BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

A Change of Exchange

On the weekend of April 4, telecommunications personnel from both BNL and GTE will put the finishing touches on the Laboratory's new computerized telephone system.

Besides pushbutton (keypad) dialing, there will be one other visible difference on the telephones. As of Monday, April 6, all Lab numbers will be accessed from outside using 282. For example, the general Laboratory number is now 345-2123. On April 6, it will be 282-2123.

This change in the Lab's exchange is necessary because the new telephone system will be controlled by an on-site computer control switch. At present, the switch serving BNL is located at the Yaphank Central Office of the Bell System, but the Yaphank switch is not compatible with the new switch installed on site. The Central Office switch in Patchogue is. The present 345 exchange is a Yaphank exchange; the change to Patchogue requires a Patchogue exchange, hence 282.

The changeover is an enormous job. There are almost 3500 telephone lines at BNL which service about 3900 phones. The entire cable system has had to be duplicated for voice traffic and enhanced to handle on-site data traffic. Despite disruptions incurred in any large changeover, Bill Webster, Manager, Staff Services Division, emphasized that, "employees have been very helpful and patient and the telecommunications people are grateful."

Ultimately, the new system will result in large cost reductions for the Lab. For example, at the end of its ten-year agreement with GTE, which provides for the lease and maintenance of the equipment, the Lab will own the equipment and be able to choose the most cost-effective way to maintain it.

Other benefits will be apparent to telephone users. Not only will keypads make dialing quicker and easier, but there are many other convenient features which are made possible by computer control. These features will be the subject of future *Bulletin* articles and of training programs to be conducted for employees in March.

Doug Humphrey

Organized by BNL's Neil Baggett (left) and Nicholas Samios (right), an important workshop on neutrino oscillation was convened at Berkner Hall last month. Session chairmen were Hugh Williams (second from left) U. of Pennsylvania, Fred Reines, U. of California at Irvine, Charles Baltay, Columbia U., and Maurice Goldhaber who was not available when this picture was taken.

BNL Lecture

Flower Power

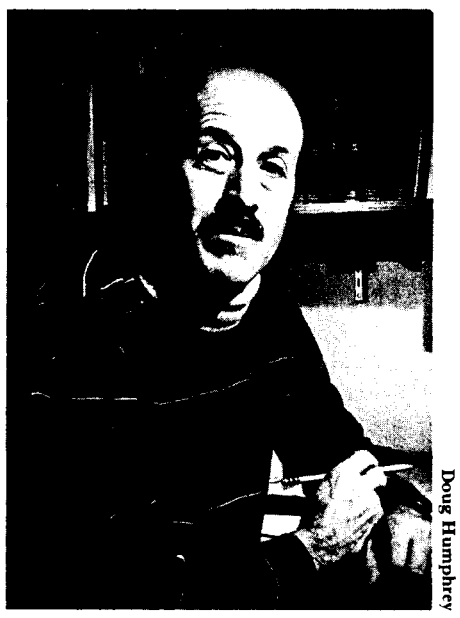
During the past few years, stories about the spiderwort plant have appeared in newspapers and magazines touting it as the "Peoples' Radiation Monitor." (Because of the publicity, the spiderwort, more properly called *Tradescantia*, is also being marketed as the "worrywort" by an enterprising grower.) Pink mutant cells observed in the normally blue-flowering plant would signal the presence of radiation in the atmosphere, perhaps from a nearby nuclear powered generating plant. But the spiderwort, although highly radiosensitive, has a great deal more to offer as a basic research tool and a monitor for chemical environmental mutagens, than just a background radiation monitor.

On Wednesday, February 18, Lloyd Schairer of the Biology Department, who has worked with the plant for 20 years, will present a BNL Lecture "Worrywort, Spiderwort or *Tradescantia*," at 8 p.m., in Berkner Hall.

In his lecture, Schairer will trace the development of *Tradescantia* as a biological test system and its use for assessing the influence of chemical mutagens on living organisms, as well as its sensitivity to radiation. Currently, flower color mutation is being used as an indicator of potential health hazards resulting from natural and industrial pollutants.

Since 1976 a 24-foot trailer, specially outfitted with elaborate air filtering and pollution measuring equipment, has covered more than 12,000 miles supporting *Tradescantia* plant exposures at fourteen sites throughout the United States. The mutation responses ranged from effectively zero at a "clean-air site" at Grand Canyon to nearly a background doubling at Elizabeth, New Jersey.

According to Schairer, *Tradescantia* seems to be well suited to air pollution work because it not only measures actual biological effects of chemical mutagens on living organisms, but the synergistic response as well. He also maintains that while conventional air pollution surveillance systems measure the level of identified pollutants, *Tradescantia* may reveal the presence of previously undetected pollutants.



Doug Humphrey

Lloyd Schairer

Lloyd Schairer is a Senior Biology Associate who came to the Biology Dept. in 1953 right after he received his master's degree from the University of Michigan. For over 20 years, he worked with radiobiologist Arnold H. Sparrow who pioneered the *Tradescantia* system for research on environmental mutagens. In 1967, Schairer was a member of the BNL team that participated in NASA's Biosatellite II program. The *Tradescantia* plant was selected for use in one of the 13 biological experiments in space. After Sparrow's death in 1976, Schairer continued the research on *Tradescantia* in association with Jack Van't Hof.

A buffet supper is served at 6:30 p.m. at the Brookhaven Center before the lecture. Many find it convenient and it is a pleasant way to meet members of other departments. Reservations for the buffet should be made in advance by calling Ext. 3541 before 5 p.m. on the day of the lecture.

More On Neutrinos: Are They Fickle?

Over a hundred physicists from a broad range of research specialties gathered at Brookhaven on January 30 and 31 to review what is now known about neutrino oscillations and to discuss possible future research in this area. The mysterious neutrino has always been viewed as an absolutely stable particle with no mass and very limited interactions with other forms of matter. Recently there has been great interest in the possibility that neutrinos may in fact have mass, and that one type of neutrino may change into another. (Three types of neutrinos are now believed to exist: the electron neutrino, which is a partner of the familiar electron; the muon neutrino, associated with the muon; and the tau neutrino, which has not yet been directly observed but is conjectured to be similarly related to the tau particle, discovered in 1975).

Tantalizing Observations

Three quite different kinds of experiments have given tantalizing hints of such new phenomena. Ray Davis of the BNL Chemistry Department has observed about one fourth the expected number of electron type neutrinos coming from the sun; one explanation might be that they change into muon or tau neutrinos, perhaps oscillating among the three types in roughly equal proportions. Fred Reines, University of California at Irvine, who made the first experimental observation of the elusive neutrino back in the fifties, presented evidence last year that some of the electron neutrinos emitted from nuclear reactors seem to be disappearing before reaching his detector, a few meters away. And a Russian study of tritium beta decay reported last year that the electron neutrino appears to have a mass of a few tens of electron volts.

These findings have naturally stimulated considerable excitement among scientists. Because of the diversity of techniques that can be used to search for these effects, and because of the broad implications if they are confirmed, scientific interest cuts across several disciplines, including chemistry, low and high energy physics, and astrophysics. If neutrinos do have mass, it could explain the astronomical indications of "dark matter" which appears to be part of the galaxies, and might even determine whether we live in a "closed" (finite) universe or an "open" (infinite) one. As BNL's Nick Samios remarked, "The neutrino has come a long way from being a hypothetical particle in 1931 to today, when it may account for as much as 80% of the mass of the universe!"

Imaginative Techniques

Several speakers at the workshop described new experiments in progress or proposed using accelerators, reactors or the sun as a source of neutrinos. A number of ideas are being developed for experiments at the Brookhaven AGS. The large new detector described in last week's *Bulletin* is likely to play a major role, and other detectors may be built. One suggestion, presented by Mike Marx of SUNY Stony Brook, was aimed at creating an intense source of muon and electron neutrinos by trapping muons inside a circular magnet until they decay (in a few microseconds). Such a device would send neutrinos out in all directions and several different detectors could be placed around the perimeter. Won Yong Lee

(Continued on page 2)

Doug Humphrey

One of 16 speakers at the world's first neutrino oscillation workshop.

Retirees

Mort Rosen

William Kwiatkowski Olive K. Ritter

William S. Kwiatkowski retires on February 10 after almost 34 years at the Lab. He is a Building & Grounds Utility Man with Plant Engineering, and he plans to stay in East Patchogue after his retirement.

Olive K. Ritter retires today from her position as Biology Associate in the Biology Department. She came to the Lab in 1960. "I just expect to be doing things I couldn't do while I was working," she said, "and to enjoy my grandchildren."

Neutrinos (continued)

of Columbia University described an experiment which could search for oscillations of muon and electron neutrinos, using two 100 ton detectors spaced a kilometer apart. Larry Sulak from the University of Michigan talked about a "Spaced-out K Neutrino Experiment" — seven water Cerenkov detectors, each weighing 200 tons, spaced out over a kilometer, to trace any possible oscillation in the intensity of electron neutrinos produced by a neutral K meson beam.

Which of these ideas may come to fruition is not yet clear. But it does seem likely that BNL can look forward to a busy period of investigations into the nature of that ghostly "little neutral one," the neutrino.

—Neil Baggett

Focus on Black History

Historian Carter G. Woodson believes that a race needs to commemorate its roots lest its achievements be forgotten. Woodson was a pioneer in documenting the contributions of blacks to American History, and he initiated Negro History Week in 1926.

In 1976, this observance was extended to include the entire month of February and retitled Black History Month.

To test your knowledge of black history, and perhaps to add to it, the Affirmative Action Office has prepared a four-part quiz, which will run in the *Bulletin* during each week in February. Here's part one: (answers on page 4).

1. Clifford L. Alexander, Jr.
2. Muhammad Ali
3. Arthur Ashe
4. Pearl Bailey
5. Todd Bridges
6. Maurice Clifford
7. Jerry Dodd

A. World-famous as a singer and actress, she is also a junior theology major at Georgetown Univ.
B. He was recently installed as President of the Medical College of Pennsylvania.
C. This retired tennis champ is national campaign chairman for the American Heart Association.
D. He rose from janitor to lead technician with the Reynolds Tobacco Co. and is credited with developing the "DORAL II" cigarette.
E. He's Willis on "Diff'rent Strokes".
F. He's the only man ever to win the World Heavyweight Boxing Championship three times.
G. A former Secretary of the Army who recently contended that the Armed Forces Qualification Test was not designed to be an intelligence test and should no longer be used as one.

CSCF Information

An informal lecture is scheduled for February 10 to acquaint interested persons with the facilities at the Applied Mathematics Department Central Scientific Computing Facility (CSCF). The lecture will start at 1:30 p.m. in the AMD Seminar Room, Bldg. 515, and last about one and a half hours.

Several CSCF courses have been scheduled for this semester. The course offerings for February include Mathematics Libraries Overview, February 24; and Introduction to Graphics Languages and Devices, February 25 - 27. The balance of the courses begin in March, including Introduction to File Structures, March 2-6; Introduction to General Purpose Simulation System, March 25 - 27; Loader and Library Techniques, March 9 - 13; Survey of Microprocessors, March 10; Utility Library Overview, March 12; Introduction to Basic, March 16 - 20; Microprocessor Techniques, March 24 - April 2.

Please refer to the CSCF newsletter Volume 19, Number 12, December 1980/ January 1981 for course descriptions, or call R. Wittlock, Ext. 4112.

Volunteers Wanted

Would you like to know how well your lungs are functioning? If you are interested, and 55 years of age or older, then we would like you to participate in a clinical study (at no cost to you). The study involves the determination of respiratory capacity by spirometry and measurement of blood gases. In addition, the localized distribution of inhaled air and flowing blood in the lungs will be determined with radioactive tracers. These normal values are required as a standard against which the results from patients with pulmonary disease can be evaluated. If you are interested in participating in this study, please call the Medical Research Center, Ext. 3672 and ask for Jean Matkovich.

COEXISTING WITH COMPUTERS

POTENTIAL FOR ABUSE

By Jagdish Dalal

As our society becomes more dependent on the computer for day-to-day activities, the potential for computer-assisted abuse of mankind, as well as invasion of our privacy will greatly increase. Just as the computer provides countless opportunities for industrial and personal growth, it can also be manipulated to provide criminal opportunities.

Computer Abuse

Donn B. Parker, (whom Fortune magazine labeled "the leading expert on the history of computer crime") defined in his book, *Crime by Computer*, "computer abuse" to be any incident associated with computer technology in which a victim suffered or could have suffered loss, and a perpetrator by intention, made or could have made gain."

The case of the Equity Funding Corporation of America, has become a classic in the annals of computer crime. The two billion dollar fraud would have been impossible to plan, let alone execute, without the use of the computer. Ironically, the perpetrators used computer printouts as a smoke screen while they manipulated the insurance policies by hand. Thus, they did not directly abuse the power of the computer, but used its "stamp of authenticity" to shield their criminal activities.

Another example of computer abuse points out the relative ease with which a computer crime can be committed. A creative software designer thought of a scheme, whereby he used his personal home computer to generate fictitious bills for services never performed by his bogus company. He addressed these invoices to large corporations and local governments, and made sure they looked impressive, and were for small amounts. He relied on an unwitting clerk at the addressee to pay the invoice without question. If he were asked about the invoice, he would send a computerized memo explaining the invoice as a "computer error." Only his bragging and carelessness helped the FBI to catch up with him. He was indicted on mail fraud and other statutes, due to the lack of existing laws concerning computer-assisted fraud.

These examples of computer abuse point out the dangers that lie ahead when computers will be omnipresent. Will computers become part of a standard tool kit for the common criminal or will computer abuse remain a white-collar crime to be discussed only at cocktail parties? Will criminal laws accommodate the intricacies and novelty of rapidly changing technologies? At present, the only answer being heard is to keep human beings involved in the computerized process. It is hoped this person will act as an auditor, and that if he/she has criminal intent, he/she would turn out to be the weakest link in the process.

Since computers will become nerve centers for such things as industrial processes, national defense, and education, computer security will have to be well planned and practiced. If a nation's defense is at the mercy of a computer, back-ups for systems, power, air conditioning, etc., will have to be provided. An errant bolt of lightning could spell disaster for many. Worse yet, a stick of dynamite placed by a terrorist group could bring a company or a nation to its knees. Therefore, many corporations now realize the importance of computer security, and have placed it higher on their list of priorities. Issues such as wire tapping, solar flares affecting satellite data transmission, disaster recovery plans, and backup computer centers are being discussed in corporate suites with an eye toward the future. A computer that once was justified to protect and keep track of a company's assets, has become the most important asset of the company to be protected.

Computer and Privacy Issues

Concern about privacy invasion by computers and data banks has increased in recent years. Even though there has been more talk about the role computerized data banks play in invading the privacy of individuals and corporations, the public has not paid much attention to the issue. To most, invasion of privacy is still the fictional "big brother" scenario of Orwell's *1984*.

Congress began discussing the issues of privacy and computer data banks in the mid-1960s. The Privacy Act of 1974 (Public Law 93-579) is the culmination of their activities. This act applied privacy requirements to all computer systems operating within the Federal Government, including Brookhaven Lab. Even though the act was passed in 1974, implementation of the act, as well as public awareness of the law, has not gained much momentum.

We are finding out that most people are willing to give up incrementally small amounts of data about themselves, in order to receive a minimum of convenience or services. Increasing interaction between government bodies and the population is also escalating the amount of private data being collected by various government agencies. In the pre-computer age, either the data was destroyed after it had served its useful purpose, or was difficult to access. With the use of computers, these limitations are no longer considered when establishing data banks.

In order to understand the ramifications of computers and invasion of our privacy, let us paint a picture for you. Though, this may sound a little bit like "1984", it is happening today.

Banks, credit agencies, and the Internal Revenue Service have extensive data about our financial status. Creditors, or even stores who extend credit have the same data. This type of data, coupled with census information, can leave your personal life open to the reviewer. Airlines, travel agencies, charge cards, and motor

club computer records know all about one's whereabouts and frequency of travel. Employment and school records can help complete a biographical sketch about your background. Medical records, through the use of computerized medical insurance records, can also help create your physical profile with regard to your ailments, or lack thereof. Computerized subscription lists portray your reading habits, likes, dislikes, and your buying potential. If all of these data can be assimilated into one giant computer data base, anyone with evil intent could exploit you.

In summary, computers and related technologies have already begun a revolution that will have more far reaching sociological and economic implications than the Industrial Revolution. Computers will be an integral part of our life style, whether at home, work, or at play. Computer abuse, crimes by computer, and computerized invasion of privacy will be of concern in a society where nine digit postal zip codes and nine digit social security numbers will be the identifiers.

In writing these articles, at times I have been a visionary, while at other times I have sounded like a skeptic. I feel that these two roles are not necessarily incongruent. A rapid rate of change in technology, coupled with a slower rate of reaction in our social and economic life styles, has created this seemingly dichotomous reaction.

This is the last of three articles on computers in our society.

BROOKHAVEN BULLETIN

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Burns: Types and Treatments

Burn is one of the most common insults to the skin. The most common type of burn is thermal or heat burn. The simplest of these burns is the first degree burn which involves only the top layer of skin. Simple sunburn can be classified as a first degree burn. Second degree burns involve deeper layers of the skin, while third degree burns involve all layers of the skin and may destroy underlying tissue.

Treatment for thermal burns and other types of burns is given in the chart below.

In addition to heat burns, there are several other types of burn injury such as powder burns from firearms, cap pistols and fireworks and strong chemicals which burn rapidly and must be completely neutralized to stop skin penetration.

Electrical burns, inhalation and eye burns can all cause serious damage which may not be visible and should be treated by a physician.

— Caroline Kramer, R.N.

First Aid for Burns

Type of Burn	Symptoms	Immediate First Aid	When to Consult a Physician
Thermal — 1° (burns top skin layers)	Skin turns red, may be painful. Usually heals in a few days.	Immediately submerge area in cold running water.	Not generally necessary unless large area involved.
Thermal — 2° (involves deeper skin layers)	Usually causes redness, blistering, and whitish, leathery areas. Some oozing of fluid possible in burn area.	Immediately rinse with cold running water **until burning stops** (at least 10 minutes). **If burn is small, cool completely,** then cover with a non-stick sterile dressing or with sterile ointment to prevent infection.	If burn: covers more than 5% of body surface (arm is 9%). occurs on eyes, face, palms of hands, soles of feet, genitalia. involves child or elderly person. becomes infected.
Thermal — 3° (involves all skin layers, may destroy underlying tissue)	Skin may appear pale, dry and white with areas of browning and charring. Burn area may be insensitive to pain but surrounding areas extremely sensitive.	**If burn is small,** immediately wash off dirt gently in cool running water; apply clean, preferably sterile dressing (in emergency, clean sheet, cloth, etc. will do). **No Ointments!** **If burn is large,** cover loosely with something clean moistened with cool, preferably sterile water; cover patient with blanket to prevent chills.	**Promptly, in all cases**
Eyes	May appear minor, but don't ignore.	Always flush thoroughly with large amounts of water (at least 10 minutes).	**In all cases**
Chemical	Burns rapidly; **No time to waste!**	Immediately flush burn area thoroughly with water, preferably under shower. **Do not wait to remove clothing!**	As soon as possible after thorough rinse; bring chemical container.
Powder	Minute particles may enter skin and cause infection.	Immediately wash with mild soap and cover with clean dressing.	**In all cases**
Electrical	May appear small but can cause serious injury to internal tissue. Commonly two burn sites at points where current enters and exits body.	**Make sure all current is off or remove source with non-conductor (wood) before touching patient.** Make sure patient is breathing, has pulse. If cardiac arrest — CPR should precede any other treatment. Cover both wounds with sterile dressing.	Transport patient to nearest emergency room.
Inhalation (of combustion by-products).	May be no initial symptoms, but can seriously damage airways and obstruct breathing.	Observe for breathing difficulties and start artificial respiration if breathing stops.	Transport patient immediately to nearest emergency room.

CAUTIONS

1. Never apply grease to stop burning. Grease retains heat and may cause further damage.
2. Avoid direct applications of ice or freezing mixtures.
3. In any burn where skin is broken, check to see if a tetanus booster is necessary.
4. In any case involving hydrofluoric acid, see physician.

Letters To The Editor

To the Editor:

In the January 23, 1981 issue of *Brookhaven Bulletin*, an article on page 2 discusses the new Oceanography Explorer Post No. 50 at BNL.

This article erroneously states that Walt Tucker "attained the rank of Silver Beaver, the highest award for an adult in BSA."

The highest rank in Scouting is Eagle Scout, earnable only by Scouts or Explorers who have not reached their eighteenth birthday. There are no ranks for adults in the Boy Scouts of America.

The Silver Beaver Award is conferred by a local Scout Council on an adult volunteer Scouter for service to Scouting. It is not the highest such award available in Scouting. The Silver Antelope is conferred by Scouting Regions; the Silver Buffalo by National Headquarters; and the International Scout Award by the World Scout Bureau in Geneva.

Yours in Scouting,
Dennis Kirson

Looking Ahead

A new program has been developed by the Personnel staff to assist employees in planning for some of the changes they are likely to experience upon retirement from the Laboratory. Pre-retirement programs of this type are being conducted throughout the country with positive results. Companies find that sound planning can make a real difference in the readiness, financial and otherwise, with which employees meet this new experience.

Approximately 20% of the BNL workforce - 700 employees - are nearing retirement. To help them prepare for the future, the pre-retirement planning program will cover a broad range of topics, including sources of retirement income, wills and estate planning, housing options, physical and emotional adjustment and the structuring of leisure time.

This month, employees between the ages of 60 and 70 and their spouses, will receive invitations from Personnel to attend two pre-retirement planning sessions. The first will be held in early March and the second between mid-March and mid-April.

The first session will be presented by a team from TIAA CREF. The second will be given by Dr. Alan Entine, a faculty member at SUNY, Stony Brook, who has extensive experience in the pre-retirement planning field.

In the fall of this year, additional sessions are planned for employees ages 55-60.

Concert Reminder

Pianist Stephanie Brown will present music by Mozart, Ravel, Villa-Lobos and Brahms, February 10, 8:30 p.m. in Berkner Hall.

BERA Names Committee

A nominating committee has been appointed by the BERA Executive Board to select a slate of candidates for the 1981 BERA Board election, which will take place the latter part of March. Those appointed were:

Roger Bailey, Plant Engineering
John Beerman, Applied Math
Per Dahl, Accelerator
Robert Fuchs, Reactor
Patrick Glynn, Staff Services
Mona Rowe, Directors Office
Steve Shapiro, Physics
Marge Stoeckel, Fiscal
Edwin Taylor, Applied Math

Possible nominees are not being considered by the committee members in preparation for a meeting to be held on Wednesday, February 18. At the meeting, qualifications of chosen nominees will be discussed and judged by the membership, and a final election slate will be selected.

Any employee who wishes to suggest a nominee is encouraged to do so by contacting a member of the nominating committee before February 11.

Aviation Club

Come fly with us! A good way to get introduced to aviation is to share a scenic ride over Long Island with an Aviation Club member. Flying can be both fun and relaxing.

Interested? Come to a club meeting on Wednesday, February 11, at 12 noon in Berkner Hall. The planning committee has moved into high gear for spring and summer events.

Volleyball

A Division

No Names fully recovered from last week's shutout; over High Society: 15-7, 16-14, and 15-12. Las Bolas edged Nuts & Bolts, 15-13, 15-13, and 12-15. Mixed Ups over Kings Court, 15-7, 15-8, 15-13.

B Division

Puff & Stuff big upset over Leftovers: 15-11, 0-15, 15-12, ending Leftovers 28-game winning streak. Oh No's shutout Semi Tough 15-13, 15-4, 15-12. TNT over Lemufs, 15-10, 10-15, 15-7.

Reminder: there is another Round Robin Tournament for the Open League on February 11.

Arrivals & Departures

Arrivals

Gnanalingam Anandalingam .... En. & Env.
Michael A. Chambers ..... Accelerator
Wolfgang U. Eberhardt ..... Physics
Michael T. Foran ..... Energy & Env.
Richard Jaung ..... Nuclear Energy
Michael W. Langhorn ..... Accelerator
R. Wanda Rowe ..... Medical

Departures

Thomas Bottiglieri ..... Sys. & Adm. D/P
Thomas A. Carney ..... Energy & Env.
Paul Dempsey ..... Nuclear Energy
Gail M. Lukas ..... Safety & Env. Prot.
Bruce E. Miller ..... Nuclear Energy

Cooking Exchange

Indian cooking is on the menu for next week's meeting on Wednesday, February 11. Meetings are held at the Recreation Building from 12:30 to 2:30 p.m. Admission is $1.00; babysitting is 25¢ per child. If there are any questions, please call Adrienne Usher at 289-7658.

Bowling

Purple & White League

The Groupers won all 7 making them the only undefeated team in the second half. John Connelly's 607 series was high for the night and Mary Scheidet's 235 game. Other good games were bowled by Al Pinelli 214, Denny Klein 214, Ken Riker 224, John Connelly 232/213, Ed Sperry 204, Dave Penoyar 201, Betty Jellett 205, Gail Schuman 202, Joyce Pinelli 194, Mickey Haller 192, Pat Manzella 189, Gerrie Riker 184, Nancy Mayeski 182, Jeanne Penoyar 180. Kathy Carter converted the 5/7/9.

Pink League

Congrats to Karen Alberico on her 200 game and 506 series which also included a 184 game. Helen Keeley rolled 177/172/160 for a 518 series. Other good games were bowled by April Donegain 174/162, Maria Apelskog 168, Mary-Grace Meier 166/162, Claudia Tyler 153 and Denise Miesell 151. The Lickety Splits rolled a new high team series of 1829 scratch.

Red League

The Old Timers won 11 from the Blue Jays with W. Reams bowling a 211/232 for a 609/702 series, R. Adams 204, R. Smol 614 gross, H. Frei 603. This Isa Team won 8-3 over the 76'ers with R. Barberich rolling a 213/223 for a 617/715 series. W. Kollmer bowled a 201/201/607 gross, R. Larsen 211/638 gross, M. Iarocci 200/605 gross. The Designers shut out the Sandbaggers 11-0. K. Riker had a 200, C. Bohnenblusch 201/609 gross, J. Ferrante 615 gross. The Freon Loaders won 8-3 over the Phoubars with R. Marlow grossing 654 and F. Powers 628. The Strangers only managed 3 from the Light Source with V. Scotto bowling a 210/636 gross and F. Pond 201/644.

Monday is an awful way to spend one-seventh of your life.

Motorcycle Club

The monthly meeting is Monday, February 9, at 5:15 p.m. in the Recreation Building. We're going to mix business with pleasure. After the meeting, stay to watch the movie "On Any Sunday," featuring Malcolm Smith and Steve McQueen. Refreshments will be served.

New members are always welcome. Dues are $5 for the year.

Answers to Quiz

1. G; 2. F; 3. C; 4. A; 5. E; 6. B; 7. D.

Cafeteria Menu

Week Ending Feb. 13, 1981

Monday, February 9

Beef barley soup	(cup)	.55
	(bowl)	.65
American chop suey		1.50
Western omlette & 1 veg.		1.50
Hot Deli — Pastrami	(on bread)	1.65
	(on roll)	1.75

Tuesday, February 10

Cream of tomato soup	(cup)	.55
	(bowl)	.65
Sauteed chicken breast on rice		1.65
Beef liver & onions w/1 veg.		1.50
Hot Deli — Barbequed beef	(on bread)	1.65
	(on roll)	1.75

Wednesday, February 11

Split pea & ham	(cup)	.55
	(bowl)	.65
Broiled filet of fish		1.55
Braised shortrib a la mode w/1 veg.		1.65
Hot Deli — Grilled reuben		1.60

Thursday, February 12

Chicken noodle soup	(cup)	.55
	(bowl)	.65
Country fried steak w/1 veg.		1.65
Spaghetti & sausage		1.55
Hot Deli — Baked ham	(on bread)	1.60
	(on roll)	1.70

Friday, February 13

New England clam chowder	(cup)	.60
	(bowl)	.70
Tuna noodle casserole & 1 veg.		1.60
Sauerbraten & potato pancakes		1.65
Hot Deli — Clam boat		1.70

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position, with consideration given to candidates in the following order of priority: (1) present employees within the department, with preference to those within the immediate work group; (2) present employees within the Laboratory as a whole; and (3) outside applicants.

The determination of the best-qualified candidate for available positions will be based upon education, experience and other job-related criteria. Such factors will be evaluated and measured against the demonstrable requirements of the available vacancy, as well as the Laboratory's Affirmative Action objectives.

The Laboratory is committed to a policy of Equal Opportunity in its selection and placement of personnel. Its objective is equality of opportunity in employment, training, and promotion without regard to race, color, religion, national origin, sex or handicap.

Each week, the Personnel Office lists new personnel placement requisitions. The purpose of these listings is, first, to provide open placement information on all non-scientific staff positions; second, to give employees an opportunity to request consideration for themselves through Personnel; and, finally, for general recruiting purposes. Because of the priority preference policy stated above, each listing does not necessarily represent an opportunity for all candidates. As a guide to readers, the listings are grouped according to the anticipated area of recruitment, as indicated below. Except when operational needs require otherwise, positions will remain open for one week following publication date.

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882.

LABORATORY RECRUITMENT: Opportunities for present Laboratory employees.

1563. TECHNICAL POSITION - Requires AAS degree in mechanical technology or equivalent background. Will assist in low-temperature measurement of superconducting wire. Responsibilities will include fabrication of experimental apparatus, use of furnaces to heat-treat wire, use of cryogenic liquids, and fabrication of superconductors. Should be familiar with simple machining and possess basic knowledge of electrical systems and some knowledge of vacuum systems. Department of Energy and Environment.

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

1564. STAFF ENGINEER - Requires a bachelor's degree in mechanical engineering or equivalent experience in designing and developing HVAC systems for buildings, including active and passive solar systems. Responsibilities will include installing data acquisition systems for monitoring thermal performances of buildings and analyzing the acquired data. Department of Energy and Environment.

1565. ENGINEERING POSITION - Requires a bachelor's degree in engineering or equivalent experience in designing, estimating, and implementing of energy conservation projects. Responsibilities will include collaborating with BNL and Federal DOE personnel in reducing energy consumption levels of mechanical/electrical systems on site. (Re-posting of Job No. 1189). Plant Engineering Division.

1566. OCEANOGRAPHY ASSOCIATE - Requires a bachelor's degree or equivalent experience. Responsibilities will include using quantitative and organic chemistry techniques with an autoanalyzer. Familiarity with instrumentation used in analyzing seawater samples is necessary as well as previous shipboard experience. Knowledge of BASIC computer programming highly desirable. Department of Energy and Environment.

1567. PHYSICIAN'S ASSISTANT - Requires certification as a Physician's Assistant. Responsibilities will include participation in clinical research programs conducted at the Hospital of the Medical Research Center. Programs include metabolic bone diseases and nutritional disorders. Medical Department.

1568. PERSONNEL MANAGEMENT POSITION - Requires bachelor's degree in business administration, personnel or a related field and two years experience in wage and salary analysis. Will be responsible for conducting job evaluations and salary surveys, writing job descriptions and wage and salary policies. The successful candidate must possess excellent analytical and communications skills, particularly emphasizing writing abilities. Personnel Division.

Autos & Auto Supplies

80 DODGE - OMNI 024 Sport, sunroof, am/fm stereo, 8 trk, rust proof, many extras. 30 + MPG, mint, reasonable. 878-1731.

75 VW RABBIT - a/t, 57,000 mi, v.g. cond, $2,000. Ext. 4416 or 821-0144 after 6.

72 PLYMOUTH FURY - 2 dr, p/s, p/b, r/h, good cond. Asking $600. Ext. 2914 or 286-3742 eves/wkends.

SHOP MANUAL - Studebaker passenger car, 1959-63, excel cond. $20. Ext. 2265.

75 TRIUMPH - TR6, excel cond. in & out, low mi., $4,000. Ext. 2921 or 698-4444 after 6 p.m.

RIMS - (2) 15" Ford, excel cond. $8. per pair. Bill, Ext. 2906 or 929-6189.

1978 TARUS TRAILER - 17' sleeps 6, awning, trailer hook-up, used 4 times, many extas. Steve, 582-3130.

78 DATSUN - pick up w/cap, 4 spd, am/fm cassette. $3,550. 732-3350.

68 PONTIAC - Firebird 350 eng., 4 spd, color red. $600. Ask for Bobby Daves, 732-3846.

MOTORCYCLE - 1952 Indian Roadmaster 80 c.i. 1344 cc, mint cond. Totally rstored. All original. Show bike. 757-2178.

70 FORD - Torino Sta. wgn., p/s, p/b, 302 V8, a/t, 17-21 MPG. $200. Bob, Ext. 7684.

70 CADDY - Sedan, DeVille, steel radials, everything works. Best offer over $100. 744-2105.

SNOW TIRES - (4) L78-15 Firestone on Jeep CT5-7 wheels. $100/lot. 363-6121 after 6 p.m.

TIRES - Dunlop SP-68 radial; 155sr14, almost new, off MGB GT. Bob, Ext. 3565 or 924-9210.

68 CHEVELLE - track car, excel cond, 331 Pro motor, Ford top loader trans, motor set back, alum. fire walls, 5.38:1-12 bolt rear E.T. 11.5 sec. $3,500. Fred, Ext. 4407 or 4435 or 499-1214 after 6 p.m.

AM RADIO - for 71 Buick LaSabre, good cond. $10. John, Ext. 3292.

76 HONDA -CJ360. $600. Kathy, Ext. 4615.

MOTORCYCLE - 1978 Honda CX-500 shaft like new, many extras. $1,500. 929-6374.

79 Corvette - Silver w/oyster leather int, loaded, immaculate inside & outside. $9,500. 584-5779.

73 LINCOLN TOWN CAR - white/tan int, all pwer, Michelin tires. Asking $900. 821-0189.

72 OLDS - Cutlass, V8, 8 trk, excel running cond. $700. Ext. 3329 or 878-0480 eves.

74 PEUGEOT - 504 Diesel, a/c, std, 75,000 mi, 28-34 MPG, good cond. Asking $3,950. 286-8733.

TIRES - (2) P-155x13", $20; 6:00x16" tires, $5. ea. Jaguar 'E' type; repair manual, $20. Frank, Ext. 2022.

76 JEEP - CJ7, 6 cyl, quadratrack, black w/brown top, excel cond. $4,000. Frank, Ext. 4709 or 281-4607.

78 MIDAS MINI MOTORHOME - 21' sleeps 6, roof & cab, a/c, am/fm CB, excel cond, 28,000 mi, $11,000. 298-4931 after 6 p.m. or Carmen, Ext. 4779.

73 DATSUN - 240Z, am/fm stereo, new radials, battery, excel, must see. Tony, Ext. 3195.

72 FORD - Sta. wgn, p/s, p/b, excel mechanically but some body dents. Arnie, Ext. 2606.

SHOCKS - front, fit '72 Duster. Sears heavy duty plus, in box. $10/pr. Ext. 2493.

73 PONTIAC - Catalina, recently rebuilt eng., many new parts, runs good; also 1973 "340" Duster, rebuilt eng. & trans, runs good, good body, extras. 924-8309 eves.

RADIO - Chrysler, am/fm, like new, reasonable. Bob, Ext. 4279 or 878-1731.

Boats & Marine Supplies

1978 - 30' Catalina Wheel Dodget V.H.F., D.F., Hoiding tank, 3 sails, mint cond. Dinos, Ext. 4666.

DANFORTH ANCHOR - #13-5 boats to 32" long w/200' nylon line. $40. John, Ext. 4312.

Miscellaneous

FIREPLACE ITEMS - glass doors, $40; brass screen, $15. (fireplace opening 36"x27"); shovel, tongs & stand, $15; wood holders, $4 & $6; air cond., old but works, $35; push-type lawnmower, $15. John, Ext. 3292.

COAL STOVE - Sears, $125; fireplace Hydrohearth, $100; fireplace glass doors, $50. Frank Rumph, Ext. 4581 or 588-3565.

ICE SKATES - girl's size 2, excel cond. $8. Jim, Ext. 3372.

VACUUM CLEANER - Sears Powermate, 6 yrs old, typewriter, manual Royal needs new platten. $10. Gail, Ext. 3338.

HEATER - Kerosene Infra Red Energy Mart Model No. EM—M221, 9,880 BTU. $175. Lou, Ext. 4615.

CHEST OF DRAWERS - in perfect cond, fine piece. $100 or best offer. Babette, Ext. 3419.

DRUM SET - Lugwig - Crystal Blue, Zilgin Cymbals-heavy duty stands, 8 pieces, new. $1,200. 399-1985 after 5 p.m.

SKIS - Hexcel Primercord 205 cm w/Marker step-in bindings, excel cond, $100; boots, women's Frye, tan, ize 7, excel cond. $35. 744-5161 weekday eves.

OIL BURNER - Sunray high efficiency Shell head, 3 yrs old. Asking $95. R. Cook, Ext. 4722 or 928-9359 eves.

ICE SKATES - boy's size 8. Ext. 2459.

HART - Holiday skis, Look bindings, length 210. $20. 732-3350.

FREE HORSE MANURE - in bags, you pick up. 589-7316.

TV - Bohsei 12" B&W, used less than 50 hrs. $40. Greg, Ext. 7960.

GAS RANGE - Caloric, good cond. $125. 286-1709.

SKIS - Kneissl-Kombination w/bindings, Zooch, Kastinger boots, size 10, used once. $85. Ext. 4489.

PROCTOR SILEX - meal maker/toasteroven and slow cooker; bed frame, single bed and frame; vertical broiler, humidifier; kitchen chairs. 751-5539.

SKIS - Rossignol 160's w/Solomon bindings. $75. John, Ext. 4312.

SKATES - boy's size 4, figure skates, excel cond, $12; men's skates, size 9, Baur Hockey type, like new, $20. Bob, Ext. 4279 or 878-1731.

GOLF CLUBS - 4 Woods, 1,3,4 and 5 Mac Gregor Tourney. $100. Ext. 2022.

DELUXE SLR CAMERA CASE - holds 2 lenses and access, brown, excel cond, hardly used. $20. Ext. 3284 or 669-9482.

SNOW BLOWER - Ariens, 3½ hp, new, elec start. $450. 924-7484.

SKI BOOTS - Caber size 12. $15. John, Ext. 2485.

ICE SKATES - ladies size 9, good cond, $8; accordion, older model (Francini) w/case and books. $40. 727-1617.

WASHER - portable Maytag, very good cond. $85. Ext. 7699 or 744-7153.

ROCK CLIMBERS - Summit magazine, July '63 - June '72. Dennis, Ext. 4259 or 736-2534 after 6 p.m.

KEROSENE HEATER - Kerosun Director, 11,700 BTU's, swivel head, 2-gal tank, U.L. approved. $225. 581-0466 eves.

LITTON - Meal-In-One Microwave, 1 yr old, excel cond. $400. Ext. 3389 or 751-7096 after 6 p.m.

LIONEL TRAINS - #671 steam engine, operating milk car, tank car, track. $100. Jerry, 281-5667.

SKI BOOTS - men's 8½ new LeTrappeur, black plastic. $45. Ext. 4727.

UPRIGHT PIANO - "Larch" carved case. $350. 928-0281 after 6 p.m.

CITRUS FRUIT - Temple oranges and pink grapefruit, 2/5 bushel, $6.50 ea. Delivery, Feb. 23. G. Price, Ext. 3336.

HOCKEY SKATES - size 10, good cond, $10. 286-1290 eves.

SLIDE PROJECTOR - Sawyer's rotamatic w/one tray and stack loader. $65. Andy, Ext. 2948 (Bldg. 318).

CHAIN SAW - 14" Homelite super two, case, extra chain, bar. $95. Ext. 4489.

VALLEY TOW BAR - for small car, complete. $80. 727-0790.

EXERCISE BIKE - electric Vita-Master, 3-way, excel cond. $100. Dee, Ext. 3675.

FOR ADOPTION - puppies: Shepherd/Collie mix, ready Feb. 15th. Maryann, 399-1413.

ANTIQUE - solid brass bed, double, about 100 yrs. old, beautiful, excel buy - redecorating. $750. 744-1081.

BLACK PERSIAN LAMB COAT - mink collar, size 12, excel cond. $125. 475-0126.

STEREO CASSETTE DECK - Sankyo STD-1650 k/Dolby system, excel cond. $95. 473-7667.

KITCHEN RANGE - (1) wood/coal/gas (1) oil/-electric, both white porcelain; electric knife, $5. 325-1961.

COMPUTER TRS-80 - Model 1, 2 disk drives, 60 CPS line printer 32K matched tables. $2,500. Mark Catan, Ext. 2504.

BOX SPRING - full size. $30. Tuli, Ext. 2901 or 924-7025 eves.

DINING ROOM SET - Drexel contemporary, 4 chairs, table, china closet. $350 or best offer. 929-4942.

TV - 19" B&W; brown leather jacket, blazer style, size 10. Ext. 2907.

NEW STOVE PIPE - insulated, 7 sec, each $30; T-pipe, $40. Total $250. 281-2289.

TICKETS - (2) half price to California, good til June. $50 per ticket. Cathy, Ext. 4093.

FIREPLACE SCREEN - large self-standing 32x50" $10. Jim, Ext. 3372.

WHEELCHAIR - Everest & Jennings, Starliner, excel cond. $115. Ron, 423-7714.

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

MEDFORD - 1/3 acre, Cape, 4-5 bdrm, 2 baths, den w/fp, l/r w/wood stove, lg. eik, formal D/R, 18x36 in ground pool, assume 7½ mortg. $42,900. Jack, Ext. 4254 or 289-6708.

WESTHAMPTON AREA - mobile home 12'x60', 2 bdrms, eik, stove, refrig, washer/dryer, laundry rm, 2 tool sheds, porch, patio, wooded landscaped plot. $10,500. 325-1112 after 5 p.m.

MEDFORD - 20 yr. old Hi-Ranch, 1.2 acres, 2-3 bdrms, eik, playrm, laundry rm, 2 baths, central a/c, 2 car garage, patio deck, in ground sprinkler system. Asking $55,000. Owner will hold mortgage at lower than current rates. 286-1709.

BELLPORT VILLAGE - 3 bdrm Hi- Ranch, l/r, fam rm, den, lg. eik, attached garage, deck, 1½ baths, short walk to Kreamer St. Schools, $42,000 Financing available. 286-8166.

MANORVILLE - 3 bdrm ranch, 1 acre, country kit, 1½ baths, full bsmt, all appli, garage, assumable mtg. at negotiable rate. $41,000. Pete, Ext. 3868/4574 or 878-1225.

CALVERTON - Low ranch, 3 bdrm, l/r, d/r, kit., fin. bsmt., ideal mother/daughter, 7½% assumable mortgage. Asking $35,000.727-9058.

For Rent

SHIRLEY - attractive apt. furn., priv. entr., util., incl. excel location, 5 min. from Lab & stores, mature working gentleman. Security. $285/mo. pays all. 281-8044.

MASTIC/SHIRLEY - 1 rm, use of house, female preferred. $40/wk. Emma, 399-2131 or Ext. 2456.

NORTH SHIRLEY - share lg. house, 4 mi. from Lab, all appli, furn., female preferred. $140/mo. plus 1/3 util. 924-4685.

YAPHANK - 3 bdrm Colonial on 260' of the Carmen's River, kitchen-din. rm, l/r, dishwasher, washing machine/dryer. $500/mo. 924-3755 or 473-7223.

MANORVILLE - 1 bdrm apt, avail. April 20, dishwasher, a/c, fully carpeted, 1½ mi. south of exit 69 on LIE. 878-1135 or 345-3835.

MIDDLE ISLAND - 2 bdrm house, immediate occupancy. $325/mo. plus util. Miriam, 924-3528.

Wanted

BABYSITTER - who lives on site, non-smoker please. Mon. to Fri. 8:30 - 5:00. for 10 mo. old. Mona, Ext. 2347.

UTILITY TRAILER - 4x6, preferably steel, reasonable. 473-7667.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

SKIERS - to ski one-day at Catamount Mt., February 28. For info, call Bea, Ext. 3571.

SCUBA TANKS - and 25-50 lb. weight lifting plates. Ext. 2384.

PRESSURE CANNER - w/gage; 6" thick unfaced fiberglass insulation. Bob, Ext. 3565 or 924-9210.

POODLE - Want to adopt miniature poodle, 1-2 yrs., accustomed to children. Judith, 698-3150.

LIVE-IN-HOUSEKEEPER - for healthy middle age man in Pt. Jefferson area. Older woman preferred. 727-7440.

TRAINS - Lionel, any "0" gauge or "027" gauge cars, tracks, & equip. Frank, Ext. 3120.

CB RADIO - 21 channel in working cond, & reasonable. Stan, Ext. 3284 or 286-1062.

BOXES - cartons for moving. Dennis, Ext. 4259 or 736-2534 after 6 p.m.

PIANO - upright or console, good cond. Ext. 4301.

BABY CRIB - and high chair, clean & reasonable. Ext. 2634 or 286-1290 eves.

COBBLESTONE - or Belgian Block, will pick up. Ext. 2072 or 929-8411 after 6 p.m.

PERSONS - interested in assembly & insulation of solar hotwater system. Quantity discount. Info-mtg. on 2/11/81, 8 p.m. Setauket School. For info, call Ext. 3575.

Car Pools

COMMACK - wish to car pool with additional driver. Conrad, Ext. 2810.

MIDDLE ISLAND - paying rider needs ride from Artist Lake Condo. to BNL, M-W 5:15 to 7:15 for S.C.C.C. class. 924-7756.

SAYVILLE - wish to join on-time carpool. Linda, Ext. 7183.

HOLBROOK - Woodgate Village, Birchwood, New England Village Area. John, Ext. 2485.

BABYLON /WEST ISLIP - driver needed for 4 person car pool. Ext. 2493.

Services

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

BABYSITTING - wamt to babysit child 2-5 yrs. Will give lots of TLC. Dawn, 924-8297.

MOTORCYCLE ACCESSORIES - for street & dirt, best prices, lab discounts. Ext. 2311.

TAXES - Prepared by Tax Consultant, your home or mine, reasonable. John, 732-2472.

PROFESSIONAL INCOME TAX SERVICE - by experienced preparer. Jack, Ext. 7942 or 864-2236.

BABYSITTING AVAILABLE - Lake Panomoka, between 25A & 25, 5 min. from BNL. rates reasonable. 929-8809

KEROSENE HEATER REPAIR - most brands: Kerosun, Corona, Yuassa, Sanyo, Noble, etc. parts available. 581-0468 eves.

CARPETS INSTALLED - repaired, quick dependable service, free estimates. Jim, 821-0187 after 5 p.m.

INTERIOR PAINTING - custom workmanship. Top quality materials. Insured. Bob, 289-7657 after 6 p.m.

FIRESIDE CHIMNEY SWEEPS - fireplaces, wood, coal & oil flues. Dustless removal. Insured. Lab. discount. Bill, 584-6425.

CARPET CLEANING - any 2 rooms, $39. All work guaranteed. Terry, 499-8377.

PIANO LESSONS - high school student, experienced, studied 11 yrs., my home, Shoreham. Jenny, 744-3744.

CERTIFIED ELEMENTARY TEACHER - willing to tutor children at your home or mine. Reasonable. Ext. 2072 or 929-8411.

HOUSE CLEANING - professional results, reasonable rates, references. 821-9508.

PILLOWS - custom patchwork by Un-Hee. 736-2534.

EXPERT TAX ACCOUNTANT - low fee for 1980 returns. 475-3981. weekends, eves. Bob.