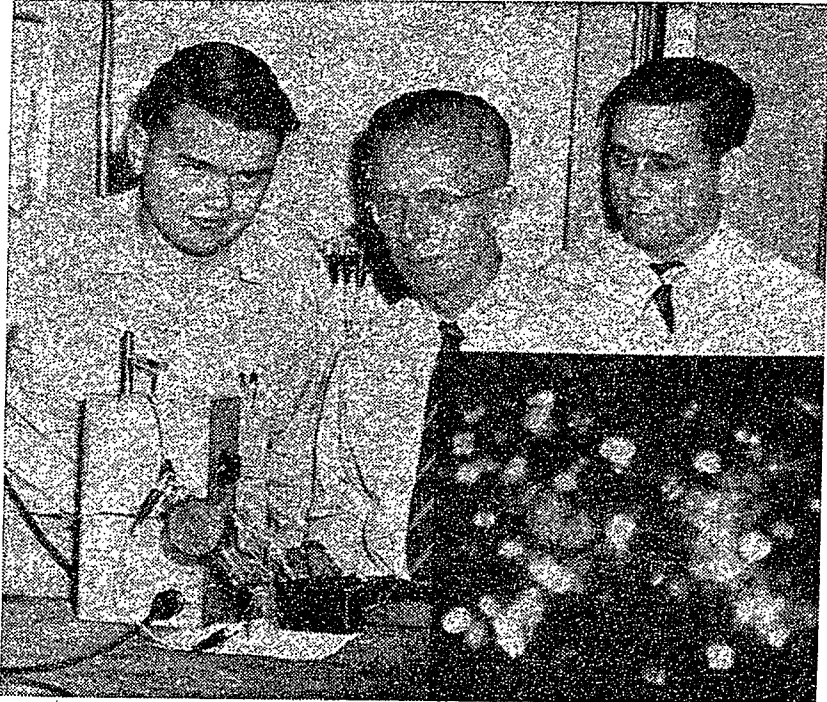




Atoms Exposed



SOME OF THE very small white dots in the inset are atoms of phthalocyanine as seen by the atom microscope invented by Dr. Erwin Mueller. The microscope is shown in the larger picture with its inventor and two graduate students in physics. They are, left to right, Walter Pimbley, Dr. Mueller, and Earl Cooper.

Simplicity Keynotes Atom Microscope

By DON SHOEMAKER

Ever since man developed the atomic theory, he has been striving to catch a glimpse of the elusive little particles on which he based his theory.

Until 15 years ago, it was impossible. Then Dr. Erwin W. Mueller, now professor of physics at the University, invented his atom microscope.

Now we know for certain that there are such things as atoms.

The keynote of Dr. Mueller's invention, technically known as a field emission microscope, is simplicity. It works on the same principle as a television picture tube.

The microscope itself is a vacuum tube, which resembles a large electric light bulb in both size and appearance.

Sealed into this tube is an extremely fine needle made of the metal which is under study. The needle, which is about four-millionths of an inch in diameter, is pointed at a fluorescent screen at the opposite end of the tube.

When approximately 5000 volts are applied to the needle, electrons stream away from the point and strike the fluorescent screen, mapping out a picture of the needle's surface.

Using such a small needle, the microscope can magnify the surface of the needle from 100,000 to 1,000,000 times. The picture is

(Continued on page eight)

'Who's in News' Fees

Philip Austin, editor of "Who's in the News at Penn State," said yesterday that students who have been chosen for the book and fail to pay the required \$2.50 fee will not be included in the publication. The deadline for returning acceptance sheets is Dec. 12.

Bed-Ridden Pope In Grave Condition

VATICAN CITY, Friday, Dec. 3 (AP)—Pope Pius XII has suffered severe collapse, with a weakening of the gallant heart that has served him through 55 years of priesthood. Early today there was grave anxiety for his life.

Through the night, troubled Romans gathered in spacious St. Peter's Square and knelt on the cobblestones to pray for recovery of their Pope and bishop.

The Vatican's vicar general, Clement Cardinal Micara, urged the world's 425 million Roman Catholics to join in the prayers.

Members of the Pope's family, the Pacellis, were near his bedside in his simple white-walled bedroom.

Dr. Riccardo Galeazzi-Lisi, physician to the 78-year-old pontiff, was constantly at his side. He had made emergency X-rays and called in a surgeon for consultation.

The Pope had been ill before in the nearly 16 years he had

headed the church, but never so gravely.

This illness—starting as a recurrence of the gastritis and hiccupping that sapped the Pope's strength last winter—became serious last weekend. His collapse yesterday weakened his heart, and there also was an indication that his condition was aggravated by an ulcer.

He was extremely weak and had been unable to take any food by mouth for several days. His physician yesterday afternoon described the Pope as conscious and completely lucid. But apparently he was unconscious for a time after his collapse.

Cabinet OK's Addition To NSA Appropriation

By DON SHOEMAKER

All-University Cabinet last night approved a \$70 addition to the National Student Association budget for this year.

Helen Sidman, acting NSA coordinator in the absence of Janice Holm, asked the additional appropriation to cover expenses to the two regional conventions this year.

An allotment of \$600 was made by Cabinet for this year's budget. However, because of the National Convention held in September, the budget was left with a balance of \$10.11.

Board Asks Probation For 9 Men

By TED SERRILL

The Association of Independent Men's Judicial Board of Review last night recommended office probation for six students and board probation for three others.

Six students, five of them residing on the second floor of Hamilton Hall and one in town, received office probation for launching makeshift homemade rockets from a second floor window across the court between Hamilton and Thompson Halls.

Three other students residing in Nittany Dormitory 41 received board probation for inflicting damage to a students' room and generally causing a disturbance.

Use Straws

One of these, a third semester student who was given disciplinary probation by the board last semester, received a recommendation of suspension from the University by the board which further decided to suspend this sentence although it will be enforced in the future if the student gives good cause.

The story heard by the board concerning the making of makeshift rockets was that four first semester students and one fifth semester student, along with a sixth semester town student, used straws from a Waring Hall dining room packed with gunpowder that they lit and launched from their second floor window on the evening of Nov. 23.

Knew Of Danger

The gunpowder belonged to the sixth semester student who had left it in the room several days previously. It was brought out by the board that this student frequented the West Dorms, particularly this floor, perhaps sometimes causing disturbances on the floor.

Upon questioning all the students admitted knowing that there was danger to some extent in leaving the open can of gunpowder in the room while they lit the "straw-rockets." They also admitted thinking that it was against dormitory regulations to make and launch such rockets but that in the excitement of the affair they hadn't made a move to stop.

The rockets, they said, were not dangerous and they had stationed some students below the window

(Continued on page eight)

Miss Sidman said that when the original appropriation was made, Miss Holm was given to understand that expenses for the national convention were to come out of last year's budget. However, since NSA budgets are in effect from July 1 to June 30 of each year and the convention was held in September, the convention expenses must come out of this year's budget.

A motion made by Robert Dennis, president of the Association of Independent Men, at the last Cabinet meeting, that the convention expenses be placed on last year's budget was passed by Cabinet.

Expenses Illegal

However, since this would be illegal under the budget set-up, the motion was rescinded and Cabinet approved the additional appropriation.

The additional appropriation includes \$30 for the fall regional convention, to be held at Rosemont College, Philadelphia, Dec. 10 and 11, \$35 for the spring regional convention, and \$5 for miscellaneous expenses.

Current expenditures to date include \$368.42 for expenses to the national convention, \$219 for national and regional dues, and \$2.47 for miscellaneous expenditures, making a total of \$589.89.

Dennis Amendment

In other action, Cabinet referred an amendment by Dennis on the procedure for determining substitutions on Cabinet to the committee on constitutional revision. Dennis' amendment states that members of Cabinet shall be as outlined in the constitution, or their duly appointed representatives.

The amendment was up for its second reading, but since the All-University constitution is in the process of being revised. It was felt that the amendment should be referred to the committee.

Expansion Plan OK'd By Senate

University Senate yesterday passed a report recommending that the administration and Board of Trustees formulate, adopt, and implement an over-all plan for the expansion of the University which will provide an increasing resident student body on the main campus of at least 18,000 by 1970.

The report was submitted by the Senate Committee on Educational Policy.

To support the recommendation, the committee pointed out that in the years immediately ahead there will be a large increase in the college age population. The group further stated that the University has the obligation of providing the "land grant college" type of liberal and practical education for the citizens of Pennsylvania.

In a second report from the Educational Policy Committee, which Senate passed, the group recommended general purposes and obligations of the University. The report set down two major purposes for the establishment of the University:

1. "To provide the type of education which many citizens felt was most needed and effective for the personal and cultural growth of their children, and which was not being offered by the forty or more colleges then in existence in the Commonwealth."

2. "To provide a college education on a more democratic basis for the children of farmers and other nonprofessional groups at a cost which they could afford to pay."

Campus Chest Drive Early Returns Poor

With only one more day remaining in the 1954-55 Campus Chest drive solicitors lack \$6250 of attaining the \$7250 goal.

The \$1000 collected during the first two days of campaigning represents approximately 16 per cent of the goal, tabulations chairman John Brunner said last night. This amount closely parallels that turned in during the first two days of the drive last year.

Kappa Alpha Theta is leading sorority contributions with 100 per cent or \$70. No returns had been received from fraternities as of last night.

Leonides Have \$225

The winner of competition between the four student groups, Interfraternity Council, Panhellenic Council, Association of Independent Men, and Leonides will be announced in the Daily Collegian on Saturday. So far Leonides is leading with \$225.

On the first day of the campaign approximately \$270 was collected.

Fifteen welfare organizations will share in the money collected by this year's chest. Eight of them are local, the other seven are national. Local groups will receive 57 per cent of the total proceeds, national groups will receive 37 per cent, and the remaining five per cent will be retained by the chest for operational expenses, Ellsworth Smith, general chairman, said.

Other officers of the chest are

John Robinson, solicitations chairman; Ann Lederman and Joseph Cutler, special events; and Ruth Grigoletti, secretary.

District solicitations chairmen are John Riggs, dormitory men; John McMeekin, fraternity men; Herbert Jordan, town men; Miss Grigoletti, independent women; Marjorie Seward, town women; Marian Wildman, sorority women; and George Dougherty, commuters.

Soliciting Groups

Besides representatives from I.F.C., A.I.M., Leonides, and Panhel, four other groups are included among the 400 solicitors. They are Alpha Phi Omega, national service fraternity, and Blue Key and Androcles, both junior men's hat societies.

Last year the goal was to get 100 per cent participation, rather than a specific monetary figure. Students contributed approximately \$6000 to the 1953-54 campaign. Brunner said this year's goal was based on last year's contributions, taking into consideration the increased enrollment at the University.

WDFM Audience Is About 2400

The estimated possible listening audience of campus radio station WDFM is 2400 students, or one-fifth of the student body, according to David R. Mackey, general manager for WDFM.

As soon as three new transponders are installed in Grange, Woman's Building, and Nittany dormitory units, 1500 more students will be able to listen to WDFM, Mackey said.

The transponders convert the station's FM signals to AM signals which can be received on ordinary radio sets, and are being tested at present.

Students may not be able to receive WDFM regularly until the transponders are perfected.