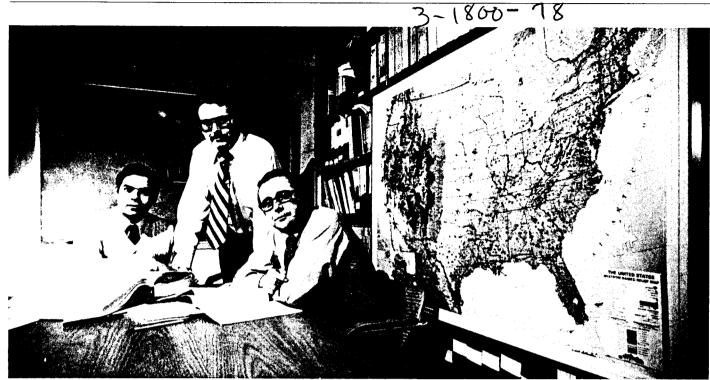
# BOLLETIN Volume 32 - Number 12 / March 31, 1978 BROOKHAVEN NATIONAL LABORATORY



The interrelationships among net migration, family income, estimated air pollution emissions and mortality are being investigated by a group in the Biomedical and Environmental Assessment Division of the National Cen-

ter for Analysis of Energy Systems. The study is headed by Salvador R. Bozzo, M.D. (right) and he is assisted by Fernando Galdos (left) and Kenneth M. Novak.

# Thou Shall Not Pollute

Energy is a two-way street. Currently, the emphasis is on the search for new sources of energy with which to maintain and further develop this highly industrialized society. But the quality of life is eroding and "warning lights" are flashing. There are bills to be paid in the matter of human endurance and some of these bills are already being collected in the form of heart disease and cancer.

Pollution affects every level of society. Looking at energy problems from the human point of view and seeking data which will be relevant to the formation of national energy and health policies, is the focus of a complex study being undertaken at Brookhaven and supported by DOE's Division of Technology Overview.

The study is complex because it deals with human beings; how they adapt to and are affected by this fast-paced society. Under the leadership of Salvador R. Bozzo, M.D., a group in the Biomedical and Environmental Assessment Division of the National Center for Analysis of Energy Systems, has been studying the interrelationships among net migration, family income, estimated air pollution emissions and mortality. Working with Bozzo on the project are Kenneth M. Novak, Community Health Associate, and Fernando Galdos, Computer Science Analyst.

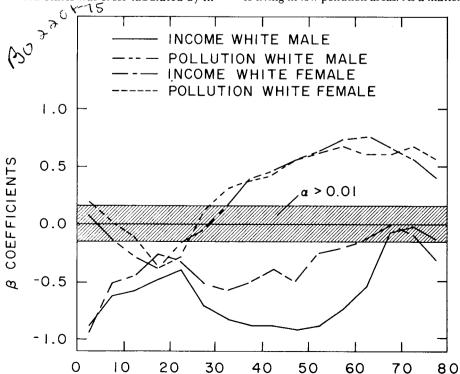
Using the Medical Data Base developed at Brookhaven, the entire population of the United States was cross-tabulated by income and emission levels of air pollutants. Population characteristics and patterns were examined for each age, race, and sex group containing a minimum of 10,000 persons. The Brookhaven study is unique because it is the first to examine the relationship of these factors by age, race and sex.

In general, income was found to be negatively associated, and pollution positively associated with mortality as age increases. The findings of the researchers seem to indicate that where a person lived could have an influence on when, and of what, he will die

Disturbing to the Brookhaven group is an unexplained increase in the number of men dying between the ages of 50-65 and there is little indication that the situation will improve. From 1958 - 1972, the mortality rate for men in these ages was 2.3 times higher than for women. Why? As possible causes, the group plans to explore more fully the areas of occupation and other environmental factors.

Quality of life is, of course, hard to define and has many components. For purposes of this study, median family income was the factor used. A better quality of life has a protective effect up to about the age of 35, say the researchers. After that, the protective effect, in relation to mortality, disappears.

Greater incomes do not necessarily lead to living in low pollution areas. As a matter



The combined effects of income and pollution on total mortality showing the increasing effect of pollution (upper curves) and the decreasing effect of income (lower curves), with age. Note the different income effect, by age, on males and females. Points on the chart are plotted at the mid-point of each five year age interval.

of fact, the Brookhaven investigators say that while they could find poor people living in clean (rural) environments, it was difficult to find the rich living in these relatively clean areas. The rich tend to be found in or near financial and industrial centers, such as Manhattan, which are high in pollution.

Migration is another piece in the puzzle and the picture that emerges is well known. Infants and children go where their families go. From the ages of 15 to 25, young people move all over the country, generally going where the jobs are. As they produce families, they move to the suburbs. In time, the suburbs become areas of high population density and industrialization. As people grow older, if they can afford it, they move to less concentrated areas. The old on limited incomes and the poor are forced to remain in the decaying areas.

Dr. Bozzo's group is trying to understand the dynamics of population change and migration, in relation to income and exposure time to pollutants. It used to be that mortality and fertility had the greatest effect on population composition and size – now migration is number one.

The problem for the future, says Dr. Bozzo, is to control the density of human populations so that they get the maximum quality of life with the smallest environmental impact.

These cycles are of great concern to the people in some states of the Union which are not yet in the throes of urbanization. The April 1978 issue of *The Atlantic* is devoted to the problems of the Rocky Mountain states which contain large quantities of coal, uranium and shale oil, and the consequent dilemma faced by the people who live there. They look with alarm at Los Angeles and New York. In the article, Ross O'Toole, a Professor of Western History of the University of Montana, whose family has lived in Montana since 1859, states the problem:

"Americans are seeking as they have never sought before what Montana has in greater abundance than almost any state in the Union – open space, clear, cool waters, a big, clean sky. Once, distance, space, and remoteness were our economic curse. Now they are our economic blessing. What awe-some irony and tragedy it would be if we were to turn our curse into a blessing only to turn it again into a curse."

From their own research, and drawing on the resources of the multi-disciplinary National Center for Analysis of Energy Systems, Dr. Bozzo's group is investigating what has already happened, and why, so that the future will reflect not only economic needs, but human needs. As he says, "the moralists of the last century are the environmentalists of this century."

## Hydrogen Contract Let

The Laboratory has awarded a \$150,000 contract to Air Products and Chemicals, Inc., for the development of a new lightweight hydrogen storage system using metal hydrides. The hydrogen from the system would ultimately be used in automotive applications. Brookhaven is managing the contract on behalf of DOE's Division of Energy Storage Systems.

As an automotive fuel, hydrogen is essentially non-polluting and relatively abundant compared to gasoline. Although the contract is aimed at both commercial and personal transportation markets, the technical problems are magnified when applied to the personal automobile due to the need to store sufficient hydrogen fuel for long distance driving (200 miles or more).

Hydrogen in both liquid and gaseous forms has been used to power automobiles experimentally. However, there are many disadvantages to these approaches including the need for super insulation or extremely large and bulky tanks. In view of this, Air Products is pursuing an alternative approach based on the use of metal-hydrogen compounds known as metal hydrides. Storing hydrogen in the form of a metal hydride was first researched at Brookhaven by J. J. Reilly and R.H. Wiswall, Department of Energy and Environment.

The density of hydrogen within the metal hydride is equal to or greater than the density of liquid hydrogen. This permits safe storage of large quantities of hydrogen in a confined space. A workable metal hydride system must be capable of storing significant amounts of hydrogen, and then releasing it when heat is applied from the vehicle's exhaust. This requires that the alloy release hydrogen at temperatures of 175-200°C. Many of the presently known metal hydride systems are capable of either storing high percentages of hydrogen at temperatures in excess of 300°C, or of operating at lower temperatures with unacceptably lower storage capacity.

The Air Products' work will be aimed at developing novel alloys capable of fulfilling both requirements. The family of magnesium alloys appears to offer the greatest promise and will be the subject of an intense and systematic study.

Air Products research for the 14-month contract is being performed by the Long Range Development Department of the Industrial Gas Division. The company built the first commercial-scale liquid hydrogen plant in 1955 to supply the Apollo rocket program. In December of 1977, Air Products dedicated its newest liquid hydrogen plant which will be used to supply the needs of the Space Shuttle program.

# Academic Employment For Scientists Rises

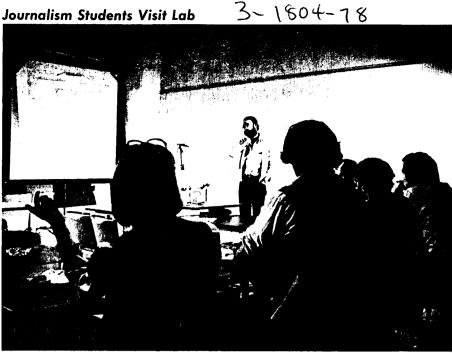
Despite inflation, reduced endowments, and budget constraints, universities and colleges continue to hire increasing numbers of scientists and engineers, according to a report released by the National Science Foundation. Employment of full-time scientists and engineers rose three percent between January 1976 and January 1977, continuing the average growth of three percent since 1969.

The report noted that there appeared to be a shift in the activities of this group from basic research toward applied research.

Although the employment of women as academic scientists and engineers grew at a rate approximately double that of men between 1976 and 1977, the overall proportion of women in these fields has changed little since 1974 – up from 15 percent to 16 percent.

#### Cricket Club

All members of the Brookhaven International Cricket Club and others interested in playing cricket, are invited to come to a general meeting on Tuesday, April 4, Room D, Berkner Hall at 12 noon.



Some students from the Columbia University Graduate School of Journalism, who are taking the science writing course, visited Brookhaven earlier this week to learn about the Laboratory's research programs and to spend a morning in selected departments gathering material for a story. Above, John Walsh talked about the oceanographic program, and, at right, Ron Peierls gave the students a briefing on particle physics. Also Jack Fontana and Ralph Yang lectured on energy and materials resources, and Bill Marcuse on systems analysis for energy research and development.



Retiring 3-1146-78



- photo by Rosen

George H. Schuette, who has been a Refrigeration and Air Conditioning Engineer in Plant Engineering since January 13, 1969, will retire today. He is planning to move shortly to his home in Lockwood, New York.

#### **BERA Board Officers**

The election of the BERA Board officers for the coming year was held at a meeting of the members last week. Elected were Gail Williams, President; Robert A. Brown, Vice-President; and Carol Beckner, Correspondence Secretary.

Ann Flood was reappointed for another year as Recording Secretary, which is a non-voting Board position.

Other members of the Board are Helen Keeley, Gerald Levine and Marge Stoeckel.

#### **Drivers Note**

If you rent cars for official or personal use and don't recognize this

AVISAID#

you are missing out. Check with the Travel Office for more information.



Last week, 18 freshmen from the City College of New York became acquainted with the principal Laboratory facilities and took short courses in various subjects taught by members of the Brookhaven staff. They were participating in the SEEK Mini-Semester program established by City College to provide them with an overview of engineering and technical pursuits at a major institution. In cooperation with City College, Brookhaven's Office of Affirmative Action prepared the week-long program which was designed to encourage the students to continue their studies and enter the engineering profession. This is the second year that Brookhaven has been host to the SEEK students.

# **Amoco Cadiz Pollution**

Last week the worst oil spill in history occurred off the coast of France. Today millions of gallons of dark sludge have invaded the fishing ports and beaches of Brittany, some of the finest coastland in the world.

Contributions to aid in the clean up of the Brittany coastline and in particular to assist efforts to reduce the suffering and destruction of marine and coastal wildlife are being collected by Gale Munson, Building 120.

The French Embassy in New York has informed Mrs. Munson that checks made to the order of "Monsieur le Marie de Brest" will be placed into a fund entitled, "Solidarité Contre la Pollution Amoco Cadiz" and will be used in the clean up effort.

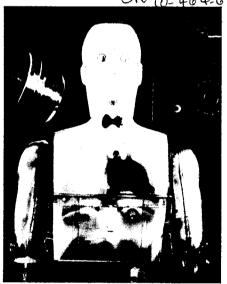
The BNL French Club/Alliance Frangaise have indicated their support for this collection and will be asking their membership for a contribution to be made in the name of the Club. All contributions of any size will be appreciated. If you would like to contribute, please send your check to Gale Munson, Building 120, before April 12.

# The Perfect Employee

He is an indefatigable worker and doesn't even take a coffee break. Salary, fringe benefits and recreation programs don't mean a thing to him. He always does what is required and never sasses back. Occasionally he comes apart at the seams, but this does not require extensive visits to the psychiatrist, just a little glue.

He is a phantom, a flexible, plastic gent manufactured to Airforce specifications of the standard American male, who has been regularly employed in the Medical Department for the last twenty years. More accurately, four phantoms have been used over the last 20 years at the whole body counting facility. Even plastic men wear out. Currently, he cost about \$5500.

His body is filled with a tissue equivalent fluid so that it has the same density as the



The Phantom

human body. As required, the various internal organs of the plastic phantom are filled with known amounts of radioisotopes. Measurements of radioactivity levels in the phantom provide data for calibration and comparison of data obtained from research patients who have been administered isotopes, in the diagnosis and therapy of diseases under study by medical scientists.

He changes color according to what's put in him. He can also be dressed up and suitably adorned during lighter moments at the Medical Department. In short, he is not only very good at his work, but is fun to have around.

#### **Stony Brook Events**

Recital: Guitarist Victor DeBella will perform at 8:30 p.m., April 8, Lecture Center

Child Study: Children who are being seriously teased or who have severe temper tantrums are eligible for a study being conducted by Dr. Fredric M. Levine, Department of Psychology. Interested parents should call HR 3-6622.

Children's Theatre: Musical version of "Tom Sawyer" will be presented at 2 p.m., April 1 and April 8, Stony Brook Union Auditorium. All tickets \$2. Reservations 585-1868, 585-5867.

Recital: Cellist Bernard Greenhouse and pianist Martin Canin will perform at Sunwood Estate, Old Field, at 5 p.m., April 2. Tickets \$5.

# BROOKHINEN BULLETIN

Published weekly for the employees of BROOKHAVEN NATIONAL LABORATORY

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CARL R. THIEN, Public Relations Officer

#### **Hospitality Committee**

A morning coffee will be held in the Brookhaven Center on Tuesday, April 11, from 9:30 to 11:30 a.m.

Alla Grassi will give a demonstration on stained glass.

All wives of Laboratory employees are welcome. Please come and bring the children. It is suggested that you bring along a toy or two for your child to play with.

#### Arrivals & Departures

#### Arrivals

Rhonda Dagradi	. Applied Math.
Daniel A. Hawkins	Central Shops
Vincent L. Saladino	Accelerator
Sharon L. Smith	. Energy & Env.

#### Departures

Trevor J. Aggus	Physics
Dolores J. Seay	Personnel
George H. Schuette	
Shozo Takagi	
R. Viswanathan	Physics

#### IRS Film Showing

A film entitled "Why Me, Tom Krolik?" will be shown at Berkner Hall on Wednesday, April 5. There will be three continuous half hour showings starting at 12 noon. All interested employees are invited to attend.

The film informs taxpayers of their rights and responsibilities, especially as they relate to audits and appeals. It tells the story of Tom Krolik, a fictional taxpayer, from the moment he receives an IRS tax audit notice to the final resolution of his case.

Also discussed are delinquent taxes, taxpayer service, and the processing and confidentiality of tax returns.

# Speakers Bureau March

March 3 - Norman Holden (DNE), Shoreham-Wading River School District, Science at BNL.

March 4 - Ron Peierls (Phys.), The Chemistry Teachers' Club of N.Y., Brief Introduction into Quarks: Do little fleas have lesser fleas?

March 6 - William Wilhelm (Accel.), Energy Expo at Smith Haven Mall, Solar Energy.

March 8 - R.C. Anderson (DO), Energy Expo at Smith Haven Mall, Energy: In Your Home, In Your Business, In Your Future.

March 9 - Lewis Jacobson (PE), Energy Expo at Smith Haven Mall, Energy Conservation in your home and automobile.

March 15 - Smithtown High School East National Honor Society: William Casey (S&EP), Nuclear Energy; Cliff Frederickson (DEE), Computers; Al Lewandowski (DEE), Solar Energy.

March 21 - Richard Skelton (Med.), Mather Hospital, The care & handling of radiation accident victims by paramedical personnel.

#### Bowling

#### Pink League

Pat Oster had the big game for the night of 204 and a series of 503. Other high bowlers were Kay Sherry 184/164, Helen Keeley 181/174 (509 series), Marge Stoeckel 172/ 160, Marie Grahn 170, Carol Beckner 169/ 165, Colleen Holland 166/161, Lindora Boyd 165, Marie Brenner 161.

The Lickety Splits bowled the highest team series of the year thus far with a rousing 2456 and maintained their 8 point lead. Over average bowlers were Helen Keeley 89 and Pat Oster 74.

#### Red League

Honors this week go to Bob Jones for a 651 scratch, 711 gross series. Bob was 129 pins over average. His 265 game (285) gross is high for the year in both categories. Also bowling well in the Sandbaggers 11-0 win over the Blue Jays was E. Meier with a 246 game 583 scratch 655 gross, and A. Dick 539/635 series. The Sandbaggers knocked down 3137 pins for the night. The Freon Loaders also had a great night, knocking down 3135 pins in their 11-0 win over the Old Timers. J. Pringle had a great night, a 227 game (his first 200) 512/650 series. F. Powers had a 202/546/654 series. J. Kelczewski had a 202 (his first also) 541/649 and F. Stahman (again) had a 225 game.

The Bubble Boys downed the Pinball Wizards 11-0. J. Saul had a terrific night with a 206/543/675 series. Jim was 111 pins over average for the night. The 76'ers took the Anachems team 11-0. In this match, R. Wilson had a 205 and R. Larsen a 201. The Designers took 11 from the Trouble Shooters with E. Sperry rolling a 206. In the final match, the Cosmos were skunked by the Sparks 11-0.

#### Purple & White League

The Sea Gulls are in first place by one point, Plutonium's in second and tied for third and only two points behind first are the Diamonds, Woodchucks, and the Pen

Ted Erickson had high series for the men with a 566 and Caryl Mac Dougall a 564 for the ladies. Other good games were Ted Erickson 206, Dick Murgatroyd 201, Bob Brown 199, Caryl Mac Dougall 202, Kay Conklin 181, Sharon Smith 180, Mary Jane Gillette 179, Carolyn Eterno 174, Mickey Haller 172.

#### Green League

The Sparks continued their winning ways as they took eleven from the Cosmos. For the winners, J. Cockrane had a 225 and B. Sick a 233. The Old Timers II stayed within striking range as they took eleven from the Dyno-Mites. For the Old Timers II, B. Galen had 200/200/202 for a 604 scratch series. The Bubble Boys took eleven from the Pinball Wizards. The Sandbaggers bombed the Blue Jays for eleven bowling a 3137 gross series. The Got-A-Hit-Ums took eight from the Pick-Ups with N. Parrinello having a 217. The Γrouble Shooters lost eleven to the Designers.

#### L.I. Industrial Tournament

Reports from the Tournament have been sketchy mainly because there hasn't been much to report. Rich Larson's 224/626 on the last night was one of the better efforts as BNL finished back in the pack. Pan American took top honors with Sperry being awarded the Incentive Trophy. Our thanks to Bob Jones, Rich Larsen, Ken , Rich Eggert and Charlie Bohnenblusch for representing BNL.

#### Golf

There will be an organizational meeting in the Recreation Hall, April 7, at 5 p.m. Old and new members are welcome. If you can't make the meeting but would like information about the league or you need a partner, call one of the newly elected officers: Vinnie Racaniello, 4613; Bob Vignato, 4592, or Marshall Bull, 2366. Deadline for membership will be Friday, April

# **Boating Safety Course**

A free six-lesson boating safety course will be given by Flotilla 18-6 of the US Coast Guard Auxiliary. The first lesson will be at 8:00 p.m., Wednesday, April 5, at William Floyd High School. For more information call Alan Bieber at Ext. 2924 or at 821-0761 evenings.



Robert B. Aronson, Deputy Chairman of the Medical Department (left) presented service awards recently to Alfred Delph (10 years), Theodore Johnson (25 years) and Stanton Cohn (20 years).

# Volleyball

#### **Employees League**

On March 22, Phoenix took Biology: 21-15, 21-9, 21-18. The Bumps cooled the Cool Tools: 21-18, 21-9, 21-4. The Easy Aces forfeited three games to the Atom Spikers.

Standings				
Spikers	14	1	.933	
Bumps	12	3	.800	
Cool Tools	9	6	.600	
Phoenix	8	7	.533	
Atom Spikers	8	10	.444	
Biology	3	12	.200	
Easy Aces	0	15	.000	

#### Mixed League

#### Division A

On March 27, Lookin' Good over Le-Muss: 15-4, 15-13, 15-7. No Names popped the Popovers: 15-12, 15-2, 12-15. The Nads edged the Assorted DO-E-Nuts: 15-7, 19-17, 16-14.

#### Standings

0		
Lookin' Good	7	2
No Names	6	3
Popovers	6	3
Nads	5	4
Assorted DO-E-Nuts	2	7
Le Mufe	1	0

The Leftovers cowered Cowturkey: 15-10, 15-3, 15-8. Oceanography beat Nuts & Bolts: 15-8, 11-15, 15-3. Riffraff forfeited three to the Diamonds.

#### Standings

Diamonds	9	0
Oceanography	8	1
Nuts & Bolts	6	3
Leftovers	3	6
Riffraff	1	8
Cowturkey	0	9

## Cancer Detection

A comprehensive physical examination is offered to Nassau and Suffolk county residents at the Nassau County Cancer Detection Center. The fee is \$65 and appointments are necessary. The detection center is located at 1535 Old Country Road in Plainview and is open from 8:30 a.m. to 2 p.m. Tuesdays and Wednesdays, from 8:30 a.m. to 10:00 a.m. on Thursdays, and one Saturday a month. For information call 420-5262 during these hours.

#### Cafeteria Menu Week Ending April 7, 1978

Monday, April 3 Corn chowder (cup) .30 (bowl) Beef chop suey on rice 1.20 Scrambled eggs, sausages, and fr. fries 1.10 Hot Deli - Pastrami (on bread) 1.15 (on roll) 1.25 Tuesday, April 4 Beef noodle soup (cup) .40 (bowl) Knockwurst and sauerkraut 1.10 Sauerbraten and potato pancake Hot Deli - Veal pattie & peppers hero 1.25 Wednesday, April 5 Cream of potato soup .30 (cup) .40 (bowl) Braised meatballs à la mode w/buttered noodles 1.20

#### Special

Davy Jones Fish Fry w/cup of soup, plain jello, small soda, coffee or tea 1.87 + tax

(on bread) 1.25

(on roll) 1.35

Hot Deli - Corned beef

Thursday, April 6	
Chicken vegetable soup (cup	.30
(bowl	.40
Cheese ravioli w/1 veg.	1.10
Roast chicken w/stuffing and 1 veg.	1.20
Hot Deli - Italian sausages and	
peppers hero	1.25
Friday, April 7	
Fish chowder (cup)	.40
(bowl)	.50
Spaghetti w/clam sauce	1.10
Breaded pork chop and 1 veg.	1.40
Hot Deli - Smoked tongue (on bread)	1.15
(on roll)	1.25

#### [Sir] Cyril Hinshelwood (1897-1967)

The creative scientist is in fact usually more concerned with the relations of things to one another than with the precise verbal analysis of what these things are. He seeks a representation of the world which continually grows by an extension or transformation of what is there already. Thus what many scientists are really after is the adventure of discovery itself.

#### Stephen Toulmin (1922-)

No doubt, a scientist isn't necessarily penalized for being a complex, versatile, eccentric individual with lots of extra-scientific interests. But it certainly doesn't help him a

# Bicycle Club

As in the previous two years the first event of the season is the Beginner's Tour from BNL (Berkner Parking Lot) to Wildwood State Park and return, about 12 miles each way. This will take place Sunday, April 9, leaving at 10:30 a.m., return about 2:30 p.m. Bring a lunch, as the facilities at the Park are not yet open. This is a slowpaced ride on public roads suitable for older children with good cycling capabilities. A geared bicycle is desirable.

Coming up May 20 is TOES - a 100 mile 2-day tour of Eastern Suffolk with outside clubs. Advance registration is required. For details, come to the club meeting Monday, April 3 at 12 noon in Room A, Berkner. Discussion of the schedule and nomination of officers are the principal topics. If unable to attend, call Gerry Morgan, Ext.

#### Mountain Club

There will be a meeting on Thursday, April 6th at 7:30 p.m. in the North Room of the Center. The spring agenda will be discussed. Anyone interested in hiking, backpacking, rock climbing, caving, canoeing, etc. is invited to attend. Ray Tessmer's movie on white water canoeing, part of it filmed on the Chatoota (Deliverance) River, will be shown after the meeting.

## Gardening Problems

The Cooperative Extension Association of Suffolk County has a diagnostic laboratory of home gardening. They will help to diagnose your gardening problems, both over the telephone (727-7850) and during visiting hours. To avoid conflict between the two, phone calls are answered from 8:30 a.m. to 1 p.m. Monday through Friday. Visitors are encouraged to come to their offices at 246 Griffing Avenue, Riverhead, between the hours of 1:00 to 4:00 p.m. on weekdays.

## Women's Softball

As a result of interest generated following last year's Women's All-Star softball games, a team is being formed for entrance into the Brookhaven Town Women's Softball League. An organizational meeting will be held Monday, April 10, at noon in Berkner Room D. All women interested in playing should attend. The organizers are also looking for a good and willing coach(es) to help develop the team to full potential. Additional details are available from Karen Schaich, Ext. 3623.

#### Selected Reading

New Sci. 77, February 16, 1978 The republic of science. J. Ziman. 422-3 Fading spoon bender. M. Blanc. 431

Science 199, February 17, 1978

A disaster in the environmental movement. S.K. Fairfax. 743-8 Polling the professors: Survey draws protest. G.

B. Kolata. 751-5 Science 199, February 24, 1978

Effects of federal residential energy conservation programs. E. Hirst and J. Carney. 845-51 New York puts together its own state energy pol-

icy and plan. L. J. Carter. 864-8 New Sci. 77. March 2. 1978

Whose eyes on secret data? D. Campbell. 593-5 New directions in carbon-14 dating. R. Hedges. 599-601

Science 199, March 10, 1978

Solar biomass energy: An overview of U.S. potential. C.C. Burwell. 1041-8 FermiLab director resigns: Cites subminimal

funding, W.D. Metz, 1052-3

Bird lovers and bureaucrats at loggerheads over peregrine falcon. N. Wade. 1053-5

Sci. Am. 238, March 1978 Pieter Bruegel the Elder as a guide to 16th-cen-

tury technology. H.A. Klein. 134-40

Phys. Today 31, March 1978

Patents: Another way to publish. C.M. Dann.

Lindenbaum sees economic gains from highenergy physics. 101-3

Science 199, March 3, 1978

Breeder reactors: Fast flux fuel rods subject of silkwood charges. D. Shapely. 956-8

Science 199, March 17, 1978

Historian of science states case for catching up on basic research. J. Walsh. 1188-90

Sci. Gov. Rep. 8, March 1, 1978 OTA head spouts 100-proof environmentalism.

#### Classified Advertisements

#### **Placement Notices**

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

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

For further information regarding a placement listing, contact the Personnel Placement Supervisor, Ext. 2882. LABORATORY RECRUITMENT: Opportunity for present Laboratory employees.

558. BIOLOGY ASSOCIATE - BS in biology, chemistry or physics. Must have experience in electron microscopy, x-ray diffraction, operation of experimental equipment and data analysis. Biology Dept.

559. TECHNICIAN - AAS or equivalent in electronics technology. Experience in electronic construction and troubleshooting necessary. Mechanical aptitude and some electronic design experience desirable. Job involves maintenance of an electron microscope facility. Biology Department.

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

560. DEVELOPMENT ENGINEER - BS or equivalent in electronic engineering with experience in the design, construction and testing of electronic systems. High voltage and/or rf experience desirable. Heavy Ion Fusion Group. Accelerator Department.

561. TECHNICIAN (WEEKLY OR MONTHLY) - Requires AAS degree or equivalent in mechanical technology or mechanical testing, with experience in the mechanical testing of metals. Knowledge of vacuum systems, electronics, and machining helpful. Department of Nuclear Energy.

562. TECHNICIAN - Requires AAS degree in chemistry or chemical technology and experience in chemical analysis and handling of gases. Background in electronics and vacuum cryogenics desirable. Department of Nuclear Energy.

563. OFFICE SERVICES ASSISTANT - Requires good secretarial skills, knowledge of dictaphone equipment. Department of Nuclear Energy.

#### **Autos & Auto Supplies**

66 DODGE CORONET - 4 dr, p/s, p/b, auto, good running cond. \$225. Ext. 4688 or 924-8213.

TAPE DECK - Craig powerplay 8-track w/2 powerplay speakers and anti-theft mount, like new. \$60. Ext. 4707 or 271-2877.

76 DATSUN - B210, excel cond, 4 spd, must sell. \$2700 or best offer. Tony, Ext. 3195.

71 JEEP WAGONEER - 360, p/s, p/b, a/c, a/t, snow plow, buckets, console, deserter tires, duke rims. Dave, 744-3339.

70 FAIRLANE - 500, V8, p/s, pdb, a/c, power tail gate window, new tune-up, CB, am/fm stereo. \$850. Tom, 325-1033.

NEW & USED TIRES - Rims repairs, snow, reg radial, Dunlop-Michelin, FREE installation, balance avail. Fred Usack, Ext. 4597 lunchtime or 475-4935 eves.

RING & PINION SET - GM 12 bolt, 3.30 ratio for better gas mileage, excel cond, 18,000 miles used. Tom, Ext. 4507 or 4084.

72 OLDS - Toronado, full power, white w/black vinyl top, interior excel, motor excel, 65,000 miles. \$1200. 265-2026.

70 PONTIAC - GTO, 400 4BBL, 95,000 miles, 3 spd, auto, p/s, p/b, am/fm, a/c, good cond. \$1100. 929-4421 between 5-6 p.m.

RIMS - (4) 6 holes for GMC, \$60; key making machine with blanks, \$150. Ext. 4265.

71 PINTO - Excel running cond, auto, a/c, am/fm stereo, elec digital clock. \$750. David, Ext. 3145.

71 NOVA - 2 dr, 8 cyl, std trans, new battery, clutch, alternator, leaving state, must sell, includes 2 mounted snows and om/fm cassette. Deena. 589-0461.

76 FORD VAN - V8, auto, p/s, a/c, am/fm, cassette, capt's chairs, finished interior, roof vent, more. 399-

76 HONDA CB200T - New (20 miles), \$750. Bob, Ext. 3313 or 981-3965.

72 HONDA 450 - Excel cond. \$700. Bob, Ext. 3313 or

981-3965.
72 CADILLAC COUPE DEVILLE - Clean and loaded.

\$1600 firm. Ext. 2482 or 732-0974.

73 OLDS 98 - New tires, good running cond. Ext. 2951 or 399-4050 after 5.

76 CAMARO - P/s, p/b, am/fm stereo cassette, 305-V8 engine, auto, vinyl roof, excel cond. Ext. 2589 or 751-8918.

75 MERCURY COUGAR XR7 - Fully loaded, ps/pb/pw/ac, Michelin radials, mag wheels, landau roof, am/fm stereo, 29,000 mi, white, maroon int. \$3800. 283-6255.

71 VEGA HEAD - Excel cond. \$25. Sue Norton, Ext. 2907 or 475-5834 after 6.

74 SUBARU WAGON - 62,000 mi, excel cond. \$2000. Hans, Ext. 3583.

78 YAMAHA - Model IT, 175cc racing bike, excel cond. \$995. Bill Kling, Ext. 4636.

71 CHEV STATION WAGON - Brookwood, good cond, new trans. Bob, Ext. 4796 or 289-1705 after 6.
68 COUGAR - White, all parts in good cond. 736-2511 after 6.

67 DODGE - Monaco, new trans, motor shot, body good. \$100. Pat, 924-8766.

68 OLDS - Delta 88, w/air, good cond, best offer or \$300. Don, Ext. 4346 or 821-9125 after 5.

WHEEL RIMS - Off '71 Ford Torino, \$9 for 2; VW tune-up kit, '64-67, \$2. Ext. 3609.

CONVERTER - 12V to 110V, \$7; Dodge 6 cyl parts, carb, \$10; water pump, \$4; fuel pump, \$4; starter, \$10. Steve, Ext. 2011.

70 COUGAR - 351 auto, a/c, p/s, p/b, am/fm 8-track, new tires, brakes, exhaust, shocks. \$1200. 331-3006.

76 SUZUKI - 500, 5,000 mi, rear luggage rack, windshield, no scratches, must sell. \$1000 neg. Bill, Ext.

71 DODGE - Crestwood wagon, p/s, p/b, a/c, heavy duty trailer package, high mileage, good cond. \$975. Jud Davis, Ext. 4504.

4 CHROME RIMS - For Chevy or GMC truck, 6 hole, 15", make offer. 399-1605.

76/77 DATSUN - 280Z, 2+2, a/c, am/fm, 4 spd, green. \$6400. Flemming, Ext. 3453.

73 PINTO WAGON - Auto, extras, clean. Ken, Ext. 2364 or 325-1537 after 6.

70 CHEVROLET - 9 passenger wagon, low mileage (54,000), loaded, Class II hitch and wires. Ext. 2482 or 732-0974.

62 FALCON - Station wagon, good cond. \$50. 878-0658 after 6.

70 EL DORADO - Red w/white top, 64,000 miles, must sell, moving. \$1900. 281-6489.

66 DODGE - Dart, 2 dr, 6 cyl, auto, ps/pb, many new parts. Steve, Ext. 3822 or 929-6527.

74 PINTO - Red w/black vinyl top, 2 litre, 4 spd, std, disc brakes, radio, heater, rear defrost, low mileage. \$1200. B. Sanchez, Ext. 3848 or 698-3145.

71 FIREBIRD - V8, all power, a/c, tape deck, good cond. \$1300. Jim, Ext. 3798 or 929-8462.

CAR TRAILER - Needs work. \$150. Dick Ryder, 589-9103.

70 GRAND PRIX - 445, 4 bbl, 79,500 mi, all power, new exhaust and shocks, buckets, mags. \$1050. 473-

69 VOLKSWAGON - New clutch, new brakes and wheel cylinders, 1971 engine, am/fm radio. \$600. Bill, Ext. 4173 or 929-3029.

TRUCK TIRES - (2) 700x14, 8 ply. Hank, Ext. 3935.

VW ENGINE - 1300cc and misc parts, \$30; VW engine stand, \$25; 6V battery, \$7.50. Mike, Ext. 2022 or 281.3460

71 PLYMOUTH - Cricket, runs well, no rust. \$100. Ext. 4742 or 744-2688.

73 DATSUN - 240Z, 4 spd, am/fm stereo w/8 track, wire wheels, excel cond. \$3000. Richard, 751-5880.

VW WHEELS - With used tires. \$4. Ext. 4240 or 286-0295.

77 FORD - Pick up, 6 cyl, low mileage, roll bar, am/fm tape deck, trackers w/white spoke, many extras. \$4950. 924-5203 after 5.

67 VOLVO - Auto, am/fm, roof rack, runs well, body and interior good. \$475. 878-4261 after 7.

WHEELS - (2) fit Dodge or Ford. \$8 ea. Bill Kling, Ext. 4636.

TIRES - (3) radials, LR78-15, 18,000 more guaranteed miles, excel cond. Woody, Ext. 2290.

#### Boats & Marine Supplies

17' COBIA - Fiberglass, 55 hp, Chrysler O.B. full electric, both 1971, good cond, extras. \$1895. 281-3122. GAS TANK - Evinrude 6 gallon tank, good cond. \$10. David, 286-0761.

MAKO 20 - Twin 65 hp P/trim, custom console and top, Ross SL300B, two radios, full instruments, equipped for offshore. \$5995. Phil, 728-0273 eves.

18' LYMAN SKIFF - 4 cyl gray, 20 gallon gas tank, instruments, lights, rag top, canvas cover, spare parts. \$550. Tom, 325-1033.

67 APPLEBY BOAT - Aluminum 12', good cond, w/onchor and life preservers. Ed, Ext. 4249.

23' COLUMBIA - Fiberglass, sleeps 4, head, galley, fabric cushions, bow, stern pulpit w/life lines, 4.5 merc, 2 sails, main cover. 286-1076.

16' WINNER - 1969, 55 hp Evinrude, 1971 Sealion trailer, new canvas, compass, extras, excel cond. \$1695. 698-7661.

OARS - 1 pr 5½ ft hardwood, like new. \$12. Ernie, Ext. 4291 or 727-2861.

#### Miscellaneous

OIL BURNER - (Heil) circulator and pump (watts); accordion 120 base, made in Italy, like new; bathroom sliding shower glass door; chandelier (5 lights) pull down lamp; 2 brass lights. Vinnie, Ext. 2951.

SKI BOOTS - Women's Reiker, size 7, fur lined, excel cond, blue, only used 1½ seasons. 286-1076.

TWO COMPLETE YEARS OF PHYS REV A - #'s 3, 4, 5, & 6 and part of 7 FREE en'mase, or trade pickychoosy for selected back issues of J. Chem. Phys. Chuck. Ext. 4331.

LIVING RM FURNITURE - 2 end tables, 1 coffee table, dark wood mediterranean, \$75; car radio, new AM, pushbutton, \$15. Richie, Ext. 4254 or 734-7342.

PANASONIC STEREO - 4 track, tape recorder, solid state. \$100. Dave, Ext. 3365.

SKI BOOTS - Lange Pro's, size 9, \$30; beginners golf clubs, bag and cart, \$30; metal gas can (2.5 gal), \$3; beach chair, \$2; b&w TV antenna, \$5; Panasonic portable (am/fm/psb), \$40; Van Wych blender, \$15. Ext. 4011.

DRUM SET - Top hat & Zimbal. \$50. Bill Kling, Ext. 4636.
PUPPY - 7 months old, affectionate & cheerful (large),

looking for a good home. Ext. 3130.

CASSETTE TAPE DECK - Stereo cassette, player deck, used 3% like new cond. 10 mg guggantee. \$45, 732.

used 3x, like new cond, 10 mo guarantee. \$45. 732-5829.

RAND MCNALLY GUIDE - For campground & trailer park, new cond. \$4. Bill Kling, Ext. 4636.

BAR - With back bar & 3 bar stools. \$50. Ext. 2529.

FREEZER COMMERCIAL - \$30; work bench, \$5; paper or film cutter, \$5; 1/4" to 1/4" to 1/4" ratchet type pipe dies, 1/4\$35. Moving. 1/4\$36. Moving. 1/4\$37.

20 GAUGE SHOTGUN CASE RELOADER - 2628 trap wads, 184 ea hi & low brass shells, 4 boxes #9 reloads, 1 box #4 field load, 100 primers, 50 lbs #8 shot. J. Zahra, Ext. 2951, 727-4515.

LAWN MOWER - Park 30 Jacobsen Riding Reel with riding seat, 5 hp motor. GR5-4199.

MINI BIKE - 3½ hp engine, 1 yr old, new clutch, brakes and chain, excel cond. \$115. Ernie, Ext. 4291 or 727-2861.

POOL - Above ground, 24 ft round, w/expandable liner 4 to 6 ft deep, plus extras, good cond. \$600. Paula, Ext. 4702.

FREE - Beautiful, adorable kittens. 821-1640.

FREEZER - Cold Spot, 19 cu ft; 27" 10 speed bike. Vinnie, Ext. 2951.

SWEET POTATO PLANTS - (Yams) \$7 per 100, order now. Teddy, Ext. 3679 or 727-3869. TWIN MATTRESS - And box spring, Sears and frame,

very good cond. \$35. Ben, 473-7681.
TWIN MATTRESSES - (2) Sterns & Foster, good cond, \$25; Harvard dual frame, \$10; (2) twin box springs,

free. Ben, 473-7681.

PACHYSANDRA - Good ground cover, 50 plants for \$5, 100 plants for \$9. 744-5448.

COMMERCIAL COFFEE MACHINES - {One burner only} w/filter supply, \$20 ea; men's bike, \$8. Steve, Ext. 2011.

SKIS - Fischer 185 cm w/bindings. \$55. Jim, Ext. 3372. FREEZER - Upright, Westinghouse, 17.5 cu ft, frostfree, excel cond. \$120. 751-8158.

ELECTRIC KNIFE - Electric broom; 7 spd blender; all in good cond. \$10 ea. Hans, Ext. 4581 or 281-5563.

EXTERIOR DOOR - 32"Wx6'8"H, complete w/storm door. Ext. 4255 or 744-6794.

POWER CASTER - Park your trailer with a power caster, at a touch of switch, forward or reverse electric, excel cond. \$195. Bob Johnson, Ext. 3354.

POT BELLY STOVE - \$50; card rocks for stationery store, very reasonable. Sharon, Ext. 3312 or 878-2591 eves.

75 HONDA - CB360 motorcycle, low mileage, excel cond, many extras. \$800. Gene, Ext. 4605 or 744-3945.

LHASA APSO - Golden female, 10 months old, champion sired, pedigreed, excel disposition, gentle, lovable, friendly. \$175. 929-8105.

#### 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

ROCKY POINT - 4 bdrm Colonial, eik,  $2\frac{1}{2}$  baths, fp, w/w carpeting, all appl, garage, wood deck,  $\frac{1}{2}$  acre, priv beach.  $\frac{7}{4}$ 4-1150.

BELLPORT VILLAGE - ½ acre, 3 bdrm, 2 car garage, screened porch, attached greenhouse, many extras. \$49,500. 286-2724.

MASTIC BEACH - 4 yr old house, 6 rooms, full bsmt, 80×125. \$28,500. 281-5328.

CENTRAL ISLIP - Condominium, 3 bdrm, town house, on corner near pool, all appliances, incl cent air, exit 57 LIE. \$31,000 firm. Ext. 2517.

N SHIRLEY - ½ acre, 2 bdrm ranch, w/w, eik, full wall fireplace, stockade fenced, shed. garage, borders Southaven Park. Must sell. Ext. 2970, 399-0836.

SETAUKET - 2½ yr old mother/daughter, hi-ranch, ½ acre, 4 bdrm, 2 bath, furnished downstairs apt, lots of extras, 3 mi to SUNY, 16 mi to BNL. \$46,990. Martha, Ext. 3307 or 751-8649.

BROOKHAVEN HAMLET - 3 bdrm, custom ranch,  $1\,\%$  acres, features too numerous to list. 286-0246.

MASTIC BEACH - Sale or rent, compact 3 bdrms, near water. Sell under \$20,000. Rent negotiable. 281-7531.

E SETAUKET - Home in desirable area, Three Village School District, outdoor patio, wooded area, quiet community, ½ acre. \$43,000. 473-8360 after 5. By appointment only.

E PATCHOGUE - Custom built brick veneer 3 bdrm ranch, oversized L/R, fin bsmt, 2 full baths, 2 fp, 2 car garage, 130x150 land, must be seen. \$51,000. 286-9054.

ROCKY POINT - The Tides, 70' ranch on ½ acre, 3 bdrms, L/R, din rm, den w/fp, eik, full bsmt, patio, garage, 2 car pkg area, priv beach. \$45,000. Ext. 4605 or 744-6482.

ST JAMES - Old dutch colonial, 3 lg bdrms, 2 baths, eik, D/R, L/R, enc porch, bsmt, OHW, garage, walk to schools, stores and LIRR, low taxes. \$39,500. 862-9384.

BROOKHAVEN HAMLET - 3 bdrms, fieldstone fp, Anderson bay window, 1½ car garage, screened porch, 24' L/R, formal D/R, kit, storms & screens, HW heat, low taxes. \$37,000. Ext. 4088 or 286-0204.

SHOREHAM - 4 bdrm Colonial, w/w carpeting throughout, 2 car garage, 1 acre, full fenced. \$56,900. 744-2821.

SHOREHAM - Raised ranch, 3 bdrms, 1½ baths, fam rm, D/R, garage and screened patio, ½ acre. \$38,000.744-5322.

N PATCHOGUE - Modern ranch, I/r, din rm, kit, 3 bdrms, 1½ baths, huge fam rm, garage, landscaped lot, prime area, walk to schools, 6 percent mortgage, low taxes, immaculate. \$39,000. 654-4394.

#### For Rent

MIDDLE ISLAND - Female only! Own bdrm, tennis courts, swimming pool, clubhouse. \$35/wk. 732-2105 or 924-7710.

RONKONKOMA - 4 bdrm house on 1 acre w/barn. Immac. \$400/mo plus utilities. 265-8827.

MASTIC BEACH - Roommate to share 5 rm apt. \$125/ mo, util incl. Ed, Ext. 3535 or 3516. 281-2177.

MASTIC BEACH - 1½ rm studio, furnished, priv ent, rent negotiable, incl util, near water, pleasant location. 281-7531.

BELLPORT VILLAGE - Quaint cottage, 2 blocks south of village and walk to dock, beach and ferry, all util except gas stove. J. Barry, Ext. 4088.

LAKE PANAMOKA - 2 bdrm house, small, cozy,

clean, beach rights, close to Lab, walk to deli, unfurn, low util. \$250/mo. Palmer, Ext. 3780 or 744-2836 or 929-8400.

BELLPORT - Two bdrm apartment. \$230/mo incl util. Chris, Ext. 2907.

#### Wanted

EXPERT AUTO MECHANIC - Experience necessary. Andy, 588-8584.

CAR SEAT - Peterson Safety shell or equivalent, good cond, reasonable. Pete, Ext. 3868 or 878-1225.

TWO BEDROOM HOUSE - Mature couple wants to rent house w/util included, reasonable. 289-3981.

WEST GERMAN FAMILY - (Near Hamburg) wants 16 yr old daughter to live in American family with similar. Ext. 3699.

AUTO HARP - Call 273-6993 after 6.

ROOMS TO RENT - For July and/or August, need kitchen, bedroom and bathroom, reasonably priced, in Bellport area. Kathy, Ext. 3146.

PORTABLE WASHING MACHINE - In good cond. Louise, 924-5422.

HOME - For a 4 year old male Irish Setter, had shots, and neutered. 744-5446.

FIREWOOD - Unsplit, any amount, any length. Russ,

589-0750.

CLEANING HELP - Responsible individual to clean small house close to laboratory. 4-5 hours bi-weekly. 924-5259 after 6.

3 WET SUITS - Any kind or condition. Bruce, Jr., 924-4097 after 5.

A. Campbell, Ext. 3354 or 727-7115.

RIFLE - M100 win .308 cal. Bill, Ext. 3066.
MOVIE PROJECTOR - 8MM (or Super 8) and screen.

SMALL APARTMENT - Port Jefferson area, furn or unfurn, immed occupancy. 473-9379 after 2.

TV - Black & white and sewing machine. Ext. 4488 days, 345-3118 evenings.

BIKE - 10 speed, in good cond; also a used set of left-

handed golf clubs. Don, Ext. 4346 or 821-9125 after 5.
RELOADING EQUIPMENT - Shotgun rifle and pistol.

Phil, 399-2070 eves. HABITRAIL - Parts, very cheap. Lindsay, 744-5448.

RUDDER - For 10' to 14' sailboat, almost any cond. Louttit, Ext. 4745. BICYCLE - Men's 3 spd, good cond. Pete, Ext. 3297 or

821-9547.
STEERING WHEEL - And hub assembly for outboard

motor boat, reasonable. Bob, Ext. 3309.

REAR BENCH SEAT - For van with or without seat

# belts. Steve, Ext. 2011. Car Pools

FREEPORT - Nassau County's south shore, call at

lunchtime. Gerry, Ext. 4597.

RIVERHEAD - In need of ride to Lab every other week.

Preferably someone living in or near Pine Crest Apts,
Riverhead. Ext. 2348 or 727-6539 after 6.

#### c ·

Services
ASPHALT PAVING & SEALING - Bob. 475-4382.

BABYSITTING - Manorville, Moriches and Mastics. \$1/hr. Missy, 878-1847.

SCUBA LESSONS - Be ready for your summer recreation. International certification included. Steve, 281-

BABYSITTING - On site. Anne, Ext. 3226.

SHARPENING SERVICE - Chain saws, hand and circular saws. Joe, 732-3286.

NOVA SCOTIA - Join group departing June 30-July 5. Cathy, Ext. 4093 or 732-6262.

TAXES - Prepared by tax accountant in the convenience of your home. Reasonable. Bob, 654-1731.

MOVING? - Will move anything (Nassau & Suffolk counties and the 5 boroughs). Robert Glucksman,

764-7452 between 5-9.

TYPING - Lite, sewing, and babysitting. Medford

area. 475-0144 after 6.

TAXES - Prepared in the convenience of your home. Evening and weekend appointments, reasonable. 665-5640.

SOIL FREE PLANTS - Plants grow in living stones. Buy or arrange for a free demonstration. For more info Annette, Ext. 4144 or 281-4178.

TAXES - Prepared in your home or mine. Very reasonable fees. Evenings and weekends. 281-2019.

CERAMIC TILE - And cement work. Reasonable prices and quality work. Donald, 281-8848 or John, Ext. 3292.

TAXES - Prepared by tax consultant, your home or mine. Reasonable. John, 732-2472.