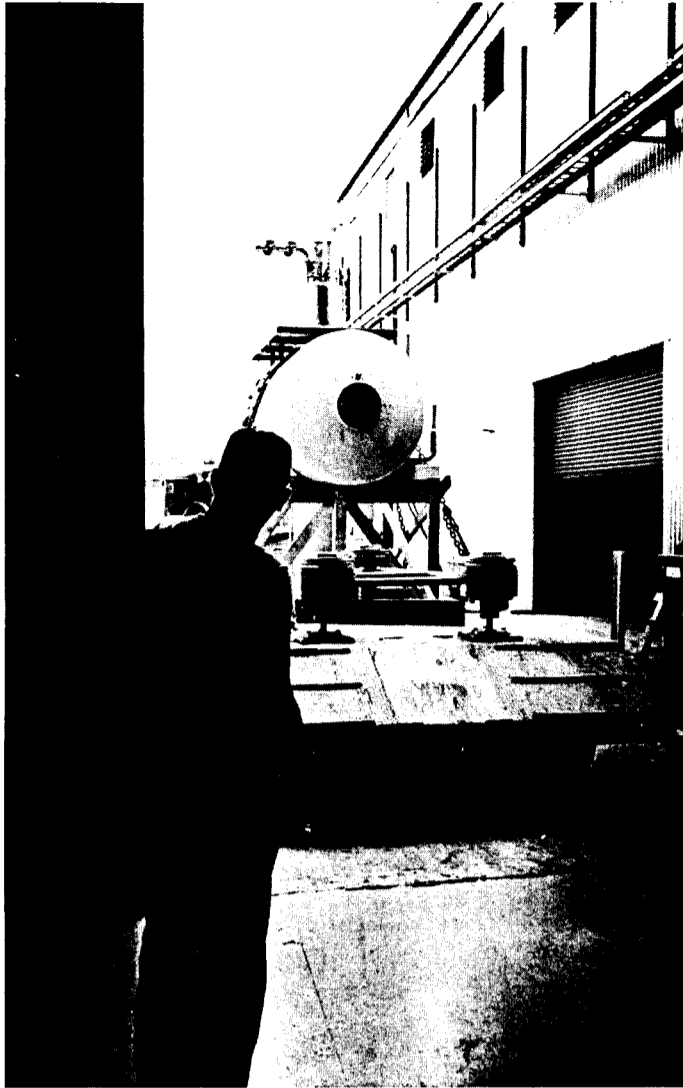


Ken Robins (left) and Bob Kehl, members of the superconducting dipole magnet team, check final details before the magnet leaves the Cosmotron.



At right, the magnet is driven into the AGS where it will be one of a pair used initially in a beam known as A-3.

First Magnet Off The Line

The first of four planned superconducting dipole magnets was rolled out of the Cosmotron building last week and into the AGS where it will be used in the High Energy Unseparated Beam. The second magnet is expected to be completed in July and all four will be in place by November.

The magnets are being constructed by the ISABELLE Division for use by a sister division in the Accelerator Department - the Experimental Planning and Support Division. Among the largest superconducting dipoles ever built, they are structurally similar to ISABELLE magnets, but dimen-

sionally different. The warm aperture is 20 cm and the magnets are 2.5 meters long; compared to the 8 cm of ISA magnets.

The experience in making and using these magnets is useful to the ISABELLE Division in the design of this proposed accelerator. Further, there is the possibility that similar magnets would be used in the intersection regions where both beams would go through the same magnet.

Superconducting magnets can result in spectacular savings in power costs over conventional magnets, since the only power required for their operation goes into the re-

frigeration system used to provide the very low temperature environment.

The magnets operate at a very high current density, 25,000 Amps/cm² for such large magnets and produce a field of 4 Tesla, considerably higher than that possible with conventional magnets. Another unique factor is that these particular magnets can absorb their stored energy internally when making transitions to the normal state, without requiring an energy extraction system.

At the AGS, two of the magnets will be mounted on a rotating pad which will allow them to be used in more than one beam with considerable ease.

Twenty-Two Years After Fallout

Medical findings over the past twenty-two years in the people of the Marshall Islands accidentally exposed to radioactive fallout, will be the subject of the 137th Brookhaven Lecture to be presented by Dr. Robert A. Conard, Medical Department, Wednesday, June 16, at 8 p.m. in Berkner Hall.

On March 1, 1954, when a thermonuclear device being tested at Bikini, detonated on about 17 megatons - a considerably larger yield than expected - an unpredicted shift in winds caused fallout to be deposited on the inhabited islands to the east, irradiating 243 Marshall Islanders, 28 American servicemen and 23 Japanese fishermen aboard their fishing vessel, the *Lucky Dragon*.

Since his arrival at Brookhaven in 1956, Dr. Conard has been in charge of the annual medical surveys in the Marshall Islands, sponsored by Brookhaven and ERDA, and carried out in conjunction with Trust Territory medical personnel. His association with the area goes back even further, to 1944, when he was there on a navy ship and, later, when he participated in Operation Crossroads at Bikini.

The 86 people of Rongelap atoll, about 100 miles east of Bikini, received the greatest fallout exposure. They suffered acute effects from whole body gamma radiation which caused transient depression of blood elements, skin burns from deposit of fallout of skin and significant internal absorption of radionuclides from ingestion of contaminated food and water. The American servicemen on Rongerik received less exposure



Robert A. Conard

and the 157 people on Utrik atoll received the least.

According to Dr. Conard, late effects from the ingestion of radionuclides at the time of the fallout were the most unexpected findings. Even though it was thought at the time that the thyroid dose was too low to result in thyroid effects, it was found that radioiodines in the fallout caused a higher dose to the thyroid gland than received by the rest of the body. About nine years after exposure, thyroid tumors in about one-third of the Rongelap popula-

tion, along with associated retarded growth and development in some of the children, were observed. In the Rongelap people, 89% of the children exposed at less than 10 years of age developed thyroid abnormalities. The considerably greater number of tumors in the children is believed to be related to the smaller sizes of their thyroid glands, resulting in correspondingly greater doses. In the past few years, it appears that thyroid tumors are also increasing in the low-dose Utrik group, and recently, one child exposed in utero developed nodules of the thyroid.

Thyroid surgery has been performed in the United States on a total of 36 Marshallese, three of whom were not exposed to the fallout. Cancer of the gland was found in three exposed Rongelap and in three exposed Utrik people. Most of these patients had extensive examinations at the Medical Research Center at Brookhaven prior to surgery elsewhere.

In 1972 an unexposed Marshallese died of acute leukemia, possibly related to radiation exposure. Other effects of radiation have been less clear cut. According to Dr. Conard, cancer, other than thyroid, appears to be most frequent in the exposed Rongelap population, but the numbers are too small to permit any firm conclusions. A possible increase in the number of miscarriages during the first five years was noted in the Rongelap women. No genetic effects have been noted in children of exposed parents, and though numerous studies have been made for possible aging effects, none have been measured that could be related to radiation exposure.

Dr. Conard will also discuss the examinations and treatment of diseases not neces-

'76 Salary Increases

Dr. George Vineyard, Laboratory Director, has announced that the effective date for annual merit increases for all nonbargaining-unit employees will be made consistent with the beginning of the new fiscal year. Accordingly, merit increases for the 12 month period covered by the FY 1977 Personnel Review will be effective October 1, 1976 for all monthly salaried employees and October 4, 1976 for all non-bargaining unit weekly wage employees.

In addition, Dr. Vineyard announced that a general increase of 3 percent will be granted all nonbargaining-unit weekly wage employees effective July 5, 1976, and monthly salaried employees in salary levels N-I and E-I effective July 1, 1976. This adjustment is to compensate for the change in the effective date of annual merit increases from July and August to October for these employees.

Notice

The Richard Dyer-Bennet concert last Sunday was cancelled due to the illness of the artist. Disappointed concert-goers will be happy to know that the committee will make every effort to reschedule another performance.

June 30 and July 1 Bloodmobile Days

By now every employee will have received a pledge card and a letter from Laboratory Director George Vineyard explaining this year's blood program. The Bloodmobile of the Greater New York Blood Program visits the Laboratory on Thursday and Friday, June 30 and July 1.

If a sufficient number of Laboratory employees and their families donate blood, every employee and his or her family will be eligible to receive an unlimited amount of blood, in case of need, within one full year. You, your spouse, dependent children, parents, parent-in-law, brothers, sisters, nieces, nephews, grandparents, and grandparents-in-law are covered.

Return your completed pledge card to G.C. Kinne, Bldg. 460, no later than Wednesday, June 16.

Saturday Tours

The first summer tour got underway last Saturday when over 300 people visited the Laboratory. According to all reports, they were very pleased with the program offered. Remember the tours as a point of interest for your friends and relatives when they visit you this summer. The tours are scheduled each Saturday, from 10 a.m. to 4 p.m., as follows:

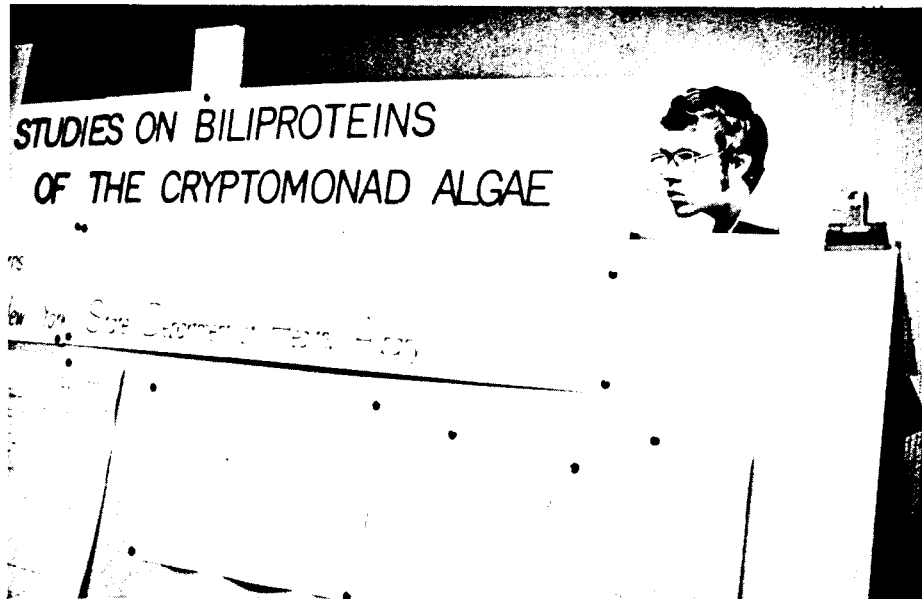
June	12, 19, 26
July	10, 17, 24, 31
August	7, 14, 21, 28

sarily related to radiation effects such as diabetes which is prevalent in the Marshalls, and the personnel and environmental monitoring conducted by the survey teams. He will relate some of the problems that have arisen in connection with the surveys, such as interference by local Marshallese politicians, problems regarding the return of the Bikini people to their homes and transportation problems. The recent acquisition by ERDA of a survey ship, an LCU which can be beached, has made it easier to conduct the surveys.

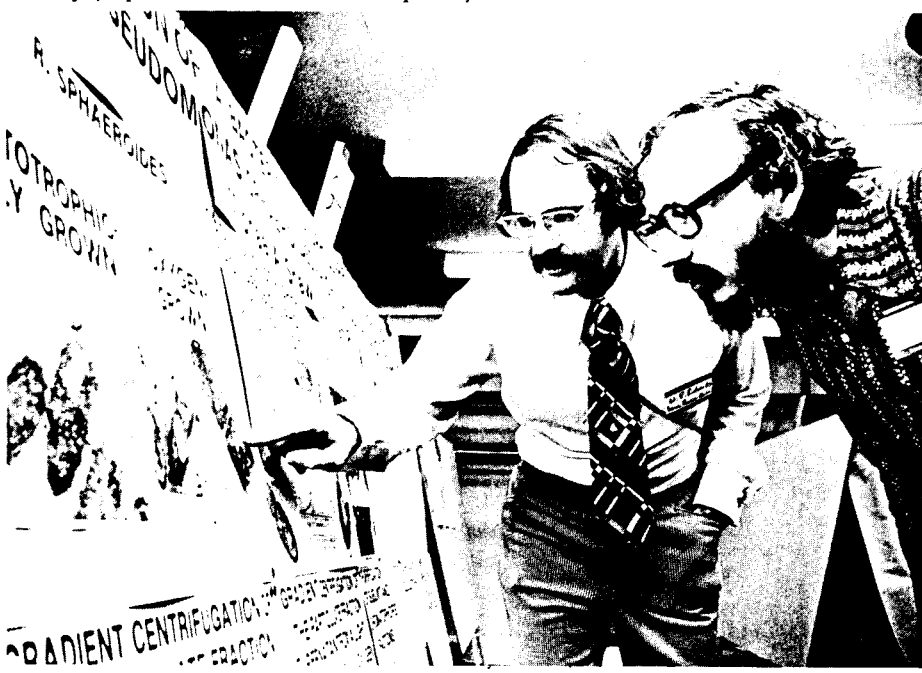
Dr. Conard received his M.D. degree from the College of South Carolina in 1941. He spent 14 years in the United States Navy as a medical officer specializing in the field of nuclear medicine. He holds the rank of Rear Admiral in the Naval Reserve.

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.

28th Biology Symposium



Joseph Warden, Rensselaer Polytechnic Institute, (above) checks out some of the 40 poster presentations on view during the evening session last Tuesday at the Biology Symposium, as do W.R. Richards, Simon Fraser University (left) and R. Cellarius, Evergreen State College, (below). About 150 biologists and biophysicists from all over the world attended the three-day meeting on chlorophyll-proteins, reaction centers and photosynthetic membranes.



Official & Special Events

- Monday, June 14
Summer Student Program Begins
Executive Seminar Tour
- Wednesday, June 16
BNL Lecture - Berkner Hall - 8 p.m.
- Thursday, June 17
Long Island Bone Metabolism Meeting
Concert

- Sunday, June 20
Father's Day
- Monday, June 21
MAP3S Planning Meeting (21-23)
- Wednesday, June 23
Navy Meeting
- Thursday, June 24
Biology Visiting Committee (24-25)

Purchasing Manager Sought

It was announced recently that Bruce W. Quinn, Purchasing Manager, was on extended sick leave. In view of the state of his health he has notified the Laboratory that he will not be returning. He has served ably as Purchasing Manager since March 1964 and his services will be missed.

The Purchasing Division, during his tenure, faced many challenges relating to the Laboratory's growth and later retrenchment. Mr. Quinn coped with these challenges very effectively and he leaves a smoothly running organization.

To replace Mr. Quinn as Manager, Vincent R. O'Leary, Associate Director for Administration, has asked that all interested parties make application to him in writing no later than June 18, 1976.

Benefit Concert

The Boehm Quintette will perform a wind chamber music concert at Bellport Middle School, Monday, June 21 at 8 p.m. Proceeds will benefit the Bellport Day Care Center, Inc. and the Bellport Area Community Action Committee.

The Boehm Quintette, formed in 1968, has performed at Carnegie Recital Hall, the Alice Tully Hall at Lincoln Center and the Library of Congress.

Tickets, available from S. Lacks, Ext. 3369, C. Stewart, Ext. 4154, or Sou'wester Bookshop in Bellport, are \$3.00 in advance, \$3.50 at door. Information 286-9616.

New In Personnel

John Burdick joined the Laboratory on June 1, as a Senior Personnel Representative in the Personnel Division. He received a baccalaureate degree in economics and business administration from Alfred Uni-



versity in 1967. After graduation Burdick entered military service, where he became involved with compensation and benefits administration for military personnel. Since that time, he has been engaged in general administration and in the recruitment of technical and scientific personnel for a New York City firm.

Burdick is a native of western New York State, and after spending virtually all of his professional career in an urban environment, is "overjoyed" to be back in the country again. His interests include tennis, sailing and restoration of sports cars.

Arrivals & Departures

Arrivals	
Michael F. Bonner	Applied Science
Chia-Hsiang Lai	Applied Science
William M. Morse	Physics
Andrew S. Noetzel	Applied Math.
Departures	
Dorothy D. Scott	Medical
Audrey Z. Vary	Medical

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In Memoriam

The untimely passing of Allan Auskern at age 46 on June 4 was indeed a shock to all who knew him at BNL. Allan was a thoughtful, meticulous scientist in the true sense of the word. He came to Brookhaven about a dozen and a quarter years ago after obtaining a master's degree in ceramics from Penn State University and after performing development work on uranium oxide nuclear fuel elements at Bettis-Westinghouse in Pittsburgh. At Brookhaven he worked on refractory carbide and nitride reactor elements in the Metallurgy Division of NED contributing much basic information in this field. Later he switched to the Radiation Division of DAS where he conducted fundamental studies on the development of concrete polymer materials.

His work and publications are widely recognized and quoted in the concrete materials field. An interesting application of his work resulted in a patent concerned with producing artificial bones for body implantation. Recently he collaborated with the Materials Sciences Division of Stony Brook University. Allan boldly and steadfastly held to the principles he believed to be fundamental to the true understanding of the matter he was dealing with. He shall be remembered by the scientific community at large and by his associates at BNL.

We all convey our deepest condolences to his family, his wife Sylvia, and his children, Joanne and Barry.

—Members of the Process Technology Division and Department of Applied Science

Letters To The Editor

To the Editor:
Allan Auskern's death has taken from the Laboratory community not only a gifted and accomplished scientist but an outstanding sportsman as well. Many of us shared his enthusiasm for tennis but few were his equals at the game. Often a winner in our Laboratory tournaments and always close to the top, Allan was admired equally for his great competitive spirit, his scrupulous regard for fair play and his perfect courtesy. His work for many years on the Tennis Committee had contributed much to the smooth operation of this popular recreational facility.

On behalf of his many friends at Brookhaven, we would like to extend to his family our sympathy for their loss which is also in no small measure our own.

—His Tennis-Playing Friends

To the Editor:
I would like to advise my friends and co-workers that my proposed solo sailing trip to Ireland was terminated in the vicinity of the Nantucket Shoals Light Tower - approximately 150 miles southwest of Montauk Point.

The boat developed a leak between the engine compartment and the main cabin. The engine compartment is open to the sea and has water in it on all points of sailing except downwind. The leak introduced approximately four quarts of water an hour into the boat. This doesn't seem like a great amount, but I did not want to start the crossing with this additional handicap.

I'd like to thank everyone concerned for their help and good wishes. I'll try again next year. My log and a tape is available to anyone interested.

—Frank Pechar

To the Editor:
I have been asked to report a change of address to the BNL Alumni Association and what better way than through the *Bulletin*. J. Georges Peter has moved from Beverly, Mass. to 12 Arlington Street, Gloucester, Mass. 01930.

Georges says he is in fairly good shape except for a slight cardiac disorder which put him in the hospital for a short stay. Things are better now and he would appreciate hearing from other alumni and undergrads.

—S.N. Earle

To the Editor:
Thank you sincerely for your thoughtful kindness at a time when it was deeply appreciated.

—George Eleazer family



The annual luncheon in honor of the BNL Tour Guides was held in Berkner Hall on May 21. The services of the Tour Guides in escorting visiting groups around the Laboratory is an important contribution to Brookhaven's public relations. Many of the Guides will also be assisting with the Saturday Tours.

—photo by Rosen

Faces, Places



Trudi Neuhoff is an Administrative Assistant to Bernard Manowitz, Associate Chairman for Environmental Programs. About this group Trudi says, "I work in a great atmosphere with progressive, innovative people." She started as a secretary in Photography in 1955 and moved to DAS eight years later. She haunts auctions and also refinishes furniture for her homes in South Haven and in New Hampshire. She maintains a vegetable and flower garden and fends off the woodchucks in New Hampshire and the rabbits in South Haven. Trudi paints in oil and acrylic and creates jewelry.

Dégustation de Fromages

Or, in other words - a cheese tasting - will be sponsored by the BNL French Group next Friday, June 18, at 8 p.m. in the Recreation Hall. Mme. Gaby Jacobus-Baudier will be our official guide through the mysteries of *double-crème*, *triple-crème*, and other masterpieces of the French cheesemaker's art. Among other helpful information, she will discuss the seasonal variations that affect certain cheeses, and the best procedures for ripening and storing cheese after purchase. Bread and wine will accompany the cheese tasting; coffee and pastries will be served later in the evening.

As imported Brie is now almost worth its weight in gold, non-members of *Le Cercle Français du BNL* will be asked for a contribution of \$3. To ensure that supplies of cheese and wine are adequate, please notify either Ralph Weston (345-4373) or Paulette Goodman (744-8449) before June 14, if you plan to attend this event.

Inside Info

Joseph Ash, Safety & Environmental Protection Division, and David Stampf, Applied Mathematics Department, were awarded M.S. degrees in Applied Mathematics from the State University of New York at Stony Brook at the May Commencement. Most of their graduate work was done through SUNY's extension program in applied mathematics at Brookhaven. SUNY has been conducting two graduate courses each semester at the Laboratory since September 1973.

In Appreciation



Awards were given recently by colleges represented in the Brookhaven Semester Program to three Brookhaven staff members for their dedicated service in instructing and advising the students who have participated in the program. Glenn Price (left), Co-Director of the Program, presented the awards to Kurt Fuchel, Applied Mathematics; Edwin Popenoc, Medical; and Sanford Lacks, Biology.

Summer Concert

The Aeolian Chamber Players will present a program of trios for various combinations of instruments in the second concert of the summer series in Berkner Hall on Thursday, June 17, at 8:30 p.m.

Hailed as "the remarkable Aeolians" by *The New York Times* and "poetic virtuosos" by *The New Yorker*, the group was founded in 1961 by its director, Lewis Kaplan, who was convinced that a permanent ensemble should be formed to perform the rich but rarely heard chamber music repertoire for the mixed timbres of strings and winds. The excellence of the group has attracted such composers as Berio, Crumb, Rochberg, and Subotnick who have written works especially for them. The group has toured extensively both in this country and in Europe and can be heard on Columbia and CRI records.

The Oakland Tribune in reviewing a concert wrote, "The Aeolian Chamber Players, five young men who specialize in music for mixed ensembles, gave spectacular performances at Hertz Hall," (University of California, Berkeley). *The New York Times* reported, "The program was played in the most sympathetic and expert manner imaginable by the Aeolian Chamber Players."

Members of the Aeolian Chamber Players are Lewis Kaplan, violin; Barbara Haffner, cello; Erich Graf, flute; Thomas Hill, clarinet and Jacob Maxin, piano. Thursday night's program includes the Madrigal Sonata for flute, violin, and piano by Bohuslav Martinu, the Trio in A Minor, Opus 114, for clarinet, cello, and piano by Johannes Brahms, and Beethoven's Trio in E Flat, Opus 70, No. 2, for violin, cello, and piano.

Tickets are \$4 for adults, \$2 for students and senior citizens.

Cafeteria Menu

Week Ending June 18, 1976

Monday, June 14	
Tomato Vegetable Soup	
Keilbasy & Sauerkraut	1.10
Grilled Ham Steak & 1 veg.	1.25
Tuesday, June 15	
Cream of Potato Soup	
Southern Fried Chicken & 1 veg.	1.10
Macaroni & Cheese & 1 veg.	1.00
Wednesday, June 16	
Beef Barley Soup	
Tuna Noodle Casserole	1.10

Special

Cup of Soup	
Tacos & Refried Beans	
Pie or Ice Cream	
Small Beverage	\$1.68 plus tax

Thursday, June 17	
Chicken Noodle Soup	
Chili Dogs & Rice	1.00
Salisbury Steak & 1 veg.	1.05
Friday, June 18	
New England Clam Chowder	
Broiled Filet & 1 veg.	1.15
Roast Sirloin of Beef & 1 veg.	1.30

Selected Reading

- Nature 261, May 27, 1976**
U.S. takes up the issues: The nuclear exporters meet again soon. C. Norman. 266-8
- Sci. Amer. 234, June 1976**
The choice of voting systems. R.G. Niemi and W.H. Riker. 21-7

Scholarship Winner



This year an additional AUI Trustee scholarship has been awarded to Vernetta Eleazer, daughter of George Eleazer, Safety and Environmental Protection Division. She lives in Bellport and is a graduate of Bellport High School. She plans to attend Morgan State College.

Bicentennial Race Results

Overcast skies and a few drops of rain did not dampen the enthusiasm of either racers or spectators Sunday morning, June 6. A total of 22 entrants appeared. The wind was light, and the result was a fast pace. A group of about 10 quickly split off from the rest and held together for most of the course, breaking apart only in the home stretch. The result was a new course record of 46:02 for the slightly longer 17.76 mile course; this is an average speed of 23.2 mph.

One minor tragedy occurred: Damian Emery, a junior, kept up with the leading pack for about half the race, but had a flat and was unable to finish. David Smith was also in the leading pack when his chain jammed. He accomplished the astonishing feat of stopping for repairs and then catching up to the leading pack to tie for third place. Exceptional gallantry was displayed by John Cherniavsky who was leading his wife Ellen by a bike length coming up to the finish line, then braked to let her cross first. Rumor has it that he was threatened with going without dinner if he beat her.

Thanks are due the Lab police, who tended the north gate, routed traffic around the race course, and supervised parking. The BNL Radio Club deserves thanks for their help with communications and race course sign emplacement. Special thanks are due Hermann Geist for supervising registration and timing.

The race times are as follows:

Senior Men		
1	Phil Watson	46:02
2	Jean Bussiere	46:10
3	Fred Usack	46:16
	David Smith	46:16
5	Ray Brown	46:23
6	Richard Kieburz	46:24
7	John Jensen	47:55
8	Robert Harold	50:48
9	Leslie Lasker	50:50
10	Bill Piel	54:49
11	John Cherniavsky	61:04

Veteran Men (Over 40)

1	Gerry Morgan	46:17
2	Alan Carroll	51:51

Junior Men (Under 16)

1	Fred Blume	46:08
2	Laurence Emery	59:05
3	James Watson	61:05
4	John Smith	71:49
5	Damian Emery	78:08
	Warren Smith	78:08

Senior Women

1	Ellen Cherniavsky	61:03
2	Patricia Scott	73:08
	Rebecca Hayes	73:08

Tennis News

BNL won its second round match in the Long Island Industrial League defeating Powers Chemical by the score of 55-16. Three doubles teams compete in each round, each team playing 3 sets with one point awarded for each game won.

Results of the individual matches were as follows:

Rosenberg, Koetzle	won 6-0, 6-4, 6-2
Auskern, Kevey	won 6-0, 6-2, 6-2
Passell, Takagi	won 7-5, 6-1, 6-0

Soccer

John Skalyo

BNL 2 — Patchogue 4

The BNL Soccer Club lost to Patchogue 4-2 at the Oregon School grounds in Medford on Sunday, June 6. Although rain was not a factor during the game, a downpour earlier left the field soaked and difficult to play on.

BNL scored early with Fisher finding the net from close range on a cross from the right wing by Veraruz. The wet field then went against BNL as three BNL mistakes due to the slippery ball resulted in goals for Patchogue 3-1. Patchogue finished their scoring at 34 minutes of the first half of a good cross in front of the goal that was pushed in by the winger, 4-1. BNL came back at 42 minutes with a header by Fisher taken in front of the goalie on a cross from the left side, 4-2.

Neither side scored in the second half giving Patchogue a victory that was deserved as they played well on the wet field and showed better control of the ball.

BNL will host the New York Oldtimers on June 19 at 2:30 at the BNL Recreation Park.

The Brookhaven Town League will start shortly after July 4 and schedules will be given when received.

The team plays pickup games on Monday evenings starting at 5:30 and welcomes new players. Anyone interested should contact Ralph Fairchild, Ext. 3649.

Softball News

Ed Taylor

Leagues I & IV

Games postponed due to inclement weather. They will be made up as double-headers the next time the teams are scheduled.

League II

Bubble Boys 7 (1-1) — Six Pax 4 (1-1)

The Bubble Boys put it all together as they got some good clutch pitching from Jack Sondericker and combined it with good fielding and good hitting to defeat a good Six Pax team.

Dirty Sox 10 (1-1) — Metallurgy 4 (1-1)

The Dirty Sox were led by Bob Horton's 2-run triple and their brand new "T" shirts as they evened their won-lost record.

League III

Circuits 6 (2-0) — Phoubars 1 (1-1)

The revamped Circuits kept their slate clean (2-0) as they finally came alive late in the game to score six runs for the win. Muscular George Hughes led the Circuit attack with a booming double that many observers say would have been a routine homerun for George in his earlier years. John Schmidt (no relation of Mike Schmidt of the Phillies) pitched his usual steady game for the Circuits.

Sweathogs 5 (1-1) — Medical 0 (0-2)

The Sweathogs played a sound game defensively as they recorded the first shutout of the young season.

League V

Oh Kays 6 (3-0) — Diamonds 5 (2-1)

The Oh Kays remained undefeated as they eked out a one run victory over stubborn Diamond club. Jackie Larrie and Rosemary Mack combined to help produce three runs in a weak hitting game.

The Odd 15-25 (1-1) — T.N.T. 7 (0-3)

The Odd 15 team hit and fielded well as they overpowered the T.N.T. team. It had to be the longest game of the season. The final out was made at 7:45.

Balls & Strikes 8 (1-1) — Turkeys 5 (1-2)

Gail Waite made some good plays in right field for the Turkeys but it was not enough to keep her team from losing the game.

Attention BNL Golfers

Our first 18-hole tournament of the year will be held next Tuesday, June 15, at Pine Hill Country Club. Tee off times will start at 12:30 so put your own foursome together or give V. Racaniello, ext. 4592, a call and he will set you up. Greens' fee \$7, entry fee \$1. Prizes for low gross, low net, longest drive and closest to the pin. Rain date the 17th.

Hope to see you there.

