

## AUI Lecture On Space Missions

Bruce C. Murray, Director of Caltech's Jet Propulsion Laboratory and an authority on Mars, Mercury, Venus and the moon, will present an AUI Distinguished Lecture on Friday, May 20, at 8 p.m. in Berkner Hall.

Murray, who has long been associated with space missions, will speak on "Viking and Beyond."

In 1975, NASA launched two unmanned, instrumented spacecraft toward the planet Mars - Viking 1 and 2. They landed in 1976. The Jet Propulsion Laboratory was a major participant in the Viking program which was a further step in the exploration of the planets, and succeeded the Mariner missions.

Dr. Murray was deeply involved in all the Mariner probes to Mars, and in the Mariner 10 flybys of Venus and Mercury. For his efforts with Mariner 10, Murray was awarded the NASA Distinguished Public Service Medal. His book, "Flight to Mercury" is a popular account of the Mariner 10 mission. His investigations of Mars have also been recognized with the George W. Goddard Award of the Society of Photo-Optical Instrumentation and Engineering and the NASA Exceptional Scientific Achievement Medal.

Murray first became interested in space technology when he served in the U.S. Air Force at the A.F. Cambridge Research Laboratories in Bedford, Mass. There he worked on ways to extend the knowledge of the earth's shape and gravity field, espe-



Bruce Murray

cially through the then new technique of using earth satellites.

When he came to Caltech in 1960, his research was in planetary astronomy and, in particular, the new field of infrared astronomy. Two years later, with Professor James Westphal, he observed for the first time the infrared emission from an object outside the solar system - a star.

Murray's Ph.D., which he obtained from the Massachusetts Institute of Technology was in geology, with a minor in mathematics. With the exception of his Air Force service and three years as an exploration geologist in Louisiana, Murray's career has been with the California Institute of Technology. He was Professor of Planetary Science before being named Director of the Jet Propulsion Laboratory in 1976.

## Focus On ISABELLE

James Sanford, Brookhaven's "Ambassador For ISABELLE" will present the 147th BNL Lecture on Wednesday, May 11, at 8:00 p.m. in Berkner Hall.

As he has been doing at numerous meetings across the country, Sanford will describe "ISABELLE - A New High Energy Physics Facility for Brookhaven." The proposed proton-proton colliding beam facility will make it possible to explore in depth the structure of the proton and the production of new particles.

This intersecting storage accelerator, which is estimated to cost \$173 million, will release nearly ten times the energy currently available from existing accelerators or colliding beams.

Sanford explains how: "In contrast to conventional accelerators with single beams, colliding beams of particles release the maximum amount of energy in particle collisions. At ISABELLE two complete accelerator rings will be configured such that the protons strike head on in six experimental regions where particle detectors will be located."

With the expectation that initial funding would be available in 1978 or 1979, construction would be completed in 1983. The facility will be able to handle at least 12 experimental groups at the same time.

At the conclusion of his talk, which he says will be descriptive rather than highly technical, Sanford will narrate a film produced by BNL photographers on the fabrication of ISABELLE magnets. For this accelerator nearly 900 superconducting magnets will be built.

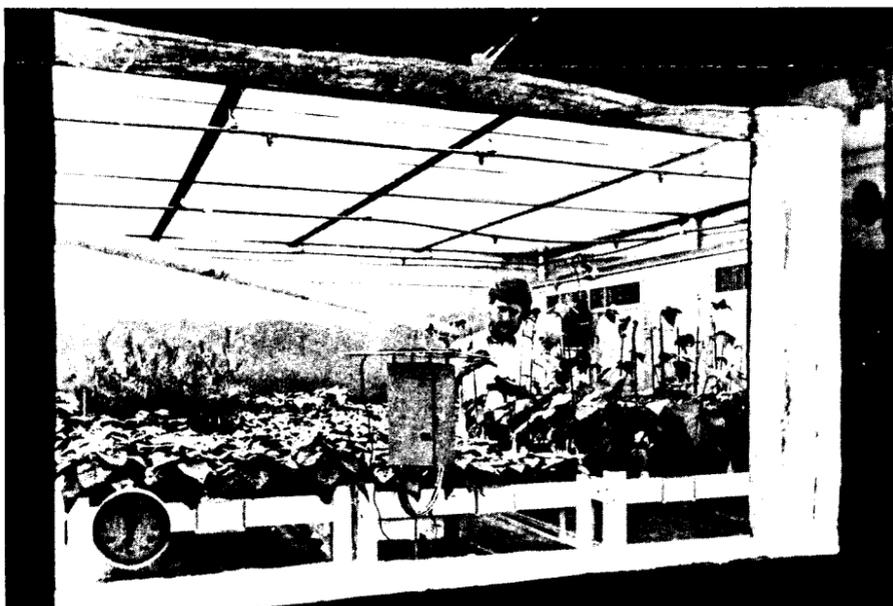
A year ago, Sanford returned to Brookhaven to take up the post of Associate Director for the ISABELLE project. He first joined the Laboratory in 1962 and when he left in 1969 was head of the Experimental Planning and Support Division in the Accelerator Department. He went to FermiLab in 1969 as head of the Experimental Facilities Section. In 1972 he was made Associate Director for Experimental Planning. Sanford is highly regarded for his unique ability to organize and manage complex high energy physics facilities.

A buffet supper will be served in the

Brookhaven Center before the lecture beginning at 6:30 p.m. Reservations should be made in advance by calling Ext. 3541 before 5 p.m. Refreshments will be available in the lobby of Berkner Hall immediately after the lecture.



James Sanford stands before one end of an ISABELLE magnet which is covered by a simulation of the main tunnel arch of the proposed accelerator.



Nicholas Gmur tends to plants at the controlled environment growth chamber. —photo by Rosen

## It Isn't Raining Violets

Increased industrialization and two cars in every garage have brought both benefits and problems. For one, "the gentle rain from heaven" may not be so gentle anymore.

Now, scientists in the Land and Freshwater Environmental Sciences Group in DAS are trying to determine the effect of acid rain on plants. And what is acid rain? As explained by Nicholas Gmur, a biologist in the group: "Sulfur dioxide and sulfates get into the atmosphere and are converted to acids through a variety of chemical means, mostly by oxidation and hydration. These acid particles are washed out of the atmosphere by rain, or fall out as dry deposits."

With the prospect of a shift in this country from oil to coal use, there is the threat of even greater pollution. Although scientists are working on this problem from many angles, including "scrubbing out" the pollutants, the DAS project will determine the effect these pollutants will have on plant life.

In their research, the group investigates pinto beans, sunflowers, bracken fern, peas, poplars, oak and pine. The plants have

been selected because they have varying sensitivities to sulfur dioxide, and studies will determine if they have the same sensitivities to acid rain.

The measurement of acidity is pH (potential of hydrogen). Clean rain has a pH of 5.7 and the most acidic rain noted at Brookhaven, so far, has a pH of 3.2. "The average in this area is about 4.0 to 4.5," says Keith Lewin, who specialized in agricultural studies at Cornell, and works with Gmur on the project. "A large amount of pollution originating in the midwest and along the eastern seaboard passes over Long Island. We're not in the epicenter of the acid rain problem, but we are in one of the severely affected areas."

A facet of ERDA's Biomedical and Environmental Research program, the acid rain project at BNL has been in operation for less than two years. So far, Gmur says, they have found that at pH 3.1, there is injury on some plants: "The acid rain penetrates into the plant cells and causes their death. The manifestation of this is small brown spots on leaf surfaces called lesions."

They are now starting tests to see if these lesions reduce crop yield. "We want to

know the point where a yield reduction occurs, and whether this reduction corresponds directly with physical signs of injury," says Lewin. The lowest pH level they have worked with is pH 2.3, and at this level there is considerable injury. For commercial cash crops, i.e., peas and beans, it would probably make the plant worthless because it couldn't produce good seed or fruit, according to Lewin.

Lance Evans, who is associated with the Laboratory of Plant Morphogenesis at Manhattan College and who is a consultant to DAS on this project, has been researching the effects of acid rain on the vegetative and sexual development of bracken fern which is common in the northeast. In a recent paper, he concludes that "only limited fertilization and, therefore, limited genetic recombinations could occur in [this fern] under conditions of acidic precipitation (pH and sulfate levels) that prevail in the northeastern United States."

Scattered around various buildings are the acid rain group's facilities. They consist of a chemistry lab, two greenhouses, a controlled environment growth chamber, two plexiglass rain chambers and an aerosol facility.

In brief, their procedure is to take plants to be treated from the stock in the greenhouse and place them on a turntable in the rain chamber. There the plants are rained on for varying periods of time by rain made in the chemistry lab. This solution consists of distilled water to which a variety of chemical compounds have been added to imitate Long Island rain. In between treatments, the plants are kept in the growth chamber.

The aerosol facility is unique. It was designed by Frank German (Biology) and Gil Raynor (DAS), and has been modified by Lewin to further expand its capabilities. In

this structure, plants can be exposed to aerosols (dry particles) of various compositions and sizes by means of a wind tunnel. The addition of a rain chamber enables them to simulate atmospheric conditions which may occur on Long Island and in other temperate regions of the earth. As the facility is in the pilot stage, they don't yet know its full potential.

The group obtains data for their Long Island rain mix from Gil Raynor. On an hourly basis he measures the volume, pH, chemical constituents, etc., of all the rain that falls at the Laboratory.

Four students from SUNY at Stony Brook are working on doctoral dissertations, a part of which is to characterize the flora and fauna of the BNL forest. The data gathered will be used by the BNL group in the formulation of a field acid rain program in the next year or two.



Keith Lewin inside the aerosol facility.

## Drinking Water OK

Employees who have noticed an off taste in the drinking water lately, should not be alarmed. The off taste is occasioned by an excess of iron and copper because the water treatment plant has been on bypass since the middle of April. According to Otto White, an industrial hygienist in the Safety and Environmental Protection Division, although these concentrations exceed acceptable levels, they do not constitute a health hazard. The water treatment plant is scheduled to be back on line the week of May 16.

## French Folksinger To Appear At BNL

The French Group of BNL will offer "An Evening of Songs with Serge Kerval" on Friday, May 20, at 8:30 p.m., in the Stage II Theater. M. Kerval, accompanying himself on the guitar, will present a varied recital of songs from France, Quebec, and Louisiana in their original forms.

Kerval, a native of Brittany, has devoted himself to the revival of French folk music. After studies with Jacques Douai, a leading French folksinger, he performed in Parisian cabarets on the Left Bank and in Montmartre, and made his American debut in 1975, when he came to Louisiana at the invitation of the governor and under the sponsorship of the French government. His fine sense of style and choice of melodies have won him wide acclaim:

Serge Kerval has produced more than 15 record albums, the most recent last spring. In 1967, he received the *Grand Prix de l'Académie du Disque Français*, the most coveted prize of the French record industry.

A donation of \$3 is requested of those who are not members of *Le Cercle Français du BNL*, or \$1 for students. Refreshments will be served after the program.



Serge Kerval

### Arrivals & Departures

#### Arrivals

Karen H. Blumer.....Applied Science  
Ralph J. Cerbone.....Applied Science  
Kenneth M. Figliuzzi.....Plant Engr.  
Charles T. Gallagher.....Safety & Env. Prot.  
Thomas S. Hopkins.....Applied Science  
Steven T. Kenyon.....Plant Engr.  
Isabel M. Slater.....Medical  
Joseph C. Stachew.....Reactor

#### Departures

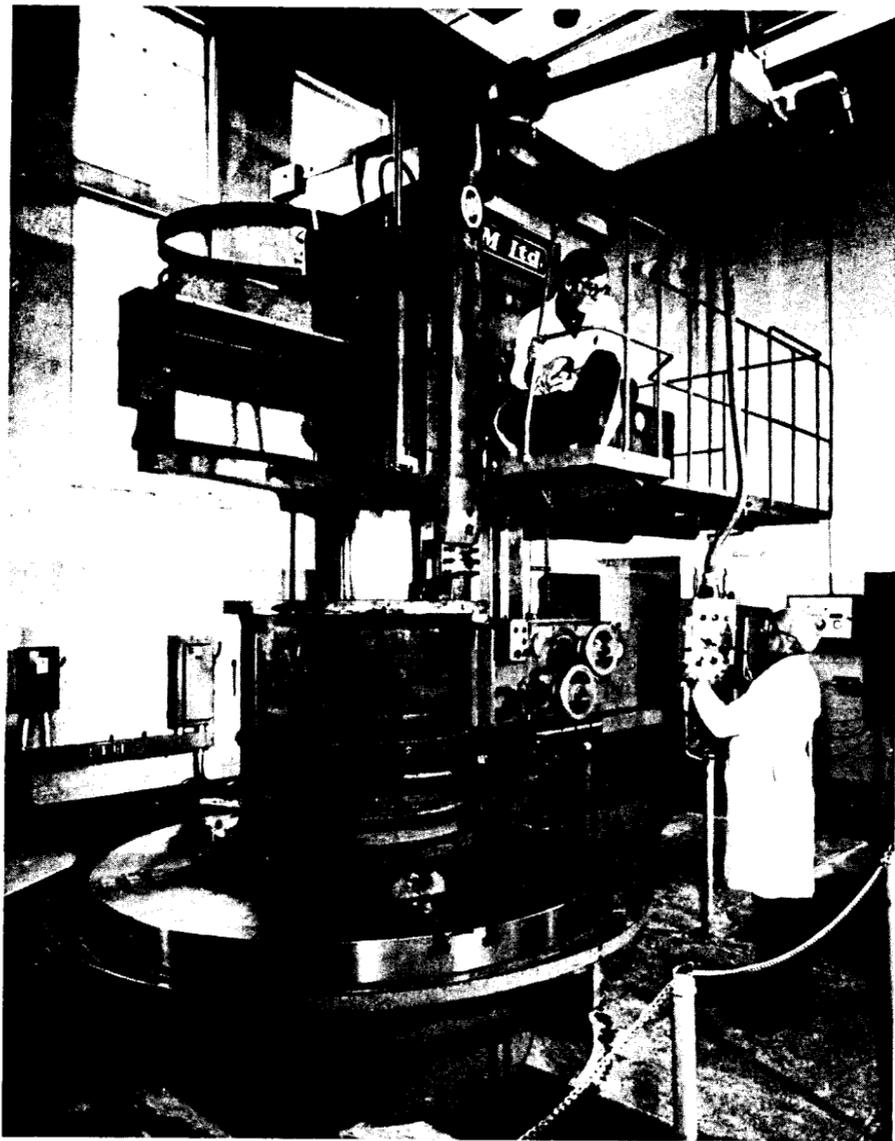
Marie J. Terrano.....Medical  
George Tucker.....Plant Engr.  
Arnold R. Watts.....Reactor

## Stony Brook Events

**THEATRE** - The University Theatre presents "Company," a musical by Stephen Sondheim, May 5-8 and May 11-14, 8:00 p.m., Calderone Theatre, South Campus, Bldg. B. Tickets: \$5, public; \$3, students & senior citizens; \$4.50 faculty, staff, alumni. Reservations, 246-5681.

**ART PREVIEW** - Reception 6:00 - 9:00 p.m. to honor Pat Solan, May 7. Works will be on exhibit May 9-20, Old Chemistry Bldg.

## Mini Tour No. 2 — Machine Shops



Tool and instrument makers Bill Danaher (top) and Jim Plastiras operate a vertical lathe with a 157" turning diameter in the Heavy Machine Shop. This is one of the out-of-the-ordinary machines that visitors will see on the mini tour of the heavy and light machines shops on Friday, May 13 (high school students), and Saturday, May 14 (general public). Central Shops has opened these two areas for the second tour of the Laboratory this season. Half-hour stops are scheduled at each of the facilities.

Among the apparatus in the Light Machine Shop are numerical control machines

programmed by computer-punched instruction tapes to change tools, go in any direction and create any shape. Visitors will also see an electron beam welder and an electric discharge machine which is used to machine difficult materials and shapes.

In addition to the mini tour of the machine shops, the program includes a showing of Brookhaven's Quest, a guided bus tour of the site and a prolonged stop at the Exhibit Center. Hours are from 10 a.m. to 4 p.m. Computers at the Applied Mathematics Department will be featured in the next mini tour on May 20 and 21.

## Show Time

Up-and-coming entertainers, like Leonard Atkinson, will be bringing their acts to Brookhaven for a lively evening of song and dance at Berkner Hall on May 14.

The Saturday night show, featuring the "Ann Prince Showcase of Future Stars" from New York, will get under way at 9 p.m. and continue until 11 p.m. with a packed program of entertainment, food and dancing.

The City Function Band will not only perform as part of the program, but will also play for dancing after the show.

The menu for the buffet includes hot barbequed sausage, barbequed spare ribs, southern fried chicken, baked macaroni and collard greens. And that's not all. There is also potato salad, cole slaw, tossed salad, and platters of ham and roast beef.

This BERA-sponsored evening has a price tag that anyone can afford. For the show itself, including appearances by the Ms. Savoy contestants, tickets are only \$5 per person. If you wish to stay for the After Theatre Buffet and dancing, the charge is \$10 per person.

Tickets will be sold at the Cafeteria starting on May 9. In the meantime, you may get your tickets from anyone of the following:

Helen Keeley.....	Accelerator(911A)
Louise Akins.....	Applied Math(515)
Ruth Wright.....	Biology(463)
Mary German.....	Chemistry(555B)
Frances Scheffel.....	DAS(197)
Grace Searles.....	DAS(703)
Janet Sillas.....	Director's(460)
Jackie Larrie.....	Medical(490)
Margaret Fleming.....	Physics(510A)
Lynn Kalbach.....	Safety & Envir. Prot.(535)
Grace Fales.....	Supply & Materiel(211)
Audrey Blake.....	Tech. Information(477A)

## Service Awards

### May

#### Thirty Years

Frank J. Garafola.....Central Shops  
Wesley L. Howell.....Plant Engineering  
Eleanor Kwiatkoski.....Plant Engineering  
Gasper R. Perry.....Instrumentation  
Budd S. Pollock.....Saf. & Envir. Prot.

#### Twenty-Five Years

Borge G. Espensen.....Physics  
Warren E. Green.....Reactor  
Robert J. Isler.....Applied Science  
Charles J. Lyons.....Supply & Materiel  
Glenn A. Price.....Director's Office  
William J. Walsh.....Medical  
Robert E. Wayte.....Reactor

#### Twenty Years

Arnold V. Feltman.....Accelerator  
Jack E. Jensen.....Accelerator  
Jacob Pruzansky.....Applied Science

#### Ten Years

Herman C. Bartalomy.....Accelerator  
William J. Brynda.....Reactor  
Richard McCluskey.....Accelerator  
Robert J. McGonigle.....Applied Math  
Paul J. Sparrow.....Accelerator

## Cooking Exchange

Coming up next at the Cooking Exchange: fruit in all its forms - fruit dishes for an entire meal. Join us on May 18 for new ways to use fruit. To volunteer your favorite way, call Elaine Lowenstein at 286-2788.

For our Grande Finale, on June 1, the men will show off their favorite masterpieces. Be sure that you don't miss this extravaganza!

Mark your calendar for May 18 and June 1 at 12:30 p.m. in the Recreation Center.

## It's . . . Cricket

The Brookhaven International Cricket Club (BICC) starts the season this Sunday, May 8, at 1 p.m., with an intramural match, followed by the traditional BYO barbecue.

All are welcome to play, watch, learn, or to just sit and be bored. For further information, call Gail Thompson, extension 2902, or Debu Majumdar, extension 2633.

## Cafeteria Menu Week Ending May 13, 1977

#### Monday, May 9

Tomato bouillon	
Franks & beans	1.10
Barbecued fresh ham & 1 veg.	1.35
Hot deli - pastrami	

#### Tuesday, May 10

Cream of chicken soup	
Chopped steak & 1 veg.	1.10
Chinese pepper steak on rice	1.30
Hot deli - knackwurst	

#### Wednesday, May 11

Split pea soup	
Shrimp chow mein on rice	1.15
Hot deli - Italian sausage & peppers	

#### Special

cup of soup	
corned beef & cabbage	
boiled potato or mashed turnip	
choice of pie, small beverage	
\$1.87 plus tax	

#### Thursday, May 12

Puree of mongol	
Spanish omelet & fr. fr.	1.15
Short ribs of beef & 1 veg.	1.30
Hot deli - roast beef	

#### Friday, May 13

Clam & celery soup	
Seafood cakes & spaghetti	1.10
Pot roast & 1 veg.	1.30
Hot deli - smoked tongue	



Leonard Atkinson, a dancer who has appeared on TV, will do his number at Berkner Hall, Saturday night, May 14.

"A committee is a cul-de-sac down which ideas are lured and then quietly strangled."  
— Barnett Cocks (1907-)

"I would trust Shakespeare, but I would not trust a committee of Shakespeares."  
— William Bateson (1861-1926)

# BROOKHAVEN BULLETIN

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**BERNICE PETERSEN**, Editor  
**DOUG HUMPHREY**, Photo-Journalist  
**CAROL PETRAITIS**, Editorial Assistant

40 Brookhaven Ave., Upton, N.Y. 11973  
Telephone (516) 345-2345

**CARL R. THIEN**, Public Relations Officer

## All About Superconducting Magnets



April Donegain (D.O.) and Juris Kaugerts (Accelerator) look at the exhibit on the superconducting magnets for ISABELLE, Brookhaven's proposed intersecting storage accelerator. Employees who would like to know what ISABELLE is all about, are welcome to view the exhibit in the lobby of Bldg. 902.

## Preserving The Paumanok A Tea & Sherry Party

Thursday, May 19, the Hospitality Committee will hold its Spring Tea and Sherry Party at the Brookhaven Center from 3:00 to 5:30 p.m. Women who are employees and wives of employees are invited. Employees are invited outside working hours. Babysitting will be available at the gym, free of charge.

"Paumanok" is the Indian name for Long Island. Exhibits of wildlife specimens, Indian artifacts, carved birds, sea life, geological maps, water color paintings and rock tumbling will be featured at this Tea.

Please come and share an interesting afternoon.

## Sports News Bowling

### Red League

An excellent team effort (3077 pins) by the Old Timers enabled them to take 11 points. All were over 500 for the night, and J. Fontana led the pack with 213/211/587. His 686 gross earned him a club award. W. Reams had a 202. Going into position, they have a 3 1/2 point lead over the 76'ers who took 7 points. T. Holmquist bowled a 206 for the 76'ers. The Sandbaggers took 8 and stay in third for position night. C. Bohnenblusch bowled a 225/584 scratch and E. Meier threw a 201. The Cosmos knocked down 3029 pins and took 11, to jump up to fourth. J. Sheehan had a 203 and C. Neuls won an ABC triplicate award with 3 games of 176. The Designers split 5-6 and are now in fifth. The Bubble Boys are next in line. They took 4 points with W. Kollmer having a 213. The Freon Loaders took 3 and remain in seventh place and in the cellar are the Anachems, who won 4 points. Good luck in the Sweeps!

### Green League

As the season draws to a close, the Super Cools edged the Charley Browns for first place. The two will battle it out on Position Night for a winner in the second half. The Super Cools only took three points from the Sparks as the latter took eight. For the Sparks, B. Rasmussen had a 203/215 to win himself a gross series award. The Charley Browns got bombed for eleven by the Cosmos thus putting them one point out of first. G. Fales had a 204. The Got-A-Hit-Ums took five points while the Trouble Shooters took six. The Blue Jays got dumped for eleven by the Old Timers. The Pinball Wizards were seven to four over the Anachems. For the Super Cools, B. Belligan had a 225.

### Pink League

Going into position night the Gutter Getters have a 5 point lead over the Med Squad. The Fiscal Assets and Pinsplitters will play each other for third place honors. High games for the night of 4/26 were Marge Stoeckel 166/161, Carol Beckner 165, Dot Marelli 158, Irma Montanez 157, Karen Schach 154.

Roll-offs for the Red, Green and Pink Leagues first and second half winners will be on Tuesday, May 10.

### Black & Blue League

Congratulations to the Power Meds. They are the league champs. In a closely contested match, they edged out the Quiet Ones to take first place in the second half. By winning both halves they are the uncontested champs of the league. The Quiet Ones will now bowl against The New Horizons for second place honors. This should

also be a close and exciting match. Budd Pollock converted the 3-7-10 split with ease. High gross pots were won by Howie Bell 221 and Ellen Jacobson 217.

### Purple & White League

Heading into position night we have the Flounders in first place and the Odd Balls in second. Still in contention are the Penthos, Woodchucks, Lucky Strikes and the Alley-Oops.

High bowlers for the men were Jim Petro 208, Ken Asselta 202, and Ted Erickson 201.

Lorraine Petro was high for the women with a 190. Nice games also by Mary Austin 163, Liz Bull 162 and Madeline Windsor 160.

The roll-offs between first and second half winners will be on May 12.

The BNL Championship will be decided on Saturday, May 14, 2 p.m., at the Port Jeff Bowl. The Bowling Award Party will be held at the Brookhaven Center on Friday, May 20, at 5:30 p.m. to ?.

## Bicycling

Three people turned out for the second half of the 18 mile ride from BNL to the tour of historic Sound Ave. A third ride sponsored by the Riverhead Preservation & Landmarks Society will take place September 11, in Aquebogue.

The BNL allotment of six has signed up for the overnight tour of eastern Suffolk (TOES) on May 14, 15. Due to underbooking of other groups you may still have a chance, but don't delay. Call Cindy Morgan, 289-5433 eves.

Coming up June 5 is the annual BNL Spring Race, usually a popular event. You needn't be a pro to enter - if you can bike 17.5 miles non-stop you'll at least get a certificate and some good exercise. Two certificates (tours count, too) get BNL employees a BERA participation credit. So come on down and join the fun!

## Soccer

Med-Bio-Chem won the first game of the evening and could only hope that Physics would beat, or tie, Stony Brook on this last day of league play. However, Stony Brook beat Physics 2-1 and won the league championship by one point. Mike Cornish got Stony Brook in front as he got a rebound in the crease and pushed it past the goalie. Early in the second half, Cornish again scored on a rebound. Stony Brook carried the 2-0 lead up to the three minute mark when Cox scored from the left side, 2-1. Stony Brook tightened up their defense and the game ended without further scoring.

Outdoor games will be played every Monday starting at 5:15. Participation in the Brookhaven Town Soccer League will start at the beginning of July.

### Final Soccer Standings

	W	L	T	Pts.
Stony Brook	9	4	2	20
Med-Bio-Chem	8	4	4	19
AGS	6	7	2	14
Port Jeff	6	7	2	14
Physics	5	8	2	12
DAS	3	9	3	9

## Mountain Club

About 20 people went on a backpacking trip to Slide Mt. (elevation 4100 feet) in the Catskills last weekend. The six-mile trail went from Woodland Valley, up Whittenburg Mt., over Cornell Mt., and then up Slide Mt. It was frosty at night and hot and sunny during the day. Special thanks to Dave Potter and Peter Tuhy for organizing and leading the trip.

There will be a club meeting tonight in the North Room of the Center at 7:30 p.m. Plans for next week's canoe trip on the Delaware River will be discussed and suggestions taken for further outings. Refreshments will be served and anyone interested in the club is welcome to attend.

## Rifle & Pistol Club

A special meeting will be held on May 11, 1977 at 5:15 p.m. in the Recreation Building.

The guest speaker will be Investigator R.F. Algar, from the State Troopers Barracks in Hampton Bays. His topic will be "Pistol Permits and New Gun Laws."

Club members, non-members and guests are welcome to attend this meeting.

## Runner's Corner

### Rocky Point Race

Despite a fine showing by the BNL runners, the Rocky Point joggers took first place in the three-way cross-country meet on April 30. BNL came in second.

The course winner was Ted Landry (DAS) who finished in 16 min: 13 seconds, just 7 seconds slower than the course record. A total of 61 people participated with 19 from BNL, led by Ted Landry (1st), Gus Prince (7th), Bill Clark (9th), Jim Gruppy (13th) and John Beerman (14th). Peter ("Steady") Rathvon's 50th place finish provided the point which tied the high schoolers.

### Spring Marathon

The 1977 BNL spring races will be held on Sunday, May 15. The races will be 20 km, 10 km and 5 km, starting promptly at 10 a.m. Registration will begin at 9 a.m. at Berkner Hall. The entry fee is \$2 for runners over 17 and \$1 for runners under 17. The races are open to all BERA members and their guests. However, only BERA members are eligible to receive the first place overall winner trophies. Certificates will be awarded to all finishers.

### The Weeple

The Weeple 4.7-mile race in Belle Terre will be held on Sunday, May 22. The race starts at the Belle Terre Community Center on Cliff Rd. promptly at 10 a.m. Registration begins at 9 a.m. with a \$1 entry fee.

Additional information is available from Bill Thomlinson (Ext. 3978), Gus Prince (Ext. 2901), or John Beerman (Ext. 4076.)

## Missing

Black binder containing F.I.P.S. manuals borrowed from CSCF Library in Applied Math. Please contact librarian on Ext. 4144.

## 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.

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. 2874 or 2882.

**LABORATORY RECRUITMENT:** Opportunity for present Laboratory employees.

172. DIVISION SECRETARY - Responsible position requiring excellent secretarial background and knowledge of BNL policies and procedures. Department of Applied Science.

173. PATROL OFFICER - Shift work. Safety & Environmental Protection.

174. LABORATORY CUSTODIAN - Two positions. Plant Engineering Division.

175. ASSISTANT RIGGER - Temporary six to eight week position - four positions. Plant Engineering Division.

176. LABORER - Temporary six to eight week position - four positions. Plant Engineering Division.

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

177. BIOLOGY ASSOCIATE - MS or equivalent in biology with good background in photo-biology, DNA repair and E-coli. Biology Department.

178. COMPUTER SCIENCE ANALYST - MS or equivalent in computer science is performed with competence in data base management and mathematical model manipulation. Six month position. Department of Applied Science.

179. OFFICE SERVICES ASSISTANT - Two positions, two month's duration. Staff Services Division.

180. STATIONARY ENGINEER, SR. - Shift work. Plant Engineering Division.

181. ELECTRICIAN A - Plant Engineering Division.

### Autos & Auto Supplies

5 RIMS - White spoke, used 1 month. Ext. 4132, 924-4328.

72 SUZUKI - TS185 Enduro, knobbies, good cond. \$400. Mike, 473-2608.

68 JAVELIN - 2 dr, 6 cyl, good gas mi, excel mech cond. \$700. Chris, 928-0043.

2 TIRES - Firestone 15 x 15 on 14" rims, street compound, Ford bolt pattern. \$150. Lee, 286-0436.

73 PLYMOUTH - Satellite, ps/pb, 44,000 mi, excel cond, 318 eng. Pete, Ext. 3354, 588-5083.

73 MONTEGO - Ps/pb, 35,000 mi, excel cond. Pete, Ext. 3354, 588-5083.

74 MAVERICK - 24,000 mi, ps/pb/auto, new tires & battery. \$2000 firm. 363-2042.

2 CHEVY WHEELS - 14", 5; 12V gen, GM, \$7. Bob, Ext. 4636, 289-0357.

76 PONTIAC VENTURA - 6 cyl, auto, ps/ac, 2 dr, 23,000 mi, perfect cond. \$3550. 732-5829.

72 AMC AMBASSADOR - 4 dr sedan, V8, auto, ac/ps/pb, 74,000 mi, excel cond. \$1200. Poletti, Ext. 4581, 345-3103 eves.

1 GOODYEAR TIRE - H78-14, 4 ply polyester. \$25. Jim or Bill, Ext. 3355.

AUTO PARTS - 6 cyl eng, trans, others for Ford Falcon or Merc Comet, make offer. C. Goodzeit, 286-0271.

73 CHEVY BLAZER - 37,000 mi, ps/pb/ac, auto, am/fm stereo cassette, excel cond, extras: \$4095. Rich, 822-6847 after 6.

69 DODGE DART - Auto trans, good cond, 48,000 mi. \$1000. Ext. 3525/3817.

71 RENAULT - 4 dr, excel mech, new radial tires, r&h, high mpg, cheap transportation. \$200. 286-2320.

VW TIRES & RIMS - Like new, Dunlop 685 x 15, 560 x 15 installed & leak tested free. Fred Usack, 475-4935.

SELECT USED TIRES & RIMS - All sizes installed & leak tested free, flats repaired, boat trailer, bicycle, cars, all \$2. Fred Usack, 475-4935.

74 PONTIAC VENTURA - 6 cyl, excel cond. Ext. 4715, 941-4820.

72 KAWASAKI - 250cc Encuro, rebtl eng. Asking \$450. 588-6539.

73 VEGA HATCHBACK - Auto, green, 57,000 mi. good running cond, orig owner. \$700. Saxon, 929-4701.

69 FORD STA WAGON - 302 eng, ac/ps, new brakes & tires. \$700 or best offer. Steve, 929-4561 after 5.

74 VEGA HATCHBACK - Ac/am/fm, low mi. 399-3282 after 7.

## Autos & Auto Supplies

4 TIRES - Tru-trac, excel cond, 11-15LT, load B, mounted 10½" Blazer rims. \$125. Kathleen, 286-1886 after 6.

62 MERCEDES BENZ - 220B, ps/pb, 50,000 mi, new clutch, shocks, complete repair records, excel cond. \$1500 or best offer. 862-8751.

73 DODGE VAN - ¾ ton, excel cond. 265-8827.

71 YAMAHA 35 - Fine perf, just tuned. Ext. 3688.

66 DODGE DART - Running cond, V8, auto, new generator & battery. Best offer. Ext. 4502/4510.

74 ZUNDAPP ENDURO - 125 cc, good cond. Chris, 728-0869 after 5:30.

72 LTD - 4 dr, ac, power, very good cond. \$1075. Ext. 4395, 653-4195.

66 CHEVY WAGON - Ps/auto, will hold 4 x 8 sheet flat. Asking \$300. Ext. 4732, 286-3510.

69 CADILLAC - 4 dr, 84,000 mi, fully equipped, good cond. \$750. Bob, Ext. 4636, 289-0357.

69 FORD ECONOLINE CAMPER - 6 cyl, auto, fully equipped, self-cont, extras. Bill, Ext. 2292, 345-3035 eves.

70 PLYMOUTH DUSTER - 6 cyl. excel cond. \$1000. Ext. 2911.

68 SS CHEVELLE - 327,411 posi rear, M21 trans, straight shifter, fancy paint job. Emil, 928-3088.

TIRES - Goodyear polyglass belted G78-15, less than 20 mi. \$25 each, firm. Bill, 475-2409.

76 PONTIAC - Trans am, 4000 mi, 455 eng, 4 spd, loaded, like brand new. \$5800. 477-2269 after 5.

74 MAVERICK - 24,000 mi, immac, ps/pb, auto shift pack, new tires. \$2000. Ext. 4278.

15" CHEVY RIM - 5-hole, 8 track player, needs 1 IC chip. \$10. Frank, Ext. 3898.

75 SUZUKI - Excel cond. \$1250. Bob, Ext. 3313.

## Boats & Marine Supplies

17' THOMPSON - \$40. For information call Ext. 2935 or 473-8995.

36' EGG HARBOR - Sport fisherman, 1962, 2 FWC engs, mint cond. Steve, Ext. 3469, 281-4371.

OUTBOARD MOTOR - Chrysler 35 hp, 3 yrs old, barely used, w/storage stand. \$650. Ext. 2633, 286-1056 after 6.

14' MFG - W/wooden decks, good cond. \$350. 2633, 286-1056 after 6.

OUTBOARD MOTOR - 73 Johnson, 65 hp elec start w/controls, used 1½ seasons, mint cond. \$800. C. Goodzeit, 286-0271.

8' RUNABOUT - 115 hp Evinrude, trailer, extras. 18' RUNABOUT - 115 hp Evinrude, trailer, extras. \$1700. 281-9332 after 7.

MUSHROOM ANCHORS - 50 & 100 lb. Chester Davis, 473-1816 after 6.

17' BOAT - Clamming or fishing, trailer, brand new, extras. \$1200. 286-8582 after 5.

19' THOMPSON - Cuddy cabin, 60 twin 40 hp Evinrudes, extras, needs some work. \$600. 653-4647.

20' FIBERGLASS - Runabout, 165 hp interceptor, '76 valve job. 286-0237 after 6.

26' NORWALK - 110 hp crown Chrysler eng, reasonable cond in water, best offer. Said, Ext. 2902, 567-2185.

15' SHARPIE - 5' beam, good for clamming or fishing. \$100. 286-0761.

31' BALTZER - Family boat w/camper back, sleeps 4, twin 126 Chrysler eng. Asking \$3500. 331-1718.

70 MERC - 65 hp, est 250 hrs, good shape, trailered. \$500. Lew, Ext. 3502, 286-8166.

23' VENTURE CUTTER - 1975, merc ob, sleeps 5, galley, trailer, \$4850. George, Ext. 4592, 473-9139.

## Miscellaneous

DELUXE CAP - Fits 8', 3 yrs old. Best offer. Sven, Ext. 3888.

BLACK WALNUT LOGS - Some lg pieces, good for carving. Ext. 2633, 286-1056 after 6.

ROTOTILLER - Used twice, 3½ hp. \$100. Bob W., Ext. 3080.

MOWER - Craftsman 22" self-propelled, old, battered, troublesome, but we were using it until this spring. \$15. Ext. 4168, 286-3675.

ANTIQUe - Singer sewing machine, 100 yrs old, excel running cond w/parts. \$150 takes all. 928-0969.

SONY QUADRALIZER - Decodes all channel sources, converts stereo into quad w/addition of rear pwr amp. \$150. Brian, Ext. 4121.

TRAVEL TRAILER - 73 Terry, 19' single axle, rear bath, self-cont. \$2700. 744-0607.

GUINEA PIG - Black, free. Ext. 3768, 751-4104 after 6.

LUGGAGE - Samsonite, used only once. 929-4173 after 4.

SHETLAND PONY - Excel w/children, very timid. Marge, Ext. 3496, 924-6307.

CAP - Alum for 8' pickup truck, 36" high. Asking \$65. 475-8724.

DRUM SET - 4 piece, Ludwig, very good cond. \$300. Mike, 878-2486.

150 WATT PROJECTOR LAMP - DJA for GAF. \$7. John, Ext. 3675, 924-3528.

BEDRM SET - Danish modern, very good cond. \$350. 475-8330.

KITCHEN SET - Table & 4 chairs. \$75. 475-8330.

FOLDING BICYCLE - Italian, like new. \$50. 281-7844.

BRICKS - Unused red clay, 54 each. Ext. 4362.

COMPRESSOR & TANK - Hose regulator, spray gun, other fittings. \$75. Bob W, Ext. 3080.

CLARINET - Artley, good cond. \$90. Karen, Ext. 4019.

ELEC GRASS TRIMMER - Used 1 season. \$10. 924-3066.

BEDRM SET - Bed, dresser, night table, mattress & box spring. \$250. Ext. 3469.

DEN SET - 2 newly recovered love seats, rocker, hassock, \$500; also must sell tables & lamps. Steve, Ext. 3469.

BANJO - Gibson mastertone RB250, 1 yr old w/case & access, excel cond, 5-string. \$500. 286-0154.

FURN - Living rm, bedrm, dining rm, custom made, must sell. Steve, Ext. 3469, 281-4371.

19" B&W TV - Admiral portable, \$80; Xmas tree, \$15; 2 lawn chairs, \$8 each; clock, \$5; steam iron, \$5. Marion, 345-3187.

TENT TRAILER - Sears, approx 10 yrs old, fair cond, sleeps 6, extras, very reasonable. 878-2827.

CANNA - Tall variety, red flowers, maroon leaves, 3 lbs or roots, \$5. Nancy, Ext. 2497.

TANDEM BICYCLE - Columbia, 2-some, white, like new. \$75. 588-4733.

TENT TRAILER - 70 Krown hdtp, stove, heater, toilet, fully equipped. \$1200. 363-6940.

GIBSON GUITAR - 56 Les Paul, Jr. all orig w/carry case, good cond. Asking \$350. Ed, 727-3608.

ADDING MACHINES - Surplus elec, various mfgs. \$25. Bob, Ext. 4636, 289-0357.

21" RCA COLOR TV - Good cond. \$85. Bob, Ext. 4636, 289-0357.

GOLF CLUBS - Wilson staff X-31, irons 3-9, pw, \$50. Pro-line line woods, \$15 each. B. Vogt, Ext. 4241.

CANARIES - 298-8956 after 12.

CAMERA - Mamiya, mini dash press, 6 x 9, 2¼ x 3¼ negs, like new. \$200. Mac, 744-0269.

71 TRADEWINDS - Hdtp, sleeps 8, good shape. \$1000 firm. 588-5688.

BICYCLE - \$12. Poletti, Ext. 4581, 345-3103 eves.

2 WATER PUMPS - ½ hp, Everite & Gould, \$10 each. Ext. 3075, 924-3581.

LINEN KITCHEN TOWELS - LI map design. \$2. C. Goodzeit, 286-0271.

REGULATOR - Poseidon w/pressure gauge, like new. \$125. Ext. 3699, 744-1081.

GE RANGE - Coppertone elec, very good cond, \$100; exhaust hood, \$20. 331-1203 after 5:30.

TYPEWRITER - Remington manual, 15" carriage, excel cond. \$30. Kris, Ext. 4058.

SWIM POOL - 21', 4' deep, all access, excel cond, 1 yr old, moving, must sell. \$700. 661-0402 after 5.

STRAWBERRY PLANTS - 20 for \$1. 924-3066.

8 TRACK TAPES - Ronstadt, Stevens, Streisand. 3 for \$5 or \$2 each. Rich, Ext. 4172.

SPIKES - Adidas RBI baseball, size 8½, good cond. \$10. Mark, 289-0399.

LAWN MOWER - Sears 20" rotary lawn, 9 cu in, practically new. \$50. Ext. 2470. 928-6930.

TRAVEL TRAILER - 70 holiday rambler, 31', many extras, excel cond. \$6500. 472-0086 after 4.

ACOUSTIC GUITAR - Ovation custom ballardeer w/case, excel cond. \$200. 281-7777.

71 WINNEBAGO - Ac, 41,000 mi, sleeps 6. \$7500. 796-1317.

GE UPRIGHT FREEZER - 17 cu ft, no frost, 2 yrs old, excel cond. \$200. 363-2940.

HO TRAIN SET - \$15; H-over vacuum cleaner, \$5-crib & mattress, \$12; baby rocking chair, \$15; rugs, gold tone, 6 x 12, \$10. Ext. 3566, 744-6767.

TRICYCLE - AMF jr, brand new, never used. \$15 or best offer. S. Spark, Ext. 4111.

SPACE HEATER - 50,000 btu kerosene. \$55. Bob W, Ext. 3080.

MOTHER'S DAY GIFTS - Asst pillows, dried flower arrangements. Sharon, Ext. 3312.

COCKTAIL TABLE - W/2 matching end tables. \$145. 286-8517 after 5:30.

MOTHER'S DAY - Coin crafted jewelry. 924-3236.

GARAGE DOOR - 6'4" x 8' wide. 289-2146.

TAPE RECORDER - Concertone stereo & playback, 6 heads, sound on sound. \$200. Ext. 4701, 271-2877.

POWER AMP - Marantz, 125 watts per channel, mint cond. \$215. Ext. 4701, 271-2877.

UPRIGHT FREEZER - Less than 2 yrs old, excel cond. Asking \$125. Ext. 2529.

YARD SALE - Giant, Sat, May 7, 10-4, Bellport Methodist Church, S Country Rd, Bellport.

PORTABLE STEREO - GE, sharp cond. Asking \$55, must sell. Ext. 4461, 345-2512 eves.

BRICKS - Unused, red clay, 54 ea. Ext. 4362.

SOFA & CHAIR - Colonial, \$60. Joe Ash, Ext. 2983.

UPRIGHT PIANO - Old, plays well, good for beginners, \$350. Tony, Ext. 3658.

UMBRELLA COVER - Patio, 281-5827.

68 COX CAMPER - New canvas fully equipped, excel cond. George, 281-5498.

FLOWERS - Limited supply of flowering orchids for Mother's Day starting at \$20. Ext. 2008.

75 TRAILER - 19' Prowler, hot & cold water, shower, fully contained, sleeps 6, awning. 281-8267.

ALCOHOL STOVE - Homestrand, 2 burner, like new. \$35. Ext. 4767, 363-6985.

TAPE RECORDER - Reel to reel, Panasonic, solid state, auto reverse, more, like new. \$125. Richie, Ext. 4254, 734-7342.

VENTILATOR - Sears, The Energy Saver, turbine, 12", complete. \$22. Ext. 2898.

PIANO - Stodard, upright, good practice piano. \$200. 286-3906.

TOASTER - Toastmaster, 4-slice, very good cond. \$7. Ann, Ext. 3143.

19½' BON VOYAGE - Hi-lo trailer, raises hydraulically, surge brakes, sleeps 6, completely equipped, extras. \$1800. 472-1714.

HUMIDIFIER - Magnus chord organ; Sears steel belted tire, F78-14; light oak dining set, 8-piece, baby items, car seat, swing, changing table, hobby horse, carriage. 472-1714.

FURN - Corner sectional, 8', \$150; bench couch w/2 blt in tables, \$100, driftwood lamp & coffee table, \$75 each; ency Britannica jr, \$150. Ext. 3121, 744-5261.

UPRIGHT FREEZER - 19 cu ft United. \$200. Winter, Ext. 3354, 924-4208.

TRUCK CAMPER - Swiss Colony, sleeps 6, self-contained, excel cond, 11'. Ext. 4058, 286-0436.

SEWING MACHINE - Morse, zig-zag, button holer, decorator cams, cabinet w/drawers, excel cond. \$125. 589-6151 eves.

ORGAN - Wurlitzer spinet, fruitwood, double keyboard, like new. Sacrifice \$800. 589-6151.

3 MATE'S CHAIRS - Heavy, \$5 each; 2 bureaus, \$10 each; vanity chair, iron & padded, \$6; old floor lamps, \$5 each. 727-1617.

CLEANING OUT - Old lamps, large mail box, \$5, 1 section wrought iron railing, heavy, \$4. 727-1617.

MEN'S WHITE LOAFERS - Brand new, size 10EEE. \$22. Ext. 2456, 473-0178.

DISHWASHER - Kenmore portable, old but in good running cond. \$40. 727-5134.

TENT TRAILER - 1970 Krown hdtp, stove, heater, toilet, 12V/110V, curtains, fully equipped. \$1200. 363-6940.

ARCHERY SET - Draw weight 25 lbs, incl some arrows, carry case & target, \$12. Carolyn, Ext. 2446, 929-6172.

ACCORDION - Excelsior, 120 bass, 3 changes, excel cond. \$250. Carolyn, Ext. 2446, 929-6172.

WOMEN'S GOLF SHOES - White, new cond, 7½ N. Marie, Ext. 2456.

FLAGSTONE - Blue slate, 50 pieces. \$10 for all. 286-0246.

EVERGREEN SHRUBS - Misc, \$1-\$5. 286-0246.

EXERCISE BICYCLE - \$10. Peter, Ext.3297.

ROOF SHINGLES - 3 sq Bird Architectural Mark II, black. 286-1253 eves.

POWER MOWER - 3 hp, 20", gas, good running cond. \$20. 475-6938.

CB RADIO - Brand new w/antenna. Ext. 4142.

MOVIE PROJECTOR - GAF Dual 8, excel cond. \$30. John, Ext. 3675, 924-3528.

WASHERS - Portable Kenmore top load washer & Whirlpool washer, excel cond. 736-2230.

COAT - Size 14, green check, \$8; brown jeans, \$5; light fixture, \$3; plant holders, \$2/\$3. Ext. 3609.

POPPER - Popcorn, \$6; 2 men's suits, w/pants, \$10; candle craft kit, \$5. Ext. 3609.

CANVASES - 6x8, 7x9, mostly 3/pk, some 6/pk. Ext. 3609.

GLASSES - 8, \$4; movie screen, \$20. Ext. 3609.

TELETYPE TERMINAL - Mega data video, mac-net model, keyboard writes & stores up to 2500 char, on monitor, transmits 100 wpm, Sylvania 12" monitor, auto cr/lf, Baudot output. \$250. 929-6646.

TERMINAL UNIT - Info-tech model 90 Rtty, tunable mark/space channels, like new. \$180; model 28, typing re-perf, 60-75-100 wpm standalone, \$60. 929-6646.

CASSETTE RECORDER - Sankyo MTC-10 micro w/5 cassettes, excel. \$50. 929-6646.

TV SERVICE BOOKS - Tab series, almost complete set, never used 21" round color picture tube w/warranty card, channel master 21FJP22, \$25. 929-6646.

LAYING HENS - 9 month old white rocks. Ken, 289-8212 eves.

CARPET - 6 x 9, gold, \$8; jewelry for mother's day. Ext. 3566, 744-6767.

CHILD'S PHONOGRAPH - GE, perfect cond, \$8; brand new cyclone spreader, \$15. Sal, Ext. 2460.

69 FORD CAMPER - Special \$250 w/11½' camper, crawl thru boot, 4 cu ft refrig, mono head, demand water, heater, stove w/oven. 286-1097.

TV GAME - Like new Atari, ping pong game. Asking \$35. Mac, 744-0296.

REFRIG - 3 yrs old, like new. \$100. 473-1456.

DRESSER - Girl's white w/mirror, \$15. 363-9527.

BICYCLE - Columbia 20", 3 spd w/hand brakes, banana seat, hi riser handle bar, excel cond. \$25. 363-9527.

Ads left out of this issue because of lack of space need not be re-submitted in order to run in next week's issue.

## 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

PATCHOGUE - Roe Blvd area, 3 bedrm, garage, fp, w/w carpet, full bsmt. \$43,000. 331-1718.

HANDYMAN SPECIAL - Port Jeff village, sm hse, 2 bedrm, front porch, very nice property. \$18,000. 473-0207.

CLEARWATER BEACH - Bldg lot, 100x150. Asking \$13,500. Ext. 3469, 281-4371.

N SHIRLEY - 10 mi hi ranch, ½ acre, landscaped, 878-9022 after 5.

STONY BROOK - Cambridge colonial, all appl, must see. \$52,000, or best offer. 751-5479.

MEDFORD PINES - Mother/daughter, 2 entrances, 4 bedrm, 2 baths, David, 924-7516.

BELLPORT VILLAGE - 6 rm hse, walk village, stores, ferry to beach. \$39,999. 286-8945, 286-1097.

MASTIC BEACH - Low taxes, full bsme, new kitchen, corner lot, 2 bedrm. \$29,500. 281-7763.

1 ACRE BLDG LOT - 100x400, 5 min to Lab. 924-3236.

COOPERSTOWN VICINITY - Seven 30 acre parcels, util, rd frontage. Ext. 3688, 363-7032.

WADING RIVER - 3-4 bedrm cape, ¾ acre, treed, landscaped, fp, w/w carpet, full bsmt w/patio doors. \$54,000. 929-8313 after 5:30.

STONY BROOK - Eton house, 4 bedrm colonial, patio, 2½ baths, ½ acre w/trees. \$58,000. Ext. 3864.

N SHIRLEY - 2 bedrm ranch, lg kitchen, fp, s&s, ½ treed, fenced acre, June, Ext. 2970, 399-0836 after 5.

ROCKY POINT - 4 bedrm colonial, 2½ baths, fp, finished bsmt, ac, wooded setting. \$46,500. Ext. 4362, 744-7667.

BELLPORT - 3 bedrm ranch, 2 yrs old, ½ landscaped acre, \$32,500. 286-1440 eves.

MORICHES - Crystal beach, 4 bedrm ranch, patio, garage, pool, s&s, \$35,000. 878-0684.

DELAWARE CO NY - 2 acres w/73 mobile home, furn, all appl, \$14,000. 289-0265 after 5:30.

HAUPPAUGE - 3 bedrm ranch, finished bsmt, garage, s&s, quiet, just painted. \$39,990. Schwarz, Ext. 2291, 979-8238.

## For Rent

APT - 1 bedrm, fp, tennis, golf, pool incl. 1-2 yr lease. 878-4794, 286-3333.

STRATHMORE EAST - Furn house, June 1 - July 15, 3 bedrm, \$350/mo incl util. Ext. 3791, 928-5124 after 6.

VERMONT VACATION - Varied recreation & attractions, views, fully equipped. 732-6499 after 6.

VERMONT VACATION HOME - Weekend, week, month. Paul, 588-6539.

VT CHALET - Week, month, season rates. 757-5599 after 4.

BROOKHAVEN HAMLET - 2 bedrm house, lg kit, den. \$275/month plus util. Ext. 4088, 286-0204.

APT FOR RENT - East Patchogue, 2 bedrms, eat-in-kitchen, living rm, bath, private entrance. 1st floor. Palais, Ext. 2907, 698-0576.

## Wanted

HOME - For female whippet, 1 yr old champion sire & dam, all shots. 732-4802.

PIANO - Middle Is Presbyterian Church, free or reasonable.