BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Spain Draws A BEAD On Air Pollution

"The work here [at BNL] is among the best being done in the field. And some aspects are unique." Those are the words of Enrique Malboyssón and Cesar Dopazo, two Spanish visitors who came to Brookhaven recently to talk to scientists in the Biomedical and Environmental Assessment Division (BEAD) in DEE. The Spanish have embarked on an ambitious program of health effects studies, using many of the methods developed by BEAD.

For the Brookhaven scientists, these studies are a good test of their work. Says BEAD division head Leonard Hamilton, "There is actually a great deal of controversy over the health effects of pollution. So far, the preliminary results reported by Malboyssón and Dopazo during their visit confirm earlier BEAD results that, indeed, air pollution is bad for you. In addition, because of their unique government control over cigarette sales, they have the data no one else has to take into account the effects of smoking."

The Spanish studies are sponsored by that country's electric power industry, in collaboration with the government's Ministry of Industry. Malboyssón is the director of AMYS, the industry's association for health and safety, which is carrying out the research.

Dopazo is a consultant to AMYS. He was once on the staff at Brookhaven, working on air quality models in the meteorology group from 1975-78. It was then that he and another Spanish visitor, Vicente Gil-Sorde, who was part of an international energy analysis group, learned about the work done at BEAD. For the past two years, scientists in BEAD have been guiding the Spanish in developing an assessment program.

Spain is a rapidly developing country. In 1960, it became the ninth industrialized power in the world. Life expectancy has doubled in the last 80 years. While this growth has improved the quality of life there, the Spanish are now wondering about the health effects of pollution from energy production and consumption.

Analyses of the Spanish studies are preliminary. Nevertheless, some interesting relationships among the data have been found.

Cross-sectional Study of Spanish Provinces

Data gathered from each of the 50 Spanish provinces in 1976 were used for a study of the long-term relationships among socio-economic, environmental and mortality variables. Factored in were geographic characteristics (area, altitude), climatological conditions (precipitation, wind, minimum temperature, humidity), emissions (sulfur dioxide, particulates, nitrogen oxides, carbon monoxide) and economic characteristics (income, percent housing without hot water, cigarette sales).

Cigarettes are only sold by government-run stores, so the data are very reliable. (In the U.S., different states charge different taxes on cigarette sales, which results in bootlegging between states. Thus records of cigarette sales by state are not a reliable indication of consumption for each state.)

Using a technique called multiple regression analysis, causes of death were studied by sex and age group as a function of the most relevant socio-economic and environmental conditions. Cigarette sales were found to be significantly correlated to ischemic heart diseases (diseases of the heart characterized by insufficient blood supply). The relationship was more pronounced for males than for fe-

(Continued on page 2)

Doug Humphrey

Leonard Hamilton, BEAD division head, (left) goes over some reports with Spanish visitors Enrique Malboyssón and Cesar Dopazo.

Clarke Williams (1902-1983)

Clarke Williams, a former Deputy Director of the Laboratory, died on Tuesday, March 15, in Bellport. He was 80 years old.

Williams' association with BNL began in 1946 when he was Executive Assistant to the Initiatory University Group responsible for the preliminary planning of the Lab. In September of that year, he was appointed assistant to the chairman of the Reactor Development Group, and in 1947-48 was on leave at Los Alamos to work on the plutonium fast reactor. In 1952 he was appointed head of the newly created Nuclear Engineering Department, where he remained until his appointment as Deputy Director in 1962.

Warren Winsche, who succeeded him as chairman, said this week that "The major reason for my return to Brookhaven to chair the Nuclear Engineering Department, was the scope, quality and excitement of that department's programs as they had developed under Clarke's leadership. He knew how to identify outstanding engineers and scientists and then to help them and their ideas to grow. He established the firm base for nuclear engineering and applied science which exists at Brookhaven to this day."

Maurice Goldhaber was director when Williams was made deputy. Goldhaber said that "Clarke Williams made very important contributions to the Laboratory in all his jobs. When I got to know him well as my deputy, I learned to rely on his good judgment and to appreciate his unfailing enthusiasm and cheerfulness."

Clarke Williams received an A.B. in physics from Williams College, a B.S. in civil engineering from MIT, and a Ph.D. in physics from Columbia University. He taught for over 15 years at the College of the City of New York. During World War II, he worked at Columbia on the development of a method of separating the U-235 isotope by gaseous diffusion. This project later became part of the Manhattan Project under the Carbide and Carbon Chemical Corporation, and Williams was group leader in charge of pilot plant construction.

Clarke Williams in 1965.

After his retirement from BNL, and until his death, Williams was Research Administrator, Marine Resources Council of Nassau-Suffolk Regional Planning Board. He also remained active in local affairs: on the Board of Directors of the Suffolk Council, Boy Scouts of America, and of Skills Unlimited. For seven years, he was a trustee of the United Fund of L.I. (the predecessor organization of United Way).

A member of the American Nuclear Society since 1955, Williams held many offices in that society, among them Vice President (1962), and President for the 1963-64 term. He received an honorary doctorate from Williams College in 1964 and was a made a Life Member of the Board of Trustees in 1967.

Williams was a resident of Bellport. He is survived by his wife Margaret; three sons, Thomas B. of Brookhaven, Evan T. of Brooklyn, David F.W. South of Ashland, Oregon; and five grandchildren.

Teachers In Tandem

Teachers often find themselves in a dilemma. While they love their profession, they may also feel they are missing out on the more exciting things happening in their fields. An ongoing project at the Tandem Van de Graaff facility offers some teachers the opportunity to experience the best of both worlds.

When the Tandem runs, it runs continously. During a run, at least two operators must be on duty at all times, for reasons of safety, as well as to set up experiments and do some routine maintenance. That's where the Tandem teachers come in.

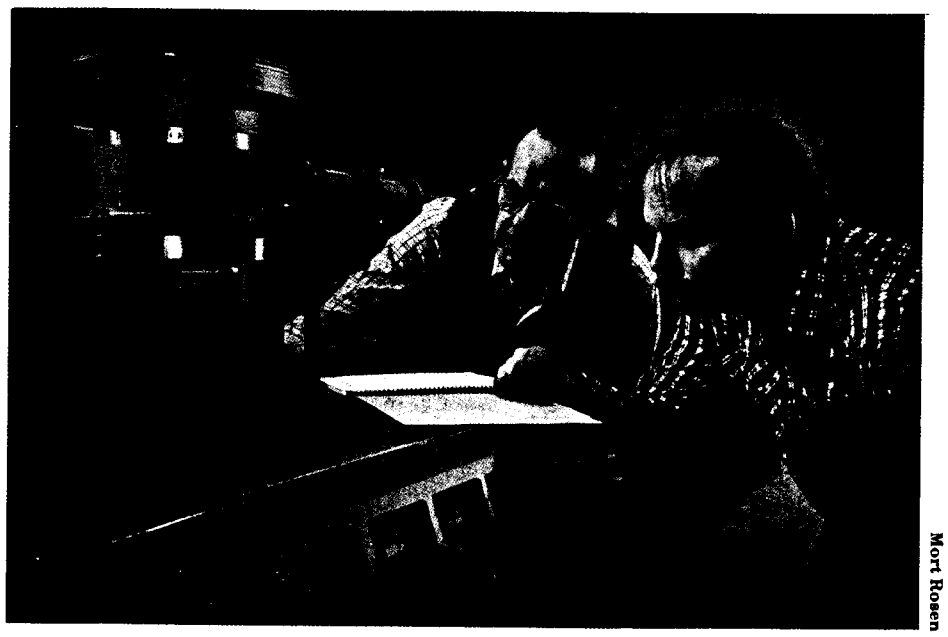
Over ten years ago, Harvey Wegner, then Project Manager at the facility, began a program of employing teachers as part-time shift workers. "Science teachers have a reasonable background," said Peter Thieberger, head of the Tandem operations group, "and they have time off just when we need them — weekends and vacation time. Teaming part-time teachers with experienced personnel has increased the efficiency of this operation considerably."

At present, there are five part-time shift workers at the Tandem. With the exception of Bill Polvent, who is a technician at SUNY Stony Brook, all are teachers. Tom Dunton is a biology teacher at Bellport H.S., where Joe Roberge, who also instructs at Suffolk County Community College, teaches chemistry. Chemistry is the subject Dan Visconti teaches at Patchogue-Medford H.S., where part-timer Steffan Utne is a shop teacher.

Some of the Tandem teachers have held their jobs since the early days of the program. Both Visconti and Roberge, who schedules these shift workers, have been coming to the Tandem for ten years now. Another member of the original group was George Virtes.

Bob Lindgren, who supervises all Tandem operators, called Virtes "an outstanding example of a part-time operator. He really took an interest

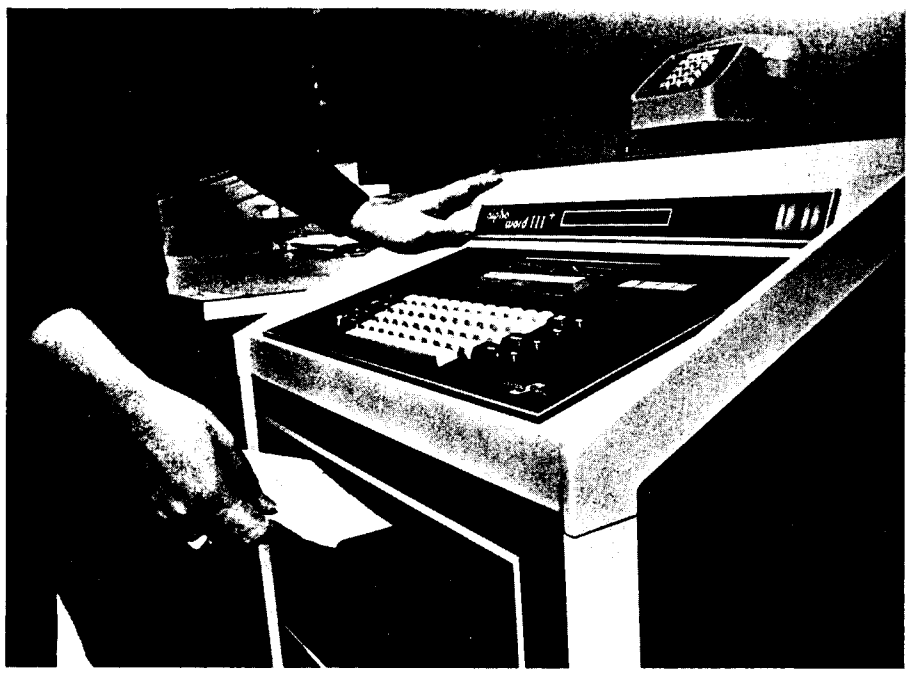
(Continued on page 2)



Mort Rosen

Bob Lindgren (left) and George Virtes work together in the control room of the Tandem Van de Graaff.

OCR Reaches New Reading Level



Alex Reben

The new OCR device at the Word Processing Center.

Not long ago a Lab scientist had a problem. With a long paper to publish on a short deadline, his copy was trapped in a word processor — and his secretary was sick! Fortunately, the scientist had a printed copy of his paper. He dashed to Photography & Graphic Arts where each sheet was fed into a new machine in the Word Processing Center (WPC). This Optical Character Reader, or OCR, gobbled up the words and sent them to the WPC, for final corrections and printout.

Until recently, the scientist's whole paper would have had to be retyped because WPC's old OCR device could not have "read" the typestyle in which the scientist's copy was printed. But the new OCR device at the WPC can read three different typestyles in two pitches — making it instantly compatible with most typewriters and printers on site. The machine, which is capable of reading up to eight different typefaces, is now programmed to read OCR B—10 pitch, Courier 72—10 pitch, and Prestige Elite—12 pitch in any combination on a page. Within a few weeks, Letter Gothic-12 pitch and Courier 12 will also be available.

As the scientist's story illustrates, even offices with their own word processors may need the new OCR. "The unexpected does happen," said Mary Wigger, Word Processing Supervisor. "A disk can go bad, and when it does, if you have hard copy of what was on it, the OCR is a lifesaver. Whenever you want to save keystrokes, think of the OCR."

Using the old OCR meant following some very rigid specifications for copy preparation. The new reader has eliminated many of these. "This machine is much more versatile," said Wigger, "and everyone who has used it is delighted." The new device can detect the end of a paragraph without special symbols; read single, 1-1/2 spaced or double-spaced copy; scan photocopies; read copy typed to almost any margin; skip copy that should not be scanned; and read underlining. And it can do all this in about ten seconds per page.

The new reader also features a keyboard and a single line display so the operator can make corrections as the copy is being read. The device is capable of sending its output to as many as five different locations. Right now, the OCR is programmed to send output to either the WPC or the composition room for typesetting.

For more information about the OCR, call Mary Wigger, Ext. 2929.

In Memoriam

William P. Schirmer, Senior Technical Specialist in the Accelerator Department, died suddenly on March 13 at 48 years of age. He had been with the Laboratory since June 2, 1958. He was a resident of Medford, and is survived by his wife Joyce; two daughters; and a brother, John Schirmer, who works in the Accelerator Department.

Spain

(Cont'd)

males, which can be attributed to Spanish social customs. Up until about ten years ago, it was considered socially unacceptable for young Spanish women to smoke in public. Values are changing now, and changes in the statistics are probably forthcoming.

The regression analysis also showed that income has a protective effect. The higher the income, the lower the mortality rate for all the diseases considered — ischemic heart disease; bronchitis, emphysema and asthma; and lung cancer. But another sex-related difference surfaced: income does not protect females as much as males, which suggests that for males, occupational exposure has a large effect.

Daily Mortality Study

A short-term study was done in the capital city of Madrid, to analyze the impact of atmospheric pollutants on mortality. In 1978, a monitoring system of about 65 stations was installed throughout the city, which has a population close to five million people. Madrid has the same inversion problem as Los Angeles.

Emissions of sulfur dioxide and particulates were correlated with death due to bronchitis, emphysema, asthma, pneumonia, and all other causes of death excluding accidents. Degree-days, humidity and minimum temperatures were also taken into consideration in the study.

One conclusion was that particulates influence death due to bronchitis, emphysema and asthma. Another finding was that mortality caused by pneumonia is so highly correlated to minimum temperature, that the effects due to pollution are inconsequential.

Damage To Orange Crops

The Spanish are developing a computer model that takes meteorological and emission data and estimates pollution levels at the ground. To test the model, a study is being done of an oil-fired electric plant located near Valencia, in an area that grows oranges for export.

The plant emits particles in the range of 500-1,000 microns — big enough to see. The particles are very acidic and cause black spots on the skin of the oranges. Yield is not reduced, but there is a loss of value. To compensate the growers, the industry pays them about $300,000 a year.

Although the study is being done to test the model, another goal is to quantify the damage in dollars and then compare that amount with the cost of emission controls.

Health Effects Of Nuclear Power Plants

A final study, for which the results will be long in coming, focuses on twin 1,000-megawatt nuclear power reactors, which have been operating for a year. Radiation detectors have been placed in a 60-kilometer radius around the plant, and the local population is under medical surveillance.

The plant is in a rural area, which allows for the first time a study of a population free of industrial pollution. (In contrast, U.S. nuclear plants are generally in industrial areas, where the basal incidence of leukeimia and other cancers is higher than in rural areas.) —Mona S. Rowe

Perlman Symposium

On Friday, April 8, the Chemistry Department will host an all-day symposium to honor the memory of Morris L. Perlman. Perlman was a member of the Chemistry Department from 1949 until his death in June of last year.

The symposium will feature talks in the several areas of research in which Morris Perlman was active. The list of speakers includes Martin Blume (BNL), Peter Eisenberger (Exxon Research and Engineering Company), Guy Emery (Indiana University), Gerhart Friedlander (BNL), Lee Grodzins (MIT), Kai Siegbahn (University of Uppsala), Richard Watson (BNL), and Samuel Weissman (Washington University).

The symposium will begin at 9 a.m. in Berkner Hall and continue until 12:15 p.m. It will resume at 2 p.m. and is expected to end about 5:15 p.m. All are welcome to attend.

Arrivals & Departures

Arrivals

Sean J. Coughlan ..... Biology
Henry M. Hauptman ..... Reactor
Paula A. Perdue ..... Plant Engrg.
Bryan A. Upshur ..... Applied Math.

Departures

This list includes all employees who have terminated from the Laboratory, including retirees:

Christopher D. Gentile ..... Reactor
Sankar K. Saha ..... Chemistry
S. Hilary Sorrels ..... Mgt. Info. Syst.

Tandem Teachers

(Continued)

and made a point of understanding a good deal about the facility." Virtes did so well that about a year ago he became a full-time operator, working evening and weekend shifts, so he could continue teaching chemistry at Ward-Melville H.S. in Setauket.

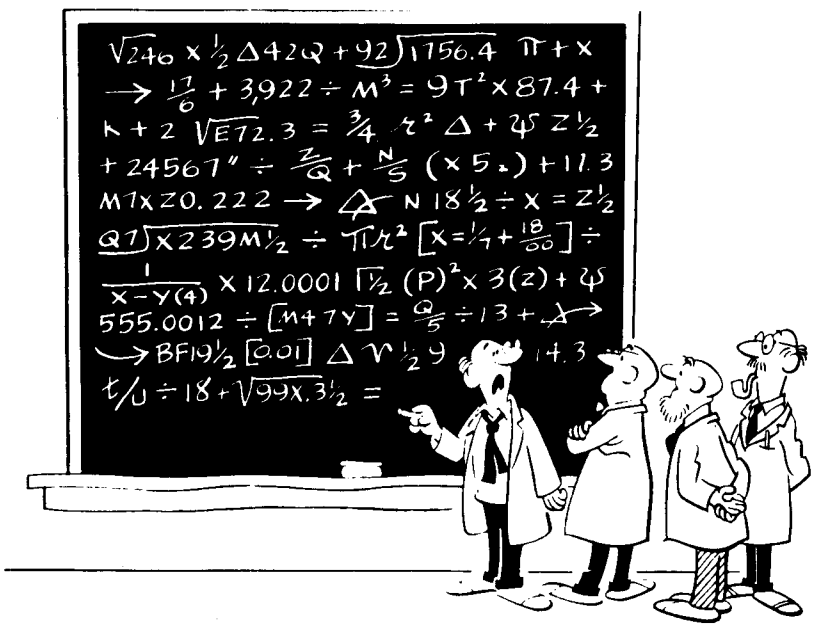
Speaking as a teacher, Virtes praised the program. "I initially felt this would fit in nicely with teaching by providing information that's not in the textbooks and keeping me up-to-date with what's going on in the nuclear sciences," he said, "and it has. It's given me an awareness of how experiments are done — the day-to-day routine of research. It satisfies my own craving to do research. Just being involved with the machine's operations, I am involved with the work being done on it."

Like others in the program, Virtes has used it as a teaching tool. He has brought his students to the facility and related his experiences in the classroom. And there's always someone at the Tandem with whom he can discuss an upcoming presentation. "The real advantage of working here is that it helps me with my teaching," he said.

If the teachers are being helped, so is BNL. As Lindgren pointed out, "the program is a good two-way street, beneficial to all." And, summing up the program's impact, Thieberger said, "It's been very successful. Perhaps most of all, it establishes another link between the Lab and the rest of the community, which I think is very good and very positive."

Arthur Schwarzschild, chairman of the Physics Department, pointed out that a program like the one now in effect at the Tandem, "could do a lot to solve the clearly perceived national problem of attracting people to teach science in the high schools. The supplement to their income, during both the school year and the summer vacation period, would help them attain a salary level competitive with that earned by people with similar training in other positions. Taking part in forefront science will also enhance their teaching and provide personal satisfaction."

— Anita Cohen



"DOES ANYONE REMEMBER WHAT WE SET OUT TO PROVE?"

BROOKHAVEN BULLETIN

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BROOKHAVEN NATIONAL LABORATORY

BERNICE PETERSEN, Editor
MONA S. ROWE, Assistant Editor
ANITA COHEN, Reporter

35 BROOKHAVEN AVE., UPTON, N.Y. 11973
Telephone (516)282-2345

In Appreciation

Thanks to all my friends at BNL for the special evening and gifts. I really appreciate your thoughtfulness.
- Paul Lindsay

We wish to express our thanks to the people who shared our sorrow at the passing of our husband and father, Kenneth C. Packer, retired from BNL.
- Mary A. Packer
Virginia M. Austen (Physics)

Cooking Exchange

A meeting of the Cooking Exchange will be held on Wednesday, March 23 in the Recreation Bldg. from 12:30 - 2:30 p.m. Foods to be demonstrated and sampled include Indian chicken and rice, and Russian ice cream. There is a charge of $1 per person, and babysitting is provided at 50¢ per child. Call Bernie Benz, 928-1068, or Adrienne Usher, 289-7658, for more information.

Do Not Cover!

Experiments by the U.S. Department of Agriculture have shown that certain kinds of flower seeds germinate better when exposed to light. The Cooperative Extension Association recommends that those seeds should not be covered with soil, whether started indoors under lights or sprouted in a garden row.

Flower seeds in this category include ageratum, begonia, browallia, calceolaria, coleus, cineraria, exacum, gloxinia, helichrysum (strawflower), impatiens, matricaria (feverfew), nicotiana (flowering tobacco), petunia, primula malacoides, salvia (red only), and snapdragon.

To plant light-requiring seeds, make shallow furrows by pressing the edge of a thin board into moist soil or a planting mixture. Then sow the seeds thinly down the furrow, but don't cover! Water with a very fine spray.

Fund Raiser

Theatre Three in Port Jefferson needs money to keep its home. A number of BNL employees have appeared in its productions, served on its Board, and many more are enthusiastic supporters. This non-profit, professional theatre is staging a Pledge-a-thon on Saturday, March 26, beginning at 8 p.m. The admission charge for an evening of entertainment is $5. Contributions may also be sent to Theatre Three, P.O. Box 512, 412 Main St., Port Jefferson, N.Y. 11777.

Family Camping

March 25, 26, 27 starts our campouts at the Lab. It's time to take the rigs and tents out of mothballs for another camping season. Any employee is welcome at the campground located next to the ball field. For more information concerning the club call Bob Tallon, at 473-3987, or Ext. 4547.

Spouses Add Spice To Cooking

Robert Knott and his daughter Peta

Beth and Philip Pile

The men were in the kitchen at the latest Cooking Exchange meeting on March 9. A crowd of about 50 people gathered at the Recreation Building to watch recipes being prepared by the male cooks.

Les Lawrence, Applied Math, demonstrated how to make Carl's Caesar salad, named after a restaurateur whose establishment served a salad worth imitating.

Boyce Grier, Physics, showed how to make a Scandinavian herring and beet salad. The flavor of pickled herring predominates in this bright red dish that Grier has made several times.

Shepherd's pie was made by John Nagy, Energy and Environment. The pie had a layer of hamburger, topped with mashed potatoes.

Another entree was demonstrated by a husband and wife team, Beth Pile and Philip Pile, Physics. The Piles made enchiladas in a production line, like they do at home.

For dessert, a meringue served with fresh kiwi fruit was made by Robert Knott, Biology. The traditional Australian dessert is called Pavlova, named after the prima ballerina.

Some of the demonstrators cook regularly at home. Nagy, for example, does Saturday night dinners, as well as breakfasts for himself and his two sons, who are up first in the mornings.

—photos by Rosen

Boyce Grier

Les Lawrence

Golf

An organizational meeting of the BERA Golf Association will be held on Friday, April 8 at 5:15 p.m. in the Recreation Bldg. Membership applications are now being sent out to all 1982 BGA members. Applications and entry fees must be returned to Bob Mills, Bldg. 901, no later than Friday, April 1. Prospective members may obtain the forms by contacting either Ron Webster, Ext. 2845, or Bob Mills, Ext. 4581.

Bowling

Pink League

M. Grahn bowled a 217, D. Johnson 185/181/161, E. Kristiansen 176, H. Keeley 170, S. Long 167/163/197, M-G Meier 160.

White League

High games were rolled by G. Fales 211, K. Asselta 207, S. Long 200, T. Natoli 200, N. Ericson 193 (also converted the 7/9/10/3/6 split), S. Smith 191. The Old Timers are in first by one point.

Red/Green League

R. Larson had games of 216/212, R. Wiseman 225, A. Pinelli 201, R. Meier 202, R. Jones 204, B. Sick 208.

Purple League

G. Spira had games of 222/225, B. Barberich 202, A. Pinelli 212, E. Meier 202/201, J. Pinelli 199, D. Stonebridge 195, L. Barberich 192, A. Spira 191.

. . . . . .

L.I. Industrial Tournament

High games were bowled by R. Larson 232/207/627 scratch, J. Morris 213/214/623 scratch, E. Sperry IV 202.

Scotch Doubles

The winners were:
J. & J. Hanlon
S. Frei & J. Hartt
J. Carroll & C. Beckner
J. & B. Cochrane
K. & B. Jellett

Thanks to J. Connelly and his helpers for an enjoyable afternoon.

Cafeteria Menu

Week Ending March 25, 1983

Monday, March 21		
Cream of chicken soup	(cup)	.65
	(bowl)	.75
Turkey chow mein on white rice		1.85
Beef liver w/onions & 1 veg.		1.80
Hot Deli — BBQ top round of beef	(bread)	1.95
	(roll)	2.05
Tuesday, March 22		
Pork and cabbage soup	(cup)	.65
	(bowl)	.75
Baked lasagna w/1 veg. & garlic bread		1.85
London broil & 1 veg. w/mushroom gravy		2.10
Hot Deli — Hot pork sandwich w/country cream gravy	(bread)	1.85
	(roll)	1.95
Wednesday, March 23		
Turkey rice soup	(cup)	.65
	(bowl)	.75
Meatcakes & onions w/1 veg.		1.80
Chicken cacciatore & 1 veg.		1.95
w/spaghetti		2.15
Hot Deli — Pastrami	(bread)	1.85
	(roll)	1.95
Thursday, March 24		
Split pea soup	(cup)	.65
	(bowl)	.75
Roast turkey w/stuffing & giblet gravy		1.90
Stuffed cabbage & 1 veg.		1.85
Hot Deli — Veal pattie & pepper hero		1.95
Friday, March 25		
Manhattan clam chowder	(cup)	.65
	(bowl)	.75
Ham & broccoli crepes		1.85
Beef burgundy on white rice		1.95
Hot Deli — Breaded fish fillet hero		1.95

VOTE
For BERA Board
Today
10 a.m. — 2:30 p.m.
At the Bank

Quilting Club

The Quilting Club will meet on Tuesday, March 22 in the lobby of the Brookhaven Center from 9:30 - 11:30 a.m. The popular "door prize" quilt blocks will be made and given to one participant. The pattern for this meeting will be "schoolhouse." Bring cutting and sewing tools and scraps of printed fabrics in various colors.

There seems to have been a mixup in orange-handled Fiskars scissors at a previous meeting. Check to see if the pair you have is your own.

For more information, call Bernie Benz, 928-1068.

Volleyball

Standings as of 3/14/83

Mixed League	
A Division	
Dinkers	6-0
Mixed Ups	5-1
EPO's	2-4
Nuts & Bolts	2-4
Teddybares	2-4
Nuclear Wastrels	1-5
B Division	
Semi Tough	20-4
Phoubars	17-7
TNT	17-4
Up Fagrabs	16-8
Nuke Yorkers	13-11
Chungas Revenge	9-12
Puff & Stuff	8-13
KMA	6-18
Screwballs	4-14
Quirks	4-17
Open League	
Phoenix	4-0
Raiders	4-0
Brewmasters	4-0
Half Lifes	0.4
FRE8D	0-4
Random Errors	0-4

Dime: a dollar with all the taxes taken out.

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. In keeping with the Affirmative Action plan, selection decisions are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

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

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.

The vacancies listed below have been exempted by the Director's Office from the current freeze on open requisitions.

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

1834. SECRETARIAL POSITION — Will assist with all phases of clerical duties relating to visitors to the Laboratory, including: typing, shorthand, travel and housing arrangements, etc. Ability to learn word processing necessary. Director's Office.

1835. TECHNICAL POSITION - Requires AAS in mechanical technology or equivalent. Knowledge of hand tools, ability to soft solder, assemble components and operate and maintain vacuum pumps, helium leak detectors and compressor pumps. Experience in testing and troubleshooting and cryogenic systems necessary. Shift work required. Accelerator Department.

1836. BIOLOGY ASSOCIATE - Requires BS or MS in biochemistry or equivalent background. Also requires knowledge of organic and protein chemistry, proficiency with the Merrified procedure of solid phase synthesis, and the HF-cleavage and deblocking procedure. The person filling this position will work at BNL for 9 - 12 months and at that time the work station will move to Plum Island. Biology Department.

1837. COMPUTER OPERATIONS POSITION - Requires AAS degree in data processing or successful completion of computer operations training program or equivalent experience. Will assist in the operation of a large electronic digital computer. Ability to work shifts. Applied Mathematics Department.

1838. PATROL OFFICER - Requires AAS in criminal justice or equivalent experience performing diverse security duties for a large organization. Excellent communication skills are necessary as well as ability to work shifts. Will participate in comprehensive training program in order to become knowledgeable of site and police procedures. Safety and Environmental Protection Division.

Autos & Auto Supplies

73 PONTIAC CATALINA - excel. cond., 56,000 mi., new brakes, good shape, must sell, $900. Ext. 3529.

79 HONDA - motorcycle, CM400T, 2,000 mi., garaged, must sell, $1,000. Ext. 7125.

74 MONTE CARLO - am/fm cassette stereo, new paint, good cond., $1,900. Sharon, Ext. 7008 or 722-8019.

81 MERCURY CAPRI - 33,000 mi., 4 cyl., a/t, sunroof, am/fm 8-track, black w/red interior, radials, excel. mpg, $5,400, negotiable. Ken, Ext. 2350 or 732-7944.

75 MUSTANG II - 4 cyl., new tires, auto., 54,000 mi., excel. cond., $2,500. Ext. 3376.

78 TRANS AM - special edition, T-roof, auto., p/s, p/b, p/w, power door locks, rear def., a/c, tilt wheel, 400 cu.in., 6.6 liter, Gold Edition, 70,000 mi., stereo, $4,200. Lou, Ext. 2022.

80 KAWASAKI - 650, LTD, red, crash bars, helmet, excel., $1,850. Bob Johnson, Ext. 3455.

73 CHEVY IMPALA - mechanically excel., some rust, reliable, $600. Ext. 3698 or 473-2524.

65 ALLSTATE MOTORCYCLE - 100cc, runs well, looks bad, 3 spd., street legal, $50; 1963 Chevy, 6 cyl. engine, very good, complete w/starter, carburetor, etc., $100. Ext. 3783 or 732-2236.

71 SUPER BEETLE - new engine, new tires, new paint, new seat covers, am/fm radio, a/c, asking $2,200. 981-9584 eves.

MOTORCYCLE TRAVEL TRUNK - ABS plastic, black, 20"x17"x12", with locks and reflectors, $45. S. Wingard, Ext. 4749.

80 HONDA HAWK - sport model, CB400T, excel. cond., low mi., extras, $995. 286-8814 after 5:30.

71 VW FASTBACK - 4 spd., wife's car, very clean, new tires, 30 + mpg, asking $1,150. Ext. 4761 or Paula, 821-9778.

80 SUZUKI - 1100-L, black, RC header, new tires, and brakes, mint, asking $2,395. 281-2589 after 7 p.m.

70 MAVERICK - auto., 6 cyl., some dents, runs fair, good around town, asking $500. Ext. 2311.

79 DODGE PICK-UP - blue/white, am/fm, V8, clean, w/cap. 475-4645.

76 FIAT - 131S, 5 spd., am/fm, a/c, 20 mpg, reg. gas, asking $1,300. Ext. 2521 or 929-8379 eves.

CAR AMPLIFIER/EQUALIZER - Pioneer AD-50, 50 watts total power, excel. cond., $90, negotiable. 744-8063.

78 FORD FIESTA - asking $2,000. Ext. 7192 or 3130.

69 OLDS CUSTOM DELTA 88 - a/c, p/s, p/b, 67,000 mi., runs beautifully, well maint., $1,000. Corliss, Ext. 4438 or 472-1585.

68 BUICK SPECIAL WAGON - 350, V8, auto., it runs, $250. Lloyd, Ext. 3381.

71 COUGAR - excel., 351, a/t, p/s, a/c, radio, snows, shop manuals, dark green, $1,495. Ext. 5141 or 567-3923 after 6.

81 PONTIAC T-1000 - white, blue pin stripe, a/c, 4 spd., 4 cyl., w/w rad., 15,000 mi., still under warranty, tint windows, asking $4,500, negotiable. Ext. 2964.

70 PONTIAC GRAND PRIX - many new parts, dependable, needs battery, asking $300. 924-3281.

68 DODGE CHARGER - runs, needs exhaust, best offer. Ext. 3630 or 246-9235 eves.

76 BLAZER - Cheyenne, V8, auto., 63,000 mi., p/s, p/b, am/fm, very good, $4,800. Paul, Ext. 2177 or 298-4985 eves.

75 PONTIAC LEMANS - a/c, 70,000 mi., 4 new tires & brakes, clean in & out, brown with brown vinyl roof, am/fm cassette, $1,600. Ext. 4089 or 698-5679.

65 BUICK LESABRE - 4 dr., good cond., many new parts, $650; 4 rims for Chevy Monte Carlo, 15", $80. Steve, Ext. 4297 or 929-6877 after 5:30 p.m.

80 YAMAHA - XS400 Special, excel. cond., black, $1,400. 929-6494.

82 KAWASAKI LTD - KZ550, mint cond., low mi., used 1 season. Craig, Ext. 4289 or 732-6489.

78 HONDA - CB550, 6,000 mi., excel. cond., extras, $1,300. Rich, Ext. 4662.

75 BROUGHAM CAMPER/VAN - self contained, loaded, 302, V8, reg. gas, 50,000 mi., orig. owner, $6,500. 734-7347 after 6 p.m.

73 AUDI FOX - 4 spd., standard, 26 mpg, rebuilt eng., many new parts, 2 new tires, $600, neg. Henry, Ext. 3050 or 588-3999.

79 MAZDA 626 - 2 dr./sc., excel. cond., 5 spd., met-blue, rust proof, 30-35 mpg, $4,750. Larry, Ext. 4107 or 472-0721.

72 GMC JIMMY - 4 wheel drive, p/s, p/b, 307 cu. in., many extras, new paint, $3,200; 1977 Ford Granada, 4 dr., p/s, p/b, 302 cu. in., garaged, no rust, orig. owner, $2,600. Tony, Ext. 2023.

75 GMC PICKUP - 1 ton, cap, hitch, elec. brakes, clean, $3,500; Kingston horse trailer, 2 horse, excel. cond., $2,200. Ext. 4753 or 941-9282.

76 HONDA CIVIC CVCC - radials, am/fm stereo with speakers, 32+ mpg, 4 spd., excel. commuter, auto., $1,850. Ext. 2198 or 744-4662.

72 DODGE POLARA - excel. inside & out, excel. running, well maint., fully equipped, $700. 924-3281.

76 AMC PACER - auto., a/c, p/s, p/b, 62,000 mi., good cond., $1,600. Robert, Ext. 3030 or 4768.

80 DATSUN - 310GX, 5 spd., $4,750. 289-2047 after 6 p.m.

79 PLYMOUTH HORIZON - auto., low mi., must sell. 924-7723 eves.

HONDA MOTORCYCLE - 90cc, good cond., low mi., ignition needs work, $200 or best offer. Roger, Ext. 3578 or 878-4864.

Boats & Marine Supplies

23' PUMA - F/G sloop, sleeps 4, head, galley, 6 HP, O.B., deep keel, $9,000. Walter, Ext. 2050.

20' BAYLINER - 1976 Liberty, 130 Volvo I/O, cabin, trailer, extras. John, 541-4792.

GALVANIZED TRAILER - 1982 Highlander; 1975 Sears 12' V-bottom alum. boat, 6 HP motor, anchor, oars, $650 firm. 281-1840.

26' PEDERSEN - Sea Skiff, depth finder & CB, sleeps 2, repowered less than 200 hours ago, $2,500. Ext. 4142.

18' CAT BOAT - 1973 Hereshoff, fully equipped, 1976 outboard, excel. cond. 286-1024.

Lost & Found

LOST - one gold loop earring. Vera, Ext. 4444.

Free

SMALL CAT - for adoption, to a good home. Mati, Ext. 3641 or 282-3097.

Garage Sales

GARAGE SALE - moving, furniture, tools, refrig., misc. items. 929-4631.

Miscellaneous

TRUMPET - Camelot, purchased recently, $90. Ext. 5053 or 472-1735 after 6.

DENIM JACKET - w/picture of Jim Morrison painted on back. Rose, 744-5069.

DUTCH MINIATURE RABBIT - 3 mos. old, dark grey, cute & gentle, needs good home, $10. Ext. 2907 or 928-3650.

ICE SKATES - new, boy's size 2, black, girl's size 3, white, $10/ea.; upright freezer, 6' high, industrial size, runs well, $75. Eileen, Ext. 4949.

OLD BATH TUB - cast iron, with claw and ball legs. GR5-4199.

POCKET COMPUTER - PC1, with interface, printer, case, books, software, value $312, asking $150. 698-3724 eves.

CANOPY FRAME - white, good cond., $50. Ext. 2964.

WALL UNIT - 6 cabinet doors, 2 drawers, 1 glass door, lights, 70" high, 66" wide, 21" deep, $200. 281-7844.

INTELLEVISION - 6 mos. old, including 2 tapes, $150. 567-5947 after 1 p.m.

MAPLE SYRUP - from my family's VT farm, $22/gal., $12/half, $7/qt. P. Wanderer, Ext. 7687.

SOFA BED - full size, Herculon material, $300; 2 colonial wood framed chairs, $150/ea. Jackie, 929-4382.

CHILDCRAFT HOW & WHY LIBRARY - excel. cond., orig. cost $200, sell for $150 or best offer. Ext. 2877.

DINETTE - Douglas with 4 overstuffed chairs, $350; Bassett square sofa table, $90; desk, $50; stereo light box, $25; sofa bed, $350. Ext. 3565.

GOLF CLUBS - woods, Spalding Par Flite 1-2-3-4, excel. cond., $60. Ext. 4452/4796 or 289-1705 after 6.

MULTIVOX SYNTHESIZER - MX2000, excel. cond., $500. 363-2614 after 6 p.m.

RIDE-ON LAWNMOWER - 5 spd., 5 HP, elec. start, with bag, excel. cond. JoAnn, Ext. 4120 or 588-8492.

BABY ITEMS - crib, $35; weight scale, $5; Sears portable washer, $100; dryer, practically new, $150. 473-2721.

UPRIGHT FREEZER - 10 cu. ft., excel. cond., $160. Linda, Ext. 2733 or 878-8491 after 5:30 p.m.

DINETTE - Bentwood style, Sears, white oval table, steel chairs, 4 vinyl green cushions, $75. Ext. 4949.

REFRIGERATOR - 1.7 cu. ft., new, asking $80. Ext. 4501 or 4495.

G.E. DISHWASHER - Mobile Maid, seldom used, excel. cond., attach any faucet, $70. Claudia, Ext. 2853.

WALL OVEN - w/infrared broiler, Caloric Ultramatic, propane, stainless steel finish, very good cond., $75 or best offer. Ext. 2492.

HAMS HEATH C.W. TRANSCEIVER - HW16, with V.F.O., ant. tuner, SWR meter, coax switch, complete, $200. 589-2648.

DRUM SET - Majestic Deluxe, Zildjian cymbals, $450. Dan, 862-8022 days or 467-1870 eves.

ALUMINUM GUTTERS - & leaders, over 200 ft., $100 takes all. 751-6418.

COUNTER TOP GAS RANGE - with small separate wall oven, good for summer cottage, $25. Ext. 5271.

KITCHEN SET - 48" oval, yellow & white, 4 swivel chairs, good cond., asking $100. Lorraine, 732-1842 after 3.

LIVING ROOM SET - light pine with brown canvas, sofa, $200; chairs, $120; cocktail table, $80; end table, $60; rocking chair, $40; Century steel desk, $250; Tensor desk lamp, $30; Kenwood receiver/-tuner, $125, Oster kitchen center, $125. 924-4250.

COMPUTER - Commodore VIC 20, with tape deck, memory expanders, many games. 929-4631.

SINGER SEWING MACHINE - $75; step stool, $20; bookcase headboard, $25; quartz heater, $30; new toaster oven, $45; 2 table lamps, $25 ea. electric knife, $20. 744-6874.

TABLES - (3) Lane, walnut finish, good cond., 1 coffee, 1 square, 1 step, $150. Jerry, Ext. 7427 or 475-5591.

SEARS GAS SPACE HEATER - 75,000 BTU, 2 blowers, excel. cond., $175. Hugh, Ext. 4669 or 924-3522 after 6 p.m.

JACKET - woman's, Moutan lamb, brown, fits sizes 14-16, good cond., stylish. 475-0144 after 6 p.m.

DOG FENCE - 5x150', plus metal poles, $75; travel cage for large dog, $30; black & white TV, $15. Ext. 4389 or 331-4596.

BIKE - Ross 10 spd., 24" size, $65. Nick, Ext. 4701.

BEDROOM SET - white Provincial, twin bed, double dresser, nightstand, $150; maple rocker, $25, excel. 286-1097.

FLUORESCENT BEER SIGNS - for home, bar, or collector, $5 ea. 363-6845.

G.E. ELECTRIC STOVE - 30", coppertone, self-cleaning, automatic cooking, $150. 929-6494.

COLEMAN CAMP OVEN - $10; canvas boat cover, 12x20', $30, used 2 seasons. Bob W., Ext. 7197 or 821-0705.

MICROFICHE READER - 3M Consort desk top, excel. cond., model 198AGE/42X, $125. 265-5218.

ANTIQUE TABLE - containing orig. Atwater Kent radio, $300. Mac, Ext. 4660.

BAR CARRIER - almost new, $70; 7 gal. ice chest, $5; sled, $5; Hitachi color TV, 13", asking $200. Ext. 7192 or 3130.

SOFA - and matching loveseat, burnt orange/-cream, cut velvet, good cond., also matching valence w/drapes, $250, neg. Mark, Ext. 5176.

WOMAN'S BICYCLE - 10 spd., Atalia Corsa, used about ten times, $75. Anita, Ext. 2346.

Car Pools

HUNTINGTON/GREENLAWN - driver needed for existing car pool. Jim, Ext. 5057.

BABYLON/WEST ISLIP - driver needed for 4-person car pool. Ext. 2500.

OYSTER BAY - join or form small car pool, occasional or daily. Ext. 3312.

STONY BROOK/STRATHMORE - established car pool looking for 4th driver. Morris, Ext. 4192.

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

BAYPORT - small authentic colonial, move-in condition, includes all major appliances, drapes, fixtures & some carpeting, 2-car garage, convenient to schools, shopping, low 100's. 472-2633.

NEWPORT CENTER, VERMONT - 80 acres, 14 mi. from Jay Peak ski area, approx. 15 mi. from the Canadian border. 727-7628.

MIDDLE ISLAND - 3 bdrm., 1 bath townhouse, 5 min. to Lab, 2 large skylights, loft den, wood stove, new w/w carpeting, central air, 5 appliances, prime location, wonderful for family with children, $48,000. 924-4237.

RIDGE - 1 acre fully wooded building plot, established residential area, minutes from Lab, $13,900 w/short term mort. 924-3236.

ROCKY POINT - 3 bdrm. ranch, l/r, d/r, eik, full basement, 1 car garage, assumable 6% mort., $59,900. 744-9760.

HOLBROOK - raised ranch, 4 bdrms., eik, l/r, d/r, large f/r with fireplace, garage, hardwood floors with some carpeting, 2 zone oil heat with set back thermostats, fenced back yard, brick patio, $61,990. Ext. 4092 or 981-7226.

For Rent

LAKE RONKONKOMA - 2 bdrm. house, minutes to SUNY/Smith Haven, 20 mins. to Lab, $400 mon. JU8-1889.

STONY BROOK - 2-3 bdrm., l/r, d/r, eik, full basement, f/p, walk to Stony Brook. 751-2835 after 6 p.m.

PATCHOGUE - 4-1/2 rm., 1 bdrm apt., includes heat, hot water, laundry, garbage pickup, cable TV, dock space avail., 1st floor, full end apt., $460/mo., avail. immed. 286-8368.

Wanted

MALE TEDDY BEAR HAMSTER - to mate with my female, must be apricot color and 1-2 yrs. old. Donna, 744-8063 days.

HOT WATER HEATER - electric; electric stove, 24-30". GR5-4199.

SAILBOAT - fiberglass, 22-26', centerboard type for cruising not racing. Ken, Ext. 7959 or 581-1169 eves.

HOUSE TO RENT - Bellport Village or Brookhaven Hamlet. Ext. 5055 or 286-0919.

JOHN DEERE - L or LA tractor, does not have to be in good cond. 727-6148 after 4 p.m.

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

APARTMENT - in NYC, to rent for my adult daughter, about July 1st. Carolyn, Ext. 3717.

HOUSEMATE - for 4 bdrm., 3 bath house, 20 min. to Lab, washer/dryer, sundeck, dishwasher, $164/mo. + 1/3 util. Ext. 2521 or 928-8379.

HOME COMPUTER OWNERS - business or pleasure, give the bulletin a call. Ext. 5053.

TRADE - 1974 Suzuki 500cc for 16' boat/trailer. Paul, 286-3923.

CAMPBELLS SOUP LABELS - send to F. Chandler, Bldg. T89, (for St. Mary School, E. Islip).

SMALL CAR - 1976-1978, less than 60,000 mi., stand. trans. Debbie, Ext. 3420 or 643-2261 after 6 p.m.

UNION MEMBERS 2230 - interested in playing softball. Peter Eterno, Ext. 4167 between 12-12:30.

OLD MODEL AIRPLANE ENGINES - Conrad, Ext. 4539.

SMALL GARDEN SHED - Mark, Ext. 3499 or 698-5748.

USED COLEMAN STOVE - lantern or other camping equipment, make 2 little boys happy. 924-3281.

HOUSE OR APARTMENT - S. Huntington/Melville/Dix Hills area, responsible tenant. Ext. 3698/2928 or 473-2524/821-1389.

DRESSER OR CHEST OF DRAWERS - Ext. 4315 or 924-0425.

Services

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

LICENSED ELECTRICIAN - reasonable rates, no job too small, aluminum wire pigtailed, residential/-commercial. 744-0722.

WORD PROCESSING INSTRUCTION - hands on practice, just 10 easy lessons, free introductory lesson. Janie, 698-2710.

ELECTROLYSIS - permanent removal of unwanted hair, physician trained, latest method, licensed, free consultation. 331-4768.

CREATIVE NAIL DESIGN - by solar, appts. Mon.-Thur., 10 a.m.-4 p.m. 399-3899.

MOTORCYCLE PARTS - & accessories, repairs. Oscar Sanchez, Ext. 3499.

BABYSITTING - experienced mother will watch your child in my home, p/t or f/t, Medford. 475-6787.

PLUMBING AND HEATING - Lab discount. John, 654-8189.

ASPHALT PAVING & SEALING - Bob, 475-4382.

NURSES AIDE - companion, p/t, for elderly lady. Smith, 744-9574.

GENERAL CONTRACTOR - carpenter, extensions, dormers, garage conversions, basements, decks, kitchens, licensed. Jim, 698-2501.

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

LICENSED HAIRCUTTER - will cut hair in your home, affordable, Centereach. Joyce, 981-4626.

WATERPROOFING - all work guaranteed in writing, over 15 yrs. experience, free estimates, Lab discount. 281-5445.

TRUCK FOR HIRE - no job too small, Lab discount. 281-5445.

EXTERMINATING - licensed men, guaranteed in writing, over 15 yrs. experience, free estimates, Lab discount. 281-5445.

KNIVES SHARPENED - a razor edge, $1 pen knife. Dave, Ext. 4388.

EASTER BUNNY CHOCOLATE - freshly made to your order, 3-1/2", $1.50; 8-1/2", $3.50; 11", $7.50. Ken, Ext. 5042 or Carol, 289-3917 after 6.

CHOCOLATES - homemade, milk, dark, or white, Easter orders now being taken. Barbara, 399-4929.

DJ AVAILABLE - all occasions, 50's , 60's, 70's & 80's music, reel to reel encoded/decoded to master tapes. Al, Ext. 3992 or 331-1003.

TAXES - prepared by tax consultant, your home or mine, reasonable. John, Ext. 3571 or 732-2472.

HOUSE INSPECTIONS - by a licensed professional engineer. John, 473-8338 after 6 p.m.

PAINTING - interior/exterior, panelling, wallpaper, free estimates, BNL refs. John, 924-5012.

DOG OBEDIENCE CLASSES - for beginners, 9 wks.-$35, Bellport area, start April 7th. 878-9115 eves.

SECRETARIAL SERVICES - word processor, fast accurate service, telephone dictation, mass mailings, resumes, letters. Colette, 744-2816.

PROFESSIONAL INCOME TAX SERVICE - by experienced prepared, IRS enrolled, by appointment. Jack, Ext. 7942 or 864-2236.

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