



## Dystonia Third Disease Responding to L-Dopa

Dr. George C. Cotzias, Head of the Division of Physiology at BNL's Medical Research Center, reported this week at two different meetings on the third disease to respond to the L-Dopa treatment. The first of the two meetings was held on Monday morning here at BNL, where more than two dozen medical writers were assembled for Atomedic '69, and the second was on Tuesday morning at the national meeting of the American Neurological Association in Los Angeles, California.

After up-dating the status of the use of L-Dopa in the treatment of Parkinson's disease and manganese poisoning, Dr. Cotzias then reported on the first successful use of L-Dopa to treat dystonia musculorum deformans, a crippling disease that generally attacks the very young.

Movies taken before and after showed a dramatic improvement in the children, especially in their ability to walk and perform other physical tasks that normal persons take for granted.

Dr. Cotzias was not the only one to report on the successful use of L-Dopa as a treatment for dystonia. At the Los Angeles meeting, another doctor also reported its use successfully.

The original use of L-Dopa as a treatment for Parkinson's disease was first developed here at BNL by Dr. Cotzias and his group at the Medical Center. Dr. Paul Papavasiliou, Dr. Clas Fehling, and Dr. Barry M. Kaufman are currently working with Dr. Cotzias. Other BNL people associated with the program are: Samuel T. Miller, Alexander Nicholson, Cathy Kinsch, Lily Tang, and Kazuko Horiuchi. Dr. Rosemary Gellene, who is now in private practice in New Jersey, was part of the team during the earlier days.

Dr. Cotzias stressed that the work with dystonia is still very preliminary and that much research is still needed.

During the Atomedic '69 meeting, an announcement was made in Washington that L-Dopa may be approved for general use by physicians by the end of the year. If so, this represents a great stride forward in its application as a treatment for Parkinson's disease. Parkinson's disease patients are deficient in dopamine, and L-Dopa acts as a precursor of dopamine. The human brain is surrounded by a natural blood barrier, which prevents unwanted (even if needed) material from crossing it to enter the brain. Dopamine, though badly needed is prevented from crossing this natural barrier. L-Dopa, however, can cross, and once across, the brain converts it to the needed dopamine.

### Bee-In At BNL



Ed Hunter of Grounds Maintenance bravely investigates a swarm of honey bees that settled on a tree near the rear of the Personnel Office. According to Hunter, the bees are docile when they are resting in this manner. After staying in the tree for several hours, the thousands of bees took flight and left the immediate area. —Rosen

### Radio Club

The Radio Club will hold its regular monthly meeting at the Recreation Building on Thursday evening, June 12, at 8:00 p.m.

## Nuclear Powered Cardiac Pacemaker



John M. Prosser, Division of Reactor Development and Technology of the AEC, holds a cardiac pacemaker similar to the one implanted in a dog at the National Heart Institute on May 26. The female dog, Brunhilda, is the first living being to use the nuclear powered device. —Humphrey

## Atom-Powered Heart Pacemaker Now Used

A surprise announcement made at the Atomedic '69 seminar on Tuesday, revealed that a nuclear-powered cardiac pacemaker has been successfully implanted in a female dog named Brunhilda at the National Heart Institute, Bethesda, Maryland.

John M. Prosser, Technical Manager of nuclear pacemaker program for the AEC made the announcement at Brookhaven before an audience of a score of science writers from all parts of the country.

Although the pacemaker has been in development for the past three years, this is the first time that it has been used in a living animal. Battery powered pacemakers are being used currently by about 20,000 persons and have a limited life because of wearing out of the battery.

The nuclear powered pacemaker has a design life of 11 years, and promises to have a practical life much beyond that time. Battery powered devices fail any-

where from 18 months to three years after implantation.

The nuclear pacemaker generates its electricity thermoelectrically from heat generated by the decay of plutonium-238, an alpha emitter whose rays may be shielded by as little as a thin piece of paper. Stray radiation from the pacemaker is no greater than that generated by a radium watch dial.

The pacemaker is smaller than the size of a cigarette package, and is estimated to cost less than \$3,000 when finally marketed.

It is planned that during the next year several more dogs will have the device implanted in them, and by 1971 it will first be used in a human patient.

The operation on Brunhilda was performed on May 26, and Dr. Peter Frommer, Chief, Myocardial Infarction Program of the National Institutes of Health, reports that she "is doing fine."

## Triple Header Audience Hears Johnson



Three separate groups of visitors to BNL heard AEC Commissioner Wilfred E. Johnson give an address titled "A Spoonful of Science" at the Brookhaven Center Monday evening. In addition to the science writers, to whom the speech was directed, a delegation from the Greek Atomic Energy Commission and a group from the AEC Budget Review Committee was present. —Humphrey

## Spoonful of Science Big Dose In Bio-Med Says AEC's Johnson

"In terms of dollars, the AEC's biology and medicine program is rather small, being approximately 5% of the AEC budget. Fortunately, the biology and medicine program is one that lends itself to high productivity at relatively low costs because it does not as yet require the very expensive equipment with its associated high operating costs that are essential for the pursuit of good research results in some other programs."

"In this program we think it is true that a spoonful of science can and does attack significant programs in a very rewarding way."

Commissioner Wilfred E. Johnson made these remarks at a dinner Tuesday night at BNL attended by science writers participating in Atomedic '69, a seminar on Atomic Medical Research.

Johnson spoke about the daily task of the science writers in translating what is going on in science into something meaningful to the public at large. The ability to cope with the age of scientific revolution as



Commissioner Wilfred E. Johnson

a society will depend heavily upon the efforts of the science writers as the front line reporters of the scientific scene.

Johnson pointed out that the public can exercise only one choice over pure science: it can support it or not support it - it can love it or leave it - but it cannot change it. Funding for pure science is usually harder than for an engineering type project such as a nuclear propulsion plant or some other project where the goals are clearly identified.

"My personal hunch is that there is no basic research program we are supporting which is more likely to result in remarkable practical benefits in the decades ahead than that in molecular biology. Biology is at the threshold of a breakthrough in areas ranging from a cancer cure to one for the common cold."

Commissioner Johnson cited many researchers for their work in fields of biology and medicine including Dr. George Cotzias of Brookhaven and other speakers at the Atomedic seminar including Dr. Charles Congdon, Dr. Takashi Makinodan, and Dr. Norman Anderson.

In concluding, Commissioner Johnson said, "If our scientific age is to be wisely managed, the taxpaying man-in-the-street must understand it. You - the science writers of this country - are his tutors and upon you depends in a unique way the future health of our institutions and the safeguarding of what is best in our way of life."

Dr. Maurice Goldhaber, Lab Director, introduced Commissioner Johnson and other honored guests at the dinner. The president of the Greek AEC and four members of his staff were present as was a group from the AEC Budget Review Committee.

## Theatre Group Meeting

Officers for 1969-70 will be elected at the meeting on Monday, June 16, at 8:30 p.m. in the theatre. At the same meeting, plays will be selected for both the Fall and the Spring productions. Only paid-up members will be allowed to vote at this important meeting.

**New Uses Of L-Dopa Explained**



Dr. George Cotzias (right) talks to reporters at the Atomedic Seminar after reporting on the use of L-Dopa for the treatment of a crippling disease that affects children. —Humphrey



Science writers attending Atomedic work in the press room at Berkner Hall to produce stories about research progress on atomic medicine.

**BROOKHAVEN BULLETIN**

Published Weekly for the Employees of Brookhaven National Laboratory

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**Letters To The Editor**

Dear Sir:

I was somewhat annoyed by the recent article "Tennis Anyone," since it discriminates against people brought up in Brooklyn. In Brooklyn there are probably more handball courts than tennis courts, and most underprivileged children brought up there learn to play handball. To be consistent with our present society's concern for the rights of minority groups, I suggest that there be no discrimination against handball players. Since handball involves four people, and equal use is made of the court space, I see no reason why tennis should take preference over handball. In fact, we would appreciate BERA marking out a court on one of the walls.

Myron Strongin

**Arrivals & Departures**

**Arrivals**

Fredericka Governale..... Personnel  
John J. Van Etten..... Medical

**Departures**

Richard J. Kerzner..... Accelerator  
William R. French who had been employed in the Medical Department since July, 1949 died on June 5, 1969.

**Hospitality News**

The next regular Hospitality Committee coffee meeting will be held on Monday, June 23, from 10 a.m. until noon in the Apartment Area Recreation Building. Everyone is welcome - bring the children. Don't miss this opportunity to meet and welcome our summer visitors who will be with us for such a short time.

**Ladies Volleyball**

The ladies have come out of training in the Gym to challenge the outdoor court. If you want to get a little spring into your life, come join them at the Softball Fields, off Brookhaven Avenue, on Mondays at 5:00 p.m. Spectators are welcome.

—Lorraine Osterer



Four common plants are shown to illustrate differences in chromosome size. Upper left, broadbean; upper right, pea; lower left, lettuce; lower right, squash. All are shown magnified 900 times.

comparable chromosome size whose edible crop is seed or fruit.

**Chromosome Size**

In general, plants with small chromosomes are less likely to be damaged by a given dose of radiation, while those with large chromosomes will suffer the greatest damage. In flowering plants there is at least 100-fold difference in chromosome size from the smallest to the largest. For species with the same size chromosomes, a woody species is more sensitive than a non-woody species. According to Dr. Sparrow, about 50 percent of the conifer species would suffer serious damage from a dose of 1000 R. For herbaceous (non-woody) plants it is estimated that at least 2000 species will have LD-50s below 4000 R and about 1300 of these below 2000 R. A dose of approximately 300 R is considered an LD-50 for human beings.

**Radiation Damage Varies In Plant Species**

Dr. Arnold H. Sparrow, Senior Biologist at BNL, reported Sunday on the results of an extensive survey on how radiation damage to plant life varies from species to species, and even within a species according to its stage development.

There is a 1500-fold difference in sensitivity to radiation from the most sensitive stage of the most sensitive species to the most resistant stage of the most resistant species for the crop plants. If trees are included, the difference increases to 3000.

He presented his report at the 17th Annual Meeting of the Health Physics Society, being held from June 8 through 12, at the Pittsburgh Hilton Hotel.

Dr. Sparrow has pioneered in developing a method of predicting the amount of radiation damage to be expected in living tissue. The method is based on a demonstrated relation between the volume occupied by chromosomes (their size) and the chromosome sensitivity to radiation injury. In Sunday's report, he extended his findings to a wide variety of field, fruit, and vegetable crops.

**Sensitivity Varies**

There are large differences in sensitivity to radiation injury at different stages in the life cycle of a single species and, in his report, Dr. Sparrow singled out corn (*Zea mays*) to illustrate this tremendous difference. For corn, there is a 50-fold difference from the least to the most resistant stages of its life cycle.

The most radiation resistant stage is the seed stage where it was also found that seed moisture content has a pronounced effect.

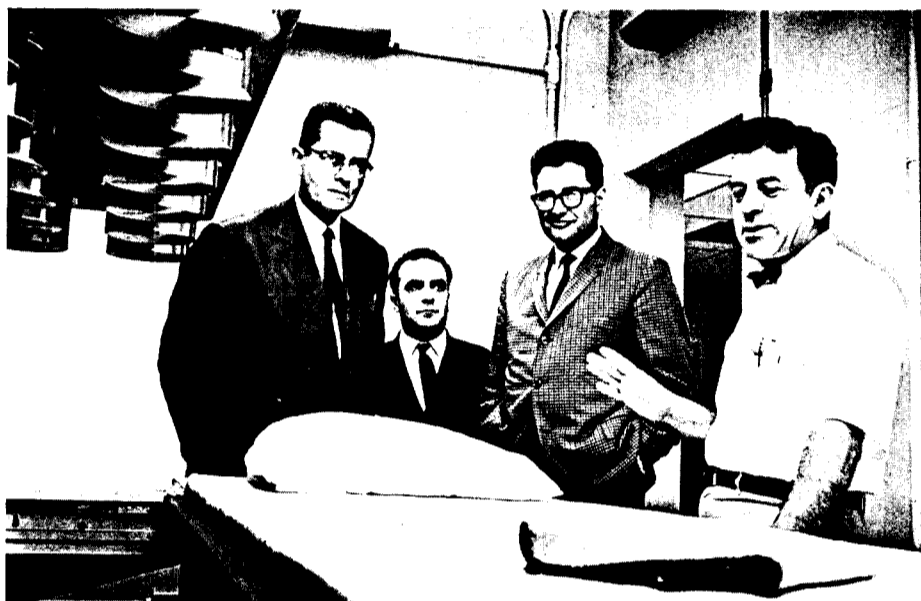
If radiation is given while the corn cells are in meiosis (just preceding pollen release) from 500 to 2000 R would be needed to reduce the seed yield by 50 percent. The prophase stage of meiosis is the most sensitive, but fortunately it is also a short stage (lasting at most a few days).

Crops whose edible parts are leaves or roots do not require a reproductive phase (except for seed for the following year) and are therefore more resistant than those of

**Counting Facility Toured**



Dr. Paul Papavasiliou of BNL talks with General P. Demopoulos, Head of the Greek AEC during a tour of the Research Hospital at BNL.



Members of the Greek AEC visiting BNL inspected the whole body counting facility as part of a tour of research facilities at Brookhaven. Looking at the array of crystal iodide detectors are (left to right) General P. Demopoulos, P. Papadimitropoulos, and S. Georgopoulos of the Greek AEC and Michael Stravino of BNL. —Humphrey

**Here and There**

Dolores del Castillo

Lewis K. Dahl (Medical) presented a talk at the Symposium on Hypertension held at the Georgetown University Medical Center, Washington, D.C., on Friday, May 23. His talk was entitled "Salt and Hypertension."

A two-day seminar on Corrosion in Nuclear and Conventional Power Plant Systems was held at the Park Sheraton in New York on May 22-23. David H. Gurinsky was moderator of a session on Nuclear Environments and John R. Weeks was a panelist in the same session. (Both of DAS)

The Applied Math Softball Team is sporting new uniforms and would like to thank all the generous people at BNL who made it possible by supporting their raffle for a basket of cheer. The drawing was held on Wednesday, May 28, at Field #1, and Mrs. Irma Bronman of Wantagh was the lucky winner.

The Bronze Star Medal, Army Commendation Medal and the Purple Heart have been awarded posthumously to Cpl. Richard P. Frasca who died of wounds received in Vietnam 15 months ago. A former member of the Supply & Materiel Division, Frasca had been assigned to a U.S. Army intelligence unit in Vietnam.

Jack Chernick (DAS) has been elected to the Board of Directors of the American Nuclear Society. He will take office at the 15th Annual meeting of the Society to be held in Seattle, Washington.

Edward E. Shelton (PEP) attended the AEC Plant Facilities Management Meeting at Oak Ridge National Laboratory, June 4-6.

Edwin J. Tuthill (DAS) is the inventor of a "Magnetically Stabilized Fluidized Bed" for which US Patent No. 3,440,731 was granted to the AEC.

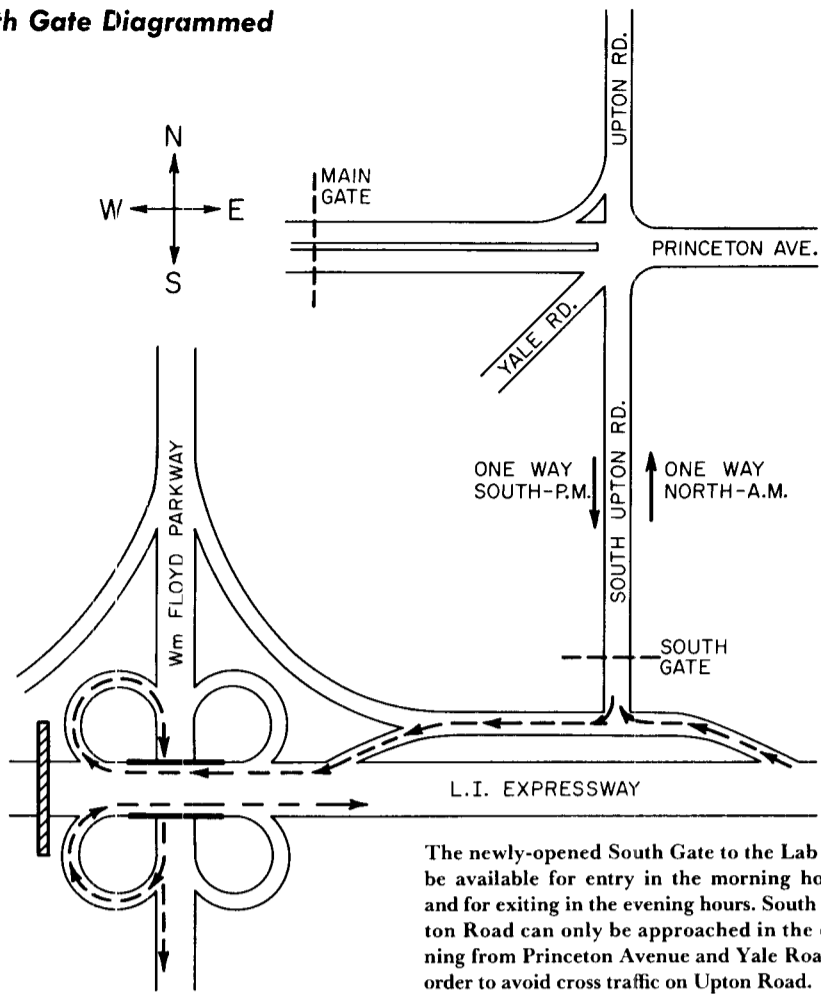
To all readers of this column, be it known that the writer has taken a short trip to the moon. While there, it is expected that she will collect seashells in and about the Sea of Tranquility.

**Eastern Visitors**



Alf Christoffersen, Director's Office, explains the layout of the AGS to a group of touring scientists. Pictured are: (left to right) Christoffersen, Muhammad Ashraf, Atomic Energy Agricultural Research Center, Pakistan; K.C. Lin and U.P. Wang of the Radioisotope Laboratory, Ministry of Economic Affairs, Taiwan, China. —Humphrey

**South Gate Diagrammed**



The newly-opened South Gate to the Lab will be available for entry in the morning hours, and for exiting in the evening hours. South Upton Road can only be approached in the evening from Princeton Avenue and Yale Road in order to avoid cross traffic on Upton Road.

**Dollars and Sense**  
Leon Meshel

**Interest on Student Loans Increased to 7%**  
by Frank Federmann

A bill increasing the interest expense to the borrower under the N.Y. State Student Loan Plan was signed into law. The measure, passed by the Legislature in the rush of the closing days of its session received no publicity. Although the bill was signed on May 12, it was made retroactive to April 1.

In the past, nine months after graduation the student would begin repaying the loan principal and start paying 3% simple interest on the unpaid loan. Under the new law, the student will pay simple interest at the rate of 7% for funds borrowed after April 1, 1969.

It must be remembered that even under the new law the student is not charged interest, nor does he repay loan principal, before graduation.

Although the interest rate has been increased, this loan program is by far the least expensive way to finance an education with borrowed funds.

**Cafeteria Menu**

**Week Ending June 19, 1969**

<b>Friday, June 13</b>	
Manhattan Clam Chowder	
Roast Fresh Pork/Celery Dressing	.65
Shrimp Newburg over Steamed Rice	.75
Fried Fillet of Cod	.65
Macaroni & Cheese Casserole	.55
Fried Fish Fillet on Hard Roll	.65
<b>Monday, June 16</b>	
Green Split Pea Soup	
Breaded Veal Cutlet/Tomato Sauce	.65
Baked Meat Loaf/Mushroom Gravy	.65
Steamed Knackwurst/Seasoned Sauerkraut	.65
Hot Pastrami on Rye/Cole Slaw	.75
<b>Tuesday, June 17</b>	
Chicken Noodle Soup	
Baked Swiss Steak/Country Gravy	.65
Pan Broiled Steer Liver/Smothered Onions	.65
Spanish Omelette/Spanish Sauce	.55
Beef Bar-B-Q on Soft Roll/French Fries	.70
<b>Wednesday, June 18</b>	
Beef Barley Soup	
Roast Boneless Loin of Pork/Dressing & Gravy	.65
Baked Macaroni, Beef & Tomatoes en Casserole	.65
Salisbury Steak/Mushroom Gravy	.65
Meatball Hero	.65
<b>Wednesday Special \$1.20 plus Tax</b>	
Cup of Soup	
Baked Salisbury Steak/Mushroom Gravy	
Green Peas & Whipped Potatoes	
Bread & Butter	
Choice of Pudding or Jello	
10¢ Beverage	
<b>Thursday, June 19</b>	
Yankee Bean Soup	
Baked Sugar Cured Ham/Raisin Sauce	.65
Stuffed Cabbage Rolls/Tomato Sauce	.65
Chicken a la King over Rice	.65
Sausage & Pepper Hero	.65

**Treasure Hunt**

The annual Brookhaven Lab House Cleaning Week begins June 16, and S&M is anxious to help you unearth those unused treasures that may have been stored and forgotten. Do your dusting - of property that is sitting idle and restore it to active use. Don't leave the cleanup job to others. Tidy up those remote areas, and junk the junk. Unproductive equipment gives no return on your investment and should be listed for transfer or excessed in order to repay its cost through maximum utilization.

The Supply & Materiel Division will again be responsible for coordinating this campaign and solicits the cooperation of all the staff to make this a successful effort. Please notify S & M by calling Ext. 2704, or 2960, for truck pickups of unused equipment or inventory materials.

**Softball**  
Tom Lee

**Brookhaven League**  
Blue Jays 9 - Dirty Sox 4  
Old Timers 8 - Batmen 5  
Batmen 4 - Old Timers 3  
Dirty Sox 6 - Blue Jays 4  
Our pre-season pick in this League looks like a winner. The Blue Jays now stand at 5 and 1 with 2 games to go. "Doc" Carsten went 3-4 with a triple and a HR.

The rest of the League are knocking each other around. A split between the two runner-up teams just about finished the first half.

In 8 innings the Batmen nipped the Old Guys and then dropped the next game to them. D. Comstock HR, B. DiLello HR, and T. Nelson HR in this series.

**National League**  
Potsareebies 20 - Rat Pack 11  
S&M 10 - Phoubars 5  
Bubble Boys 15 - Metallurgy 10  
AMD 13 - Six Pax 5

The grand old man G. Woodsen showed the Pack what it was all about going 5-5. HR's by H. Gassner and W. Roelofsen of the Pack. Leonard Love was at the game.

Bubble Boys ended Metallurgy's chances at first place. HR's by Stillman, Stoffel and Erickson.

S&M seems to be well on the way to a first half championship with 5-0 record and 2 games left. R. Philips and A. Mahefka each went 2-2. N. Greenlaw played outstanding ball for Phoubars.

AMD won another with D. Murgatroyd's HR and E. Taylor's defense.

**Laboratory League**  
Bio-Meds 25 - Converts 10  
Chemistry 15 - Charlie Browns 4  
Deadwoods - Mets - Postponed  
Deadwoods 5 - Bio-Meds 2  
Mets 17 - Charlie Browns 2  
Chemistry 17 - Converts 9

Jack Brennan's pitching cooled off the Bio-Meds 5-2 for a Deadwood win. Jim Mullins hit a HR. Asselta had 3-4.

**BERA Film Series**

The BERA Movie Group begins its summer season next week on Thursday evening, June 19, with Whistle Down the Wind at 8:30 p.m. in Berkner Hall. Please note the starting time, which is a half-hour later than it has been previously. Admission will be \$1.25 and tickets may be obtained at the door before each performance. There will be a movie every Thursday evening through August 31 except for the week of July 4th. Watch for the full summer calendar in next week's Brookhaven Bulletin.

**Whistle Down the Wind**

8:30 p.m. - Berkner Hall - Thurs., June 19

Directed by Bryan Forbes and produced by Richard Attenborough in the Scottish countryside, this is a charming drama about three children on a farm who have rescued three kittens and hidden them in a barn. When the oldest, Kathy, goes to check on them, she finds a frightened fugitive and asks him who he is, what he is doing there. He blurts out, "Jesus Christ," in reply and Kathy runs to tell the other children to come and see their new friend and Savior, Jesus.

After having been told by a Salvation Army worker that Jesus will take care of his kitten, Kathy's brother brings it to the new Jesus, but his faith is shattered when he finds the kitten becomes sick and dies.

Soon word spreads among the adults about the fugitive and the children's aunt calls the police, who capture him easily because he cannot shoot his way out with children nearby. As he surrenders he folds his arms in the sign of the cross and the children know that he'll return.

**Skindivers Complete Course**

An informal buffet dinner was held at the Lakeview on Monday, June 2. At that time, more than 40 employees and their spouses received their cards and certificates for completing a course in Skindiving and SCUBA.

The program, conducted under the able instruction of Lou Cafone from the Suffolk County Vocational Education and Extension Board, lasted 12 weeks. During that time, a complete indoctrination to SCUBA safety and usage was presented to the recruits.

Thanks are due to the many people who made the program a success. These include Lloyd and Marie Schairer who were responsible for bringing Lou and company over; Paul Colsmann and Gene Tirpak who assisted in setting up the party; and George Sabine and the Recreation Office who handled getting the course off the ground. —T. Lee

**Swimming Pool Summer Schedule**

Starting on June 16th the following Swimming Pool Schedule will continue through July 7th:

**Open Monday through Friday**  
12:00 noon - 1:00 p.m. - Employees  
1:00 p.m. - 9:30 p.m. - Employees, Family, Guests

Beginning July 7th, the following schedule will go into effect:

**Open Monday through Friday**  
12:00 noon - 1:00 p.m. - Employees  
1:00 p.m. - 2:30 p.m. - Children's Swimming Lessons  
2:30 p.m. - 9:30 p.m. Employees, Family, Guests

**Summer Season Tickets**  
(June 16 through August 29)  
Employee \$ 5.00  
Family 10.00

Tickets will be on sale at the Pool Office.

**Daily Admission Rates**  
(Effective July 1)  
Employee \$ .50  
Family Member .50  
Guest .75

Parents bringing children to use the Pool should not do so any earlier than 15 minutes before their scheduled admission time. Children are to remain in the designated waiting area near the Pool's entrance until the Pool opens for them and when waiting to be picked up by parents. The Gymnasium will not be available for this purpose.

**Summer Session For Kids**

Once again this year, the Recreation Office will offer a "Summer Program" for the children of Laboratory employees. Supervision will be provided by two experienced instructors.

Registration of each child must be made in advance, and parents will be requested to sign a responsibility form agreeing to the program's necessary regulations.

Both the on-site play sessions and the swimming lessons will begin the week of July 7th for a seven week period through August 22. A special activities day, which will be held in August, has been planned in the swimming pool. The exact date will be announced.

Children in both programs will be provided with a BERA activity shirt.

**On-Site Play Sessions**

The morning portion of the program will be for the children of on-site residents only. Participants must be at least five years of age. Teenagers are encouraged to participate. The sessions will be held daily from 9:00 a.m. to 11:30 a.m. at the Recreation Building in the Apartment Area. Applications will be sent directly to residents or may be picked up at the Recreation Office. A registration fee of \$7.50 per child must accompany your application (make check payable to BERA). Several special programs will be scheduled to afford parents an opportunity to see or join their children in action.

**Second Session Shoot Results**

After a cloudy morning start Saturday, the Large Bore Shoot proceeded to a successful finish.

For the second session, the first week's winners Walter Kane and Alfred Lukas were tied for first place with a score of 311 out of a possible 400.

—Frank Rumph

**Child Swim Class**

Classes in swimming will be conducted in the swimming pool for children of Laboratory employees beginning July 7th and continuing for a seven week instruction period as listed below.

The purpose of our swimming program is to teach the children as much as possible in the allotted time. This will be done according to the ability of each child and every child will receive a BNL Swimming Participation Card. Red Cross Certificates will be issued wherever possible.

Classes will be arranged for each weekday, Monday through Friday, and only one classification will be scheduled for instruction each day.

**Swimming Classes 1:00 - 2:30 p.m.**

1. These classes are for all Laboratory employees' children.
2. Children must be four feet in height.
3. A fee of \$5.00 per child must accompany application. (Make check payable to BERA.)
4. Children will report at the swimming pool not earlier than 12:50 p.m.
5. Classes will end at 2:30 p.m. Off-site children must remain in the Pool Area until picked up by parents. On-site children must remain in the Pool or proceed directly to the Apartment Area.
6. Children will pay daily admission fee (50¢) or present season ticket to enter Swimming Pool.

Application  
Swimming Classes Date.....  
Name & Age, Each Child - Class Letter

1. ....
2. ....
3. ....
4. ....
5. ....

I wish to register the above children in the swimming classes. I understand that he or she is not permitted to leave the Swimming Pool Area. I agree that he or she may be denied participation in the program for failure to observe the rules.

Employee's Name (Please print)

Lab Address Lab Extension

