

Boron: Hope For Cancer Therapy

The use of conventional radiation cancer therapy might be called a good hammer that doesn't always hit the nail squarely. Cancer cells are hard to map completely, so radiation treatment is sometimes a matter of shots in the dark, with the hope a few will hit their mark. Another problem is determining how much radiation surrounding healthy tissue can tolerate before it succumbs, further weakening the victim.

For the treatment of melanoma, a kind of lethal skin cancer, scientists in BNL's Medical Department are refining a new therapy that selectively irradiates tumor cells and leaves healthy cells intact.

Termed Boron Epithelial Neutron Capture Therapy by principal investigators Sam Packer and Ralph Fairchild, the treatment entails neutron irradiation of borated compounds that selectively bind to neoplasms, or tumor cells.

"The whole question," says Fairchild, "is whether you can introduce into a tumor a stable isotope that interacts with neutrons - one that releases energy locally upon neutron activation or capture."

Although the team had a choice of several isotopes, they settled on ¹⁰boron, because it's least hazardous to the body. Their most recent work, begun two years ago under NIH funding, is focusing on attaching boron to a vehicle molecule that can bind to tumor tissue.

To date, the group has found chlorpromazine, a compound widely used in psychiatric hospitals as a tranquilizer, binds very well with melanin, a pigment present in hair, skin, eyes, and highly concentrated in malignant melanomas. Chemist Steve Hannon is working on producing the borated analog of chlorpromazine.

"The synthesis isn't complete yet," Fairchild pointed out, "we've gotten the boron on, but omitted two methyl groups. But even without the methyls, our preliminary tests with lab animals indicate the borated analog of chlorpromazine binds with melanin."

Chlorpromazine has several advantages over other vehicle molecules. Once in the body it binds with melanin-containing tissue with a biological half-life of around 4 days. By the second day, it's washed out of the blood, and other tissues.

This reduces the problem of having the borated compound still in the blood during neutron irradiation, a difficulty that eventually halted BNL's early work with neutron capture therapy in the late 1950's.

"They first tried using water soluble compounds," Fairchild said of the early work, "but the compounds

didn't concentrate in the tumors. There was still too much in the blood stream, so when you irradiated a tumor with neutrons, the surrounding blood vessels were also damaged. Eventually, the whole thing was abandoned."

Problems with the neutron beam also discouraged the early project. Thermal neutron attenuation in the tissue was too rapid, causing the outer tissue that the beam first penetrated to be damaged.

The current project began anew with regulating the beam. Using filters in the medical research reactor, and body tissue as a moderator, they are able to control the beam energy so that it's slightly above thermal - or room temperature - but below damaging ionization energy. "This is just what we want," Fairchild said,

(Continued on page 2)



Doug Humphrey

Richard Sautkulis (Biology) monitors a diesel engine that puffs exhaust into a polyethylene chamber which holds a potted *Tradescantia*. Sautkulis's group is studying the mutagenic effects of diesel exhaust on *Tradescantia*.

Trad. Studies Focus On Diesel Exhaust

According to EPA estimates, more than ten percent of U.S. passenger cars will be diesel-powered by 1985, significantly changing the composition of exhaust products in the atmosphere. The coming diesel popularity has spurred massive studies to understand and project its potential effects and prevent increased air pollution.

Last week in the BNL Biology Department, researchers found *Tradescantia* plants exposed to diesel emissions have twice the mutation rate of control plants. The EPA funded project, begun last year and led by Lloyd Schairer and Richard Sautkulis, uses a clone of *Tradescantia* developed years ago at BNL for the detection of environmental mutagens and carcinogens. Mutation appears as a color change in stamen hairs - mutants express the recessive pink; normal hairs are blue.

So far the project has studied the nature and rate of mutagenesis of *Tradescantia* exposed to raw, concentrated diesel exhaust from one of the Lab's emergency generators. Experiments with more closely controlled parameters are being planned.

"The EPA became interested in studying environmental hazards of diesel emissions," Sautkulis says, "when it became clear more vehicles than ever will soon be diesel-powered."

While diesel engines are more fuel efficient, they produce particulate pollution and gases whose individual and combined effects are largely unknown.

"You get things like benzo (a) pyrene (a known carcinogen), hydrogen cyanide and formaldehyde. Some are present in gasoline engine exhaust, but in much smaller quantities, because the fuel is more refined," Sautkulis points out.

Later this summer, the BNL team plans to test the mutagenic effects of light-duty diesel exhaust, which is the kind that would come from a small truck or passenger car. "They're suspected to have a higher percent of mutagens in their emissions than larger engines," Sautkulis says.

This autumn, the team plans more closely controlled experiments at the EPA research center in Triangle Park, N.C., where there is a diesel dynamometer that can simulate emissions under a variety of driving conditions, and can control exhaust composition, flow rate and fuel chemistry. From these experiments, they hope to be able to get a more qualitative picture of the effects of individual exhaust components.

—James Kent



Mort Rosen

Checking for any weight changes in a mouse afflicted with a melanoma are Ralph Fairchild, right, and Steve Hannon, both of the Medical Department. They are involved in a project studying the use of boron compounds in cancer treatment.

Kistiakowsky To Speak On HEP

Vera Kistiakowsky, Professor of Physics at Massachusetts Institute of Technology, will be the next speaker in the Women in Science Lecture Series. Her talk is entitled "High Energy Strong Interactions - An Emerging Understanding." Open to everyone, the lecture is on Thursday, August 14, at 3:30 p.m. in the Physics seminar room, Building 510.

Dr. Kistiakowsky worked in the field of experimental nuclear physics before 1960. Since that time, she has done research primarily in experimental high energy particle physics. She is currently studying multiple particle production by π^+p , K^+p and pp interactions at 147 GeV/c. She has also been involved in the design and construction of a relativistic rise charged particle identifier for the Fermilab hybrid system.

Dr. Kistiakowsky holds a Ph.D. from the University of California, Berkeley. Before going to MIT, she served on the faculties of Columbia and Brandeis Universities. She is a fellow of the American Physics Society and a member of Phi Beta Kappa.

Interested in the special problems of women in science, she suggested to the APS in 1971 that a Committee on Women in Physics be established. She chaired that committee for the first year. Subsequently, she has

served on other committees concerned with problems unique to women in science and has written and presented more than twenty papers on this subject. Presently Dr. Kistiakowsky is President-elect of the Council of the Association for Women in Science.

Following the lecture, a buffet dinner will be served at 5:30 p.m. at the Brookhaven Center. Reservations can be made by calling the Cafeteria at Ext. 3541.



Vera Kistiakowsky

Inside Info

Richard B. Setlow, chairman of the Biology Department, was presented the Finsen Medal at the Eighth International Congress on Photobiology, on July 21, at Strasbourg, France. The Congress meets once every four years. Setlow was cited for "his outstanding fundamental contribution to Photobiology and Repair of Nucleic Acids." The gold medal is awarded in honor of Niels Finsen, winner of the 1903 Nobel Prize in Physiology or Medicine for the application of light in the treatment of skin diseases.

Weekend Tour

Featured this weekend is the Lab's linear accelerator, LINAC, which injects protons into the AGS at about one-third the speed of light. Visitors will see the Cockcroft-Walton pre-accelerator, where the protons are generated, and peer down into the 480-foot long tunnel that houses the linear accelerator.

The complete tour also includes a viewing of Brookhaven's "Quest;" a guided bus tour of the Lab site; and a visit to the Exhibit Center.

Before The Monsoon



Ansel Tuthill, Atmospheric Sciences Division, DEE, captured this scene off the coast of Digha in West Bengal, India. Last year, Tuthill was there with S. SethuRaman, Paul Michael and John McNeil doing summer monsoon experiments. Tuthill said the local people fish along the shore every day. They use boats like the one in the background to lay nets in a wide arc from one point along the shore to another. Then, doing what Tuthill described as the Digha Shuffle, they line up at the two ends, and shuffle backwards, slowly pulling the net in. "The whole process takes two to four hours," said Tuthill, "and for all that work, they end up with a catch that fills about four of those baskets you see in the picture." It's all part of the rhythm of life in Digha, India.

Product Exhibit

A Loctite Lab mobile unit will be on site Tuesday morning, August 5. Adhesive products will be featured and the van may be found in the parking lot on Brookhaven Avenue, adjacent to Stage II.

Arrivals & Departures

Arrivals

Charles Boampong.....Energy & Env.
Elizabeth A. Canal.....Energy & Env.
Anthony Ievolella.....Central Shops
James Juliano.....Central Shops
Dennis H. Reuter.....Plant Engr.

Departures

Elbio R. Schachner.....Medical
Larry Tempesta.....Plant Engr.
David A. Weston.....Accelerator

Food Alert

A hazardous food alert from DOE indicates a problem with Banquet Brand Frozen Turkey Products and some turkey products from Louis Rich Foods. These items have been found to contain the pesticide Dieldrin which has caused cancer in laboratory animals. All such products should be returned to the vendor.

How To Publish Without Half Trying

C.P. Baker, who retired a few years ago, sent us the attached clipping from his files. He can't remember where it came from, but it could be the answer to many a scientist's prayer.

Dear Colleague:

Publish or perish? Today, more scientists than ever before are faced with this problem. This letter brings you the opportunity not only to publish but to appear as a co-author of many interesting and important articles bearing on research problems in a variety of scientific disciplines. Naturally, we want to help you, but in order to do this you have to help us.

Below are the names of eight well-known scientists. Include them as co-authors in your next publication.

Then make eight copies of this letter with the list of names amended as follows. Strike out the name of the first mentioned scientist and advance the positions of the remaining names by one place upwards. Then include your name at the bottom of the list.

Send the eight copies to eight well-known scientists of your acquaintance. Try to maintain as far as possible the high standard of scientific excellence represented on the present list.

If you send eight copies off within a few weeks and publish, as you usually do, within a few months, you should by the end of a year be the co-author of approximately 16,000,000 first-class papers.

Boron

(Continued)

"to get high thermal neutron densities generated at depth in target tissue, and not at surface tissue."

Fairchild also noted neutron capture therapy solves the hypoxic cell problem - that oxygen-poor cells are resistant to conventionally applied x and gamma radiation. The central part of tumors are usually hypoxic, and do not respond well to conventional radiation therapy. However, ¹⁰Boron can deliver a tumoricidal radiation dose to these oxygen-poor cells.

Before clinical trials on people, extensive work remains to be done on lab animals. "It'll be a number of years before any of this is tested on people," Fairchild said. "We have to see if it all works out. There are a lot of ifs."

—James Kent

Patents Awarded

Meyer Steinberg, DEE, and Ralph T. Yang, formerly at BNL, were awarded U.S. Patent No. 4,197,285 for "Regeneration of Lime From Sulfates For Fluidized-Bed Combustion."

Ralph T. Yang and Ming-Shing Shen, former BNL employees, were issued U.S. Patent No. 4,191,115 for "Carbonaceous Fuel Combustion with Improved Sulfurization."

On Wings Of Song

Elisabeth Palmedo and Helen Wilkinson will give a special concert of vocal solos and duets on Wednesday, August 13 at 8:30 p.m. in Berkner Hall. The program includes music by Brahms, Dvorak, Fauré, Mendelssohn, and Purcell, and old Italian songs and Irish folk songs. See next week's Bulletin for details.

Hospitality News

A morning coffee will be held Tuesday, August 5, from 9:30 to 11:30 a.m., at the Brookhaven Center.

All wives of Laboratory employees are welcome. Please come and bring the children. Babysitting will be provided free of charge. It is suggested that you bring along a toy or two for your child to play with.

Cafeteria Menu

Week Ending August 8, 1980

| | |
|--|-----------------|
| Monday, August 4 | |
| Chicken rice soup | (cup) .40 |
| | (bowl) .50 |
| Battered, fried steak & 1 veg. | 1.55 |
| Franks & beans | 1.35 |
| Hot Deli - Pastrami | (on bread) 1.45 |
| | (on roll) 1.55 |
| Tuesday, August 5 | |
| Navy bean soup | (cup) .40 |
| | (bowl) .50 |
| Chicken cacciatore & 1 veg. | 1.45 |
| Sweet & sour pork & 1 veg. | 1.50 |
| Hot Deli - French toasted grilled ham & cheese | 1.40 |
| Wednesday, August 6 | |
| Clam & celery soup | (cup) .45 |
| | (bowl) .55 |
| Fish & chips | 1.40 |
| Saga's own lasagna & 1 veg. | 1.45 |
| Hot Deli - Philadelphia steak & cheese hoagie | 1.50 |
| Thursday, August 7 | |
| Cheese chowder | (cup) .45 |
| | (bowl) .55 |
| Chicken pattie parmigiana & 1 veg. | 1.45 |
| Corned beef & cabbage | 1.50 |
| Hot Deli - Shrimp pattie burger | 1.45 |
| Friday, August 8 | |
| Fish chowder | (cup) .45 |
| | (bowl) .55 |
| Beef sukiyaki on toasted Chinese noodles | 1.45 |
| Fish cakes w/noodles & cream sauce | 1.40 |
| Hot Deli - Hot Italian sausage & pepper hero | (on bread) 1.35 |
| | (on roll) 1.45 |

'Tis The Season

First the good news: BNL is suffering little from this year's gypsy moth population explosion.

Now the bad news: towns on the north and south shores are suffering from patchy infestations of the leaf-eating insect, and may undergo some tree defoliation next spring when the larvae hatch.

According to Tom Kowalsick of the State University of New York Cooperative Extension Service, areas hard hit are Medford/Patchogue, Shirley/Mastic and the northshore from Shoreham to Port Jefferson.

But there is something you can do to stop the gypsy moth caterpillars before they start munching on your orchard, shade and ornamental trees. When accessible, egg masses can be destroyed by scraping them off their substrate and dunking them in kerosene. Masses usually contain up to 500 eggs, and measure 1½ inches long by three-quarters of an inch wide. When fresh, they have a buff or yellowish color and a soft velvety surface. Older ones have a darker weathered look.

July and August are egg-laying months. Egg masses are deposited on the underside of branches, in tree trunk crevasses, under loose bark, in stone walls, on fences or in any shady, protected place. The insect winters in the egg stage.

Next spring, eggs laid now will hatch when trees come into leaf, usually in early May. The newly hatched caterpillars spin silken threads which can carry them long distances on the wind, their main dispersal mechanism.

As the larvae grow, they devour more and more leaves. Favorite meals include oak, willow, apple, the birches and poplar. Less favored but also eaten are cherry, elm, hickory, hornbeam, maple, sassafras and black tupelo. Older larvae will feed on pine, spruce, cedar, hemlock and beech.

By early July, larvae are fully grown and seek a place to pupate. The pupal, or resting stage, lasts about 14 days, after which an adult moth emerges, and the cycle continues.

Although native to Europe, Asia and northern Africa, the gypsy moth has developed some natural enemies on this continent, since it was accidentally released in Massachusetts in 1868. Populations may be reduced by insectivorous birds and mammals, and parasitic and predatory insects that attack various stages of the gypsy moth. Very cold winters can also kill exposed eggs.

Federal and state agencies emphasize caution when selecting and using insecticides. Chemicals registered for homeowner use to control gypsy moths include carbaryl, Imidan, orthene and diflubenzuron.

More information on gypsy moth control can be obtained from the Cooperative Extension Service of Suffolk County, 246 Griffing Avenue, Riverhead, N.Y. 11901, tel. 727-7850.

School For Tots

The Upton Nursery School is now enrolling three and four-year olds in classes beginning in September. Children participate in a stimulating program either two or three mornings a week. Tuition fees are reasonable. Parents may assist in the classroom, or pay an additional modest fee for the services of a teacher's assistant. For information, call Karen Brunschwig, 924-0030, Ruth Fernow, 929-8465, or Colin Stewart, 286-9616.

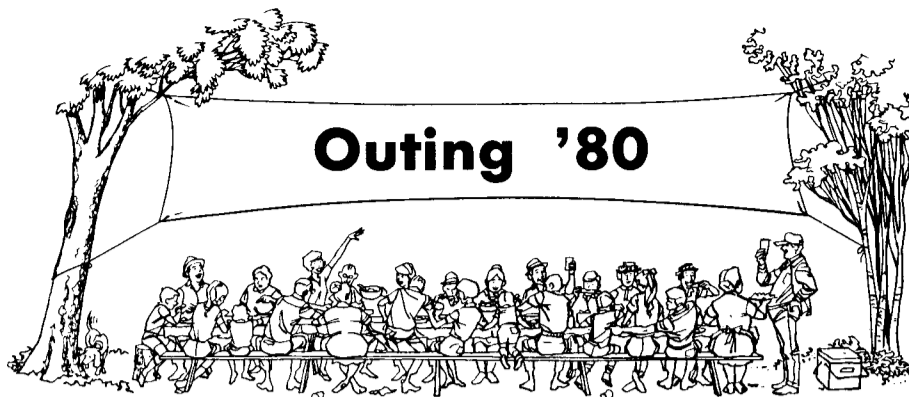
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Outing '80

If you haven't bought a ticket to OUTING '80, the employee picnic on Saturday, August 23, you only have two weeks to go. Last day to get one is August 15. After that, you're out of luck.

A ticket will entitle you to more than just free beer, soda, cotton candy and ice cream. All kinds of games and activities are planned for the day.

You can work out in the gym (sneakers required) and then cool off in the swimming pool. Both will be open from 2 to 6 p.m.

Bring a partner and enter the round robin doubles tennis tournament. Just remember to also bring

your own rackets, balls and tennis shoes.

If you are more of a spectator, you can watch demonstrations ranging from karate to fly tying to model airplane flying.

And since this is a family day, there will be special games for children. The Fire Group is even setting up a sprinkler for toddlers to play in.

Buy your tickets now from any department secretary or receptionist. You won't be able to get them after August 15 and you can't crash the party. Tickets are \$3 for adults, \$1 for children under 16. Babes in arms are free.

Cricket

The Brookhaven Cricket Club recorded its second victory of the season last Sunday against the British Veterans Club from Oyster Bay. British Vets battled first and made slow progress for the first hour against the accurate fast bowling of John Millener and Govind Vinjamuri. Dibyendu Bandyopadhyay then took over and at once had the visiting batsmen in trouble with his slow spin bowling, finally taking 5 wickets for only 14 runs out of a British Vets total of 74. In reply, Clem Auguste quickly scored 38 for Brookhaven, who then coasted to an easy win with only four wickets fallen.

Bowling

Bowlers are still needed, either partners or teams, to complete the Sayville Bowl League. Anyone interested should contact Rich Larsen Ext. 3464, Betty Jellett, Ext. 3631 or Helen Keeley, Ext. 4649.

Football Classic

The Grambling-Morgan Football Classic, for the benefit of the New York Urban League's Whitney M. Young, Jr. Memorial Scholarship Fund, will be played on Saturday, September 13 in Yankee Stadium.

Those interested in buying tickets for this exciting annual event may place their orders at the BERA Sales Office in the Cafeteria. Tickets are priced from \$16.50 to \$6.00, and payment must be made at the time of order.

No orders will be accepted after 12 noon on Wednesday, August 13.

Golf

The fourth tournament of the BGA golf season will be held on Monday, August 11 at the West Sayville, Suffolk County Golf Course. There will be a \$4 green fee and a \$1 entry fee. Assigned tee off times will begin at 11:30. Send entry fee to John Connelly, Bldg. 452 (Ext. 3284) by August 7. BGA tournaments are open to all BNL employees, their spouses, and retired employees.

Fifty-six golfers took part in the third tournament held at Flag Country Club. Les Lawrence won low gross - 18 holes with a 75 and Mike Iarocci won low net - 18 holes with a 65. Other winners were: low gross - front 9, Steve Heald (39), low gross - back 9, George Korhut (39), low net - front 9, Bob Glasmann (29), low net - back 9, Mike Losquadro (31), closest to the pin, Bob Gibbs, and longest drive, Bob Mills.

Mountain Club

The Mountain Club will hold a beach party at Smith Point on Sunday, August 10, starting at 1 p.m. Meet on the beach about 1/2 mile west of the entrance road (along the National Seashore), and bring your own food and refreshments. If you have questions, contact Steve Spencer at Ext. 3401.

Softball

League I

Ravens 11 - Deegenerates 5
Source I 16 - Six Pax 15
Phoubars 12 - Blue Jays 10

League II

Titans 32 - AMD 14
Roga 12 - Cardinals 3
Moles 9 - Dirty Sox 2

League III

Medical 10 - Lights Out 5
Brewmasters 10 - Ice Pops 6
Big Sticks 20 - Binary Bombers 8
Lights Out 9 - Nuke Powers 3
Nuke Powers 12 - Huff & Puff 11

League IV

Thrds 11 - E-Z Riders 6
Balls & Strikes 17 - Nads 9
Diamonds 8 - Random Sample 7
Survivors 23 - Turkeys 4

League V

TNT 10 - No Feedback 9
Source III 11 - No Names 8
Who Cares 13 - Mudville Sluggers 5
Who's On First 17 - Underalls 15

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex, age or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all nonscientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment, as indicated below. Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

LABORATORY RECRUITMENT: Opportunity, for present Laboratory employees.

1422. SECRETARIAL POSITION (part-time/evenings) - Requires excellent secretarial skills, especially technical typing ability. Capability to learn to use word processing equipment is essential. Will primarily be responsible for using word processing equipment to process scientific manuscripts. Biology Department.

1423. SECRETARIAL POSITION (part-time) - Requires excellent secretarial and communication skills. Familiarity with Laboratory personnel procedures and word processing equipment is desirable. Will assist office staff with developing and maintaining various programs and activities. Director's Office.

1424. MATERIAL HANDLER - Supply and Material Division.

OPEN RECRUITMENT: Opportunity for present Laboratory employees and outside applicants.

1425. FACILITIES ENGINEER (Architectural) - Requires BS or equivalent in architectural and experience performing a broad scope of architectural activities, including the preparation of preliminary sketches, working drawings specifications and estimates for commercial and industrial type buildings. Will be responsible for completing the architectural analyses, design and prosecution of various projects on site. Plant Engineering Division.

1426. ECONOMICS ASSOCIATE - Requires BS/MS or equivalent in economics with excellent communication and analytical skills. Familiarity with energy systems analysis, computer programming, policy analysis and/or quantitative methods is highly desirable. Will be responsible for acquiring and analyzing data for cost, benefit, and feasibility studies related to alternative energy policy programs, Department of Energy and Environment.

1427. MEDICAL ASSOCIATE - Requires BS or equivalent in biology. Experience in clinical hematology and tissue culture is essential. Additional experience in serology and fluorescent microscopy is desirable. Will provide general laboratory assistance to principal investigator. Medical Department.

Autos & Auto Supplies

73 CHEVY NOVA - 4 dr, needs body work. Best offer over \$300. 499-9100.

75 FORD GRANADA - Gia, 6 cyl, p/s, p/b, auto, very nice car. \$2,000. Ext. 2377 or 281-2382.

74 HONDA - motorcycle, 450, excel cond, 12,000 mi. \$1,150. Brian, 727-0139 after 6.

73 ROADRUNNER - immac in and out. \$2,800. 281-3093 after 6.

15" WHEELS - GM type fit Pontiac or Chevy, good cond. \$5 pr. Bob, 2819 or 289-0357.

68 CAMARO - conv, auto, needs body work. \$300. 281-1862.

350 ENGINE - LT-1, block bored, 30 over 12:1 compression assembled, never run. Joe, Ext. 2022.

73 FORD GALAXIE - 500, 4 dr, a/t, r/h, ps/pb, stereo, am/fm 8 trk, a/c, good tires, paint, eng, 59,000 orig mi. \$1,350. 277-4091.

EXHAUST SYSTEM - custom, dual, fits 1972 Camaro 350 from headers back. \$75. Sue, Ext. 2050 or 475-5834.

78 KAWASAKI - KZ 1000, excel cond, must see. 298-9403 after 4:30.

71 VW SQUAREBACK - am/fm, new muffler, battery, 28/33 + mpg. J. Adams, Ext. 4994 or 732-5641 eves.

78 - KZ-200 elec start, 1952 mi, blue. \$795. Carol, 472-1871 after 5.

DIRT BIKES - Suzuki TC 90 cc and TC125 cc. \$325 ea. Ron, Ext. 4082.

Kids In The Suds



Last week, children in the summer recreation program on site had fun frolicking in foam sprayed out by Firefighter Charles LaSalla. The Fire Group also showed them a movie on fire safety, did a demonstration on fire equipment and clothing, and took everyone for a ride on a fire engine.

Children's Program

Pool Special

While the older children displayed their talents by executing zany dives off the diving board, the younger ones had their share of fun reaching the finish line of the ever popular balloon race. Contest winners were: Zany Dives - 1st, Ranjit Notano; 2nd, Gereon Sistemich; 3rd, Steven Stelts. Balloon Races - (ages 4 through 6) 1st, Cathyleen Holden; 2nd, Alex Crabb; 3rd, Derek Spark - (ages 7 through 9) 1st, Keith Holden; 2nd, Heidi Perry; 3rd, Katja Gotlich.

Coming Events:

This Friday - relay races

Next Friday - ping pong ball and cup races

On-Site Program

Ballerinas, magicians, gymnasts, musicians and even a "mystery comic rollerskater" highlighted the talent show held in the recreation building last Friday morning. The entertainers were rewarded with prizes as well as enthusiastic audience applause.

Coming Events:

This Friday - scavenger hunt

Next Friday - Halloween party

Tennis Instruction

A reminder to those 7 to 16 years of age that a tennis tournament will begin on Monday, August 4. Watch for the information sign posted at the swimming pool.

Mort Rosen

