

## Fragile - Open With Care

As a possible spinoff of recent studies in the Biology Department, fruits and vegetables which can be kept fresh for longer periods may be a reality if we can learn to control "senescence" - the inevitable death of cells.

Research Associate George Wagner has developed important new procedures for taking the plant cell apart into its many components. This work was done in the laboratory of Harold W. Siegelman, and Biology Associate John Tilley provided very important assistance to the project.

The largest compartment in the mature plant cell is the vacuole. It occupies more than 90% of the total volume of the cell. The new procedure developed here allows the isolation of the intact vacuole in very large numbers so that they can be studied in detail for the first time.

The procedure is both simple and easy. First, an enzyme is used to dissolve the cell wall. A phosphate solution is then mixed with the plant cell. The cell slowly swells up like a balloon and bursts very gently.

This releases most of the cell parts intact. All previous methods involved breaking cells by grinding which also breaks the vacuoles.

"The vacuoles contain some pretty nasty stuff," said Wagner, "like strong acids and compounds which are used in making leather from hides." He explained that this "nasty stuff" might alter the character of other cell parts when the vacuole is broken during the traditional isolation procedure.

He added that the grinding process itself may also affect the other parts of the cell in undetected ways. The process Wagner developed has the advantage of breaking the cell gently.

This process was successfully tested in the isolation of chloroplasts, which convert light energy to chemical energy. Geoffrey Hind, who has been studying chloroplast function in plant cells, and Biology Associate Herbert Nakatani provided expert assistance.

Frank German, staff assistant for Greenhouse and Field Operations, and Barney Peltz, greenhouse staff, played a key role in the project. "They were very important," said Siegelman, "in providing uniform materials over a long period of time so that continuous experimentation could be maintained."

The vacuole is considered responsible for several important plant functions, including senescence. Biologists have suggested that when cells reach this last stage of development they are "committed to die." A current hypothesis advanced by other biologists is that the vacuole bursts releasing enzymes



At the greenhouse, (from left) Barney Peltz and Frank German, who is in charge of greenhouse operations, check the Holland tulips which are provided for the experiments. Christmas amaryllis plants are also used.

the vacuole and other parts of the cell.

How does senescence come about? They don't know yet, but Wagner plans to continue the research he has been doing here for the past two years in the hope of finding an answer. "We need more basic information about molecular and cellular aspects of the senescence process before we can make advances in halting or reversing it," asserts Wagner.

Wagner suggested that a greater understanding of the process might lead to discovery of a chemical which delays senescence, or development of new varieties which are less sensitive to the triggering forces which lead to cell death.

A plant has no skeleton, but instead relies on the rigidity of vacuoles packed with liquid and stored materials. New knowledge of the vacuole could shed light on problems of frost hardiness and drought resistance.

Some plants are known to accumulate toxic environmental substances. Isolation of the vacuole will now allow scientists to study where these toxins concentrate in the cell. "This could contribute toward an understanding of the effects of pollution on plants," said Wagner.

"We are collecting basic information which can eventually be applied to these sorts of problems," he explained, "and I have no doubt that it will be applicable."

This work which uses the single wall-less plant cell as a research tool, is an outgrowth of the pioneering efforts of Harold H. Smith and Peter Carlson. In 1972, they announced their success in growing the first mature hybrid plant from the fusion of single plant cells of different species.

—Clifford Cockerham

This were a wedder for to slegen inne!

—Chaucer

## United Way Drive A Success

The final tabulations are being completed for the Laboratory's United Way drive. And the results are something to smile about. Barney McAlary, campaign chairman, makes the following comparison between this year and last:

	1974	1975	% Increase
Employees participating	130	296	128%
Amount contributed	\$12,600	\$20,624	64%

As can be seen, not only has there been a substantial increase in the number of employees participating, but also an additional hefty sum of \$8,000 has been raised this year. "About 11% of our employees have participated this year," said McAlary, "versus only 4½% last year." And he is particularly pleased that this year's annual pledge averages \$70 per contributor, which is considerably higher than the average of \$33.40 for the upper one-third of Nassau-Suffolk contributors.

"We want to express our sincere thanks for the generosity of our employees whose gifts will benefit local United Way agencies and hospitals," said McAlary speaking for all BNL's campaign workers.

## Update On Solar Neutrinos

About a mile under solid rock in the Homestake Gold Mines in Lead, South Dakota, a solar neutrino detector was built in the late 60's. Since that time, Dr. Raymond Davis, Jr., a senior chemist, has been conducting experiments the aim of which is to observe the neutrinos, measure their flux and energy and thus test our ideas of how the sun generates energy.

In the 132nd BNL Lecture, entitled "The Brookhaven Solar Neutrino Experiments: Past, Present and Future" Davis will report on these experiments January 28, at 8 p.m. in Berkner Hall. This will be the second BNL lecture on this subject. The first was presented by Davis in March 1967.

Since that lecture, the Brookhaven solar neutrino detector has been in operation and yielded a startling result: the number of neutrinos detected is less than one-tenth of that predicted by the supposedly well understood theory of solar energy generation. The thermonuclear reactions which produce all the energy of the sun take place only in the center of the sun, and neutrinos are the only products of these reactions which can immediately penetrate the outer layers of the sun and reach the earth. They thus provide the only means of "seeing" directly into the interior of the sun.

Davis will also discuss many of the theoretical speculations which have been stimulated by this large disagreement between theory and experiment, as well as the next possible experiments which should aid in solving the puzzle.

Ray Davis received his Ph.D. from Yale in 1942 and then served in the Air Force until 1946. Except for a short period at Monsanto Chemical Company, his professional career has been spent in the Chemistry Department at Brookhaven.

A buffet supper will be served at the Brookhaven Center before the lecture beginning at 6 p.m. Reservations should be made in advance by calling Ext. 3541 before 5 p.m. Refreshments will be available in the lobby of Berkner Hall immediately after the lecture.



Raymond Davis, Jr.

## Selected Reading

**Bull. At. Sci. 32, January 1976**  
The coming age of shortages. E. Benoit. 6-16  
Solar sea power. C. Zener. 17-24  
The Pentagon's program of IR&D: The need for reform. J. Reppy and F.A. Long. 30-6

**Environ. Sci. Technol. 10, January 1976**  
Environmental lab operating experience. J.E. Regnier. 28-33  
Resolving environmental conflicts. J.E. McCarthy. 40-3

**Sci. Amer. 234, January 1976**  
The necessity of fission power. H.A. Bethe. 21-32  
Mirages. A.B. Fraser and W.H. Mach. 102-11

**Phys. Bull. 26, December 1975**  
The physicist and his environment. J. Redfearn, et al. 527-35  
DESU: Its past, present and future. H. Schopper. 537-8

**Sci. Gov. Rep. 5, December 1, 1975**  
ERDA hires National Academy for vast energy study. D.S. Greenberg. 1-3



What!  
Me at BNL  
for 7 days?



Brookhaven Semester Program college students who have just arrived for the start of the 16th Semester. Seated from left, Le Joyce Hathorn, Marilyn Sims, Mary Jordan. Standing from left, Anthony Eason, Eva McLemore.

## From Natchez And Mobile To Upton

When the five Brookhaven Semester students arrived Monday they were greeted by bone chilling weather, an abrupt change from the milder air prevailing down south. With a helping hand from Equal Opportunity Assistant Renee Flack, they have spent the week adjusting to the weather, and to the Laboratory and its environs where they will spend the next 16 weeks.

Le Joyce Hathorn, Eva McLemore and Marilyn Sims are biology students from Jackson State College, Mississippi. Other biology majors are Anthony Eason, Elizabeth City State University, North Carolina, and Mary Jordan, Tougaloo College, Mississippi.

The students will concentrate on biochemistry, molecular biology and physical chemistry and will divide their time between classes and research.

This is the 16th semester of the program that started in the fall of 1968 to help overcome the inadequacies that existed in the science and mathematics programs at predominantly black colleges and universities. A consortium was formed, named the Regional Cooperative Association in Science and Mathematics (RCASM), and con-

sisted of a director and one member from each institution. In the succeeding years, the number of participating institutions has grown from 10 to 18. Brookhaven provides the instructors and facilities for the courses and research activities of from five to ten students each semester.

In a report prepared by RCASM Director, Dr. Amos P. Kennedy of Grambling College, it is noted that conditions have improved somewhat at the southern colleges through the development of new courses, strengthening the science and mathematics faculties and the acquisition of much needed equipment.

The report states that the strong academic environment at the Laboratory and the experience the students gain in using the most advanced scientific equipment make the Brookhaven Semester Program one of the most successful of its kind.

In a recent survey of 48 students who spent a semester here, nearly half had gone on to graduate school. Others are working as teachers and in industry. The Navy and the Air Force have claimed one each and one young man is a minister.

## Music From Laredo

The fourth concert in the 1975-76 series will be given by the distinguished American pianist Ruth Laredo, who will present a program of works by Beethoven, Scriabin, Rachmaninoff and Ravel at 8:30 p.m., Wednesday, February 4, in Berkner Hall.

Hailed as one of today's foremost interpreters of Scriabin, Ruth Laredo's reputation, nevertheless, has been developed on immense musical versatility. She has been soloist with major U.S. orchestras and her recital tours have taken her from coast-to-coast. Another dimension was added to the young artist's career through her performances (the world's first) of all the Scriabin Piano Sonatas at New York's Hunter College honoring the 100th anniversary of the composer's birth. Abroad she has been guest artist at the Israel Festival and the Festival of Two Worlds in Spoleto.

Born in Detroit, Ruth Laredo studied with Rudolf Serkin at the Curtis Institute of Music in Philadelphia. She has long been associated with the Marlboro Festival and has been an active and outstanding chamber music performer for many years. In this capacity she has frequently toured with Music from Marlboro and performed with the Cleveland and Guarneri Quartets and with members of the Budapest Quartet.

In the spring of 1973 she gave a spectacularly successful recital on the Great Pianists Series at Lincoln Center. *New York Times* critic, Donal Henahan said: "Ruth Laredo is about as big as a hummingbird. As she sits at the piano, her hands sometimes appear to hover over the keys, a blur to the eyes, if not to the ears... But what hummingbird ever packed the power Miss Laredo brought to bear in her recital... she deserved every cheer she received." This season Miss Laredo performs in New York City five times. She makes her debut with the New York Philharmonic with three performances, appears in recital and is soloist with Musica Aeterna at the Metropolitan Museum of Art.

As a recording artist Ruth Laredo has also won acclaim. Her recording of Ravel's piano music was chosen by *Saturday Review* as one of the year's best albums, and she



Ruth Laredo

made history with the first recordings of the complete Scriabin Piano Sonatas. Miss Laredo recently signed an exclusive recording contract with Columbia Records and is currently recording all of Rachmaninoff's piano works for them.

Last year Ruth Laredo received the Winston Churchill Travelling Fellowship. Initiated in 1968 by the English Speaking Union of the United States, its purpose is to enable Americans from various walks of life to travel, study and consult with their counterparts in the British Commonwealth countries. Miss Laredo was the first musician to receive the award.

Admission	
Adult	\$3.50
Full time student (with I.D.)	1.75
Over 65	1.75
Under 18	1.00

## SERI Follow Up

According to press reports, New York State will propose the 214-acre site adjacent to the Laboratory as its choice for the Solar Energy Research Institute (SERI). Other sites competing for the state selection were in Rochester, Albany and North Hempstead Town on Long Island. Federal guidelines are expected this month and if this property conforms to them as a possible site, New York State will make the recommendation official. The presence of the Laboratory on the site was a strong factor in favor of this location for SERI.

## New Pool Season Feb. 1

The new pool season will begin on February 1 and extend through April 30. Season passes will go on sale at the pool on Friday, January 30.

Season pass costs: employees only, \$5.00; family, \$10.00.

### Pool Schedule

<b>Monday-Friday</b>	11:30 - 1:30 Employees Only
	5:00 - 9:30 Employees/Families/Guests*
<b>Saturday &amp; Sunday</b>	1:00 - 6:00 Employees/Families/Guests*

\*One guest per adult BERA member may be admitted to the swimming pool at any one time without prior arrangements. Adult BERA members may arrange to have more than one but not more than five guests at any one time by making advance arrangements with the Recreation Representative in the Personnel Office.

This schedule will remain in effect until further notice.

## Hospitality Committee News

The next morning coffee will be held on Tuesday, February 3, in the Brookhaven Center, from 9:30 to 11:30 a.m. Babysitting will be available at no cost.

Mrs. Miyako Iizumi will demonstrate the intricate technique of wrapping the kimono and will explain some of the traditions associated with the kimono.

## Letters To The Editor

To the Editor:

I have some pet mice that have multiplied. Since it is becoming difficult to house these mice families, I'd like to know if your Labs would be interested in obtaining them. I enjoy caring for them. The colors of my mice are pure white, beige and dark black, and some mixed colors. I only have 3 large fish tanks. Cost of food & shavings are a problem. I have 46 healthy mice, 5 which are pregnant. My parents don't like this huge number.

If you are interested call collect this number 273-1041 after 3 p.m. - if not do you have any suggestions?

Sincerely,  
Allison Beyerlein  
7th Grade, Brentwood H.S.

## Reporters Wanted

The *Bulletin* is looking for acute observers to alert us to news for your newspaper. These need not be "heavy" items, just leads to people, incidents, funny happenings, and the like. If something comes to your attention which you think would be interesting to readers of the *Bulletin*, let us know.

Also, the "Tune In" boxes have been replenished. If there is something you want to know, but don't know who to ask, take a form and write about it. Your letter will be numbered and forwarded without your name to the appropriate office for a response. Messages of general interest will be published in the *Bulletin*.



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## Cafeteria Menu

### Week Ending January 30, 1976

<b>Monday, January 26</b>	
Tomato Vegetable Soup	
Keilbasy & Sauerkraut	1.05
Grilled Ham Steak & 1 veg.	1.15
<b>Tuesday, January 27</b>	
Cream of Potato Soup	
Southern Fried Chicken	1.10
Macaroni & Cheese & 1 veg.	1.00
<b>Wednesday, January 28</b>	
Onion Soup	
Tuna Noodle Casserole	1.10
<b>Special</b>	
New England Boiled Dinner	\$1.87 plus tax
<b>Thursday, January 29</b>	
Chicken Noodle Soup	
Chili Dogs & rice	1.00
Salisbury Steak & 1 veg.	1.05
<b>Friday, January 30</b>	
New England Clam Chowder	
Broiled Fillet & 1 veg.	1.10
Roast Sirloin & 1 veg.	1.25

## Arrivals & Departures

### Arrivals

Paul C. Auh	Applied Science
Joanne D. DeLise	Health Phys. & Safety
James T. Durnan	Plant Engrg.
Juanita Heyliger	Tech. Info.
Linda E. Kinsella	Plant Engrg.
Frank E. Kito	Biology
William R. Leight-Manuell	H. P. & S.
Vinod Mubayi	Applied Science
Alvin Nash	Plant Engrg.
Thomas J. Ruth	Chemistry

### Departures

Robert E. Lundgren	Mech. Engrg.
George H. Tucker	Mech. Engrg.

## Tuition Refund

Effective Spring Semester 1976, employees may receive concurrent payments of benefits by the V.A. and the Laboratory for the same period of education.

## Slo-Break Basketball

by Dr. K.

In the game on January 8, the Spuds routed the Condors 67-54 behind the play of Dennis Nordstrom who got 24 points and Jeff Gaffney with 20 points. Dick Sutter added 10 points more to the victory. For the losers, Mac Thomas and Mike (the Spike) Dagg played well obtaining 15 and 16 points respectively. Carl McKeever also scored in double figures with 10 points. Dr. K. played so poorly the Condors may sue him for malpractice.

The double-header on January 15 pitted the Condors vs. the Persuaders and the Spuds vs. the Browns. In the first game, despite the fact that Dr. K. operated for 17 points, the patient died as the Persuaders trounced the Condors 63-54. Other high scoring Condors were Jim Vaughn (14 points) and Carl McKeever (11 points). Four of the five Persuader players were in double figures; Leroy James with 20 points, Larry Dunmore with 17 points, Blue Garrison with 12 points and Brant Johnson with 14 points.

In the second game the Spuds defeated the Browns 74-71 in an offense-minded contest. Jeff Gaffney poured in 27 points and Dennis Nordstrom put in 19 more for the winners. M. Rose scored 12 points also. The Browns had three men with double-figures. The Moose, who rampaged for 35 points, Gordon (Fox) Smith put in 12 points and Dave Tang added 11 more points to the Brown tally.

The League standings are as follows:

	W	L
Spuds	3	1
Persuaders	3	1
Browns	2	3
Condors	1	4

Individual scoring statistics will be computed at the end of this half of play.

### Emergency Numbers

If these numbers are not already in a prominent spot on your telephone, please put them there. Under the receiver is the usual place.

2222 - Medical Emergency  
3333 - Fire Emergency  
4444 - Police Emergency

### New Use for the Graphite Reactor Hall



At the conclusion of the AUI Board meeting last week, Trustees and Laboratory officials visited the floor of the old graphite reactor and heard Assistant Director R.C. Anderson (center, right) describe the plans for turning it into a Science Exhibition Hall. It is expected that the exhibits will be open for public tours on Saturdays during the summer months. —photo by Rosen

### Soccer

DAS-CHEM-MED managed a 1-0 half-time lead against PHY-AMD-INST. Murtagh then moved to the frontline and scored two quick goals followed by another by Lasker for a 3-1 win for PHY-AMD-INST. Murtagh continued his offensive wizardry with a hot kick (3 goals) against AGS for a 3-2 win. AGS was in for a down day as they lost 2-1 to DAS-CHEM-MED. Goals by Hernan and Rafferty were enough to offset a goal by Oldham.

#### League Results

	W	L	T	Pts.
PHY-AMD-INST	8	2	6	22
AGS	8	7	1	17
DAS-CHEM-MED	2	9	5	9

### Bicycling, Anyone?

There will be a meeting on Ground Hog's Day (February 2) in Room A, Berkner Hall at 12:30 p.m. to organize the bicycling events of the coming season.

These events include the spring and fall races and cross-country tours, if there is sufficient interest. Past racers are urged to attend, but anyone interested is invited, even if their interest is only in touring.

### Bowling News

Cathy Van Noy

#### Pink League

Going into position night, the "Pin-splitters" are still leading by seven points with the "Fiscal Assets" in second and the "Spare" out of second by one point. High gross game was won by Renie Rosati with a 214.

#### Black 'N Blue League

The "Fudpuckers" have relinquished first place after leading the league for the first five weeks to the "Question Marks." "Congrats" to Al Laurine who converted the 4-8-10 split. High games went to Dick Murgatroyd 205, Debbie Antonio 191 and Renee Flack 162.

#### Green League

The "Trouble Shooters" opened the second half by taking eleven from the "Soc-Et-Tuums." The "Blue Jays" took eight from the "Charley Browns." The "Phou-bars" cooled the "Super Cools" by taking eight and the "Got-A-Hit-Ums" came back strong and took eight from the "Sparks." High for the night was Phil Borzi with a 202.

#### Red League

High games for the evening were W. Reams 237-690 gross for his club award. W. Kollmer 233, E. Meier 212, J. Scesny 207, R. Meier 201, R. Jones 200-200, C. Neuls 200 and J. Pukit 200-684 gross for his club award.

#### Purple and White League

The "Flounder" beat the "Sea Gulls" for the second fourth with a 38-18 record and the "Sea Gulls" with a 37-19. This is the second time the two teams have battled for the lead. High games were J. Usher 202, M. Bull 198, B. Roche 174, M. Belligan 166 and L. Bull 164.

### Volleyball

#### Men's League Results - Week of 1/14

Spikers	3	Circuits	0
Busters	3	Easy Aces	0
Cool Tools	3	Atom Spikers	0

#### Men's League Results

	W	L
Spikers	22	2
Cool Tools	21	3
Atom Spikers	13	11
Busters	9	15
Easy Aces	6	18
Circuits	1	20

Sorry, Mixed League results not available.

### Nets Basketball Tickets

Discount tickets for two Nets games are now on sale at the BERA Sales and Services Office. Seven dollar tickets are selling for three dollars each.

The games are scheduled for Friday evening, February 13 (Nets vs. St. Louis), and Friday evening, March 12 (Nets vs. Kentucky).

The BERA Sales and Services Office is open Monday through Friday from 7:30 a.m. to 2:30 p.m.

## Classified Advertisements

### Placement Notice

Challenging projects directed toward the resolution of national energy problems are being proposed by the Laboratory. Opportunities for Economists, Systems Analysts and Engineers with backgrounds in mechanical and chemical engineering may develop within the near future. Projects center on studies in energy conservation, conversion, and analysis of both existing and advanced energy systems.

Individuals interested in obtaining further information may call the Supervisor of Personnel Placement & Development, extension 2882 or 2874.

### Autos & Auto Supplies

74 MONTE CARLO - Swivel bucket seats, ac/ps/pb, wire spoke rims, rear defogger, new snow radials, full vinyl roof. \$3500 firm. Jim, Ext. 3840.

65 SAAB - Model 96, very good running cond, bad body rust, 56,000 mi on engine. 929-4522 after 5.

63 TRIUMPH TR4 - 4 cyl, 4 spd, good running cond, needs some work. Dave, 281-6468 eves.

73 HONDA 125 - New rear tire, moved up shocks, good cond. 473-5114.

75 HONDA 125 - Moved up shocks, radial head swing arm, air forks, never raced, excel cond. 928-3088.

MUSTANG HOOD - For 1967, excel cond. 475-8766.

WHEELS - 14x6, Fairlane 67-68, new w/valves. \$10 for 2. Paul, Ext. 3277.

4 TIRES - Uniroyal G78-15, fiberglass belted tires, mounted on Chevy rims. 281-8612 after 6.

4 RIMS - From 75 pickup truck, size 900-16, 8 lugs. \$100. Dennis Didio, 286-0372.

73 CHEVY NOVA - Hatchback, V8, auto, vinyl roof, new steel-belted radials, 38,000 mi, good cond. \$2300. Ext. 4094.

GOOD TIRE & RIM - For Pinto. \$10. Herb, Ext. 3403.

HUB CAPS - Dodge & Chevy, 4 each 14"; 2 14" Chevy rims. Ext. 4028.

68 CLASSIC JAGUAR - Roadster XKE-E type, excel cond. \$3500. 286-1309 after 4.

68 MERCURY MONTEGO - V8, 4 dr, snow tires, good running cond, \$575. Ann, Ext. 4137, 473-4583 eves.

74 PLYMOUTH FURY III - 4 dr sedan, all power, am/fm, new tires, \$2700. Mike, 751-2149 eves.

67 CATALINA - 2 dr, hdtop, ps/pb/ac, 2 new stud snows, 5 H-78, glass belts. \$550. 588-4987.

72 DODGE DART - Slant 6, standard trans, 45,000 mi, excel cond. \$1500. 475-3927.

74 PINTO - Auto, steel radials, 2300cc. \$2295. Bill, Ext. 4662, 298-4089.

67 CADILLAC - Sedan de ville, full power, vinyl roof, stereo, ac, excel cond. \$850. Ext. 3078.

68 VOLVO - 142 S, 2 dr sedan, white w/overdrive, body excel, no rust, mechanically ok. \$1195. Bill A., Ext. 2011, 477-0301.

73 CHEVY PICK UP - 1/2 ton, standard trans, 35,000 mi, new clutch, V8, good tires, am/fm, clean. \$2400. 289-7453.

64 DODGE DART - 6 cyl, runs excel, body has some rust, will pass inspection. \$250. Joe Buch, Ext. 4241, 732-8877.

### Boats & Marine Supplies

30' RICHARDSON CLASSIC - 1929, new bottom ribs, floors, engine beds, cabin varnished, inside barg, Chy ace, make reasonable offer. Ext. 3277.

22' GARVEY - Decked over cabin, fiberglass bottom, 40 hp Evinrude. \$800 or best offer. Pete, 744-3807.

20' SAILBOAT - Sleeps 2, 4 wheel trailer, winter cover, fiberglass bottom, \$800 or best offer. Pete, 744-3807.

WORK BOAT - Outboard, Novi, 1974, 26', 8' wide draws 1', very large self bailing cockpit, teleflex steering, extras. \$950 or best offer. Pete, 744-3807.

65 CHRIS CRAFT - 27' Cavalier, 185 hp Chevy V8 engine, many extras, excel cond. \$6000. Ext. 4612.

ALCOHOL STOVE - 2 burner, Turm Nereus, practically new, stainless steel, brass tank & burners, flame control, automatic priming. Helen, Ext. 3335.

15' MFG - 25 hp Johnson, controls, speedometer, motor in mint cond. \$475. Bill Espensen, Ext. 3992.

9' SAILING PRAM - W/gaff rigged mast, sail, etc. \$175. Bill Espensen, Ext. 3992.

20' CRESTLINER - Cuddy cabin, sleeps 2, marine head, full cover, 100 hp Johnson power tilt, elec start. Asking \$1500. 727-5168 after 6.

### Miscellaneous

FIGURE SKATES - Women's 7 w/carrying case & blade guards. Ext. 2633, 286-1056.

VOLT/OHM MULTIMETER - EICO 565, new in carton. \$25. D. Vail, Ext. 2046.

OSCILLOSCOPE - EICO 460, Heathkit EF-2, test chassis & all manuals, all new in cartons. \$135. D. Vail, Ext. 2046.

ELECTRIC DRILL - 3/8" Miller Falls, saw attachment. \$15. Ext. 2485.

ELECTRIC MOTORS - 115 V, single phase, 1/4 hp. \$5. Ext. 2485.

ELECTRIC SPACE HEATER - 8', circulates heater fluid, thermostatic control. \$50. Ext. 4362.

CAMPER CAP - 74 Wilson, fits 6' truck, inside finished. 878-4193 after 5.

### Do-It-Yourself Heating System



Robert Gibbs (Accelerator Dept.) with the solar reflecting panels he built from scrap lumber, glue and aluminum foil. He uses the panels to heat the 16' x 24' living room of his home in Bellport. On a sunny day he can shut off the hot water heat and maintain a temperature of 70° in the room. He was encouraged and assisted in this endeavor by Gary Cottingham (Accelerator) who has considerable expertise in the field and has also built a similar system in his own home.

## Classified Advertisements

PENTAX CAMERA - SLR 35mm, excel cond, w/55mm & 135mm telescopic lens. \$150 firm. L. Honikel, Ext. 3617.

GREAT BOOKS - Of the Western World, complete set & bookcase, good cond. \$200. 744-8632 after 6.

BED - Harvard frame, wicker headboard; Pentron stereo tape recorder. Ron, Ext. 3395.

DIDING RM SET - Table, 4 chairs, pads, table cloths, matching drapes, china closet, buffet, contemporary dark mahogany. 581-7656.

SIBERIAN HUSKY PUP - AKC, female, blue eyes, 10 weeks old, show potential beautiful markings, paper trained, health guaranteed. Ext. 3481, 751-7140.

CB SET - Globe CB-100, 12 VDC or 110 VAC, dual conversion, excel base unit, asking \$50. Ext. 4058, 286-0436.

SKIS - Bindings, men's boots. Ext. 4058, 286-0436.

BICYCLE - Men's 26" Columbia, good cond. \$20. Fred, Ext. 4613.

RIDING BOOTS - Women's used leather, 8 1/2-9 narrow, \$5; rubber, size 9-9 1/2, \$5. Ext. 2345.

RIDING HORSE - Toddler's, \$7; bed rail, \$5. Les, Ext. 4074.

ACCORDIAN - W/case. \$65. Les, Ext. 4074.

STEREO - Am/fm & phono console w/2 extra speakers, phono needs work. \$50. Jerry, 475-5591 before 3.

SKI BOOTS - Child's size 2, rubber, buckle type. \$9. Georgia Irving, Ext. 2318.

TENNIS RACKET - Davis, Hi-Point, 1L 4 1/8, used one season, new grip. \$20. G. Irving, Ext. 2318.

FIGURE SKATES - Black, size 3, new, used once. \$10. Georgia Irving, Ext. 2318.

STEREO - Radio, very good cond. \$30. Ext. 3850, 3067.

SKI BOOTS - Men's, lace, 9 1/2, leather, worn once. \$10. Ext. 3232 eves, 3583 days.

BASSET PUPPIES - AKC reg, born 11/3/75, tricolored, males & females. \$150 firm. Jim, 289-0833 after 5.

OLD PHONO RECORDS - 7 plays & movies, 3 Doris Day, 2 Four Lads, 4 others. Lawrence, Ext. 4107.

SEWING MACHINE - Singer zig-zag, model 457 w/ buttonhole attachment & other extras, excel cond. \$100. June, 399-0836 after 5.

8" RADIAL ARM SAW - Excel cond, many extras. \$125. Paul, Ext. 3277.

SCAFFOLD - & motor pan. \$25. Pete, 744-3807.

SKI BOOTS - Lange-flo buckle, 7 1/2N men's or 9N ladies. \$25. Cozine, 727-3793.

2 HEADBOARDS - Single w/built-in book shelves, antique gold, matching night table. \$30. 286-1192 after 6.

WINTER COAT - Like new, size 12, black cloth, fur collar & cuffs, 3/4 length. \$30. J. Candiano, Ext. 4144.

VACUUM CLEANER - Lexwt, good cond, all attachments. \$15. 924-3236.

BABY ITEMS - White birch crib & mattress; carriage; Baby Butler high chair. Best offer. 744-2493.

AIR CONDITIONERS - 6000 btu, 2 Sears, 1 Westinghouse, \$60 each; dehumidifier, Westinghouse, \$45. 744-2493.

SNOW THROW - 4 hp Ariens, 2 yrs old, elec start, chains, grease kit, new cond. \$200. 475-8211 after 5:30.

STEREO AMP - Paco, 40 watt, tube type w/extra tubes. \$35. Ext. 3593.

VACUUM CLEANER - Shetland canister, works well. \$15. Ext. 3593.

MAPLE SET - 3-piece early American, sofa bed, chair, rocking chair, ideal for play rm. \$100. Paul, 878-1486.

GAS RANGE - Caloric 30", bottle gas, almost new, cost \$325, asking \$200. 585-7094 after 6.

ORLON YARN - Still available. Ann, Ext. 3143, 732-9384.

DRAPERIES - 4 pair, Shantung, fully lined, 80" long x 69" wide, pleated avacado, used 3 months. \$135. 286-8945.

RUGS - Sculptured w/fringe, 9-12 & 6x9 w/padding, green. \$75 for both. Ext. 3051, 289-5607.

SHAYER - Norelco triple header, used only once. \$12. Nancy, Ext. 4619.

ICE SKATES - Men's hockey, size 10, good cond. \$8. Nancy, Ext. 4619.

LEATHER SKI BOOTS - Women's double laced, very good cond, size 6. \$10. Pat, 584-7050.

SHAWLS - 80"x26", one black, one red/black/blue stripes. \$20 each. Ext. 2345.

HOCKEY SKATES - Boys, size 13, good shape, 2 yrs. \$6. Bob, 475-4382.

REFRIGERATOR - 12 cu ft, perfect cond. \$60. J. Leong, Ext. 3225, 4815.

REFRIGERATOR - Frigidaire, good working cond, about 8 cu ft, ideal extra family rm area. \$15. 924-3236.

CRIB - Perfect cond, \$25; high chair, \$10. Mike, Ext. 4821.

HO TRAINS - 7 locos, 25 cars, 11 switches, twin pwr pack on 5x9 layout, many extras, \$250, no reasonable offer refused. 744-3312.

ICE SKATES - Men's size 3, black figure type. \$2. Ext. 4058.

SNARE DRUM - Zim-Gar, w/carry case & Premier adjustable stand. \$25 takes all. Ext. 4058, 878-0642.

ELEC GUITAR - Double magnetic pickup, \$30; accordian w/case, excel cond, \$200; antique pot belly stove, \$100. 722-3938.

SINK - Pink cast iron double basin w/rim. \$15. 363-6845.

GLASS TOP SERVER - 3 drawers w/door at each end, 4 mate & 2 capt chairs w/dining rm table, leaf, pad, dark color. \$100 for all. 363-6845.

SPACE HEATER - Ashley wood burning, thermostat controlled, \$175. Frank, Ext. 4581, 588-3565.

BEDRM CHEST - 1 walnut 5-drawer men's, 1 women's 5-drawer mahogany. John, Ext. 4634, 727-4515.

HANGING LIGHT FIXTURE - Teak & glass, 3 tear-shaped lights, ideal for dining rm. \$12. Sandy, Ext. 3369, 286-1022.

NIKON CAMERA - W/F 1.4 lens, 74 model, like new. Mike, 878-2486.

(2) CHILDREN'S DESKS - \$10 each. Ext. 4122, 286-8512.

TWIN BED - Metal frame, box spring & headboard, \$35; Victorian bureau, needs minor repair, original glass pulls. \$35. M. Green, Ext. 4484.

MINK COAT - Natural, full length, size 12-14. 472-0509.

ANTIQUE CHAIRS - Cut glass, tables, pressed glass & bric-a-brac. 472-0509.

ICE SKATES - Girl's, size 3, \$5. Bill, Ext. 4662, 298-4089.

GE REFRIGERATOR - Like new, 13 1/2 cu ft, gold, 2 dr. \$150. Alan, Ext. 2072.

SWEET "HEART" PILLOWS - 15"x15" red or blue pring w/lace, order now for Valentine's Day. \$6.50. Sharon, Ext. 3331.

### 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 Rent

MORICHES - 5 1/2 rm apt in new house, very nice area, elec incl. \$300/month. 878-2357.

LAKE RONKONKOMA - 1 bedrm apt, \$150 + util. 588-1889.

ROCKY POINT - 2 bedrm apt, completely furnished, private entrance, avail 2/1/76, adults preferred. 744-8805 after 6.

WADING RIVER - Beautiful 9 rm colonial, 8 mi to Lab, 1/2 acre, furnished, 5 bedrms, one closed off, on cul-de-sac, near LI Sound, beach, up to 2 children. Rick, Ext. 3979, 929-6820.

FURNISHED RM - South shore, good area, off-street parking, village conveniences, suitable congenial mature woman. 475-2627 after 6.

VERMONT VACATION - 3 bedrm mobile home w/ fireplace on 10 acres, 10 min from Okemo Mt. close to 7 major ski areas, weeks or weekends. Bob, 473-8186.

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### For Sale

S. SETAUKET - 3 bedrm ranch, finished basement, above ground pool w/deck, appl, carpeting, 1/4 acre, 3 Village schools, 20 min to Lab, must see. 751-6261.

CENTER MORICHES - 7 rm house, 4 rms upstairs, 3 down, 2 full baths, full cellar, garage, breezeway attached, hot water heat, storm windows, cyclone fence. 878-0237.

SHIRLEY - Smith Rd, 3 bedrm ranch on 1 acre, w/w carpet, appl, barn, shed, patio, util rm, eat-in-kitchen, dining, s/s, swings, fully landscaped, low 40's. 281-1458 anytime.

VILLAGE OF SHOREHAM - Large ranch, 3 bedrms, 3 baths, den w/fireplace, living, dining, kitchen, dinette, 2-car garage, beautiful rolling acre. \$92,000. 744-2493.

RIDGE - 3 bedrm house, ranch on wooded 3/4+ acre plot, basement, blk top, appl. \$33,500. 924-4962.

CENTER MORICHES - (2) 100' front x 175' deep bldg lots, near shopping, schools, marina. \$10,500 each. 878-2936.

NORTH SHORE - 3 bedrm, 1 1/2 baths, partially finished cellar, knotty pine interior, fireplace, 20'x30' garage w/pit, 23,000 btu ac, appl, 20 min to lab. \$246 taxes, \$30,000. 744-3312.

CALVERTON/RIVERHEAD - Townhouse, 3 bedrms, 1 1/2 baths, ac, all appliances. \$289/month + util. 488-2497.

HIGH RANCH - 3 yrs old, 4 bedrms, 2 full baths, finished family rm, 1/2 acre, 15x32 adobe ground pool, 10 min to Lab. \$38,500. No real estate fee, call for appt. Ext. 3620.

CUTCHOGUE - 1 acre bldg lot, water view, beach rights, near schools & shopping, asking \$15,000. G. Laird Stubbings, Ext. 4068, 298-5092.

SOUTHAVEN - Contemp ranch, 5 min to Lab, large living rm w/fireplace, den, 3 bedrm, 2 1/2 baths, eat-in-kitchen, garden house, 1 acre, adj to park. \$42,000. 281-4080 after 5.

TOWNHOUSE - 3 bedrm, 1 1/2 baths, w/w carpet, central air, 15 min to Lab, maintenance free, must see. \$27,000. Ext. 2978, 369-2526.

BELLPORT - 5 bedrm, 2 1/2 baths, living rm, dining, family, Franklin stove, screened porch, unfurn, 1 1/2 acres. S. Country Rd, \$350/month or \$55,000. Ext. 2057, 286-1091.

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CB RIG - 23 channel base station, good working order. Charlie, Ext. 2957, 744-3312 eves.

BROWNIE UNIFORM - New style, blouse and jumper or pants, size 8. 878-2239.

CYMBALS - Pair of "High Hat," for a drum outfit. Reasonable. Call 878-2239.

BELT SANDER - 3" or 4". Ext. 2113.

### Car Pools

MASSAPEQUA - Want either an established car pool or willing to start one in the Massapequa & surrounding area. Nancy, 795-3136.

BROOKHAVEN HAMLET - To Stony Brook University, office hours. Ext. 2633, 286-1056.

E. SETAUKET - Pt Jeff Sta. Opening for 1 or 2 drivers, vicinity of Ward Melville H.S. Law, Ext. 2462.

RIVERHEAD - Driver wanted for 5-member car pool. Pat, Ext. 4519.

STRATHMORE CORAM - Would like to join car pool from Strathmore Coram to Lab. Ming-Shih Lu, Ext. 2455.

### Services

ART LESSONS - From professional artist, all medias, near Lab. 924-4962.

TREE SERVICE - Removal, topping, cabling, chain saw work, estimates. 727-1329.

HAVE TRUCK - Yards, cellars, garages cleaned, light hauling, lawn leaves vacuumed. 727-1329.

CORD WOOD - Split & delivered, \$70/cord, \$40/half cord. 727-1329.

VW MECHANIC - Dealer trained, lowest prices, guaranteed work. Fred, 924-3556.

AUTO REPAIRS - Tune ups, brakes, almost any repairs at good rates. Ray, 878-2486.

TREE WORK - Removal, topping, stumps, trimming. Paul, 744-3807.

CLEANUPS - \$15 a full truck load. Paul, 744-3807.

WILL BABYSIT - One child in my home, fenced yard & playmates. 981-4435.

BABYSIT - Monday-Friday, experienced mother. Chu, 744-6910.

TAXPAYERS - Federal & State income tax forms prepared in the privacy of your home or mine. 744-9822.

BABYSITTING - Reliable, East Moriches, & vicinity. Lori, 878-1540.

DOG SITTER - References available, for further info, 286-8512.

AUTO BODY REPAIRS - Refinishing & painting. For free estimates, Bob or Lou, 727-9669.

GREAT MUSIC - Reasonable, 5-piece combo for all occasions, all types of music. 751-