

Muller Makes Atoms Visible to Human Eyes

By SUE CONKLIN

Atoms have been a topic of discussion for 100 years, and now, after 19 years' research, Dr. Erwin Muller has been able to make them visible to the human eye.

Dr. Muller, a professor of physics, has invented a field ion microscope through which the regular array of atoms in a crystal lattice can be seen.

Dr. Muller announced the perfection of the microscope, which he has developed and perfected, at the 13th annual meeting of the Electron Microscope Society of America recently.

As a result of Dr. Muller's accomplishment, scientists now may observe the atomic structure of a surface where formerly they had to depend

on theoretical interpretations of experiments for their knowledge of the average arrangement of atoms.

Because of their minute size, atoms have eluded the most powerful optical and electron microscopes.

Dr. Muller first developed an electron emission microscope with which he could see a few of the larger atoms. This did not satisfy him, however, and in 1951 he developed a positive ion microscope. This brought him close to his goal. Recently he perfected the emission microscope by coding temperatures in the ion microscope.

Pictures Were Blurred

His best field emission microscope in the past presented only blurred pictures of some large-size atoms, widely scattered over the surface, but now all the atoms that constitute the surface of his specimen can be clearly seen. This achievement offers wide possibilities for research in metallurgical fields.

Dr. Muller's field ion microscope is able to magnify up to 5 million times. Although this microscope would not be used for bacteria, if a bacteria specimen were magnified by this amount it would appear the size of an elephant, according to Dr. Muller.

The microscope works at a temperature of minus 300 degrees Fahrenheit. Dr. Muller's earlier microscopes enabled him to develop a theory which showed him that lower temperatures would aid in getting greater magnification.

Teaches Graduate Physics

Dr. Muller said he only teaches one course, a graduate physics course. He works with students working for their graduate degrees, but spends most of his time doing research.

The development of the new microscope meant the realization of a goal he has been striving to reach for 19 years, from the time in 1936 when, as a young physicist in Berlin, Germany, he developed the first field emission microscope.

A native of Berlin, Dr. Muller was a pupil of Nobel Prize-winner Gustav Hertz. After the war he worked at the Kaiser Wilhelm Institute in Berlin and was a professor of physics at the Free University of West Berlin. Dr. Muller and his family came to the United States in 1951. He joined the University faculty in 1952.

Dr. Muller said he plans to remain in the United States.

IFC—

(Continued from page one) The Lion should be guarded in lieu of the damage done to the University of West Virginia campus last week by Pitt students.

In conjunction with the IFC action, William Moyer, IFC secretary-treasurer, issued the following list of fraternities and the hours they are scheduled to guard the Lion shrine. If fraternities cannot be at the shrine at the scheduled time, they are to call William Moyer at Delta Upsilon fraternity.

Schedule

Monday night: 10-11 p.m., Phi Gamma Delta; 11-12 midnight, Sigma Pi; 12-1 a.m., Acacia; 1-2 a.m., Theta Chi; 2-3 a.m., Sigma Phi Alpha; 3-4 a.m., Sigma Phi Epsilon; 4-5 a.m., Delta Sigma Phi; 5-6 a.m., Delta Upsilon; and 6-7 a.m., Delta Tau Delta.

Tuesday night: 7-8 p.m., Alpha Chi Rho; 8-9 p.m., Phi Kappa Phi; 9-10 p.m., Alpha Phi Delta; 10-11 p.m., Kappa Delta Rho; 11-12 midnight, Alpha Epsilon Pi; 12-1 a.m., Alpha Gamma Rho; 1-2 a.m., Alpha Phi Alpha; 2-3 a.m., Alpha Rho Chi; 3-4 a.m., Alpha Sigma Phi; 4-5 a.m., Alpha Tau Omega; 5-6 a.m., Beta Sigma Rho; 6-7 a.m., Beta Theta Pi.

Wednesday night: 7-8 p.m., Chi Phi; 8-9 p.m., Delta Chi; 9-10 p.m., Delta Sigma Phi; 10-11 p.m., Delta Theta Sigma; 11-12 midnight, Pi Kappa Alpha; 12-1 a.m., Kappa Sigma; 1-2 a.m., Theta Kappa Phi; 2-3 a.m., Triangle; 3-4 a.m., Kappa Alpha Psi; 4-5 a.m., Sigma Alpha Mu; 5-6 a.m., Alpha Zeta; and 6-7 a.m., Lambda Chi Alpha.

Thursday night: 7-8 p.m., Phi Delta Theta; 8-9 p.m., Phi Epsilon Pi; 9-10 p.m., Phi Kappa Psi; 10-11 p.m., Phi Gamma Delta; 11-12 midnight, Phi Kappa; 12-1 a.m., Pi Kappa Alpha; 1-2 a.m., Phi Kappa Sigma; 2-3 a.m., Phi Kappa Tau; 3-4 a.m., Phi Sigma Delta; 4-5 a.m., Phi Sigma Kappa; 5-6 a.m., Pi Kappa Phi; and 6-7 a.m., Phi Mu Delta.

Friday night: 7-8 p.m., Delta Upsilon; 8-9 p.m., Sigma Alpha Epsilon; 9-10 p.m., Sigma Chi; 10-11 p.m., Sigma Nu; 11-12 midnight, Tau Kappa Epsilon; 12-1 a.m., Phi Delta; 1-2 a.m., Theta Delta Chi; 2-3 a.m., Theta Xi; 3-4 a.m., Zeta Beta Tau; 4-5 a.m., Delta Sigma Lambda; 5-6 a.m., Beaver House; 6-7 a.m., Phi Gamma Delta.

Counseling—

(Continued from page one) DIR, the admissions office testing program, the extension centers testing program, the course placement testings programs, the education 105 reading and study habits improvement program, the national vocational testing programs, the freshman faculty advisers, and the freshman orientation program.

'S' Club to Meet Tomorrow

All varsity letter winners are urged to attend the Varsity "S" Club meeting at 8:30 p.m. tomorrow at Theta Kappa Phi, according to Dean Mullen, president of the club.

Neyhart Cites High Auto Death Rate

By NANCY SHOWALTER

Amos E. Neyhart, administrative head of the institution of public safety, University extension, told the Faculty Luncheon Club yesterday that one million people have been killed in automobile accidents in the approximately 50 years Americans have been driving.

"If the accident rate continues to climb as it has been, the second million will be killed in the next five years," he said.

Neyhart teaches teacher preparation for driver education in the United States, Canada, Hawaii, and Cuba, and is also consultant and writer for the American Automobile Association.

He started the first driver training course in the country in 1931 at the University, and the first teacher-preparation course for driver education in 1936.

The main causes of accidents are human shortcomings, such as:

- 1. Unfavorable inherited per-

sonal character traits such as mental, emotional, and physical makeup

- 2. A lack of traffic knowledge.
- 3. A lack of driving skill.
- 4. The increase in a devil-may-care attitude concerning driving.

However, these shortcomings can be overcome by capable drivers who have passed a stricter and more thorough examination for the operator's license and, after passing, would take a yearly re-examination.

He cited the example of a test conducted in Ohio which proved that 600 of the people who had driver's licenses were also receiving checks for the blind.

An important phase of the examination would be an interview with a psychiatrist employed by the traffic motor vehicle department in each town, who would determine if the applicant were mentally capable of operating a car.

He also advocated the spot checking of automobile safety features, as well as the yearly compulsory vehicle inspection

3 Groups To Sponsor 1st Fireside

Leonides, the Association of Independent Men, and the University Christian Association will sponsor the first in a series of coed firesides at 7:30 p.m. Wednesday in Simmons Lounge.

Glen Elder, junior in agriculture education from Centerville, will speak on a "Tour of Europe" and will show color slides of his trip last summer through Great Britain, France, Germany Switzerland, Italy, and the Netherlands.

Judith Pendleton, president, announced last night that the S-Club, which has been sponsoring a series of dancing lessons for men, has asked 35 independent women to help with the final lessons to be given Nov. 28, 29, 30, and Dec. 1. The lessons are held in the Hetzel Union Building.

Miss Pendleton also announced that she will make unscheduled visits to unit meetings regularly held by Leonides representatives in their respective dormitories. She explained that a more personal contact with independents might help to erase the feeling of working with a "non-entity."

Arabel Wagner, chairman of the Leonides Mardi Gras booth committee, reported to the council that the Leonides booth earned \$16, but that expenses ran to \$14.04. Mortar Board had given the group \$5.00, leaving a balance of \$9.04 to be paid out of the Leonides treasury.

Two Football Teams Due From Pittsburgh

Two special trains carrying approximately 1300 University of Pittsburgh student and faculty members will arrive Saturday for the football game.

The Pennsylvania Railroad trains will travel on the Bellefonte Central lines from Bellefonte to State College. The PRR will use the Bellefonte Central's diesel power to bring the trains into State College.

Members of the University of Pittsburgh faculty will travel on the first train. The Pitt team will return to Pittsburgh on one of the trains.

Eisenhower Praises Television Education

Closed-circuit television in colleges and universities today may well be the greatest single aid to both resident instruction and adult education devised in this century, Dr. Milton S. Eisenhower, president of the University, said in a quote to the New York Times Sunday.

This method, which is not sent out to the general public,

is appearing on the nation's college campuses as a partial solution to the growing shortage of personnel. Through the TV hook-up a professor can lecture to several classes at the same time.

60 Now in Use

Sixty closed-circuit installations are now in use in American schools. Many institutions of higher learning are teaching television techniques.

Teaching techniques in ten courses have been especially adapted for television here at the University, according to the Times. Among the courses taught are general psychology, chemistry and the psychology of marriage.

This fall the University has broadened a research project, begun last year, to compare the effectiveness of conventional instruction with the same instruction presented over closed-circuit television.

Some 2500 students are taking the TV courses.

Experiments Prove Useful

Experiments in this method may prove useful to extend the effectiveness of the individual teacher and improve the quality of instruction, meet the teacher shortage, and make it possible to raise faculty salaries by extending the individual teacher's effectiveness.

According to a report issued by the American Council on Education's committee on television last week, teachers' colleges are developing a two-fold interest in educational television.

TV Enables Observation

They are teaching its use as a medium of instruction, and are finding that through a closed circuit television they are able to observe teaching demonstrations at close range without actually being in the classroom. This permits discussion among observers without interruption of the class being taught.

Dr. Clarence R. Carpenter, professor and head of the department of psychology, will report on the television experiment at meetings of the American Association of Land-Grant Colleges and Universities in East Lansing, Mich., this week.

Frings Will Open Evolution Lecture

Hubert W. Frings, professor of zoology, will speak on the unifying concepts of modern biology at the first in a series of four evolution lectures to be held at 7:30 tonight in 214 Frear Laboratory.

The four lectures, sponsored by the Zoology Society, will cover the biological, sociological, and religious aspects of evolution.

At the second lecture, scheduled for Nov. 29, Paul Grun, assistant professor of genetics, will discuss the manner in which the evolution of plants and animals has occurred.

thought of SPUDNUTS? 30 DIFFERENT VARIETIES

- Breakfast ●
- Coffee Break ●
- Dessert ●
- Snack ●
- Any Party ●



AD 8-6184 Phone 1 day ahead

Time Is Running Out
Last Two Performances
This Weekend!

The Rainmaker
Friday and Saturday
● Center Stage ●

Flashcards—

(Continued from page two) tators will be able to see the flash cheers.

According to the new plan a cheerleader, probably the head cheerleader, will call the cheers to the 660 students seated in the section.

Delphi, Cwens to Coordinate

The committee plans for Delphi and Cwens to be aisle coordinators if they accept the plan. They will distribute plans and cards to each of the students seated in their rows. With these plans a student has only to look at the number of the cheer called and his plan sheet will tell him what color card to hold up. The aisle coordinators will sit on the end of the aisle.

Two students will also be in charge of distributing the plan sheets to the members of Delphi and Cwens according to the plan.

Freshmen sitting in the flash-card section may count it as a minor activity. The committee expressed the feeling that the plan would work better with freshmen than with seniors because they felt the freshman class has more spirit.

Fellowship Plans Open House

Roger Williams Fellowship will hold an open house at 7 tonight at the home of the Rev. Earl F. Spencer, 417 W. Hillcrest avenue.

CLASSIFIEDS

FOR SALE

MINIATURE BINOCULARS, six power. Cost \$35. Will sell for \$15. Call AD 8-9555.

ENGLISH BICYCLES: 1 man's and 1 woman's 28 inch. Both with U.S. tires. Will sell separately.

BASS VIOLIN, flat back, excellent tone—\$80. Call Stan AD 8-9666 after 5 p.m.

'46 MERCURY 4-door sedan, radio, good rubber. Call Stan AD 8-9666 after 5 p.m.

1941 DODGE, excellent condition, reasonable price. Radio and heater. Call Dave Moskowitz AD 7-2941.

A CONN TENOR Sax and AB 8-point hydroplane. Both good shape. Ask for Fred, 314 Pugh St. Phone AD 8-8708.

1946 76 OLDSMOBILE. Good tires, heater, back-up lights, turn signals. Call AD 7-7246 after 5:30 p.m.

PROMPT, PROFESSIONAL Radio and Television Service. Batteries for all portable. State College TV, 282 S. Allen St.

1929 CHRYSLER 2-door sedan, second owner. Good condition. \$50 for quick sale. Phone AD 7-4008.

1940 FORD 2-door sedan; recently completed 1400 mile trip. \$50. AD 7-4008 ask for Bob.

ROOMS FOR RENT

SEATS FOR Stan Kenton concert, Friday Nov. 18 at 8:30 p.m. only \$1.50 at HUB desk.

THIRD FLOOR single room, medium size and 1/2 double 1st floor—2 blocks from campus 217 E. Foster. AD 7-3488.

LOST

RONSON PENCIL-LITER—Friday in HUB or Osmond. Finder call Chuck ext. 296, ask for Chuck.

BOTANY NOTEBOOK Nov. 3. Call Pixie ext. 1091.

ONE PAIR of glasses, black horn rims without case in the HUB. Call Bob AD 8-8755.

FOUND

MODEL AIRPLANE found near beef barn. Person may claim by paying for this ad. Call Jay ext. 263.

WORK WANTED

TYPING—accurate and reasonable—theses, term papers. Call Univ. ext. 2150 or 2137.

THEMES, MANUSCRIPTS and theses accurately typed. Reasonable rates. Phone AD 7-7147.

HELP WANTED

FIGURE SKATER to teach nine-year old girl two hours per week. \$1.00 per hour. Phone AD 7-2512.

MISCELLANEOUS

HI FIDELITY—the latest in good music listening at Shade Associates, 234 E. College Ave. Open evenings. Hear how WDM sounds over the amazing little Granco FM receiver (only \$29.95).

WE PHOTOCOPY discharge papers, marriage licenses, drawings, maps, thesis papers. Evenings and Saturdays by appointment. Phone AD 7-2304.

WHEN YOUR typewriter needs service just dial AD 7-2492 or bring machine to 638 W. College Ave.

PHOTO COPY Service. We copy everything but money. Everything for the artist. Open evenings. Call AD 7-3364.