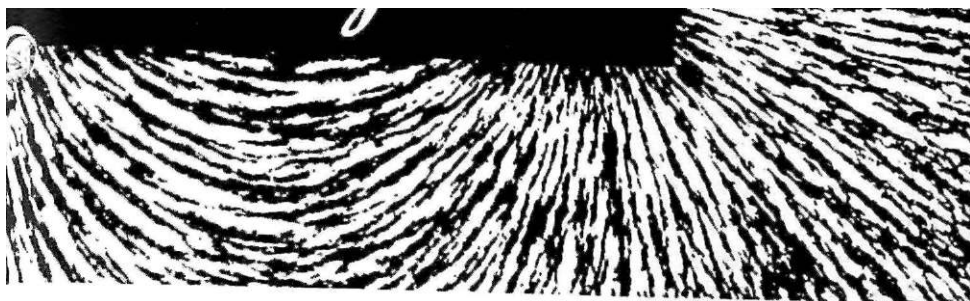




Published for the employees and families of the
LAWRENCE RADIATION LABORATORY
University of California
Berkeley • Livermore
August, 1959 Vol. 3, No. 8

FIDLER APPOINTED ASSISTANT DIRECTOR OF LABORATORY

Dr. Edwin McMillan has appointed Dr. Harold Fidler to the position of Assistant Director of the Laboratory effective August 5.

In this position he will serve as a staff assistant to the Director, assuming many of the responsibilities formerly carried by Dr. Donald Cooksey, Associate Director Emeritus.

Family Day and Hobby Show To Be Held in Berkeley

A Family Day and Hobby Show will take place at the *Berkeley* Laboratory on Sunday, September 20, from 1:00 to 5:00 in the afternoon.

If you have an interesting or unusual hobby, here's your chance to display it. Or if you know of hobbies your co-workers pursue, urge them to take part.

The Family Day will be a good opportunity for employees to bring their families to the Laboratory to see the wide variety of research facilities that are used in the work at Berkeley. The activities of the Laboratory will be demonstrated with a number of displays and other presentations.

If you wish to display your hobby, call Tane Nutting, Ext. 443, Berkeley.

Note to the ladies

Remember, the Laboratory is built on Hills. Be casual, and wear flat heels.

Thermodynamics Course Offered at Livermore

The Course, Physical Chemistry XB 114H—Thermodynamics, will be offered by the University Extension Division. It will be taught in Bldg. 143 at Livermore. ? This is one of the many courses to be offered under the Livermore education program. A list of the other courses was printed in the August 20 *Calendar*.

For registration and information, call Leonard Lind, Ext. 24.9, Livermore.



Loff to right: Morris Pripstein, Dr. Joe Lannutti, Dr. John Poirior, Dr. Janice Button, and Dr. Phillippo Eberhard discuss a piece of apparatus used in the experiment. They are standing near some of the equipment used to send the beam into the hydrogen bubble chamber.

Antilambda Seen In Bubble Chamber

Berkeley physicists have reported the first example of the production and decay of a hyperon-antihyperon pair seen in the 72-inch bubble chamber. (A hyperon is a particle that is heavier than a proton or neutron and differs from them in a quality called "strangeness.")

This pair is called the lambda and antilambda. The antilambda is the third particle of antimatter discovered by means of the Bevatron. The other two antiparticles are the antiproton, discovered in 1955, and the antineutron, detected in 1956. (The first antilambda was observed in emulsion plates exposed to a pi-meson beam at the Bevatron last year.)

Antiparticles are bits of matter that have properties exactly the opposite to their counterparts in ordinary matter. They do not normally exist in the ordinary world of matter, and if produced they exist for only a short time, for when they collide with ordinary particles they are annihilated with them. The result of the annihilation is the creation of other

particles that usually decay quickly and dissipate into energy.

The antilambda experiment at the Bevatron with the 72-inch bubble chamber involved the efforts of a large number of people. Two Berkeley research groups, headed by Dr. Luis Alvarez and Dr. Burton Moyce, cooperated in performing the experiment. Dr. Phillippe Eberhard (visiting from the Centre National de la Recherche Scientifique de France), George Kalbfleisch, Dr. Joe Lannutti (visiting from Florida State University), Morris Pripstein, Dr. Lynn Stevenson, and Nguyen Huu Xuong (visiting from the Vietnam Atomic Energy Office) were primarily responsible for setting up and operating the beam. They were assisted in this part of the project by Janos Kirz, Arnie Nirdlinger, Peter Ralph, Willy Talley, and Phil Yager.

Bill Boyd, Jim Carroll, Keith Hinrichs, and Dr. John Poirier set up and operated the electronic particle detectors for the

Continued on Page 2

Antilambda Seen In Bubble Chamber

Continued from Page 1

beam. The velocity spectrometers were operated by or under the guidance of Bob Watt and Dr. Sherwood Parker. Don Gow and his bubble chamber operators kept the 72-inch chamber going.

Dr. Margaret Alston, Dr. Hugh Bradner, and Dr. Janice Button directed the film scanning and measurements groups, which consisted of John De Soto, Vincent De I. any, Bob Ioulks, Afzaal Hussain, Chuck hear, Beverley Lee, Carl Rindfleisch, Jerry Smith, Bonnie Thompson, Mel Waldman, and Boh West.

A number of other physicists, engineers, students, and technicians assisted in various phases of the experiment.

A system nearly 210 feet long, including three parallel-plate velocity spectrometers, six quadrupole lenses, and two bending magnets, filtered and directed a beam from the Bevatron. The beam consisted essentially of antiprotons and mu mesons when it entered the liquid hydrogen bubble chamber. When the antiprotons in the beam collided in the chamber with the hydrogen nuclei (which are protons), many different types of events took place—one of which was the creation of an antilambda-lambda pair. So far two interactions out of about 6,000 have resulted in antilambda-lambda production in which both hyperons decayed in the chamber.

A picture of such an event (sketch at right) in the bubble chamber shows the antiproton make its entrance, move a distance in the chamber, and disappear. Then further ahead is seen a V-shaped pair of tracks, both pointing back to the point of disappearance of the antiproton. In further analysis of the event, physicists conclude that two "invisible" particles (particles with no charge leave no tracks) were formed and proceeded forward in diagonal directions. One soon decayed into a negatively charged antipro-

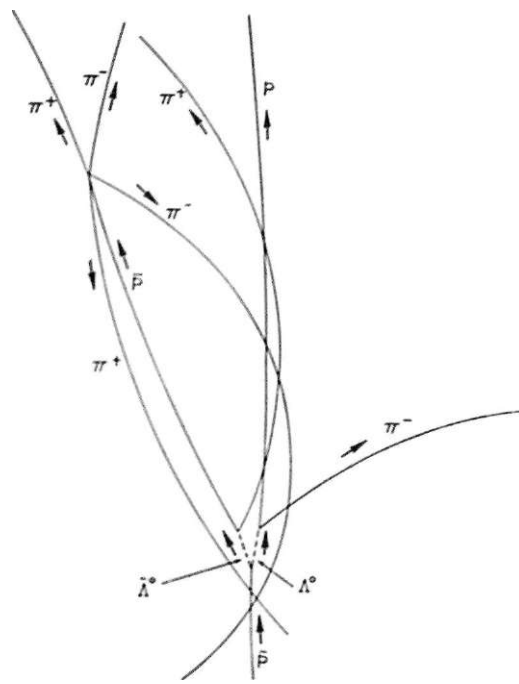


Figure 1

A photograph of the production of a lambda-antilambda pair. The symbols are interpreted as follows:

- π^+ = pi meson of positive charge
- π^- = pi meson of negative charge
- P = proton
- $\bar{P}$ = antiproton
- Λ^0 = antilambda (a neutral particle)
- $\bar{\Lambda}^0$ = lambda (a neutral particle)

ton and a positively charged pi meson, and the other decayed into a positively charged proton and a negatively charged pi meson.

An analysis of the event indicated that both invisible particles were lambda hyperons; the one that decayed into the antiproton (which may have annihilated in the chamber) is the antilambda.

The experiment is continuing so that the scientists may study the properties of such events as well as other types of antihyperon production events that may be found.

Hartsough Placed in Charge of Bevatron Operations

Walter Hartsough has been placed in charge of Bevatron operations. He will replace Harry Heard, who left the Laboratory to accept a position with Hewlett-Packard Electronic Products, Palo Alto.

Mr. Hartsough came to the Laboratory in the spring of 1946 as a physicist in the Cloud Chamber Group. When the Materials Testing Accelerator (MTA) program began at Livermore, Mr. Hartsough joined the Alvarez Group in Berkeley to work on the MTA.

In 1952 he transferred his interest to the Bevatron and helped build the accelerator for that machine. When the Bevatron started operations in February 1954, Mr. Hartsough became Crew Supervisor of the Bevatron Operations Group. A year later he became Assistant to Harry Heard, who was in charge of operations and has held that position until his recent appointment.

Walter Hartsough is a graduate of the University of California (A.B., physics, 1944). He joined the United States Navy in 1942 and was assigned to the V-J program. He was sent back to the University of California, where he completed his Bachelor's degree. He served in the Navy until 1946.

Lambertson to Assist in Bevatron Operations

Glen Lambertson will assist in Bevatron Operations and will be in charge of development work for Bevatron improvement.

Mr. Lambertson attended the University of Colorado (B.S., engineering physics, 1948) and the University of California (M.A., physics, 1951). During the war he served in the United States Army.

Early in 1951 Mr. Lambertson came to the Laboratory to work as a part-time accelerator operator while completing his studies for his Master's Degree. Later that year he worked on the Materials Testing Accelerator and in 1952 joined the Magnet Test Group to assist in the development of the Bevatron magnet. When the Bevatron started up in early 1954, he was concerned with various phases of Bevatron operation and also the ISW cyclotron conversion.

In the fall of 1954 Mr. Lambertson took a leave of absence to go to Brookhaven National Laboratory to assist in the development of the alternating-current cyclotron, which was under development there. He returned to the Laboratory the following year to work in the Magnet Test Group and in a short time transferred to the Lofgren Group. He has since been engaged primarily in experimentation with antiparticles. He was one of the group that discovered the antiproton in 1956.

HARFORD

APPOINTED

William Harford has been appointed Budget Officer for the Laboratory.

Mr. Harford attended the University of California (B.S., Chemical Engineering, 1948, and M.B.A., 1953). For four years he worked for the Clorox Chemical Company, Oakland. During his last two years at Clorox he worked nights and attended college in the daytime to earn his Master's degree in Business Administration.

Mr. Harford joined the Laboratory in October 1952 immediately after completing his Master's thesis. He began work as the Business Office Representative

BUDGET

OFFICER

in the original Operations Division and took part in the Livermore Laboratory's first test series at Nevada in 1953. Shortly thereafter L Division was formed, and Mr. Harford transferred to this new group. In September 1954 he went on a leave of absence for nine months because of illness. When he returned in April 1955, he resumed his position in L Division but was occupied mainly with technical liaison with A Division. A few months later he transferred to the Director's Office as Budget Officer for the Livermore Laboratory, the position he held until his recent appointment.

Kozlov Tours Berkeley Laboratory

Frol Kozlov (First Deputy Chairman USSR Council of Ministers) was a guest of the Berkeley Laboratory during his mid-July American tour.

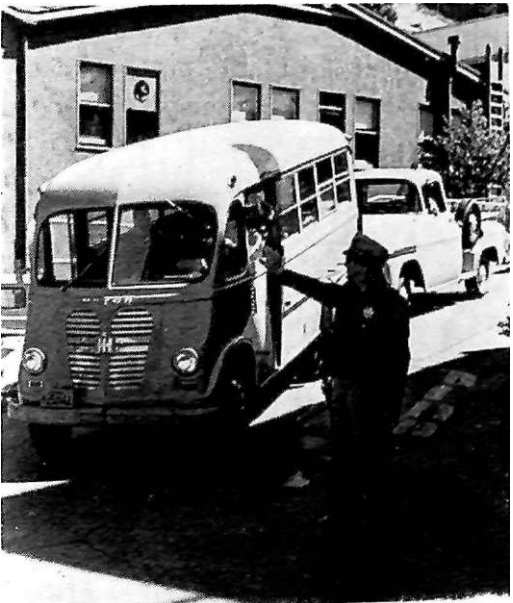
When he arrived at the Laboratory with President Clark Kerr, Mr. Kozlov enthusiastically greeted Dr. Edwin McMillan (Director) and extended a warm handshake. Commissioner John Floberg (AEC, Washington) was then introduced.

The official party and their entourage were invited into the Bldg. 50 Auditorium, where Dr. McMillan briefly described the activities of the Laboratory and introduced Dr. Robert Thornton and Dr. Isadore Perlman (Associate Directors), Dr. James Born (Assistant Director of Donner Laboratory). Dr. Hugh Bradner (Alvarez Physics Research Group), Dr. Melvin Calvin (Bio-Organic Chemistry Group Director), Don Gow (Project Engineer in Charge of Bubble Chambers), and Dr. Bill Wenzel (Alternate Physics Group Leader in Charge of the Bevatron).

From Bldg. 50 Dr. McMillan, Mr. Kozlov, and their parade of followers proceeded to the Bevatron. As the two men stood on the mezzanine and looked down on the world-renowned machine, Dr. McMillan explained that it had an energy of 6.2 Bev (billion electron volts).

"We have one operating at an energy of 10 Bev at Dubna," said Mr. Kozlov. Dr. McMillan said that he knew about it and that the U.S. is building a 25-Bev machine at Brookhaven. Mr. Kozlov nodded and answered that a 50-Bev machine is planned for construction soon in Russia.

"Yes, I've heard about that too," said



Officer Jack Moneyhun stops traffic for the Russian-American procession.



Newspaper reporters strain to catch the conversation between Frol Kozlov (left), his interpreter (center), and Dr. Edwin McMillan.

Dr. McMillan, and asked how far along it was and would it also be in Dubna. Mr. Kozlov stated that the money had been appropriated, that the plans were ready, and that it will be at a location directly across Moscow from Dubna (which is on the Volga River to the north).

It was at this point that Mr. Kozlov remarked, "Physics is the best field for us to compete in."

The group was escorted next to the 72-inch bubble chamber. Don Gow and Hugh Bradner briefly described the workings of the bubble chamber. A similar machine is now under construction in Russia.

The group was then taken to the 184-inch synchrocyclotron, where Dr. Thornton explained the operation of the accelerator. Before leaving the Hill, the visitors paused to admire the view of the Bay.

Mr. Kozlov was surrounded by numbers of eager press photographers and correspondents from the Russian Press and the U.S. Press. Some were traveling

with the official party and others swarmed in from the local press. Mr. Kozlov's entourage included M. A. Menshikov (USSR Ambassador to the U.S.), Madam Y. S. Nasriddinova (Chairman, Presidium, Supreme Soviet, Uzbek SSR), V. S. Kalinin (Atomic Scientist), and about a dozen other officials and staff. The American Escort Party consisted of representatives from the State Department and the Governmental Affairs Institute.

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Left to right: V. S. Kalinin is shown a photographed bubble chamber event by Dr. Hugh Bradner and Dr. Robert Thornton.



The visit opened at the Bldg. 50 Auditorium. Left to right: M. A. Menshikov, President Clark Kerr, Frol Kozlov, and the interpreter.

record crowd attends RLRA picnic

Nearly 2 500 employees and guests attended the gala RLRA picnic at Linda Vista Park on July 19—the biggest yet!

Approximately 54 prizes were given for the dozen games that were played. All 720 participants in the events received free rides on the loop the loop. The hungry picnickers flocked to the Park's brand

new barbecue pits. Then there was dancing, swimming, and a variety of fun with sports for the young and old.

The Picnic Committee

Bud Tari (B Division) was the picnic chairman, and Jim Austin (Pipe Shop) and Leroy Hord (A Division) were in charge of the events.



Above: Music added gaiety. Left to right: Mary Ann Murphey, Ethel Murphey, Joe Murphey (Sherwood Accelerator Operator), Jack Blakeley (guest), Walt Thompson (Tool Crib Attendant), Walt Ridge (Student Shop Supervisor). Richard Ridge, and Mike Jaramillo (Plant Service). Below: Shishkebab and wieners for dinner. Left to right: Marianne Kugler (Berkeley Physics Research), Vaskin Hagopian (Berkeley Physics Graduate Student), Stan Klezmer (Electronics Counting Equipment Group), Don Davis (Livermore Mechanical Shops), and Laverne Davis.



Sue Voegele (daughter of Ai, Mechanical Engineering) walks off with first prize for the footrace for youngsters age 1 to 6.



VJTJ r- .-r.&^vtr-

The mad dash to win the footrace!

Calvin and Seaborg Honore:

Dr. Melvin Calvin was given an Honorary Degree of Doctor of Science (D.Sc.) from Oxford University, Oxford, England. The degree was presented to Dr. Calvin during a ceremony at Oxford on the first day of August.

Dr. Glenn T. Seaborg (Associate Director) has been elected an honorary Fellow of the Royal Society of Edinburgh, Edinburgh, Scotland.

SHERWOOD SCIENTISTS ATTEND CONFERENCES IN EUROPE

Four physicists from the Sherwood Group attended conferences in Europe this August.

Dr. Stirling Colgate, Harold Furman, Dr. Dick Post, and Chuck Wharton presented papers at the Fourth International Conference on Ionization Phenomena in Gases at Uppsala, Sweden.

Dr. Allan Kaufman also attended the conference, which was held August 10 to 21. Allan conducted a two-week seminar in the first half of August at the Ecole d'Ete Les Houches, Les Houches, France. The seminar was entitled "Trapped Theory for a Fully Ionized Gas."

Chuck Wharton is at present spending a year at the Max Planck Institute for Physik, Munich, Germany. He is working in the determination of electron density and electron temperatures.

Stirling, Harold, Allan, and Dick Newcomb attended the Informal Conference on the Stabilities of Plasma, at Oxford University, Oxford, England, August 24 to 26.

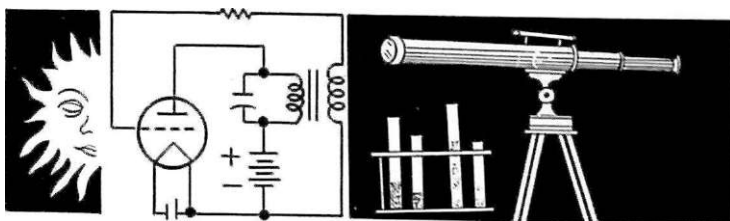
SGIWINN BICYCLES ARRIVE IN LIVERMORE

A fleet of 175 new Schwinn bicycles arrived at the Livermore Laboratory recently. The bicycles have been leased to us by an outside firm and are very sturdy and easy to ride. They will be maintained by a maintenance company, and your cooperation is asked in preserving the condition of these new late-model bikes. If you have comments, suggestions, or criticism, please call Ext. 7081.

Ride 'em, don't hide 'em!

In the past, bicycles have been found inside buildings, presumably withdrawn for individuals' personal use. The Plant Service Department requests that bicycles be placed in the racks only.

JUNIOR SCIENTISTS' W/ORKSHOP



By DR. BERNARD HARVEY

Some of the simplest experiments can be made with optical parts that are usually available around the home. Here are two:

The first experiment illustrates the law of reflection of light from mirrors. Take a small mirror from somebody's purse (avoiding detection, of course), and stick it upright in the center of a writing pad. A small piece of modeling clay or chewing gum (well chewed) will help to hold the mirror. Stick two pins A and B into the paper (see Figure 1), then look

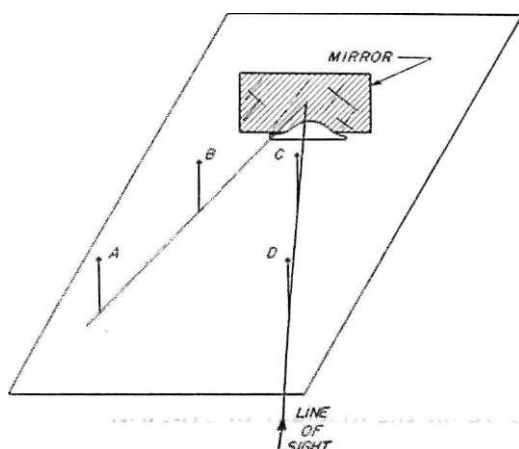


Figure 1

into the mirror from a distance of two or three feet and move your head around until the reflections of the two pins are perfectly in line with each other. Now stick in the pins C and D so that they are in line with the reflections of the other two pins. All four pins should now be perfectly lined up, as you look along the line of sight. Now draw a straight pencil line through the holes made by A and B, and another through the holes made by C and D. With a sharp pencil, draw a third line along the front of the mirror.

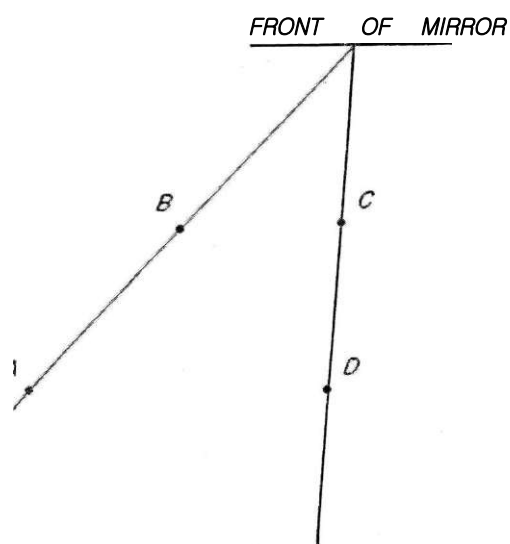
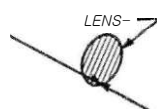


Figure 2

Your three lines should now look like Figure 2. If you have done this carefully, you will find that the angle that the line AB makes with the front of the mirror is exactly equal to the angle that the other line makes. You will find that no matter how you turn the mirror or place the pins A and B, this will always be true.

The second experiment uses two pins, a ruler, and a lens. You can use a box-camera lens, or a lens from a slide projector or enlarger. Hold it up towards the sun, or a distant lamp, and move a piece of paper up and down until you see a sharply focused image of the lamp or sun on the paper. Now measure roughly the distance from the lens to the paper. This distance is called the focal length of the lens.

Now stick the lens upright in the center of a table (bubble gum again), and place behind it a pin (A) which is between two and four focal lengths away from the lens. The lens will make an image of the pin. You can find the position of this image by looking at the pin through the lens and sticking a second



5

LINE OF SIGHT

Figure 3

pin B in the table between your eye and the lens (Figure 3). Now move your head from side to side, and watch both pins. They will not stay in line with each other. Move the pin B in and out until you find a position where the two pins appear to stay lined up no matter where you put your head. Pin B is now in the same position as the image of pin A. Measure the distance from A to the lens (called u in Figure 3) and the distance from B to the lens (v). These two distances enable you to calculate the focal length of the lens (f), using the equation

$$\frac{1}{u} + \frac{1}{v} = \frac{1}{f}$$

For my lens, I made $u=10$ inches, and

found $v=7.2$ inches. This gave me the equation

$$\frac{1}{10} + \frac{1}{7.2} = \frac{1}{f}$$

or $f=4.18$ inches. I repeated the measurement with $u=15$ inches, and in this case, v was **5.75** inches. These numbers gave $f=4.15$ inches, so that my two measurements agreed very well with each other.

And now regretfully I take my leave of the Junior Scientists and their fathers. I am supposed to be writing a book, and the way things are going it will be two years behind the publisher's deadline. We will do our best to find somebody to continue this column, because many of you have been kind enough to say that you read and enjoy it.

Editor's Note:

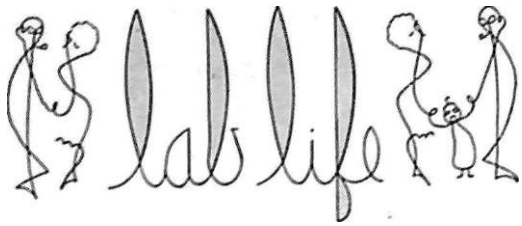
It is with extreme regret that THE MAGNET staff accepts Dr. Bernard Harvey's resignation from the Junior Scientists' Workshop column. We sincerely hope it is only temporary. So many people have followed and filed his column monthly that we know our readers will regret his absence and miss his inimitable humor.

Dr. Bernard Harvey was born in Banbury, England. He was educated at Oxford University, Oxford, where he earned a B.A., B.Sc., xM.A., and D.Sc. in chemistry. In 1942 Bernie began his career as a chemist at the British Ministry of Supply. Five years later he moved to Montreal, Canada, and worked for Atomic Energy, Ltd., and subsequently went to the Chalk River Plant.

In 1953 Bernie came to the Radiation Laboratory, where he has done studies of the transuranium elements. He was one of the codiscoverers of the element mendelevium in 1953. His main interest at present is the study of nuclear reactions carried out at the 60-inch cyclotron and the heavy-ion linear accelerator.

He is a part-time instructor on Campus and has taught several courses at the University Extension School. Next semester he is planning to teach Nuclear Chemistry 123 at Extension School.

Bernie married Margaret Brooker in England in 1941. Now Margaret and Bernie have four sons and one daughter. There's Richard, 15; Chris, 13; Michael, 11; Allison, 9; and Phillip, 4. The Harvey family enjoys many good times together in recreation out of doors. They own a nine-foot sailing dinghy for water sports; they camp and hike in the summer and ski in the winter. The three older boys are Boy Scouts, and last year Bernie was chairman of the Troop Committee, another activity he will forego until his book is off to press.



to the altar

Nevada

Charles Dykes (Electronics Engineering) and Kay Bollig on June 20.

Berkeley

Judy Bramell (Personnel) and Marv Atchley (Computer Operator) on August 1.
Rowena Vaca (Payroll) and David Hunrichs on May 16.

Livermore

Horace Furumoto (Optical Measurements) and Laurel Waishnor on June 10.
Barbara Lopachuk (Pass Office) and Jerry Dittman (Device Division) on June 27.
Pat Taylor (Personnel) and Gene Broadman (Mechanical Engineering) on July 12.

the stork brought

Nevada

Mr. and Mrs. Lloyd Guymon (Documentary Photography)—a son, Jesse Lewis, on June 12.
Mr. and Mrs. Robert Howe (Pluto Operations)—a son, Lawrence Frederick, on July 1.
Mr. and Mrs. John McShea (Administrative Services)—a daughter, Margie Lida, on April 14.

Berkeley

Mr. and Mrs. Richard (Marge) Frederick (Travel)—a son, Michael Leigh, on August 1.
Mr. and Mrs. George Pappas (Director's Office)—a daughter, Andrea, on July 6.
Mr. and Mrs. Gene Riley (Electronics Installation)—a daughter, Darlene Linda, on July 20.
Mr. and Mrs. Seth Shepard (Accelerator Operations)—a daughter, Kirsten Parnell, on July 11.
Mr. and Mrs. Bill Wadman (Health Physics)—a son, Raymond Alan, on March 7.
Mr. and Mrs. Harold Woods (Electronics Installation)—a daughter, Linda Marie, on July 31.

Livermore

Dr. and Mrs. John Anderson (Experimental Physics)—a daughter, Carol Gay, on May 23.
Mr. and Mrs. Gene Bradley (Mechanical Engineering)—a son, Thomas Craig, on June 3.
Mr. and Mrs. Ray Devany (Mechanical Shops)—a daughter, Mary Kathleen, on July 2.
Mr. and Mrs. Louis Ducote (Electronics Engineering)—a daughter, Janet Lynn, on May 21.
Mr. and Mrs. Cedric Gallagher (Electronics Engineering)—a daughter, Wendy Rene, on July 9.
Mr. and Mrs. James Jepson (Chemistry)—a son, Paul James, on July 26.
Dr. and Mrs. Ray Ward (Chemistry)—a son, Michael Raymond, on July 10.

Erratum—July issue

Monte Hickenlooper is cm at Livermore, not at Berkeley.

Darrah Thomas Plans To Study in Russia

Dr. Darrah Thomas will leave Berkeley in early September for a nine-month stay in Russia. He plans to study nuclear reactions with Dr. G. N. Flerov (the physicist who discovered spontaneous fission). He will go either to the Atomic Energy Institute in Moscow or the Joint Institute for Nuclear Studies at Dubna.

Darrah's wife, Barbara, and their children, David (age 2) and Steven (age 3 months), will leave the following month to sail on the S.S. Rotterdam. They will stay in Copenhagen, Denmark.

GENEVA POST ROTATED

Dr. Stirling Colgate (Sherwood Physics Group Leader) has completed his tour of duty as Technical Advisor to the Delegation of the United States to the Conference on Discussion of Nuclear Tests, held in Geneva, Switzerland.

Herbst Goes to Geneva

Stirling has been replaced by Dr. Roland Herbst (Radiation Group Leader), who left for Geneva the middle of July.

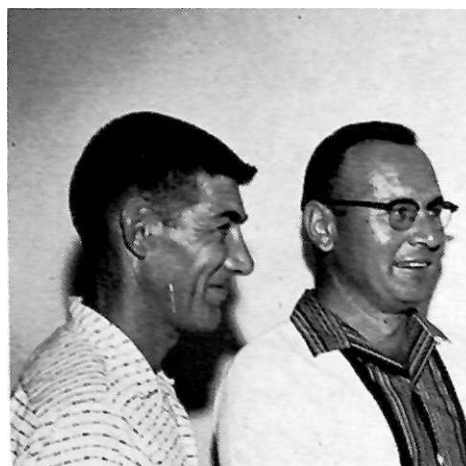
THE MAGNET and THE CALENDAR Move

The office for THE MAGNET and THE CALENDAR moved to Bldg. 30, Rm. 107. The extension remains Berkeley, 293.

RLRA ELECTS NEW OFFICERS

Election of RLRA officers for the coming year was held recently. Jim Beard (Site 300 Plant Service) is president; Hiram Phillips (Livermore Stores), vice-president; Jack Dilgard (Site 300 Operations), secretary; and Marie Briggs (Site 300 Plant Service), treasurer.

Other members of the board include Bill Fourman (Mechanical Technician



The new RLRA officers are (left to right) Jack Dilgard (Site 300 Operations), Jim Beard (Site 300 Plant Service), Hiram Phillips (Livermore Stores), and Marie Briggs (Site 300 Plant Service).

WANTED: Auxiliary Police At Livermore

Volunteers for the Livermore Auxiliary Police Force are needed. For information and application, call Security, Bldg. 113, Rm. 125, Ext. 677.

Van Atta Speaks at London Convention

Dr. Chester Van Atta was a speaker at the Convention on Thermonuclear Processes held in London, England, April 29 and 30. Dr. Van Atta and Dr. I. N. Govin, from the Academy of Sciences of the U.S.S.R., were the invited foreign speakers at the Convention.

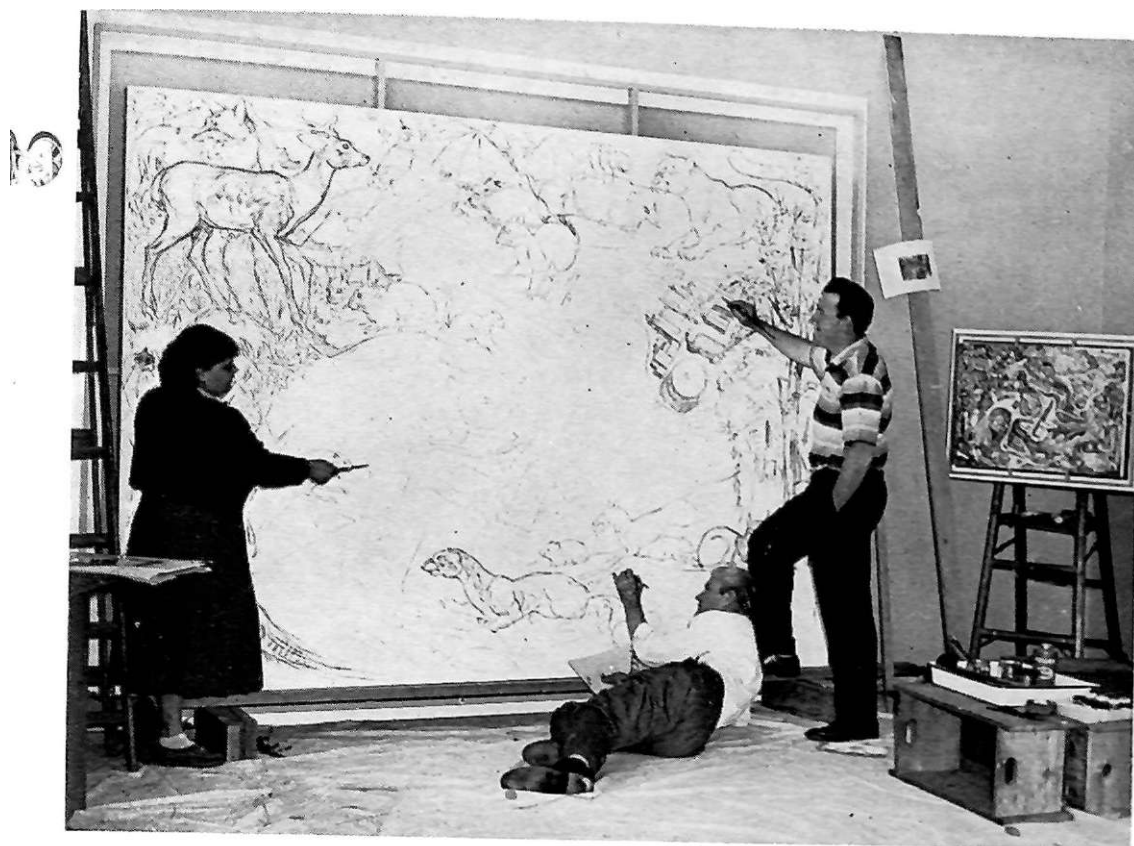
PLANT SERVICE MEK COMPLETE COURSE

Six employees of the Plant Service Refrigeration and Air Conditioning completed a special course of instruction designed to equip them to handle the intricate temperature problems encountered in the low-temperature experimental area.

The course, called "Application of Automatic Controls to Heating and Air Conditioning Systems—817AB," was presented by the University of California Extension Division. The Laboratory students who took the course were Art Bihles, Don Botts, Jim A. Smith, and Ted Stromberg, from Livermore, and Luc Butler and Ed Floth, from Site 300.



W



Left to right: Evelyn Grant, John Wright, and Al Appleton put color into the mural.

Mural Adorns Berkeley's Lunchroom

A colorful mural was recently completed for the lunchroom in Bldg. 10 at the Berkeley project.

The decoration was designed by Al Appleton (Supervisor, Technical Illustrators). Al was assisted in the preparation and painting of the mural by Evelyn Grant and John Wright (Technical Illustrators). The three artists created the 7-by-10-foot egg tempera and varnish-glaze painting almost entirely on their own time.

The mural, as shown in the accompanying photograph, presents the buildings and surrounding Hill area, with emphasis upon the natural flora and fauna to supply an environment of relaxation for Laboratory personnel during their lunch hour. Evelyn made a thorough study of the flowers and plant life on the Hill; John made architectural studies, prepared a scale model of the interior, and rendered the lettering; and Al made studies of the animal life from texts, displays at the California Academy of Sciences, and the Fleishhaeker Zoo in San Francisco. Only those animals and plants that are actually native to the Hill are included.

Al began with a small model of the mural, which he had photographed. A black and white slide was then projected onto the panel, and the artists traced the projected image. Skillful application of dry color in egg and varnish emulsion brought life to the final painting.

Al and his crew worked many nights

and week ends at the Laboratory to complete this mural, and much credit is due to them. Credit also should be given to Bill Rice, formerly of Plant Engineering, who fostered the project; to others in that department for their active interest; to the carpenters and painters for the preparation and installation of the large panel and frame; and to the 184 Club, which contributed the paints.

Mural Dedicated to Police

During their nocturnal work sessions, the artists were visited frequently by the Hill police. The officers' interest in the progress of the work, as well as their un-failing courtesy and good will, prompted the dedication of this mural to the Berkeley Laboratory Police Force.

BERKELEY CHEMISTS SPEAK AT MUNICH

John Conway, Dr. Burris Cunningham, and Dr. Jim Wallmann (Berkeley Chemistry) have left for Germany to attend the Seventeenth International Congress of Pure and Applied Chemistry, at Munich, from August 30 to September 6. Burris was invited to give one of the six plenary-session lectures of the Congress, and Jim and John will present contributing papers.

The three scientists plan to visit other European laboratories. John is presenting a paper at the Eighth International Spectroscopy Colloquium, held at Lucerne, Switzerland, September 14 to 19.

Livermore Chemistry Designates Section Names

The Livermore Chemistry Division has made some changes in the names of the subdivisions of its organization. The sections will continue to function as before. Dr. Roger Batzel heads the Division and is assisted in the over-all administration by Dr. Ed Fleming and Dr. Ralph James.

Gt'neidIGhemisfry

The Analytical Chemistry and Physical and Inorganic Chemistry Groups have merged to form a single section called "General Chemistry Section." It is led by Dr. Gus Dorough. The section is responsible for research in explosives, high-temperature, solid-state, and theoretical chemistry and for assistance to the Laboratory in various analytical and instrumental fields.

Process and Materials Development

The Chemical Engineering Group has been renamed the "Process and Materials Development Section." Dr. Barney Rubin is the leader. The responsibilities remain unchanged and include the general chemical process studies and the metallurgical, ceramic, and plastic materials development in assistance to all Laboratory programs.

Radiochemistry

The Radiochemistry Section is headed by Dr. Bob Goeckermann and is responsible for various radiochemical studies, including nuclear explosion diagnostics.

Cafeteria Addition Open

The new two-story addition to the Berkeley cafeteria is now open. It accommodates 85 people and affords a beautiful view of the Bay Area. You may either buy or bring your lunch.



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LAWRENCE RADIATION LABORATORY

University of California
Berkeley and Livermore, California

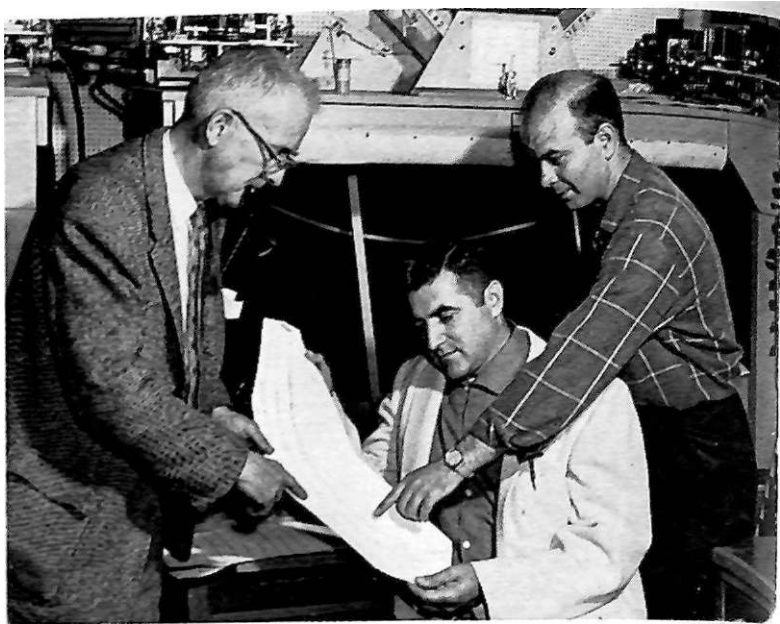
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Science Teachers Study at Laboratory



Teachers learn how to operate the IBM 650 computer. Left to right: Jo Ann Brennan (Livermore Union High School Mathematics Teacher), Bill Scofield (Washington Union High School Mathematics Teacher, Fremont), and Edna Vienop (Mathematician), one of the teachers' supervisors.

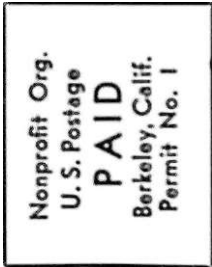


Left to right: Dr. Wilson Powell (Physics Research Group Leader), Bill Baum (Alhambra High School, Martinez), and Anthony Rinaldi (Burbank Junior High School, Berkeley). Dr. Powell explains to the teachers a template showing the way a pi meson looks in the propane bubble chamber.

Forty high school science teachers joined the Laboratory staff this summer in a teacher-training program. The program was initiated to stimulate the teachers so that they might improve and bring up to date their teaching curricula. Twenty were chosen from schools in the area between Salinas and Santa Rosa to work at the Berkeley Laboratory. The other twenty teachers were drawn from southern Alameda County and Contra

Costa County high schools to work in the Livermore Laboratory*. This was the fourth summer that teachers have come to Berkeley but the first one for Livermore. During their eight-week stay at the Laboratory, the teachers were integrated into the research program, and at each project a series of lectures was presented. At Livermore, teachers were assigned to the 90-inch cyclotron, the pool-type re-

actor, and the Chemistry and Computation divisions. All were Q-cleared but were not involved in weapons work. At the Berkeley Laboratory the teacher worked in Physics Research, Chemistry and Biology and Medicine. Dr. Harry Heckman (Physics Research) was in charge of the Berkeley program, and Bill Nolan (Hazards Control) was chairman of the Livermore program.



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At Berkeley the Maintenance Machinists recently gained a jeep and the Plumbing Shop a new*. Left to right: Charlie Bowden (Plant Service), Chuck Dobrunick (Maintenance Machinist), Henry Atchison (Plumber). Twenty-eight motor vehicles have been delivered to the Hilleral Service Administration (GSA) since May. A few were replacements, and the others were additions to the fleet. The vehicles included pickup trucks, jeeps, and carryalls.