BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Lab Begins Tests On Oil Savings Options

BNL is about to begin field tests of some of the most popular fuel-saving devices and systems now being marketed for use in oil-fired home heating systems. The tests, to be completed by October 1981, will help DOE identify the most effective ways for homeowners to modify their heating systems in order to conserve fuel oil.

Approximately 300 homeowners in the metropolitan area have been selected to take part in the field tests by allowing individual fuel-saving devices, or combinations of devices, to be installed in their home heating systems, said Robert Hoppe, head of BNL's Oil Refit Option Qualification Program. Each home's oil consumption will then be monitored and compared to past years' consumption, to determine how much oil each device or combination actually saves.

The purpose of the Oil Refit Option Qualification Program is to evaluate the various heating system modifications, or "refit options," available to homeowners who heat with oil. The program is part of DEE's Energy Storage and Conversion Division, headed by Frank Salzano. Brookhaven's work in this area is included in DOE's Fuel Oil Conservation Marketing Demonstration Program, which is aimed at encouraging the use of fuel-saving devices in the home.

Each refit option to be tested will consist of either an individual fuel-saving accessory device, or a combination of accessory devices and modifications such as fine tuning the heating system or reducing its firing rate. The accessory devices used in the BNL tests will include retention head burners, vent dampers, baffles, flue economizers, aquastat reset controls, and automatic set back thermostats.

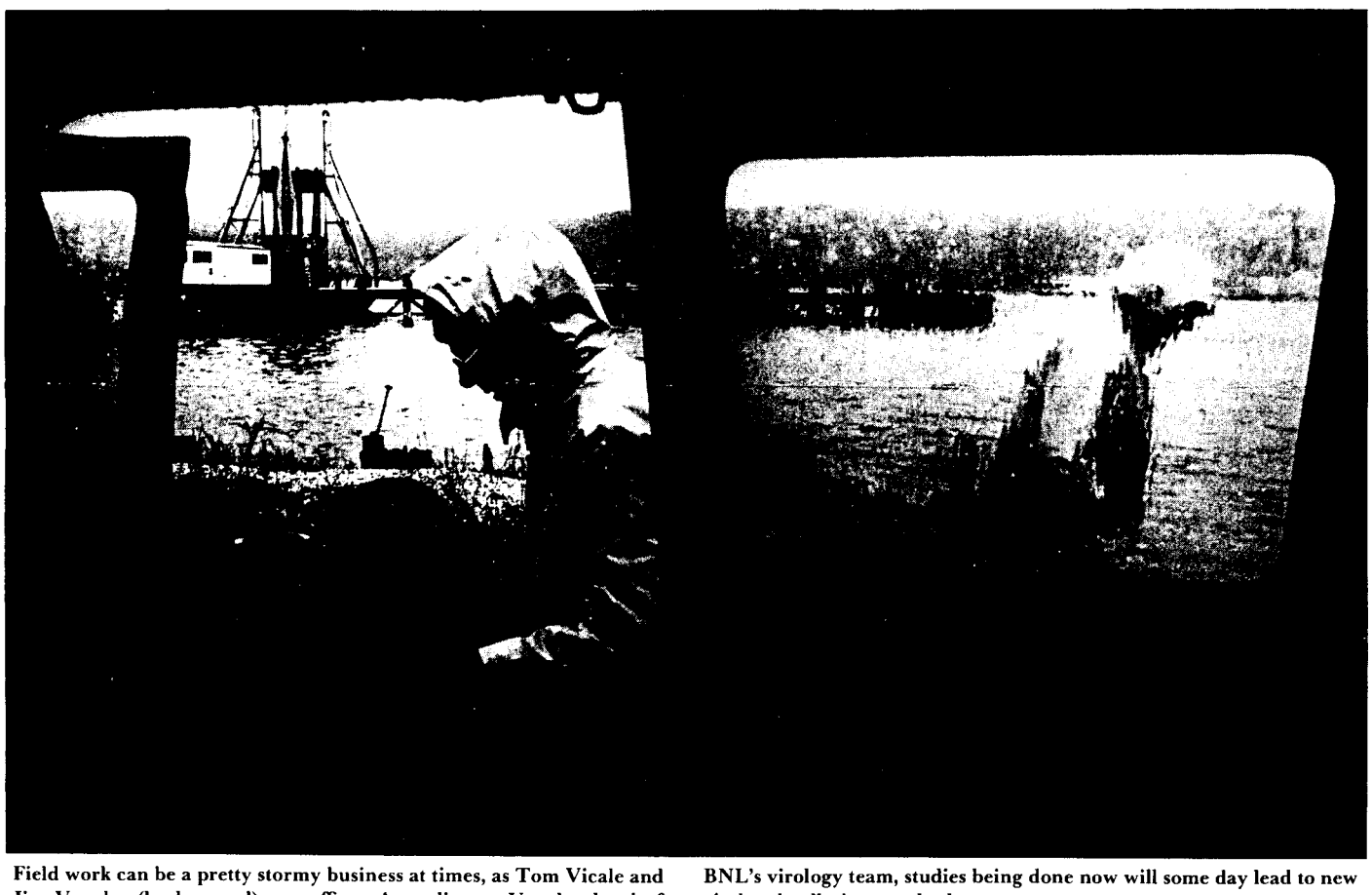
Eight different refit options will be tested in homes which have hydronic, or hot water, heating systems, and four will be tested in homes which have forced warm air systems.

The refit options for hydronic systems will be installed by the end of June in 210 homes in the Strathmore at Stony Brook residential area in Stony Brook, Long Island. Approximately 30 more homes on Long Island and 70 in New Jersey have tentatively selected to participate in the tests on forced air systems. Options will be in place in those homes by late July.

The homes to be used for the field tests were selected so as to be as similar as possible in construction, existing heating system, and occupancy patterns, explained Hoppe. Long term affiliation with an oil dealer was also required, to assure that data on past oil use would be available.

Participating homeowners have agreed not to make any changes in their heating systems during the field tests. The refit options will be installed in their homes free of charge, and at the end of the tests they may choose to keep the options without charge, or return them.

The refit options will be installed and serviced by the Medford/Suffolk County Office of Meenan Oil Co., Inc., under contract to Brookhaven. The company will also supply BNL with oil consumption data which will be used to evaluate fuel savings.



Field work can be a pretty stormy business at times, as Tom Vicale and Jim Vaughn (background) can affirm. According to Vaughn, head of BNL's virology team, studies being done now will some day lead to new viral and pollution standards. —photo by Humphrey

Viral Studies In The Field
—Port Jefferson Harbor

From the shoreline it looks like a small swell bubbling up in the relatively calm waters of Port Jefferson harbor. Jim Vaughn, head of the DEE virology team, points to the center of it – just about 150 feet offshore from the Northville Petroleum site – and explains where his assistant, Tom Vicale, is trying to row a rubber life raft.

A powerful wind whips off the sea intermittently bringing a combination of sleet, hail, and snow under a steady downpour of rain. Vicale is blown further and further from his destination, but after almost half an hour battling finally reaches the outfall pipe that dumps treated sewage from the Port Jefferson treatment plant into he harbor. He and Vaughn begin filling a 50 gallon tank with sample water from the pipe mouth. They move out toward the end of a tanker pier; Vaughn pulls up sediment with a heavy rust incased sediment sampler while Vicale takes oysters and clams from a mud covered lobster trap, and attempts to balance his small raft.

The point of all this is to collect information on the interelationships of human (enteric) viruses and shellfish for the Food and Drug Administration (the FDA) – the projects sponsor. Vaughn began this particular phase of the program at Port Jefferson harbor this January; for the next year his team will collect bi-weekly data and compare the numbers of viruses present in the sediment, water, and shellfish. Shellfish are important indicators of what is present in seawater because their bodies act as filters, extracting algae from seawater. Oysters and clams pump about 5 to 10 gallons of water through their shells an hour.

Vaughn points out that in the past viral studies consisted of lab experiments where shellfish were provided a certain concentration of laboratory passaged viruses in an artificial environment.

"The FDA doesn't want a lot of lab studies done in test tubes," says Vaughn, "They're interested in finding out whether or not water is a good index of fecal solution in shellfish harvesting areas, or if they should be testing the sediment – the work has to be done in the field."

According to Vaughn, free floating viruses – those that remain unassociated with sewage or sediment particles, and are often used in lab experiments – quickly inactivate. However, sewage dumped into the harbor contains particle-bound viruses which can survive in sea water for several months. By looking at the natural ratio of viruses to shellfish and sediment, the BNL researchers can determine how long the viruses last, and the effect seasonal changes will have on their numbers. This is all related to their likely uptake by filter-feeding bivalves. The specific viruses Vaughn

(Continued on page 2)

Muckerman Wins A Guggenheim

James T. Muckerman, a theoretical chemist in the Chemistry Department, has been awarded a John Simon Guggenheim Fellowship. His proposal, "Dependence on Dimensionality of Model Problems in Molecular Dynamics" was one of 276 projects selected by the Guggenheim Foundation from 3,066 applications.

Muckerman will take a one-year sabbatical leave from the Lab, beginning about September 1, to work with Dr. M.S. Child at the Theoretical Chemistry Department, University of Oxford. Muckerman says that although both he and Child have been working on calculations of detailed motions of atoms in molecular systems, their approaches have been different, and he expects their upcoming collaboration to be fruitful.

Two general questions regarding the dependence of model problems and their solutions on dimensionality are the unifying theme of the proposed research. The first is, to what extent do conclusions about accuracy and efficiency of a theory or computational method obtained from the consideration of a model problem in restricted dimensionality have to be altered when considering the same problem in its full dimensionality? Second, is it proper to attribute to a physical system the existence of some phenomenon demonstrated only through the solution of a model problem in restricted dimensionality?

Specifically, Muckerman and Child will explore local modes of vibration in polyatomic molecules, and the existence of "trapped trajectories" in three-dimensional atom-molecule collisions.

Doug Humphrey

Jim Muckerman

Viral Studies (Cont'd)

is recovering are members of the polio, coxsackie, and echo virus groups, the most common human enteric viruses.

Under the present system the FDA uses the coliform bacteria count to

The FDA is hoping that the data the virology group is collecting at Port Jefferson Harbor will determine the effects of ecological conditions on the bio-accumulation of enteric viruses in shellfish. —photos by Humphrey

determine the levels of microbial pollution contributed by sewage, but Vaughn doesn't believe that this is the most accurate way to determine this.

"One thing we've shown through this study is there's no relationship between coliform counts and the occurrence of human viruses," continues Vaughn. "You can have a zero coliform count and still have significant numbers of recoverable viruses left in the water."

Because environmental fluctuations don't affect viruses the way they do bacteria – viruses are hard to get rid of. Chlorination will kill many, but not all viruses, and Vaughn says "You can't get rid of all of them in the real world."

The primary treatment plant in Port Jefferson, which has served the village and the State University at Stony Brook for the past 35 years, pours 1.5 million gallons of treated effluent into the harbor every day. As demands on that plant, and others on Long Island, increase, Vaughn believes viral studies are an important step in helping local governments set pollution standards. Presently, there are only six to eight Labs in the United States which can perform this kind of environmental sampling.

"The final line significance of this study won't be determined for several years," states Vaughn, but I can see viral standards coming within the next 10 years which will make use of data we are collecting now.

The equipment and techniques Vaughn uses in the virology lab today are a far cry from his graduate school days when he hung gauge strips in the water and hoped viruses would 'hang on,' but even with sophisticated technology things don't always go right.

"People who just work in a lab can't conceive how many things can go wrong in the field," says Vaughn, laughing, "from forgetting a wrench at home to falling overboard out on the Sound."

Between the Port Jefferson Harbor study and the Speonk project, Virology does 50 to 60 percent of its work in the field. And because of the data they have collected Vaughn is also considering doing a similar project at a public dock across from their Northville Petroleum site to see how far, and to what intensity, the viruses travel across the inlet.

—Jerry Mikorenda

—And In Speonk

Funded by the Suffolk County Department of Health, Virology will also be studying the saturation of viruses into the groundwater at an apartment site in Speonk. Jim Vaughn, the BNL project head, is going into the study with several questions on his mind: how far do viruses move, what happens to the viruses in the water, and what is considered a safe distance for the placement of drinking water wells adjacent to cesspools.

To Vaughn the most important question he must answer is how far the viruses move through the groundwater aquifer. Right now, the country has an ordinance that doesn't allow septic tanks less than 100 feet above private drinking water wells; however, this is based on bacterial movement, not viral. To discover how far, and in what direction, viruses move horizontally, Vaughn has set up a series of sample wells at various distances from the central subsurface wastewater system. The wells have been placed from as close as five feet to as far as 200.

"We know that viruses may be entrained during recharge and move as far as 50 feet vertically, but we have no information on horizontal movement once they enter the groundwater aquifer," said Vaughn. "The county wants to see how close the current bacterial system approaches the viral question."

Viruses are considered to pose a greater potential hazard because, theoretically, it requires a single virus particle to initiate an infection, while it may take thousands of bacteria (eg. typhoid organisms).

According to Vaughn, there are 150 different enteroviruses that occur in domestic waste water. Speonk is a prime spot for study because of the geographic make-up of the South Shore, and the cross-section of people, including children who often carry many more viruses than adults.

Over the next year Vaughn and his assistants will collect more than 300 samples from Speonk. —J.M.

At the Speonk site the virology team is studying the horizontal movement of viruses as they enter the groundwater aquifer.

Consumer Alert

The Consumer Product Safety Commission (CPSC) has called attention to several household items which are being recalled or require modification in the interest of safety. BNL's Safety and Environmental Protection Division suggests that this information may be helpful to employees.

• Approximately 8,900 electric lawn mowers produced by the Sunbeam Outdoor Co. may pose electrical hazards to users. The recall program applies only to models 3227 and 3228 sold nationwide since 1978. The power cord may get caught between the handle and a bracket which mounts the handle to the mower. To eliminate the hazard a part can be obtained free of charge from: Department 91B, Sunbeam Outdoor Company, Division of Sunbeam Corporation, Box 430, Kingstree Highway East, Manning, South Carolina 29102.

• Valves for portable gas grills could cause fires. The valves, manufactured since 1979 by the King Seeley Thermo Company, may leak propane gas. Sold across the country under the "Structo" brand name, the grills contain a one-pound propane cylinder. The recalled valve models are: 7962, 7964, 7965, and 7966. For a free replacement valve call (815) 235-8852.

• Durham Industries, Inc., of New York City, is recalling the detachable connector cords sold with 97,000 toy telephone sets, and is part of the model 7028 "Holly Hobbie" dial-intercom phone on the market since 1977. The plug connected to the cord resembles an every day electrical plug, and children may receive shocks and burns from trying to force the plugs into household outlets. Cords should be returned to Durham Industries, Inc., 41 Madison Avenue, New York, N.Y. 10010. For more information call (800) 638-8326.

• Twenty-thousand "Automatic Day-Night" thermostat controls made by the Fuel Sentry Corporation of Mt. Vernon, New York and 19,500 "Home Energy Saver" thermostat controls manufactured by the Fuel Gard Corporation of Glastonbury, Connecticut – are cited as faulty by the CPSC.

The CPSC has determined that carbon resistors used in both devices may overheat and start fires. The defective heaters have caused at last 17 instances of sparking or flaming since 1977.

Potentially dangerous Fuel Sentry heaters were made between September 1976 – 1977, and November and May 1978. Only brown colored carbon resistors are hazardous – all others are thought safe. A date code appears on the back of the faulty heaters. The following fall into that range: 396 to 526; 017 to 327; 437 to 527; and 018 through 218. For more information on refunds or replacements of Fuel Sentry parts call (800) 638-8326.

• The CPSC warns consumers that energy-saving devices that are improperly installed, or otherwise defective, may not only result in fire hazards, but also in carbon monoxide poisoning, electrical shocks, or explosions.

Volunteers Wanted

A limited number of healthy non-smoking men and women of all ages are wanted to participate in a clinical study, which 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. Anyone interested in participating in this study should call the Medical Research Center, 345-3672, for further information.

In Appreciation

Dear Friends and Co-Workers:

Finding it difficult to respond individually to each of you that were present on February 5, 1980 for my farewell party, I am hoping that this brief, yet sincere, message of gratitude will reach all of you. The ceremonies lasted only a few hours, but will be remembered fondly for the rest of my life. Your friendship and support through the years made my association with you a memorable experience. Having received from you all of your good wishes, I now want to extend to you my sincere wishes for the best of everything in the future.

—Herman Haller, Jr.
Tempe, Arizona

We would like to thank all our friends and co-workers at Brookhaven for sharing in our time of grief at the loss of both my parents.

—Joseph Buscemi and Family

Rationing Works

Since July 3, 1979, monthly gas ration coupons have been issued for all Lab vehicles. Introduced as a planning device to achieve an orderly reduction in gasoline usage, it now appears that rationing works, and does not have any serious impact on Lab services.

With the exception of fire engines and ambulances which are not under restrictions, ration coupons were allocated to all other official vehicles in accordance with their importance to Lab operations. Reporting on the period July 1, 1979 – February 29, 1980, Staff Services Manager Bill Webster notes that 19.22% less gas was burned than in the same previous period. By such means as reducing casual travel and consolidating deliveries, mileage on Lab vehicles was reduced by 92,134 miles.

Associate Director Vincent O'Leary says that although a mild winter and the replacement of some gas guzzlers with more efficient vehicles were also factors in the decreased use of gasoline, rationing was the principal cause. The Lab plans to continue the program indefinitely.

New Equipment Demonstration

The Savin Corporation will exhibit their latest copiers and word processing equipment on Tuesday, April 15 from 10:00 a.m. to 3:00 p.m. in Berkner Hall, Room A.

The System 600 Copier/Sorter, the 880 high speed-self diagnostic copier and the 950 Vertext Word Processing System will be shown.

Anyone who is interested in some of the latest office technology is invited to attend.

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BERNICE PETERSEN, Editor
MONA S. ROWE, Editorial Assistant

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

CARL R. THIEN, Public Relations Officer

Focus On Cajuns

"Louisiana Cajuns," an exhibition of 50 photographs by Turner Browne which document the culture of the Cajun people, will be on view at Berkner Hall from April 21 through May 2.

An opening reception, featuring a showing of the short documentary film "River Boy," will be held at 8:00 p.m. on Monday, April 21, in Room C. Thereafter, the exhibit may be viewed between 11:00 a.m. and 2:00 p.m. on weekdays.

The word "Cajun" is a corruption of "Acadian," the early name for a resident of Nova Scotia. The Cajuns (not to be confused with Creoles) are an ethnically French people who left Nova Scotia for Louisiana, at first voluntarily and then by force, after France had ceded the province to the British in 1713. Their settlements, in the swamps and along the bayous of the southernmost part of Louisiana, are almost inaccessible; even today, much of the transportation is by boat.

Part Cajun himself, photographer Turner Browne felt that there was a lack of accurate reporting on this culture, as well as a need to document aspects of a way of life that is rapidly disappearing. A grant enabled him to live with the Cajuns for a year, photographing them in many of their everyday activities.

The resulting photographs were first exhibited at the Louisiana State Museum in New Orleans in 1975, and later at a number of other galleries, including the Alliance Française in New York. The photographs are also collected in a book published by the Louisiana State University Press.

The exhibition is jointly sponsored by the Art Committee of BERA and *Le Cercle Français de BNL.*

Garden Tip

If you are planting a vegetable garden this year, it would be well to check the soil acidity of your plot. The degree of soil acidity or alkalinity is measured on a pH scale which runs from 0.0 for extremely acid, to 7.0 for neutral, to 14.0 for extremely alkaline. Most vegetables thrive in a slightly acid soil with a soil pH reading between 6.0 and 6.8. On Long Island, soils tend to be acid.

To have the pH of your soil tested, bring a sample to the Cooperative Extension Office, 246 Griffing Avenue, Riverhead. They will perform this service for you at a small charge of 50¢–$1.00, and will give you any other information you require about preparing the soil for planting.

Make A Note

Economist J. Kenneth Galbraith will lecture at Brookhaven the evening of May 8. Watch the Bulletin for details.

IAEA Openings

The following positions are available at the International Atomic Energy Agency in Vienna for a term of two years:

Division of Nuclear Safety and Environmental Protection: to assist the Director on matters related to management of radioactive wastes.

Division of Scientific and Technical Information: to be responsible for planning and implementing computer training courses and seminars.

Division of Safeguards Information Treatment: to participate in the evaluation of the quality of chemical and non-destructive measurement data for safeguards.

Office of Internal Audit and Management Services: to carry out tasks in the fields of financial, economy and effectiveness auditing.

Joint FAO/IAEA Division: to assist the Director in carrying out program on the use of nuclear techniques for plant improvement.

Division of Nuclear Powers and Reactors: 1) to assist in formulating and executing programs concerned with uranium resources and ore processing; 2) to assist with work in electric power system economics and expansion planning.

Details may be obtained from the Office of Scientific Personnel, 40 Brookhaven Ave.

Volleyball

Mixed League
Standings 3/31/80

A:	High Society	6-0
	No Names	6-0
	Nuts & Bolts	5-1
	Family Affair	1-5
	Deegenerates	0-6
	Thrints	0-6
B:	Nads	5-1
	Diamonds	4-2
	Leftovers	4-2
	Monday Night Live	4-2
	Le Mufs	1-5
	Underalls	0-6

Open League
Results 4/2/80

Moles took Spikers
18-21 21-16 23-21

Toga buried Bumps
7-21 21-10 21-11

OTHG beat Phoubars
21-12 21-13 17-21

Players Pool edged Monday Terrors
21-18 22-20 21-19

Cafeteria Menu
Week Ending April 18, 1980

Monday, April 14		
Chicken rice soup	(cup)	.40
	(bowl)	.50
Batter fried steak & 1 veg.		1.50
Franks & beans		1.35
Hot Deli - Pastrami	(bread)	1.40
	(roll)	1.50
Tuesday, April 15		
Navy bean soup	(cup)	.40
	(bowl)	.50
Roast chicken w/stuffing & 1 veg.		1.45
Chopped steak & 1 veg.		1.40
Hot Deli - French toasted grilled ham & cheese		1.35
Wednesday, April 16		
Clam & celery soup	(cup)	.45
	(bowl)	.55
Fish & chips		1.40
Saga's homemade lasagne & 1 veg.		1.40
Hot Deli - Philadelphia steak & cheese hoagie		1.50
Thursday, April 17		
Cheese chowder	(cup)	.45
	(bowl)	.55
Chicken pattie parmesan & 1 veg.		1.45
Beef liver & onions & 1 veg.		1.35
Hot Deli - Italian sausage & peppers hero	(bread)	1.35
	(roll)	1.45
Friday, April 18		
Fish chowder	(cup)	.45
	(bowl)	.55
Beef sukiyaki on toasted Chinese noodles		1.45
Fish cakes w/noodles & cream sauce		1.40
Hot Deli - Baked Virginia ham	(bread)	1.40
	(roll)	1.50

Arrivals & Departures

Arrivals

Berthel Becton.....Director's Ofc.
Lenore F. Dudzick.....Personnel
Jean D. Ramirez.....Nuclear Energy
James H. Saunders, Jr......Energy & Env.

Departures

Florence V. Caliguri.....Staff Services
Stephan N. Dodt.....Medical
George M. Guydish, Jr......Plant Engrg.
Edmond J.L. Schouler.....Energy & Env.
Denise G. Warren.....Ph. & Gr. Arts
Fred A. Wunder.....Ph. & Gr. Arts

Teacher Wanted

The Nursery School expects to hire for the 1980/81 school year a certified teacher for a class of four-year olds, which meets two mornings a week. Those wishing to apply should do so, in writing, before April 23, to: P.O. Box 324, Upton, NY 11973.

Students At BNL For 4th Annual SEEK Program

A mini-semester for 15 freshman and sophomore Engineering and Science students enrolled in the SEEK Program of City College of New York was held during the week of March 31 through April 3. The purpose of the program was to provide an overview of the engineering and technical pursuits at BNL, and to encourage students with minority backgrounds to consider a career in engineering. During their stay the students saw engineering and science in action, and participated in tours and lectures given by each department. The program was prepared by the Affirmative Action Office.

Garden Plots

Those onsite residents who are interested in growing their own flowers or vegetables this season, should sign up now for a garden plot. Contact Eve Sokol, Ext. 3011, Apt. 28D.

Women In Science

Dr. Laura Sbarra, head of Industrial Medicine, will address the Women in Science Association, at a luncheon meeting on April 16. The meeting will begin at noon and, if you are interested in attending, please bring your lunch. Coffee and tea will be served.

Motorcycle Club

The BNL Motorcycle Club will meet in the Recreation Building on Monday, April 14, at 5:15 p.m. The meeting will include a report on the spring check-up, and the first in a series of rider clinics at which an explanation of the motorcycle and what makes it go will be given. Beginners are welcome.

Movies Galore

Six cartoons, a Charlie Chaplin short, and Mark Twain's "Huckleberry Finn" will be shown at Berkner Hall on Saturday, April 12. Showtimes are at noon and 2:45 p.m. The kids can sit through both showings if they wish.

Tickets are $1.50 if purchased in advance; $1.75 at the door. They are on sale at the Cafeteria at lunchtime. Proceeds to the Brookhaven OXFAM Committee for Cambodian relief.

Bowling

Green League

The Sparks are still in first place as they took 11 from Isa Team. J. Cockrane bowled a 202, J. Carroll 205 and W. Kristiansen 223. The Blue Jays, in second place, took 6 from the Designers with D. Stelmaschuk bowling a 211. The Pinball Wizards moved into third, only one half point out of second, by taking 11 from the Trouble Shooters. The Light Source took 3 from the Old Timers with R. Wiseman bowling a 200. The Old Timers II took 3 and the Phoubars lost 11.

Pink League

The Stars & Strikes had a 1831 scratch series thanks to good team bowling. Special help came from Millie Connelly's 192/175 and Fran Nusz's 196. Other good games were bowled by Renie Rosati 184, Marge Stoeckel 184, Fran Briening 180, Ginny Walker 179, Helen Keeley 171, Pat Jencius 167, Mary-Grace Meier 164/163 and Toni Cockerham 152.

Red League

The 76'ers won 11-0 over the Phoubars with great team bowling (3111 pins). M. McKenna grossed 651, J. Petro (201-203) grossed 647, R. Larsen (214) 612 gross, J. Connelly (201) 601 gross, J. Morris 600 gross. The Old Timers won 8-3 over the Light Source. R. Smol (204) grossed 607, J. Fontana 600. The Freon Loaders won 8-3 over the Old Timers II. The Designers split 5-6 with the Blue Jays. C. Zavesky had a 611 gross, A. Pinelli 604. This Isa Team lost 11 to the Sparks. R. Barberich had a 214, E. Sperry IV 200, and S. Kiss grossed 600.

Purple & White League

Jim Petro rolled high game and series with a 254/619. Caryl MacDougall's 222 was high for the women. Other good games were bowled by Jim Griffin 229, Al Pinelli 202/214, Bob Jones 205, Dave Penoyar 204, Ken Asselta 201, Mary Grace Meier 202, LizBull 192, Helen Keeley 187, Lorraine Petro 187, Sharon Smith 187.

Classified Advertisements

Placement Notices

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

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

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

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

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

LABORATORY RECRUITMENT: Opportunity, for present Laboratory employees.

1303. HELPER A - Central Shops Division.

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

1304. RADIOACTIVE MATERIALS TECHNICIAN - Requires AAS or equivalent experience in chemical technology with some mechanical aptitude. Will assist with the processing of radioactive and hazardous waste materials; will assist with the development, production, preparation for distribution of both radioactive and nonradioactive materials. Medical Department.

1305. EXPERIMENTAL MACHINIST (three positions) - Requires experience in job print interpretation, layout and machine set up. Candidates must demonstrate ability and imagination in all phases of machine shop work. Will function as an all-round machinist for non-production work in research development shop. Project assignments range from raw material to final assembly. Central Shops Division.

1306. SENIOR DESIGNER - AAS degree or equivalent. Requires extensive background in the layout of electronic packaging, including schematics and mechanical printed circuit board layout with associated artwork. Ability to work from rough preliminary schematics and verbal instructions is required. Accelerator Department.

1307. TECHNICAL POSITION - Requires AAS degree or equivalent in electronic technology. Will participate in construction and testing of magnets and associated power switching. Must be familiar with electronic test instruments, analog and digital techniques, high voltage and/or high current power supplies, hand and common tools. Working knowledge of vacuum technology desirable. Accelerator Department/ISABELLE Project.

1308. TECHNICAL POSITION (mechanical) - AAS degree or equivalent with experience in the construction, testing and leak checking of ultra-high vacuum systems. Will work in the vacuum group on the development, installation and test of sophisticated vacuum systems. Accelerator Department/ISABELLE Project.

1309. TECHNICAL POSITION (two openings) - AAS degree or equivalent with experience in the proper use of hand tools, the ability to assemble large components carefully and the ability to coordinate work with others. Experience with lead detectors and cryogenic devices desirable. Occasional shift work. Accelerator Department/ISABELLE Project.

1310. PLUMBER A (temporary - 5/19/80 to 9/26/80) - Requires successful completion of a four year apprenticeship program and substantial experience in the commercial/industrial sector as a plumber. Will be responsible for the layout, construction, installation, repair and maintenance of water, sewage and gas systems, related facilities and auxiliary equipment. Plant Engineering Division.

1311. STEAMFITTER A (temporary - 5/19/80 to 9/26/80) - Requires successful completion of a four year apprenticeship program and substantial experience in the commercial/industrial sector as a steamfitter. Will be responsible for the layout, construction, installation, maintenance and repair of heat, steam and water distribution systems, related facilities and auxiliary equipment. Plant Engineering Division.

Autos & Auto Supplies

71 BUICK ESTATE WGN - good cond, new transm, tires, radiator, a/c, ps/pb, after May 1. $800. Ext. 3701.

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

TIRES - (4) Goodyear D78-14, less than 2K mi. $25 ea or all/$95. Ext. 2492.

74 BUICK CONV - a/t, a/c, ps/pb, p/w, AM/FM, rear defrost. Asking $2555. Ext. 4113, 289-0753.

74 FORD F-250 - rebuilt motor, 4 w/d, AM/FM cassette, new exhaust. $4000. 698-3030 after 6.

FREE - new tan canvass top for VW conv. Ext. 2908, AT 6-8968.

74 TOYOTA PICKUP - AM/FM radio, bumper, good cond, 28 mpg hwy; 70 Duster, good cond, good tires + snow w/rims, radio, w/w. John, 727-7741.

77 FORD - LTD II Brougham, 4 dr, ps/pb, vinyl top, wire wheels. $3500. 929-6388 after 4.

71 PINTO - 2000cc, a/t, radio, dependable, good mi, new exhaust. $400. Bob, Ext. 3509, 289-9533.

69 MERCURY - 2 dr, good tires, runs well. $100. J. Egan, Ext. 4488.

MG MIDGET - wire wheels, 4/$50; doors, $25 ea. 736-2836.

77 FORD VAN - fully cust, 6 cyl, 20 mpg, shrowrm cond, must sell. Best offer over $4000. 585-7726.

69 CHEVY SUBURBAN - body parts: 3 spd Hurst shifter, 63 Corvette bumpers, grille. John, Ext. 4976, 744-4386.

73 GMC - 4 w/d sub, a/c, 350 ci, ps/pb. $2600. Ext. 4113, 744-5910.

73 PINTO WGN SQUIRE - a/t, high mi. $500. Ext. 4207, 286-2251.

68 OLDS CUTLASS - running cond. $300. 924-7902 eves.

78 YAMAHA YZ-250E - mint cond, never raced, hardly used. $875. 928-7769 after 5.

70 FORD WGN - 3 spd, 9 psgr, ps/pb, very clean, runs great. Asking $450. 399-0828.

78 CHEVY NOVA - a/c, a/t, ps/pb, AM/FM stereo-8 trk, mint cond, 23,000 mi. Ext. 2982, JU 8-1713.

75 CHEVY CAMARO - excel cond, 3 spd stick, p/s, new steel belted radials, AM/FM radio, fully gauged. $2800. 878-9544 after 7.

71 LTD - 4 dr, a/t, ps/pb, some rust, runs well, $200; 72 Chrysler Wgn, a/t, ps/pb, 55,000 mi, $300. Alan, Ext. 7684, 427-9425 eves.

67 DODGE DART - good eng. $350. Kale, Ext. 4224.

78 KAWASAKI KZ200 - elec start, 1900 mi, blue, mint cond. Carol, 472-1871.

72 PLYMOUTH DUSTER - side damaged, good eng, parts or whole for sale. Ext. 2054.

79 CHEVY PICKUP - 4x4, mint cond, 9000 mi, a/t, ps/pb, Cheyenne, all set up, off road. $8000. Jim, 289-1117.

MOTORCYCLE FAIRING - used on 650 Yamaha, good cond. Ext. 3120.

75 PONTIAC FIREBIRD - 350 eng, 2 bbl carb, r/h, ps/pb, a/c, AM/FM-8 trk, brown/brown, excel cond. Robert, 475-2058.

71 CHRYSLER NEW YORKER - ps/pb, p/w, rad tires, excel cond. grn/grn vinyl top, AM/FM, a/c. $1500. Jim, Ext. 4040, 289-0876.

Boats & Marine Supplies

KOLIBRI - West German built glass fibre sailboat, mainsail, jib w/trailer. $800. Ext. 3974, 929-4068.

1972 WELLCRAFT V-20 - 165 hp, I/O, new canvas, CB 7' 18" ant, good on gas, very clean. 929-4967 after 6.

14' ALCORT "FLYING FISH" - 120 sq ft full battened sail, fiberglass bendy mast, trailer, fast, excel cond. $950. 929-4133.

18' ISLANDER SIKFF - 4 cyl Gray eng, head, life jackets, needs some repairs. $250. Tom, 325-1033.

14' ALUM SEA NIMP BOAT - w/7-½ hp Mercury, like new. $550. Ext. 3499.

20' O'DAY SAILBOAT - 3 sails, keel centerboard, shoal draft, fully equipped, extras. $6299. 289-0925.

22' GARVEY - oak ribbed glass over wood, self bailers, controls, eng. $895. Dennis, Ext. 3050, 654-2076.

28' RICHARDSON - 283 Chevy, economical, good cond, new ignition & bilge pump; 7' fiberglass dinghy, like new, w/oars, $125. P. Fallon, Ext. 3043, 878-2266.

15' WOODEN SKIFF - very good cond, w/steering & controls, no motor, ready for water. 281-0360.

FIBERGLASS HULL - 16' Glassmaster. $125. Levine, Ext. 4212, 878-1124.

Miscellaneous

MEDIT LAMP - cost $135, mint cond, asking $75; flute, mint, Ital, $75. Joe, Ext. 2898.

BLK LIQUOR CAB - 2 dr, $25; dbl basin sink, $15; coffee table, $10. 363-6845.

CAMPER - Corsair 19' self-cont, excel cond in & out. $1900. Ext. 7148/4543, 363-2522 after 6.

POPULAR MECHANICS - 1957-1974 & Summit, July 63-June 72. Make offer. Dennis, Ext. 4259, 736-2534 eves.

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

16 CU FT REFRIG - Sears r.h. door, freezer on top, good cond. $95. Bob, Ext. 2819, 289-0357.

WINDOWS - white D.H. insul w/scr, new, (1) 3'x3', $65; (2) 3'x4', $75 ea. 924-6582.

FOR ADOPTION - Alaskan Malamute-Poodle, 6 mos old, all shots, paper trained, 12" high, good w/children. Ext. 2311, 567-5131.

DIN RM SET - mod walnut, china closet, buffet, table & 4 chairs. $250. Bob, Ext. 2964.

F/W WELL PUMP - 110/220v & 42 gal tank. $75. 475-9398 after 5.

GE ELEC DRYER - 18 lb cap, like new, used only 6 mos. $125. 924-8264 after 6.

FRANKLIN FIREPLACE STOVE - w/hydro hearth grate. $150. F. Rumph, Ext. 4581, 588-3565.

AIR COMPRESSOR - Sears 4 hp, 20 gal tank, like new. $250. 736-2836.

LAWN TRACTOR - Huffy 8 hp w/32" twin dbl blade deck, $125; elec lawnmower, B&D 22", $10. Tom, Ext. 2613, 281-4080.

GE WASHER - 18 lb cap, 3 cycles, still under warranty, like new. $250 or best offer. Ann, Ext. 7620/4959.

OIL BURNER - ready to install, 7 yrs old. Best offer. Joe, Ext. 2005.

VIOLIN - ½ size, bow, case, excel cond, German make. Best offer. Julie, Ext. 2593, 929-6460.

WILSON GOLF HALF SET - golf bag, putter, good cond. $30. Ext. 4410, 924-0581.

FREE PUPS - Lab Golden Retriver mix, looking for good homes. Tom, 283-6437.

TAPE RECORDER - Chanel Master 2 spd, w/access, $15; 4' white florescent light bulbs, 25¢ ea. 289-8565.

INFANT DRESSING TABLE - white, like new. $30. 281-8274.

AIRTIGHT STOVE - Gibraltar no. 3, almost new, cost $500. Now $350, cash & carry. 588-0805.

MOVING - want to sell all bedrm, liv rm, din rm furn. 924-7902 eves.

FREE - sofa, chair, ottoman, made from authentic whiskey barrels, needs repair, come haul away. Ext. 4363.

BICYCLE - Ross 10 spd, chrome plated, Panasonic light, padded handle bars, new, classic. $200. 698-9296.

COUCH & CHAIR - Medit, $200; 3 tables, $150; 2 lamps, $75; excel cond. 732-4821 eves.

FLOOR TILES - 3/32 vinyl asbestos, light color, approx 700 sq ft. , 5 gal compound. $75. 286-8350.

COLOR TV - Sanyo 19", remote control, avail Apr 25, leaving country. $125. Ext. 3223.

RUGS - colonial, good cond, 9'x9', $35; 9'x12', $45. 265-1072.

SOFABED - green Herculon, inner spring matt, matching drapes & lamp. Must sell, make offer. 698-7428.

⅜" WET SUIT - lg, extra long, good cond. $75. Ext. 3514.

GERBIL SETUPS - w/access & gerbils. $4/setup. A. Romano, Ext. 4024.

CRAFTSMAN JIG SAW - 26" throat, 37" overall, no motor. $50. 475-2075.

AIR COND - for horiz sliding window, 6000 BTU, $70; parker lawn sweeper, $10. Ext. 4227.

GE REFRIG - Avocado, 14 cu ft, needs polish, $40; range top & hood, alum, needs polish, $25. Dick, Ext. 2911.

STUDIO COUCH - sleeps 2, old, $15; alum folding chair, king size blanket, best offers. Laura, 365-3111.

STEREO AMP - Dynakit 35 watt, pre-amp, FM tuner, factory wired, excel cond. $150 compl. B. Azzara, Ext. 2050.

TOAST-R-OVEN - GE 4 slice, new, $35; burger cooker, $10; travel iron, $6; heater, $20. Ext. 3027.

DACHSHUND PUPPY - long haired. Cheap. Glenn, 744-1679.

EVERGREENS - yews 4'-5', you dig, $5 ea, we dig $8 ea. Jim, 286-0024.

CRIB/MATT - excel cond, $15; babyseat, $3. Ext. 2054, 698-0013 after 6.

CONSOLE STEREO - custom built, cherrywood cabinet, Harmon Kardon rcvr, Garrard turntable, Jensen spkrs, mint cond. Best offer. 369-2151 after 6.

RECORDS (33's) - lg variety, old & new, good, 80/$25; organ, $35. 727-1617.

CUSTOM FR PROV FURN - sectional sofa, hutch, mirror & table. Otto, Ext. 4248, 331-1907.

KITCHEN SET - Spanish Medit, 60" oval w/leaf & 6 wrought iron chairs, cushioned. 289-1085 after 5.

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

ANIMAL HUTCH - 4'x8', suitable for chickens or rabbits. $35. 581-7656.

CARPET - gold, high quality, used, more than 70 yds. 821-0794 eves & weekends.

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 - south, prime loc, old-fashioned charm, 9 rm, 2-story colonial, oak & tile fp, D/R, duplex den, 4-5 bedrms, 3 baths, 2-car gar, gas heat, .6 acre. $55,000. Ane, Ext. 3404, 286-3764.

PATCHOGUE NORTH - 3 bedrm hi ranch, eik, lg L/R, lg panelled fam rm, excel cond, add'l insulation, 6% assumable mtg. High 30's. Ext. 4333.

MEDFORD - close to LIE, mother/daughter, all newly remodeled on ¾ acre incl buildable lot, upstairs 3 bedrms, DR/LR w/fp & w/w down stairs, eik, 1 bedroom, L/R, sep elec & heat. $53,000. 475-2769 after 5.

CORAM - $10,000 assumes 7% mtg, $1569 taxes, gas heat, well insulated, 15 min to Lab, 3 bedrm ranch, 4/10 acre fenced, patio, att gar, all appl, carpeting, city water & sewers. 331-2234.

PORT JEFFERSON - Harbor Hills, 3-4 bedrm ranch, possible mother/daughter, wooded ⅓ acre, fp, dead end st, financing arranged. Reduced to $69,000. Ext. 4505, 473-1523; 928-0483.

MASTIC BEACH - owner leaving state, 3 bedrm ranch, bsmt, all appl, w/w, Farmers Home mtg 1%. 281-5498.

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

EAST PATCHOGUE/BELLPORT - brick ranch, 8-½% assumable mtg, ¾ bedrms, playrm, bsmt, fp, att gar, 0.3 acre nicely landscaped. $43,000 total, $13,000 cash over. Ext. 4363.

LAKE GROVE VILLAGE - 2 fam 3 bedrm ranch, LR/DR, eik, oak flooring w/w, 5 appl, deck, treed, landscaped, tool shed, gas heat, low taxes. $38,500. Ext. 3800, 467-1763.

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

BUILDING PLOT - over 100' front w/400' depth, located minutes from Lab, quiet custom homes, price very negotiable for interested parties. 924-3236. for details.

MASTIC BEACH - 3 bedrm ranch, corner lot, roofed patio, pleasant location near water. Low 30's. 281-7531.

BELLPORT SOUTH - walk to beach, golf, tennis & shops, beautifully planted 1 acre, garden, fruit trees, play house, excel cond, 4 bedrms, 1-½ baths, gas heat, city water. 286-2320.

BELLPORT VILLAGE - 3 bedrm hi ranch, L/R, fam rm, den, lg eik, deck, 1-½ baths. $42,000. 286-8166 after 5 & weekends.

For Rent

EASTHAMPTON - 2 bedrm house, DR/LR, pool, access to prvt beach, dishwasher, washer/dryer, avail for 1 wk during July or Aug. $600/wk. 744-8917 after 6.

SHOREHAM - immac 3 bedrm ranch, all 5 appl, economical piped gas heat, insulated, gar, fully fenced back yard, prvt & secluded, MI schools, unfurnished. $360/mo + util. For appt call Geskie, 744-0509.

STONY BROOK - lg rm in house, walk to SUNY, hospital, share kit, common areas. $115 + share of util. 751-5633 eves.

BELLPORT - 3 bedrms, 2 baths, 2 fp, gar, prvt road near Bay. 286-2251 after 5:30.

POCONOS - chalet in prvt community, sleeps 6, indoor pool, tennis, riding nearby. 289-2159.

Wanted

TO RENT - 1 rm apt or furn rm, Lab vicinity, June 1 - Oct. Yvette, Ext. 3369.

ROTOTILLER - in good cond, reasonable. Gail, 878-4664 after 4.

ADDITIONAL MEMBER - needed for Stony Brook van pool. Paul, Ext. 2476.

STEREO SPKRS - 3-way w/8 ohm system impedance, must be pretty good quality. B. Espensen, Ext. 3992, 298-4172.

DRAFTING TABLE - sm size. Tom, Ext. 2959.

BICYCLE - single or 3 spd, 26". J. Adams, Ext. 4994.

TRAVEL TRAILER - approx 20', must be in good cond. Paul, Ext. 2023, 727-1464.

HOUSE SITTER - water front, 4-day wk till Mid-June, feed cat. 727-8631 weekends.

USED BIKE - I will pick up about 500. 744-5801.

CRIB W/MATT - lg size, reasonable. Ext. 4380, 924-6102.

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

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

Car Pools

PT JEFF STATION - 2-person car pool would like to increase to 4. Tom, Ext. 3239.

VALLEY STREAM VICINITY - along So State, car pool wanted. M. Shear, Ext. 4444.

WESTHAMPTON - occasional driver/rider in 3 component pool. Ext. 4395.

BLUE POINT - paying rider, Atlantic Ave near Montauk Hwy. Sue, Ext. 3163, 363-6121.

BELLPORT - 8:30-5, needs 5th driver. B. Graves, Ext. 3326, 286-0497.

PATCHOQUE - via E. Patchogue, on-time service, opening for paying rider. Alyce, Ext. 2902.

STONY BROOK/STRATHMORE - join or form car pool. Morris, Ext. 7146/4444.

Lost & Found

FOUND - 2 General Motors keys in the East Chemistry parking lot. For info call Michele, Ext. 4303.

Services

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

MOVING PICKUPS & DELIVERIES - R. Glucksman, 764-7453 after 6.

EXPERT TUTORING - math, French, German, elem subjects, certified teacher, my home. $10/hr. 941-4328.

MASONRY - brick, concrete work, free estimates, driveways, fireplaces, barbecues, low rates. 543-6057 after 5:30.

JEWELRY REPAIRED - gold & silver polished. Dan, Ext. 3289.

FIREWOOD - hardwoods. $149/cord delivered. Ken, 924-3756.

TYPING - scientific reports & general typing, reasonable rates. Ann, 286-4352; after 4, 286-9572.

HOUSESITTING - young working couple will house sit 1 mo in early spring while our house is being renovated. Ext. 7646.

ROTOTILLING - gardens, new lawns, flower beds, up to 1000 sq ft. $18. Tom, Ext. 2011, 325-1033.

BABYSITTING - Tues thru Fri, 8:30-5 or any other time, reasonable rates. Ext. 3015.

TIRES - new, used, repairs, etc, mtg & balance avail. F. Usack, Ext. 4798 lunchtime.

ASPHALT PAVING & SEALING - Bob, 475-4382.

DISC JOCKEY FOR HIRE - all occasions, any type of music,reasonable rates. 924-9296.

FISH FOR SALE - flounder, live wgt 60¢/lb, fillet $2.10/lb; crabs. Jim, 289-1117.

TAXES - prepared by tax consultant, your home or mine, reasonable. John, 732-2472.

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