

the Bulletin Board

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FEBRUARY 25, 1964

DR. KOUTS ELECTED CHAIRMAN OF REACTOR SAFEGUARDS ADVISORY COMMITTEE

Dr. Herbert J.C. Kouts of the Reactor Physics Division at BNL has been elected Chairman of the AEC's Advisory Committee on Reactor Safeguards for a one-year term throughout 1964.

The Committee is a statutory one appointed by the Commission to advise the AEC on safety aspects of nuclear reactor design and operation. Committee members elect their own officers.

Dr. Kouts has been a member of the ACRS since February 1962. He participated as a U.S. delegate to the International Conference on the Peaceful Uses of Atomic Energy at Geneva in 1958, is a member of the European-American Reactor Physics Committee, and has served extensively in various other consultant capacities.

TABLE TENNIS TOURNAMENT

Once again it's time for our annual Table Tennis Tournament. The competition to determine our 1964 champions will begin within the next few weeks.

The contest will be of a simple elimination nature, requiring participants to play one match a week at a mutually agreed upon time. Contests will be held in singles, doubles and mixed doubles **if enough entries are received**. Awards will be presented by B.E.R.A.

The playing schedule will be posted in the Gymnasium on March 11, along with the tournament regulations. Competition will officially begin the week of March 16.

A fifty-cent entry fee must accompany your registration for each tournament. Entries are now being accepted at the Recreation Office, 3 Center Street. For additional information call Ext. 391.

Deadline for entries is March 6.

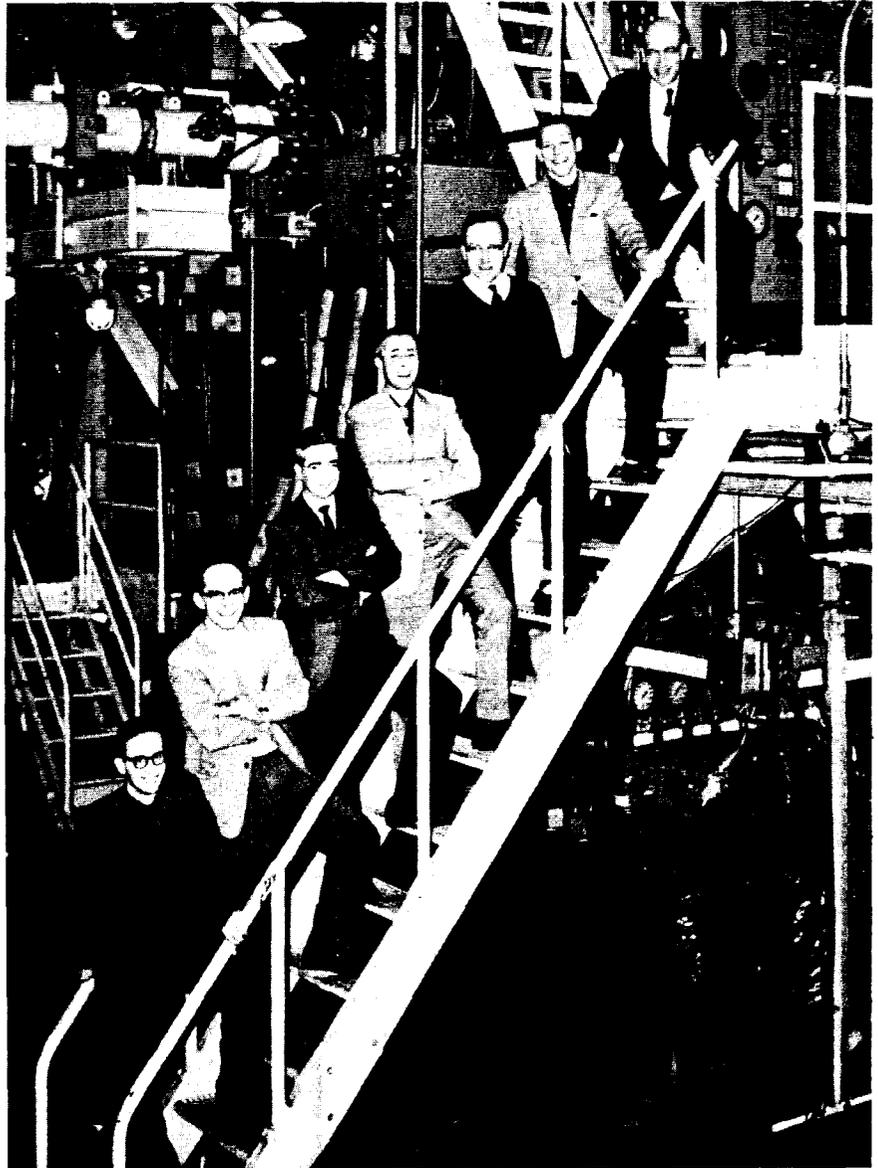
CAFETERIA SPECIAL

Thursday, February 27

Small Juice
Tossed Salad
Chicken Cacciatore over Rice
Cinnamon Apple Sauce
Beverage
\$.99

**BOWLING STANDINGS WILL BE PUBLISHED
AS REGULARLY AS POSSIBLE
WHEN SPACE PERMITS**

BNL REPORTS DISCOVERY OF IMPORTANT NEW ELEMENTARY PARTICLE



A representative group of the individuals involved in the Omega Minus experiment at the 80-inch Bubble Chamber (top to bottom): R.P. Shutt, J.E. Jensen, M.S. Webster, W.A. Tuttle, W.B. Fowler, D.P. Brown, and N.P. Samios.

A team of physicists at BNL has observed a new sub-atomic particle called the Omega Minus. Although its existence had been proposed on theoretical grounds, the Brookhaven experiment is the first to provide confirmation of this rare particle. The work was done at the Alternating Gradient Synchrotron (AGS), using the recently completed 80-inch Bubble Chamber, under the auspices of the U.S. Atomic Energy Commission. Announcement of this significant advance in our knowledge of nuclear structure is made in the February 24 issue of *Physical Review Letters*.

(continued on page 2)

Elementary Particle - continued

The Omega Minus, with negative electric charge, belongs to a family of "strange particles" ("strangeness" is a term used in describing a property of certain nuclear particles). These strange particles, called hyperons, live only for about one ten-billionth of a second after they are produced. Although this seems a short time, on a nuclear time scale this is so enormously long that these particles are considered quasi-stable elementary particles in their own right, and not just "resonant states" of other known particles.

The heaviest previously known strange particle was the "cascade" hyperon (or Xi), so called because it decays into a Lambda particle which in turn decays into a proton, in each case the decay being accompanied by a pi-meson, a basic "carrier" of nuclear forces. The Omega Minus observed now might be called a super-cascade particle, for it decays into the just-mentioned cascade particle, again accompanied by a pi-meson. In each step in this strange particle cascading process, the strangeness changes by one until only a proton or neutron whose strangeness is zero is left. The cascade has strangeness minus 2 and decays in two steps, whereas the newly-found Omega has strangeness minus 3 and decays in three steps.

Unlike the more or less chance discovery of some of the other elementary particles, which have contributed to an increasingly complex picture of elementary particles and nuclear forces, the observation of the Omega Minus is significant in that it may be the keystone to an orderly arrangement of the previously known particles, reminiscent of the Atomic Table of the Elements or of optical line spectra. Making use of a branch of mathematics called group theory, a number of theoretical physicists, led by Professor Murray Gell-Mann of the California Institute of Technology and Dr. Yuval Ne'eman of Israel, now a visitor at C.I.T., have produced such an arrangement and have predicted the existence of a so far missing particle with the properties of the Omega Minus. It was determined that one possible example had been seen in a photographic emulsion exposed to cosmic rays about ten years ago by Professor Y. Eisenberg, then at Cornell University.

"The discovery of the Omega Minus by Dr. Shutt's group," stated Dr. Maurice Goldhaber, Director of B.N.L., "forms a capstone in a building which was so far held together only by the bold imagination of Drs. Gell-Mann and Ne'eman."

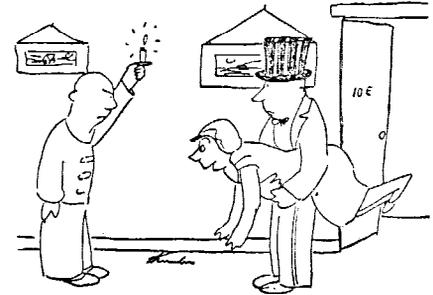
An intensive search for the particle was started a few months ago at several high energy physics laboratories. At Brookhaven, the AGS produces protons of energies up to 33 bev. In order to obtain more easily controlled conditions, these protons were allowed to hit a target from which negative K-mesons were extracted by a very long (about 400 feet) array of magnets and electrostatic separators. A beam of about ten such particles was then allowed to enter Brookhaven's 80-inch Liquid Hydrogen Bubble Chamber every 2½ seconds. In this chamber, the world's largest, liquid hydrogen at a temperature of minus 412 degrees F. is permitted to "boil" for a small fraction of a second when the beam enters. The paths of electrically charged particles are thus outlined by tracks of bubbles which are immediately photographed by several stereoscopic cameras. One such photograph, out of 100,000, revealed the possible "signature" of the Omega Minus. Analysis by very accurate measuring machines and an IBM-7094 computer confirmed this signature. The Omega Minus was produced in association with two K-mesons and weighs about 3400 times as much as an electron, which is the reason why such large and complicated equipment is necessary to produce it, for a large mass requires much energy to create it. At the same time, large groups of physicists, engineers, mathematicians, and technicians cooperate to produce the end result.

As more examples of the Omega Minus are found in the future, the more subtle properties of the new particle will also become known. Thus it is hoped that more light will be shed on one of the most challenging problems of modern physics: what is the nature of the nuclear forces and what is the apparently so very complex structure of the "elementary" particles?

The BNL physicists who took part in the experiment, in alphabetical order, are as follows: Virgil E. Barnes, Philip L. Connolly, David J. Crennell, B. Brian Culwick, William C. Delaney, William B. Fowler, Edward L. Hart, Paul V.C. Hough, Jack E. Jensen, Joshua K. Kopp, Kwan-Wu Lai, John L. Lloyd, Thomas W. Morris, Yona Oren, Robert B. Palmer, Albert G. Prodetl, Dusan Radojicic, David C. Rahm, Clarence R. Richardson, Nicholas P. Samios, James R. Sanford, Ralph P. Shutt, John R. Smith, David L. Stonehill, Richard C. Strand, Alan M. Thorndike, Medford S. Webster, William J. Willis and Steven S. Yamamoto.

Three physicists from Syracuse University, Drs. Nahmin Horowitz and Jack Leitner, and Patrick E. Hagerty, a student, together with Georges W. London, a student from the University of Rochester, also participated in the experiment.

The team was headed by Dr. Shutt, with Dr. Samios in direct charge of the experiment.

**PREVIEW REVIEWS OF
"A THURBER CARNIVAL"**

**"This Gentleman Was Kind Enough
to See Me Home, Darling"**

"This show has problems. Never have I seen such a menagerie of disturbed types."
—S. FREUD

"'A Thurber Carnival' has everything. Wit, humor, sex, wisdom, girls, color, girls, charm, and girls. It's a real delight!"
—S. MINSKY

"This is one of the finest plays I have ever seen. Sorry I couldn't stay for the second act, it's really one of the best."
—L. JOHNSON

"Typical bourgeoisie promiscuity. Overemphasis on the visual. Sex for sex' sake. This play would never succeed in mother Russia."
—POPAKOVICH

FEBRUARY 27, 28, 29, 1964

BNL THEATER

8:30 P.M.

PLAY TICKET SELLERS

Director's	E. Murgatroyd
A.G.S.	M. Semerjian
Applied Math	J. Friedman
Biology	E. Hodges
Chemistry	E. Sayre, G. Friedlander
Cosmotron	B. Keck
Hot Lab	M. Kinsley
Instrumentation	H. Cooke
Library	V. Lyons
Medical	M. Follenius, R. Korsos
Nuc. Eng'g.	L. Duvall, G. Jones
Physics	P. Towey, P. Fairhurst
Reactor	J. Kreitzberg
Recreation	M. Walters

PRICES:

Adults (Family), \$1.00 Guests, \$1.25
Children (Under 18 years), \$.50

PERSONNEL SERVICES

Recreation Office — 3 Center Street
Daily 9:00 a.m. — 1:00 p.m.

DISCOUNT TICKETS

Discount coupons, good through March 1, are available for **The New National Sports Vacation and Travel Show**, now being exhibited at the New York Coliseum.

B.E.R.A. BOX SEATS FOR NEW YORK METS BASEBALL GAMES ON SALE MARCH 2

We planned ahead and made our selection early for a choice location in the newly constructed Shea Stadium for BERA's 8 box seats for the 1964 season. The seats are excellently located between home plate and third base.

Beginning March 2, orders for tickets (accompanied by cash or check) will be accepted for 43 playing dates: All Sunday and night games and two holiday games. Tickets are \$3.50 each.

With the team's move to the new Flushing Meadow ball park and the resulting shortened trip for us to see games, we expect tickets to go much faster this year. So don't wait—make your plans early and purchase your tickets for the date of your choice. We have a limited supply to be sold on a first come, first served basis.

TICKETS ON SALE MARCH 2 FOR GAMES LISTED BELOW

	29 Nights	12 Sundays	2 Holidays
April 19	Pittsburgh.....		Sunday
May 6	Cincinnati, Wednesday.....		Nite
May 8	St. Louis, Friday.....		Nite
May 10	St. Louis, Doubleheader.....		Sunday
May 12	Milwaukee, Tuesday.....		Nite
May 29	San Francisco, Friday.....		Nite
May 30	San Francisco, Saturday.....		Holiday
May 31	San Francisco, Doubleheader.....		Sunday
June 2	Houston, Tuesday.....		Nite
June 5	Los Angeles, Friday.....		Nite
June 7	Los Angeles, Doubleheader.....		Sunday
June 9	Chicago, Tuesday.....		Nite
June 10	Chicago, Wednesday.....		Nite
June 19	Philadelphia, Friday.....		Nite
June 21	Philadelphia, Doubleheader.....		Sunday
June 23	Pittsburgh, Tuesday.....		Nite
July 9	St. Louis, Thursday.....		Nite
July 10	St. Louis, Friday.....		Nite
July 12	Cincinnati, Doubleheader.....		Sunday
July 24	Milwaukee, Friday.....		Nite
July 26	Milwaukee, Doubleheader.....		Sunday
July 28	Los Angeles, Tuesday.....		Nite
July 29	Los Angeles, Wednesday.....		Nite
July 31	Houston, Friday.....		Nite
Aug. 2	Houston, Doubleheader.....		Sunday
Aug. 4	San Francisco, Tuesday.....		Nite
Aug. 5	San Francisco, Wednesday.....		Nite
Aug. 14	Philadelphia, Friday.....		Nite
Aug. 15	Philadelphia, Saturday.....		Nite
Aug. 16	Philadelphia.....		Sunday
Aug. 18	Pittsburgh, Tuesday.....		Nite
Aug. 21	Chicago, Friday.....		Nite
Aug. 23	Chicago, Doubleheader.....		Sunday
Sept. 1	San Francisco, Tuesday.....		Nite
Sept. 2	San Francisco, Wednesday.....		Nite
Sept. 4	Los Angeles, Friday.....		Nite
Sept. 5	Los Angeles, Saturday.....		Nite
Sept. 6	Los Angeles.....		Sunday
Sept. 7	Houston, Doubleheader, Monday.....		Holiday
Sept. 9	Milwaukee, Wednesday.....		Nite
Sept. 22	St. Louis, Tuesday.....		Nite
Sept. 25	Cincinnati, Friday.....		Nite
Sept. 27	Cincinnati, Doubleheader.....		Sunday



WIN TWO FREE TICKETS

Two free tickets to see the Mets vs Giants on August 5 can be yours if you will mail the answers to these questions. (in a sealed envelope marked Baseball Contest) to the Recreation Office before March 6. In the picture above:

1. Name the two players shaking hands.
2. Name the occasion.
3. Give the date of the occasion.

To give everyone an equal chance, all envelopes will be placed in a cylinder, rotated and drawn until one containing the correct answers is selected.

TICKET PRACTICES

1. The Recreation Office will be open for ticket sales and information daily 9:00 a.m. to 1:00 p.m.
2. Tickets are intended for the employee and members of his immediate family. It is understood a single employee might wish to purchase an additional ticket for his or her escort.
3. Employees may purchase either 2 or 4 tickets.
4. Tickets will not be sold to any one employee for more than 2 games in advance.* An employee who has purchased tickets for 2 games in advance will be permitted to buy additional tickets only after he has attended at least one of his games. In other words, tickets will not be sold to anyone currently in possession of tickets for 2 unplayed games.
5. Tickets will not be returnable or acceptable for refund at the Recreation Office.
6. If a game is rained out or postponed, refund or exchange should be made at the Ticket Office at the Ball Park.

*If there are tickets which have not been sold one week before game time they will be sold regardless of the number of tickets already in the purchaser's possession.

Arrivals and Departures**WELCOME TO BNI**

APPLIED MATHEMATICS	
Reine Reece	Ext. 409
FISCAL	
Barbara E. Campbell	2588
PLANT MAINTENANCE	
Herman G. Geist	2381

FENCING CLUB

MEETS AT THE GYMNASIUM
TUESDAY EVENINGS, 5:00 P.M.
New Members Welcome

SKIN DIVING COURSE

Starts 7:30 p.m.
March 2 at the pool.

CLASSIFIED ADS**FOR SALE**

1959 MERCURY - 9 pass. wagon. Asking \$750. GR 5-4034.

1958 CHEVROLET - Wagon. V-8, auto trans., excellent condition. Low mileage. \$600. AT 9-0626.

1954 CHRYSLER - Fully powered. Good running cond. \$275. AN 5-0845.

1957 MERCURY - Late model. Power brakes and steering. Excellent motor and body with 4 new tires. \$495. Must sell. AN 5-7492 after 6 p.m.

1953 PLYMOUTH - 2-dr. sedan. Good running cond. Snow tires. \$40. G. Rogers, Ext. 481 or SH 4-3945.

1964 TICKETS - To "A Thurber Carnival," February 27, 28, 29 at Theater, 8:30 p.m. Music delightful and way out. Cast somewhat worn, but spirited. A terrific buy.

1960 FIAT - Model #500. Had week-old motor job before accident. Ideal for parts; handyman can repair. Make offer or trade-in on old car. SH 4-3074 days until 4 p.m.

1957 FORD - Wagon. V-8 engine, std. shift, overdrive. Good running cond. Near-new tires. \$450. SH 4-5458 after 6 p.m.

1954 CHEVROLET - 4-dr. sedan, std. trans., good tires. \$130. HR 3-0288.

1955 PLYMOUTH - Very good cond., engine in order, good tires and new battery. White/red. \$80. Ext. 388.

1959 JAGUAR - XK150. Roadster, navy blue, excellent condition. Bill, Ext. 686 after 3:30 p.m. or GR 5-7063 before 3:00 p.m.

1961 OLDS - Conv. 88. Auto. trans., power steering and brakes, r&h, excell. cond. \$1700. Will consider older car in trade. Bruce, Ext. 2376.

1959 ENGLISH FORD - Consul. 4-dr. sedan. Owner left country. \$345. C. Raseman, Ext. 348 or 941-4078.

1962 OLDS - F-85. 2-dr. sedan, V-8 engine, auto. trans., r&h, w/w's, excell. cond. \$1400. L. Cohen, Ext. 458.

1962 RENAULT - Dauphine deluxe. R&h, w/w's, vinyl interior, clean. \$675. Ext. 2623.

A GOOD TIME - Yours to enjoy with the purchase of tickets to "A Thurber Carnival." Guaranteed fun for the hipster as well as the armchair set.

1957 CHEVROLET - 2-dr. sedan. Auto trans., good body, tires, and runs very well. \$300. Fred Maye, Ext. 2480 or LT 9-4074.

1958 NASH - Metro. Good cond. \$225. 878-0071 after 6 p.m.

STOCK CAR - 301 Chevy powered, complete with extras. \$500. 281-7665.

1959 FORD - 2-dr. sedan, r&h. \$500. W. Lanyi, Ext. 2411 or 2410.

1952 NASH - 2-dr. sedan. New snow tires. J. Petropoulos, Ext. 2472 or 2715.

1951 PLYMOUTH - 4-dr. sedan. Heater, stand. trans., good mechanical cond. Dependable second car. \$30. Avail. immediately. First come, first served. Please take it! C. Cannistrati, Ext. 2717 or 2770.

1963 INTERNATIONAL SCOUT - 4-wheel drive, fully equipped, full top, 4500 miles. \$1995. 288-6238 days.

HOUSE - Cape Cod, 2 bedroom, Port Jefferson Station. 125'x100' corner plot. Fireplace, expansion attic, 2-car garage. HR 3-1080 after 5:30 p.m.

HOUSE - Center Moriches, 2 bdrms. \$11,500. 878-2289.

HOUSE - East Islip opposite Heckscher Park, 5 rooms, double kitchen, large playroom, laundry room, den, 3 bedrooms, w/w carpeting, washer & dryer, storms & screens, city water and well, fenced-in yard, large patio, 1/2 acre. \$21,000. Ext. 622 or 581-2877 after 5 p.m.

HOUSE - Brookhaven. Colonial ranch, fireplace, 7 rooms, 1/2 car, attached garage. Fully landscaped and fenced 125x150 ft. lot. AT 6-0270.

BRICK CAPE COD - Located off So. Country Rd., E. Patchogue. 4 bedrooms, 1 1/2 bathrooms, full basement, 75x210 lot, convenient to all schools, \$13,900. Ext. 2491 or AT 6-8517 after 6:00 p.m.

HOUSE - Sacrifice. Newly decorated 5 1/2 rms.; 2 bedrooms. Garage, elec. stove, oil burner, cabinets, walk-in-pantry. 60x140 lot. Two blocks from center of Patchogue village. GR 5-2829 after 6 p.m.

HOUSE - No. Brentwood area. Six room ranch, with attached garage. Storms and screens, two patios, gas fired hot water heat, fenced corner lot 96x100 ft. 1/4 mile from L.I. Expressway exit. \$17,500. P. Ettari, Ext. 2407 or BR 3-6436.

1955 ULRICHSEN - Hardtop - Hardtop sea skiff. Chrysler crown motor overhauled last year. Motor shaft & tanks. \$2,300. AT 6-9224.

SKIFF - 18 ft. Old Town, with 40 h.p. Johnson motor, 4 yrs. old. New navy top, & side & aft curtains. All accessories, S. Kochis, Ext. 2410 or SH 4-5348.

SPORT CRUISER - 1957 Owens, 19 1/2 ft., 100 h.p. 2 bunks, head. Approx. 50 hrs. One owner. \$1350. Chris, Ext. 2278 or 212-HA 9-7293 after 6 p.m.

FRENCH POODLES - Miniature. Gayle, Ext. 2212 or 281-7394.

TWO TICKETS - To "A Thurber Carnival" free with the purchase of a 140 seat block of tickets to same. How can you afford to miss this once-in-a-lifetime opportunity?

AUTO PARTS - For 1953 and '54 Willys, various parts. AN 5-0845.

TABLES - 2-end tables, one coffee table, walnut with blue glass top. \$3. each. AN 5-0845.

ELECTRIC BROILER - Shiny Broiler-King, with tubular heaters, rated as best. Used only twice. \$10. J. Constant, Ext. 618 or 2373.

EQUIPMENT - Tube tester, Sencore Mighty Mite, like-new cond. Asking \$48. Capacitor checker, inductance-resistance bridge. Heath 1T-11, less than year old, comp. with manual, \$25. RF Signal generator, Heath RF-1, range to 32mc, good cond. Manual, leads, \$20. Large assortment of electronics books and manuals, request list. P. Warner, Ext. 425 evenings, 4-Midnight.

CLARINETS - 3 B flat clarinets in good cond. One Pedler, one Buffet Crampon & Cie. One has no name. Will sell individually or in package deal, Sal, Ext. 2209.

KEROSENE HEATER - Auxiliary 2-burner. Output 20,000 btu per hr. G. Lilja, Ext. 657 or JU 8-2328 after 6 p.m.

CARPOOLS

DRIVERS - For existing carpool from North Heatherwood Development - Port Jefferson high school area. S.C. Jones, Ext. 2526.

Leaving from New York, 6 p.m., February 27, 28, 29 for Brookhaven Theater to see "A Thurber Carnival." Contact David Merrick, producer.

DRIVERS - Wanted to complete existing carpool from Massapequa, Massapequa Park or Amityville area. D. Eversley, Ext. 2158.

DRIVER - Wanted for existing carpool from Babylon-West Islip area, 8:30 to 5:30 p.m. W. Rodgers, Ext. 7782.

WANTED

CAMPING EQUIPMENT - Tents, cots, sleeping bags, etc. Starting from scratch, so interested in any equipment you may have. F. Thornhill, Ext. 2254.

ELECTRIC KILN - For ceramics use. G. Rogers, Ext. 481 or SH 4-3945.

An audience for that brilliant showpiece, "A Thurber Carnival." Will be presented at the Theater on February 27, 28, 29 at 8:30 p.m. Audience must be willing to laugh uproariously and appreciate humor at its peak of development.

TYPING - To be done at home by experienced secretary. YA 4-3848.

Anyone interested in beginning or reviewing basic German with another student. Daytime sessions only; hour to be arranged. For further information, call AT 6-0893.

LOST & FOUND

GLOVE - Lady's right hand, black leather, in Post Office.

Are you frantically searching for creative expression? Have no fear. We have captured that elusive quality in "A Thurber Carnival." It may be reclaimed at the Theater, on February 27, 28, 29.

Personnel Services - 3 Center Street