BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Spotlight on NSLS Research

Probing Catalysts

Crude oil, also known as black gold, shines because of catalysts. Oil refiners use catalysts to transform black gold from a thick mineral into refined fuel and lubricants. In speeding reactions, catalysts break chemical bonds and form new ones.

That catalysts work is well known, but how they do their job is not. To understand what happens at the surface of catalysts, a participating research team (PRT) of Exxon and National Synchrotron Light Source (NSLS) scientists are using low energy, soft x-rays to probe the catalysis of carbon bond-breaking reactions in the presence of reactive gases.

Working on the vacuum ultraviolet (VUV) beam line U-1, John Gland, a physical chemist from Exxon's Corporate Science Research Laboratory, heads the catalysis studies. Other PRT members are NSLS Physics Associate Dan Fischer, a solid state physicist; NSLS Assistant Scientist Francisco Zaera, a surface chemist; and Shikong Shen, a catalytic chemist from the Chinese Academy of Sciences, People's Republic of China, who is visiting Exxon and stationed at the NSLS.

The Exxon-NSLS team has for the first time utilized this new probe to examine the steps in a surface chemical reaction occurring under pressure of hydrogen gas, a condition similar to that found in industrial refining.

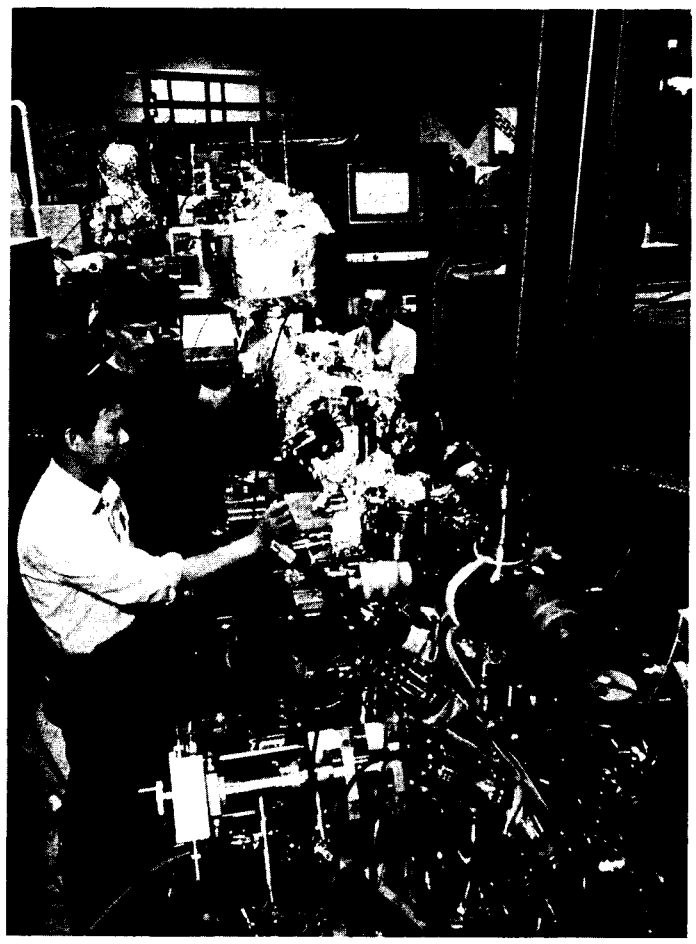
This experiment could only be performed at the NSLS, as no other synchrotron in the world has the high intensity light that is necessary. Using a monochromator to select the energy of x-ray light they want, the Exxon-NSLS team can look at one specific element, such as carbon, of the molecule they are studying.

Before starting their research, they had to develop a system to transmit enough intense soft x-rays from the VUV ring to do the experiments. Yet this "window" system had to be strong enough to withstand the pressure from the gas inside the reaction chamber.

For this experiment, the U-1 team scanned the soft x-ray energy through 283 electron volts energy, which is known as the carbon edge. This is the energy threshold necessary to excite one of the two electrons closest to the carbon nucleus to a higher, unoccupied level outside the atom. "As much of organic chemistry involves carbon atoms, this is a really important edge for us," explains Gland.

The atom gives off the energy it absorbed in one of two ways. It usually emits what is called an Auger electron, or the atom may fluoresce an x-ray of characteristic energy.

"Though it is a low probability occurrence, fluorescence is key," says Gland. "It is the only way we can detect the absorption of x-rays by carbon in an atmosphere of gas. Auger electrons can't get through the gas to be detected." The U-1 team had to develop a high efficiency, soft x-ray proportional counter to detect the fluorescent x-rays emitted from the carbon atoms at the surface of a catalyst under study.



Peter Horton

At the NSLS U-1 beam line: (left, foreground to background) Shikong Shen, Dan Fischer, John Gland and (right) Francisco Zaera.

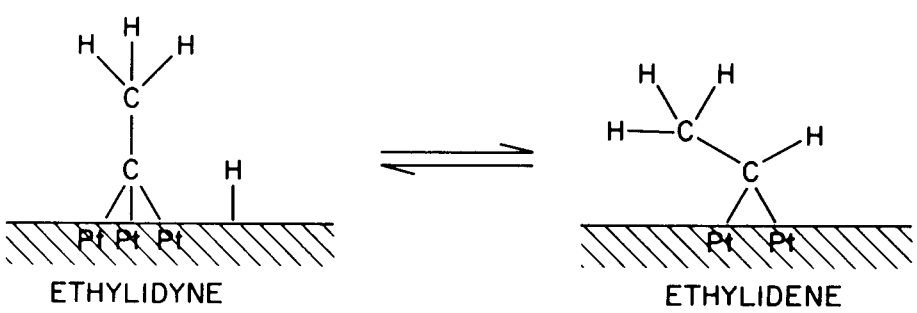
"Devices have been built before for the detection of soft x-rays at this energy," says Fischer. "But in making our detector, we had to merge the technology for these devices to the technology of ultra-high vacuum." Not only does this detector have to operate with one torr pressure of hydrogen gas inside the reaction chamber, but it is used under ultra-high vacuum (UHV), 10^{-10} torr, which is one tenth of a trillionth of an atmosphere, as well.

Explains Fischer, "This technological advance allows the experimenter to bridge the gap between traditional UHV surface science and reaction studies at high pressure."

In the presence of one torr of hydrogen gas, the first x-ray absorption fluorescence experiment was performed by the Exxon-NSLS team in June. Looking at the carbon-to-carbon bonds of a molecule called ethylidyne, which was on the surface of a platinum single crystal, they found substantial changes in soft x-ray absorption in the presence of hydrogen gas. This indicates that a surface reaction had occurred.

After another experimental run, the research team will spend a couple of months to determine the bonding and orientation of ethylidyne's carbon and hydrogen atoms during the reaction catalyzed by platinum.

Says Gland, "Ethylidyne is a model — the simplest molecule you can study that has a carbon-carbon bond. After we figure out this model reaction for carbon-carbon bond breaking, we'll go on to work on more complicated molecules." — Marsha Belford



The proposed reaction of ethylidyne under high pressure of hydrogen.

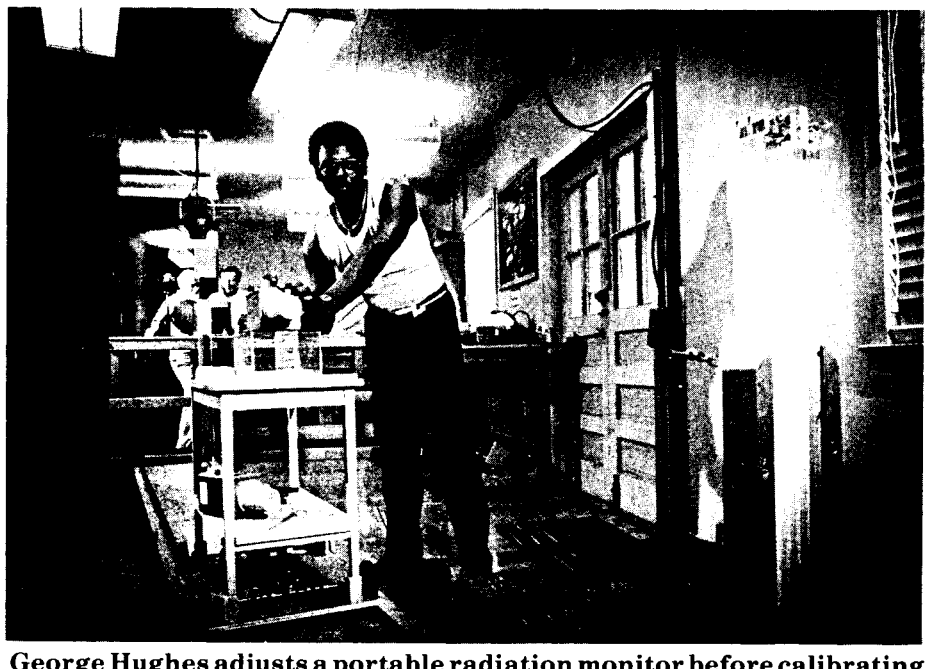
The Monitoring of Monitors

Hans Geiger would have been proud of BNL's Calibration Group. Whether you have radiation monitoring equipment problems or just need a routine calibration for your instrument, you can count on Calibration. Tucked away in the woods past the new firehouse, Calibration provides quality assurance for portable radiation detectors on site.

Joe Balsamo, head of the Instrumentation, Engineering and Calibration Group of Safety and Environmental Protection (S&EP), notes that there are 650 portable radiation instruments at BNL. Calibration checks these devices for accuracy and services them annually. Some specialized instruments and those which are used extensively are serviced by Calibration more frequently. In addition to checking BNL instruments, Calibration does outside contracting work for the Nuclear Regulatory Commission and other government agencies.

To test the accuracy of portable radiation instruments, Calibration uses known radiation fields with sources having known rates of radioactive emission. These sources emit alpha, beta, gamma or neutron radiation. To insure the quality of the dose measurements, Calibration uses a "transfer standard," a radiation detection device calibrated by the National Bureau of Standards, to establish the dose rates from BNL sources.

When a dosimeter is tested, a source is pulled up from a basement storage area by negative air pressure into a lucite column in the testing area. The dosimeter sits on a trolley which is located at a predetermined distance from the source. Taking the distance from the source and the strength of the source into account, Calibration compares that dosimeter's reading with an ideal value. They are able to monitor the readings on the dosimeter using a remote TV camera.



Mort Rosen

George Hughes adjusts a portable radiation monitor before calibrating it. The monitor rests on a trolley, which is located at a predetermined distance from the lucite column on the right. When a calibration test begins, a source is pulled into the column from a basement storage area by negative air pressure. In the background, (from left) Joe Balsamo and Frank Stepnoski observe a TV monitor.

If the actual readings on the dosimeter differ from the calculated values, Calibration corrects the discrepancy. George Hughes, manager of the facility, and Frank Stepnoski, who conduct the testing, make any necessary repairs on the instruments. All testing procedures are performed in accordance with protocol set by the American National Standards Institute.

Procedures for testing the 56 different types of monitoring instruments currently in use at BNL vary slightly. The Calibration group is designing a program to guide technicians though the tests, calculate deviations from the proper readings and record the results of those tests. This program will facilitate the evaluation of problems in the calibration of a group of instruments.

The Calibration facility also houses equipment for the Department of Energy's Radiological Assistance Program (RAP) which provides emergency response to radiation incidents in the northeast area of the United States. The Calibration group services the equipment and makes sure it is ready for immediate use.

Calibration is also responsible for testing batches of film badges that the Lab uses for radiation detection.

(Continued on page 2)

Patent Awarded

U.S. Patent #4,556,068 was awarded to **David Vartsky**, a former BNL employee; **Lucian Wielopolski**, **Anthony F. LoMonte** and **Kenneth J. Ellis**, all of Medical; and **Stanton Cohn**, a former BNL employee, for developing a method to measure lithium in the brain and other organs.

Prescribing lithium salts is a standard treatment for manic depression, but the mechanism of action is not known. Moreover, long term use does have side effects. In view of the importance of clinical lithium use, it is desirable to study its distribution and dynamics *in vivo*.

In this invention, the lithium in the body is irradiated with thermal neutrons to produce tritium atoms. The tritium atoms are transformed in part in the surrounding aqueous solution to form gaseous tritiated hydrogen, which has small solubility in body tissues and liquids and thus appears quickly in the breath. A special counter then measures the amount of tritium, which is related to the amount of lithium present in the irradiation zone.

Calibration (Cont'd)

They expose the badges to predetermined amounts of radiation to confirm that the badges detect such radiation accurately. All badges can detect beta, neutron and gamma radiation; therefore, to evaluate the performance of the badges, testers must provide exposures for each type of radiation and for mixtures of radiations.

Currently, Calibration is planning a campaign to register all portable radiation detection equipment with their office. "Instruments that were purchased by private individuals, other departments, or brought from other sites and in use at BNL, still need to be tested at Calibration," Balsamo stressed. To insure accuracy and conform to regulations, he asks that those instruments be registered. Employees can call Balsamo at Ext. 7727 for information about radiation instrument or dosimeter testing.

Balsamo also urges that scientists planning to change their instruments or use them in a different radiation field should contact their S&EP representative to assure they have the appropriate equipment.

— Howard Rubin

The Sale of the Century

In its first incarnation as Camp Upton, from 1917 to 1920, the BNL site was a bustling World War I training camp. Hundreds of buildings had been built and equipped to accommodate the 40,000 soldiers that typically populated the camp at any one time. When the war was over, the soldiers went home, but the buildings and equipment remained — for a while.

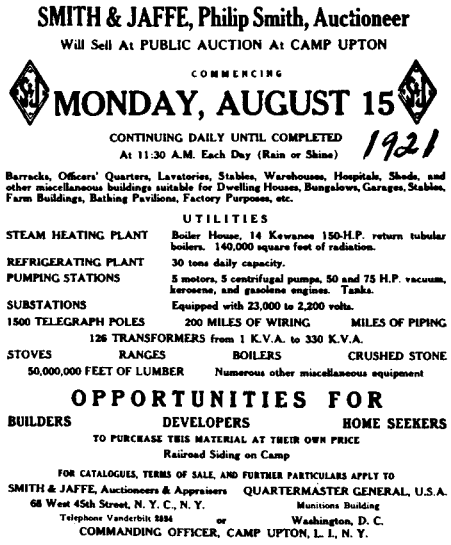
On August 15, 1921, thousands of prospective purchasers, toting half-inch-thick catalogues, flocked to Camp Upton for a Public Auction Sale. Held by order of the Secretary of War, the auction featured "1660 buildings, utilities and improvements" and would continue daily until they were all sold.

The buildings for sale included any number of barracks, mess halls, garages, shacks, tool sheds, dormitories and office buildings, as well as a few post offices, post exchanges, infirmaries, guard houses, administration buildings, laundries and headquarters. Apparently, most of these were expected to be sold for any remaining value they might have as lumber, windows, door, etc., as this item indicates:

- Base Hospital, Officers' Quarters — 150x200 ft., three wings, 167 windows, 66 doors, about 130,000 ft. lumber.

A few structures were somewhat unique:

- Stable, 30x40 ft.
- Five wood latrines, each 6x6 ft.
- Shoe repair shop.
- Typewriter repair shop.
- Smith shop.
- Two grain elevators, 42 ft. diameter.
- Chicken house.
- Theatre, 120x179 ft.
- Band stand.
- Powder magazine.
- Ice Cream shack, 12x30 ft.



PUBLIC AUCTION SALE

1660 BUILDINGS, EQUIPMENT and IMPROVEMENTS

AT

CAMP UPTON, LONG ISLAND, N. Y.

BY ORDER OF

Quartermaster General, U. S. A.

SMITH & JAFFE, Philip Smith, Auctioneer

Will Sell At PUBLIC AUCTION At CAMP UPTON

COMMENCING

MONDAY, AUGUST 15 1921

CONTINUING DAILY UNTIL COMPLETED
At 11:30 A.M. Each Day (Rain or Shine)

Barracks, Officers' Quarters, Lavatories, Stables, Warehouses, Hospitals, Sheds, and other miscellaneous buildings suitable for Dwelling Houses, Bungalows, Garages, Stables, Farm Buildings, Bathing Pavilions, Factory Purposes, etc.

UTILITIES

STEAM HEATING PLANT — Boiler House, 14 Kewanee 150-H.P. return tubular boilers. 140,000 square feet of radiation.
REFRIGERATING PLANT — 30 tons daily capacity.
PUMPING STATIONS — 5 motors, 5 centrifugal pumps, 50 and 75 H.P. vacuum, kerosene, and gasolene engines. Tanks.
SUBSTATIONS — Equipped with 23,000 to 2,200 volts.
1500 TELEGRAPH POLES — 200 MILES OF WIRING — MILES OF PIPING
126 TRANSFORMERS from 1 K.V.A. to 330 K.V.A.
STOVES — RANGES — BOILERS — CRUSHED STONE
50,000,000 FEET OF LUMBER — Numerous other miscellaneous equipment

OPPORTUNITIES FOR

BUILDERS — DEVELOPERS — HOME SEEKERS

TO PURCHASE THIS MATERIAL AT THEIR OWN PRICE

Railroad Siding on Camp

FOR CATALOGUES, TERMS OF SALE, AND FURTHER PARTICULARS APPLY TO

SMITH & JAFFE, Auctioneers & Appraisers, 68 West 45th Street, N. Y. C., N. Y. Telephone Vanderbilt 2884 — or — QUARTERMASTER GENERAL, U.S.A. Munitions Building Washington, D. C.

COMMANDING OFFICER, CAMP UPTON, L. I., N. Y.

- Three target pits, each 416 ft. long, 8 ft. deep. Lined on both sides with 2x12 in. lumber and telephone wiring.

Among the utilities and improvements offered for auction were countless furnaces, cooking ranges, transformers, pumps and air compressor tanks. Also available were:

- Crescent electric dish washer, Model E.
- Champion ice chopping machine.
- Sixteen mess tables and benches.
- Reliance rolling coal dumper, with 8 chutes, 4 wheels.
- About 250 tons crushed stone.

The auction and time have cleared the Camp so thoroughly that today only one structure remains on site from World War I — the foundation of the silo in the warehouse area.

One of the small barracks offered at the Public Auction Sale was bought by Marion L. Pond, who had been stationed at Camp Upton during World War I. He moved the structure to Hampton Bays and converted it into the house pictured above.

Sol Pearlstein Is Honored by BOCES

On July 22, Sol Pearlstein, head of the National Nuclear Data Center, was presented a plaque from Joel Berg, Board of Cooperative Educational Services (BOCES), in appreciation of Pearlstein's support of the BOCES 2 Summer Institute for Gifted and Talented Youth.

Since 1978, on even-numbered years, youngsters enrolled in Berg's summer course on mathematical decision-making have made field trips to the Nuclear Data Center. There, Pearlstein shows them how researchers use computers to make decisions.

In particular, he talks about the 109 elements and the 2300 different isotopes of those elements. "They all have different nuclear properties," says Pearlstein, "and I describe how the computer helps us display this information. To show these properties in graph form, one has to make innumerable individual decisions . . . for example, where to put the legend so that it does not interfere with the display of data. If, instead, a computer program is written intelligently, then the computer can make a lot of those decisions."

According to Berg, the BOCES program offers the students material they cannot get in their home schools. His math course, for example, shows the students how statistics, logic, probability theory and game theory can help them make decisions throughout their lives.

While Pearlstein has been hosting the math students on even-numbered years, another BNLer, Keith Thompson, has been hosting them on the odd-numbered years. Thompson, a statistician in the Biology Department, was given a plaque last year. Actually, Pearlstein was to receive his plaque last year, too, but was out of town the day of the ceremony.

Both Pearlstein and Thompson have had children enrolled in the summer program and have volunteered their time because of that involvement.

Peter Horton

Sol Pearlstein (left), head of the National Nuclear Data Center, holds a plaque presented to him by Joel Berg, BOCES. Also on hand is Grace Brindley, director of the BOCES Summer Institute, and Walter Kato, deputy chairman of BNL's Department of Nuclear Energy.

Arrivals & Departures

Arrivals

John Dioguardi ..... Physics
Jamie L. Sims ..... Sfgrds. & Sec.

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Janet M. Firriolo ..... Medical
William C. Horn ..... Sfgrds. & Sec.
Raul C. Munoz ..... Chemistry
George O.K. Stenby III ..... Accel.
Eliahu Stern ..... DAS

Hospitality News

"Meet the Creatures of Long Island" will be the topic of Biologist John Hanlon's presentation at the next Hospitality Committee get-together on Tuesday, August 5, at 9:30 a.m. in Room D, Berkner Hall. Hanlon, a member of the U.S. Fish and Wildlife Service, will talk about and show slides of the various kinds of fish, animals and birds found on Long Island.

Spouses of Laboratory employees and guests are welcome. Coffee, tea and danish will be served. Bring the children; babysitting will be provided free of charge.

Note to Diners

The Cafeteria will be closed on Saturday, August 9. On that day, snack bar service will be available from 9:00 a.m. to 2:00 p.m. at the Brookhaven Center.

All film badges will be changed tomorrow. Please place your badge in its assigned rack space before leaving work today.

Addled Addresses

725 Blue Cabin
National Labs

Brookhaven Bato Lab

Brookhover Natl Lab

Brookhaven Nat Cab

Mr & Mrs Cookhawen Nat
Staff Serwices Diwision

Berkeley National Lab

U. S. Department of Energy
Brook Heven Area Office

BNL Labor atories, Inc.

Brookhaven Nations

Brooklyn Nat'l Laboratories

Brook Avon National Lab

This photograph in last week's issue of the Bulletin was set up for dramatic effect. It inadvertently showed several serious violations of good Laboratory safety practice. For instance, the investigator who is pouring the liquid nitrogen has inadequate control over the vessel, a situation aggravated by his position relative to the dewar. Also, good safety practice would require a face shield and gloves. In experiments with liquid nitrogen, the potential for skin burns and eye damage should not be underestimated.

Employees' Art On Display

The 10th BERA Members Art Exhibit opens with a reception on Monday, August 4, in Room B, Berkner Hall, and the work will be on display from 4:45 to 7 p.m.

Those who attend opening night will be the first to enjoy 42 art exhibits contributed by 16 BERA members. The exhibits include both sculptures and pictures. Pictures range from watercolors to drawings, from oils to mixed media.

The exhibit will run until Wednesday, August 13, and the viewing hours are from 11:30 a.m. to 1:30 p.m. weekdays.

Afro-American Club

Everyone is invited to a family gathering sponsored by the Afro-American Culture Club. There will be contests, games, prizes, good food and drink, J.J. the Clown, a magic show, face painting (for kids of all ages), dancing and music by our own "E.T.," as well as Reggae music by D.J. "Raz Marvin" from WUSB. It all happens on Saturday, August 16, from noon until 6:00 p.m. at the Recreation Park.

Tickets are $5.00 for adults and $2.00 for children under 12. It is preferred that tickets be purchased in advance, but no one will be turned away "at the door."

For information and tickets, contact the following: April Donegain, Ext. 4425; Sandra Dozier, Ext. 4933; Francis Ligon, Ext. 3709; Bruce Penn, Ext. 7213; and Barbara Simpson, Ext. 7009. The rain date is Sunday August 17.

Swim Team

At the Nassau County Long Course Masters Swim Meet last Saturday, three members of the BNL Swim Team earned three gold medals, one silver and one bronze.

50-yard Freestyle

Paul Michael 35.40 3rd men 55-59

100-meter Freestyle

Paul Michael 1:27.60 4th men 55-59
Marsha Belford 1:31.37 1st women 30-34

100-meter Breaststroke

Toshi Sugama 1:23.85 1st men 35-39
Marsha Belford 1:50.80 2nd women 30-34

200-meter Individual Medley

Marsha Belford 3:36.59 1st women 30-34

Post Note

Because new steam pipes are being installed underground in back of Bldg. 179, the Upton U.S. Post Office has been forced to curtail its service window hours. For the duration of the work, which will take about a week to ten days, their counter will be open only from 8:30 a.m. until 4:30 p.m.

Equipment Demo

Philips Information Systems will display their new products in Berkner Hall on August 6 and 7, and their representatives will be available to answer questions. There will be three sessions each day: at 10 a.m., 1 p.m. and 3 p.m. Call 800-522-8989 to inform them of the day and session you want to attend.

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Golf

The fifth tournament of the BGA season will be held on Tuesday, August 12, at the Pine Hills Country Club in Manorville. Tee times will begin at 11 a.m. and may be obtained by contacting Joe Carbonaro, Ext. 5139, Bldg. 130.

Entry fees are $1 for BGA members and $2 for non-members. Deadline for signing up for the tournament is Friday, August 8. Greens fees are $11. The tournament will be stroke play with gross and net winners by flight.

Seventy-four golfers, a record, teed off for the tournament at the Indian Island Golf Course. Winners for low gross were John Millener (77), Mike Losquadro (90), Ted Dahne (96) and Edward F. Meier (102) in flights A, B, C and D, respectively. Net winners were Vinnie Racaniello (70) in A, Jack Detweiler (70) in B, Jim Petro (69) in C and Tony Coppola (69) in D. Ed Mikol Jr. was closest to the pin at hole #8, and Doug Sweely was closest at #17. Mike Losquadro had the longest drive on #9, and Rich Tiska had the longest on #15.

Cafeteria Menu

Week of August 4

Monday, August 4

Cream of tomato soup	cup	.65
	bowl	.85
Ham steak Hawaiian w/ one veg.		2.45
Hot vegetable plate (lite weight)		2.25
Beef stroganoff over noodles		2.45
Hot Deli: BBQ pork sandwich	bread	2.35
	roll	2.50

Tuesday, August 5

Chicken noodle soup	cup	.65
	bowl	.85
Super deluxe pizza w/ topping		2.00
Chili relleno casserole w/ one veg.		2.45
Stuffed tomato with vegetable garni	(lite weight)	2.25
Hot Deli: Baked Virginia ham	bread	2.35
	roll	2.50

Wednesday, August 6

Cream of cauliflower soup	cup	.65
	bowl	.85
Braised chicken liver marsala w/ one veg.	(lite weight)	2.45
Sweet & sour chicken w/ one veg.		2.45
Hot Deli: Meat loaf sandwich	bread	2.35
	roll	2.50

Thursday, August 7

Minestrone soup	cup	.65
	bowl	.85
BBQ spareribs w/ one veg.		2.55
Baked ziti w/ garlic bread		2.35
Egg salad & pita bread plate (lite weight)		2.25
Hot Deli: Roast beef	bread	2.35
	roll	2.50

Friday, August 8

Boston clam chowder	cup	.65
	bowl	.85
Baked fresh fish w/ one veg. (lite weight)		2.65
Fettucini Carbonara w/ one veg.		2.45
Hot Deli: Corned beef	bread	2.35
	roll	2.50

Softball

Week of July 22

League I

Six Pax 18 - Phoubars 7
Blue Jays 20 - Dirty Sox 3

League II

Phase II 9 - Lights Out 8
Magnuts 7 - Binary Bombers 4
Scram 9 - Medical 4

League III

Kidz-R-Us 13 - Septembers 7
Mole-Esters 8 - Source 5
Survivors 5 - Farm Team 2
Turkeys 8 - Who Cares 5
Farm Team 8 - Snakebites 5

League IV

Spacekadets 20 - Hit 'N Run 16
No Feedback 10 - Who's on First 8
Foul Ups 13 - Underalls 1
Sandboxers 16 - Mudville Sluggers 10
Sandboxers 21 - Underalls 8

Phys. Rev. Opening

Editorial Assistant, The Physical Review - Part-time position available to assist editors in processing manuscripts for publication. Physics or math background desirable, but experience in technical editing also acceptable. Address inquiries to American Physical Society, Box 1000, Ridge, NY 11961, Attention: Personnel Department.

Nursery School Registration Open

Last May, the children enrolled in the Upton Nursery School took a field trip to the Suffolk County Farm in Yaphank. Here Renee Bloch, one of the two teachers at the school, shows children the proper way to feed a horse.

The Upton Nursery School is now registering children for the 1986-87 school year. Enrollment is open to three- and four-year-old children whose parent or relative is an employee of BNL. The three-year-olds meet twice a week, while the four-year-olds meet three times a week. Classes are held on site in the Recreation Bldg.

As a cooperative run by parents and certified teachers, the school's high-quality program is affordable. The classes, though non-academic, provide a stimulating program, including art, music and outdoor activities.

Class sizes are limited, but there are still openings for September. For more information and enrollment forms, call Marietta Veligdan, 924-4074, or Susan McCafferty, 878-1255.

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 and/or appropriate bargaining unit, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific 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.

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 Employment Manager, Ext. 2882.

THE VACANCIES LISTED BELOW HAVE BEEN EXEMPTED BY THE DIRECTOR'S OFFICE FROM THE CURRENT FREEZE ON OPEN REQUISITIONS.

LABORATORY RECRUITMENT - Opportunities for present Laboratory employees.

2464. SECRETARIAL POSITION - Requires excellent secretarial and communication skills and knowledge of MICOM word processing. Familiarity with IBM/PC helpful. Under close supervision, will prepare technical reports and make travel arrangements. Department of Nuclear Energy.

2465. BUDGET POSITION - Requires AAS degree in business administration and/or a minimum of two years' pertinent experience. Under general supervision, will maintain files and records required for budget administration, which will include some reporting and analysis. Will be responsible for the control and direct entry of budgetary data into administrative computer system. Budget Office/Director's Office.

2466. BUDGET POSITION - Requires bachelor degree in business administration and/or several years' pertinent experience and excellent communication skills. Will assist with the review, coordination and control of data used for preparation of budgets and forecasts. Will perform management information studies, assist in the preparation of special requests and analysis. Familiarity with computer systems highly desirable. Budget Office/Director's Office.

2467. LAMP CLEANER - Plant Engineering Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside applicants.

2468. COMPUTER OPERATIONS POSITION - Requires AAS degree in data processing or successful completion of computer operations training program or equivalent experience. Will assist in the operation of a Hewlett-Packard 3000 computer. Must be willing to work shifts. Management Information Systems Division.

2469. TECHNICAL POSITION - Requires AAS degree or equivalent in electrical/electronic technology, with significant experience. Must be proficient in fabrication testing, operation and maintenance of low-level analog instrumentation circuits including signal conditions, high-speed sampling and data-gathering, precision integrators, sample and holds, analog multiplexing and ADC/DCA. Experience in digital systems, including computer systems' interfacing, nanosecond timing systems and NIM/ECL experience, is necessary. Knowledge of lasers and associated optical techniques or computer programming and IEEE-488 GPIB experience a plus. Department of Nuclear Energy.

2470. TECHNICAL POSITION - Requires AAS degree or equivalent in electrical/electronic technology, with significant experience. Must be proficient in fabrication, testing, operation and maintenance of precision (up to 18 bit) high current magnet power supplies and high voltage instrumentation supplies. Experience with high power fast pulsed supplies, and with RF and microwave frequencies, measurements at these frequencies and with transmission lines and waveguides is required. Ham license or commercial radiotelephone license a plus. Computer interfacing and IEEE-488 GPIB experience a plus. Department of Nuclear Energy.

Autos & Auto Supplies

79 VOLVO - 242-DL, 4 spd., o/d, a/c, am/fm stereo cass., sunroof, new tires & brakes. $4,800. 929-4840.

85 T-BIRD - loaded, charcoal gray, red interior, under 7k mi., mint cond. $10,500, firm. 289-3830.

CRUISE CONTROL - Sears, electronic, brand-new, never used, for American cars and trucks. $30. Bob, Ext. 4782.

84 HONDA - 125, ATC clutch or auto, electric start, excel. cond., asking $750. 929-3620.

78 COACHMAN CAMPER - slide on, 9½ foot, hot water, heater, shower, refrig., stove, mint., $2,250. 475-4199.

75 FORD GRANADA - 2 dr., stick, excel. cond., well maintained, dependable, best offer. Ext. 2455 or 331-1432.

APACHE CAMPER - solid state mesa, fold-up. 475-3553.

TIRES - (2), P205/75B14 on GM wheels, $25./pair. 473-3364 eves.

75 MERCURY COUGAR XR7 - a/c, p/s, p/b, new brakes & exhaust system, good cond. $650. 758-5659 after 5 p.m.

74 TOYOTA CORONA - 2 dr., 4 cyl., am/fm cass., 97k mi., runs well. $650. Ext. 2110.

TIRES - Goodyear (4) P175/75R13. Ray, 289-0883.

73 FIREBIRD - 327 Chevy, 3 spd., new clutch, L-88 scoop, no rust, body in primer. $2,400. 473-7460.

79 TOYOTA CELICA GT - 5 spd., am/fm cass., a/c., rack. $2,750 neg. Ext. 5185.

81 CORVETTE - burgundy/saddle, auto., full pwr., new tires, low mi., garaged, excel. cond. $13,200. 692-6634 after 5 p.m.

84 SUBARU - mint, 5 spd., 4 cyl., a/c, excel. gas mi. $8,200. JoAnn, Ext. 4120 or 588-8492.

73 FORD RANCHWAGON - full size, seats 8, depend., trans., new 5 yr. battery. $490. Jack, Ext. 4447 or 744-3919 eves.

LUGGAGE RACK - extra large size, fastens to rain gutter of any car. $20. Ext. 4153 or 732-5829.

69 MERCURY MARQUIS CONVERTIBLE - red, very good cond., a/c, asking $2,000. 676-4226.

75 FORD PINTO - station wagon, good cond. Don, Ext. 5329 or 878-2215 eves.

72 MERCURY MONTEGO - 302 auto., am/fm, good cond. $500. Dan, Ext. 4987 or 698-7322 after 5:30 p.m.

75 DUSTER - runs very well, needs repair of k-frame. $400. Barbara, 281-5563.

73 FORD TORINO - 2 dr., a/t, 160k mi., new timing chain, good battery, tires & appearance. $600. Ext. 3712.

83 ESCORT - 4 dr., a/t, a/c, p/s, am/fm stereo cass. $3,500. Neil, Ext. 2023.

79 VOLARE STATION WAGON - good cond., 91k mi., asking $1,800, avail. mid-August. Ext. 3451/3078.

80 BUICK RIVIERA - V8, low mil., all power, excel. cond. $4,700.; 80 DATSUN 210 SL, a/c, 5 spd., 67k mi., excel. cond. $2,800. 589-7699.

76 PONTIAC STATION WAGON - $200. 286-0286.

84 PONTIAC 6000LE - black, a/c, p/w, am/fm cass., mag wheels, 30k mi., tilt steering. $8,500.; 84 VIKING, 8' slide-on camper, refrig., stove, heater, water tank, sink, wt. 1000 lb. $3,300. 821-9659.

80 RENAULT LE CAR - sunroof, am/fm, 46k mi., stand. shift, very good cond. $1,400. Gerd, Ext. 4119 or 751-6342 after 6 p.m.

82 PLYMOUTH CHAMP - 47k mi., excel. cond., Ext. 2575 or 563-2889.

DATSUN 310/79 - a/c, am/fm stereo cass., new clutch, brakes & drive shafts. $1,500. Mike, Ext. 4407.

78 SUBARU FE - 2 dr. sedan, good cond. $1,600. Paul, Ext. 2961 or 751-5593 eves.

TIRE - Sears, new, never used, Dynaglass belted, P195/75B14 on 14" Plymouth rim. $35. Joe, Ext. 4439.

77 HONDA - hatch, rebuilt trans. eng., new brakes, clutch, tape deck, 5 spd., 34 mpg. $520. Ext. 3164.

79 PLYMOUTH HORIZON - 70k mi., p/s. $800. or best offer. Al, Ext. 4826 or 231-4613 after 5 p.m.

80 DODGE OMNI - new radiator, head, muffler, brakes & tune-up, 4 dr., auto., trailer hitch. $1,500. 928-2803.

TIRES - (4) 33"x16.5", 8-lug, new 10-ply radials, plus rims, fits Ford F350, $100. each. 692-6634 after 5 p.m.

80 DATSUN 200SX - hatch, 64k mi., 5 sp., am/fm, recent tires, high mi. $3,300 neg., Greg, Ext. 7960.

71 VOLKSWAGON - sq. back, auto. trans., new tires, good running cond., needs some body work. $650. B. Sick, Ext. 2897, or 473-3693 after 6 p.m.

81 CUTLASS SUPREME - a/c, p/s, p/b, am/fm radio, 71k mi. $3,800. Ellie, Ext. 3395 or 325-1537 after 6 p.m.

77 PONTIAC BONNEVILLE - 4 dr., power windows & seats, cruise control, orig. owner. $2,000. Judy, Ext. 5263 or 821-3290 eves.

TIRES - (2) A78-13 on Pinto wheels; TRUCK TIRES, (5) 9:50x16.5, (2) reg., (2) snow, (1) spare. Ken, 289-8212 eves.

77 DATSUN KING CAB PICKUP - w/cap, 4 spd., am/fm, 72k mi., good cond., $1,500. Al, Ext. 5128.

85 RENAULT ENCORE - 25k mi., am/fm, 40+ mpg, excel., $4,700. Ext. 3293.

73 HONDA - 750cc, plexishield, custom seat, trunk, sissy bar, very good cond., $650. Frank, Ext. 2022 or 399-4480.

81 CHEVY CITATION - 4 dr., 4 cyl., std., $1,900. 289-0826.

78 CHRYSLER LE BARON - needs muffler, $600. 789-8195.

75 DUSTER - runs well, needs repair of k-frame, $350. Barbara, 281-5563.

14" TIRE - AMC w/rim, good for spare, $20. Janet, Ext. 2345 or 929-8152.

77 MERCURY STATION WAGON - p/s, p/b, a/t, a/c, p/w, cruise control, very good cond., must sell, $1,500. Ext. 5161 or 924-1460.

83 PLYMOUTH TURISMO - 29k mi., 2.2L/5 spd., GT-Sport, loaded, extras, showrm. cond., $5,000 neg. Ralph, Ext. 2368 or 928-6654.

80 DATSUN 200SX - am/fm cass., 5 spd., 59k mi., blue, one owner, very clean, $3,195. 727-8546.

85 YAMAHA MAXIM X - 700cc, low mi., excel. cond., extras, must see, $2,500. Andy, Ext. 4987.

76 CORVETTE - a/c, p/s, a/t, p/w, s/s brakes, tilt & tele. wheel, needs paint, hi. mi., $6,500. Bill S., Ext. 4434 or 399-6168.

78 MERCURY ZEPHYR - 6 cyl., a/c, 2 dr., a/t, sunrf., good cond., $1,350. Dean, 399-1157 or 281-1862.

SUZUKI - GS250t, 10k mi., extras, excel cond., $499; Truck cap, custom fiberglass, Toyota short bed, excel. cond., must sell, asking $199. Jack, Ext. 4411 or 929-8287.

78 DATSUN 510 STATION WAGON - a/c, 4 spd., stand. trans., good running cond.. Lew, Ext. 5193 or 928-4863.

71 FORD MAVERICK - 4 dr., good shape, $400 or best offer. Ext. 3067.

73 PLYMOUTH VALIENT - 4 dr., good cond., $400. Tim, 281-7873 or Ext. 3496 after 5 p.m.

72 MERCURY MONTEGO 302 - auto, p/s. p/b, am/fm, runs well, $500. Dan, Ext. 4987 or 698-7322.

82 PLYMOUTH CHAMP - 2 dr. hatch, excel in & out, low mi. 363-7032.

31 CHRYSLER - 3 window coupe, all orig., $8,000 firm. 289-5704 after 5 p.m.

79 DODGE CHALLENGER - 4 cyl., 5 spd., a/c, am/fm cass., many new parts, $800. Ext. 3822 or 929-6527.

76 AMERICAN MOTORS STATION WAGON - needs some work, asking $1,200. Ext. 2468.

78 CADILLAC COUPE DEVILLE - 46k orig. mi., white/red interior, mint cond., asking $4,500. 289-5583.

72 PLYMOUTH DUSTER - 6 cyl., new brakes, shocks, exhaust, tires, alt., very good cond., $800. 331-4281 after 5 p.m.

77 PINTO - 77k mi., runs well, new exhaust, tires, asking $600. 744-5422 after 6:00 p.m.

75 TRIUMPH SPITFIRE - convertible, removable hardtop, 33k mi, no rust, good cond., $2,000. Brian, 744-2169.

82 KAWASAKI - low mi., $1,550. 285-4424 days or 361-6592 eves.

75 AMC SPORT HATCH - a/t, a/c, new tires, brakes, exhaust, runs well, $400. 929-8922.

75 PLYMOUTH DUSTER - 6 cyl., p/s, a/c, am/fm radio w/cass., good running cond., $550. 924-3236.

73 VW SQUAREBACK - std., new muffler, alt. & batt., reliable, $625. Ext. 4463 or 751-2422.

75 CHEVY IMPALA - very reliable, 85k mi., moving, must sell, $650. 981-7646 eves.

76 BMW 2002 - 4 spd., new clutch & brakes, good cond., $2,300. 765-1302 after 6 p.m.

FRONT CHROME BUMPER - Ford van/pickup, $60; Ford stock carb/manifold, $50; Tube grill chrome, $10; Chrome roof rack for station wagon or van, $10. Ray, Ext. 3536 or 289-7615.

80 DATSUN 200SX - hatch, 5 sp., am/fm, 64k, new tires, hi. mi., $3,200 neg. Greg, Ext. 7960.

78 AMC CONCORD SW - 6 cyl., a/t, a/c, am/fm, 59k mi., good cond., $1,500. Ext. 2021 or 281-6052.

77 AUDI FOX - sunrf., new tires, 4 spd., asking $1,000. Cindy, Ext. 3301 or 924-1287 after 6 p.m.

78 CHEVY MONZA - a/c, p/s, am/fm stereo, new tires, good transp., asking $800. Ext. 4669 or 654-3989 after 6 p.m.

70 KAWASAKI 500 - good cond., $900. 399-0002 eves. and wknds. after 6:30 p.m.

79 VOLARE - p/s, a/t, 91k mi., roofrack, excel. cond., avail. mid Aug., asking $1,800 Ext. 3078 or 3451.

77 LINCOLN CONTINENTAL - 2 dr., excel. cond., must sell, any reasonable offer. Ext. 7590 or 878-1790.

78 FORD VAN E150 - needs engine, $500. 751-7023.

79 JEEP CHEROKEE - V-8 eng., 4/wd, a/c, am/fm radio, good cond., asking $3,800. Ext. 4270 or 732-3002.

79 TOYOTA - am/fm, a/c, good cond. in & out, asking $1,650. Mike, 821-9709.

83 FORD ESCORT - 4 dr., am/fm stereo cass., a/c, p/s, a/t, $3,500. Neil, Ext. 2023.

83 TOYOTA CELICA GTS - 5 spd., a/c, sunroof, all options, $8,000 neg. Rich, Ext. 2434.

TIRES - HR7B-15 GM rim, w/w, $30; A78-13 Ford rim, w/w, $25, new cond. 472-4228.

83 CAN-AM - 400cc, Encylo, 80 mi., excel. cond., $1,500 or best offer, will trade for street bike. Ext. 4584 or 473-5331.

Boats & Marine Supplies

11½' SNARK WILDFLOWER - sailboat, 3 sails, unsinkable, $795. Joe, Ext. 2898 or 728-1859 eves.

JEFFERSON DEPTH COMPUTER - Model 230, Transom mount w/8' & 4" alarm, range 2'-200', never used, $150. 289-3360.

16' SAILBOAT - wood, fiberglass bottom, 2 sails, trailer, anchors, $650. 878-8113.

27' BRISTOL - weekender, fully equipped, 5 sails, inboard diesel, exterior woodwork teak. 941-9423.

82 JOHNSON - 15 h.p., 16' rowboat; 68 Evinrude 9½ h.p.; 16' alum. boat & trailer, good cond., all or mixed. 473-1682.

23' Proline - walk around cuddy, sleeps 2, full canvas, 200 h.p., trailer, easy load. 475-7577.

Miscellaneous

POOL - filter, pump, all access., 15-16' solar & winter covers, ladder, excel. cond. $100 for all. Ext. 2497 or 286-2203.

MOVING SALE - 1 yr. old 13" color TV, $130; sofa, $60; loveseat, $90; beautiful colonial walnut shelf, $140; blankets. Ext. 5161 or 924-1460.

KITCHEN UNIT - for studio rm. or office, inclds. 2 burner stove, sink, refrig. & storage area, asking $550. 286-1681.

RANGE - Westinghouse, dble. oven, self-cleaning, avocado, $100; matching hood w/light & fan, $25; wooden high chair, light wood finish w/pad, $10; twin stroller, Strolee, reclining seats, sun canopies, excel. cond., $50. Linda, 744-0722.

BEDROOM SET - comp. queen size, 9 pc. Mede-terrian, mint cond., $575. 567-0480.

MINOX PL CAMERA - 35mm, leather case, hood & filter, Minox Subminiature "C" w/case. Ext. 2459.

NIKON FA CAMERA - 28mm, 35-70mm lenses, all new w/Nikon cases, filters. Ext. 2482.

BIKES - children, 20" Huffy, good cond., $15. Naomi, Ext. 4875.

TOKINA - ATX 80-200 f2.8, SMZ 80-200 f3.5 lenses w/filters, cases & hoods. Ext. 5221.

TYPEWRITER - Smith Corona, port. elec., $100; electronic keybd., Casio, as new, $150. Ext. 3451.

CHINA CLOSET - lg. walnut, $200; 8' Castro conv. sofa, $150; pole lamp, $30, mint. Ext. 2529.

BREEDER CAGE - Great Dane, never used, $80; Christmas tree, $8. 821-9659.

TONGS - for block ice, $15; 1918 trunk, good, $50; window fan, good, $15; old chest of drawers, $75. 878-6637.

NOISE REDUCTION UNIT - DBX 228, Type II, dynamic range expander, new in box, $190. 475-6773, leave message.

TYPEWRITER - portable, Smith Corona, $100; organ, Casio, as new, $150; Radio Shack computer, $125. Ext. 3078 or 3451.

STEREO - Sansui, rack system, excel. cond. w/extras, $375. Mark, Ext. 5350.

FURNITURE - sofa, chair, rocker, ottoman, dark pine frames, coffee table, 3 side tables, excel. cond., $900. Ext. 2529.

VACCUM CLEANER - Hoover, almost new, chandellier. Ext. 3136.

COSTUMES - theatrical & dance, hardly used, top qual. lg. selection for children and ladies. 475-4690.

MAGAZINES - Mod. Photography & Fine Wood Working, 10¢; stall shower doors, $5; skis & ski boots, $20. 475-1254.

TYPEWRITER - Smith Corona electronic, excel. cond. 363-7032.

CARGO CARRIER - like new, $40. Henry, Ext. 3084.

KITCHEN SET - 48x36 oval butcher block, formica top, chrome legs, 4 chairs, $100; 3 small Wedgewood blue, country stencilled end tables, 2 matching, 1 odd, $7 ea.; assorted sports trophies, var. sizes and activities, make offer. Charlie, 979-6624 eves.

COAL STOVE - Surdiac Southport MCK 512, 44,000 btu, auto feed, heats 13,700 cu. ft.; wood front door, weatherstrip w/jams, 1¾x36x6'8". 475-0509.

PEREGO BABY COACH - w/windshield & bunting, $30; piggy-back stroller, excel. cond. 298-4398 eves.

STEREO - Fisher, brand new, amp w/digital tuner, 100 watts per channel, $175. Ext. 2765.

KNIFE COLLECTION - new stock, 50% off, American made, almost all makes. Don, 281-2731 eves.

CAMERA - Mamiya C330, 2¼" TLR w/case, lens shade & extra fucusing screen, mint. Brian, Ext. 2799.

3M DISKETTES - 5¼", ds/dd, new, best qual. $10/10. Jim, Ext. 3372.

WET SUIT - full Tiki surf, excel. cond., $175. 281-7873 days or Ext. 3496 eves.

POOL LADDER - stainless steel for inground pool, 2 step, good cond., $25. Ext. 7148 or 286-9390.

DYNAMIC RANGE EXPANDER - DBX 228, Type II noise reduction unit, new in box. 475-6773 leave message.

AIR CONDITIONER - Westinghouse deluxe compact 5000, hardly used, $100. Jean, Ext. 2553.

PINE HUTCH - 1850's, $200; beautiful treadle sewing machine, $200; Victorian sewing side table, $75. 331-4987.

GREENHOUSE - Lord & Burnham, 6'x8', free standing, hydraulic vent window, $400. 360-6206.

FURNITURE - dresser, nightstand, port. bar, convertible sofa, coffee table & more. 751-2469 eves. & wknds.

PHOTO SCREEN - portable, 18"x24", $5; IBM elec. typewriter w/greek typits, long carriage, $250. Susan, Ext. 4267.

BABY WALKER - Graco Tot Wheels II, $35; playpen, good cond., $15. Ext. 4070.

SOFA - hide-a-bed, Simmons, sleeps 2, lt. brown tweed, clean & very good cond., moving, must sell, $95; 3 desks, all birch, sturdy, single & dble. drawer pedestals, $50 & $75. 286-0379.

MOVIE CAMERA - GAF XL 251, super eight, excel., $50 firm. 744-9677.

Free

OIL TANK - 275 gals., no leaks, rusty, you pick up. 821-9505.

Yard Sale

CENTER MORICHES - 68 North Ocean Ave., Aug. 2, 10 a.m.-4 p.m., washer, furn., bikes. 878-8113.

Car Pools

GREENPORT - or vicinity. Ed, Ext. 3293 or 477-2880.

PATCHOGUE - van pool, seat open, leave name & number. Ext. 4669.

Lost & Found

LOST - small gold ring w/2 little pearls, between Chem. parking lot & Berkner on 7/29. Harriet, Ext. 4926.

Real Estate

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

For Rent

WADING RIVER - fully furn., lakefront prop., all amenities, SWR schools, newly remodeled, avail. 9/86-6/87. Ext. 3822 or 929-6527.

HILTON HEAD, S.C. - 2 bdrm. condo, many extras, tennis, golf, beach, pool, sleeps 6, $400/wk., $200/4 days, taking fall rentals. 585-9149.

SHIRLEY - 2 rm. apt., walk to beach, $385 incl. util. 744-2821.

SETAUKET - furn. house, 4 bdrm., 2½ baths, walk to SUNY, avail. Sept. 1 to Nov. 1. Ext. 2475 or 751-4539.

SHOREHAM - 3 bdrm., furn. house, avail. for 1 yr. starting Oct. 1, SWR shool district, beach rights, 2 baths, l/r, d/r, f/r, gar., full basement, special rates for animal lovers. 744-3744.

PUNTA GORDA, FL. - 2 bdrm., Aug. 23-30, $400; Hollywood Beach, 2 bdrm., 2 bath, overlook ocean, Sept. 13-20, $400. Ext. 4082.

For Sale

SAYVILLE - 3-4 bdrms., cedar ranch, brick front, 2 baths, gar., central a/c, full bsmt., eik, d/r, l/r, fam. rm., patio, outside shower, appl., w/w, walk to golf, bay, $144,000. 589-2681.

MASTIC BEACH - frame house w/2 bdrm., l/r, eik, full bath, 80x100 plot, $63,500. 744-2821.

COOPERSTOWN VICINITY - 190 acres, 1/2 wooded, 1/2 cropland, private, $425 per. 363-7032.

CAPE CORAL, FL. - ranch, 3 bdrm., 2 bath, eik, d/r, l/r, fam. rm., screen-in patio, 2 car gar., central air, $80,000. 475-3527.

RIDGE - No. of Rte. 25, 1.12 acre plot, 100+x400+, level, 80% cleared, 20% wooded, in estb. quiet locale, $47,900. 924-3236.

MILANVILLE, PA. - 1 rm. cabin on 7½ acres w/stream near Delaware River. 717-559-7857.

SHIRLEY - 3 bdrm. ranch, cathedral ceiling, wood stove 1½ car gar., ⅜ acre, 10 min. to Lab, mid 90's. Ext. 4428.

PORT JEFF. STA. - condo, 2 bdrm., 1½ baths, central a/c, all appl., storms/screens, club house, pool, tennis, $102,500. 928-8522.

Wanted

DEHUMIDIFIER - in good cond. Ext. 5632 days or 821-3586 eves.

HOME - for grey long hair cat, spayed, shots, also kittens. 929-9537 ro 744-2821.

SERVICEMAN - for dehumidifier & air conditioner, reasonable; utility trailer, 4'x8', reasonable. Walt, Ext. 2907 or 698-0576 after 6 p.m.

WOODEN CRIB - w/mattress, must be in good cond. Sharon, 727-0661 after 5:00 p.m.

HOUSE TO RENT - Bellport, E. Patchogue or Brookhaven, 2 bdrm. min., quality tenant. Bill, Ext. 2378.

PVC PIPE - for underground elec., approx. 50 ft., also pressure treated wood. Whitey, Ext. 2913.

GM TURBO 350 - auto. trans., any cond. & free for needy student. Ray, 727-3608.

GUITAR - standard size for beginner.

HOUSE TO SIT - free, exper., caring, any period after Sept. 2. Jack Allentuck, Ext. 2412.

HOUSEMATE - female to share house w/young working mother & 2 school-aged kids, Pt. Jeff., rm. & priv. office, $350 neg. 928-9577.

T.I. PROGRAMMABLE 59 - in good cond. 475-6773 leave message.

BABYSITTER - for 2 children, my house, starting Sept. 751-7023.

APARTMENT - for BNL couple for 1 yr., $600 max. Harvey, Ext. 3758.

350 BLOCK - 12 bolt, 411 posi for Chevelle. Mike, 282-3803 or 981-7306 leave message.

Services

*Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the **Bulletin**.*

GENERAL CONTRACTOR CARPENTER - extensions, dormers, gar., conversions, basements, decks, kitchens, licensed. Jim or John, 698-2501.

KAYAK LESSONS - sea kayak, slalom recreational tidal inlet, whitewater, bays, L.I. Sound, basic to advance. Tim, 281-7873.

BRICKWORK - walk, patios, brick & sand, Belgium block, landscaping, ties, swimming pool. Tony, 698-9274.

TYPING - reports, manuscripts, thesis, personal, reas. rates. Kim, 732-5451 after 7:00 p.m.

BABYSITTER - avail. teenager, anytime. Vashti, 821-3290.

SAILBOARD INSTRUCTION - for Moriches Bay, will also rent sailboard to student, reas. Tom, 878-2311 eves.

PAINTING - interior/exterior, BNL ref., reas. Pat, 924-7723 eves.

BABYSITTING - my home, Bellport, exper., ref. Maryann, 286-2435.

FIRESIDE CHIMNEY SWEEP - fireplaces, wood, coal & oil flues, caps, relining, stove parts, Lab discounts. 821-9690.

PAINTING - interior/exterior, free estimates, ref. avail., Ext. 7995 eves. or 928-6368 days.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.