Science Fair Displays Year-long Pupil Study

What are the schools doing in science? Parents, friends and others interested are invited to see, for themselves, exhibits and displays produced by the China Lake Elementary and Burroughs High School youngsters at the Fourth Annual Science and Math Fair, to be held tomorrow on the Burroughs campus from 10 a.m. until 9 p.m., declared John Trent, chairman.

Displays and exhibits in elementary science, photography, biology, physics, mathematics and home economics will be arranged according to school, using an identifying color theme. Exhibits prepared by children in kindergarten through sixth grade will be displayed in the Burroughs Cafetorium; Junior and Senior high school exhibits will be set up in the science and math wing of the High School. Commercial exhibits, private exhibits, models and books dealing with all phases of science and math will be on view in the high school library. Student lectures will be given throughout the day.

The Audio-Visual Department in the Bakersfield Office of County Schools and the California Interstate Telephone Company have provided films and models. There will be several commercial displays by companies in the east Kern County area and by local organizations.

The Science Fair is a product of the entire school year. Elementary exhibits are class work directed by the teachers on such subjects as plants, fish, stars, weather, climate, the earth's surface, trees, energy and development of chicks. Junior and Senior High School projects will be the work of individuals or of small, informal groups of students.

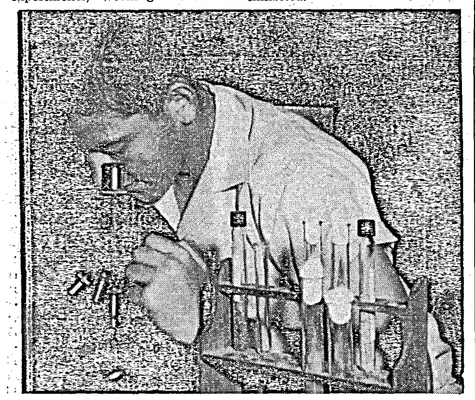
All exhibits must demonstrate a mathematical or scientific principle in a way clearly understandable to those who view the display. Exhibits will consist of demonstrations, experiments, working models or charts, diagrams or collections with scientific objectives.

Display Judges

Kenneth Robinson and Dr. Earl Murray will present awards to the students with outstanding exhibits at 2:30 p.m. Judging exhibits and displays at the Fair will be: Dr. Earnest Bauer, physics; Dr. L. E. Ward and Dr. Margaret Maxfield, mathematics; J. G. Moore and J. T. Leininger, photography; Dr. Karl Heller, Darwin Tieman and Mrs. C. D. Lind, biology; Dr. Alvin Gordon, Dr. Martin Kauffman and Elmo Julian, chemistry. Cash prizes will be awarded high school winners and certificates will be given to the Elementary and Junior High winners. The cash awards are being provided by local clubs, organizations and interested individuals. Elementary certificates are being provided by the Kern County Schools.

Assisting Trent in plans for the annual Science Fair were John Condos, Frances Dickinson, Lena Waddock, Robin Fincher, Harold Pierce, Richard Erbe and Irma Barker.

Some of the projects to be displayed include: from the elementary schools—space travel, the study of lumber and underwater activities. Members of the Junior High Science Club have prepared displays in chemistry, antibiotic molds contained in local soil, techniques of radio control of aircraft, and hydroponics. A club project will also be exhibited.



MICROSCOPIC STUDY—Junior High student Wayne Cherry's concentration upon his slides is characteristic of student absorption in the sciences. Wayne's findings concerning antibiotic molds in China Lake soils will be displayed at tomorrow's Science Fair.

High school displays will include an analytical study of liquid chromotography, a plastics manufacturing plant, demonstration of the rate of the heart beat of chicken embryos, a half-million volt linear accelerator, and others.

Past Science Fairs have drawn spectators from parents, teachers, colleges and from others interested in student activity in science. These people have left the Fair impressed by the quality and quantity of work accomplished by our school-age population. Permission has been obtained for off-Station people to attend the Fair.

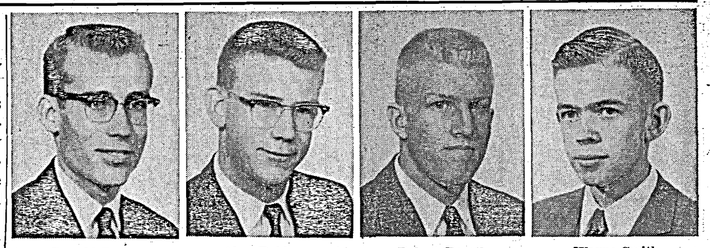
R. Clodfelter Named Alternate Appointee

Richard A. Clodfelter, Burroughs senior, is one of ten boys in Kern, Kings and Tulare Counties to be named as an alternate for attendance at the Air Force Academy for the term beginning July by Congressman Harlan Hagen. If the principal appointee, Michael Ferguson, Edwards, California, does not gain admission to the Academy in the entrance examination, the ten alternates will compete for the appointment.

Near East Desert Film

All Station residents are invited to attend the showing of "The Negev Desert" at the new wing of the All-Faith Chapel tonight, following Hebrew services at 7:30 p.m.

The film depicts Dr. Nelson Glueck's successful archaelogical study made of the 4,000-square-mile desert which extends south between Egypt and Jordan to the Gulf of Aqaba. It is a land figuring largely in the centuries old history of the Near East and in the Scriptures and religious traditions of three of the world's major faiths—Christianity, Judaism and Mohammedanism. Refreshments will be served after the movie.



Donald Davis — Alan Robinson — Robert Roseth — Wayne Smith

Science Minded Teen-agers Supplement Text Study With On-the-Job Application

Unique in application, objective and procedure is the Work-Experience Program according twelve selected Burroughs High School students the opportunity to utilize classroom theory through an on-the-job study-work contact with Station scientists and with Station equipment in Michelson Lab.

Well into its fourth season of operation, the Work-Experience Program was formulated in its present stage last year by J. A. Donnan, Burroughs chemistry instructor and Science Club Advisor, and A. E. Ellings and R. D. Weaver, members of the Research Society of America, Dr. C. E. Weinland of the Weapone Planning Group, and members

Diane Renne

of the Station training program.

Selection of the students chosen to undertake specialized study during the last half of the school year was made early this semester by Kenneth W. Westcott and John Trent, High School principal and instructor, respectively, and by Donnan based on academic standing, interest and goals displayed by by the candidates. Clearance and badges were secured through Richard Felton, Station Education Director.

Through Dr. Ivar Highberg, Head, Test Department, and Dr. Ray Merrow, Chemistry Division of Research Department and RESA representative, sponsors for the students were obtained. These sponsors, through close contact with the student and his work, provide guidance in meeting the objectives of the program which does not necessarily benefit the Station, but rather, offers practical application of scientific and mathematical theory.

Working for two hours each day after school the students were initially given a thorough introduction to the facilities of the Technical Library through a specific research application. Most of them are now beginning work on their continous project, which will extend through the remainder of the school year. At the end of this semester, each student will submit a written report of his activities under the Work-Experience Program.

Student Scientists

Eleven of the science students are seniors; one is a junior. Those included in the program, their sponsors and projects are: **Richard A. Clodfelter,** sponsored by David Newman, Head, Metallurgy Section, Quality Engineering Division, Engineering Department, is working on a project centered on the spectrograph and possibly, later, a problem in metallurgy; **David Connelly,** sponsored by F. H. Davis, Research Department Consultant, studying electronic theory and allied construction of equipment; and **Donald Davis,** sponsored by Donald W. Moore, Chemistry Division, Research Department, working on liquid chromatography which is a process of selective adsorption of colored materials by an adsorbant, used in this instance to separate the colored constituents of tomato paste and of grass. Some X-ray diffraction experimentation is planned. Davis was one of the ten Burroughs students who participated in the Work-Experience program last year, accomplishing materials evaluation under Robert Weinhardt of the Materials Division of the Engineering Department.

Ronald Gasser, the only junior in this year's program, is sponsored by Edward Price, Head, Fluid Dynamics, Physics Division of Research Department, is working on a rocket combustion instability apparatus; **Diane Renne,** one of the two girls included in the science study plan, is sponsored by William P. Norris,

John Vandaveer

Organic Chemistry Branch of the Chemistry Division, Research Department. She has learned the use of technical abstracts through study in the Technical Library and is doing basic experimentation, including determination of melting points of organic compounds. Her continuous project may possibly be the synthesis of an anti-vitamin. **Carolyn Ridpath,** sponsored by Gerald Whitnack, General Research Branch, Chemistry Division of Research, has also been working in the Technical Library. Her project is likely to be the analysis of sea water by electrochemical methods.

Sponsored by Dr. Rene Engel, Head, Oceanic Research, Research Department, **Alan H. Robinson** is undertaking a literature search for general information concerning the physical and chemical properties of sea water. He is also working, in his spare time, with Don Moore of the Research Department, on experiments in liquid chromatography. **Robert Roseth** is sponsored by Charles Drew, Combustion Branch, Chemistry Division, Research Department, and at present is conducting an exchange reaction between cyclopentane and heavy water. Tests will be made on the mass spectrometer for purity with the end result to be used as a tracer in other reactions. Future plans point to work on vapor phase chromatography. **David Skaar,** sponsored by Robert Herman, Head, Data Automation Branch, Assessment Division, Test Department, is experimenting in information theory and developing a computer to control its own information source through advanced electronic circuitry.

Fred Ashbrook, Head, Instrument Development Division, Test Department, is sponsoring **Wayne Smith** who is working on advanced third-dimensional trigonometrical calculations used to measure missile projectiles and to be used for missile tracking cameras; **John Vandaveer** is determining the size and number of atmospheric nuclei. Collection will be made by filtering; the particles are then identified by chemical and visual means and measured for size and distribution. He is sponsored by Edward Ashburn, Atmospheric Physics Branch, Physics Division, Research Department. **Bruce G. Warr,** sponsored by William McBride, Inorganic Chemistry Branch, Chemistry Division, Research, is dating organic material through the radiochemical "carbon fourteen" process. This is a new field at the Lab and instruments utilized by Warr are being used for the first time.

Carolyn Ridpath

RAFT Club News

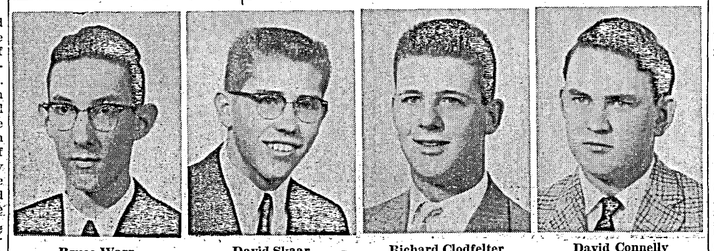
Theatrically speaking, "The Constellations," the combo from Edwards Air Force Base, played to a packed house at the RAFT Club, last Saturday evening, February 21. Guests for the occasion were 19 beautiful Los Angeles girls, invited by Don Hoggan, Teen-Center Director.

This next Saturday evening, February 28, will be "Birthday Party" Night with record dancing until 11 p.m. All members who have a birthday during the month of February, be sure to let us know, so that we may wish you "Happy Birthday."

RAFT Club Hours

September through May
Monday through Friday—Open 4 to 10 p.m.
Saturdays—Open 4 to 11:30 p.m.
Summer Schedule
June, July, and August
Monday through Friday—Open 2 to 10 p.m.
Saturdays—Open 2 to 11:30 p.m.

Yearly membership cards may be purchased for $1.80 which averages out to a cost of only 15 cents per month.



Bruce Warr — David Skaar — Richard Clodfelter — David Connelly

—Student Photos by Ladye Arthur

Everyone Invited to DESERT AREA HIGH SCHOOL MUSIC FESTIVAL Tonight 8:30 p.m. Station Theatre

ROCKETEER

TEMPERATURES

	Min.	Max.
Feb. 19	37	61
Feb. 20	40	60
Feb. 21	38	48
Feb. 22	32	58
Feb. 23	30	59
Feb. 24	30	61
Feb. 25	35	64

Budd Gott, Editor — Phones 71354, 72082, 71655 — Office, Housing Bldg., Top Deck

Vol. XV, No. 8 — U. S. Naval Ordnance Test Station, China Lake, California — Friday, February 27, 1959

Dr. Wilcox Named to Vital Defense Post

Noted Scientist Ends Technical Lecture Series

Dr. Herbert S. Green, a distinguished British Commonwealth scientist, and Professor of Mathematical Physics at the University of Adelaide, Australia, has been conducting a series of lectures at NOTS for three months.

His lectures involved advanced theories of fluids, electromagnetism, magnetohydrodynamics, relativistic quantum mechanics, and superfluids. Prof. Green has made important contributions of his own to each of these fields in his many publications in international scientific journals. In addition, he is a skillful expositor and has written several books and monographs on the theory of fluids. The latest of these appear in the monumental 54 volumes of Encyclopedia of Physics now being published in Germany.

Professor Green came to the Naval Ordnance Test Station after a year's stay at the Institute for Advanced Studies in Dublin, Ireland, where he temporarily replaced the world-famous Professor Erwin Schrodinger, founder of the modern "wave mechanics." The renowned "Schrodinger Equation" is one of the cornerstones of modern physics, comparable to Einsten's celebrated energy-mass relation, $E = mc^2$.

Green visited the United States once before, in 1949-50, when he was a member of the Institute for Advanced Study in Princeton. It was during that period that he met Dr. R. B. Leipnik, now a mathematical consultant at the Station, who made the arrangements for his present visit here.

This is the first visit to the U.S. for Dr. Green's family. His wife

Dr. H. S. Green

Marlies, a native of Europe, has been surprised and pleased at many features of American life which she had misunderstood before. The children have attended the China Lake schools, even though winter here is vacation, or summer time in Australia. They have enjoyed their school experiences here perhaps because children are worked harder in Australian and British schools than in American schools.

Prof. Green feels that the informality and emphasis on current affairs and general information in the local schools is better suited to the needs of the average and below-average student than is the educational practice of the Commonwealth, but that the above-average student is poorly served here. However, he has been surprised by the widespread popular interest in science, and the important administrative posts entrusted to scientists in the United States.

His lecture series made a significant contribution to the technical program of the Station and the U.S. scientific effort. This is an outstanding example of the beneficial and needed cooperation between the peoples and countries of the Free World.

Celebrated Artist To Lecture Sunday

The Desert Art League will sponsor an informal lecture and demonstration of portrait painting in oils by Jae Carmichael, next Sunday from 3-5 p.m. in the Anchorage. Some of Miss Carmichael's paintings will also be on display.

California-born Jae Carmichael works in both oils and watercolors and her subjects range from portraits to still life, from marines to landscapes.

She attended Mills College before graduating from the University of California. After receiving her master's degree from Claremont Graduate College, she went to Europe to paint. She is an instructor at the Junior Museum of the Pasadena Art Museum, the Pasadena School of Fine Arts, and the Laguna Beach Art Gallery.

Her awards include the Grand Prix de Paris in 1958, first prize for water color at the Laguna Beach Art Festival in 1957, the best California landscape at the Women Painters of the West Annual in 1956, and others. Her name is listed in Who's Who in American Art (1956-57).

The high caliber of her work, the fresh, direct and vigorous approach of her art place her among the most promising young artists of today. The meeting is open to the public and there is no admission charge.

Deadline Nears for Art Festival Entries

Art exhibits by amateur and professional artists in both youth and adult categories are invited to be entered in the 11th Kern County Art Festival to be held in the Community Center March 14 and 15.

Applications must be mailed to the Kern County Parks and Recreation Department, 1680 K Street, Bakersfield, by March 1.

These and the rules and conditions governing eligibility may be obtained from the local chairmen or the Station and Ridgecrest libraries. Applicants are limited to two entries.

All pictures submitted must be originals and must be framed or matted ready for hanging. Persons who have earned a total of $500 from art works are considered to be in the professional category.

Film Society Offers Italian Film Next Week

The next showing of the China Lake Film Society will be "La Strada" next Monday and Tuesday, March 2 and 3, at the Community Center. Both showings will begin at 8 p.m.

This is an Italian film of 1954 vintage, starring Anthony Quinn, Giulietta Masina and Richard Basehart. Federico Fellini tells the story of a simple-minded waif, a brutish strong man and a philosophical "fool" all traveling Italy's highways. Dialogue is in English. The film is a winner of many awards, among them the 1956 Academy Award for Best Foreign Film.

Election of officers for the next season will be held before the films are shown.

Accepts Position as Deputy Director Of Defense Research and Engineering

Dr. Howard A. Wilcox, Assistant Technical Director for Research and Head of Research Department, has been selected to serve as Deputy Director, Defense Research and Engineering, Office of the Secretary of Defense in Washington, D.C., it was announced this week by Dr. Herbert F. York, Director of Defense Research and Engineering. Dr. Wilcox will be taking leave of absence from the Station when he assumes his new Washington, D.C., post on March 3.

Dr. Howard A. Wilcox

Since coming to NOTS in 1950, Dr. Wilcox has been Project Engineer on the Sidewinder guided missile. He was appointed Head of Weapons Development Department in 1955, and an May 1, 1958, assumed the position he is now leaving in Research.

Dr. Wilcox was born in Minneapolis, Minnesota, and was graduated magna cum laude in physics from the University of Minnesota in 1943. He spent the next year studying and teaching physics at Harvard University and Radcliffe College.

In 1944, he joined the Manhattan Project and moved to the Los Alamos Laboratories of the University of California. In early 1946, he followed Drs. Fermi, Allison, and Teller from Los Alamos to the University of Chicago, where he was Awarded several University Fellowships leading to his MA and Ph.D. degrees in physics in September 1948.

From 1948 to 1950, Dr. Wilcox was Instructor and Assistant Professor of Physics at the University of California in Berkeley.

In view of the outbreak of the Korean War, Dr. Wilcox left Berkeley in 1950 and joined the U.S. Naval Ordnance Test Station.

He has travelled abroad as a scientific representative of the U.S. Navy, and is the author of several published scientific and technical articles and lectures.

For many years, he has taught courses in mathematics and physics to groups ranging from graduate scientists to gifted high school students. Dr. Wilcox is a member of Phi Beta Kappa, Sigma Xi, Research Society of America, the American Physical Society, the American Rocket Society, the Federation of American Scientists, and the American Civil Liberties Union.

Dr. William S. McEwan, presently head of the Chemistry Division, has been appointed to fill Dr. Wilcox's position as Assistant Technical Director for Research and Head of Research Department in an acting capacity.

Desert Area Schools Present Music Festival Tonight

High school students from schools at Edwards, Mojave, Randsburg, Tehachapi, Trona and China Lake will present the combined Desert Area High School Music Festival tonight at 8:30 p.m. at the Station Theater.

Under the direction of guest conductor John E. Green, director of the Trojan Marching Band, University of Southern California, the Festival Band will present "Proud Heritage" by Latham, "Folk Song Suite" by R. Vaughn Williams, "March to the Gallows" by Berlioz, an arrangement of "Nobody Knows the Trouble I've Seen," selections from "Damn Yankees," and "Barnum and Bailey's Favorite" by King. The Festival Band will be composed of members from each school.

David Thorsen, Director of Choral Music at Pasadena City College, will direct the Festival Chorus in their presentation of "Sine Nomini" by Ralph Vaughn Williams, "Views in the Night" by Ralph E. Williams, "Wondrous Cool, Thou Woodland Quiet" by Brahms," "Jesu, Priceless Treasure" by Bach, "Sing Me a Song" by Vecchi," "See Me Cross the Water" and "Gimme That Ol' Time Religion."

John E. Green
... guest conductor

Enrollments Needed for Parent-Child Care Class To be Given by Red Cross

A new Parent and Child Care Class, sponsored by the local Red Cross and Adult Education department, is now being organized. Twenty enrollments are needed before the class can convene.

Expectant mothers and fathers, as well as other interested adults responsible for the care of new mothers and babies are urged to enroll. Class material will cover pre-natal care, birth, care of new mother and baby, baby's first year and the admission of the child into the family group. Students will receive certificates and pins upon completion of the course. Ruth Stone, RN, will instruct the course.

To enroll, contact Jane LaRosa, P. O. Box 618, China Lake, Ext. 724481.

Little League

All officers and managers are urged to attend next Monday's meeting of the China Lake Little League, at 7:30 p.m. in the Safety Building.

Newcomer—

Family Service Agency Hires New Director

Joseph Kane, a full-time psychiatric social worker, has arrived at China Lake to serve as director of the Desert Area Family Service Agency.

Kane is the first full-time worker to be employed by the Family Service Agency. Other workers in the past served on a part-time basis.

The Agency provides professional consultation service to people who need help with their personal or family problems. Interviews are private and confidential.

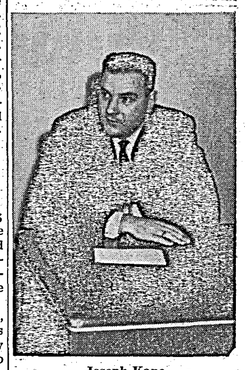
For the past four years Kane has been employed as the chief social worker in the Veterans Administration office at San Bernardino, and before that worked in the Veteran's Administration in Los Angeles.

Kane received his training in this field at the University of Akron, in Ohio, and has a master's degree in social work from the University of Pittsburgh.

He is accompanied by his wife, Rosalyn, and their small daughter, Nancy.

According to Kane, the annual meeting of the Desert Area Family Service will be held April 2.

Office hours are now scheduled Monday through Friday from 7:30 a.m. to 4:30 p.m. Appointments may be made by calling Ext. 72714.



Joseph Kane
... New Director

Does Your Last Name Begin With A, B or C?

If it does and you are an enlisted man owning an automobile, today is the last day to register to get your new green border car decal to drive on the Station.

Starting March 2 and continuing through March 13, enlisted personnel whose last names begin with D, E or F must report to the Traffic Control Office at the Main Gate between 7:30 a.m. and 4:15 p.m. to obtain their new decals.