News Notes

U.S. Courier Satellite Marks Third Anniversary of Sputnik I; Inter-Agency Rivalry Emerging

The Army sucessfully orbited a 500-pound Courier communications satellite from Cape Canaveral, Fla., on 4 October. During its first circuit of the earth the vehicle transmitted a message from President Eisenhower to Secretary of State Herter at the United Nations, marking the third anniversary of the launching of the first satellite, the U.S.S.R.'s Sputnik I, and the opening of the space age. Many Western scientists have been expecting the Soviet Union to commemorate the occasion with yet another space triumph, but no announcement has been made.

The United States has so far launched 26 earth satellites and two deep space probes. The Soviet Union has fired six earth satellites (each many times heavier than those of the United States), one deep space probe, and a successful moon shot.

The new Courier has further increased the prospects for improved international communication. An earlier step was the successful launching, in August, of the National Aeronautics and Space Administration's balloon satellite Echo, which reflects radio signals between two widely separated points. The Courier, known as a "delayed repeater," is an active satellite that sends and receives messages. When it is in sight of a ground station, it can operate at the rate of 372,500 words in a 5-minute period. Messages are stored on tape recorders in the satellite and transmitted back to earth on command when the vehicle is over the next station.

The Courier experiment is part of the preparation for the Army's Project Advent, in which it is planned to space three 1-ton satellites above the equator at an altitude of 22,500 miles so that each will remain over a single spot on earth, moving at the speed at which the earth rotates.

Agency Rivalry

The Echo and Courier have raised the possibility of a jurisdictional controversy between NASA and the Army over the conduct of the communications satellite program. Heretofore, the military and civilian programs have been clearly defined, the first being devoted to active satellites and the second to passive. Now, however, it has been reported that NASA is considering work on active communications satellites. The space agency's tentative plans have aroused the concern of the Senate Aeronautical and Space Sciences Committee, which is drafting a report warning of the danger of duplication of effort in the development of communications satellites, as well as in other fields such as manned space flight.

More Neanderthal Skeletons Found in Shanidar Cave, Iraq

Columbia University anthropologists have discovered three additional skeletons of prehistoric men in Shanidar Cave in northern Iraq, which yielded three Neanderthal skeletons in 1957 and the skeleton of a prehistoric infant in 1953. An expedition led by Ralph Solecki, assistant professor of anthropology at Columbia, also discovered a burial place with 26 skeletons, date palm pollen, wild wheat, and additional evidence of a change from cave to village life.

The excavations were made near Shanidar, a small Kurdish village of about 150 persons in the Zagros Mountains, 250 air-line miles north of Baghdad, Iraq, near where the borders of Iraq, Turkey, and Iran meet. The expedition was cosponsored by Columbia University and the Smithsonian Institution, under a research grant from the National Science Foundation.

Solecki commented that the new finds, like the ones of the 1957 season, probably represent a "conservative" type of Neanderthal who became extinct in northern Iraq about 45,000 years ago. He said that it is possible that the Zagros mountain area may have been a refuge for these prehistoric people, since there is geological evidence suggesting that in Palestine a more humanly advanced "progressive" Neanderthal was already in existence long before this time. He observed:

"The Neanderthal skeletons of Shanidar Cave give us physical evidence of the Mousterian [stone-age] culture bearers whose artifacts in Iraq were first found at the cave of Hazer Merd near Sulaimaniya [in Iraq, about 100 miles south southeast of Shanidar] more than 30 years ago. The finds are important to human paleontological studies, especially since their very number represents a population series for comparative study."

The cave lies at an altitude of 2500 feet. It provides good, but airy, shelter

Ralph Solecki, T. Dale Stewart (in checkered shirt), Jacques Bordaz, a graduate student at Columbia, and a representative of the Iraqi government, in Shanidar Cave examining one of the seven skeletons of prehistoric man found there.

and is comparatively dry and well-protected from the weather, with a southern exposure. The expedition's excavation, sunk in the center of the floor area, was graduated down in steps to a depth of 45 feet, where bedrock was encountered. The surface area of the pit measures 20 to 30 feet wide and 80 feet long. Solecki said that shepherds dumped debris into the excavation after the 1957 season, and the scientists and their party spent a month this year cleaning it out.

All of the seven Neanderthal skeletons were found in the lower level of the sediment, dated 45,000 and more years ago. The lowest skeletons were 10 to 12 feet deeper than the others and were estimated geologically to be about 70,000 years old, while the upper ones were found by carbon-14 methods to be about 45,000 years old. The skeletons are more complete than are usually found—virtually whole ones fairly well preserved. Only about one-tenth of the cave has been excavated; excavation of the remainder is expected to provide other specimens.

Six of the skeletons have been sent to the directorate general of antiquities of Iraq in Baghdad. Arrangements have been made for the seventh to be sent to T. Dale Stewart, a member of the expedition, at the Smithsonion Institution. Solecki also has arranged for shipment to him of a case of animal bones for study by zoologists and a case of soil samples for study by geologists.

Office for Japanese-American Science Cooperation Opens in Tokyo

Two representatives of the National Science Foundation, Robert T. Webber and Henry Birnbaum, have been assigned to the staff of the American Embassy, Tokyo, to establish an office to assist in promoting exchange of scientific knowledge between scientists and institutions in Japan and the United States. They will act as an integral part of the embassy in close cooperation with the science attaché, Willis R. Boss.

As part of their duties, the two men will study and report on Japanese science organization and funding, both private and governmental, and will make similar information on American science available to Japanese scientific institutions. One of their principal functions will be to develop and promote the exchange of scientific information of a documentary nature. In this connection, they will assist in the publication in English of scientific articles and abstracts written by Japanese scientists and will support activities for translating and abstracting existing Japanese science information into English. They will also encourage the exchange of scientists between Japan and the United States and will arrange surveys, reviews of research, and science education activities.

Inter-Agency Policy Disagreement

Establishment of the new office is the outcome of long-standing policy disagreement among several government agencies. In recent years the upsurge of Japanese science has prompted a number of United States officials to urge the setting up of a scientific liaison office in Japan.

Last year the Office of Naval Research, which has for some years operated a large and successful office in London for European science cooperation, launched plans to form a similar unit in Tokyo. The State Department objected, however, on the grounds that in the present political climate such an office should not function under military auspices. Nevertheless, there have been recent reports that the Department of Defense may also open a scientific office in Japan.

Educators Recommend Broader Science Programs in Public Schools

Science education for American children and youth must begin in kindergarten and continue through the 12th grade. The recently published report of the science manpower project of Teachers College, Columbia University, urges that science be made a "fourth R" in the early program of general or liberal education. It recommends that science education should begin in kindergarten, and must be given the same importance as reading, writing, and arithmetic in the six elementary grades. For the junior high school, a 3-year program in general science for all students is recommended.

In the senior high school, science should be designed for three groups of students: those who will complete their education with high school, an academic group who will go on to college, and a special academic group with "marked science interest and aptitudes."

The report, *Policies for Science Education*, was prepared by a group drawn largely from the ranks of professional educators concerned with the teaching of science. They worked under the direction of Frederick I. Fitzpatrick, head of the department of the teaching of science at Teachers College. Fitzpatrick is editor of the report and director of the science manpower project.

The science manpower project was organized 4 years ago to help improve the teaching of science in the nation's schools. It is supported largely by a group of leading American industries and foundations. The report recommended, among other things, stiffer requirements for science teachers, opposition to the pressure of parents to establish "easier" programs for their children, and a shift away from the tendency to regard science and mathematics courses as electives that the student can easily avoid taking.

Science Information Exchange Organized

A Science Information Exchange has been established within the Smithsonian Institution. It was organized in late September by representatives of the Public Health Service, Department of Defense, National Science Foundation, Veterans Administration, National Aeronautics and Space Administration, Atomic Energy Commission, as well as of the Smithsonian. The new organization developed from an expansion of the successful Bio-Sciences Information Exchange, which has been a cooperative enterprise under the aegis of the Smithsonian, with the financial support of the above-mentioned agencies, for the past 7 years.

Orr Reynolds, director of the Office of Science, Defense Research and Engineering, Department of Defense, was elected chairman of the governing board for the coming year, and Lyndon Lee, coordinator of research in surgery, and chief, Extra V. A. Research Division, Veterans Administration, was made vice chairman. Stella L. Deignan, director of the Bio-Sciences Information Exchange since its initiation, will be the director of the staff of the expanded agency.

The basic purpose of the Science Information Exchange, as stated in the agreement between the participating agencies, is as follows: "To foster and facilitate effective planning and management of scientific research activities

supported by United States agencies and institutions by promoting the exchange among participating agencies of administrative data about all types of current research. This process will include the accumulation, organization, analysis, and distribution of pertinent information and data concerned with all types of research within the scope of the Science Information Exchange."

The exchange will make available information on research in progress that has been filed with the exchange to its supporting agencies and other qualified investigators. It plans to spend the months immediately ahead working out procedures for the inclusion of the physical sciences in its program. It is expected that the actual scope of coverage and service, by subject matter and by types of research projects, will evolve and expand gradually.

News Briefs

U.N. oceanographic study. The United Nations is planning an extensive study of the world's major bodies of water. Fish will be counted, fertility and productivity studied, and the floors of oceans mapped. Roger Revelle of the Scripps Institution of Oceanography, a member of the national committee of the United Nations Educational, Scientific and Cultural Organization, recently announced plans for the international cooperative program, which is expected to cost contributory nations a total of $20 million a year. UNESCO will provide $500,000 for the first 2 years of operation.

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Smog warning. Advance warning of impending severe smog conditions is now available to all cities east of the Rocky Mountains under a new cooperative network operated by the Weather Bureau, the Department of Commerce, and the Public Health Service. Thirty-six States will be able to get warning bulletins by teletype from the Weather Bureau Research Station, located at the Public Health Service's Sanitary Engineering Center in Cincinnati.

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Botanical museum closed. Since 15 June the museum building of the New York Botanical Garden, which houses the museum, the library, the herbaria, and the paleobotanical collections, has been temporarily closed to visitors. The extensive renovation work undertaken by the Department of Parks of the City of New York is expected to be completed in time for the building to reopen by about 1 January 1961. Meanwhile, the administrative and scientific staff have found temporary quarters in other buildings of the garden, and a skeleton library of reference works and current publications is available.

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NASA materials research. The National Aeronautics and Space Administration has announced the establishment of a Materials Research Programs Division. Reporting to the assistant director for structures and operating problems in the Office of Advanced Research Programs, the division assumes responsibilities previously fulfilled by elements of both the propulsion and structures divisions. George C. Deutsch, formerly head of the Refractory Materials Branch at NASA's Lewis Research Center, is chief of the new division.

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Biological teaching films. The University of California has announced the release, for rent or sale, of two new teaching films: *The World Within*, a general introduction to the study of parasitology, and *The Life and Death of a Cell*, which describes modern cell theory. For information, write to the Department of Visual Communication, University Extension, University of California, Los Angeles 24, Calif.

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Research dog hero. On 1 November the board of directors of the National Society for Medical Research will select the Research Dog Hero of 1960. Nominations for the award may be made by anyone. The research dog must be alive, have participated in important scientific work, and preferably be now either a pet or at least allowed the freedom of the institution's animal quarters. Nominations must be received by 30 October at society headquarters, 920 South Michigan Blvd., Chicago 5, Ill.

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Nutrition examinations. The American Board of Nutrition will hold the next examinations for certification as a specialist in human nutrition on 10 April 1961 in Atlantic City. Application forms, which must be returned by 1 March, may be obtained from the secretary, Robert E. Shank, M.D., Department of Preventive Medicine, Washington University School of Medicine, Euclid and Kingshighway, St. Louis, Mo.

Grants, Fellowships, and Awards

Endocrinology. The American Institute of Biological Sciences has received funds that will enable it to award travel grants to approximately 25 American scientists desiring to attend a symposium on comparative endocrinology in Oiso (Tokyo), Japan, 6–10 June 1961. Application blanks may be obtained from AIBS, 2000 P St., NW, Washington, D.C., Attention: Dr. John R. Olive. Applications must be filed with AIBS *before 30 November.*

General, for women. The American Association of University Women has announced its 1961–62 program of fellowships for women of the United States. The awards are open to women who hold the doctorate, or who will have fulfilled all the requirements for the doctorate except for the dissertation by the time the fellowship year begins, or who have attained professional recognition. Fellowships are unrestricted as to age or field and may be used abroad or in the United States.

Forty fellowships are available: one for $5000, four for $4000, ten for $3000, and 25 for $2000 to $2500. Applications must be filed *before 1 December.* For information, write to: Fellowships Office, AAUW Educational Foundation, 2401 Virginia Ave., NW, Washington 7, D.C. (Information about international fellowships and grants offered for women of other countries may be obtained from the same address.)

Laboratory equipment. Scientists and science teachers in colleges, universities, and nonprofit organizations have been invited by the National Science Foundation to submit proposals for the development of prototypes of new laboratory equipment for use in the nation's primary and secondary schools and in colleges. Proposals signed by the project director and a responsible officer of the sponsoring college, university, or scientific organization should clearly describe the work to be done, give the qualifications of the personnel involved, show how the proposed device will be tested and eventually made generally available, and present a detailed budget.

Support under this program will not be provided for the purchase of equipment for refurbishing school and college laboratories, or for commercial production of equipment or materials. Although proposals may be submitted at any time, those to be considered for support during the current fiscal year

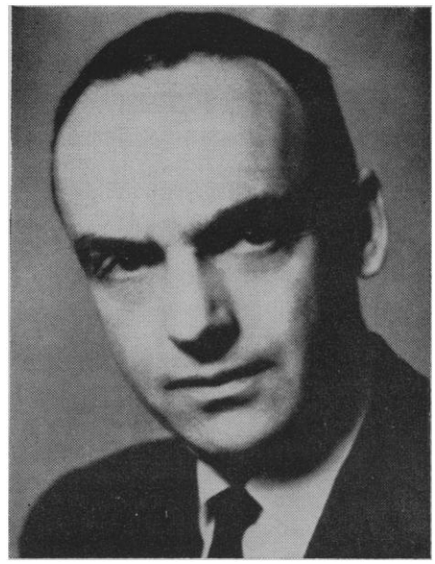
should be sent *before 15 December* to the Course Content Improvement Section, Division of Scientific Personnel and Education, National Science Foundation, Washington 25, D.C.

Scientists in the News

William W. Rubey, one of only three specially appointed staff research geologists at the U.S. Geological Survey, has resigned to take up a new post as professor of geology at the University of California, Los Angeles, after a distinguished career with the Survey that began in 1920 when he became a geologic aide. Rubey, whose most recent public recognition was an honorary degree from Yale University in June, is a member of the National Science Board and of the AAAS Board of Directors. He will retain a part-time affiliation with the Geological Survey.

Rubey's principal interests and accomplishments have centered around geologic principles and processes; his research has ranged widely over such diverse fields as petroleum geology, geomorphology, principles of sedimentation, the causes and results of mountain building, economic geology, and oceanography. He made the initial geologic study of the Cliffside field of Potter County, Tex., which proved to be the nation's outstanding helium reserve. All gas rights in the field were acquired by the government, and the operations of the Amarillo helium plant since its opening in 1929 have been based on the production of the Cliffside fields.

William W. Rubey



H. Stanley Bennett

H. Stanley Bennett, professor and chairman of the department of anatomy at the University of Washington, Seattle, has been appointed dean of the division of the biological sciences at the University of Chicago, effective 1 January 1961. He will succeed **Lowell T. Coggeshall**, who held the deanship for 13 years. Coggeshall was appointed the university's vice president for medical affairs last March.

Bennett, an internationally recognized biologist who is immediate past president of the American Association of Anatomists, is widely known as a specialist in cellular anatomy and cytochemistry. His work with the electron microscope has yielded fundamental new knowledge of how human muscles work.

Louis P. Hammett of Columbia University, one of the nation's foremost physical chemists, has won the American Chemical Society's 1961 Priestley Medal, highest honor in American chemistry. The gold meal will be presented to Hammett "for distinguished services to chemistry" at the American Chemical Society's 139th national meeting in St. Louis in March.

Hammett's research, chiefly on the speed of chemical processes and the arrangement of atoms within molecules, has helped clarify the theory of acidity and added to knowledge of chemical reactions in solutions. As a wartime contributor to national defense, Hammett worked on explosives and rocket propellants. He also is widely recognized for his accomplishments as an educator and administrator.

Karl K. Darrow, who retired from the technical staff of Bell Telephone Laboratories in 1956, has received the Karl Taylor Compton Gold Medal, the highest honor of the American Institute of Physics. The Compton medal, which has been awarded only once previously, is granted for "high statesmanship in physics." Darrow was cited for his devotion to physics "in ways without precedent or parallel," in a ceremony at the Arden House of Columbia University, Harriman, N.Y. Darrow, who served nearly 40 years with the Bell System, has been secretary of the American Physical Society since 1941.

Six winners, including two radio stations, have been named by the American Heart Association to receive its 1960 Howard W. Blakeslee awards for outstanding reporting on heart and circulatory diseases. The awards will be presented at a luncheon of the association's Council on Community Service and Education at the Sheraton-Jefferson Hotel in St. Louis on 22 October in conjunction with the annual meeting and scientific sessions of the association. The winners, each of whom will receive a citation and an honorarium of $500, are as follows.

Barbara Milz, newspaper reporter, for a six-part series in the Augusta, Ga., *Chronicle* (December 1959) describing open-heart surgery and the research advances which combined to make possible a successful heart operation. (Mrs. Milz is at present with the Atlanta *Constitution.*)

Francis Bello, for his *Fortune* magazine article, "How good is Mr. Hurley's diet?" (December 1959), dealing with the relationship of diet and coronary disease and presenting the latest medical opinions on this subject.

H. M. Marvin, associate clinical professor of medicine, Yale University School of Medicine, and past president of the American Heart Association, for his book, *Your Heart: A Handbook for Laymen* (Doubleday), which improves public understanding of the heart and circulatory diseases.

Isaac Asimov, free-lance writer, for his book about the circulatory system, *The Living River* (Abelard-Schuman), which explains for the layman the manifold activities of the human bloodstream and their relationship to the structure and disease of the heart and circulation.

"A new life for Larry," radio program presented 1 July 1959 by KMOX, St. Louis, Mo., which dramatized a sig-

nificant research achievement through the documentary account of an operation inside the heart of a 5-year-old boy.

"Close to the heart," a television film presented 21 February 1960 by WCSH-TV, Portland, Me., which illustrated progress in heart research including new advances in heart surgery.

Arne Tiselius, Nobel Prize winning director of the Institute of Biochemistry, University of Uppsala, Sweden, is in this country to discuss special research in protein chemistry, electrophoresis, and absorption with scientists of the Army Research Office and the Army's technical services. He will also confer with investigators at the Quartermaster Research and Development Command, Natick, Mass., and the U.S. Army Medical Center at Walter Reed Hospital.

Jacques Monod, professor of biochemistry at the Sorbonne and *chef du service* at the Institute Pasteur, Paris, is at the University of Oregon this month as visiting lecturer in biology in the Institute of Molecular Biology.

Twenty-three men will be honored by the Franklin Institute at its annual Medal Day on 19 October. With the exception of the Franklin Medal, the awards are presented in the order in which they were founded.

Franklin Medal (1914): **Roger Adams**, research professor of chemistry emeritus, University of Illinois, Urbana, for his contributions to organic chemistry.

Elliot Cresson Medals (1848): **Hugh L. Dryden**, deputy administrator, National Aeronautics and Space Administration, for contributions to aerodynamics and guided missiles; **Arpad L. Nadai**, formerly consulting mechanical engineer, Westinghouse Research Laboratories, Pittsburgh, Pa., for contributions to elasticity and plastic flow of materials; and **William F. G. Swann**, director emeritus of the Franklin Institute's Bartol Research Foundation, Swarthmore, Pa., for cosmic ray investigations; also a Certificate of Merit (1882) to **Richard R. Moore**, chief metallurgist, Naval Air Engineering Facility, Naval Air Material Center, Philadelphia, Pa., for fatigue testing of materials.

Edward Longstreth Medals (1890): **W. Edward Chamberlain**, special assistant to the chief medical director for atomic medicine, Veterans Administration, Washington, D.C., for contributions to radiological engineering; **John W. Coltman**, associate director, Research Laboratory, Westinghouse Electric Corporation, Pittsburgh, Pa., for contributions to the x-ray image amplifier; **Frederick A. Keidel**, research project engineer, Experimental Station, E. I. DuPont de Nemours & Co., Wilmington, Del., for development of an electrolytic moisture analyzer; and **Moulton B. Taylor**, president, Aerocar, Inc., Longview, Wash. for development of a flying automobile.

Howard N. Potts Medal (1906): **Charles S. Draper**, professor and head of department of aeronautics and astronautics and director of the instrumentation laboratory at Massachusetts Institute of Technology, for contributions to inertial navigation.

Louis E. Levy Medals (1923): **Ezra S. Krendel**, manager, engineering psychology laboratory, Franklin Institute Laboratories for Research and Development, Philadelphia, and **Duane T. McRuer**, president, Systems Technology, Inc., Inglewood, Calif., in recognition of their paper on the human operator as a servo system element.

George R. Henderson Medals (1924): **Ernest Chatterton**, engineering consultant, formerly chief engineer, D. Napier and Son, Ltd., London, England, and **Herbert Sammons**, managing director, D. Napier and Son, Ltd., for their development of the "Deltic" diesel-electric locomotive.

John Price Wetherill Medals (1925): **Raymond Castaing**, staff member, Laboratoire de Physique des Solides, Université de Paris, France, for development of the electron probe microanalyzer; **Walter Juda**, executive vice president and technical director, Ionics, Inc., Cambridge, Mass., for development of a commercial method of desalting saline water; and **Victor Vacquier**, research geophysicist, Scripps Institution of Oceanography, University of California, La Jolla, for his development of the first practical airborne magnetometer.

Walton Clark Medals (1926): **Robert W. Cook**, vice president, C. W. Fuelling, Inc. Decatur, Ind., and **Lee F. McBride**, C. W. Fuelling, Inc., Decatur, Ind., for their development of a leak-sealing system for gas mains.

Frank Brown Medal (1938): **R. Buckminster Fuller**, structural designer, Forest Hills, N.Y. for his inventive conception of the geodesic domes.

Stuart Ballantine Medals (1946): **Rudolf Kompfner**, director of electronics and radio research, Bell Telephone Laboratories, Inc., Holmdel, N.J., and **John R. Pierce**, director of research (communications principles), Bell Telephone Laboratories, Inc., Murray Hill, N.J., for their development of the traveling wave tube amplifier; and **Harry Nyquist**, formerly assistant director of systems studies, Bell Telephone Laboratories, Inc., Murray Hill, N.J. for his contribution to electrical communication engineering.

Allan D. McKnight, executive commissioner of the Australian Atomic Energy Commission, was made chairman of the Board of Governors of the International Atomic Energy Agency at the first meeting on 3 October of the newly elected board.

Guerogui Nadjakov of Bulgaria and **Carlos Graef Fernandez** of Mexico are vice chairmen.

The board also appointed a scientific advisory committee whose members include **Isidor I. Rabi** of the United States, **W. B. Lewis** of Canada, **Homi J. Bhabha** of India, **Vasily S. Yemelyanov** of the Soviet Union, **Bertrand Goldschmied** of France, Sir **John Cockcroft** of Britain, and **Louis Cintra do Prado** of Brazil.

Herbert Freeman, former head of the military data processing department of the Sperry Gyroscope Company, Great Neck, N.Y., has been appointed associate professor in the department of electrical engineering at New York University (Bronx).

Terance Charles Stuart Morrison-Scott was appointed director of the British Museum (Natural History) last spring, succeeding Sir **Gavin De Beer**.

Recent Deaths

Norman Bauer, Logan, Utah; 45; professor of chemistry at Utah State University; 9 Sept.

Russell D. Herrold, Chicago, Ill.; 72; professor emeritus of urology at the University of Illinois College of Medicine; 29 Sept.

Hermann I. Schlesinger, Chicago, Ill.; 78; emeritus professor of chemistry at the University of Chicago, and leader in jet and rocket fuel research; recent recipient of two of the top honors in American chemistry—the American Chemical Society's 1959 Priestly Medal, and the Willard Gibbs Medal awarded by the society's Chicago chapter; 29 Sept.

Herman A. Wagner, Chicago. Ill.; 94; consulting mining and metallurgical engineer.