BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

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 Epithermal 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 ^{10}boron, 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."

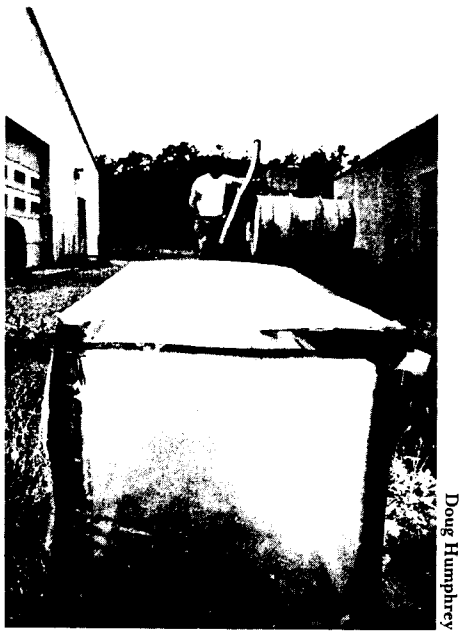
Problems with the neutron beam also discouraged the early project. Thermal neutron attenuation in the tissue was too rapid, causing the outer tissue that the beam first penetrated to be damaged.

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)

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.



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

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 $\pi^{\pm}p$, $K^{+}p$ 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 diner 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 Iuliano	Central Shops
Dennis H. Reuter	Plant Engrg.

Departures

Elbio R. Schachner	Medical
Larry Tempesta	Plant Engrg.
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.

Movies Tonight

Old time comedy films will be shown at Berkner Hall tonight. Film times are:

6:00 & 9:30 – My Little Chickadee, with W.C. Fields and Mae West.

7:30 – shorts, with the Three Stooges, Shirley Temple and the Little Rascals.

8:20 – Duck Soup, with the Marx Brothers.

Admission is $3 at the door. The event is sponsored by the Brookhaven OXFAM Committee for Cambodian Famine Relief, and the ticket price is tax deductible.

Selected Reading

J. Am. Med. Assoc. 244 (4), July 25, 1980
Losing weight through exercise. B.A. Franklin. 377-9

New Sci. 87 (1210) July 17, 1980
Hidden agendas in the energy debate. J.H. Douglas. 208-10

Sci. Am. 243 (2), August 1980
Disk-storage technology. R.M. White. 138-48

U.S. News & World Report LXXXIX (4), July 28, 1980
Russia's new challenge to U.S. – In the classroom. J. Trimble. 50

New Sci. 87 (1209), July 10, 1980
Organic superconductors. D. Jerome, et al 104-7

Time 116 (2), July 14, 1980
That aching back! A. Toufexis. 30-34 +

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, ^{10}boron can deliver a tumorcidal 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 sages 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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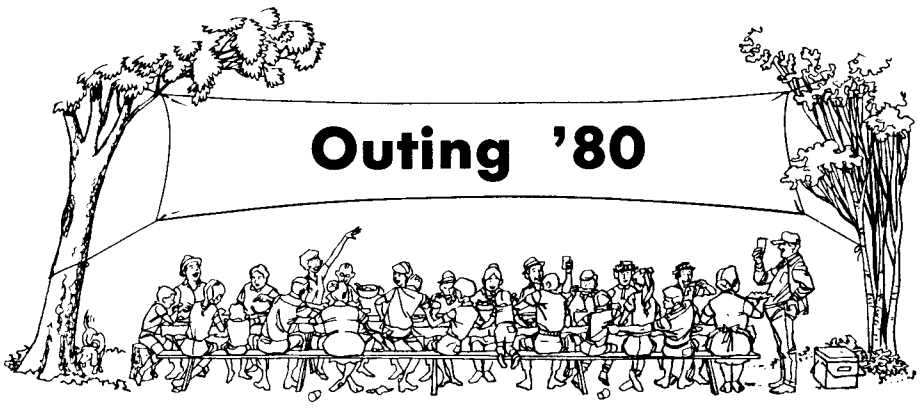

If you haven't bought a ticket to OUTING '80, the employee picnic on Saturday, August 23, you only have two weeks to go. Last day to get one is August 15. After that, you're out of luck.

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 Flagg 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 ½ 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

Thrids 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

Kids In The Suds

Mort Rosen

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.

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 Materiel 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.

Auto & Auto Supplies (Cont'd)

ARISTOCRAT TRAILER - 1971, gas/elec refrig, counter stove, oven, shower, 18½', excel cond. $2,100. Walter, Ext. 3352.

76 HONDA - CJ360, new battery, helmet, low mileage, good cond, extras. $750. Kathy, Ext. 4615.

71 HARLEY DAVIDSON - FLH, excel cond, many extras. $3,500. Joe, Ext. 7961.

75 PACER - 6 cyl, a/t, p/s, p/b, am/fm radio, radials, excel cond. $1,700. Joe, Ext. 3569 or 286-9560.

TIRES - (2) Delta trans-am H60-15, never used, raised white letters. $65. Kevin, Ext. 4261 or 654-8553 after 6.

74 DATSUN - pick up, white, 4 cyl, orig owner. $1,600. 924-4325.

RIMS - pair of 14", 2⅜" center hole, $5; 6 gal steel tank for outboard, $5. Ext. 4993.

68 CADILLAC - Sedan de Ville, one owner, 28K mi, unusual valve and opportunity. Jim, Ext. 4343.

78 THUNDERBIRD - pb/ps, p/w, a/c, am radio, immac cond inside and out, 22,000 mi. $4,000. 286-0695 or 286-9013.

79 RABBIT-C - 4 dr, am/fm stereo, tint glass, rust proofing, excel cond, must sell. $5,200. 724-0564.

72 CHEVY - sta wgn, p/s, p/b, good cond. $550. Len, Ext. 4487.

74 CHEVY CORVETTE - white w/pinstriping, black int, auto, T-top, new tires, new brakes, very clean. $6,900. Linda, Ext. 7187.

68 CHEVY - pick up, 4 w/d, 4 spd, 72-350 motor w/ 10½' slide on camper, sleeps 5, new 12:00 16x5 tires, extras. $2,995. 758-9825.

SEATS - for 1979 Ford Econoline, tan, $35; bumpers, $30 ea; crash bars, 1978 CB750K, $14. Ext. 4758.

76 DODGE - 20' Winnie 360 A/T loaded ready to go, very good, new tires. 588-5688.

76 PINTO - wgn, a/t, a/c, 6 cyl, 44,000 mi. Kevin, Ext. 4901 or 924-7283.

72 DODGE DART - p/s, a/c, a/t. Best offer. 286-1489 after 6.

75 CAMARO - 41,700 mi, auto trans, 6 cyl, good shape. $2,900. Ext. 3084.

76 CHEVY NOVA - 6 cyl, auto trans. $2,500. 979-6816.

Boats & Marine Supplies

CLAMBOAT - Decked Garvey 70 HP, Evinrude, extras. Ext. 4666 or LT9-9160.

STARMASTER - (shapie-style) clamboat w/mariner motor, 18' FG/w professionally made 1974; 48 HP 1979. Lee Lawrence, 472-0721.

FIBERGLASS - Dinghy, nice cond, $65. with oars, $75. A. Campbell, Ext. 3354 after 4 pm.

14' CRESTLINER - 1975 Evinrude rebuilt 50 HP w/ trailer and extras. $2,500. 588-0424.

17' FIBERGLASS BOAT - 60 HP Johnson, Hole craft trailer (1972) elec. winch all accessories. $1,650. 473-0775.

PORT A POTTY - self contained, excel cond. $50. Don, Ext. 2022 or 878-2215 after 5.

6 HP SEAGULL - silver Century, outboard, lg shaft, excel cond. $275. 724-2923.

MERC - 50:1 Quicksilver outbaord oil 5 gal. drum unopened list $50. sell, $35. Ext. 3848 Charlie.

Yard Sale

GIGANTIC YARD SALE - Aug. 2 & 3rd, Sylvan Dr., Wading River, follow signs from 25A.

GARAGE SALE - Aug. 2nd. Pt. Jefferson, assorted household items, office, home furniture. For directions call Ext. 4444 or 473-2588.

GARAGE SALE - Aug. 2nd & 3rd, 9 to 4 pm, 4 Splitpine Circle, Medford. 289-0342.

YARD SALE - several families, Aug. 2 & 3rd, 10 to 4 pm, 136 Rocky Pt. Landing, Rocky Point.

CONTENTS OF HOUSE - Sat & Sun, Aug. 2 &3, 10-4. 11 Gerard St., Bellport.

Miscellaneous

BIKE - Boys, green w/chrome fenders, white-wall tires, good cond. $25. 581-7656.

AMANA REFR/FREEZER - side by side, 19 cu ft., good. $325; kitchen range, oil/electric. $100. as is. 325-1961.

DINING SET - (6) chairs, $50; dbl mattress and box spring, $30. and $15; (2) end tables $20; like new rugs, $30. and $50. Mrs. Baloyi, 473-3784.

BABY DRESSING TABLE - colonial couch; carriage. 884-2868 after 6 p.m.

MAX - part Lab-Doberman. 1 yr. old, needs good home, place to run. Housebroken. 878-8933.

WATER FILTER - worried about your water? Fits any faucet. $30.00. Ext. 3655, 281-2002.

TENT - Morsan's best, Nuocom-8x10. See erected. $50.00 289-1755.

FIRESIDE CHIMNEY SWEEPS - fireplaces & stoves, chimneys; protect against chimney fires, insured, Lab employee discount. 584-6425.

GM CAR SEAT - crib, high chair, other baby items, painted desk and dresser. 744-4965.

BICYCLE -26" men's bike w/basket, good cond. $35. John Zahra, 727-4515.

GEMS - precious stones, wholesale prices, acquamarine, topez, amethyst 744-8025.

CRIB - and dresser, white, Sesame St. $50; strollee double stroller, $30. Chris, Ext. 4612 or 281-7379.

BEDROOM SET - Medit, dbl bed, triple dresser w/ mirror, armoir, 2 night stands, no mattress. $300 or best offer. Diane, 878-4984.

TV - Black and white, Philco 19" remote control. $50. Ken Asselta, Ext. 4581.

LIGHTING FIXTURES - five recessed, excel cond. $5. ea. 5/$20. Pat, Ext. 2452.

HYDROHEARTH - heats single level home, fits standard hearth 24" wide. $80. 281-4871 after 6.

AIRTIGHT - wood stove, heats up to 1000 sq ft. 1 yr. old. $75. Rich, Ext. 3573.

DESK - Ethan Allen roll top desk, pine wood. $175. 585-5321.

DRESSER - Danish modern, 5' Lx18" Wx30" H, Walnut, very good. $150; trash compactor, good cond. $75. 277-4091.

LAZER PICTURES - new and beautiful, 16" x20", all wood frames, Reg. $70. Now, $40. Judy 698-4882 after 4 p.m.

FIRE WOOD - $100.; rims for wide Camaro tires. 2 for $20. 281-1862.

FREE KITTENS - (males) 1 orange, (2) grey, 1 striped. Joyce, Ext. 4105.

BEDROOM SET - 3 piece, cherry colonial, single bed, $250; (2) cranberry lamps, $45. 472-9421 after 6 p.m.

CAMERA - super 8 movie camera, zoom lense, light and projector, excel cond. $175. Kathy, Ext. 4615.

PING PONG TABLE - ¾" particle board, fold-up, excel cond. $50. Betty, Ext. 4825.

COUCH - queen size convertible, floral, bird design on blue velvet, excel cond. $450. 732-9087.

COUCH - Bassett, and matching arm chair, $200; end table and coffee table. $110. or $290. for all. 281-0804 eves.

BABY ITEMS - changing table, walker, car seat convertible to high chair, etc. Ingrid, 286-2127.

AIR COND - Fedders 15,000 BTU, 220 V, little used, $250. Ext. 4333 or 929-6984.

PING PONG TABLE - standard size, best offer over $20. 286-9013.

BIKE - girls, hi-rise handlebars, banana seat, pink, very good cond. $25. 581-7656.

KUSTEM - 200 amp. and bottom w/two 15" speakers w/covers, excel cond. $350. 286-9197.

MAYTAG - Top-of-the-line electrical clothes dryer, automatic control. W. Kato, Ext. 2444 or 473-3295.

PEREGO - carriage/stroller; GM infant carseat; swing; infant seat; other baby items. 924-3756.

BASEBALL GLOVE - used but in good cond. $5. Wayne, Ext. 2959.

TWIN BED - mattress w/box spring and wooden head board and Harvard frame. $75. Fred, Ext. 3259.

MOUNTAIN LAUREL - 3 yr. old plants, healthy & growing, $6.50 ea; also pachysandra plants, 25 plants for $2. Jean, 929-4522.

TABLE LAMPS - $10./pr; standing lamp, $5; B&W TV, $10; child's carseat, $8; fish tank w/accessories, $8. Morris, Ext. 4188.

TI 58 - Programable calculator, 70; Lafayette HA 146, 2 MTR transceiver asking $100. Ext. 4576.

FRANKLIN STOVE - w/grate, screen, and stove pipe, good cond. $90. J. Skora, Ext. 2819 or 744-9677.

TV - Sears 14" B&W, $20. Ext. 3396.

AIR COND - Chrysler Airtemp, 18,000 BTU's, needs freon. $75. including thru wall brackets Ext. 3292 or 581-1773.

TORO LAWNMOWER - 21", self propelled, runs OK, $25. Dick, Ext. 2911.

ANTIQUE - drop front Secretary w/glass doors, needs refinishing. $85. 281-8538.

PLATFORM BED - Kingsize walnut loft craft w/headboard and form mattress. Disassembles. 821-1148.

WOOD BURNING FRANKLIN STOVE - also uses cannel coal, excel cond. $75. 924-6021 or 929-8982.

HP 97 - Calculator, card reader, ten solutions, books and two pacs, brand new. $500. Ext. 2482.

BABY ITEMS - stroller; booster seat, swing, mahogany contemporary twin bed, boys baby clothes. 929-6748.

TURBO - oven, farberware countertop, efficient, economical. $90. 821-1148.

WATER PUMP - Deming set for shallow/deep well. $75. Ext. 3392 or 475-8330.

LAWNMOWER - Toro, 21" reel type, excel cond. $50. Al, Ext. 2957.

BOOKS - photography, Time/Life series complete set and index. $65. Fred, Ext. 4407.

SCANNER - realistic 10 Channel, including crystals. $125. Ext. 4749 or 286-8448.

BICYCLE - Ross 5 spd Derailleur, year old, perfect cond, $60. Phil, Ext. 7934 days or 728-0273 eves.

ROUND BED - 84" dia. box spring foam mattress, bed spread. $100. Bob, Ext. 4547 or 473-3987.

MAHOGANY CABINET - w/Gerard record changer, $30; Lamp, 34", $7. both in good cond. Ann, 286-2280.

BEDROOM SET - dbl bed, mattress, boxspring, dbl dresser, bureau, (2) night tables, mirror. Ext. 3189 or 751-2070 eves.

WOODEN DESK - 4 drawer 48" x 16", $20; upholstered chair, $25. Ext. 4045 or 289-5770 after 6.

BLANKETS - (3) wool, $5. ea; and comforter for dbl bed, $10. Ext. 4045 or 289-5770 after 6.

HAMBURGER MAKER - heater; travelling iron; am/fm transistor radio; roller skates. Ext. 3027.

CHAIRS - (2) folding macramae, $20. ea. ideal for sm. apt, excel cond. 588-3779.

PILLOWS - (2) feather, $5. ea; (4) polyester, $1. ea. Ext. 3801 or 289-5770 after 6.

COMPOUND BOW - Wing Thunderbird, adjustable 45-60 lb., 28"-30" draw length, excellent condition. $100. Ed Scarano, Ext. 2907 or 475-5524.

TV - tray set, $15; (2) sm. 3-drawer dressers, $15. ea. Ext. 4045 or 289-5770 after 6.

CALCULATOR - HP97/card reader, ten solution books & two pac's. Brand new. $500. Ext. 2482.

DESK - wooden, 4-drawer, 48"x16", $20; upholstered chair, $25. Joyce, Ext. 3801 or 289-5770 after 6.

DESK - metal, very large, $25. 581-7656.

SOFA - green Italian Prov. & two ladies chairs, black & gold. 884-2868 after 2 pm.

UPRIGHT FREEZER - Sears coldspot 19½ cu. ft., deluxe model, hardly used $275. 475-1647.

REFRIGERATORS - (2) good cond. $35. ea. Ext. 4547 or 399-1561 Joe.

STEREO - Pioneer SX-650 receiver, AR-14 speaker, Sony PS-5520 turntable, excel cond. $450. 475-4394.

QUEEN SIZE - mattress & box spring. $100. 924-6021 or 929-8982.

SCREEN HOUSE - 12' diam. $95; ping pong table folding, $35; sleeping bags, $3 up. 265-0501.

WATERBED - queen size; frame, liner, mattress, heater. $325 new, asking $150. 281-0804 eves.

MATES BED - (2) all wood, roller draws, fruitwood finish, $125. ea. or both for $200. 654-2304 after 12 pm.

GARRARD TURNTABLE - $35; GE amplifier, $20; antique electrified brass & wrought iron kerosene lamp, $75, 472-9421 after 6.

ELECTROPHONIC - stereo console, 8 track, turntable & am/fm stereo radio. $75. John Zahra. 727-4515.

COLOR TV - 25" Magnavox fruitwood console, needs transformer. $75. 475-2350.

DEEP FRYERS - (2) restaurant equipment. $100. both; toaster, $10. Diane, 878-4984.

AIR COND - $50; tennis balls - 60 pcs, $10; grease gun, $3; TV stand, $3; antenna rotor, $10. 744-5867.

BACHELOR CHEST - sm. yellow, 3 drawers. $30. 281-0843.

SHOT SHELL RELOADER - loads all 20 & 12 ga., 6 or 8 segmint crimp, 2-¾" & 3" shells. $70. C. Nielson, Ext. 3935 or 325-0968.

DRYER - portable electric, Panasonic, very good cond. $95. Ext. 4447 or 924-8213 after 5.

OIL TANK - 275 gal. $50; Royal typewriter, manual, new cond; Buffet, old, $50. Mike, Ext. 2320 or 929-4716.

WINDOW FAN - 12" reversible, like new cond. $15. Ext. 4701 or 271-2877.

GYM MAT - full size professional. like new, usd onely once, $80. originally, $150. Ext. 2052 or 767-0680.

SOUND GUITAR AMPLIFIER - 2 channel, Jensen speakers, very good cond. $120. 286-0534.

SOFA - 3 cushion full length, dark avocado green stripe, $40; Clairol "Kindness" 20 roller hairsetter, new in mirrored box, $10. Ext. 3771 or 878-1471.

AIR COND - 10,000 BTU GE unit, $75. A. Muller, Ext. 3057 or 878-0357.

RUG - Wool, L. green 9x12 scroll, good cond, Gulistan, $50. Lola, Ext. 2265.

OIL BURNER - deep well pump, ¼ HP, make offer. C. Hull, Ext. 3655 or 281-2002.

ROUND SCREEN HOUSE - 12', never used, brand new, ready for asembly. $200 Firm. Tom, Ext. 2011 or 325-1913.

SHOTGUN - 12 gauge, best offer. Phil, Ext. 3310.

INDIAN HEAD PENNIES - assorted dates, various cond, rolls of 50. $20. ea. Les, Ext. 4074.

WOOD STOVE - high efficiency, Lange. $250; folding fireplace screen, $10. J. Guthy, 929-8287.

CONVECTION OVENS - (2) deck style, Wolfs, priced to sell, gas type. Mark, 821-1395.

BICYCLE - ladies 3 spd Raleigh, excel cond, like new, Ext. 2522 or 286-0810 eves.

PACHYSANDRA PLANTS - healthy & thriving, 25 plants for $2. Jean, 929-4522.

TECHIVICS TURNTABLE - Model SL 32, used 4 mos. $50. 744-9802 or Ext. 3319.

DOUBLE BED - w/mattress. $45. Ext. 4676.

AIR COND - 6000 BTU, GE, purchased 7/21/80. Moving. Sell by 8/8/80. $125. Full warantee; Agatha Christie, 75 paperbacks, many out-of- print, sell comlete set only $65. Ext. 4907 or 345-3107.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Sale

ROCKY POINT - 9 mi. from Lab, M/D, custom built, practically maintenance free, nicely landscaped, 100x 100, storms & screens, oil BB heat, many extras, excel cond, one rm screened in summer house on property. 744-2332.

MASTIC BEACH - 3 bdrm ranch, corner lot, roofed patio, pleasant location near water. Low 30's 281-7531.

BAYPORT - 4 bdrms, 2 baths, seperate apt. 1 acre, near bay. 472-1097 after 5 pm.

MASTIC BEACH - 3 bdrm, panelled L/R w/new w/w carpet, eik; outdoor & indoor front porches, complete insulation, elect. heat, new asphalt driveway, ¼ acre, taxes, $550. $25,000. Chris, 281-7379.

CENTRAL ISLIP NORTH - 1 acre, hi-ranch, 8 rms, 1½ baths, 24 x 28 sunken patio, possible M/D, many extras. Yani, Ext. 2514 or 234-8564.

For Rent

WADING RIVER - 2 bdrm house on cliff w/spectacular view of L.I. Sound, washer/dryer with D/W. Avail. Sept. to June 1981. $325/mo. Ext. 2440 or 929-8165.

YAPHANK - German Gardens, sm. bungalow, ideal for single. $190/mo. incl. elect. & hot water. 924-3946.

LAKE GROVE - 6 rms, 3 bdrm L/R, D/R, eik, carpeting, gas, heat. Ext. 3800 or 467-1763.

POCONOS CHALET - in priv. community, sleeps 6, swiming, tennis, etc. 289-2159 after 6.

RIDGE - 1 bdrm, 2 floor, furnished apt. priv. ent, female only, references. Ext. 7996 or 929-6034.

SHIRLEY - 4 bdrm house, 2 baths, cellar, garage, near bridge & bay, avail. 2nd wk. Aug., $350/mo. J. Carroll, Ext. 3284.

Wanted

LOAN - of childs or ladies bicycle for games at the BNL picnic. August 23. Ext. 4841.

HOUSEMATE - to share 2 bdrm house in Medford. $150/mo. + ½ util, w/washer & dryer. Warren, Ext. 3464 or 924-7552.

OLD DOLLS - and teddy bears. 475-4199.

ROOMMATE - own rm & bath, share expenses, lg. house. Joan, Ext. 7981 or 286-0742 after 6.

HOUSE - 3 or more bdrms w/bsmt in So. Huntington/ Melville area. Bill, Ext. 7688.

CAR - 4 or 6 cyl, mechanically good, '72 to '75, medium mileage, reasonable. 588-3999.

HAM OR CB TOWER - 40 to 50', Niels, Ext. 4731 or 473-4677 after 6 pm.

TRANSPORTATION - desperate! ride to SUNY Binghamton on August 29th with all belongings, will pay. Joe, Ext. 7720 or 765-5373.

HOUSEMATE - to share 4 bdrm, 3 bathrm, house in Coram. $155/mo. plus share util. 928-8379.

HOUSE - or apt. to rent, 2 bdrms in Seaford or Massapequa. John, Ext. 4973.

ROOMMATE - share 4 bdrm Cape in Ridge, furn/unfurnished. $150. Tom, Ext. 3273 or 924-9143.

1973 FIAT - 128 sedan, does not have to run, needed for parts, very cheap. Ed., Ext. 4636 or 929-4522.

HOUSEMATE - 3 students in Stony Brook area seek fourth. ($150 + util). T. Sills, Ext. 2865 or 689-9109.

Car Pools

VANPOOL - from Miller Pl., So. Beach, Rocky Pt., to BNL. Don, Ext. 3284.

QUEENS/REGO PARK - need to join car pool. Ext. 7618.

MASSAPEQUA - and vicinity, one driver needed. Plotkin, Ext. 4717.

JERICHO/SYOSSET - car pool from Exit 41/42 LIE or surrounding area. Stan, Ext. 7635.

SOUTHAMPTON/HAMPTON BAYS - area. To start car pool. Stacey, Ext. 3397 or 283-6836.

STONY BROOK - Strathmore, third member needed for existing car pool. 8:30-5:00. Jon, Ext. 4862.

PATCHOGUE - third member needed for existing car pool. Mike Brooks, Ext. 4414.

Lost & Found

LOST - Tennis racquet, Donnay, near court 4 on July 20, reward. Jim, Ext. 4157 or Ext. 4142.

Services

CARPETS INSTALLED - and repaired, quick dependable service. Free estimates. Jim, 821-0187.

RELIABLE HANDYMAN - looking for yardwork and painting jobs for the summer, reasonable. Patchogue area only. 289-7383.

CLEANING - complete home, apt., offices. Free estimates. 751-2350.

PET SITTER - Port Jeff High School student will care for your caged pets. David, 928-6654.

TIIRES - new & used, service & repairs. Fred Usack, Lunchtime Ext. 4798.

BABYSITTING - will sit your child Mon. thru Fri. any age, maximum 2 children. Ext. 3111.

CAR WAXING - wash & wax. $20. your home or mine. Steve, Ext. 4297 or 543-9008.

BABYSITTING - my home Mon. thru Fri. TLC given, playmates, big yard. Center Moriches. 878-0939.

CHAUFFERED LUXURY LIMO SERVICE - Call 698-2268, 698-2266.

ASPHALT - paving & sealing, Bob, 475-4382.

CHIMNEY SWEEPS - fireplace & stoves professionally cleaned. Protect against chimney fires. Lab employee discounts. 584-6425.

LAWNMOWING - and babysitting jobs wanted. E. Patchogue, Bellport, Brookhaven area. Billy, 289-2691.

ROTOTILLING - new lawns & flower beds, $12. per 1,000 sq. ft. So. Shore only. Tom, 325-1033.

AUTO REFINISHING - all areas of body work performed, small car discounts. Bob, Ext. 2546 or 744-4047.

PIANO TUNING - and repair, reasonable rates and conscientious service. 751-4985.

MUSIC - for all occasions, Alias Smith & Jones. 929-6624 after 6 pm.

CLEANING LADY- will clean homes in the Riverhead area. 369-1421.

HARBOR FANTASIES - lessons & rentals; sunfish, windsurfers, hobie cats, fishing boats & water skiing. 324-9606.

EXPERIENCED MOTHER - (RN) will babysit for your children in my home in Shoreham beginning Sept. M. Brown, 744-7542.

Ads left out of this issue due to lack of space need not be re-submitted to appear in next week's issue. Please note that ads may not be more than 15 words long and must be received in the Bulletin office by 4:30 p.m. Friday, for inclusion in the following week's Bulletin.