chemical Education*. In his work in chemical education Dr. Larsen was an invited

speaker at the National ACS meeting in St. Louis (April) on "Features Associated with Chemical Elements," and at the Eighth Biennial Conference on Chemical Education, Storrs, Conn. (August) at which he spoke on "On Textbook Cloning—the Role of Publisher-Sponsored Reviews in the Parturition Process." He was the organizer of the Symposium on Innovative Undergraduate Instruction at the 40th Southwest Regional ACS Meeting, at which he presented two papers, also.

DR. JERRY MILLS was the General Chairman of the 40th Southwest Regional ACS Meeting in Lubbock in December. At his doorstep were placed the thousand-and-one details for the overall organization of the meeting, and to him and his colleagues go the plaudits for the great success of the meeting. Dr. Mills has been chosen as Councilor-elect for the ACS South Plains Local Section.

DR. EDWARD QUITEVAS presented an invited paper at the International Conference on Lasers '84, San Francisco (November) on "Picosecond Modulation Spectroscopy and Photodynamics of Dye Molecules." At the 40th Southwest Regional ACS Meeting he chaired the session on Reaction Dynamics and Molecular Scattering, and presented a paper in the physical chemistry section. Ed gave a seminar on his research work at UT Dallas (December) and, at a completely different level, spoke on "Lasers in Chemistry" at the Saturday Seminar Series in our department (December 15). This series, known as S³, is a monthly meeting for area high school students and their teachers, organized by colleague Russ Larsen.

DR. ROBERT REKERS is heading up the Committee which will plan the renovation of the old chemistry building. The objective is to provide new classrooms and laboratories, special research laboratories and shops, completely re-wire and re-plumb the building and improve the air conditioning system (which couldn't need that more). The exterior features of the building will be restored but not altered. The present estimate for renovation is \$3.3 million. Planning will occupy 1985 and construction 1986-87. One aspect which we don't think about initially in contemplating renovations of this magnitude is where to carry out what now goes on in the old building while it is completely gutted. That's the first part of Bob's planning. Many of you will recall that Bob Rekers was the department's representative during the construction of the new chemistry building, now regarded as one of the finest buildings on the campus. Bob: you have a reputation to maintain. We will all be watching the outcome.



Prof. Charles Shoppee and Mrs. Sellie Shine, in Melbourne.

DR. HENRY SHINE was a discussion leader at the Gordon Conference on Radical Ions, Wolfeboro, N.H. (June). In July he was in Interlaken, Switzerland to present a paper on "Pursuit of Heavy-Atom Kinetic Isotope Effects in Photochemical Rearrangements" at the 10th IUPAC Symposium on Photochemistry. Having there picked up the travel bug Shine journeyed later to New Zealand, Australia, and Germany also with the excuse of doing chemistry. In Auckland, N.Z. he was an invited speaker at the 7th IUPAC Conference on Physical Organic Chemistry (August), speaking on "Use of Heavy-Atom Kinetic Isotope Effects in Delineating Mechanisms and Transition States of Intramolecular Aromatic Rearrangements." From Auckland, he went to Australia to marvel at Sydney's harbor and opera house and to give lectures at the University of Sydney, the Research School of Chemistry at the Australian National University in Canberra, and at three Universities in Melbourne (La Trobe, Monash, and Melbourne U.). In Melbourne Shine's host was none other than our first Welch Professor, Charles Shoppee. From Melbourne to London takes 27 hours but it's no big deal. One follows the night around the globe and sleeps all the time. From London Shine went to Lindau, Germany, as a plenary lecturer on "Electron-Transfer Reactions of Organosulfur Cation Radicals" at the 11th International Symposium on Organic Sulfur (September). Shine was the organizer, with Prof. John Kice, of the Symposium on Electron Transfer and Related Reactions in Organic Chemistry at the 40th Southwest Regional ACS Meeting here in Lubbock, and gave a paper in the Symposium. Following the ACS meeting Shine took off for Hawaii, ostensibly to be a speaker in the Symposium on Electron

Transfer Reactions at the PacChem Meeting where he spoke on "Reactions of Azoalkanes Initiated by Electron Transfer to Organosulfur Cation Radicals." In reality, the journey to Hawaii was to visit Maui and store up strength to write the Departmental newsletter during the Christmas holiday.

DR. PILL-SOON SONG continues to serve as Editor of *Photochemistry and Photobiology*, and to speak about his research in national and international meetings. He gave invited lectures at the International Conference on Optical Probes of Tetrapyrroles, Konstanz, Germany (August), and at the International Congress on Photobiology, Philadelphia (July), where he and his students also had five contributed papers. In September, Song attended the NATO Advanced School on Sensory Transduction, Volterra, Italy as an invited lecturer and member of the organizing committee.

DR. ROBERT WALKUP served as chairman of local arrangements for the 40th Southwest Regional ACS Meeting, for which service all participants are in his debt. At that meeting Walkup and his students presented two papers: "Potential Synthons for Polyketide Syntheses via a Bromination-Dehydrobromination-Alkoxide Addition Reaction of Substituted Acrylates" and "Syntheses and Reactions of Chlorosilyl Ethers." Bob also presented a paper at the 60th SWARM-AAAS meeting in Lubbock in March, and attended the 13th Annual Texas Synthesis Conference at Roundtop in November. Bob has also been a very active speaker in other Texas colleges and universities as a member of the Department's Recruiting and Assistantships Committee.

Dr. Guerrant Retires

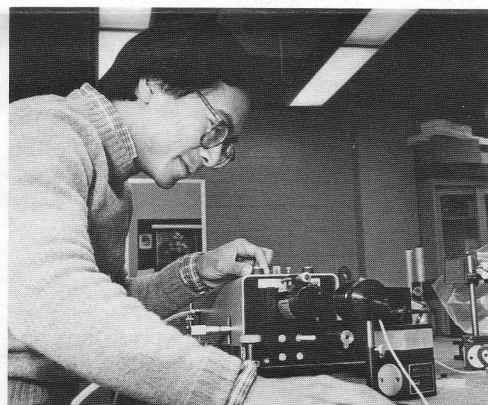
This year saw the retirement of Dr. Barnett Guerrant after 16 years in the Department. A scholarship has been established to signify Dr. Guerrant's service to the Department, and was awarded for the first time at the Awards Banquet in April. Before joining Texas Tech in 1968 as Professor of Chemistry and Coordinator of the General Chemistry program, Dr. Guerrant was for 11 years Professor of Chemistry at Austin College, during which he was also, successively Chairman of Mathematics and Science Area, Coordinator of Research and Chairman of the Chemistry Department. Dr. Guerrant was a graduate of Austin College, and received the Ph.D. degree from the University of North Carolina. Thereafter he worked in chemical industry until joining Austin College in 1957. Presently Dr. and Mrs. Guerrant are in Taiwan where both hold teaching appointments in their fields: chemistry and music.



Dr. Albert Kovelesky, visiting assistant professor, organic chemistry.

New Faculty

DR. ALBERT C. KOVELESKY is spending a year with us as visiting assistant professor, teaching in the undergraduate organic chemistry and chemistry for nursing students programs. At the same time Dr. Kovelesky is doing collaborative research on electron-transfer reactions with Dr. Shine. Dr. Kovelesky received degrees from Penn State (B.S.), Kansas State (M.S.), and the University of Kentucky (Ph.D.), and came to Texas Tech from Northeast Louisiana University.



Dr. Edward L. Quitevas, assistant professor, physical chemistry.

DR. EDWARD QUITEVAS joined the department in the fall 1984 as assistant professor of physical chemistry. Ed was born in San Francisco. He received the B.S. with Highest Honors in Chemistry from Berkeley (1974), the A.M. in Physics and Ph.D. in Chemical Physics from Harvard (1976, 1981). He was a postdoc (1981-82) and research associate (1982-84) in the Picosecond Spectroscopy Laboratory, Laser Physics and Chemistry Group, University of Toronto. At Harvard and Toronto Ed was a teaching fellow in the general chemistry and physical chemistry programs. During the Berkeley years he received the California State, U.C. Mothers'

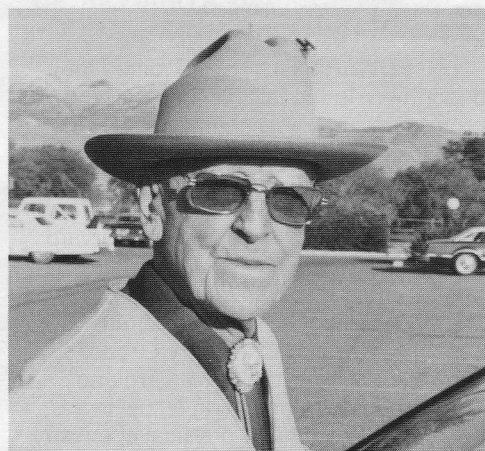
Club, and Decoto Scholarships, the Edward Frank Kraft Prize and an ARCS Foundation Award. He was a U.C. Regents' Scholar and was designated Outstanding Chemistry Student, College of Chemistry. Ed was elected to Phi Beta Kappa in 1974. His research interests are in the application of picosecond Laser techniques to studies of photoelectrochemistry, dynamics at solid-liquid interfaces, chemical dynamics in the liquid phase, and inorganic photochemistry. In these studies Ed will have access to the super, picosecond spectroscopy facilities established at TTU by Welch Professor Wilse Robinson. He has 12 publications in this field of research.

News of Emeritus Faculty

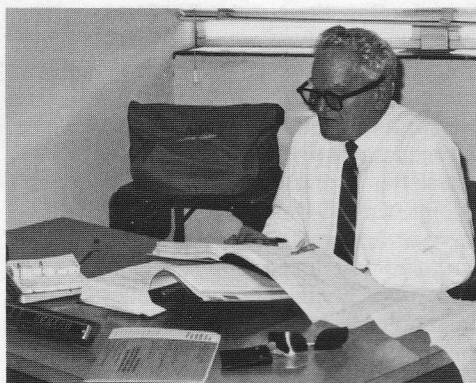
Editor Shine was fortunate this year in being able to visit both of the senior emeritus professors, Morris Stubbs in Albuquerque and Charles Shoppee in Melbourne. Hence, the two photographs in this issue. Professor Shoppee continues research work at La Trobe where he has office and lab space. In October he took to the air again for a month in South Africa where he visited and spoke at the Universities of Natal, Witwatersrand, Port Elizabeth, Cape Town, and Stellenbosch, Westville University and the CSIR in Pretoria. That's the way we'd all like to "retire."

As for our indefatigable neighbor, Morris Stubbs, now well into his 8th decade, he continues to speak about science and energy and the environment to civic groups, clubs, and high schools within reach of Albuquerque, and the number of such talks since retirement from the University of Albuquerque was 104 at the end of 1984.

Dr. "Mac" McPherson visits the Department frequently to continue making slides for faculty who give seminars and lectures hither and yon. A great guy!



Prof. Morris Stubbs, at home in Albuquerque, N.M.



The late Prof. Jules Renard, photographed at the time of his retirement in 1970.

Professor Emeritus Jules Renard 1904-1984.

Professor Jules Renard died in Lubbock on August 23. He will be remembered particularly by chemical engineering students, for Prof. Renard joined Texas Tech when the two departments were united as the Department of Chemistry and Chemical Engineering. He taught general chemistry and chemical engineering courses, particularly Unit Operations in which his students constructed magnificent scale models of industrial plant processes. He moved with the Chemical Engineering Department when separation occurred in 1959.

Jules Renard was born in Hornu, Belgium, and grew up in a French-language environment whose accents never left his spoken English, and became more intense the more he became excited. His father was a mining engineer, which, perhaps, influenced Renard's choice of engineering, too. He was a Licenciate in Chemical Sciences of the Technical University of Charleroi, Belgium (1925), and received the degree Ingenieur-chimiste from the University of Nancy, France, in 1934. He had broad experience in chemical industry, encompassing coal tar and synthetic ammonia plants, and the dyeing, bleaching and finishing of textile fibers. During WW II he was a colonel in the Belgian army and, on the fall of Belgium in 1940, was interned for six months in the POW camp Eichstätt in Bavaria. The Germans released Renard and sent him to work in occupied Belgium for the remainder of the war in the industrial production of organic intermediates. Renard never forgot or forgave Germany for his imprisonment and forced work. When the Germans were defeated, Renard was made Technical Director to run another industrial plant producing paints and enamels whose Belgian owners had been imprisoned for collaboration with the enemy. He left Belgium in 1948 to serve

briefly as a consultant in a sugar plant in Brazil, from where he entered Canada the same year. After two years of teaching pilot plant laboratories in the University of Toronto he settled in Texas to begin his 19-year stay at Texas Tech. He carried out research on equilibria in ternary systems, under the somewhat limited conditions of the early growth of research in the University. Renard retired from Texas Tech in 1970. Jules and his Canadian wife, Hazel, moved to California for a few years, but returned to settle among friends again in Lubbock, where Mrs. Renard continues to reside. During this latter period Renard was welcomed back to his "former home" in the Chemistry Department, where, in a small office-laboratory, he was able to continue for a while some research projects of his earlier years.

More about Prof. W. M. Craig

In our last Newsletter we described the role played by the late Prof. Craig in the use of chemical and alchemical symbols in the facade of our chemistry building and the one at Rice University. By coincidence a book has now come out concerning the architectural detail of Rice's buildings: *A Walking Tour of Rice University*, by Rice Professor Emeritus Bud Morehead. Included in the book are photographs of alchemical symbols on Rice's chemistry building, some of which, we now reproduce with Morehead's gracious help and permission. (Contact Rice University Studies, P.O. Box 1892, Houston, TX 77251, if you are interested in the book.)

The symbols in the Rice building were designed with the help of Prof. Craig. In that connection Mrs. Craig showed me, recently, the hand-written letter from Craig to Rice's architect William W. Watkin on July 7, 1923. In this letter Craig says the symbol representing the sun "and using a complete circle, represented perfection in metallic character and was therefore used for gold." The symbol representing the moon "and which used only part of a circle, therefore showed only partial metallic perfection and was used for the moon."

During preparation for renovating the old Tech building, it was necessary to move out the emission spectrograph used years ago by Dr. Craig and his students. In doing that the beam of the spectrograph was exposed and scratched into it were found the names of former users, which we now reproduce in our final salute to them and Dr. Craig.

Former Faculty

Dr. Jim Kimble, visiting assistant professor, 1976-1978, is working with Phillips Petroleum Co., Bartlesville, Okla.



The Robinson Conference, with Welch Prof. G. Wilse Robinson, center front row.

Meetings, Meetings, Meetings

Remember the old saying: it never rains but what it pours? So it was with scientific meetings in Lubbock this year. We had three of them.

SWARM-AAAS

In March the Southwestern and Rocky Mountains Division (SWARM) of the AAS held its annual meeting on TTU's campus. The last time SWARM met in Lubbock was in 1973. The meeting this year was organized by Henry Shine ably assisted by faculty from various colleges of TTU and from the TTUSM Biochemistry Department, including particularly John Anderson, Russ Larsen and Bob Shaw of our own Department. The SWARM meeting consisted of symposia and papers in a very wide variety of sciences, including physical, agricultural, sociological, biomedical, psychological, historical and science education. Approximately 350 participants were on the Campus, and the sessions themselves were held mainly in the University Center.

Robinson Conference

To honor Welch Professor Robinson on the occasion of his sixtieth birthday, thirty of his present and past students and colleagues gathered in Lubbock on July 18-21, 1984. The G. Wilse Robinson Conference on Molecular Spectroscopy and Molecular Dynamics was a smashing success both in terms of the scientific program and the social activities. Technical aspects included contributed papers by: R. M. Hochstrasser (Pennsylvania), D. M. Burland (IBM), R. Kopelman (Michigan), D. M. Hanson (SUNY-Stony Brook), R. Zwanzig (Maryland), M. Allen (JPL), M. A. El-Sayed (UCLA), J. T. Hynes (Colorado),

H. M. McConnell (Stanford), M. Kasha (Florida State), B. E. Kohler (Wesleyan), S. D. Colson (Yale), S. A. Rice (Chicago), E. R. Bernstein (Colorado State), G. R. Fleming (Chicago), and G. W. Robinson (Texas Tech). For the Conference Banquet at the University City Club, the after-dinner speaker was Michael Kasha who described "Three Great Personalities in Science: G. N. Lewis, J. Franck and R. S. Mulliken." A post-conference trip to Carlsbad Caverns was enjoyed by many of the participants.

40th Southwest Regional ACS Meeting

Mention of this meeting has already been made in news of the faculty. This is the first time the SW Regional ACS Meeting has been held in Lubbock and there is no doubt that it scored a great success. One visitor, a regular attendee at SW Regional meetings described it as the best in 15 years. The success of the meeting can be attributed to the careful and detailed planning (Joe Adamcik, Dick Bartsch, Bob Holwerda, Jerry Mills and Bob Walkup) and to the organizing of the splendid symposia that were the mainstay of the meeting. Some of these have been noted in the news about the faculty. Other symposia were on: Analytical Chemistry of Wine, Asymmetric Organic Syntheses, Biochemical Oxidations and Bioenergetics, Biochemical Regulation, Conformational and Configurational Analysis, Innovative Undergraduate and Highschool Instruction in Chemistry, Inorganic Chemistry and the Undergraduate Curriculum: When, What and How Much, Organometallic Reaction Mechanisms, and Surfactants for Enhanced Oil Recovery. Not to be forgotten, though, is the huge effort by the Department's

secretarial staff in handling all of the paper work for the meeting. We take our hats off to Judy Leuty (who also ran the registration desk), Jane Bradley, Mary Sufall and Mary Samudio, the unsung heroes (heroines?) of much that we accomplish.

On the lighter side, tasting of West Texas wines was held at the Hilton Inn, while a post-meeting trip to Carlsbad Caverns was led by Bob Holwerda, for which beyond-the-call effort we award him the Order of the Copper Enzyme.

The scientific sessions were held in Lubbock's Convention Center, a fine facility with which all visitors were impressed ("you have this in Lubbock?").

Chemistry Department / American Chemical Society Annual Awards Banquet

The Department and the South Plains Section of the American Chemical Society joined once more in their annual banquet on April 26, 1984. This was an especially significant occasion for we were honored by the presence of several early members of the department: Prof. Robert C. Goodwin, former chairman and President of Texas Tech, Prof. Margaret Stuart, Prof. and Mrs. Joe Dennis, and Mrs. William M. Craig, wife of the late Prof. Craig. We were also pleased to have with us Mr. Ed. Bradshaw of the Weymouth-Campbell Foundation. The banquet speaker was Dr. Roland Menzel, TTU's Physics Department, who fascinated the audience with his talk and slides on detecting latent and otherwise almost imperceptible finger prints with laser irradiation.

The main motivation for the annual banquet is to honor students with awards and scholarships. These are listed separately. The Weymouth-Campbell scholarships, given in memory of former Regent C. E. Weymouth and his daughter Mary Ann Weymouth Campbell, were presented by Ed. Bradshaw. Also honored at the banquet was Mrs. Tommie Hunt, Levelland High School, Levelland, TX, who won the South Plains Section Award as Outstanding High School Chemistry Teacher.

The Crunch Comes to Texas. An Appeal for help.

For several recent years Texas has basked not only in sunshine but also in surpluses in the treasury. The rise in oil prices following OPEC actions in the 70s gave Texas its own oil boom. Those days are over, maybe forever. Texas Comptroller Bob Bullock has forecast a wide gap between anticipated revenues and expenditures. The State is calling for cuts in budgets in all of its agencies. One proposal from Austin is for a 26% cut in appropriations for Universities. This represents the saddling of much of the State's deficit on higher education. That is, higher education seems to have become the major sitting duck for deficit-trimming hunters. A budget-cut of this magnitude will, without doubt, undo what we at Texas Tech and others in other State schools have achieved during years of uphill battles for improvement. The proposed cut is to be across the board in salaries and operating expenses. It is projected that a cut in the salary budget of the proposed size would mean dismissal of one out of every four or five members of the faculty and auxiliary staff. The havoc that this would play, not only in the University's future, but also in the local economy and in the future growth of Texas as both a "high-tech" and agricultural state is fearful to contemplate. The threatened cut of 26% becomes one of 30-plus % cut during the anticipated inflationary trend of the second biennial year. Some people think that this cut is only a negotiating one for what in reality may be a 10-15% budget cut. Even that, though, makes the future for higher education in Texas look bleak. Having lived happily for years on what is now a faltering oil and gas economy, Texas must find other ways to pay some of its way. A large cut in university budgets will not, it is felt, solve the pending long-term problem of State funding. It could be helpful if University alumni resident in Texas were to make such news known to their representatives in Austin.

In preparation for reduced funding all departments at TTU have been asked to submit two budgets for 1985-86, one embodying a 4% and the other an 8% cut in salaries and operating expenses. The Chemistry Department has submitted its proposed budgets. Cutting into operating expenses will affect supplies of chemicals and glassware, of course. We will have to trim also in instrument upkeep and in bringing in visiting seminar speakers. In that regard modest help from alums can be helpful. Of course, if anyone out there has \$200,000-\$300,000 spare to help us with matching funds for upgrading our NMR and Mass Spectrometer facilities, we won't say no. But, at a different level, gifts in the \$100 range will make a large difference in helping bring seminar speakers to our department, and to upkeep in parts for our instruments. We now ask for your generous help. Contributions should be sent to the Chairman, Dr. Richard A. Bartsch. They will be tax deductible, we believe.

Our appeal for help also embraces our plans for the new program in undergraduate biochemistry. This program is reflected in the recently approved change in the name of our department into Department of Chemistry and Biochemistry, and the approval of new degrees, B.S. and B.A. in Biochemistry. For the new program up-grading of the biochemistry laboratories is urgently needed. Because of the budget crunch, many items of equipment and instruments for this laboratory have not been purchased. Items needed are UV-visible spectrophotometers, fraction collectors, and a refrigerated centrifuge. If you know of persons or companies who would donate one or more of the above, please contact Dr. Richard Bartsch, Chairman, or Dr. John A. Anderson, in the Department of Chemistry.

Scholarships and Awards to Undergraduate Students, 1984

The Samuel Hunt Lee Memorial Award (to an outstanding freshman chemistry major)

Kevin MacReady.

The William Barnett Guarrant Award (to an outstanding student in organic chemistry),

Brad Bufkin.

The CRC Press, Inc. 37th Annual Freshman Chemistry Achievement Award (to an outstanding student in freshman chemistry),

Kevin MacReady.

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

Caren Caffrey.

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

Linda Bagwell.

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),

Tracey Price.

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

Karen Mikkelson, Girish Vallabhan.

The Weymouth-Campbell Scholarships: for superior performance (as a freshman chemistry major) Kevin MacReady, Jonathan Metzler; (as a sophomore chemistry major) Victor Akin, Brad Bufkin, Jerry McLaughlin, Caren Caffrey, Susan Jack; (as a junior chemistry major),

Linda Bagwell, Quinn Bligh, Stephen Hall.

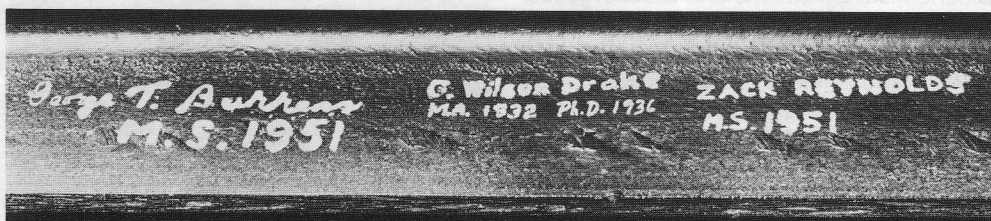
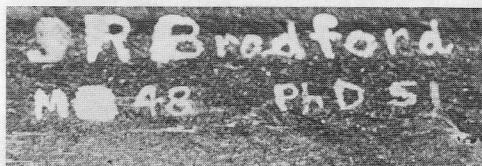
Teaching Assistant Awards to Graduate Students

Texas Tech University Outstanding Graduate Student Teacher Award:

Ray Cunningham.

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

Grace Ndip, Scott Pendergrass, Cyriacus Uzomba.



Users of Prof. Craig's emission spectrograph scratched their names into the beam of the instrument.

Scholarship and Award Winners, L to R:
Susan Jack, Caren Caffrey, Karen
Mikkelson, and Girish Vallabhan.



Weymouth-Campbell Scholars 1983-
1984 with Ed Bradshaw (center). Front:
Jerry McLaughlin and Linda Bagwell;
Middle L to R: Kevin MacReady, Stephen
Hall, Quinn Bligh. Back L to R: Jon
Metzler, Brad Bufkin, Victor Akin.



Teaching Assistant Awardees, L to R:
Ray Cunningham, Grace Ndip, Cyriacus
Uzomba, Scott Pendergrass.



Graduate Degrees, 1984

Qoang-Rung Bih, M.S. (Dr. Marx), "Total Synthesis of Anhydro-B-Rotundol."

Bing-Hsun Chen, M.S. (Dr. Knaff), "Ferredoxin Enzyme Complexes."

Karen Andrea Cobb, Ph.D. (Dr. Knaff), "Cation/Amino Acid Symports in Photosynthetic Bacterium *Chromatium Vinosum*."

Leonard V. Gribbs, Ph.D. (Dr. Mills), "Lewis Acid-Base Exchange Reactions of Polypnicogens."

Gary Owen Gray, Ph.D. (Dr. Knaff), "Soluble Cytochromes C from *Chromatium Vinosum*."

Young-Sook Hahn, Ph.D. (Dr. Marx), "The Migration Tendency of Unsaturated Substituents in a Cationic Rearrangement."

Jhy-Yuan Her, M.S. (Dr. Wilde), "Raman Study of Vibrational Dephasing of Allene."

Randy F. Johnston, Ph.D. (Dr. Holwerda), "Electrochemical and Reactivity Studies of Polynuclear Chromium Complexes."

Chou-Jin Kiang, M.S. (Dr. Anderson), "The Conversion of Emodinanthrone and Emodin to Stentorin in *Stentor Coeruleus*."

Carol E. Mattes, M.S. (Dr. Shaw), "Electron Paramagnetic Studies of the Oxygenase Mechanism of Ribulose 1,5-Biphosphate Carboxylase/Oxygenase."

Nabeel Nabulsi, M.S. (Dr. Bartsch), "Synthesis of Azacrown Compounds."

John Scott Pendergrass, M.S. (Dr. Bartsch), "Non-Carbohydrate Organic Compounds in Mesquite Hardwood."

Gary Don Stevens, M.S. (Dr. Holwerda), "The Oxidation of Biological Mercaptans by the Bis(2,9-Dimethyl-1,10-Phenanthroline) Copper II Ion."

Louis E. Stewart, M.S. (Dr. Bartsch), "Metal Ion Complexation by Ionizable Crown Ethers."

Cyriacus U. Uzomba, M.S. (Dr. Marx), "Synthesis of Ketolactones Related to Sarkomycin and Studies Toward a Synthesis of Phyturberin."

Undergraduate Degrees, 1984

Keith S. Alexander, B.S.

Richard B. Baker, B.S.

Kevin L. Bales, B.A.

Paul B. Braswell, B.A.

Deborah E. Coates, B.S.

David A. Hering, B.S.

Melissa A. Hisey, B.A.

Allan D. Kennemer, B.A.

Yi Liu, B.A.

Gene D. McDonald, B.S.

Karen A. Mikkelson, B.S.

Jane M. Nickel, B.S.

Terrence P. O'Brien, B.S.

Tracey D. Price, B.S.

Matthew T. Ryan, B.S.

Jeremy R. Smola, B.A.

Scott L. Stacks, B.S.

Girish C. Vallabhan, B.A.

Scott D. Windahl, B.S.

New Research Grants

Dr. D. W. Armstrong

"Use of Functionalized Surfactants in Flame Atomic and Luminescence Analysis," DOE Supplement, \$22,000, and Center for Energy Research (TTU), \$5,000.

Dr. Richard A. Bartsch

"Crown Ethers for Determination of Metal Ions," Technicon Instruments Corp, \$42,260.

"Ion Selective Compounds," Miles Laboratories, \$17,441.

"Metal Ion Complexing Agents," Serpentix Conveyor Corp., \$20,000.

"Metal Ion Recovery by Polymer-Bound Reagents," Serpentix Conveyor Corp., \$20,000.

"Metal Ion Complexation by Ionizable Crown Ethers," DOE, \$255,000.

Dr. Walter Chesnavich

"Model Calculations," Research Corporation, \$3,300.

Dr. Jerry L. Mills

"Phosphorus Oxide Chemistry," Stauffer Chemical Co., \$6,000.

Dr. Edward L. Quitevis

"Picosecond Studies of Charge Transfer at the Semiconductor-Electrolyte Interface," American Chemical Society, Petroleum Research Fund, Type G, \$15,000.

Dr. Pill-Soon Song

"Aneurial Photosensory Transduction in Stentor," NIH, \$225,520.

Dr. Robert D. Walkup

"Novel Synthetic Approaches to Biologically Active Molecules," TTU Biomedical Research Support, \$5,000.

"Synthesis Using Beta-Lactones," TTU State Organized Research, \$5,250.



Over fifty years of leadership of the Chemistry Department. Henry J. Shine (1969-1975), John L. Kice (1975-1981), Joe Dennis (1950-1969) and Richard A. Bartsch (1981-) gather around Robert C. Goodwin (1930-1950).

News of Alums

Robert M. Arnold, Jr. (B.S. '64) is the quality assurance manager for Union Carbide's PVC, phenoxy and polyvinylbutyral businesses in Texas City.

Dong-Hak Bae (Ph.D. '82) is working in Uniroyal's research laboratories at the World Headquarters, Middlebury, Conn.

Arthur L. Baer, Jr. (pre-dental student '56-'59) is a dental surgeon in Dumas, TX.

Charles Baldwin (Ph.D. '70), professor of chemistry and physical science, Wayland Baptist University, Plainview, TX is the director of the South Plains Regional Science Fair, which will be held in Plainview, March 29-30, 1985. The Fair is expected to bring in 400 entries from an 18-county area. Winners in the regional competition will go on to the International Science and Regional Fair later in 1985.

The Hearst Foundation of San Francisco has aided in the funding of the Regional Fair with a grant of \$20,000 to WBU.

Frankie Geneva Boyd (B.S. '55), M.S. in Chemistry, St. Mary's University, SA, 1968, and JD from St. Mary's School of Law, 1975, was appointed Municipal Court Judge, City of San Antonio, in September, 1983. Judge Boyd had a career in biology and chemistry before entering the legal profession, working, for example, with J. M. Huber, Borger, TX 1959-1962, Southwest Foundation for Research and Education 1962-1966, and as an environmental scientist 1969-1975. Private law practice 1976-1978, and assistant city attorney in SA 1978-1983, followed graduation from law school.

Bert B. Boyer (B.A. '82) is working on his Ph.D. degree in physiology at the LSU Medical Center, New Orleans, LA.

William B. Castor (B.S. '67) has been promoted to Associate Scientist by the Texas Division of Dow Chemical, Freeport, TX.

Bong Rae Cho (Ph.D. '80) sends greetings from Korea University, Seoul, where he is an assistant professor.

Burgess Cooke (Ph.D. '69, University of Georgia) post-doctoral fellow with former Welch Professor Shoppee, is the Laboratory Supervisor, Texas Department of Public Safety, Midland, TX.

Leonard Cribbs (Ph.D. '84) is working with Dow Chemical, Freeport, TX.

Gayle Glenn (B.A. '82), D.D.S., completed an orthodontic postdoctoral program in Baylor College of Dentistry in May, 1984, and began private practice in orthodontics in Dallas in June. Dr. Glenn asked for an update on Miss Stuart, who retired from the department in August 1979. Miss Stuart lives in Lubbock. We were pleased to see her at the Departmental Awards Banquet in April.

Sadly, Miss Stuart's mother passed away in January, 1984.

Chester Golightly (B.A. '51) M.D., is in private practice in Lubbock, specializing in family practice.

Jeff Her (M.S. '84) is at U.T. Arlington in the Material Science Department working on his Ph.D.

Carolyn McAdams Harris (B.A. '66) is an instructor in computer science at Lamar University, Beaumont, TX.

Thomas K. Hayes (B.S. '80) is a graduate student at Penn. State and is working on his Ph.D. degree with Professor S. Weinreb.

William R. Heineman (B.S. '64), Ph.D., U.N. Carolina '68 and now Professor of Chemistry in the University of Cincinnati has been selected by the Technical Societies of Cincinnati to receive its Distinguished Scientist of the Year Award. In 1983, Heineman was named Chemist of the Year by the Cincinnati section of the ACS. We send our condolences to Bill on the death of his mother in Lubbock on October 4, 1984.

Kurt Hogaboom (B.A. '78) obtained the Ph.D. degree in pharmacology from West Virginia University. After continuing at WVU for postdoctoral research in medicinal chemistry he joined Smith, Kline and French, Philadelphia, in February, 1983. There he was promoted in April 1984 to Associate Senior Scientist, and does research in chemical mediators (histamines, leukatrienes) of immediate hypersensitivity reactions.

Randy Johnston (Ph.D. '84) is currently an instructor in our Department, on a one-year appointment.

Colleen M. Kennedy (B.S. Biology, '83) entered medical school in San Antonio (UTHSCSA) in August 1984. Colleen has sent her appreciation of studying in our department. All the best, Colleen.

Soo-Un Kim (Ph.D. '83) is now a post-doctoral fellow in Ohio State University's Chemistry Department with Prof. Floss.

Harvey E. Mallory (M.S. '61) now with DuPont in Wilmington and marketing their Kevlar polymer, returned to Lubbock for a visit in Oct. '84 while on his way to meet up with son, Harvey IV, a student at UT. Come back again, Harvey.

Koon-Ha Park (Ph.D. '83) is in his second year of post doctoral research at UT and will be returning to Korea in February, 1985 to become assistant professor of chemistry in Choong-Nam National University.

Rita K. Payne (B.S. '74) has completed her senior residency at the West Virginia School of Medicine's Hospital and has returned to Lubbock to practice obstetrics and gynecology at the Women's Clinic. Welcome back, Dr. Payne.

Warner Peticolas (B.S. '50) Ph.D. Northwestern University, has been awarded one of the prestigious Alexander von Humboldt Prizes for the year 1984-1985. These Humboldt Stiftungen are awarded for research and study in Germany. Peticolas will spend seven months at the Max Planck Institute for Solid State Studies in Stuttgart. Peticolas is professor of chemistry at the University of Oregon. He joined the University in 1967 after working for the DuPont Co., the NIH, and IBM where he spent eight years as a researcher and group manager in chemical physics. In 1973-74, Peticolas held a Guggenheim Fellowship at the Max von Laue Institute in Grenoble, France, while in 1980-81 he was a visiting professor of biophysics at the University of Paris.

Kenneth F. Rash (B.S. '69), M.S. 1977 in organic chemistry from U. Cal., Davis and now piloting Boeing 727's for Republic Airlines sends us the following heart rending story. "After 5 years as a pilot in the USAF I returned to graduate school at UC Davis, and got smarter and smarter but poorer and poorer. The aviation job offer came through after orals and course work for the Ph.D. were completed. After lengthy thought (3 nanoseconds) I took to the skies. Now I see Lubbock from 35,000 feet." Some would say that's the best point of view, Ken, but we know different, don't we? Any free rides for former professors?

Bill Reynolds (B.S. '59) is now plant manager at Cosden Oil's Polystyrene Plant, Calumet City, Ill. Bill and Martha (formerly Martha Milburn) spent 18 years with Cosden in Big Spring, TX, when Bill transferred to the Port Arthur Refinery for Fina. In 1983, they moved to Homewood, Ill. The Reynolds have three daughters: Debbie (a graduate of Lamar U.), Donna (a graduate of West Texas U., who spent two years at TTU), and Danna (a student now at UT).

Hemanta K. Sarkar (Ph.D. '83) has joined Roche Molecular Biology Institute, Nutley, NJ, as a junior scientist.

Ferril C. Smith (B.A. '77), M.D., has written from Athens, Greece, where he is the internist at the Hellenikon AB, and is destined to stay about two years. FC writes that he was attracted to the base by a recruiter who asked "how would you like to go to a place just like Lubbock but with mountains on one side and the ocean on the other?" FC and wife Elena (Ph.D. in Spanish) have been compensating for such obvious disadvantages (i.e., not being in the real Lubbock) by travelling to even less attractive places such as Germany, Turkey, Spain, and Tangiers. Well, its all Greek to me, anyway. I'll understand it when they finally get to England, like which there is no other place.

As we went to press, the bomb blast near Hellenikon made headline news. We send thoughtful concern to the Smiths and all other personnel in the area.

Jeremy Smola (B.A. '84) is now at the Texas College of Osteopathic Medicine. Recently Smola was credited by the American Red Cross with a heroic effort at saving the life of a man by performing cardiopulmonary resuscitation, at the November 3 Senior Citizens Fair in Fort Worth.

Gary Stevens (M.S. '84) is with Texas Instruments, Dallas.

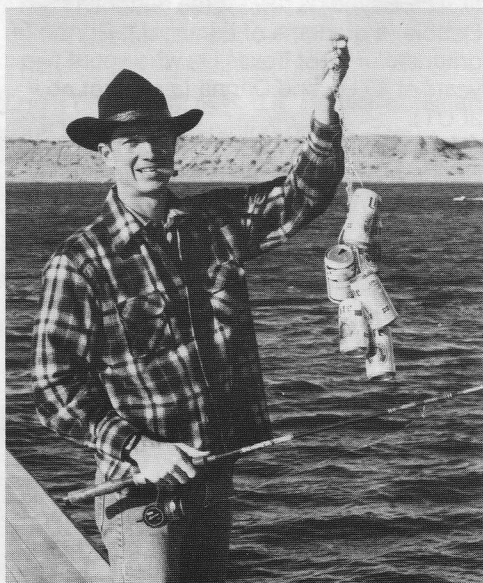
Charles B. Thaxton (B.S. '62, M.S. '64), Ph.D. Iowa State University, is now the Director for Curriculum Research, Foundation for Thought and Ethics, Richardson, TX. Before joining the Foundation, Dr. Thaxton held postdoctoral fellowships at Harvard in the history and philosophy of science, and at Brandeis in molecular biology.

Gerald Walzel (B.S. '73, M.S. '76) continues as a Captain in the USAF but having secured Papillion, Nebraska, has moved to Las Vegas, Nevada, already well-known for its high flying and other pursuits (see photo).

Roseanne Woo-Haltresht (B.S. '77) is now working with TRW, Inc., Industrial and Energy Sector, Cleveland, Ohio, as a Business Analyst, reporting to the Vice President of Planning and Development.

Il-Woo Yang (Ph.D. '81) will return to the Department for a year of postdoctoral study sponsored by a grant from the Korea Science and Engineering Foundation.

Ibrahim Yilmaz (Ph.D. '80) is an assistant professor, Department of Chemistry, Boğaziçi University, Istanbul, Turkey.



Captain Gerald Walzel finds the catch in Las Vegas, Nev., to his liking.



Mrs. William M. Craig, Mrs. Joe Dennis and former Chairman, Prof. Joe Dennis. Department Banquet. In the background L to R: Dr. Jerry Mills, Dr. Robert Walkup, Dr. Robert Holwerda.



Outstanding Highschool Teacher Awardee, Mrs. Tommie Hunt, Levelland High School, with husband and Dr. Arthur Draper, on her left. Awards Banquet, April 26, 1984.

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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 you 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

Responses were mighty sparse. No other names titillated the Tastes of our readers. Those who responded did so for the Test Tube only. So, that's it, until another Editor Tries to Test public opinion again in, say, Twenty years from now. The Twenty-five smackeroos go to Harvey E. Mallory, III, not because he took the Editor to lunch this year during his belated return to the campus, but because he wrote: "I'd like to cast two votes (mine and Betty's) for the Test Tube." I always like a man who casts his wife's vote. That should get the Editor the Texas chauvinist Turniphead award.