

ALBENERI TRIO
Third Concert

The Albeneri Trio, performing at Brookhaven for the third time, will present the next concert of the BERA series on Thursday, February 25. The concert will be given in the Research Staff Lounge and will begin at 8:30 p.m. The Trio, which consists of Ward Davenny (piano), Giorgio Ciompi (piano) and Benar Heifetz (cello), will play the Beethoven Trio in B flat major, Opus 11, the Piston Trio in E minor and the Schubert Trio in E flat major, Opus 100.

The Albeneri Trio was organized fourteen years ago and in the intervening years has become the foremost piano trio in the country. Ward Davenny, the newest member of the trio, has performed extensively as a soloist and with chamber ensembles. He played with the trio at their last performance here in 1957. At present he is Director of the Cleveland Institute of Music. Giorgio Ciompi studied with Georges Enesco and played in the NBC symphony before he became head of the violin department at the Cleveland Institute of Music. Benar Heifetz was a member of the famous Kolisch Quartet, and then came to the United States where he has played in the Philadelphia Orchestra and the NBC Symphony. He has continued to perform with the Symphony of the Air.

This group has received constant acclaim in the press. Here are some samples of recent reviews:

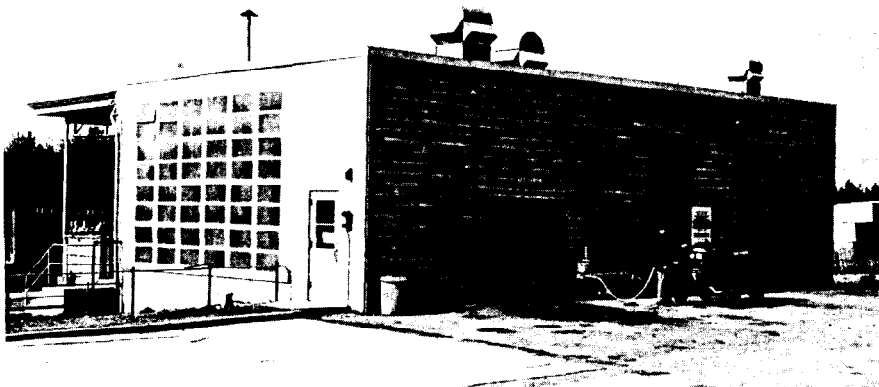
"Judging by last night's performance, there would seem to be no aspect of musical culture that the Albeneri's have not searched out, held up to the lights of feeling and reason, and developed to a point of utter refinement. Their ensemble tone is uncannily perfect, yet no detail of beauty is lost. —N.Y. HERALD TRIBUNE

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WASHINGTON'S BIRTHDAY

Monday, February 22, will be observed as a regular Laboratory holiday.

**LIQUID HYDROGEN –
YEAR ROUND JACK FROST**



Hydrogen Liquefier Facility

A recent article in THE BULLETIN BOARD described the hydrogen bubble chambers. These devices enable the scientist to observe the movements of particles and the collisions which take place between them, and provide indirect measurements of many of their properties. As described in the earlier article, bubble chambers essentially are sealed containers filled with a suitable liquid, often hydrogen. Thick glass windows are provided through which the tracks of particles may be photographed. These tracks are caused by the formation of bubbles around the charged ions left in the path of a high energy particle, such as a proton or meson, moving through the liquid.

The bubble chambers at BNL consume enormous amounts of liquid hydrogen. In the early days of the use of bubble chambers for research, it was very expensive and difficult to obtain large quantities of liquid hydrogen. To meet BNL's requirements, a hydrogen liquefier was designed and built by the National Bureau of Standards. The liquefier, completed in mid-1956, is housed in a building behind the Cosmotron. It has supplied 6,000 liters (approximately 6,350 quarts) per month since the Cosmotron has been back in operation.

Because of its unusual characteristics, liquid hydrogen is a difficult fluid to work with. At room temperature, hydrogen is a gas; it does not become a liquid until its temperature is reduced to minus 423 degrees fahrenheit. Since liquid hydrogen must be kept at extremely low temperatures and since very little heat is needed to boil it away, special techniques are necessary in handling and producing this material.

Liquid hydrogen is stored in special multi-walled containers called dewars which have high vacuum as insulation and liquid nitrogen (which is purchased at low cost) or multi-reflecting surfaces as a thermal radiation shield in order to keep boil-off at a minimum. Well designed containers are capable of storing liquid hydrogen with only 1% to 2% loss in 24 hours. Air must be prevented from coming into contact with liquid hydrogen, because the air would freeze solid and might plug piping and valves. In addition, solid air within liquid hydrogen is explosive under certain conditions.

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LIQUID HYDROGEN—Cont'd

Loss of the insulating vacuum in a container will result in a very rapid boil-off and provision must be made to carry the gas safely to the outside. Pipe lines have to be double walled with a vacuum in the outside space, if any liquid is to reach the far end. The design of such special equipment is a function of the Mechanical Engineering Department.

The liquefier operates by compressing commercially supplied hydrogen gas to 1800 pounds per square inch and then precooling it by exchanging heat with liquid nitrogen at about minus 300 degrees fahrenheit. Further reduction in temperature is accomplished through additional heat exchange with very cold hydrogen gas returning to the compressor. The gas is then allowed to expand rapidly to atmospheric pressure (about 15 pounds per square inch). This sudden reduction in pressure cools the gas and results in about twenty per cent of the hydrogen being liquefied. The remaining extremely cold hydrogen gas returns to the compressor, to start the cycle anew, after exchanging heat with the incoming high pressure gas. This is a continuous circulation process, producing about 60 liters per hour. The liquid hydrogen is stored and delivered to the user in 30, 50, 150 and 1,000 liter dewars. Improvements underway at the liquefier will increase the liquefaction rate to over 80 liters per hour.

ALBENERI TRIO — Cont'd

"A large audience, one of the season's largest, assembled last night in Town Hall to listen to an evening of chamber music by Beethoven. The Albeneri Trio was host, — altogether admirable in its musicianly phrasing, its clean ensemble and the spirit with which the work was set forth." —N.Y. TIMES

"The reaction was tumultuous — in fact it can be described as an ovation."

—WASHINGTON TIMES HERALD

Those who do not have series tickets may obtain tickets at the door for \$2.00 (\$0.75 for children).

Albeneri Trio - Special Buffet Supper

The Brookhaven Center will serve a Special Buffet Supper from 6:00 p.m. to 8:00 p.m. on Thursday, February 25th, for the convenience of those attending the Albeneri Trio concert at the Research Staff Lounge at 8:30 p.m. on that date. Pot Roast of Beef or Seafood Au Gratin will be offered at \$2.00 per person. All are invited. Reservations are not necessary, but advance notice to Extension 2453 will be helpful.

SUNDAY BUFFET - FEB. 21

A Family Buffet will be served at the Brookhaven Center on Sunday, February 21st, from 4:00 p.m. to 7:00 p.m., featuring Half Broiled Chicken or Fried Fantail Shrimp. All are invited. The price is \$2.50; children \$1.25. Reservations are not necessary, but advance notice to Extension 2453 will be helpful.

TOURNAMENT TIME

Once again it's time for our annual tournaments in Table Tennis and Badminton. The competition to determine the Laboratory champions will be getting under way in the next few weeks. Contests will be of a simple elimination nature, requiring participants to play one match a week at a mutually agreed upon time. Results of matches will be announced. Contests will be held in both singles and doubles if enough entries are received. Trophies will be presented by BERA.

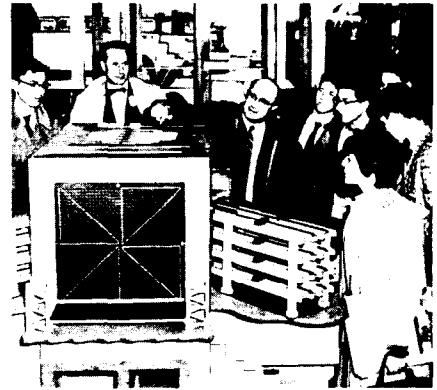
A 50¢ entry fee must accompany your registration for each tournament. Entries are now being accepted at the Recreation Office. For additional information call Ext. 391.

HOCKEY DISCOUNTS

If you're looking for a way to spend an exciting Sunday afternoon, this is it! Hockey offers the spectator everything — excitement, speed, action. Take advantage of our group purchasing of tickets and go for half price. Bring the family, too.

Sunday, February 28, 3 p.m. Rovers vs. Philadelphia. Regular price \$2.50 — our price \$1.25. Long Island Sports Arena in Commack. Deadline for tickets Thursday, February 18.

Order now! Make your reservation by calling or seeing G. Sabine, Ext. 391, at the Recreation Office. Please accompany your order with cash or check.

**EDISON DAY, FEB. 11
VOTED A BIG SUCCESS**

Last Thursday, February 11, the Laboratory was host to 239 selected high school science students and editors of school papers, as part of an AEC-sponsored Science Youth Day, in observance of the 113th anniversary of the birth of Thomas Alva Edison. The students represented 29 Suffolk County Schools, from Bay Shore in the west to Mattituck in the east.

This year, a new kind of program was innovated for the visitors. Instead of giving the entire group a comprehensive tour of the Laboratory's major facilities, each student was given the opportunity to choose from a total of 20 different research projects, and attend any two sessions, one in the morning and one in the afternoon. Each problem was presented by the appropriate scientist; he began by outlining the ways in which the problem was being attacked, and then demonstrated the machines, instruments and other equipment being used. During the presentation, questions from the students were encouraged.

The reactions to this new type of educational program, both from the scientists, the students, and their teachers, was most gratifying. The scientists were impressed with the generally high quality of the questions that were asked, and the intelligence and interest of the students. Undoubtedly, the teachers also were due for credit, for the obviously high degree of selectivity they had used in nominating the students that were included in this year's Edison Day group.

**WATCH FOR
BERA DANCE**

CAFETERIA TIDBITS

To accommodate the crowds thronging to the Thursday Buffet Luncheon in the East Room of the Cafeteria, the hours have been extended from 11:30 a.m. to 1:30 p.m. See you there Thursday, February 18th. Enticing entrees, and the price is right - \$1.00!

Fresh baked fruit pies will be available, to take home, on Wednesday, February 17th, at the Cafeteria for 79¢. Take home a delicious pie to the family.

FEDERATION OF AMERICAN SCIENTISTS MEETING

The FAS will hold an open membership meeting on Wednesday, February 24, at noon in the East Room of the Cafeteria. Willie Higinbotham will report on "Test Ban Inspection." Bring your lunch, or buy it there, but please attend! If you are not a member of FAS but are interested in joining you will be welcome.

PROFESSIONAL OPENINGS AT BNL

About six weeks ago, THE BULLETIN BOARD listed job opportunities for which employee referrals were sought. At the present time there are still openings at the Laboratory for Electrical and Electronics Engineers, Metallurgists, and Mathematicians-Programmers.

If you know of anyone who might be interested in exploring these or other professional vacancies, notify P. Paige, Ext. 2100 or R.C. Anderson, Ext. 741.

BNL SAFETY RECORD

41 Days Since Last Disabling Injury
(Jan. 5, 1960 - Feb. 14, 1960)

CAMERA CLUB

The next meeting of the BNL Camera Club will be Wednesday, February 17 at 8 p.m. in the Recreation Hall. There will be a shooting session with a model. The emphasis will be on lighting arrangements.

Members should remember to bring cameras and film.



BERA BOWLING

GREEN LEAGUE

The Fire Department, by beating Chemistry 4-0 holds first place by 4 points over the Old Timers. The Electrons won over the Old Timers 3-1. The Reefers squeezed a 3-1 win over the Teasers. High games rolled by Audet 188, Adams 197, Kampe 185, Kinney 200, Holmquist 186, Peters 180, Ratyca 198, Middleton 180, Rhodes 180, Levy 200. High series were rolled by Kinney 526, Levy 522, Adams 535, Peters 529, and Middleton 514.

BLUE LEAGUE

There's plenty of good bowling being displayed each week. High games and big series are not uncommon. The only thing this league is missing is a reporter who is willing to spend a few minutes of his time each week to keep the boys up to date on who's bowling what. Put your league in the black (and white). Volunteer your services to G. Hardman, President of BNL Bowling Leagues.

PURPLE LEAGUE

The Phoubars moved within one point of the first place Designers by taking them for three points. T. Marrion had 208-559, D. Vogt 194-533, Red 192-510 and Ole 179-505. For the losers Scatton had 195-549, Sperry 179 and Rocky 172.

The Toppers, still in third place, took 3 points from the Bowl Aids. Rosenka had 206, Zelenka 191, and Green 174. For the Bowl Aids Walsh had 194 and Schulz 183.

The Ptuiss took 3 points from the Chain Gang. Bubka had 170 and D. German 167 while for the losers Brems had 204-538. The Fiscal team made a clean sweep as they took 4 points from the Dirty Birds. Bohn had a 180, Eberbach 175 and Rose 164.

LADY KEGLERS COLUMN

The Odds and Ends lengthened their lead on 1st place to 4 points last night by taking 3 from the Frisbees, while Medical dropped 3 to the Strugglers. The tie for 3rd place was broken when

the Nightingales came through with flying colors with a 3 point victory over their contenders, the Allthumbs. Sam's Gals are on the upward move by taking all 4 points from Chemistry. Pat Ferrigno of the Strugglers converted the only split shot of the night 5-7.

High games and series: Grace Siemen 174-495; Theresa Barbato 161; Barbara Oelkers 168; Phyl Mirabelli 156; Matilda Harriet Melbourne Penney 157.

Next week the Odds and Ends and Medical clash for 1st place, the Nightingales will valiantly try to hold their 3rd place position, with the Allthumbs and Strugglers right in there fighting for it.

SET SHOTS

On February 2, the Old Timers were swamped 66-47 by a very strong Metallurgy attack. Bill Kenny tallied 20 and Carl Klamut ran up his high for the season to 12. Tom Prach had 13 points for the O.T.'s.

In the nightcap, Thumpers and Chemistry took the floor, and at half time, the game was up for grabs. With 11 men against 5, Chemistry shuffled men in and out and were effective on the boards, holding the Thumpers to one shot at a time. But in the third period, Lark and Co. could manage any hoops while Carstens got hot for the T's and the ball game was over. Final tally was 42-20.

On February 9, only one game was played. The Old Timers requested a forfeit to Thumpers because of players working overtime and sickness. In the one game, The Metallurgists ran up 70 points, highest this year, to take the contest against Biology 70-49. Big men for the second week for Metallurgy were Klamut with 19, and Kenny and Frei with 14 each. Kukacka and Sabine tossed in 15 and 14 respectively for the Bios.

Next week will pair O.T.'s vs. Chemistry at 6:15 and Thumpers vs. Bios at 7:30.

SPORTS CAR MEETING

There will be a meeting at 8:00 p.m. Friday, February 19, at the Recreation Building on York Lane. All enthusiasts are urged to attend this general organizational meeting.

VOLLEYBALL

The third round of the volleyball league continues with the "fat but jolly" boys from Personnel keeping the lead. It is rumored that Ca(p)t. Knapp insisted that the boys stop sleeping on the court. Cosmotron, back at full strength, has been in a slump but is still in contention.

The Bubble Chamber team was tied for first place looking up and they claim it's the sparkling water that they are drinking before each match. Medical's pep pills arrived, but alas, haven't had the desired effect. Because conditioning is the key to victory in volleyball, any one of the teams can still back into first place.

DISCOUNT TICKETS
TO BOAT SHOW

Discount tickets to the Boat & Sportsmen's Show at the State Armory, Jamaica, are available at Personnel Services for March 5-13. The tickets cost 75¢ each.

TV TROUBLE SHOOTERS GUIDE

An order of Do-It-Yourself Trouble Shooters Guides has arrived at Personnel Services. They are on sale at 40¢ each.

BULLETIN BOARD

CLASSIFIED AD POLICY

1. Employees only may place ads in THE BULLETIN BOARD.
2. All items advertised for sale must be the property of an employee.
3. Real estate ads will be accepted only when they involve change of residence by an employee.
4. No ads for business purposes will be accepted.
5. Ads must be submitted in writing (preferably typed) by 3 p.m. Friday for inclusion in the next week's newspaper. Address the ads to THE BULLETIN BOARD, 58 Brookhaven Avenue, or deliver them to the Personnel Office. Ads must contain a signature and Laboratory telephone extension. If you do not want your name to appear when the ad is printed, put it in parentheses.
6. Ads are run on a space available basis. If your ads does not appear due to space reasons, it will be held for inclusion in the next issue of THE BULLETIN BOARD.
7. If you wish to repeat an ad, it must be re-submitted.

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CLASSIFIED ADS

FOR SALE

1958 FORD - Fairlane 500. 4-door Victoria, power steering, Fordomatic. State inspected, white. Best offer over \$1550.00. DEer Park 2-7997.

1956 OLDSMOBILE - 4 door sedan. Radio and heater. Automatic transmission. 2-tone. J. Zahra, Ext. 2170 or POrt Jefferson 8-2075-J.

1957 CHEVROLET - 6 cylinders. 2 door sedan Belair. \$1200. Jake, Ext. 2208.

HOUSE - 4 rooms with bath, full basement, porch, 1½ car garage, plot 50x190, fully landscaped, fenced, venetian blinds, aluminum storm windows and doors, oil heat, low taxes. Excellent location near school, bus, shopping center. Fully furnished. \$15,500.00. Sacrifice. ATLantic 9-0209.

HOUSE - 3 rooms and bath. Refrigerator and stove. Plot 60x535 ft. On Washington Ave., Patchogue. \$6500. Priced for immediate sale. C. Wingard, Ext. 2395 or GOver 5-3717 evenings.

DORY - Nova Scotia double ender, 18 feet. Inboard well for outboard motor. Will throw in 7½ h.p. Scott Atwater which might run. Asking \$60. Williams, Ext. 2393.

LUGGAGE - hand luggage. 2 Val-Pacs, dark blue, one ladies' and one men's, practically new. Both for \$18 or \$10 each. Williams, Ext. 2392.

LUGGAGE - 3 piece light weight luggage, used once. Reasonable. Call GOver 5-2829.

MATTRESS - 4½ inch foam rubber mattress and matching box spring. E. Raka, Ext. 310.

25 FOOT BOAT - Cabin, bay boat. Good condition. Fully equipped. Searchlight, elec. bilge pump, life preservers, cushions, etc. \$695 firm. John H. Ince, BELLport 7-0706.

23 FT. 6 IN. - Uhlrichsen Sea Skiff. 1959, 109 h.p. gray marine engine. Time - 125 hours. Toilet, sink, water tank, 2 bunks, fish well, Munston ship to shore radio (30 watts). Newly painted and varnished. Ready to go. Price \$4,000. Ext. 2193. After 5:30, GOver 5-2287.

1955 CHRIS CRAFT - 18 ft. inboard skiff with 1957 95 h.p. Chris Craft engine. \$2100. All equipped. W. Berg, Ext. 593.

JIB - canvas, excellent condition. Will probably fit Cape Cod knockabout. A bargain at \$30. M. Greene, Ext. 779 or BELLport 7-0237.

21 INCH TV - 1956 RCA table model. Good working condition. \$75. Jake, Ext. 2208.

MODEL PLANE - Piper cub, "Top Flight." 26½ in. wing span. 18 in. length. Motor: .049 "OK CUB". All assembled, painted \$7.00. GOver 5-1285 after 4 p.m.

FADA - 16 in. TV. Picture tube 1 year old. Needs little work. \$25. Ext. 451.

SPEAKER SYSTEM - 12 in. Japanese woofer and Atlas HR-2 horn tweeter with 3500 cycle crossover. Jensen bass-ultraflex cabinet made of ¾ in. oak, finished in walnut formica. \$50. Call J. Bauernfeind, Ext. 722 or ROnkonkoma 9-4292 after 6 p.m.

KITCHEN RANGE - Tapan estate range. Completely automatic. Needs a little work. Paid

\$450 8 yrs. ago. Price \$75. Also air conditioner (G.M. Frigidaire) 8 seasons old. Just doesn't get cold enough. First \$15 offer. New ther. controls. Also unused stainless steel sink top - \$25. ATLantic 2-0792.

HARDER FREEZER - upright model No. HU 13 E. 18 cu. ft. Original cost \$625. Good condition - "will sacrifice". Also electric ice cream freezer. Brand new. Excellent condition. \$10. GOver 5-2233.

RAVISHING RED RENAULT DAUPHINE - 4 door, radio, heater, w.w., late 1958 model. \$900. S. Earle, Ext. 591.

PHONO CARTRIDGE - with diamond stylus for 33 rpm records. Irvin Meyer, Ext. 2222.

PIANO - Jesse French. 41 inch console in excellent condition. \$375. ATLantic 6-8342 after 6 p.m.

CAMERA - Canon IIIA. Combined range-view finder for 50, 100 and 134 mm. lens with 50 mm. F 1.8 Sevenar, case, neckstrap. Also Canon Photography by Deschin. \$70. Ext. 356, Bergeron.

SOFA - 3 cushion type. Color blue. Very good condition. \$35. Call YAphank 4-3354.

TV SET - 17 inch. Console. Beautiful cabinet with sliding door. Set needs some repairs. Also combination radio and phonograph, Zenith. \$25. each. Ext. 2135 or SAYville 4-1656-J after 6.

1953 PONTIAC - Chieftain. 4 door sedan. Radio, heater, hydromatic, 2-tone. Good reliable car. Call Ext. 624.

RUNABOUT - heavy gauge riveted aluminum durateck runabout, 12 ft. with front deck and steering wheel. About 6 yrs. old. A 1958 7½ h.p. Evinrude with 4 gallon tank and motor stand. A 1959 Mastercraft Trailer with winch and tail light. Also included: anchor, lines and cushions. Ready for use. \$450. Ext. 624 or GOver 5-2131.

WANTED

HOME FOR PUPPIES - healthy, black, result of misalliance between Gordon Setter and Labrador Retriever. Ext. 741.

FENCING EQUIPMENT - foil and mask. Call Ext. 2135.

TYPEWRITER - would like to buy used typewriter. Bob Walton, Ext. 2181.

CAR POOLS

Wanted - ride from Bellport to Adelphi Div. at Sayville Monday and Thursday nights 7:00-9:30 for Spring Semester. Call Ext. 2106 or ATLantic 7-8205 after 5:30.

Want a ride to Hofstra on Tuesday and Thursday evenings for 8:00-9:15 p.m. class from Port Jefferson-Setauket-Stony Brook area. Call J. Walsh, Ext. 457.

Want to join car pool from Bellport area to Adelphi Wednesday evenings, 6:30-8:30 p.m. Mary Lou Buchanan, Ext. 372.

Drivers wanted for 3 man car pool - Canaan Lake area. J. Brackes, Ext. 2341.

3 man car pool leaving Bay Shore desires other members. Jake, Ext. 2208.