

NEWS - LETTER

UNIVERSITY OF ILLINOIS

Department of Mining, Metallurgy and Petroleum Engineering

January, 1962

TWENTY YEARS AFTER



Walter Bruckner's file yielded this masterpiece, reckoned by local archeologists as having been taken in 1941. This unlikely looking group has been tentatively identified as the Mineral Industries Society members of that era. Individual identification will be omitted to protect the innocent. We can't help but note that Earl Eckel doesn't seem to have grown much hair over the years, and that Barney Ricketts is beginning to look more like Earl (from the forehead up) every day. Those of you in the group may want to show this to your wives, who may be beginning to wonder whether that handsome husband of their youth ever existed at all.

We think these old pictures are interesting, and if you find any similar pictures from college days, and will loan them to us, we'd like to put them in the Newsletter for all to recall and enjoy.

New Course on Corrosion Offered

A new course has been added to the department's list of technical electives, Met. E. 307, "Corrosion of Metals." This represents the first time that a full course treatment of this important subject has been available on the campus. Prof. Walter Bruckner has organized the course as an outgrowth of his many years of research and interest in cathodic protection and corrosion control.

Interest in this course by me-

chanical engineering students promises to provide additional enrollment. The corrosion course, along with our elective courses in powder metallurgy and welding provide opportunity for students to gain a valuable background in these important areas. Our senior students who have taken these courses report that company interviewers are particularly impressed with students who have cultivated these special interests.

New Electron Microscope Lab

Extensive remodeling has been going on in the Metallurgy Laboratory this past fall to provide room for a new electron microscope laboratory in the department. Two electron microscopes have been acquired. Each is a Hitachi, Type HU-11, which is particularly well adapted for electron transmission work with metallic specimens.

These instruments have a resolving power of 10 Angstroms or better, accelerating voltages up to 100 KV, and double condensers lenses for high intensity illumination. The instruments are fully equipped with auxiliary stages for observation of specimens at both high and low temperatures and while under stress.

Federal funds were obtained for purchasing the instruments, one through the Atomic Energy Commission, the other through the Air Force, Office of Scientific Research. Several graduate students will be involved in two new research programs being instigated, and their work will also be subsidized by contracts with these government agencies. One of these projects, supervised by Professor Wayman, will involve the study of martensite-type transformations. A second one, supervised by Professor Ricketts, is concerned with defect structures as related to recovery and recrystallization of cold-worked metals. Each of these investigations will be based on the preparation of thin foils and examination with electron transmission.

The new laboratory is located on the ground floor of the Met Lab in the area formerly occupied by electrometallurgy along with about a fourth of the heat treating laboratory. The microscopes are housed in separate small rooms but share common dark rooms, one for plate development, another for printing and enlarging. These rooms will all be inter-connected by means of reversing corridors. A separate laboratory is used for specimen preparation.

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NEWS FROM THE DEPARTMENT

Professor Erwin Weise suffered a severe stroke last month, the attack coming with a suddenness which only added to the shock felt by all his friends. For some days, Erwin was in a coma and given only a small chance to pull through. We are greatly relieved now to be able to report that he has improved steadily, and his condition, while still serious, is much stronger.

We have tremendous admiration for the bravery of Erwin's wife, Ursula, during this critical period. We are sure her faith and spirit have had much to do with Erwin's progress. Our deep sympathy and hopes for complete recovery go to the entire Weise family.

Prof. David Lieberman is on leave of absence during the current academic year in order to serve as Liaison Officer to the London office of the Office of Naval Research. In this interesting assignment, Dave is to report to the Navy on activity in solid state science in Europe. In carrying out this responsibility, Dave will have the opportunity to travel extensively and visit many laboratories. Judging from the little correspondence received from the chronically loquacious Lieberman, we can only assume his duties, and efforts to "do" Europe have left him with little free time.

The newest member of the petroleum engineering faculty is Professor A. J. deWitte who came here in June from the Gulf Research and Development Company (Pittsburgh). Prof. deWitte is a citizen of the United States, and is well-known for his published work on well-logging. He was born and educated in Holland, with degrees in geology and geophysics from the Universities of Groningen and Leiden. Prior to his work at Gulf, Prof. deWitte was associated with Standard-Vacuum in Indonesia, and with Western Geophysical and Continental Oil Company, Development and Research Division, in the United States.

In the last year, other temporary staff appointments brought well-known scientists into the work of petroleum engineering group. Dr. John R. Philip, a Principal Research Officer of C.S.I.R.O. of Canberra City, Australia, spent several

months here in the spring continuing his work in the general area of porous medium flow. Dr. A. E. Scheidegger, now with the University of Alberta, spent four months here during the spring and summer. Dr. Scheidegger had the official title of Visiting Professor of Geophysics (under the sponsorship of the Graduate College), and while here he organized several graduate seminar series, and completed the writing of his new book on Geomorphology (Springer, 1961).

We are momentarily expecting the arrival of Prof. Norman Street who will rejoin our staff after a year's absence. Norman served as Principal Research Officer with C.S.I.R.O. at Merbein, Australia, during the past year.

A new staff position, that of Business Manager, has been created, and is ably filled by Tony Graziano. Tony received his B.S. in metallurgy from Carnegie Tech (a testimonial to the teaching of Paul Shewmon), and worked two years as project engineer at Brackenridge, Pa. Tony's principal duties are concerned with the administration of the department's research activities, a rapidly expanding area with a current annual budget of over \$500,000. Tony's organizing and managerial talents have won him responsibilities in many other facets of departmental administration beyond those associated with contract research.

It has not been possible to obtain a denial of the rumor that the Fred Wrights, on a recent visit to Chicago, took their children to the Museum of Science and Industry, and toured the German submarine instead of taking the children to the coal mine exhibit.

Howard K. Birnbaum has returned to the department as Associate Professor of Physical Metallurgy. Howard has been at the University of Chicago in the Institute for the Study of Metals for the three years since receiving his Ph.D. here in 1958. He plans to continue researches begun at Chicago on the interaction of point defects with dislocations by measurements of elastic modulus and yield point, and will also teach courses in physical metallurgy.

The Birnbaums have acquired a

boy, a girl, and a boxer since last living in Champaign, any one of which is capable of shaking the aplomb of the casual visitor. One thing that hasn't changed is Howie's prowess on the handball court, which he quickly reasserted to Altstetter, Bohl, and others.

Prof. George Eadie has been actively engaged in the formation of the Midwestern Coal Sub-section of AIME which meets in Southern Illinois each month. George reports that Jim Fox, '48, and Jack Tisdale, '55, of the Industrial Engineering Dept. of the Freeman Coal Mining Corp. and Charles Jan-Kousky, '50, of Freeman are usually in attendance at these meetings.

V. S. Tuman received a \$5,000 grant from the API for support of his research on propagation of elastic waves along a curved path in non-isotropic and non-homogeneous porous formations.

WE HAVE NEW NAME

The official name of the department has been changed to "Department of Mining, Metallurgy, and Petroleum Engineering." The change from "Mining and Metallurgical Engineering" was considered advisable in order to reflect the department's important activities in petroleum engineering. There is another difference in the name of a more subtle nature in that "metallurgy" appears rather than "metallurgical engineering." This again indicates the emphasis of the graduate and research programs in areas of pure metallurgy rather than engineering, although the engineering aspects of physical metallurgy remain the important core of our undergraduate curriculum.

It must be admitted that our new title is quite a mouthful, and certainly couldn't be repeated too many times in a publication the size of the Newsletter, or conveniently engraved over the entrance of a building. More than a few man hours were spent thinking of a shorter title that would do justice to the work of our department, but all in vain. The final rationalization was that if the AIME included all three areas in its official title, then it was good enough for us.

NEWS ABOUT ALUMNI

Hugh P. Nicholson, who was co-chairman of the Department in the late thirties, visited the Department recently. Hugh is now located with Linde in New York City, and was in town to visit his son who is acting as assistant municipal engineer in Champaign while finishing work for his B.S. in Civil Engineering.

A second generation department alumnus received his degree in metallurgy in the person of Bill Bottomley this past June. His Dad, J. A. Bottomley, received his mining degree in 1930.

Pete Nikias, Min '58, has recently completed graduate studies at Stanford, and has accepted employment with Standard Oil Company of California. Art Schmidt, Min '60, and Loren Vogel, Min '60, are both employed by Schlumberger in the Midcontinent region.

T. S. Simms, Met '40, has received a promotion with the Semi-Conductor Division of General Electric in Auburn, N. Y. to Manager of the Metals and Process Department. During the year, Tom was granted a patent as sole inventor, and his group won a first place award in the **Materials in Design Engineering** competition for the development of a new insulating material. Tom's former position was Manager of R & D of Refrigeration Engineering, Hotpoint Division.

Dean Baseley, Min '59, has left Crucible and is now in the Industrial Engineering Department of the Old Ben Coal Corp. He has bought a new home in Sesser, Illinois, and seems to be right at home in the "Illini Club" of Old Ben. Newly appointed Manager of Mines for Old Ben is Eugene T. Morini, '40, whose office is in Benton, Ill. Frank Padavic, '50, is Asst. Superintendent at Mine No. 21, Oscar D. McDaniel, '54, is Superintendent at No. 9 Mine, Jack Webster, '50, is Coal Preparation Engineer, and John Janes, '50, is in charge of the Industrial Engineering Department.

Jim Gaebe, Met '59, was tapped on the shoulder by Uncle Sam, and now reports his address as: Lt. James R. Gaebe, 631st Ordnance Co. (DS), Ft. Bragg, N. C.

Richard A. Campbell, Min '50, has left his position as General Superintendent of Pittsburg Midway, and is now working in Illinois for the Peabody Coal Company.

We enjoyed a visit with Dick Gaydos, Met '53, this Fall at the annual Chicago Section AIME student night. Dick is with Republic Steel, and he brought us news of some of his classmates. We particularly appreciated receiving through him a set of specimens representing ingot and wrought samples of steels produced to contain particular nonmetallic inclusions.

Ben Tudor, Min '50, was observed having a gay time on the dance floor (with his wife, no less) at the Coal Miners' Party during the American Mining Congress Coal Convention in Cleveland. Ben's address is now P.O. Box 472, Clarksburg, West Virginia.

Bob Thomas, Met '52, and his lovely wife, Frances, paid us a visit this Fall. Bob had left his position with American Steel and Wire at Waukegan and has been with International Nickel for the past two years. Part of this time was spent in Huntington and St. Louis, and now he is back in the Chicago area, even to the extent of living in the same home in Waukegan. Bob's present position is District Sales Manager for Huntington Alloy Products Division of INCO.

Dan Bronkhorst, Min (M.S.) '61, has written that he is still in the Dutch Army, and gives his address as: Rembrandtlaan 32, Schiedam, Netherlands.

Norbert Blaski, Met '49, came to Urbana this Fall for a football game, and so not to waste the trip completely, brought his wife and a section of his family by the Met. Lab. As the Blaski family now numbers six boys and a girl, it is standard procedure that the family takes turns going on such trips. The oldest looks like good metallurgical timber, as he was all for giving the metallography students a hand on the polishing wheels. Norbert is now General Superintendent of the Chrysler foundry in Indianapolis.

Walter Lucas, Min '54, is Chief Engineer for Sahara. Wally has given up commuting from West Frankfort to Harrisburg, but is still holding on to his bachelor status.

Kenneth T. Kamber, Met '58, completed his master's degree requirements here last year, and is now at Stanford where he hopes to finish his Ph.D. in metallurgy this year. Ken and Ethel announced the arrival of the Kamber heir, Craig Thomas, on September 26, 1961.

The November, 1961 issue of **Mechanization** magazine has several pages devoted to the North American Coal Corporation and some particularly fine words to say about Robert N. Morris, Min '47, General Manager, Southern Division. Judging from the pictures, Bob has apparently recovered from his recent illness. His headquarters are at Monmoth, West Virginia.

John Sayles, Met '56, joined Lindberg Engineering Co. after receiving his M.S. from this department in 1958, and has been keeping us informed on some of the interesting phases of his work there. One of his more exciting assignments occurred last year when he spent several months in California on the erection of a specially designed controlled atmosphere, bottom quench, traveling gantry furnace to heat treat complete missile frames. Jack was fortunate enough to be joined by his wife, Anna, during the later stages of the work so they could enjoy a California vacation together before returning to Chicago.

Received a call last month from W. H. "Red" Couts, Met '54, from his new position with Wyman-Gordon at Worcester, Mass. Red is doing research and development work on heat resistant alloys in the air force heavy press plant. Red was formerly at GE's Evin-dale, Ohio plant, and reports the concentration of our grads in the Cincinnati area is beginning to disperse, as Roy Athey, '53, is now with Pratt and Whitney in Florida, and Bill Hensley, '49, has taken a position in the GE-administered AEC lab in San Jose, California.

More Alumni News

Jim Yancik, Min '59, has left ENOCO and is now an engineer for the Sahara Coal Company, Inc., in Harrisburg, Illinois. Jim, his wife, and their one child (so far) are now living in that fair city.

George Purdy, Met '42, made his first visit to the campus since 1946 to show his son, now a senior in high school, what a first rate engineering college looks like.

It was a pleasure to hear from Joe Foster, Met '41, and that he enjoys receiving the Newsletter, a real compliment considering Joe's journalistic background as Associate Editor of **Metals Progress** and the ASM Handbook. Those of you who may have glanced at the **Metals Progress** masthead lately may have noticed the heavy representation of our alumni. In addition to Joe, there's Carl Weymueller, '49, as Assoc. Editor; Fred Siegrist, '49, as Assistant Editor; and Bob Bertossa, '49, serving as Consulting Editor. Joe has reported his new home address as 3285 Braemar Road, Shaker Heights 20, Ohio.

Ed Spencer, Met '49, has switched from consumer to producer status, as he resigned his position with American Can at Barrington to take a position as Supervisor of Container Materials Research for National Steel Corporation of Weirton, Pennsylvania.

R. C. Anderson, Met '51, is one person who is benefitted by the lack of metallurgical engineering graduates, as this creates a large demand for his consulting services. Bob has a new business address: 7606 Gulf Freeway in Houston, Texas; he also receives mail at P.O. Box 12037, Houston 17.

Howard Randall, Met '47, is now associated with the International Nickel Company, 1817 Tennessee Bldg., Houston 2, Texas. His home address is 13111 Highwood Rd., Houston 24. I imagine Howie has settled down to be a solid citizen, and doesn't even remember his reputation as the "character" of the class of '47.

Bob Frankenber, Met '52, resigned his position with Borg-Warner in Decatur, Illinois, and has taken a job in the Stainless

Division of Jones and Laughlin in Canton, Ohio. This information was exchanged when Bob and his family met Prof. Bob Bohl and his family by coincidence at a toll-way restaurant while both families were on vacation. Bob was active in the local Sangamon Valley Chapter of ASM, and we'll miss our frequent opportunities to meet with him.

Ken Janowski, Met '59, has transferred from his position with Atomics International to Douglas, where he is working on low temperature creep in steel.

R. M. Willard, Met '59, is now working in the Autonetics Division of North American on microminuturization of electronic circuits, electron beam processes, and epitaxial film deposits. His home address is 1462 Buster, Simi, California.

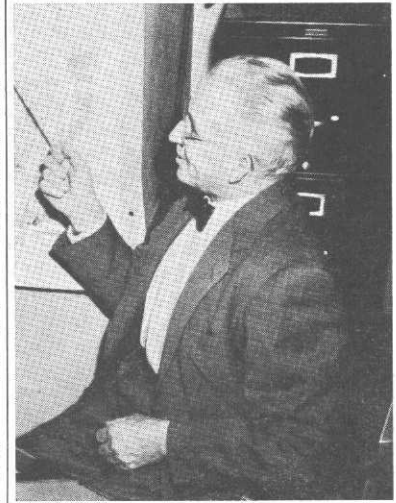
Frank M. Lister, Met '44 (M.S. '47), has been promoted from Chief Materials Engineer to Director, Quality Control for Karman Aircraft Corp., Bloomfield, Conn.

George Haley, Met. '56, (M.S. '57), is now Supervisor, Hard Surfacing Rod Production for WaiMet Alloys Co., Dearborn, Michigan. George was formerly at Wright Field, Columbus, Ohio.

Harold Gegel, Met. '55, was on the campus several months ago primarily to talk with Prof. Balluffi about furnace design. Hal is at the Fundamental Research Laboratory at Wright Field, and is working on his Ph.D. at Ohio State University.

Another visitor this year was Stewart Sanderg, Met '48 (M.S. '49). Stew has been with Westinghouse since his graduation in a variety of capacities. For three years, until 1959, he was on assignment to the Radiation Laboratory in Livermore, California high temperature materials selection for reactor applications. In 1959, he returned to Pittsburgh (unfortunately, he couldn't bring the the West Coast climate with him) to work on thermoelectric elements in the APD, and recently joined the Astonuclear Department working on high temperature fuel materials.

Prof. R. G. Wuerker Has Passed Away



Professor Rudolph George Wuerker passed away on August 30, 1961 in Santa Monica, California. He had been in ill health for some time, and on leave from his duties at the University since April of this year.

Dr. Wuerker came to the University in 1949 and was promoted to the rank of full professor. His lively sense of humor and the warm spot in his heart for students in general and foreign students (Rudy became a U. S. citizen in 1954) in particular, will be sorely missed.

Although known particularly for his work in rock mechanics. Dr. Wuerker was a prolific writer. His papers, in a variety of technical journals, reflected his wide range of interest in a number of fields of engineering, including mining, geophysics, mineral beneficiation, and coking properties of coal.

Professor Wuerker is survived by his widow, Isabel, whose address is P.O. Box 167, Santa Monica, California.

ELECTRON MICROSCOPE

(From page one)

Looking forward to the operation of the new laboratory, Professors Ricketts and Wayman attended a course on electron microscopy during June at the University of California in Berkeley. Installation here is now near completion, so that professors and students alike are learning to operate the new instruments. The laboratory should prove to be a valuable addition to the facilities of the department.