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BROOKHAVEN NATIONAL LABORATORY

Salt Studied At BNL For Use In Nuclear Waste Disposal

Before too long a method for disposing of radioactive waste must be developed.

According to BNL Physicist Paul Levy, the United States and other nuclear powers have been generating radioactive waste from weapons production and nuclear power plants since 1944. Currently, waste is stored in a variety of large tanks such as those in the tank farms at the Hanford Reservation, in Washington. To determine an environmentally acceptable means of storing radioactive waste, the DOE has established a number of organizations to conduct research on various aspects of the problem. One of these is the DOE Office of Nuclear Waste Isolation (ONWI) which is primarily concerned with determining a geological site, or sites, for an underground waste repository.

One of many projects sponsored by ONWI is the BNL study to determine effects of radiation on natural rock salt. Natural rock salt deposits are found in a large fraction of the United States, particularly in the Western United States. These beds may be hundreds or even thousands of feet thick, and usually lie 1000 feet or more below the earth's surface. Salt beds are one type of repository under consideration.

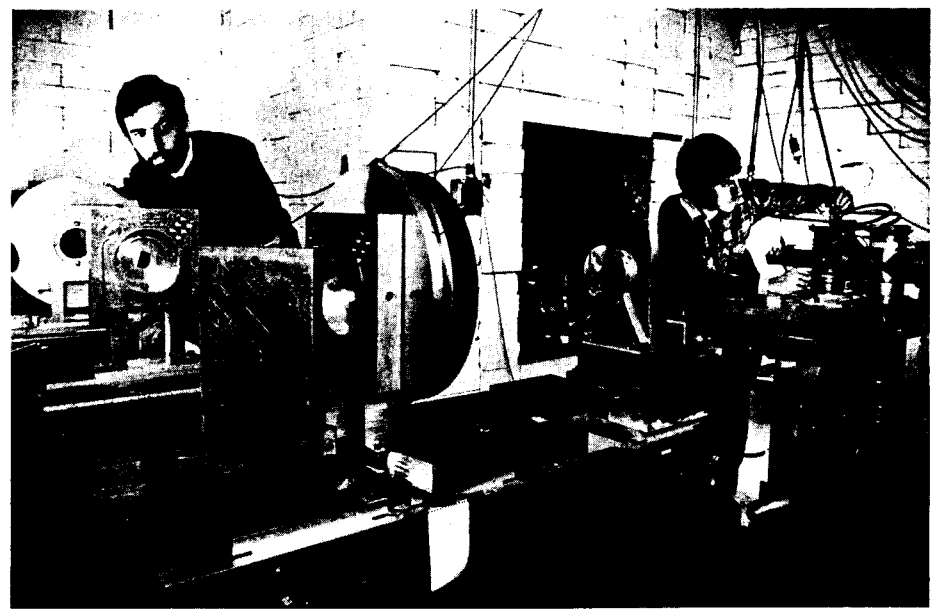
The question the ONWI would like BNL research to answer is: do large amounts of radioactive material, in any geological medium, cause any radiation damage effects which would impair, or improve, the location's usefulness as a repository site?

For the last three years Levy and his colleagues have been studying the effects of radiation on rock salt in an effort to assist the ONWI in evaluating the various types of geological formations available for an underground disposal program. Other waste disposal plans under consideration include burial beneath the sea floor.

Levy said that typical storage facility would consist of numerous caverns – called galleries – which would be hollowed out in salt beds, most likely 1000 to 2000 feet below the surface. The entire underground facility could cover a square mile or so.

Levy would like to have the waste stored in a manner that would make it easy to remove in the future. He believes the world's technology may increase to the point where future generations may want to remove the stored waste and transfer it to a location where it is less likely to escape to the biosphere. For example, they could propel it into the sun, or place it in orbit around the sun.

The physical properties of rock salt suggest that it may be a good storage medium. Rock salt is surprisingly plastic. In other words it deforms easily under pressure. In old salt mines hollowed out galleries gradually close up. In 50 or 60 years a 30 foot high gallery will be completely closed. Thus the salt would make a tight seal around the material placed in it.



Jim Loman (left) and Gary Elgort (right) make some adjustments on BNL's optical scanner OERF. It is the only device in the world which can optically study a sample being bombarded with electrons. According to BNL physicist Paul Levy its use has led to some important results on irradiated rock salt. —photo by Rosen

Perhaps the most important result obtained from the research to date is that strained rock salt develops radiation damage in a far shorter time than does unstrained salt. This could be a substantial consideration when evaluating the various types of repositories.

Most of the research on rock salt utilizes the Optical Electron Radiation Facility (OERF). This is a computer controlled measuring and optical system for making optical absorption and luminescence measurements on samples while they are being irradiated with electrons. It is the only device in the world in which the sample can be studied by optical techniques while it is being bombarded with a continuous beam of energetic electrons.

(Continued on page 2)

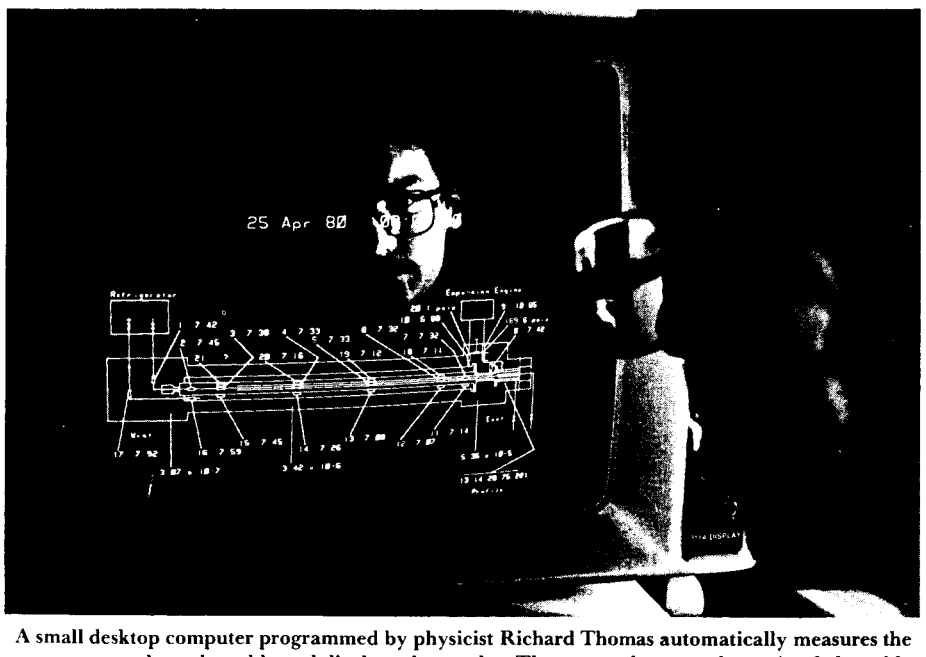
Cable Current Best Yet

The third and last in a series of prototype superconducting cables for the Power Transmission Project recently underwent high-current tests. The 10-meter cable was powered up to 8,000 amps, a considerable increase over the previous maximum current of 5,500 amps, and twice the rated current of 4,000 amps. By comparison, a conventional cable with a copper conductor of the same diameter, one inch, would have a rating of only 810 amps. Eric Forsyth, head of the Advanced Technology Applications Division, reports that the flow of cooling gas to the leads had to be increased, but, beyond that, everything appeared stable. Now, they will prepare for the big one – the 100 meter cable.

The prototype cable was taped by technicians Hank Noehren and Kevin Stevensen, under the supervision of Bob Kowalski and engineer Tom Muller. The instrumentation and superconducting joints were added by Stan Pollack. At Building 815, the cable was inserted in the cryogenic enclosure and the lab team of Nick Houvener, Ken Rogers and Dennis Farrenkopf, under Bill Kristiansen, completed the cryogenic piping and connection of the high-current leads.

Cooldown started on the morning of Monday, April 21 and, by Tuesday noon, the cable had passed into the superconducting state and current was circulated.

Forsyth noted that this test differed from the earlier ones in that current was supplied to the cable via a termination bushing: the previous cables were connected to a superconducting transformer. The termination has leads which are superconducting at the cold end and must be capable of carrying rated current at the warm end; no mean task. The termination assembly, made under the supervision of Bob Schmidt, had been tested separately but this was the first time it had been combined with the cable. By Wednesday, the characteristics of the cable at the rated current of 4,000 amps were plotted and the system remained energized all night under the watchful eye of a small on-line computer programmed by Rich Thomas.



A small desktop computer programmed by physicist Richard Thomas automatically measures the temperature along the cable and displays the results. The screen shows a schematic of the cable and cooling system. —photo by Rosen

On Thursday, the cable was energized up to 6,000 amps to determine the limit of "cryostability." Briefly, cryostability refers to the intrinsic ability of the cable to return to the superconducting state after a fault or other event has "quenched" the cable into the normal state. This is an important property of a cable intended for electric utility company applications.

On Friday, the cable was powered up to 8,000 amps for 30 minutes. Forsyth said that the cable seemed "quite happy" and the current level was limited only by the room temperature power supply.

"The extensive testing of the 10-meter cables over the last two years was necessary to validate the design before we made an investment of time and money in the fabrication of the 100 meter cable," explained Forsyth. Now, he says all components are on order for the actual electrical cable, and construction will start later this fall.

Soc. Sec. - Again

As was previously reported in the Bulletin, there has been considerable flap over the fact that the Social Security Administration (SSA) did not credit 1977 second quarter earnings to BNL employees earning rec ords. The SSA was duly informed and replied that such information would be reflected in their records early in 1980. Now, Payroll has been told that because of numerous changes in SSA procedures, this error cannot be corrected on the Washington records until sometime after July of this year.

However, employees who are about to retire should not be alarmed. Maurice DuBois, Payroll Supervisor, says employees will suffer no monetary loss. Before benefits are calculated, the local Social Security offices always verify BNL earnings statements with Payroll.

Volunteers Wanted

A limited number of healthy volunteers, both men and women, are wanted to participate in a clinical study to determine the biological distribution of radioactively labeled red blood cells over a 24 hour period. The study will be performed twice using different methods of labeling the cells. Each study, performed a week apart, will require an overnight stay in the Hospital of the Medical Research Center. For further information 345-3672.

A report on the Galbraith lecture, given last night, will appear in next week's Bulletin.

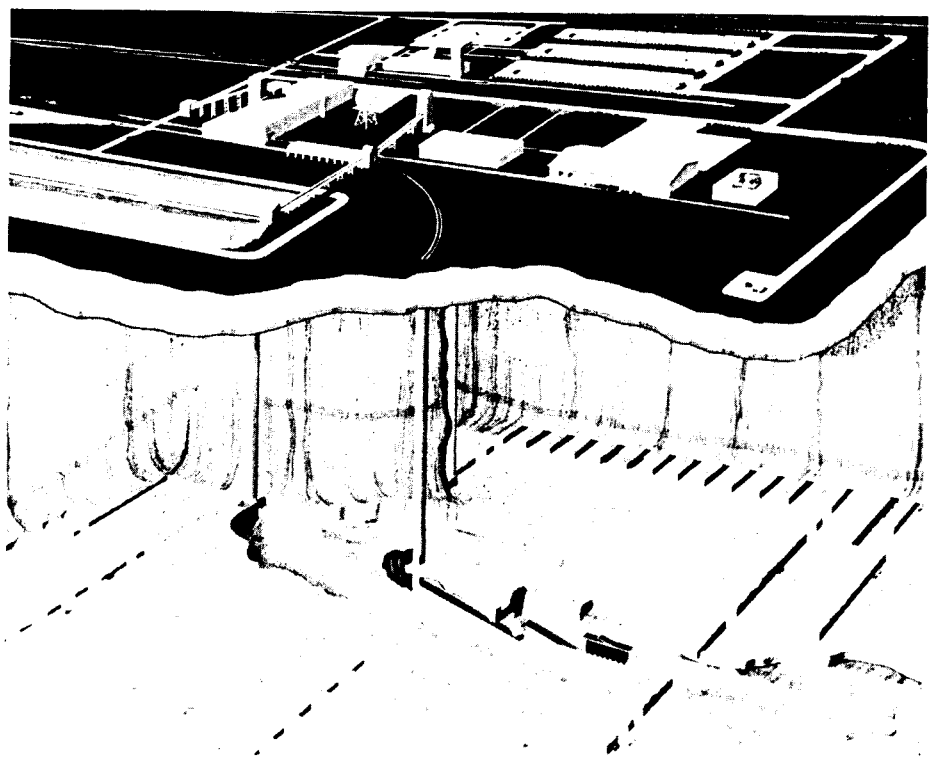
Why So Few Women Scientists?

Psychologist Beverly Birns of SUNY at Stony Brook will speak on Monday, May 19, in the second lecture of the Women in Science Lecture Series. Her topic will be: "Women in Science, Why So Few? - A Psychological Perspective." Open to everyone, the lecture is at 3:30 p.m. in Berkner Hall.

Dr. Birns is a Professor of Psychology, Professor of the Interdisciplinary Program in Social Sciences, and coordinator of women's studies at SUNY Stony Brook. She teaches such graduate courses as Psychology of Women and Women in Contemporary American Society. Her undergraduate course topics include child development, sex role learning, and women in non-traditional professions. Before coming to Stony Brook in 1970, she was an Assistant Professor in the Department of Psychiatry at the Albert Einstein College of Medicine, where she is currently a Visiting Associate Professor.

In addition to her teaching, Dr. Birns serves as a consultant. Presently, she is affiliated with the Hunts Point Parent-Child Health Center. She is a member of many societies, including the American Psychological Association and the Eastern Psychological Association. In 1959 she was awarded the U.S. Public Health Pre-Doctoral Fellowship, and in 1964 the Post Doctoral Interdisciplinary Research Fellowship. Dr. Birns is a Fellow in the New York Academy of Sciences.

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



A typical waste disposal site of the future might appear like this. Placed in a geologically stable area, three to five of these repositories may serve America's need to store radioactive waste well into the 21st century.

Salt Study (Cont'd)

The radiation damage in the salt is determined by measuring the optical absorption spectrum. As the salt is irradiated its color changes from white to yellow, to blue, purple, and finally black. The amount of radiation damage, or color, depends on the temperature, dose rate, strain, and other factors.

A typical nuclear waste site of the future would be placed in a geologically stable area – one that has been free from any disturbances for millions of years and very likely to stay that way for at least 50 to 100,000 years. In one of the present plans, the radioactive waste would be combined with molten glass – chemically binding it to the waste – and then poured into approximately 20 inch by 20 foot long canisters. In the underground cavern, canisters might be packed in bentonite, a clay barrier material. After the entire disposal site has been filled with canisters, and backfilled with salt, massive concrete plugs will stop up the shaft and the surface will revert to whatever it was before the repository was established.

There are problems which must be solved before choosing a site, or in using salt as a matrix, but Levy maintains that by knowing the disadvantages beforehand they can be handled through engineering. One problem which may develop in a salt repository is the entry of water. Water become very corrosive when it reacts with radioactive, or damaged salt. However, it hasn't been determined whether or not that is detrimenal.

During the coming years radiation damage in rocks such as granite and basalt will be studied to determine if repositories can be established in these materials.

Right now both France and Sweden are storing radioactive waste in granite, or are preparing to do so, Levy said. He also added that the Soviet Union has an underground disposal system.

Levy sees another five to 10 years work on the project, and believes that sometime after 1985 the pros and cons of each type of repository (rock salt, granite, basalt) will be known, sites will be chosen on the basis that any possible release of radioactivity will be reduced to the lowest possible levels.

"One of the real problems with this business (of nuclear waste disposal)," said Levy, "is people want – and sometimes demand – simple answers to questions which don't have simple answers."

If rock salt is used as a waste matrix, western New York State might be considered as one area for a disposal site because of its vast salt beds. If it becomes necessary for each state to store its own nuclear waste there are other areas that might be considered as well.

"Altogether I think three to five repositories in the United States should be able to handle all our nuclear waste well into the 21st century," said Levy. —Jerry Mikorenda

Bittersweet Victory

One of the casualties of the boycott of the Olympic Games in Moscow is BNL's Stan Lekach. Even though U.S. athletes will not be participating in the Games, those who made the teams are being notified. Recently, Stan was chosen for the 5-man U.S. Olympic team in saber fencing. It is a goal to which he has long aspired, for which he has worked very hard, and he is happy that "it finally clicked."

When he first heard about the possibility of a boycott, Lekach did not approve, but now he accepts it because "something must be done to show that the Russian invasion of Afghanistan is wrong." As he was born in Russia, Stan says his feelings were both "sentimental and competitive" at the prospect of participating in the Games at Moscow. He left Russia when he was ten years old and emigrated with his parents to Chile. "It would have been nice to return to Russia," he says, "under normal conditions."

Nevertheless, he did get a berth on the Olympic team, and that was important to him as he has been after it for a long time. During the 14 years Lekach has been fencing, he has spent most of his spare time perfecting his skill, and his vacations participating in matches all over the world. Now he has reached the top. And will he continue the arduous fencing schedule? "It all depends," he answers. "Perhaps I will just become a Sunday fencer."

Mort Rosen

Stan Lekach

On Fiber Optics

A Fiber Optics Seminar will be held at 1:00 p.m. on Monday, May 12, at the Brookhaven Center. Guest speakers from AMP, Inc., Fiber Optic R&D Division, and Galileo Cable Manufacturer, will discuss the latest advances in fiber optics technology. All those interested are invited to attend.

Eclectic Fashion

A collection of unusual clothes and accessories spanning a century will be shown at the Hospitality Committee's Tea and Sherry Party on Thursday, May 15 from 3:30-5:30 p.m., at the Brookhaven Center. The show of "contemporary fashion with the antique connection" is drawn from the collection of Lesley Balazs de Teledg-Bacon, a well known fashion consultant.

A note for those using the baby sitting service: children will be cared for in the Recreation Building in the housing area (Bldg. 317, York Lane).

NYC Train Trip

The Hospitality Committee is planning a group railroad trip to the city on Wednesday, May 21. Departure will be at 7:55 a.m. from the Patchogue LIRR station. Round-trip fare is $2.45, children under six years ride free.

Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York 11973, no later than **Thursday,** May 15. Make checks payable to "Brookhaven National Laboratory." Your tickets will be given to you on the train. Refunds will be made only if cancellations are received by the Friday preceding the scheduled trip.

Arrivals & Departures

Arrivals

Emil Veakis.....Nuclear Energy

Departures

Anthony S. Lee.....Nuclear Energy
Eileen G. Pinkston.....Contr. & Proc.

Show Off At The Show

Summer is around the corner, and weekend tours at the Lab are about to begin. The opening weekend is May 31 and June 1.

This season, the Exhibit Center has special areas set aside to accommodate exhibits that demonstrate energy-saving ideas. Currently on display are Arnold Roesch's aluminum can solar collector and Ed MacDougall's solar hen house. If you have done some innovative thinking on an energy problem and would like to display your work, contact Tour Program Manager Janet Hoefling at Ext. 2400.

One of the highlights of the first tour weekend will be a Sunday morning kite flying contest. This is a repeat of last year's popular event, which drew a crowd of 300 spectators and participants.

For kite enthusiasts who want to refine their skills or start making their special kites, here is a list of the contest categories:

Highest Flier – Contestants will take an assigned position on the field. All kites will be launched at the signal, and at the end of three minutes, the highest kite will be declared the winner. Two prizes will be awarded in this category – one for contestants age 12 and under, and one for contestants 13 and over.

Smallest Kite – Contestants will bring their kites before the judge for inspection. Each kite must fly out 25 feet of line to qualify.

Biggest Kite – These kites must attain an altitude of 75 feet within a five minute time period. Unlimited running space is allowed. Limited to three persons per kite.

Most Beautiful Kite – Open to home-made kites only. The emphasis will be on decorative qualities, but the kites must also fly.

In each category, the first place winner will receive a prize from the Exhibit Center's science store, and ribbons will be awarded for first, second and third place.

With only three weeks to go before the big weekend, all potential exhibitors should notify Janet Hoefling, and kitists can start working on their designs.

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Cooking Exchange

"The Men" (husbands or friends of members) have graciously consented to take the next meeting of the Cooking Exchange to a South Sea Island luau. Although the recreation building in the BNL apartment area may not have swaying palm trees or glorious tropical flowers, ambience will be overlooked when the guest chefs present their appealing array of authentic food of the islands. Featured will be Poh Loh Kai, beef kabobs Waikiki, curry fruited rice, and macadamia cream tarts.

This final meeting of the season will be held on Wednesday, May 14, from 12:30 to 2:30. A small charge of $1 per person will be collected, and babysitting will be provided at 25¢ per child.

Call Bunny Pietrzak (751-1866), or Wendy Green (878-8952), for more information.

Aviation Club

The next meeting of the Club will be held Wednesday, May 13, at noon in Berkner Hall.

The annual Fly-In will be held on May 20, destination Nantucket.

Mark your calendar for June 17, 7:30 p.m. The Club is planning to show the BLUE ANGELS Navy flight Team Roadshow Film, "Threshold," at Berkner Hall .

On The Aisle

"Pooka. From old Celtic mythology. A fairy spirit in animal form. A wise but mischievous creature. Very fond of rum-pots, crack-pots. Always very large. . . " If you've never met a pooka, the Bera Theater group's fine production of Mary Chase's comedy "Harvey" is a delightful introduction to the ways of pookas and their unpredictable effects on the lives of those around them. If you know a pooka, then you will certainly be interested in how a collection of ordinary people in a small Midwestern town deal with theirs.

John Binnington, as Elwood P. Dowd, skillfully uses his stage experience to convey just the right air of consistent, mild-mannered, but all-conquering madness. With the help of Harvey the pooka, Elwood Dowd has, as he says, "wrestled with reality for forty years, and . . . finally won out over it."

Portraying Myrtle Mae Simmons, Elwood Dowd's niece, Sandra Lane gives a hilarious performance as a very conventional young lady faced with the difficult problem of catching a man while burdened with an uncle who scandalizes her social circle with his escapades in company with Harvey.

Veteran actress Jane Love turns in an outstanding performance as Veta Louise Simmons, Elwood's sister. She brings off the difficult task of winning the hearts of the audience with great skill and humor.

In his first role in a BNL production, Wendell Chu, as Lyman Sanderson, M. D., is excellent as a young, slightly pompous pyschiatrist faced with problems never envisioned in medical school. He copes with a winning blend of professional self-confidence and bewilderment.

As nurse Ruth Kelly, Angela Castellano conveys a superb mixture of professional pseudo-sincerity and real concern for her patients. Karl Swyler is perfect as Duane Wilson, the sanitarium attendant, fiercely devoted to his boss and always ready at a moment's notice to "escort" recalcitrant patients to their therapy.

William Love deserves special mention as William Chumley, M. D., founder and chief psychiatrist at Chumley's Rest. His reverie concerning his dreams if he got Harvey's cooperation is especially effective.

In supporting roles, Rita Straub, as Mrs. Ethel Chauvenet; Chris Pendleton, as Mrs. Betty Chumley; Joseph Indusi, as Judge Omar Gaffney; and Joseph Boniface, as E.J. Lofgren all add wit and sparkle to this delightful comedy.

Director Ruth Basile expertly brings off this production with the right light touch. The sets are simple but effective, and the stage crew deals well with the technical difficulties of staging in Berkner Hall. In short, this production of "Harvey" is thoroughly delightful and very funny - a splendid way to pass a spring evening. Don't miss it.

—Alan Bieber

Final performances are tonight and tomorrow at 8:30 p.m. in Berkner Hall. Tickets will be sold at the Cafeteria at noon today, and at the door before both performances. Prices are $3 for general admission and $2 for senior citizens and students under 18.

Several members of the cast in the current Theater Group production of "Harvey." Bill Love (Dr. Chumley) stands aloof as Chris Pendleton (Betty Chumley) and John Binnington (Elwood P. Dowd) have a conversation. —photo by Humphrey

Bowling

Purple & White League

In a close race down to the last game The Flounders defeated the Draftecs to become the 2nd half winners. High game for the night was Sharon Smith's 221. High series was rolled by Ed Meier 195/194/188 - 577, Jim Petro close behind with a 574 series, games of 198/173/203. Other good games - Jim Griffin 202, Al Pinelli 201, Ken Riker 203, Nancy Erickson 198, Joyce Pinelli 197, Marge Belligan 191.

Pink League

Finishing off the season with some flair were: Mary-Grace Meier 183, Renee Flack 178, Millie Connelly 170, Ellie Kristiansen 169, Kit D'Ambrosio 165, Sharon Creveling 163 and Anna Parrinello 143. Sweepstakes winners were Kit D'Ambrosio and Mary-Grace Meier. The Pinsplitters and Lickety Splits are scheduled to playoff next Tuesday.

Red League

The ISA team won 8-3 over Old Timers. T. Iarocci (200) grossed 640. R. Barberich (201) 616 gross, J. Roesler 613 gross. Strangers lost all 11 points to the Phoubars. The Freon Loaders won 7-4 over the 76'ers. V. Bilms 632 gross, J. Connelly (210) 618 gross, F. Hohmann 616 gross, J. Petro 601 gross. The Sandbaggers split 6-5 with the Designers. C. Zavesky 609 gross.

The Lyric Winds

Woodwind Quintet In Concert

The Lyric Winds, a woodwind quintet, will perform on Wednesday, May 14, at 8:30 p.m. in Berkner Hall. This is the quintet's premiere public performance and is a fund raising event for the benefit of the BERA Concert Series.

Members of the Lyric Winds are Mark Barton, flute; Lois Barton, oboe; Carolyn McGrath, clarinet; Laurance Eisenhart, bassoon; and Joyce Kilmer, horn. Mark Barton and Laurance Eisenhart are BNL employees. All the musicians are active in other local ensembles such as the Suffolk Symphony and the BAFFA Symphony Orchestra.

The program will include the Divertimento No. 1 in B flat by Haydn; Pastoral Op. 21 by Persichetti; the Quintet in G minor, Op. 56, No. 2 by Danzi; and Quintet Op. 43 by Carl Nielsen. Also featured in the program will be soprano Laura Eisenhart in a performance of a Cantata by Alessandro Scarlatti. Ms. Eisenhart has appeared as soloist with the Mendelssohn Choir of Pittsburgh and the Pittsburgh Symphony, and in the State University at Stony Brook production of The Marriage of Figaro. She will be accompanied by pianist Ann Jupp; Mark Barton will play the flute obligato.

Donations of $3 or more are requested.

Bicycling

Coming up June 8 is the annual BNL Spring Race. As in last year's race, there will be two events, a single-lap, time trial around the lab exterior on public roads and a two-lap bunch start. A lap is about 16 miles. The two lap event will start at the North Gate on Wm. Floyd Parkway at 9:00 a.m. and the time trials at 9:10, with registration beginning at 8:15. The registration fee is $1.50 which pays for the soda and medallions. The time trial is open to all ages, but the bunch start event is for experienced riders. Protective headgear is required for all entrants in both events.

Medallions on marble plaques are awarded for best time in various age and sex categories, for best lap time in the two lap event, and for closest predicted time in the time trials - you could win this one on a tricycle! Riders from other clubs are welcome, as are lab employees, their families and guests.

Motorcycling

The Motorcycle Safety Foundation Rider Course and Beginning Rider Course will be explained on Saturday, May 10 at 10:00 a.m. in the Brookhaven Center. Films and riding demonstrations are also planned.

On Monday, May 12 at 5:15 p.m., the Motorcycle club will hold its monthly meeting in the Recreation Building.

Swimming Pool

The pool will be closed on Sunday, May 11. Normal schedule will resume on Monday, May 12 at 11:00 a.m.

Runner's Corner

Don't forget the annual BNL Roadrunners Spring Races - SUNDAY, MAY 18 - - starting at Berkner Hall. 5 km event starts at 9:30 a.m., while the 15 km race goes off at 10:15 a.m. Both races are open to the public and all BNL walkers, runners and joggers are cordially invited to participate. Pre-registration ($1.00 for adults and .75 for children) ends May 14. You may also register the day of the race ($2.00 for adults and $1.50 for children). Entry forms can be obtained from the bulletin board in the men's and women's locker rooms.

The first three finishers in each age category will receive an award, while all finishers will receive a handsome BNL certificate with their finishing time and place. Both courses have been accurately measured with ample water stops and mileage markers.

Race committee chairmen and volunteers will meet Tuesday, May 13 at 11:30 in the conference room of Building 318. Volunteers are needed to man water stops and direct runners on the course. You can volunteer by calling Ted Landry on extension 2959.

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.

1334. AUTO TRUCK MECHANIC - Responsibilities will include performing repairs, maintenance, service for gas and diesel engine vehicles (automobiles, trucks and material handling equipment). Must have demonstrated ability and experience in standard transmission rebuilding and use of electronic diagnostic equipment as well as experience in limited welding, brazing, painting and other body and fender repair work. Staff Services Division.

1335. LAUNDRY OPERATOR B - (Two positions, Temporary - May 19 to September 26, 1980). Plant Engineering Division.

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

1336. QUALITY CONTROL ENGINEERS (three positions) - Requires BS or equivalent in mechanical, electrical or industrial engineering and capability in preparing, implementing and maintaing procedures pertaining to all aspects of Q.A. activities for all phases of a high technology program. Accelerator Department/ISABELLE PROJECT.

Autos & Auto Supplies

69 VW - needs work, can be fixed to run or good for parts. $200. Augie, Ext. 4220.

74 CUTLASS SALON CUSTOM - ps/pb, p/w, a/c, posi rear, air shocks, rear defog, tilt wheel, dual exh, AM/FM-8 trk, eng/body/int all good. Debbie, Ext. 7908.

SNOW TIRES - A 78-13, 3000 mi, save-buy now. Both/$30. Rau, Ext. 3830.

73 TORINO - extras, high mi but good cond, asking $650; 73 Pinto Wgn, a/t, fair running, high mi, body damaged, $400. Tom, Ext. 2863, 724-2451.

76 PONTIAC LEMANS - 2 dr, ps/pb, a/c, landau roof, excel, must sell. $2850. 724-7264 after 6 or weekends.

73 GMC SUB - a/c, ps/pb, 4 w/d, 350 cid. $2300. 744-5910.

74 LESABRE LUXUS CONV - a/t, full pwr, AM/FM, a/c, rear defrost, mags. Asking $2500 or best offer. Ext. 4113, 289-0753.

78 CHEVY VAN - 6 cyl, 22 mpg, 20,000 mi, custom int & wheels, sunroof, p/s, AM/FM. $4500. Bob, Ext. 3050.

TIRE - Shellride tubeless, 8.25x14, 4 ply. $10. 473-4471.

71 MERCEDES BENZ - 4 dr, 4 spd, ps/pb, a/c, AM/FM, 24 mpg, excel cond. Ron, Ext. 4112, 324-2133.

65 MERCEDES 190 - diesel, many new parts, needs eng work. $2000. John, Ext. 2070, 728-1201.

72 CHEVY STA WGN - ps/pb, good cond, new brakes/batt/tires (2). Price negotiable. Len, Ext. 4487.

70 BUICK SKYLARK - 6 cyl, 4 dr, a/t, ps/pb, new batt/starter/tires, runs well. $300. Ext. 7670.

79 KAWASAKI L.T.D. 400 - immac, 3000 mi. $1495. 727-5324.

74 FORD GRAN TORINO - a/t, ps/pb, a/c, AM/FM stereo; new paint, excel cond. $1300. 744-4047.

78 KTM - 250cc, mint cond, many extras. 325-9580 after 6.

TIRES - (4) General H78-14 b/w, w/good tread. All/$55. Tim, Ext. 7982, 727-7741 after 6.

72 PONTIAC LEMANS - AM/FM, ps/pb, a/c, good rubber, $500 or best offer; (4) Firestone H78-15 fiberglass belted tires, good rubber, $60. 281-2186.

77 KZ400 - crash & sissy bars, luggage rack, blue, 2 helmets, very well maintained. $1200. Bill, Ext. 7611.

76 CHEVY SUBURBAN - AM/FM, a/c, trailer hook-up, 40 gal gas tank, good cond. $2400. 929-4605 after 5.

TIRES - (2) Uniroyal FR78-15 steel belted radial w/w, almost new cond. $35. Ext. 4701, 271-2877.

67 DODGE DART - new batt/alt. $250. Kale, Ext. 4224.

78 HONDA CAFE RACER - 100% chrome, 2 modified engs, $6000 invested. Best offer over $4500. 928-0158 after 6.

78 CHEVY NOVA -a/t, a/c, ps/pb, 24,000 mi, mint cond. George, Ext. 2982, JU8-1713.

REBUILT ENG - 1959 MGA. $300. 473-7546 after 6.

76 FORD PINTO SQUIRE - V6, a/t, ps/pb, a/c, good mi. $2400. Paula, 924-7283.

72 DUSTER - parts for sale, good running 6 cyl eng + others. Ext. 2054.

77 CAMARO - ps/pb, p/w, a/c, AM/FM stereo, 305-V8, excel cond. Pat, Ext. 4173.

71 CHEVY MALIBU - sm V8, reg gas, 65,000 orig mi, runs well, needs cosmetic work. Ext. 4309.

75 KAWASAKI 2H - 750, 3 cyl, 2 stroke, headers, blk, very fast. Henry, 727-0216.

TIRES - (4) brand new F78-15 mounted on Ford rims w/hubcaps. $100. Frank, Ext. 4709.

70 CORVETTE - 350/300 T-top, a/t, a/c, ps/pb, p/w, AM/FM, low mi, new tires/brakes/exhaust, like new. 744-2404.

71 DUSTER - excel cond, yellow, economical slant 6 eng, std shift. $975. Ext. 7679.

MAG WHEELS - (4) BR70-13 tires, fin-type wheels. Asking $250. Eric, 669-1557, or Ext. 2973 after 5.

70 DODGE VAN - AM/FM-8 trk, finished int, bed, roof vents, runs well. 277-2671 after 6.

UTILITY TRAILER - 3½'x7', 3 sides. $150 firm. Paul, Ext. 2071.

76 ALFA ROMEO AFFETTA - 4 dr sedan, 4 cyl, 5 spd, a/c, htr, 5 tires, burg/alarm, tan/aubergine, 49,000 mi, 25 mpg city, 30 mpg hwy, AM/FM-spkrs. $5000. 248-6690, 487-6843 after 5.

CAMPER - 73 Swinger, 11.5', for ¾ ton pickup, 70 Duster 340 a/t, new paint. Harry, Ext. 3533, 265-2762.

TIRES - (5) Goodyear custom radials, steel belted G78-15. Ext. 3392, 475-8330.

FLAT-BED TRUCK BODY - 14', all steel framing & tie-bar, heavy wood decking. $225. Tom, Ext. 4084.

75 KAWASKI 900 Z-1 - excel cond, new custom headers, tires, oil cooler, many extras. $1800. Vern, Ext. 7978, 878-0164 after 6.

75 PONTIAC LEMANS WGN - V8, ps/pb, a/c, good tires & brakes, some rust. $1750. 289-0791.

Boats & Marine Supplies

CLAMMING SUPPLIES - 18 tooth rake w/skids, $40; 16 tooth rake w/skids, $20; seed & cherry cull w/box, $10 ea. Dave, 286-3235.

16' GARVEY - bottom fiberglassed, good cond. $290. Ext. 2005, 878-8847.

BOAT TRAILER - needs work. Best offer over $50. 654-2304 after 5.

16' MFG GYPSY - 1974, 120 Merc I/O rebuilt 1979, good cond. 661-3650.

SAILFISH - mahog int. $250, w/home brew trailer-free. Sue, 286-0407.

17' BOWRIDER WINNER - like new, hull only 1973, $700; 8' Starcraft fiberglass sailboat, center board, new sail, excel cond, $195; Thompson 17' Lapstrake, $75. 924-3082.

23' SPORTCRAFT 1970 - cuddy cabin, sleeps 2, 155 hp V6 OMC I/O, legal head, full camper top, VHF, excel. $4800. 286-3933.

14.5' FIBERGLASS MFG - w/trailer, 1975 25 hp Evinrude, misc eqpt. $650. Ext. 2019, 744-0763.

16' FIBERGLASS RUNABOUT - dbl foam bottom + heavy duty tilt trailer, both excel cond. $800. Ext. 4502.

18 HP EVINRUDE MOTOR - newly rebuilt w/2-6 gal tanks. $275. Bill, Ext. 7698, 732-9102.

CLAMBOAT - 24'x8', glassed hull & deck, oar r.r, self-bail cockpit, cabin, 1975 70 hp Evinrude, excel cond. 666-8431.

OUTBOARD - British Seagull 40 plus 2 hp. $100. Frank, 698-1176.

17' GRADYWHITE 1976 - 85 hp Johnson, trailer, like new, in water, CB, all equipt, must sell. 734-7584 after 6.

18' THUNDERBIRD - cuddy, 115 hp Johnson, navy top, equipment, 4 wheel tilt Cox trailer. Hank, 286-9659 eves.

115 HP EVINRUDE - excel cond, $700; 28 hp Evinrude, good for parts, $50. Bob, Ext. 3309.

Miscellaneous

HIGH CHAIR - $3; vacuum – almost new, $20. 744-9498 after 7.

BEDRM SET - Medit; dbl bed, triple dresser w/mirror, armoir, 2 night stands, no matt. $425 or best offer. Diane, 878-4984.

TAPESTRY COUCH - new, contemp, loose pillow back, blue/rust/taupe. Asking $500. 654-3333 after 5.

TRAVEL TRAILER - 23' self cont, low mi, excel cond, must see to appreciate. $3995. 475-3546 after 6.

ELECTRONIC FOOTBALL GAME - Coleco head to head hardly used. $20. Thomas, 698-3145 eves.

HITACHI COLOR TV - 9", AFT, auto color lock, excel cond, $195; cocktail table, 2 end tables, fruitwood w/marble tiles, very good cond, $90; fine china, 45 pc, 2 mo old, $35. Ext. 2386, 924-3072.

TRAVEL TRAILER - 19½' Norris, fully self cont, sleeps 8, many extras. $2200. Ext. 2309, 473-9180.

BUNK BED - w/mattress, springs; 1 china sink. McInturff, 286-8890.

MIRROR - elegant plate-glass, 32"x40", dark gilt carved wood frame, extend your living room's horizons. $25. 286-3580.

KITCHEN TABLE - wrought iron, cost $450. Sell $75. 281-6130 eves.

MOVING - must sell GE washer, 18 lb cap, 1 yr old, like new, perf cond. Best offer. Ann, Ext. 4959.

GRANITE - for your fp, barbecue, walks, white, blk & white, pink, red. 2 tons/$175. 924-3553.

MARTIN GUITAR - 00-18C model, excel cond, w/case, must sell, good for beginner. $300 firm. 821-0137.

RECLINER CHAIR - $10. 727-5912.

SKIS - Rossignol Spirit 150cm w/Allsop binding, excel cond. $100. 286-0497 eves.

OLYMPUS 310 - auto strobe in absolutely perf cond, w/manual & box. $80. Louise, Ext. 3617.

PILLOWS - square or heart-shaped, w/lace. Sharon, Ext. 3793, 878-2591.

GIRL'S BIKE - Ross 20", 3 spd, excel cond. Casswell, Ext. 4278, HR3-9223 after 5.

PUPPIES - AKC reg Doberman, blk, good disposition & line, have parents at home. 727-7185.

DECORATOR SOFA - 4- pillow, gold, 9' long. $200. 928-4068 after 6.

FREE - lg dog house, you pick up, good cond, no repairs needed. Sue, Ext. 7669, 744-7679.

BICYCLE - Schwinn 20" girl's, banana seat, $25 firm; buffet, Danish mod, 5'L x 36"W x 30"H, walnut wood, great for storage, $150. Ext. 4532.

VIENNA QUICK-A-TREE - 7', new last Xmas, orig cost $70, now $25; 14 lb Amflite bowling ball, used twice, blk, $10. 924-3581.

IVORY PIECE - from India, beuatifully carved, rare. Ext. 3761, 821-9423 eves.

ENCYCLOPEDIA BRITANNICA - 1958 ed, also 50 vol 5' shelf of Harvard Classics, good cond. Best offer. Ext. 2602.

WALNUT CONSOLE TABLE - 20" x 40", seats 10 open, $75; baby stroller, like new, $9. Jack, 475-7067.

LIL-COLT - 8' camper cap w/insert, excel cond. Asking $650. 924-6372.

BICYCLE - Columbia 5 spd tandem, brand new, never used. $175. 744-5214.

USED LAWNMOWERS - rotary & reel. Ext. 4539.

TRAVEL TRAILER - 20.5' Shasta 1977, fully self-cont, sleeps 6, full tub in bath, excel. $4200. 281-0804 eves.

CABINET - $12; vacuum, $65; child's folding stool, $6; dog choke, leashes, grooming supplies, wholesale; film splicer, 14" wheels, $8 for 2 ($4 ea). Ext. 7772.

15' SCOTTY TRAILER - 1969, sleeps 5, gas stove, heat, ice box, water brakes, porta potti. $1000. Jack, Ext. 3075.

UTILITY TRAILER - extra hvy duty, 4'x5', sm wh, lights, fenders, excel cond. Charlie, Ext. 4201.

MOBILE TRANSCEIVER - Midland Mod 13-884, 4W, 23 channel. Best offer over $200. Duncan, Ext. 7913.

1980 AIRTIGHT STOVE - Tempwood 5000 BTU, top loading down drifter. 924-4872.

LADDER - for above ground pool, $10; GM rims, 5 hole, $3 ea. Little John, Ext. 2819.

SEWING TABLE - adjustable for open arm machines, very good cond. $25. Bruce, Ext. 4418.

SNARE DRUM - w/drumsticks & stand, seldom used, excel cond, must sell. $30. 286-1278.

10 SPD BICYCLE - 23" frame, carrier, toe clips, $100; a/c, 7000 BTU, $70; 20" girl's bike, $15. Ext. 3465, 744-7981.

DINETTE SET - green & white, $40; traveling sprinkler, $35. Ext. 2251.

AIR COND - 12,000 BTU, 230 volts, for casement or sliding windows, used only 2 seasons. $150. Larry, Ext. 3365, 698-8009 after 6.

SCHWINN VARSITY - 10 spd, needs repair. $25. Norm, Ext. 4415.

TRACTOR - 14" plow disc, cultivator blade, for sm farm, nursery, up to 5 acres, good cond. $1250. GR5-5349.

KITCHEN CHAIRS - rock maple, captains or mates, 5 of ea, need refinishing. $35 ea. Annamarie, 473-9016.

WINDOW AIR COND - Sears Coldspot 5000 BTU, 25; new 5' ash oars, $8 ea. Ext. 4058, 878-0642.

MEN'S SUIT - Wards western style, denim blue, 38 reg, worn twice, w/vest. $20. Joe, Ext. 4254.

FREE - swing set, you pick up, 2 swings, slide, horse. Bill, Ext. 2906, 929-6189.

KEROSENE SPACE HEATER - Aladdin, up to 9300 BTU per hr. $100. Tom, Ext. 3535.

DEEP WELL PUMP - ¾ hp, $75; 30 gal captive air water tank, $50. Frank, Ext. 7138, 732-4224.

COLOR TV - $75; steam iron, $5; king size blanket, $10. Sandro, Ext. 4382/3111 eves.

SWIMMING POOL - 4'x24', new s.s. filter, 5' high vinyl chain link fence. $325. 878-1495 between 6:00-8:00 p.m.

BARBIE ACCESS - lg asst dresses, clothes, blow-up furn, some never used. 744-5553.

BICYCLE - men's 26" std bike. Ext. 4846, 363-6940 after 5.

USED FRIGIDAIRE REFRIG - 9 cu ft, great as second unit for beverages, low cost running. $30. Ernest, Ext. 3357.

2 BICYCLES - girl's or boy's. $30 ea. Dinos, Ext. 4666.

CHILDREN'S BOOKS - new & old, most ages; humor, adventure, animals, horses, folk tales, mysteries, nonfiction. 286-8724.

POOL - s/s filter, motor, pump, vacuum, skimmer, lounge, hose, chlorine holder, ladder. All/$60. Norman, Ext. 2043.

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

COOPERSTOWN VIC - 160 acres, good road frontage. Reasonable. 363-7032.

EAST PATCHOGUE - 4 bedrm, 2-story colonial, full bsmt, carpeting, hard wood floors, inground pool, 0.4 acre, 10 yrs old. $50,000. A. McInturff, Ext. 4845, 286-8890.

WESTHAMPTON/REMSENBURG - cape cod, cedar shingles, 3 bedrms, 2 baths, lg eik, fam rm, deck & fp, low taxes. $65,000. Richard, Ext. 4396, 325-8158.

CENTRAL ISLIP NORTH - 1 acre, hi-ranch, 8 rms, 1½ baths, 24x28 sunken patio, possible M/D, many extras. Yani, Ext. 2514, 234-8564.

BELLPORT VILLAGE - 3 bedrm ranch, lg eik, att gar, patio, stockade fenced rear yard. $36,500. 286-0795.

BELLPORT VILLAGE - Dutch colonial, 4 bedrms, 1½ baths, excel cond, brick patio, garden, flowers, fruit trees on 1 acre, walk to shops, golf, beach, ferry. 286-2320.

BROOKHAVEN HAMLET - 3 bedrm ranch, ½ acre, bsmt, a/c, w/w 1½ baths, gar, 8½% mtg. 286-2690 eves.

SOUTH SHIRLEY - 3 bedrms (possible 4th), 1 full + 2 half baths, L/R, D/R, eik, den w/fp & woodburning stove, bsmt, 2-car gar, many extras, 7 mi from BNL. $37,000. 281-0804 eves.

MANORVILLE - 3 bedrm ranch, 1 acre, 32' country kit, cathedral ceiling, 1½ baths, appl, bsmt, gar, assumable mtg at negotiable rate. $45,000. Pete, Ext. 3868/4574, 878-1225.

ROCKY POINT - 2 bedrm brick ranch on lg plot. Reasonably priced. Ext. 2460, 744-9822.

CORAM - $12,000 C/O, 10½% assumable mtg, 4 bedrms, L/R, D/R, eik, 2 baths, 2-car gar, 15x20 den w/fp, gas heat, 4/10 acre, fenced, mint cond. 698-4966.

WADING RIVER - north of 25A, exclusive area, property for sale, lovely wooded building lot, slightly under 2 acres. Owner asking $20,000. 928-0158, no brokers.

For Rent

PT JEFF VILLAGE - 4 bedrms, 2½ baths, fam rm, furn, colonial on corner lot, gas heating & cooking, walking distance to Conn ferry, LIRR & elem school. $600/mo starting Aug for 1 yr. S. Fiarman, Ext. 2925, 331-3445.

CENTER MORICHES - spacious, 5 unfurn house, waterfront, boatslip, sundeck. $390/mo. 567-2561.

BROOKHAVEN HAMLET - furn apt, lg L/R, 2 bedrms, kitchette, bath, oil heat provided, 1 or 2 mature working adults. 286-0129.

BELLPORT - 3 bedrms, 2 baths, L/R, D/R, kit, 2 fp, lg den on lower level, gar, located on prvt road near bay. 286-2251.

N. SHIRLEY - 3½ rm apt, new, modern, 1½ bedrms, pvt ent + deck, furn avail, incl util & cable. $325/mo. Kathy, Ext. 7745.

Wanted

CUB SCOUT SHIRT - any size/cond, need left front panel. Dennis, Ext. 4259, 736-2534 eves.

LAWN MOWER ENG - 3½ hp, to fit 21" Toro Whirlwind. Frank, Ext. 3898.

GOOD USED TIRES - size 145SR13, reasonable. Henry, Ext. 2534.

DONATION - or 2 regular 26" bicycle tires for underprivileged children. 281-2002.

FILE CABINET - office size, 4-5 drawers, good cond. Linda, Ext. 4216.

BIKE - 14" boy's sm, any cond. Peggy, 727-4859.

CLERK TYPIST - for on-site contractor, up-date, records, light typing, full or part time. J. Fahey, Ext. 4031, 924-0300.

BABYSITTER - for 5-mo infant, 3 mornings/wk, on site or at home. G. Munson, 744-0763.

HOUSE - mother/daughter, 3 bedrm main house, apt attached or sep. 286-8166 after 5 & weekends.

MOTORBIKE - sm dirt/trail, 50-100 cc for 13 yr old beginning rider. Reasonable. Dick, Ext. 3273.

BOX SPRING - for full size bed, cheap, occasional use for guests. Bill, Ext. 2378.

PERSONS - to go on 1-day shopping spree to Reading, Pa, June 21. For info call Marie, Ext. 3673.

400-500 BRICKS - we will pick up. Ext. 7115, 744-5801.

APARTMENT TO RENT - 1 bedrm, Rocky Point, Sound Beach, Miller Place area. Donna, Ext. 2907 or 751-6383, eves.

Lost & Found

LOST - glasses (blk metal frames, darkening glass), last fall & shaded sunglasses recently. Ext. 7755.

Services

AUTO REFINISHING - all areas of work performed, discount rates for sm car refinishing. Ext. 2546, 744-4047.

HOUSESITTING - young working couple will housesit June while home is being renovated. Ext. 7646, 369-2151.

ROTOTILLING - weekends, anywhere on L.I. $15/hr. Bob, 878-4556.

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.

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