

## Volcker warns of growing threats to economy

WASHINGTON (AP) — Federal Reserve Chairman Paul Volcker yesterday warned of "strain, imbalance and danger" in the U.S. economy and once again urged Congress to do something about soaring federal budget deficits.

The chairman of the nation's central bank said the United States had enjoyed a relatively strong economic recovery for 2½ years with low inflation, but he said budget and foreign trade deficits were posing a growing threat.

"The inherent strength of our economy and the momentum of our expansion have carried us a long way," he said in testimony before a House Banking subcommittee. "But we also do not need to look far to see signs of strain, imbalance and danger."

Volcker's comments came a day after the cen-

tral bank revealed that it had boosted one of its key money supply targets for the rest of 1985, a move interpreted by many as giving the Fed more leeway to continue an easy credit policy designed to foster a rebound in economic growth.

However, Volcker told the House panel that the central bank was reaching the limits of what it could do through monetary policy to keep the economy thriving.

"We are dealing with a situation marked by gross imbalances that can neither be sustained indefinitely nor dealt with successfully by monetary policy alone," Volcker said.

Volcker and many other economists believe that huge federal budget deficits have driven interest rates higher than they otherwise would have been, attracting foreign investment which has kept the

U.S. dollar at high levels. The strong dollar has in turn given the country record trade deficits by making imports cheaper and U.S. exports tougher to sell overseas.

The trade and budget deficits are currently being handled by "piling up debts abroad in amounts unparalleled in our history," Volcker warned.

"When we are living on this much borrowed money, we are also living on borrowed time," Volcker said.

Responding to a question, Volcker repeated an assertion he made earlier this year that Congress needs to cut the \$200 billion deficit by \$50 billion in 1986 to have a favorable impact on financial markets.

## Elms being sprayed to control beetles

By NAN CRYSTAL ARENS  
Collegian Staff Writer

Pesticide spraying was scheduled to begin last night along campus malls and around Old Main in an attempt to combat the bark beetles spreading Dutch elm disease.

Ardath Johnson, coordinator for information services with the Office of Physical Plant, said yesterday that weather permitting, University ground crews would begin spraying at 9 last night.

This is the second pesticide spraying this year for University elms, she said.

The crews will use methoxychlor — the chemical they have used for several years to control the beetles, Johnson said.

Johnson added that spraying will continue Tuesday at 6 a.m. when helicopters will spray all campus elms and many of the elms in town.

However, bad weather could postpone the spraying because the pesticide cannot be administered in the rain, fog, or wind, she said.

The spraying became necessary when University tree specialists discovered the five diseased elms cut down on campus earlier this week were infested with the bark beetles, which can spread deadly Dutch elm disease to healthy trees.

John Peplinski, coordinator of the University's Plant Disease Clinic, said that when beetles live in trees infested with the Dutch elm disease fungus, they can spread the disease to healthy trees when they fly away to feed.

"When those beetles emerge (from under an infected tree's bark), they are likely to be covered with (fungal) spores and they could fly to nearby trees and infect

them," Peplinski said.

Two of the five trees cut down on campus were confirmed to have Dutch elm disease, while the remaining three were suspected of harboring the disease, he added.

"Chances are, all five have it," Peplinski said.

Johnson said the spraying next Tuesday will cover a one half mile radius from the infested elms and will focus on elm stands around Old Main, on Burrows Road, College Avenue, the Grange Building, Ritenour Health Center, Eastview Terrace McKean Street and Hastings Road.

"We're just going to spray all of campus," she added. "These are the larger concentrations of elms — there are also isolated elms that will also be sprayed."

Marcus Schneck, University public information officer, said although there was less danger of the spray penetrating the foliage now than during early spring sprayings, he advises people not to park their cars along the spray routes between 6 a.m. and about 8:30 a.m. Tuesday.

Johnson cautioned people living in residential areas who have children not to leave toys outside during the spraying.

Johnson said the spraying was part of the University's overall program to prevent the spread of Dutch elm disease, which threatens the 300-plus elms on campus.

Chiko Haramaki, professor of horticulture and chairman of the University's Tree Commission, said "the preventive maintenance is working."

"Until we had this outbreak where (the disease) was spreading through the root grafts (along the Mall), we were finding about one diseased tree per year," Haramaki said.



Mathematician Paul Erdos speaks to a standing room only crowd in 101 Kern Building on Tuesday afternoon. During his lecture, Erdos described mathematics as an art form. But unlike painting and music, he said, mathematics is a cumulative art form — new generations build on work done in the past.

## Lecturer exults the joys of math

By NAN CRYSTAL ARENS  
Collegian Staff Writer

The lecture room was packed. Every seat was taken and late-comers were forced to sit on the floor or stand in the back, straining to hear. But it was not a politician or entertainment personality who drew such a crowd to Kern Building on Tuesday, it was a 72-year-old mathematician named Paul Erdos.

"Despite my age, I will manage to finish my talk," Erdos said, hobbling to the chalkboard in a worn pair of leather sandals.

At the beginning of his talk, Erdos complained of a sore ankle, which made walking or even standing painful. Half way through his lecture, however, he returned to the microphone and with a very broad smile said: "Mathematics is wonderful, isn't it. This is so interesting, I have forgotten all about my ankle."

And for Erdos, mathematics is wonderful, magical and a little spiritual.

Erdos described mathematics as an art form that could stand alongside painting, sculpture and music. But unlike painting and music, mathematics is a cumulative art.

"You can't look at a painting by one of the great masters or even the cave paintings, which are 20,000-years-old, and say that today's art is better," he said.

However, mathematics is cumulative — each new generation builds on work done in the past.

"Any student today can do better than Newton or Euclid," Erdos said. "Once you have found the proof it always looks much easier."

"Finding the simplest proof for a difficult mathematical theorem can be made easier by a large book Erdos claims is in the hands of God.

"God has a . . . book with all (mathematical) theorems and their simplest proofs. If (God) looks favorably on us he shows us the book for a moment," Erdos said. "You don't have to believe in God, only the book."

Erdos' talk on finite mathematics and number theory was laced with favorite jokes and anecdotes about his travels — his mind flashing back and forth between the two polar topics as if they were completely compatible in his mind.

After outlining one mathematical proof on the chalkboard, Erdos returned to the microphone and said "You know, I'm really 2.5 billion-years-old."

"When I was the age of most of the people in this room," Erdos explained, "the Earth was two billion years old — but it was very difficult to determine the age. Now, they say the earth is 4.5 billion-years-old so I must be 2.5 billion-years-old."

Erdos, who is the last of the world's itinerant scholars, has no home or family. He travels from university to university offering his help in solving difficult mathematical problems.

Steven Krantz, University professor of mathematics and Erdos' host in State College, said he carried all of Erdos' worldly possessions in two small sacks.

"Private property is a nuisance," Erdos said. He added that he did not miss not having a home or family, although his mother traveled with him before her death at age 91.

"My mother used to say, 'I don't travel because I like to, I travel to be with my son,'" Erdos said, adding that he was very close to his parents who were both mathematicians.

Erdos said he could not remember when he first became interested in mathematics.

"I was too young, I don't remember," he replied, adding that when he was very young and his mother was away he would play with the calendar.

"Then, suddenly, I knew how to calculate," he said.

Erdos said mathematics and music were similar art forms because they both produced child prodigies.

"If you have your natural ability you can do a lot very soon," Erdos said. "I was somewhat of child prodigy myself."

He recalled that when he was four-years-old he went to his mother and announced his revelation that 100 minus 250 equals 150 below zero. "That was quite nice for a four-year-old."

He added, however, that mathematics did not have to be mysterious and incomprehensible to the average person.

"It's like playing the piano," Erdos said, "everyone can do some but not everyone can play very well."

Before closing, Erdos made several comments about genius.

"Einstein said genius is 99 percent perspiration and one percent inspiration," he said. "In mathematics you don't have to perspire so much, your brain just has to be open."

Erdos said having an "open brain" means always being ready to accept new ideas and drop what you are doing to follow them up — a trait useful in all professions.

Perhaps having an open brain has made it possible for Erdos to publish over 1,000 papers during his career.

Krantz pointed out that for most mathematicians, 50 to 100 papers is a large figure for lifetime.

## Beads produced in space go on sale commercially

WASHINGTON (AP) — The first products manufactured in space for commercial use went on sale yesterday, good news for anyone who needs millions of microscopic latex beads.

The National Bureau of Standards said it has begun shipping vials of the beads to companies that can use them to calibrate special instruments that make or measure finely ground particles.

"They will be used to improve microscopic measurements made throughout the economy in electronics, medicine and other high-technology areas," Ernest Ambler, director of the bureau, told a news briefing.

The beads, each 10 micrometers or 1-2,500th of an inch in diameter, were made aboard the space shuttle Challenger using a chemical process developed by the National Aeronautics and Space Administration and Lehigh University in Bethlehem, Pa.

"This material is the first of what we expect will be a long line of products to carry a made-in-space

label," said NASA Administrator James M. Beggs.

Other products of space manufacturing expected in a few months or years include new classes of pure drugs to fight disease, perfect crystals for electronic components and new alloys, Beggs said.

NASA turned the beads over to the bureau so that they could be measured and certified for size. The bureau makes and distributes extremely pure and accurately measured materials to serve as references for industry.

The space agency said it turned to the bureau to sell the products because it already has a distribution system set up. The bureau has more than 900 different standard reference materials, or SRMs, available and sells about 40,000 units annually to industrial, scientific and commercial users.

The bureau said it will sell about 600 units of the space beads for \$384 each.



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