



Radiation Damage Predicted By New Method At BNL

A new method of using chromosome volume that is up to four times more accurate than previous methods in predicting the effects of ionizing radiation on living organisms, including viruses, bacteria, algae, mammals, amphibians, and higher plants and ferns, was reported Tuesday by scientists attending the 17th Annual Meeting of the Radiation Research Society in Cincinnati, Ohio.

Dr. Arnold H. Sparrow, a Senior Scientist in the Biology Department, heads the team that performed this work, and Dr. Gerhard Holm, who is co-author of the report, made the presentation.

There has always been general agreement among scientists that ionizing radiation has an adverse effect on living organisms and that various organisms vary widely in their sensitivity to radiation. Unfortunately, the effects too often could not be accurately determined until after the exposure to radiation, and attempts to predict the adverse effects were too time consuming and without sufficient accuracy. This wide variation in organism structure and sensitivity has little or no effect on the new method of chromosome volume which depends solely upon the volume that chromosomes occupy in the nucleus of a cell, when the cell is not dividing. A cell that is not dividing is said to be in interphase and while it is dividing it is in mitosis.

When a cell is in interphase, the chromosomes are not measurable, but are known to be fairly evenly distributed throughout the nucleus. During mitosis, the chromosomes condense or congregate and become visible under the microscope as distinct, rod-like bodies, thus giving the scientist a



Gerhard Holm

Arnold Sparrow

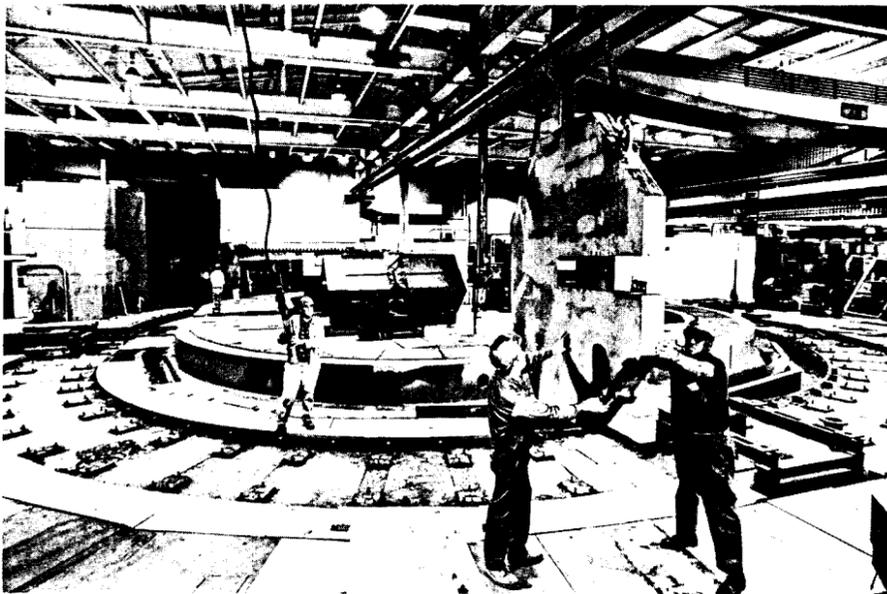
chromosome number for a given species. This chromosome number is then divided into the volume of the nucleus, resulting in another value which is called the Interphase Chromosome Volume (ICV). The ICV is the key value which is directly related to the radiosensitivity of the organism, or species. Chromosomes carry DNA (deoxyribonucleic acid), which constitutes the hereditary material called genes.

Dr. Sparrow and his colleagues have compiled radiosensitivity data on more than 80 different organisms. Because of the wide variation in living organisms as represented by the size of an individual cell and its nucleus, the method requires that organisms be divided into four distinct groups.

The first group includes prokaryotes (viruses and bacteria) and algae, the second includes mammals, the third amphibians, and the fourth higher plants and ferns. The method described in detail in the report given at the Radiation Research Society has been tested on additional organisms not included in the original study, and the results verified what had already been found with the originals.

The report of Dr. Sparrow and Dr. Holm was one of 18 biology and medical reports presented by members of the scientific staff of Brookhaven National Laboratory, dealing with a wide variety of subjects in the realm of radiation and its effects. The meeting began at the Netherland Hilton in Cincinnati on Sunday, May 18, and ended on Thursday, May 22. Dr. Victor P. Bond, Associate Director for Life Sciences, participated in an eight-member panel discussion on Wednesday, entitled "What Radiation Measurements Are Needed and Meaningful for Radiation Biology."

Cosmotron Takes No-Return Trip



The first of the billion-volt accelerators, having done its work with distinction, is disassembled and carted away to a storage area. The Cosmotron was first operated in 1952, and shut down the last day of 1966. At the peak years of its operation many important experiments in high energy physics were made possible through use of this machine. —Humphrey

First BeV Accelerator Heads For Oblivion

You might say that the Cosmotron has come around full circle. Twenty-one years ago ground was broken for the foundation for the building that would house the 3-billion electron volt accelerator.

Last week the last magnet sections of the Cosmotron were disassembled and taken to the Igloo area for storage.

Malcolm H. McCrum, a Technical Specialist in the Accelerator Department, has been working at the Cosmotron since November of 1968 supervising the disassembly of the giant machine that was started up in June of 1952. Early in 1948, when the construction of the Cosmotron started, McCrum was hired to work on the Accelerator Project. His first job was to help in the construction of several scale models of the new proton synchrotron.

McCrums missed the big day in 1952 when the full beam energy of 2.3 BeV was obtained. After he returned from a seven-month sick leave, the Cosmotron was in full operation, and before very long was on a 24-hour schedule that sometimes extended to seven days each week. During this period, McCrum worked various shifts, mostly in the control room.

The world's first billion-volt accelerator lived up to the promise implicit in the sign over its entrance door: "For the enlightenment and benefit of Mankind." It was a sad day for most of the people associated with the Cosmotron when the warning bell was silenced on December 31, 1966.

At the time of its closing, Lab Director Maurice Goldhaber said, "We are extremely sorry to see the Cosmotron turned off after its long and notable career. . . . Many pioneering ideas were worked out here which have later been applied throughout the world. . . . Many important discoveries in physics were made."



Malcolm McCrum checks magnets before they are cut apart.



Charles Brockner, Central Shops, uses torch to cut apart magnet sections.

Malcolm McCrum said, "It's a shame it had to go. It was the big job of my life. I enjoyed working there, and got a big kick out of everything that I had to do."

The magnet sections of the huge machine have been carted off to the waste disposal area where they will be stored while lingering radiation is slowly dissipated. Some of the specialized magnet assemblies will be used at the AGS with various extracted beams.

When the disassembly job is complete, McCrum will go back to his present job at the AGS in a survey crew. The Van de Graaff injector has been converted for use in a biomedical research program. The experimental floor, the offices and shops are being used by the Accelerator Department for various programs connected with the AGS.

There will be one stop less on the Visitor's Day tour this year. The Cosmotron will be gone.



Cosmotron parts stored in the Igloo area are checked by Smith Pearsall (left) and George Hughes.

NSF Head Plans To Rejoin AUI

Dr. Leland J. Haworth, Director of the National Science Foundation, plans to rejoin AUI/BNL as Assistant to the President of AUI and Special Consultant to the Director of BNL sometime after July 1, when his already announced retirement from the NSF becomes effective.

Dr. Haworth was appointed Director of the NSF by President John F. Kennedy in April 1963, and took office on July 1 of that year. At that time he had been a Commissioner of the U.S. Atomic Energy Commission. At the same time that President Kennedy named Haworth to the NSF post, he also named Tape to replace Haworth as an AEC Commissioner.

Both Tape and Haworth were named AEC Commissioners from positions at AUI/BNL.

At the time of Haworth's appointment to the AEC in 1961, he had the dual responsibilities of President of AUI and Director of BNL.

Perhaps in anticipation of someday returning to the area he loves, he never sold his Long Island home when he moved to Washington. When he assumes his new duties sometime after July 1, he will establish his office at BNL and move back into his Belle Terre home overlooking Long Island Sound.



Leland Haworth

The first indication of Dr. Haworth's post-NSF retirement plans became known last week when he was honored at a private dinner by the National Science Board, the governing board appointed by the President. At the dinner, Dr. Philip Handler, current Chairman of the NSB and President-elect of the National Academy of Science, paid special homage to Dr. Haworth. Dr. Lee DuBridge, Science Advisor to the White House, presented Dr. Haworth with a Certificate of Appreciation from President Nixon. Following these honors, Dr. Tape spoke for the science community at large in paying additional homage to Dr. Haworth for his long career of dedicated service to science and country.

During Dr. Tape's remarks he made known Dr. Haworth's plans to rejoin AUI/BNL.

"Dr. Goldhaber of Brookhaven and Dr. Heesch of NRAO join me in welcoming Lee Haworth back," said Dr. Tape when he was at BNL this week. "All of our employees are well aware of Dr. Haworth's past association with us, and his great contributions to our organizations. We will all be most pleased to have him back."

AUI, in addition to operating BNL for the AEC, also operates the National Radio Astronomy Observatory for the NSF. The NRAO, which uses radio telescopes exclusively, was first established in 1956. It currently has several radio telescopes at Green Bank, West Virginia; a central computer and staff laboratory at Charlottesville, Virginia; and a single radio telescope at Kitt Peak, Arizona.

Safety Report On Underground Tests

A new technical report on underground nuclear testing is now available. "Safety of Underground Nuclear Testing," (TID-24966) summarizes the activities of the AEC to assure public safety in conducting "Plowshare" tests in Nevada.

The report, which was prepared in collaboration with Los Alamos, Lawrence Radiation Labs and Sandia, is being distributed by the Division of Technical Information Extension in Oak Ridge, Tennessee.

Dining Hours Changed

The Brookhaven Center and the Cafeteria will be closed on Memorial Day, May 30, 1969.

The Snack Bar will be open on that day from 9 a.m. until 2 p.m.

Snakes Alive!



The northern black racer being held by Dexter Hinckley, an entomologist with the BNL Biology Department, was found in the control building of the ecology forest. Most snakes found around this area, are not only non-poisonous, but have a large appetite for mice, shrews, rats and moles. After Hinckley showed the snake to his children he released it.

—Humphrey

Ecology Conference Starts Here Monday

"Diversity and Stability in Ecological Systems" is the title of the 22nd Annual Brookhaven Symposium in Biology, scheduled for May 26-28 at Berkner Hall.

The annual conference of the Biology Department is widely recognized as one of the most significant scientific events of the year. This year's topic is of vital concern both in science and in public affairs and has drawn distinguished scientists, many of whom have participated in both science and public affairs over many years. The conference will be attended by an estimated 300 scientists from the United States and abroad.

The conference will explore systematically the relationship between diversity and stability in both natural and man-dominated ecosystems. The early sessions will be devoted to defining the problem with participants including the major contributors to both theory and research on this topic. G. Evelyn Hutchinson of Yale University will chair the first sessions. Subsequent sessions will be devoted to exploring diversity and stability in natural communities. Chairmen of following sessions will include R.H. Whittaker of Cornell University and LaMont Cole, also of Cornell. There are no sessions on Tuesday afternoon, a period to be devoted to a choice of tours, field trips or informal discussions.

A highlight of the symposium is the evening lecture on Tuesday, entitled "Not Peace, but Ecology," and will be delivered by Professor Garrett J. Hardin of the University of California at Santa Barbara. Professor Hardin is a distinguished geneticist and author of many books and articles relating science to human affairs. One of his most recent contributions was an article in the Saturday Review of Literature entitled "Looking for Lemonade in the Santa Barbara Oil." The final session on Wednesday morning, chaired by Professor Hardin, will be a specific attempt to apply ecological principles to social problems. The summary will be provided by a distinguished ecologist, Professor Edward S. Deevey, Jr., of Dalhousie University.

The symposium includes 17 scientific papers in addition to the symposium lecture and summary. Speakers represent a total of 17 different institutions, as diverse as the Institute of Fisheries in Barcelona, Spain, the Woods Hole Oceanographic Institution, the University of North Wales, and the State University of New York at Stony Brook. Proceedings will be published in book form by BNL.

An unusual first will be recorded at this conference. The campsite at the Laboratory, used only by the camping club until now, will be home for a number of scientists attending an official function. Permission to use the campsite was granted to approximately 20 ecologists who had specifically requested that they be allowed to do so.

Here and There

Dolores del Castillo

J. Robb Grover (Chemistry) presented a seminar at Yale University on May 12. The seminar was entitled "Shell-Model Combinatorial Calculations of Nuclear Level Densities."

Jerome Weiss (DAS) was recently elected to the office of Counselor Chemistry of the Radiation Research Society.

The ISPPRA Nuclear Electronics Symposium was held May 6-8. Robert Chase (I&HP) presented D.G. Dimmler's paper entitled "A Computerized Data Acquisition System for High Event Rates." V. Radeka (I&HP) presented an invited paper entitled "1/f Noise in Physical Measurements." Both Chase and Radeka participated in a technical round table discussion, and Chase also was a session chairman.

Robert Lehn (Central Shops) had an unfortunate accident last Saturday, and is in St. Charles Hospital, Port Jefferson, mending a broken hip. He is wished a speedy recovery by his many friends.

H.W.J. Foelsche (Accelerator) has recently returned from CERN, Geneva. While there, he discussed CERN's experimental program and their plans for the future, and consulted with the r-f separator group about their progress and the collaboration with the Russian laboratory at Serpukhov.

Meyer Steinberg (DAS) gave a seminar for the graduate students at Princeton University and at North Carolina State University on "New Materials and Processes by Radiation Treatment."

Garman Harbottle (Chemistry) has accepted membership on the Board of Associate Editors for the new international journal, Radiochemical and Radioanalytical Letters, which is to be published under the joint editorship of the Elsevier Publishing Co., Amsterdam and Akademiari Kiado, Budapest.

Elvin Kalinin of the Moscow Aviation Institute will visit the Laboratory on May 26 to discuss rod bundle heat transfer.

Jean Faure, Renaud Schoen, Pierre LeFrere of the Synchrotron Saturne Department of Saclay will visit at the Laboratory May 28 and 29 to discuss accelerators.

Motoharu Kimura, Director of the Laboratory of Nuclear Science, Tohoku University, will be at the Laboratory May 28 and 29 to discuss the HFBR advanced booster project.

The 17th Annual Meeting of the Radiation Research Society was held in Cincinnati, May 17-22. Among the authors of papers presented at this meeting were Ursula Reincke, A.L. Carsten, E.P. Cronkite, R.G. Fairchild, John L. Bateman, J.O. Archambeau, H. J. Brenneis, H.A. Johnson, Mildred Pavelec, C.V. Robinson, S.H. Cohn, C.S. Dombrowski, J.S. Robertson, H.R. Pate (all of Medical); K.H. Thompson, A.H. Sparrow, H.H. Smith, G. Holm, H. J. Curtis, A.G. Underbrink, R.C. Sparrow, D.A. Bankes (all of Biology); V.P. Bond (DO); and J.W. Baum (I&HP).

BLAST Rally

Sunday, May 25th, is the date of the next big BLAST Rally. You can get registration forms at the Recreation Office or from Stan Anderson. Entry fee is only \$4.00 for pre-registrants and will be increased \$1.00 on the day of the event.

Awards will go to:
1st-3rd - Overall
1st-4th - Uneq.
1st-5th - Novice

Dash plaques will go to all contestants. Call Stan Anderson on Ext. 2411 for more information.

Annual Rifle Match

The BNL Rifle and Pistol Club will hold its annual large-bore rifle match on May 24 and June 7 at 9:00 a.m. at Brookhaven Town's Medford Range - weather permitting. Any center fire rifle with open sights or telescope may be used.

The entry fee is \$1.00 and prizes will be given for first and second place.

All Club members and non-members are invited to participate. For further information call Frank Rumph on Extension 7586.

Need Piano Practice? Here's A Grand Solution

All pianists at the Laboratory are invited to practice on the new Steinway Concert Grand Piano at Berkner Hall when it and the hall are available.

The piano is kept covered and locked, but a key is available on request from Manny Hillman, Applied Science, 60 Rutherford, Ext. 2378. Before requesting the key, the availability of the hall must be cleared with Mariette Kuper's Office, 40 Brookhaven, Ext. 436. The person signing for the key accepts responsibility for the condition of the piano during his term of use. If the piano is found to have been abused, then the person responsible will no longer be permitted to use it.

Reservations for the use of the piano for evenings and weekends must be made during working hours. The key may be kept only for those hours requested. It is absolutely essential that all precautions be taken to keep the piano in an excellent condition at all times.

Sign of the Times



Ed Hunter of Grounds Maintenance hopes that a new way of saying "Keep Off The Grass" will be effective in the area in front of the Cafeteria. The newly seeded field was mulched with straw and then sprayed with a liquid fertilizer that had green coloring added to it. Hunter hopes that people will not cut across this field until after the new grass is well established.

Cafeteria Menu

Week Ending May 29, 1969

Friday, May 23	
New England Clam Chowder	
Chopped Steak/Smothered Onions	.65
Baked Halibut Steak/Lemon Butter	.65
Combination Seafood Platter, Shrimp, Smelt, Fried Filet	.75
Cheese Omelette	.55
Filet of Long Island Flounder Hero	.70
Monday, May 26	
Green Split Pea Soup/Croutons	
Baked Swiss Steak/Country Gravy	.65
Beef, Macaroni & Tomatoes en Casserole	.65
Chicken Croquettes/Cream Gravy	.60
Romanian Steak on Hard Roll	.75
Tuesday, May 27	
Chicken Noodle Soup	
Roast Chicken/Celery Dressing	.65
Pork Chow Mein/Rice & Chinese Noodles	.65
Beef & Vegetable Stew	.65
Veal Cutlet on Hero Roll	.70
Wednesday, May 28	
English Beef Barley Soup	
Roast Top Round of Beef au jus	.65
Chicken a la King over Rice	.65
Baked Pork Link Sausage/Mashed Potatoes & Gravy	.65
Hot Corned Beef on Rye/Cole Slaw	.75

—x—

Wednesday Special - 99¢
Cup of English Beef Barley Soup
Chicken a la King over Rice
Cole Slaw
Bread & Butter
Choice of 20¢ Dessert & 10¢ Beverage

—x—

Thursday, May 29	
Tomato Vegetable Soup	
Braised Veal Steak, Swiss Style	.65
Baked Salisbury Steak/Mushroom Gravy	.65
Home Made Corned Beef Hash	.60
Bar-B-Q Beef on Bun/French Fries	.70

Friday, May 30
Have a safe, enjoyable holiday.

IBEW Meeting Notice

The next General meeting of Local 2230, IBEW, will be held on Thursday, May 22 at the K. of C. Hall in Patchogue at 8 p.m. The agenda includes reports from committees and general business.

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Public Relations Officer

Letters To The Editor

Dear Sir:

Dr. Leonard Hamilton has asked me to find out to whom he is indebted for a most fortunate service performed in the early hours of Wednesday, May 14. The mechanism maintaining temperature control in one of our cold rooms failed and because it was not possible to make the repairs promptly, someone called Dr. Hamilton at home about 3 a.m. to ask if there were any critical materials in the room. Following instructions, the caller removed to another cold room a large container, holding about \$9000 worth of biochemical material that would have been a complete loss if left in the malfunctioning room until regular work hours began.

I have not been able to ascertain who performed this most helpful act. Possibly, by expressing our appreciation for all the members of the police, fire, utility and telephone services who contribute to the operation of the Medical Research Center, especially after hours, the unknown person may learn of our particular appreciation for his thoughtfulness and kindness.

W.A. Finn

Arrivals & Departures

Arrivals

Norman N. Gold.....DAS
Anna-maria Vasquez.....Biology

Departures

Harold L. Higgins.....Central Shops
Michele E. Haller.....Purchasing
Bartholomew F. Moleta.....Accelerator
Barry J. Russell.....Accelerator
Jo-Ann A. Tinnie.....Medical

Service Awards - May 1969

Twenty Year

Brandon, James B. DAS
Der Mateosian, Edward Physics
Feigenbaum, Irving L. Physics
Fernandez, Edmundo Medical
Irsa, Adolph P. Chemistry
Kiesling, Clifton DAS
Pollock, Dorothy S. Chemistry
Roush, Bobbie M. Graphic Arts
Sowiak, Mary S&M

Ten Year

Brockmann, A. Eric Accelerator
Caiazza, Emil J. Photography
Durose, Richard J. Medical
Henderson, August G. PEP
Hotchkiss, Richard F. Accelerator
Klotz, Paul J. DAS
Marr, Robert B. Applied Math
Mohlmann, Eugene C. Purchasing
Walser, Paul L. PEP

May Is The Month For TIAA - CREF Changes

Every year, during the month of May, participants in the A.U.I. Retirement Plan may request that the apportionment of their contributions between TIAA and CREF be changed. Such changes apply to contributions made by the Laboratory as well as those made by the employee and are effective the July 1st following the change request.

Participants who have previously applied all contributions to TIAA, the fixed annuity program, may apply as much as 75% of subsequent contributions to CREF, the variable annuity program. Conversely, participants may also reduce or terminate contributions to CREF and increase their TIAA contributions accordingly. Any such changes will affect only future contributions and will have no bearing on accumulations in either TIAA or CREF up to the effective date of the change.

Change forms and further information regarding the A.U.I. Retirement Plan may be obtained by calling Personnel Services, Extension 2106.

Those Were The Days, My Friend . . .



Long before the "New Morality" became an issue in everyday life, the strippers in burlesque were prancing on the runways. At BNL this mood was re-created by Barbara Strohm as she played the title role in Gypsy.

Footlights, showgirls and orchestre pit all combined to make the illusion complete. —Humphrey

Gypsy Outstanding Says BNL Audience

The title of the show according to the program was "Gypsy." For all practical purposes, it should have been called "A Night To Remember."

Those in the audience who were over forty and of the male sex, would tend to sink a little deeper in their seats by the second act, while they thought back to the pre-World War II days of "Burly-cue." The only thing missing at BNL was the candy butcher between the acts offering . . . "A special picture book . . ." with each bar of candy.

Enthusiastic crowds of theatregoers greeted the first two performances of Gypsy as presented by the BERA Theatre Group.

Conversations overheard as the audience departed after the final curtain indicated overwhelming satisfaction with the presentation. Favorable comparisons were made with the original Broadway production. It was generally agreed that the BERA show was rated superior to the recent re-run of Gypsy on TV which starred Rosaland Russel.

The roars of laughter and waves of thunderous applause which continually filled the theatre in response to activities on stage were emphatic indications of the uniform excellence of the cast, staging, lighting and orchestral accompaniment as well as the over-all professionalism of the entire show.

Each of the cast, whether they had a big or a small part, deserved the title of Star.



Before the show the first-night crowd examines the lobby posters before going to their seats.



Ushers for the first night were; Joyce Adams, Louise Whaley, Gail Gianopoulos and Denise Whaley.



Dov Kahane, one of the Newsboys, waits to go on stage in his clown makeup.

Softball

Tom Lee

Brookhaven League

- Blue Jays 9 Batmen 1
- Old Timers 4 Make-ups 3
- Old Timers 10 Dirty Sox 2

While the rest of the League are beating each other, the Blue Jays are coasting along with no losses.

G. Oldham 4 for 4, M. Gottfried hit a HR and S. Garrett chucked 3 hitter for Blue Jays this week.

Old Timers in second with two wins this week. They had to go 8 innings to stop Make-ups.

National League

- Rat Pack 14 Six Pac 6
- S&M 7 Potsareebies 3
- Metallurgy 3 AMD 1
- Bubble Boys 13 Phoubars 2

S&M heading League with two wins and the rest of the League fighting for second.

Rat Pack had some fine play from P. Valli and HRs by Lee and Phillips.

Metallurgy and AMD had quite a defense battle with AMD losing their first game after winning 16 straight.

Sorry guys! Stoffel hit HR for Bubble Boys.

Ode from a losing Captain - "After coming off the field quite confident following a brilliant display of rock hard defense holding S&M off a zero out, bases loaded situation to no runs the Psychedelic Bats of the Potsareebies fizzled out to the dazzling display of the white stripes of the lavishly decorated Supermen of S&M, 7-3." Bob Carciello

Laboratory League

- Bio-Meds 34 Charlie Browns 5
- Deadwoods 11 Converts 1
- Mets 19 Chemistry 7

Bio-Meds unleashed the guns against old C.B. with B. Bores 6 for 6 including 2 HRs. Should be interesting race in this League with three good teams to battle it out.

Soccer

Southampton 1 - BNL 3

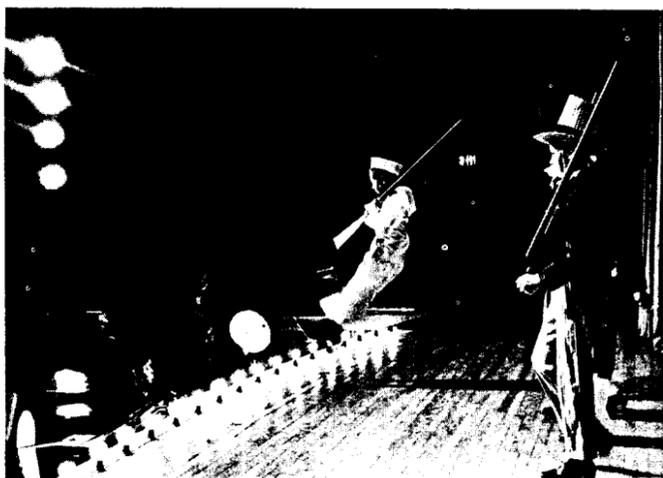
Playing their best football yet, on Wed. May 14th, in ideal conditions, the soccer team romped to a 3-0 lead in the first half against a less experienced college team. In the second half, although we came close to increasing our score on several occasions, the opponent's greater energy began to pay dividends. However, our defense yielded only a single goal leaving us with a well deserved victory.

Scorers: Cox (2), Mariscotti (1)

—M.T Hutchings



A trailer was placed next to one of the backstage dressing rooms to provide more space. Here, Charles Zavesky, Pat Towey and Charles Meinhold get ready for the opening curtain.



During the show these high-kickers worked before an enthusiastic audience every time they were on stage. Gypsy was a first class show presented in a first class manner.

Bowling Awards Pictures



The buffet was generous and appetizing.



BNL Men's Champs are the Electrons. Left to right are: Stan MacCormack, Charles Tomesch, Captain Warner Hayes, Arnold Schroeder, Al Pinelli and Sanford Wagner.



BNL Ladies Champs, the Medigals, are (left to right) Kay Trautwein, Mary Craig, Captain Ann Kirkpatrick, Brita McGonigle and Kay Conkling.



Joseph (Pappy) Seitz gets a special retirement award from Personnel Manager J. Washburne.

Classified Advertisements

Positions Available

UTILITIES OFFICE ASSISTANT (1) - Plant Engrg. & Planning.

Application Deadline: May 28, 1969.

REFRIG & A/C ENGINEER (2) - Plant Engrg. & Planning.

Application Deadline: May 28, 1969.

Employees interested in applying for above positions should inform their Supervisor and file written request with Employment Office on or before deadline date.

Autos & Auto Supplies

63 CORVETTE COUPE - Blue, 327, 4 spd, mags. \$1500. W. Hasselriis, Ext. 2143.

62 RAMBLER AMERICAN - 2 dr sedan, avail beginning of June. \$200. Lou, Ext. 7411.

66 VW - White sedan, radio, snows, reversing light. \$1050. Marita, Ext. 2240.

63 DODGE - 4 dr sedan, 318 V8, auto trans, ps, r/h, clean, runs OK. \$500. D. Hirst, Ext. 2938, 286-3912.

65 CHEVY - VE, auto trans, r/h, ps, must sell. \$950 firm. Ext. 2582.

53 FORD - V8, 4 good tires, in good cond. Best offer. 878-2890 after 5:30.

LATE 64 DATSUN - 4 dr sedan, excel cond, clean, economical on gas, 30-35 mpg, orig owner. \$400. Lou, Ext. 482.

CAMPER - To fit Datsun pickup, sound cond. \$135. 588-5833.

64 CORVAIR - 2 dr, std trans, new brakes, batt, tires, very clean. \$450. GR5-9493.

66 MERCURY COMET - Sport coupe, 6 cyl, auto trans, new brakes, economical, good cond. J. Hamilton, Ext. 2138, JU1-1224 after 6.

2-14" CHEVROLET WHEELS - Good cond. \$5. Bob, Ext. 2450, 289-0357.

60 PONTIAC STATION WAGON - Ps/pb, r/h, good cond. \$300 or best offer. Bob, Ext. 2450, 289-0357.

65 IMPALA SS 376 - 4 spd, very clean, maroon. \$1350. Frank, Ext. 481.

65 PONTIAC VENTURA - 2 dr hdtpr, turquoise, auto trans, V8, ps/pb, pwr windows, low mileage, excel cond. \$925 firm. 281-5289.

64 FORD GALAXIE CONV - Maroon, auto trans, good cond. \$775. Ext. 7351, 744-2453.

68 OLDSMOBILE CUTLASS "S" - 2 dr sedan, 16,000 mi, auto trans, r/h. \$2800. JU1-5786 after 6.

66 CHEVY BISCAYNE - 6 cyl, well maintained, very good cond. \$850. Tom, Ext. 2971, 286-1378.

63 PONTIAC TEMPEST CONV - Auto trans, ps/pb, 2 new tires, leaving country. Nicolini, Ext. 7722, 4-7.

68 DODGE DELUX PICKUP - Low mileage, 8' bed, Shell camper, auto trans, air cond, oil springs, extras. \$2650. Ernie, Ext. 2934.

59 VW - New brakes, good running cond, needs slight body repair. \$100. Rimler, Ext. 566.

62 PONTIAC TEMPEST - Auto trans, r/h, 2 dr, good running cond. \$350. Chendra, Ext. 7802, 2761 after 6.

63 RAMBLER STATION WAGON - V8, auto trans, ps, r/h, orig owner, good cond. \$500. Bob, Ext. 7309, 751-3554.

67 DODGE COFONET 500 DELUXE - Silver grey/blue int, auto trans, ps, r/h, new w/w, 4 dr, V8, warranty, 21,000 mi. \$1900 or best offer. Herb, Ext. 2868, 744-5238.

65 GRIFFITH - 239 cu. in. Ford eng, 271 hp, only 150 made, very good cond, very fast. \$2600. 286-9669 after 4.

64 CORVAIR MONZA CONV - 3 spd, good tires, dk red/blk top, blk bckt seats. \$350. George L., Ext. 7581.

66 CHEVY - 6 cyl, 2 dr, std trans, r/h, excel cond, white/red int. Bonnie, Ext. 2745; Dennis, Ext. 7356, 732-0191.

2 NEW TIRES - Only 50 mi old, 6 ply, 8 ply rating, 7.00x13 w/rims. \$40. P. Hughes, Ext. 7554.

64 CADILLAC CONV - Excel cond, all pwr, air cond. Asking \$1250. Ren, HR3-3576.

55 CHEVROLET - 2 dr hdtpr, needs motor work. \$50. Bill, Ext. 2580.

66 OPEL - Sports coupe, t blue, r/h, w/w, snows, low mileage, very good cond. 475-8610 after 5.

WORKSHOP MANUAL - For all 65 Plymouths. \$3. Ext. 2708.

64 VW CAMPER - W/tent, clean car, excel running cond, eng just rebuilt. \$1395. Ext. 322.

68 PONTIAC FIREBIRD 400 - 4 spd, options, must see. \$1600. Jan, 727-7234, 8-3-30.

65 VW - White, sedan, radio, new brakes, excel cond, orig owner. \$700. J. Kerwin, Ext. 2296, AN5-7367.

65 OLDS DELTA 88 - Excel cond, factory air. \$1450 or will swap for station wagon of equal value. Joe, Ext. 2582, 588-7930.

60 OLDS - 4 dr sedan, auto trans, ps/pb, very clean, many new parts, runs well. HR2-1078 after 6.

67 FIAT - 124 sedan, white/red int, radio, snows, 30 mpg, very good cond. \$975. Jim, Ext. 7229, 334-6476.

65 MUSTANG CONV - 6 cyl, auto trans, ps. Ext. 486.

61 PONTIAC - 2 dr, auto trans, V8, ps/pb, body needs some work. \$95. J. Goodie, Ext. 2187.

65 CHEVROLET PICKUP - 4 w/d, 65 Shamrock camper, 10x7, 4' cab over, self contained. GR5-2043.

Boats & Marine Supplies

13' MFG RUNABOUT - 40 hp Evinrude & Cox trailer. AT6-8718 after 6.

18' LAPSTRAKE - 80 hp Johnson Electromatic, Cox trailer w/elec winch, excel cond. \$2175. JU1-8146 after 5.

"JET 14" - 2 sets "Hard" racing sails, all stainless steel riggings, Cox trailer, ready for water, many extras. 581-0884.

34' HOUSEBOAT - 1967 Marinette, alum hull, 110 hp Diesel inboard, documented, elec refrig, gas stove, fully equipped, like new. \$14,900. Jim, Ext. 2420.

37' OWENS 1964 - Twin 225 engs, 290 hrs on ea, 3 kw elec gen, 95 watt ship to shore, elec refrig & stove, fiberglass dinghy. LT9-9463.

16' FIBERGLASS SKIFF - 5' beam, 40 hp Evinrude, elec start, navy top, curtains, anchor, etc., excel cond. P. Miller, HR2-0344.

26' SLOOP - Shoal draft, 9.5 hp Aux. Cruise 4, completely equipped, cond good. Ext. 663, LT9-0644.

HARDWARE, RIGGING & RUDDER - Used but sound, from 19' Lightning sailboat. Ext. 7536, YA4-3556.

MICHIGAN PROP - No. 48-22575A2, 10x10, 3 blade, alum, 11 spline, fits Mercury outboard Mark 58, 58A, 400, 500 (56-61). Pete, Ext. 447.

14' LAPSTRAKE - Outboard motor boat, good cond, needs paint. \$50. B. Johnson, Ext. 573.

21' BAY CITY CABIN CRUISER - 95 hp fresh water cooled, used 3 yrs, bunks, head, galley, excel cond. Petruk, AT6-0124 eves.

15' OLD TOWN RUNABOUT - 33 hp elec start Evinrude motor, trailer, ready for the water. 286-0785.

27' CORRECT CRAFT CABIN CRUISER - Sleeps 6, s.s. radio, depth finder, head, 145 hp, painted, ready for water, excel. \$2200. 732-2134 eves.

MUST SELL - 32' sturdy serviceable cabin boat, newly rebuilt 115 hp Chrysler Crown, head. \$850. Ext. 379, LT9-3269.

16' GLASPAR 1963 - w/75 hp Evinrude eng & trailer, like new. \$1200. GR5-9030.

16' THOMPSON - w/35 hp Evinrude in good cond, gas tanks, anchor, etc. incl. Asking \$350. AT6-8544.

16' GARVEY CLAM BOAT - Brand new, unpainted, never used. \$325. J. Knapp, Ext. 495.

Miscellaneous

LONG BRUNETTE FALL - Beautiful, human hair, used twice. \$50. LT9-2805 after 4.

UPRIGHT PIANO - AT6-8718 after 6.

HI-FI SPEAKERS - 2 Eico HFS-3 units, 12", 8", 3" speakers in birch cabinets. Hirst, Ext. 2938, 286-3912.

CHILL CHASER - Like new, w/thermostat. \$50. Write interoffice - Fales, T-100.

2 BEAUTICIAN'S UNIFORMS - 1 blue, 1 green, size 3. Orig \$10 ea, sell \$4 ea. 581-4197 after 3.

HALF PRICE - Pitcher & bowl, \$15; brass lamp, \$15; lamps, \$10/pr; 4 maple chairs, \$20; artificial fireplace w/accessories, \$30. Hedrick, JU8-7989.

23" ADMIRAL TV - Blonde console, very good cond. \$35. Hedrick, Ext. 2450.

COLEMAN GAS STOVE - 2 burner, old but good. \$70. 588-5833.

SILVER QUARTERS - \$400 worth. Best offer. F. Leon, Ext. 316, GR5-8187.

MEDICAL ENCYCLOPEDIA - New, 2 vols, cost \$40, sell \$20; National meat slicer, hand operated, never used, \$7. 585-3719.

SILVER COINS - \$80 face. Best offer over \$95. B.P. Doran, HR3-9232.

SPOTTING SCOPE - 24 power Unertl, w/bi-pod. \$60. Nicoletti, Ext. 560.

C.B. RADIO - Courier 23 channel, plus 22A, excel cond. \$75 firm. 281-8612 after 6.

HAND LAWN MOWER - 18" Craftsman, good cond. \$15. Pat, Ext. 7229.

F 2.8 LENS - Fully auto 35 mm camera, brand new, perf cond. Take it away for \$40! L. Rau, AT6-0451.

SET OF DAN LURIE WEIGHTS - \$12. B. Espensen, Ext. 7638.

CAR TOP CARRIER - For surfboards, new cond. \$10. B. Johnson, Ext. 573.

WOOL COATS - Blk winter, beige spring, excel cond, needs shortening, size 16-18. Worth \$100, sell both for \$20. 585-3719.

JEWELRY WARDROBE - Evening ensemble, pins, necklaces, jewelry box, famous make, never worn. Value over \$50, sell \$15. 585-3719.

HOUSEHOLD FURNISHINGS - Incl Colonial furn, washing machine, hi-riser, lamps, tables, recliner, glassware, bric-a-brac, other misc. Reasonable. AT9-1277 after 6.

DOORS - Asstd sizes; 2 pc formica countertop. Ext. 2816, GR5-7372.

8' CAMPER - Sleeps 4, self contained, must sell. \$795. 289-4776 after 5.

INFANT CRIB - Full size, perf cond, incl mattress, wood, white enamel finish, mattress hgt adjustable, side raises & lowers. \$15. Bob, Ext. 7633.

CHILD'S HIGH CHAIR - Cosco, stainless steel legs & side rails, padded seat, adjustable food tray & step, new cond. \$8. Bob, Ext. 7633.

RAIL FENCE - 250', gate & posts. \$40. JU8-6417.

TWIN SIDE TABLE - Imported from Hong Kong, red color, Oriental style. \$200 or best offer. Ext. 2813.

4 SLICE TOASTER - Sears, good cond. \$8. Sadofsky, Ext. 2709.

CAMERA - Petri FT-SLR, thru lens meter, 55 mm f 1/8 lens, perf cond. \$100. C. Schmidt, Ext. 573, 744-3312 after 5:30.

16" PORTABLE TV - 2 mos old, guarantee, leaving the country. \$65. Nicolini, Ext. 7722, 4-7.

POOL - 15'x42", filter, skimmer, vacuum, metal frame, cover, etc., used 2 short seasons. Asking \$75. AT6-0436.

LAWN MOWER - Jacobsen 24" reel type, 2 1/2 hp w/riding sully. \$150. Miller, Ext. 2381-2, HR2-1646.

6' REDWOOD PICNIC TABLE - 2 benches, \$30; 2 Adirondack chairs; lg folding table; lawn chaise & cushions; 2 dr wood wardrobe. 924-3354.

ACCORDION - Ferrari, 120 bass, excel cond, w/case. \$100. George L., Ext. 7581.

17" MAGNAVOX TV - Excel cond. \$35. Okuyama, Ext. 522.

SCOTT SPREADER - Good cond, \$5; pr door lighting fixtures, colonial, \$10; post lamp fixture, colonial, \$5. HR3-2523 after 6.

LAWN MOWER - Ward's power reel type, it runs! TV set, 21" Magnavox, it works sometimes! J. Krikawa, Ext. 7509.

ELEC MOTORS - Sump pump, auto, 1/2 hp, 1725 rpm, new, \$15; 1/2 hp, 1725 rpm, 3 Ph, \$20. Walt, Ext. 7534.

HOOVER VACUUM CLEANER - Suitcase style, good working cond, except in need of new hose. \$20. B. Fox, Ext. 2811, 7784.

WESTINGHOUSE STEREO - Portable, auto changer, all record spds & sizes, very good cond, needs needle. \$25 firm. Betsy, Ext. 7552.

LAWN MOWER - Reel 2.5 hp Sears 18", 6 blades, good cond. \$40. Petruk, Ext. 2142, AT6-0124 eves.

9'6" SURFBOARD - Good cond, excel for beginner, grey & white. Only \$50. Dick, Ext. 7343.

KENMORE WASHER - 5 yrs old, needs gear box. Make offer. Nardi, Ext. 7243.

ZENITH PORTABLE STEREO - Excel cond, w/2 remote speakers, new stylus & 45 rpm spindle. \$50. Ext. 2818.

STORMS - 1 pr ea 55x32, 47x31; also 2 prs screens to match. \$10 or best offer. Ext. 7753, 286-3742.

RIDING MOWER - Old, but works, Fairbanks Morse. As is, \$30. Carsten, Ext. 2893.

WESTINGHOUSE ELEC RANGE - Sealed oven, timer, excel cond, sell because of kitchen remodelling. \$125 or best offer. Ext. 7753, 286-3742.

EVERETT UPRIGHT PIANO - Cherrywood, w/bench, 1 1/2 yrs old. Orig \$1000, asking \$650. Ext. 7216, 862-8007.

SURFBOARD - Hobi 9'6", good cond, tailblock, redwood stringers, stripes. Orig \$180, now \$90. AT6-8544.

DOG PEN - 8'x8'x3 1/2' Sears Roebuck model. \$33. Ext. 7219.

CHILD'S BICYCLE - As new, suitable for ages 5-7. Kinson, Ext. 7793, 744-8300.

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

BELLPORT - 6 bedrms, 2 baths, 2 car garage, 3 zone h/w heat, wooded 3/4 acre. Refrig, washer & dryer incl. \$22,500. W. Corwin, Ext. 657, AT6-0724.

SELDEN - Lovely treed area, 3 bedrms, 1 1/2 baths, 20' den, cabinet lined kitchen, wall oven, snack bar, beautiful landscaping, priv patio within cedar fence, paneling, broadloom throughout, extras. \$21,990. Ext. 7294, 732-3957.

PT JEFF STATION - 8 rms, 4 bedrms, 1 1/2 baths, w/w, s/s, patio, 2 car garage, 2 zone oil h/w, near schools & shopping, take 5 1/4 mort. 473-6109.

RIVERHEAD - 3 & 4 bedrm tri-level home, w/w carpet, h/w heat, city water & sewer. 727-4333 after 5:30.

1/2 ACRE - Wooded, 3 blocks from bay, Newport Beach, E. Moriches. 289-3422 eves.

SHOREHAM - 2 yr old colonial ranch, 3 bedrms, 2 baths, liv rm, din rm, fam rm, lg kitchen, full basement, 2 car garage, 1/2 acre, landscaped, deeded beach rights. Ext. 2708, 744-5448.

WADING RIVER - 4 bedrms, 1 1/2 baths, fam rm, lg eat-in kitchen, 2 car garage, 130'x150' treed & terraced yard. 929-4472.

SOUTHAVEN - 4 bedrm cape cod, 2 baths, din rm, full basement, att garage. \$26,500. 286-3649.

SHOREHAM - 4 bedrms, cape cod, 2 baths, 2 car garage, fireplace, beautiful location, deeded beach rights. Ext. 7640, 744-5378.

BUSINESS OPPORTUNITY - Near Greenville, NY, restaurant, well est, seats 45, open all yr, plus 2 separate mod apts, hunting, fishing, skiing, etc. \$25,000. \$8000 down, balance on terms. Joe, Ext. 2582, 588-7930.

For Rent

FURN SUMMER COTTAGE - Shirley, util. 281-7595.

FURN APT - Brookhaven, 2 rms & bath, avail June 2. \$100/mo. Ext. 2743, 286-8787 eves.

SUMMER RENTAL - July & Aug, compl furn 8 1/2 rm house, owner's home in E. Patchogue. \$700. J. Olson, Ext. 441, 289-1463.

FURN APT - Center Moriches, 2 rms & bath, avail 'til 9/22, use of lg waterfront lot & dock. 878-0898.

BEACH COTTAGE - 15 min from Boston (Nahant), 4 bedrms, compl furn, on the water, avail 7/1-10/1 or? Shea, Ext. 7411.

Wanted

MUSHROOM ANCHOR - 50 or 75 lb. B. Espensen, Ext. 7638.

CHILD'S SEAT - For bicycle. K. Fuchel, Ext. 2446.

TO RENT - 2-3 bedrm house, furn, June 1, will sign 1 yr lease. Tim, Ext. 7205, 501.

OLD BROKEN CAMERAS - & camera equipment for student of camera repair course. C. Schmidt, Ext. 573.

TO TRADE - About 16 bks S&H Green Stamps for equal quantity Triple S, Plaid or King Korn. M. Strongson, Ext. 2727.

1 WHEEL CULTIVATOR - W/attachments, good cond. 588-5833.

RECOIL STARTER - For '55-'58 Johnson or Evinrude 5-7 1/2 hp motor, other possibilities considered. M. Greene, Ext. 7779.

ONSITE HOUSEWIFE - To care for 6 yr old boy, all or part of summer vacation, 8:30-5, Monday-Fri. Georgia, Ext. 2186, 286-8869 after 5:30.

HOMES - For 2 kittens, 1 male, 1 female, 7 wks old, both gray w/blue eyes. 281-5289.

TYPING - Term papers, etc., to do at home. Claire, Ext. 2131.

SUN TACH - For GM. Claire, Ext. 2131.

MOTOR BOAT TO RENT - Ext. 7689, 589-7052.

BUNK BEDS - To be refinished, w/o mattresses, reasonable. Betty, Ext. 2174.

HOME - For 1 1/2 yr old female calico cat & her daughter of 6 wks, both house trained. Jim D., Ext. 2328, LT9-9349 after 6.

PUMP ACTION SHOTGUN - 20 gauge or 410 gauge, in good cond. Walt, Ext. 2457.

SILVER DOLLARS & 1/2 DOLLARS - Will pay 50% & 10% respectively; silver quarters & dimes, will pay 6%. Belfiore, Ext. 7294.

HOME FOR KITTENS - 4-two stripes, 2 orange, 7 wks old. Willy, Ext. 542, AT6-3650, AT6-8968.

BABYSITTING - Will care for child ages 1 1/2-4 for working mothers, all day or 1/2 days. 281-3460.

POSITION - Experienced teacher for the Middle Island School Dist wants to tutor elem students during summer. Mrs. Kelsch, 281-8500.

TO RENT - Furn house or apt, suitable for postdoc, wife & 7 yr old, starting 7/1 for summer or 6 mos. Steve, Ext. 2200.

BABYSITTER - Age 15 or over, occasional wk nights (early), weekends. 475-6288 after 6.

TYPING - Eng, French, to do at home. Ext. 7718 after 6.

ELEC BROOM - Hollywood bed, metal frame; refrig. Nardi, Ext. 7243, AT9-3596.

1 TIRE - 16" for Chevy pickup, reasonable. F. Folde, Ext. 560.

VW BEETLE - Mech sound (looks not important), reasonable. M. Caunter, Ext. 2800.

1 USED BICYCLE - Full size. Jeff. Ext. 7278, 475-6873.

RELIABLE CLEANING WOMAN - Once a wk, own trans, work in Setauket. 941-9022.

PORTABLE SEWING MACHINE - Good cond, inexpensive. J. Gilat