Southern Illinois University Carbondale OpenSIUC

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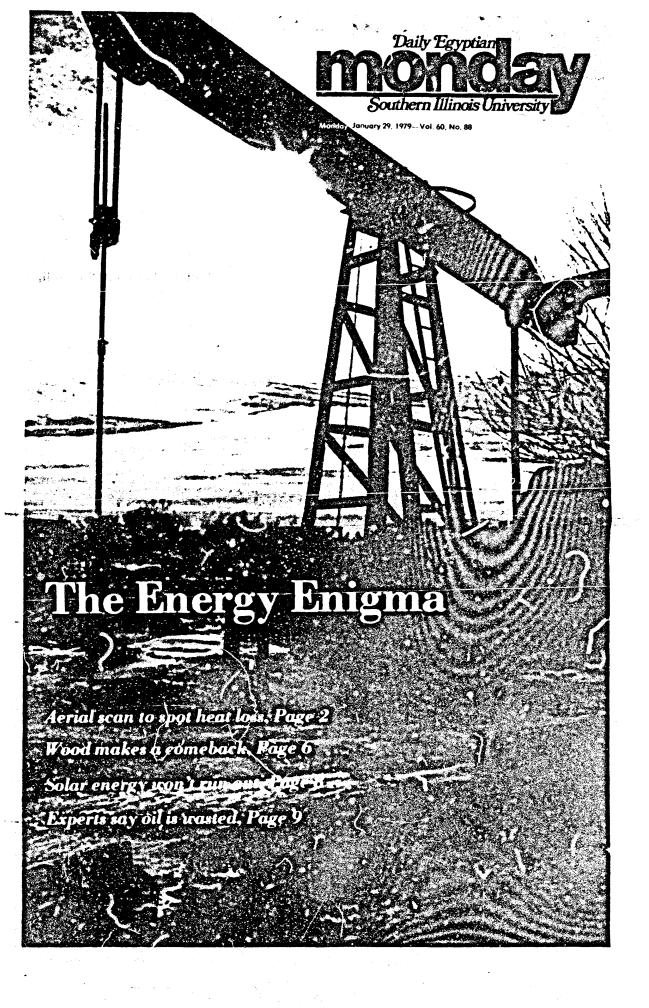
Daily Egyptian Staff

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City to be scanned for heat loss

By Ed Lempines Staff Writer In the scepts of a clear winter sight, a small plane coupped with space age infrared cameras glides silently over the sleeping comm-

inity. It passes over B passes over the city once, and then several times more, ist cameras clicking with precision 4s it collects photographs of every house of buildings of every house

collects photographs of every h use and building. With its mission accomplished, it flies silently on to its next destinative. The plane and its special mission-are not science fiction. They do not come from access in a new James Bond movie Bond movie

The plane is real, and it may be oming to Carbon he before the end f the winter. Its mission: to help ity residents cut down on energy omnumption and decrease heating city res bills.

bila. The City of Carbondale, with cooperation from SIU, is calling on this space age technology in an effort to make the mission successful. According to Assistant City Manager Bill Moss, an "infrared scan" of the city will allow city officials and residents to identify which Carbondale buildings are energy efficient.

identify which Carbondale buildings are energy efficient. Because infrared canteras are sensitive to heat, the aerial scan allows city officials to find, with pinpoint accuracy, which homes and offices are losing heat through their roofs and sidewalls. In an aerial scan, evergy efficient houses appear very dark, while a house which is lesing heat is much lighter. Moss said.

house which is lessing near is much lighter. Moss said. Whether the city will be able to have the scan done this year is uncertain, though. Moss said late last week that tentative arrangements had been made with Texas Instruments, Inc.

to have the heat loss survey done for Carbondale. But he said, the Dalizz, Texas-based firm has a backlog of requests which may force him to requests which may force nim so look for another company to do the

Not for another company to do the job.
In addition. Moss said, certain wather conditions are necessary for the scan to be effective.
For optimal results, temperatures should be in the middle 20s, with a clear sky and low relative humidity. The roofs of of the buildings to be somed must also be free of snow for the scan to accurately measure theheat loss.
"Idealty, we'll be able to have several uresentations where the public can come and inspect the juictures." Heading to hold a seminar on interpretation of the pictures. When the state is a seninar on interpretation of the pictures. When the city presentations are held, city officials or members of the shawnee Solar Project will beip people find their own homes and then explain the meaning of the photographs to them. "Anybody with a home with not much issued to see it." Moss said. "It's not a fonlprof system, but it can help people decide if they want more is ulation."

Situation." Situ is also participating in the infrared scan program, and according to Vice President for Campus Services Clarence Douglerty, the scan may enable the Univ sity to obtain building impro ement from the federal government. "The older buildings on campus were built at a time when energy was inexpensive and when the science of insulation was not fully developed." Dougherty explained. "It's important that we have this heat loss information in times of high energy costs."

Anothony Hall, the Parkinson Building and Pulliam Hall were too poorly insulated to be energy efficient.

The infrared photographs will al ine intrared photographs will also belp the city determine which houses may be eligible for housing insulation grant money distributed by the city's Division of Renewal and Housing. Moss said

and Housing. Moss said Low- and middle-income families who own their own homes are eligible for up to \$800 to pay for insulation if they meet the requirements for the grant. The infarred Flyover Program, which is being conducted by illinois institute of Natural Resources. The institute of Natural Resources. The institute of Natural Resources. The institute of the term of the US. Department of Energy. Funds obtained from the federal government are used in part to provide cities participating in the program with up to half of the cost of the aerial scan Moss said that Texas instruments, Inc. Sas agreed to do the veat loss survey for \$6,560. At that price, the 10-square-mile flyover program will cost approximately \$1.50 for every residence in Carbondale, he added. The institute of Natural Resources has pledge to pay a full \$0 percent of this cost, and according to Moss, help will be contag from other source.

806 rree

We asked the University and the "We asked the University and the Central Illinois Public Service Co. to participate in the program and provide a matching share of the cost," he said. "The University has agreed to pay one-third. But CIPS is studying the matter and hes not, yet given us a response." Mess said he believes that federal Community Development Block Grain m.ney will also provide some funds perhaps up to one-third of the cost.



The arrow on the left points to an er v efficient home in Carbondale. In this photograph of an infrared scan, homes that are losing heat appear white, like the house pointed to on the right.



Page 2, Daily Egyptian, January 29, 1979

Countries compete to harness fusion

By Deb Browne Staff Writer Fossil fuels are dwin:ling, Nuclear fission carries a radioactive threat. Solar power is undeveloped and many experts consider it unefficient. What s new? Fusion. The reaction that fires the sun. Some scientists call if the perfect solution to the energy dilemma. In laboratories in the United States, the Soviet Union, Western Europe and

laboratories in the United States, the Soviet Union, Western Europe and Japan, they are competing to harness nuclear fusion. The Energy Research and Development Admin-istration is spending 1430 million a year toward that difficult goal. The process gives hope because the fuel, satifwater, is in unimited and universal supply. And it leaves behind no by-product that can be used in dangerous weapons. In fact, fusion's primary by-product, he-lium, can be released into the atmosphere or sold for use.

atmosphere or sold for usc. E equals mc2. The same equation that explains the enormous amount of energy released in fassion, the splitting of atoms, governs energy production in fusion, which joins atoms together. In a fusion reaction, atomic nuckei of light elements like hydrogen collide and merge. The re-alting nuclear particles contain less mass than the sum of me original nuclei. In both fusion and fission, matter is converted into emergy.

lission, matter is converted into energy. Nuclei are easy to split, but dificult to fuse because atomic nuclei naturally repel each other. Therefore, causing large numbers of models to fuse requires formidable

conditions: --very high temperatures, to give the nuclei great velocity. --lugh density to crowd them together, increasing the chance that they will hit.

and to sustain itself. When these reovinements were first realized, they were beyond the capabilities of science. But experiments showed that two isotopes of hydrogen, deuterium and

tritium, wou'd fuse more easily than stable hydrogen. Because their nuclei have larger cross sections than hydrogen, the probability of direct collisions is increased, enabling rusion to occur with less carrene beat and density. Scientists have taken two appraches to creating the critical conditions necessary for fusion. A

to the energy problem .

Some scientists call it the solution

to fire lasers or electron beams onto iny pellets of fuel. Robert Zitter, a professor of physics who is re-sert-ing laser-induced chemistry, explained how laser-fusion may occur. The fuel, contained in glass balls about the size of the head of a pin, is the form all sides by a laser beam. The incredible heat produces a transformed into helium by fusion. Zitter said, and would then be transformed into helium by fusion. Zitter said, and would then be transformed into helium by fusion. Zitter said, and would then be transformed into helium by fusion. Zitter said, and would be used solely for experimental purposes. He 1 clives the eventual com-mercial fuel for fusion will be duterium which seems glentual-because one-eight gram of it taken from one gailon of sea water, can be converted into the energy equivalent of about X0 gailons of gasoine. But a combination of tritium and deuterium seems likely to be the orgunal fusion fusion in the form of electro-magnetic waves and high coeff narries when are

proven to be the easiest to fuse in preliminary experiments. However, controlled this to has not yet occurred. Energy input is still 100.000 times greater than output in fusion research. The earliest target date for a break-even point is 1982. Scientists expect Princetor's Plasma Physics Laboratory, which is being built without to be the first! Laboratory, which is being built currently, to be the first A successful fusion reaction by lasers is expected in the period between 1983 and 1985 After that nearly two decades of demonstration and pilot plant work will pass before electricity is generated by a commercial fusion plant.

OVERSEAS PUPILS LONDON (AP)--Overseas pupils at British public schools have become such big business an agency

... Professor offers energy saving tips

Phil Sonk as to

Staff Writter John Naas, assistant professor at the School of Technicai Careers, suggests caulking windows and placing weather stripping along door steps as two ways to make a home or apartment more energy efficient

Restricting heat loss through proper insulation can lower the high heating costs of December, January and February. On the average, 60 percent of annual heating costs are accumulated during these three months, Naas said. Naas said, putting plastic over windows is another easy and beneficial way to stop heat loas. The best alternative to producing more energy is to use energy efficiently, he said.



humidity in the room is 50 to 60 percent because the body does not have to work as hard to stay warm, he said.

he said. Trailers Jose a special problem because insulation regulations vary from northerm to southarm states, Nass said. "Trailers built in Mississippi are not designed (or the weather in Illinosi, 'Nass said. Underpinning is also necessary in trailers, he added. Although it is the most expensive. electric heat is preferred. Naass said, because it does not cause drafts like forced air furnaces. He added th-+ the source of heat is not as

important as the efficiency of the insulation. Naas said the popularity of coal as an energy source has risen

magnetic field has been used to contain the heated isotopes and deflect them from the vessel valies so that they do not iose velocity and cause a temperature drop. Most widely used are magnetic contain tent devices called "tokamaks," invented by Soviet

scientists in the early 1960s. Another technique being tested is

because of its abundance and cleanliness. Oil beating is cleanliness. Oil heating is inefficient, dirty and detrimental to

our economic and political situation. he said. Nuclear power, seen in the future as a viable energy source as is solar power, will be the best

alternative to conservation. Naas explained, because breeder reactor production of fuel can exceed fuel use.

Welcome Back Students

shockwave inward, microimplo-sion, which presumably causes fusion to take place. Zitter said. Energy is released from fusion in the form of electro-magnetic waves

the form of electro-magnetic waves and high speed particles, which are radioactive. The particles are then caught in a "neutron moderator," according to Zitter. A simple moderator, or wall, is carbon. Eventually, he said, the fusion furnace itself will become relingeding. furnace radioactive

'Carbon as a radioactive material "Carbon as a radioactive material doesn't pose that much of a radioactive threat." Zitter said. "You still have to dispose of it, but compared to the energy you get out, there is very little to dispose of." However. Zitter noted. "scientists are still on the first step." He, and nuclear experts, also say that very little radioactivity would be produced in the fusion process. Neutrons are used to create the fire

Neutrons are used to create the fire in a fission reaction. Zitter said, but neutrons are only a by-product of fusion

Radiusctivity may also be produced in the process of developing tritium, which is not found in nature. Tritium is formed

is being formed to act as a clearing-house for them. The agency will place foreign applicants at 1,050 recognized independent schools.



exhibits

Paintings from the University of linois art faculty will be displayed brough Jan. 31 at the Mitcheli and aner North galleries.

films

"The Grateful Dead," 7 p.m. and 9 pm. Thursday Friday and Salurday in the Stodent Center Auriterrum. Admession is 75 cents for the Thursday show and 31 for the Friday and Saturday suows. "Every Man for Himself," 7 pm. and 9 pm. Sunday at the Student Center Auditorrum Admission is 31. "God Against All," 7 pm. and 9 pm. Sunday at the Student Center Auditorrum Admission is 31.

The following films will be showing at less through Thursday. Check Daily Egyptian advertisements or call the theaters for show times.

"Every Which Way But Loose." Varsity Theat T. "The Lord of the Rings," Varsity

Theater. "King of the Gypsies," Saluki

Theater. "California Suite," Saluki

Theater "Moment by University 4 Theaters, "Animal House," I Moment."

University 4

Theaters. "Paradise Alley," University 4

Theaters. "Magic," University 4 Theaters. "Superman," Fox Eastgate "Superman," Theater

music

The Grateful Dead will perform 9 pm., Feb. 7 at the Arena. Remaining tickets will go on sale at 9 a m., Monday at the Arena Special Events Ticket Office. Tickets are \$8.50, \$8 and \$7.50.

shows

W. C. Field shorts. 8 p.m., Tuesday through Saturday at the Student Center: Video Lounge. Admission is 52 vents. The Chinese Circus, 8 p.m., Feb. 6 at Shryack Audii vrium. Tickets are \$7, 56 and 55 for the general public and \$6, \$5 and \$4 for students.

sports

Men's Basketball, SIU vs. Wichita Stale, 7:35 p.m., Monday at the

Rizie, 7:35 p.m., Monday at the Arena. Women's Basketball, SIU vs. University of Tennessee-Martin, 7:30 p.m., Friday at Davies Gym. Admission for students is 50 cents and for the general public \$2. Women's Gymnastics, SIU vs. University of Louisville, 2 p.m., Friday at Davies Gym. Men's Gymnastics, SIU vs. Northern Illinois, 2 p.m., Saturday at the Arena.

at the Arena.

Basketball, SIU Men's Bradley, 7:35 p.m., Saturday at the Arena

Women's Basketball, SIU vs. Indiana State, noon, Sunday at Davies Gym. Admission is 50 cents

for students and \$2 for the general public.

butter marsis. Baramarsis. Basketball free-throw contest. Entries due at noon Monday at the Recreation Building Preliminary rounds for the contest will be from 4 p.m. to 7 p.m., Tuesday and Wednesday at the Recreation Building

Wednesday at the Recreation Building. Mini-soccer captains meeting. 4 p.m., Tuesday in the Recreation Building, Room 158. Deadline to enter mini-soccer is at 5 p.m., Wednesday at the Recreation Building, Room 158. Fee is \$2. Table tennis singles entries are due at 11 p.m., Thursday at the Recreation Ruin²⁴ nor There is a \$1 returnable entry fee

Women's basketball free-throw finals 8:30 p.m., Friday at Davies

finals Gym.

wurkshops

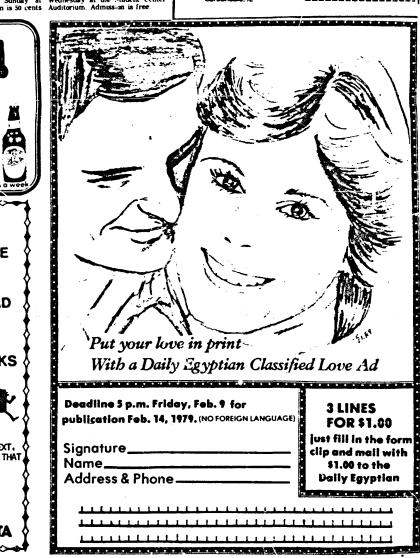
The Career Planning and Placement

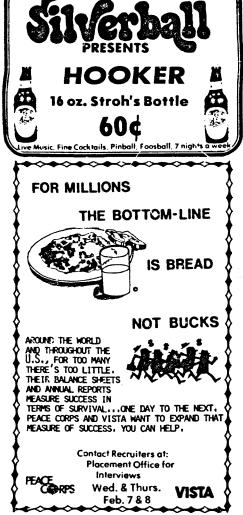
The Career Planning and Placement Center will sponsor: -an interview workshop from 1pm. to 2 pm., Wednesday. -a resume workshop from 10 a.m to 11 a.m., Thursday. -a government workshop at 11 a.m., Thursday.

plus....

Barbara Bowie, economics officer of the Bureau of Human Rights and Humanitarian Affairs, U.S. Depart-ment of State, will speak on 'The Human Rights Issue 'n the Carter Administration'' at 7:33 pm., Wednesday at the Student Center Auditorium. Admission is free.







Page 4, Daily Egyptian, January 29, 1979

'Lord of the Rings' film recreates Tolkien's fantasy

By Mike Reed Staff Writer If you've read J.R.R. Tolkien's classic trilogy, "The Lord of the Rings," you'll probably enjoy animator Ralph Bakhi's extraordinary version of life in Middle Earth even if it doesn't exactly coincide with what your own maginalism has continued up.

exactly coincide with what your own imagination has conjured up. If, on the other hand, you haven't read the novels, you'd better make plans to see this film with someone who has, or avoid it all together. With all the unusual names of characters and places, and the more than occassional lapses in plot structure, very much expla nation will no doubt be necessary. All that as de, the film version of "The Lord of the Rings" does a much better job of recreating Tolkers is iantasy than anyone had a right to expect even if some of the



details do seem to have been meedlessly discarded. Director Bakshi ("Fritz the Cat." 'Heavy Traffic" and "Wizards") knows he's playing with fire when he sets out to recreate the realistic characters and vivid setting that have alreacy taken on their various forms in the minds of millions. To the (Ilm's credit however, this seems to be among it's strongest points. Each of the characters has been presented in such a way that their image and personality is totally acceptable. In fact, the facial expressions in this film are probably the best in animation's history, with

especially good characters being made of the hideous Gollums and the

made of the hideous Gollums and the evil goblus. In order to give the setting a more surrealistic effect. Bakshi has relief on the blending of animation and ectual film footage in a style similar to that of "Witards". While this technique doesn't always work and occassionally even serves as a distraction, it is very effective in the

HOMECOMING QUEENS

MIAMI (AP)-Among the 51 finalists chosen as All-American Imainst crossen as Alt-American Homeconning Queens to ride in the Orange Bowl Parade here were five with a perfect 4.0 academic standing. The overall average for the group was 3.5. Academic excellence was one of

the requisites for representatives of colleges and universities in all 50 states and the District of Columbia AHMED'S

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numerous battle scenes. In snarp contrast, the use of bright colors and background subtletes were even more effective in setting the more festive occusions and providing occasional consedic relief. By the way, if you only got around to reading the first half of the books you won't be needing that interpreter after all. It seems "The Leart of the Binds" conditional base base Lord of the Rings" would have been

more appropriately titled "The Lord of the Rings, Part 1" with a sequel

of the Rings, Part 1" wrute a seque-sure to follow. While thas sort of misleading advertising can only be considered another public relations rip-off, "The Lord of the Rings" must still be considered at least a minor success if only because it achieved so much of its mammoth so much undertaking.

BEOG CHECKS AVAILABLE FOR SPRING SEMESTER

Basic Grant checks will be available in the Bursar's office. Checks will be available for those students who had turned in their eligibility reports by January 5 and had registered for spring semester by

January 12:

DATE	LAST NAME
Monday, January 29	P · Z
Tuesday, January 30	H - O
Wednesday, January 31	A - G

BEOG checks may be picked up at windows 4-10. You must bring your spring fee statement and ID card with you.

CHECKS NOT PICKED UP BY APRIL 29 WILL BE CANCELED

THE GOLD LINE

Lunch Special Hice of single ingredient . Deep Fan Fizza Salad

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Carbondale

'Classics at SIU' play to star liberal arts dean

By John Carter Staff Writer The unsectentious troupe from "Classics at SIU" is back for another semester of Friday-night drama and they're starting it off with Menander's "The Group." With Lon Sheiby, dean of the College of Liberal Arts, in the starring role, the play starts at 7:30 pm., February 2 in the Home Economics Building Lounge. "It was a matter of typecasing inat

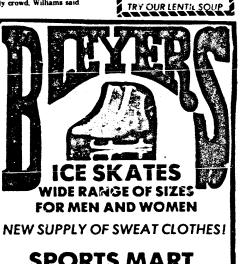
The pixy starts at 7:30 p.m., February 2 in the Home Economics Building Lounge. "It was a matter of typecasting inat got me the lead in tic." '29," Shelby said. "Everyone assumes that a dean is a grouch." Although most of the "Classic" productions are somewhat serious, "The Grouch" promises to be anything but that. The play is a "new" Greek comedy which examines the obnoxious character of Chemon, a grum by farmer who is irked by anyone that dares to waste any of his fishe. Annoying folk are always present, though because the land adjoining the farmer's is a haven for ral ble-rousing drunkards. The glot thickens when the farmer's daughter attracts a handsoine young man that the old man cannot stand. Flaring tempers ensue. In order to emance his character's klonyncratic behavior, Shelby said that has been working at blending the worst traits of the old farmer with those of the old dean. With his experience at the latter, Shelby expects the end product to be a "bonk." "The Grouch, "according to Rick Williams, "Classics at SIU" production manager, is not a run-of-the-m.id Greek play. It is, in fact, the

Winter is bonanza for snowy theives

Jor Shoury University of the Associated Press Hard-to-get anowhowers are disappearing in northern Indiana this snowy winter in a recent outbreak of thefts. Police said the besty snows which have crippled the northwestern corner of the state have pro-d to be a bonanze for thieves. Most retail outers sold out of snowblowers by fall, and new shipments are gone almost before they can be taken off the truck. Not only are snowblowers vanishing, but some motorists forced to abandon their cars are returning to find them stripped of just about every removable and salable part from batteries to rediators.



only su-viving specimen of "new" Greek -randy. Found beneath the sands of an Explain desert some 30 the Sparinas had conquered Athens in the late 5th century B.C. and scattered the population into the mountains. Greek theater then evolved away from using social and political jokes of the day as their primary sources of material. Dramatists began to write hypothetical, situational comedy and develop the comedy of errors. Admission to the production is free, as always, and refreshments will be served. Also, arriving early are performed for a standing-room-only crowd, Williams said



SPORTS MART EVERYTHING FOR THE ATHLETE 718 So. Ill. 457-6016 Carbondale, Ill.

The Student Center Is MAKING GOOD THINGS HAPPEN

On Friday, January 19th the Student Center and the Student Activities Center presented the 79 C Dale Strip. Student Center Open House. The activities included the Muddy Disco, a coffeehouse, food specials, bowling, the spring activities fair. Fentom Robinson with many more and of course it was all free. The Student Center staff thanks all of you who participated and for those of you who did not attend, we are sorry you missed it. The open house is just another way the Student Center is Making Good Things Happen.



the Muddy Disco is returning friday, Feb.16th and the Coffeehouse will also return fri., Feb23rd

Scientist opposes nuclear technology

Staff Writer He testified in favor of a bill that He testified in favor of a bill that would have stopped new nuclear plants from coming into Illinois. He picketed a nuclear reactor in Morris. II. And un 1977, he protested outside a ceremony honoring the 42 scientists who first achieved a nuclear chain reaction. So what makes 60-year-old Leo Seren. who speaks optimistically about the power of public optimion to eventually eliminate fission reac-tors, different from most other

turs, different from most other active enviror ntalists?

Seren was one of that group who, years ago, first controlled a sion reaction in Chicago. Later he 15 sophisticated directly on more sophisticated technology for the atomic bomb in Los Alamos, N.M.

In about the same proportions that one fissioned uranium atom gives off electron volts, (one atom to 200 million volts), radioactivit compounds as it is passed throug million radioactivity compounds as it is passed through the food chain. Seren cited studies which found radioactivity had increased a million fold as it passed from radioactive failout from nuclear testing, to water, fish, and finally, birds which at the fish. Seren faults the NRC for

suppressing studies which show that low levels of radiation exposure cause cancer. He cites articles which tell the stories of numerous scientists who have load government funding when their studies challenged government-accepted levels of radiation exposure. "It takes environmentahists and people who have no vested interest in maining these plants to publicize the information and set standards." Seren said. In principle, the

Seren said. In principle, the NRC has no vested interest, but, said Seren, "I'm not so sure. "In NRC has no vested interest, but, said Seren, "I'm not so sure. "In the long run, they want to see the plents continue, because only if they continue will they (the NRC) continue to function as a commission," he stated, withyat noting that about half the members of the NRC are former nuclear industry big wigs. "They sort of promote nuclear energy." he said. While Seren admits the recent slowdown of plant construction is a matter of economics. He credits slowdown of plant construction is a matter of economics, he credits vocal fission opponents for an influence which led to structer plant construction standards, which mue added to the increasing cost of nuclear energy. Illinois Power Co. y asked the Illinois Commission for a 14 recently

percent hike in electricity and gas rates to pay the interest on loans used to build the Clinton reactor. Inclement weather has been blanied

Inclement weather has been blanned for construction delays. Waste storage involved with nucleur reactors includes not only long-term containment of fission by-products, but also "decommissioning" of reactors when they become so radioactive that they are no longer safe for the employees

nployees. Decommissioning, which involves emp

Decommissioning, which involves building special machines to remove radioactive equipment without releasing radioactivity into the environment, must be done for each reactor after about 30 or 40 years. Seren said. He described the decommissioning that has already there also as terrible taker

Becommissioning that has already taker place as terrible. But Leo Seren's intense opposition of fission power gors beyond technical information. It comes from his conscience.

Now the retired scientist lives in a Now the retired scientist lives in a ('hicago suburb, pilots private business planes and does what he can to spread the word against nuclear weapons and reactors. For all his technical knowledge, Come attent his mechanistic suburged.

ren states his opposition simply: "You see, radiation and radio-See

active wastes are bad for living things," he explained in a December interview. "The fission process is an irrevocable process. Once interview. The ission process is an irrevocable process. Once radioactivity is created, there is no way to shut it off. Radiations will peretrate all mater and a certain amount gets through containment."

His biggest argument against nuclear fission as a primary energy source is that he does not believe the wastes have been, or ever will be,

handled properly. The problem of what to do with reactor by products has been "one terrible business," Seren said, and has been compounded by the Nuclear Regulatory Commission a lax regulations and the capitalistic practice of awarding contracts to the cheapest bidder.

the ch-sapest bidder. For example, Seren says that 10-foot walls of lead "would probably" prevent high-energy radioactive particles from leaking through containment. The Clinton reactor, still under construction about 40 miles northeast of Springfield, is encased in 3-foot-thick walls of encased in 3-foot-thick walls of concrete. "These things are going to be radioactive for thousands of years. We have no right to leave the wastes to future generations and take the energy now, it's not fair to

rho received a doctorate in physics with a specialization in cosmic rays at the University of Chicago.

University of Chicago. Radioactive rays emitted from isotopes of heavy metals can cause sickness. cancer and death, depending on the level of exposure. The effects of radiation exposure may also be passed on to future generations in the form of genetic emitted from unations

generations in the form of genetic mutations. Said Seren, "The bombing at Hiroshima and Nagisaki started a series of dramatic events that changed my hinking." His first child was born at that time, alive and well and healthy, as Seren put it, when thousands were dying lingering deaths from the radiation released by a bomb which he helped to develop. "It was just too much to contrast." A few weeks betr, a close friend died quickly from a levelal dose of died quickly from a levelal dose of critical." on began to fission without control. Lewis Stotan, another friend of Seren's, dropped a screwdriver of Seren's, dropped a scre into a pile of fissionable m. causing them to go critical into a pile of fissionable materials, causing them to go critical. He too received a fatal dose of radiation and died within a few weeks.

Natural gas efficient but costly

By Kathy Best Staff Writer

Staff Writer Until last year, the price of natural gas was "ridiculously low" and one of the nation's cheapest and most effecient energy sources, according to Dick Lambert of the American Gas Association. It is still one of the most efficient sources. Lambert said, but its price is rising to a level competitive with electricity and will continue to rise yearly.

between the set of the

available, he said. And with deregulation of prices and extended deep drilling limits, supplies should trillion

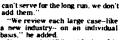
last "well beyond 3(10" However, Ed Joyce of People's Gas Company in Chicago, one of CIPN's five suppliers, was not so optimistic. "Generally, the major gas producing areas in the United Source are barred demonstration deput States are being drawn down." he said "While we have sufficient supplies for the immediate future. 10 years hence the picture is more clouded

cloided." Joyce said that People's Gas currently is a number of long-term projects on the drawing boards to ensure future natural gas supplies. He cited the Alaskan north slopes, foreign imports in the form of hquifed natural gas), coal gas-ification and new drilling in the Rocky Mountains as possible future supplies.

Rocky Mountains as possible inture supplies. But these projects, Joyce said, require huge amounts of dollars and new technology. "If we could see development of some of these projects on the horizon," he said, "the picture would change drastically." Despite the "cloudy" supply future, Joyce said his company as once again encouraging market expansion.

expansi

we can currently supply all the ople in our market area," he said. I we get someone we think we



add them." "We review each large case-like a new industry- on an individual basis." he added. Verson of CIPS said that his company, too is not discouraging market growth. In 1971, Vason said, CIPS stopped accepting requests for naturaj gas space heating. It established, with Illinois Commerce Commission approval, a priority list that, by May 1978, was 8,000 custorers long. May 1978, was 8,409 customers long

In May, he said, CIPS began

In May, he said, CIPS began releasing space heating permits. "I don't believe there are anymore persons on the list now," Voison said, and the company is in the process of extending more permite

AGA spokesman Lambert said the emand_for_natural_gas_will mand for natural gas will ntime because of the substances sirable properties. 40

"It's clean burning, causes almost no environmental pollution and takes very little processing to go from the ground to the gas jet," he

These qualities, Lambert said, ensure th: future of the natural gas industry.

Wood: ailing resource but potential remains

By John Carter Staff Writer

Wood may be making a comeback as a source of energy, but whether or not it is viable for use by the masses and for the masses is still a debated question. Industry has been

the .nasses is still a debated question. Industry has been implementing wood in a number of ways lately, and there has always been a place for wood in the home. But when it comes supplying an entire nation, let alone an entire planet, with energy from wood, problems arise. Wood is not immune to the rigors of scarcity. When it was used as the primary source of energy in the midst of the Industrial Revolution, there was, according to Paul Yambert, professor of forestry, an energy crisis because of depleted woodlauds. As wood was replaced by fossil fuels, the ahortage was practically forgotter. The problem could essily arise again, though, if the demand for wood took a sharp increase.

evening arise egain, incours, it use demains for wood took a sharp increase. "On a worldwide basis there is an extreme shortage of wood, and the depletion ratio is very rapid," Yambert said. Yambert cited China as a good example of wood energy deficiency. Peasants, who are desperate for wood for home heating and cooking, yank saplings out of the ground almost as quickly as the government can plant them. Things aren't much better in countries like India or those on the African continent. continent.

In essence, the wood shortage is greater than the fossil I shortage," Yambert said. "It is much more serious on fuel shortage," Yambert said. "It is much more serious on a worldwide basis. Each year it takes a greater part of the commoner's income." Yambert, who visited Kenya a year ago, said that a big

government scandal arose when government ministers were found out to have cornered the charcoal market and were exploiting it

As (esperate as the problem appears on the international level, wood has at least some future as an energy source in level, wood has at least some future as an energy source in Americs. Given this country's financial resources, its technical advancements and timber supply, wood could, according to some researchers, eventually supply as much as seven percent of total demands. In New England, 18 percent of the homes use wood as their primary heat source. This is perhaps made easier since that region is nearly covered with forests. "On a modest homestead of five or six acres, one could be self-sufficient with relative ease." Yambert said. "The problem, though, is that most homes aren't suited for wood heat."

probl

When wood is carried into the house the do when wood is carried into the house the door to the outside is usually left open for the next load, Yambert said, and heat escapes very quickly. Larry Bush, assistant professor of design, echoed these semiments and pointed out that firergiaces, from which most American homes gain heat from wood, are exceptionally inefficient, sometimes to the point of net heat loss. What heat doesn't go straight up the chimney is either lost in the expanses of the room of offset by a vent being left open all night, after the fire has 'room out gone out

gone out. The obvious alternative, Bush said, is the use of wood stoves for heating instead of fireplaces. Since the oxygen content of a wood stove can be manually controlled, wood burns more efficiently and much longer. The stove even stays warm longer after the fire has gone out.

"When using a wood stove, a two or three room house with sufficient insulation and responsible use, could be kept warm the entire winter with four or five cords of wood." Bush said. "Over time, the investment in wood and in the stove will pay itself off when the heating bills begin to come in

Bush suggested a digester, a machine that traps the gases emitted during decomposition and then burns them as a fuel, would work quite well for homes and cost Bush suggested very little to operate.

SIU to seek alternative energy

By Domma Kunkel

Staff Writer Despite external funding for research projects, alternative sources of energy for the University are still plans for the future. Frank Horton, vice president of academic alfairs, said funds are being provided both federally and through the University for research projects that may have an impact on and off campus. Recause of the descriptions of various nevicets being conducted by

various projects being conducted by researchers in many departments throughout the University, it would

arrougnout the University, it would be hard to estimate how much money is being spent on energy conservation, Horton said. If the research will be used here depends upon the outcome of the projects and the scale of savings, Horton said.

Currently the University has plans for instituting a solar energy heating for instituting a solar energy heatin and cooling system in the School o

Agriculture. Tom Engram, Agreeuture. Tom Engram, utilities superintendent at the Physical Plant, said the Capital Development Board for SIU is seeking federal funds to formulate that solar energy system

system. The University also sought funding for a Multiple Integrated Utility System which would burn waste materials and gas long with our present energy source, Clarence Dougherty, vice president for campus services said, however, that funds were not granted for the project. The process of waste burning may

be another alternative future energy saving plan.

Fage 6 Daily Egyptian, January 29, 1979

program was not yet "readily adaptable" to the University system now but that it may become economically feasible to turn to waste beating in coming years. If the University continues to avoid at the current sub-

In the University continues to expand at its current rate, the Physical Plant would also need to, en'arge, causing a need for an alternative source of energy. Engram said. He added that waste burning combined with focal burning may become that alternative

ource. Dougherty said waste burning would be too expensive today but that in the future it may prove to be less expensive than our present system of coal burning. He said waste burning was a "thing of the future for SIU" An additional plan to save energy is a project called retro-fitting. Engram said the is a plan of making

modifications and changes to improve the existing system. He said when the system was first built, people did not have to werry about saving energy. But today the shortage of energy is a problem and modifications have to be made for its conservation.

System Seven is also another

energy saving technique. This automated computer system contrals air handling equipment. It reduces the peak demand for

The University also has an Energy Conservation Committee. This committee surveys methods and procedures for the purpose of saving energy on the campus

Engram said energy conservation an "individual thing" which needs the cooperation of all the people who attend school here, work here and

Faculty panel to discuss coal

intendent at the Physical said the Capital Development for SIU is seeking federal University also sought g or a Multiple Integrated System which would burn materials and gas loog with erty. vice president for services said, however, that were not granted for the raterials and the waste burning may her alternative future energy plan. Doily Egyption, Jonuary 29 1979

They will discuss U.S. and Illinois corey win discuss U.S. and Illinois coal resources, regional and national mining operations, environmental and land reclamation problems, waste disposal, air and water polution and the role coal is expected to play in meeting future needs.

The panel discussion will consist of brief remarks by all participants and a lengthy question-answer session. Co-sponsors are the University Forum Committee and the Office of the Vice President for Academic Affairs and Research.

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Solar heating involves many kinds of systems

By Terri Tangney Staff Writer

On a star 93 million miles away, the nuclei of hydrogen, carbon, nitrogen and oxygen interact. Eight minutes later, Earth Eight receives the fission by-product -solar radiation. Less than one billionth of that

Less than one billionth of that energy falls on the earth's surface. Most of the potentially damaging ultraviolet radiation is shielded by a laver of ozone: some is scattered by dust or particles, or reflected by clouds. The energy that does get through is mainly in the visible spectrum. It powers photosyn-thesis and, most important to humans, raises the temperature of whatever it lands on. This is solar energy. energy.

With cells, collectors and energy efficient huilding design, man has translated the energy into ways to heat his buildings and water. Five

basics on solar heating are: 1. The most simple and cost effective system is passive solar heating. No single piece of equipment is used to collect heat. because the house acts as a collector in whole. The design ena'ses it to retain the sun's heat.

Large windows are placed for a southern exposure, and heavy shades are drawn when the sun goes down to lock the heat inside. goes down to lock the heat inside. Anst important to the passive system is the southern window overhang. It is a shelf above the window that extends lar enough over to block the high-angled summer rays, but allows the lower-angled winter light to enter the

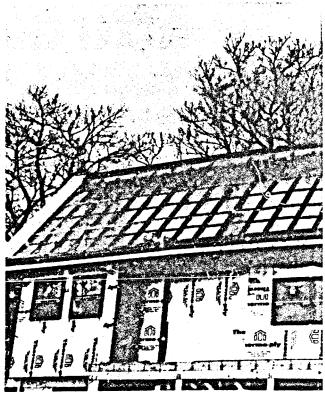
2. An active system uses collectors. Collectors are just absorbers. With either air or water inside them, they trap the heat. Usually placed on the roof or side of the building, collectors transfer the heat inside through fans or pumps.

In the air system, the warmed air is blown up through rocks stored in the basement. The water system keeps the hot vater in a storage tank. As it is needed, heat

a storage tails. As it is include, include is drawn off the rocks or water. 3. Hybrid systems use a combination of passive and active in one structure. During sunlight, the passive system provides heat. and at night, or times without sun, the active collection reserves would be used.

would be used. 4. The two m∡in types of coilectors are tube and itat plate. The tube system consists of black-painted tubing inside a vacuumed, larger glass tube. Inside the black tubing is either air or water, and as it is heated by the sun, it is moved to storage containers. The Federal Building, currently under construction on Cherry Street and University Avenue, will use tube-type collectors on its roof. 5. Flat plate collectors operate on the same principle. but sunlight

c) be contexture on the root. 5. Flat plate collectors operate on the same principle, but sunlight warms a dark plate that is insulated in a flat panel. Air or water passes over the plate and is transferred to storage.



"The most se vhisticated solar heating system in Southern Illinois" will incorporate 400 square feet of air-type collectors, says its builder and designer, Brent Erlich. He calls it a sight-fabricated system, meaning the collectors are put together on the spot, and that the house and

collector are house, the wat supply the wa Phil Bankeste

Unrelenting radiation Solar energy 'sweet American conven

By Terri Tangney

By Terri Tangney Staff Writer Sunrise! Wake up and take a long, hot shower. Toast your bread and fry your eggs. On the way to school, fill your tank Go to your class in the temporary

classrooms. Each room has a space heater and its own air conditioner. Lunchtime. Drive up for drive-up hamburgers. Stop for a paper. More classes in the afternoon. Sit in a

room where the windows can't open, so the air conditioning or the heating has to run for ventilation. All around you is metal and glass, and it all feels cold to the touch.

Come home, take another hot shower turn on the oven for dinner and watch television with the radio on. Your chicken has been transported acruss the courtry thousands of miles, just like the

courtry thousands of miles, just like the rest of your food. Surset. It's getting cooler, so turn up your 'sectric blanket. So goes the sweet American convenience dream. All the comforts you could ask for. It feels good, and people now have time to do the fun things in life.

But something has gone wrong. Heating bills are getting higher and higher. A full tank in your car costs twice as much as it did eight years ago,

The prices are still rising. The prices are going up because the oil and coal that fuel the power plants are becoming harder to get. And, the resources - fossil fuels - are running

What isn't running out, at least for some billions of years, is the energy radiated from the sun. Solar energy is billions used to heat buildings and now being used to heat buildings and their water supplies. Proponents of this alternative source of energy see it as the best answer to solving the energy

Chris Robertson is a solar visionary. Page 8, Daily Egyptian, January 29, 1979

He is a "renewable energy resource planner" for Shawnee Solar Project, a non-profit, public service group of 44. The project, located at 211 ½ W. Main, states their goal as "to enable Southern Illinoisans to make the transition to the use of renewable energy sources." Robertson mass a solar energy for future

Robertson sees a solar energized future that increases jobs, and improves both economic development and self-

He says incorporating solar heating in

There must be a "transition period," phasing out fossil fuels and gradually transferring dependence to renewable

Brent Ertich agrees. As the head of Sunverter Co., Inc., of Murphysboro, he designs and builds energy efficient homes. He said that, at the present, a solar system cannot take over 100 percent of the heating load. During cloudy spells, and during winter nights,

"When building a house now, it would be very short sighted not to look into a solar system."

homes, as opposed to building nuclear reactors, will increase available jobs by five times. The reason for this, he said, is that building a nuclear reactor would take a lot of labor, but for a short period of time. But to outfit a city or town with solar heating would employ many people over a long period of time. This would also necessitate "a couple

of solar businesses in every town," he said.

Since the technology needed to roduce the engineent is relatively produce the entirment is relatively simple, Robertson said that a solar-based community would profit from increased economic development and self-reliance.

self-reliance. The equipment could be produced locally, and so the money would be circulating within the community. And, he said, solar energy eliminates the possibility of being cut off - having power failures or suffering from ol embargoes. Robertson does not feel that America an instantib turn oner to solar energy.

can instantly turn over to solar energy.

a conventional heating backup must be

Erlich, who received his bachelor's degree in design in 1974 at SIU, said that degree in design in 1974 at SIU, said that while every home is different, he tries to shoot for a 70 percent solar heating capacity. His company uses their own patented air-type collector, and he said he won't build a home without incorporating at least some principles of many diffused design.

incorporating at least some principles or energy efficient design. The biggest misconception people have about building a home with solar heat is that it is overly expensive. The prices range with each house, Erlich said, but an average price for an active solar system would run approximately \$6,000. But this investment would be repaid in fuel savings in six to eight years.

years. Another fallacy the consumer has about solar heating is the belief that the technology is too experimental now, and, if they wait, the cost will go down and the equipment will improve, Erlich reid en idi

"People who think that way are gambling. The equipment now is effective and efficient. The cost won't come dawn that much because the price for raw materials will skyrocket. Equipment will improve, and collectors will get smaller and easier to install, but the money saved over the next 20 years with his current system will not for any

with his current system will pay for any improvements that come along," he said.

The average life of the system varies with the type. Erlich estimates the water-type system should last 15 to 20 years, and the air system should last as

long as the house, size, in it, there is nothing to corrode. Erlich wants to see the consumer educated about solar principles and how it works, since he predicts a commercial explosion.

There is no regulation, no criteria of standards," he said. "There are people already in it just to make a quick buck." Albert Kent is trying to help clean up that mess An assistant professor of thermal and environmental engineering, he is testing solar collectors and windows for their efficiency. Through a monitoring system he has designed and has installed in two solar-heated homes in the area. Kent is determining how much the collectors are able to use sunlight. He also figures the heating cost of a home with a conventional heating system and then calculates what the savings are using solar heat. He has also drawn up possible

He has also drawn up possible efficiency requirements for producers of solar collectors. This provides a basic format for production that can help ensure that collectors will be efficient.

The homes Kent is monitoring were built by Gilbert Reiman's realty company of Murphysboro. A 1937 SIU graduate in engineering, Reiman became interested in solar beating about five years ago, he said. He has studied

Expensive, necessary oil importation confounded by public, industrial waste

By Marcia Heroux Staff Writer

What does oil have to do with Big Mac's? Plenty, says George Fraun-felter, professor of geology. The plastic cartons used for the McDonald's product and many other four products on the market, are made from oil.

Fraunfelter and two of his fellow workers, Charles Mansfield, assistant workers. Charles Mansfield, assistant professor of geology, and Jay Zimmerman Jr., associate professor of geology, got together to talk about oil. And what they talked about wasn't just the waste of energy on the part of oil companies, but on the part of industry and the American public in general. All three men have had mactical as

All three men have had practical as well as academic experience in the oil field.

Fraunfeiter used to work in exploration for Creole, a subsidiary of Standard Oil of New Jersey. Mansfield worked in planning and projects, and Zimmerman worked in research for

Exace Corporation. Though oil is becoming a more difficult and more expensive resource, it. a yet a depleted source by any means

Mansfield said the North Sea was being explored for oil. Fraunfelter said oil was being drilled for off the Netherlands, between the Shetland Islands to Holland. He also said that Vietnam may be a yet unexplored possibility.

Mexico will sell most of their crude oil to us, but it will take to 1985," Fraunfelter said. Problems in Mexico included the fact that the oil is in the middle of a rain forest and the "tremendous energy take which must "tremendous energy take which must be built up around the field to get the انه Zimmerman said.

on, Zimmerman said. Importing oil is an expensive but necessary evil. The Organization of Petroleum Exporting Countries (OPEC) recently announced price hikes of 5 what can we do about this? "Put up with it," Fraunfelter said. "We don't have enough of our model to be about this?"

What can we do about this? "Put up with it," Fraunfelter said. "We don't have enough of our own reserves." Fraunfelter said. "If we want it the way we have been using it, we're going to have to pay for it." Mansfield said "it here is a growth in the world-wide demand for oil-that is been considered in the set of the set of the set been in the set of the set of

what is particularly frightening. Oil production is going up but not as fast (as supply demanded). Reserves in terms of supply demanded). Reserves in month supply are going down.

Power in terms of oil has changed. Fraunfelter said that 15 years ago Exxon, Shell and Guif companies con-Exxon, Shell and Gulf con trolled the oil of the world.

"They don't cantrol the price, pro-duction or distribution now," Fraunfelter said.

Zimmerman said the Iranians can now sell to any country they please and at any price they please. He said Russia has been cut off from natural gas by Iran and Russia and was responding with threats of war. "So it's not only the Americans who

are worrying about it,' Zimmerman said Fraunfelter said that not only are we

Frauntieter said that not only are we going to be paying more for oil but we will be getting more refined oil. "The real profit in the gasoline business is in the refinery. Countries want to refine the oil in the country and ship it to us refined, not crude oil. We're going to have to buy more and more of the finished product, and we're going to pay more." Fraunfelter said.

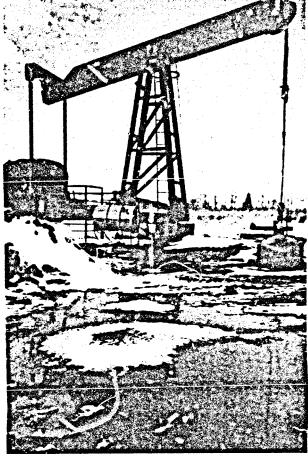
pay more," Fraunteiter said. "The American public can no longer take energy for granted," Zimmerman said. "A lot of people thought the fuel crisis was invented by the oil companies. There's nothing but food which hits us more closely than this." What is a insuit about our fear of

What is so ironic about our fear of

What is so ironic about our fear of depleting energy resources is our ongoing waste of the resources. Zimmerman said, "There's natural gas produced at the same time you produce oil. You take the oil first, just let it eacape and burn it as it goes. That's a waste of natural gas." "They do it in Illinois," Fraunfelter exist

said

The practice of letting this natural gas



Oil wells like this near Benton, Il), are becoming rare as world demand for power increases and oil becomes harder to find. New resources are

escape, speeds up the process of getting to the oil, but in long-range economic

terms it is unwise. Mansfield said that "putting gas back in the ground prolongs the life of the oil d increased the production of an ail field.

They do it in Illinois," Fraunfelter said. Fraunfelter explained that the more

rraunciter explained une the nore pressure there is in the ground, the more you can produce." Zimmerman called this practice, known as "flaring off," simply "immoral."

"immoral." Mansfield said that if you look at petroleum production (both oil and gas) as "an intergrated effort, then the flaring off of gas is wasteful, even if the gas product is not profitable." He said the loss could be more than madeup for with the sale of the oul.

Though this might up the price of oil in Though this might up the price to of in the U.S., Mansfield said, "it's not a solution to be setting end roads to petroleum company profits. Once it is no longer profitable, they il quit doing it." Zimmerman said he thinks an excess During the energy crisis, profits of companies were jumping 500 percent."

Not that the petroleum business is all

"It's a high risk thing," Zimmerman

said. "It used to be said that one out of ten (drills for oil) would turn out to be good," Mansfield said. "They still had to good," Mansfield said. ") drill for the other nine."

Zimmerman said companies must bid on leasing rights to drill on state soil, and pay the state "so many millions just

available, but are found in rain forests or at the bottom of the sea. mal': g the oil expensive to pre-Staff photo by Brent Cramer)

to look for it until the lease runs out. Then you never know whether there's oil down there or not until you drill.

Once oil is found, nobody knows how much oil is down in the wells until the last barrel of it has been drawn out, Mansfield said.

Fraunfelter said companies need to look at the production from a long-range point of view "They would make more money in the long run.

Zimmerman added, "They produce so fast, they damage the oil fields." "You'll probably get 40 percent of the oil that's down there," Fraunfelter said.

Fraunfelter explained that this is the reason foreign countries are trying to cut back on production--- to get the most

out of their rich oil fields. What's going to happen is that the American public is going to have to adapt like the Europeans have. Zimmerman said.

"We have to make the attempt to inform ourselves," Zimmerman said. form ourselves," Zimmerman said. Mansfield said, "Each one of us individually is going to nave to ask ourself what constitutes wise use of energy.

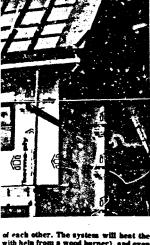
Zimmerman protested, "That's not going to happen. People refuse to be inconvenienced and they don't look

"It's going to take something to force people to preserve. Either by a U.S. regulation or by another country." Mansfield said, "I fault Congress as a

whole for not acting.

Zimmerman said. "The Congressional majority for the Democrats is a myth on the energy problem."

Daily Egyptian, January 29, 1979, Page 9



with help from a wood burner), and even h for the clothes dryer. (Staff photo by

ay maintain ence dream'

solar heating's principles and how the climate of Southern Illinois effects them. climate of Southern lillinois effects them. The biggest problem is the high humidity of the area, which causes condensation, he said. He added that, with Kent's testing, the problem can be

Walter Borst, associate professor of physics and astronomy, is at work measuring what goes on inside the collector. He is measuring the natural ction in passive collectors. More More simply, he me within the collector and how much the air temperature rises. Borst has also done work on the long-

borst has also bolie work on the voil; term storage of solar heat. He is experimenting in a home outside of Carbondale, and found that the energy remained in storage for two months. Not satisfied, Borst said he hopes to increase the time span by adding insulation

Research is also being done in the design department by Richard Archer, uctor, and Larry Bush, assistant inst professor

Bush said that he and Archer try to find the appropriate technology, or to use what is available to get the most from the time, energy and materials used. They also serve as unofficial consultants for an "enormous" number of home builders.

"When building a house now, it would be very shortsighted not to look into a solar system," he said.

solar system," he said. The most significant product of the Archer and Bush search for alternative energy solutions is their hybrid automobile. It runs on both methanol automobile. It runs on both meth and electricity. The School of Technical careers h

used the knowledge of Archer and Bush to propose a solar heating technicians' program. Bill Wickersham, research program. associate at STC, said that the program will train people to install solar heating systems.

Most ignored colonial leader to be honored in celebration

American Revolution, has become an all but forgisten figure in American listory. According to Thomas Schwartz, professor of English, Paine is the explained. "He figlt has it is an "most ignored" and often maingred of our colonal leaders. That is one of the many reasons he has review the rather controversial universe." Despite Paine's view of Amstraview the rather controversial tradition of celebrating Paine's birthday with "A Free Speach Celebration" to be heid at 8 pm torday in Morris Library Auditorium. Schwartz, whose own presentation at the program will be theide "Tom Paine and American Ingratitude" said the tradition of celebrating Paine to be their cult hero. Paine to be their cult hero. Schwartz aid. Schwartz aid. Schwartz aid. "By the time of this American and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this America and received so little." Schwartz aid. "By the imme of this and the public outcry against

By Mik- Re al By Mik

Taylor said. A third presentation "Tom Paine: An Appreciation," will be given by Earle Stibitz, professor of English. The talk will deal with the power of "Common Sense" and "The Crisis Theorem"

"Common Sense" and "The Crisis Papers". Despite the controversy sur-rounding Paine, Schwartz said the celebration is not an attempt to vindicate him. In fact, the presentations will be held to about 30 minutes each in the hope that the audience will participate. "We're ming this at the community as well as the university." Schwartz said. "Hopefully we can get people thinking about contributing their takents and sensitivities to the cause of social betterment."

MARING 4 BRE LINE TAUJAHASSEE, Fia. (AP)-Few footbal; players have main a touchorts under eractly the same set a circumstances that Jackie Frowers of Florida State scoring against Southern Mississippi. Flowers caught a pass, good for 61 yards and a score, but the last 40 yards and a score, but the last 40

yards of his run to the end zone were unnerving. Flowers carried the football in one hand while he slapped at the side of his beimet with the

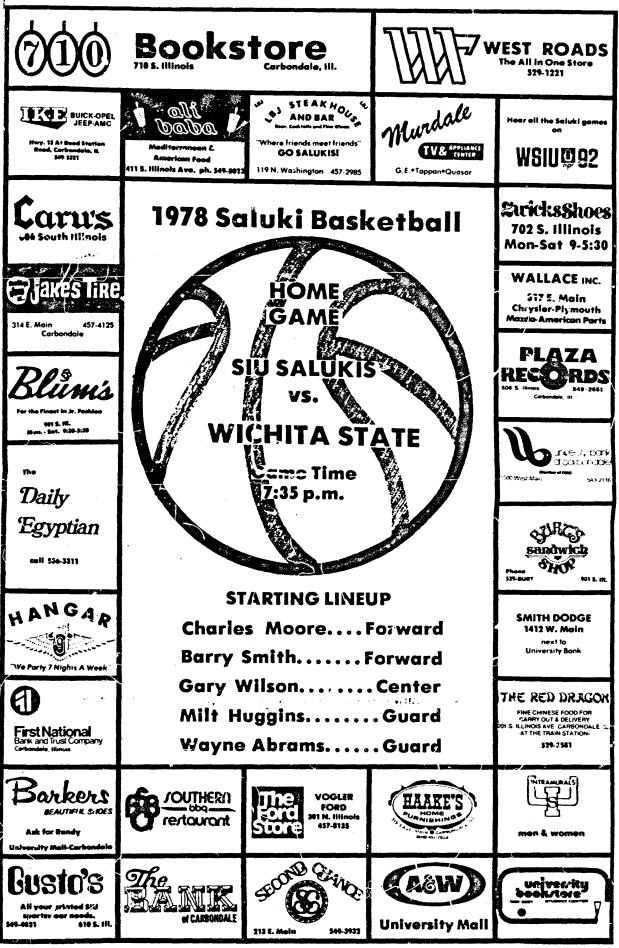
other. I had just caught the ball and gotten open when the bee got into my helmet," Flowers said.



Poye (fit, Daily Egyption, January 29, 1979,







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A- 10x50 MOBILE Home (Cones'oga) Call 457-7080. 5/80Ae93

FOR SALE. 10x55 Trailer, 1'2 lots and out building. In Hurst, 12 miles from C-dalo. \$5500. 5721Ae92

Miscellaneous

MISS KITTY'S USED Furniture located 5 miles north on Route 51 to DeSoto, III, 6 miles east of DeSoto, III, Hurzt, III, on Route 149. Furniture of all kitds. Free delivery up 25 miles. Phone 997-2491. 5148A692C

DESIGN YOUR OWN carpet with colorful carpet squares. 13 by 18", 25 cents; 18" by 27", \$1.00. F & E Supply, 418 N. 12th, Murphysboro. B3542A#91

RECONDITIONED APPLIANCES.

APPLIANCES. refrigerators, washers, dryers, TV, ranges. All units guarnateed. BLY, sell, trade furmiture. Loyd's Appliance, 119 N. 16th, Herrin. 9' -8512. 40/14/08

THE WATERBED SHOPPE, sow located on Rt. 13, one mile east of University Mall. Open til Spra, 549-8332. BSSX:Af101C

BUYING BASEBALL CARUS. 549-7696 evenings. 5546Af102C

TYPEWRITERS. SCM ELECTRICS, new and used. Irwin Typewriter Exchange. 1101 North Court, Marion. Open Monday Saturday. 1993-2997. B5559A ¹03

NIKON FT. 2 Camera 50mm \$309.00 or best offer. Call 457-2887 68A (59

MAMIYA C-220 2¹⁴ camera with 55mm wide angle \$295. o 100mm. Vivitar for Nikun mount \$60 549-6624. 5685Af91

SAVE \$41.30" harvest gold gas range plot-less ignition payments only \$18 multibly. (all Goodyear University Nall 549-2107 for details B5694Af89

SAVE \$45 AVOCADO electric over deluxe model payments only \$12 per month call Goodyear Univ. Mail, 549-2107 for details 5690Af89

SAVE \$50 HARVEST GOLD frost tree refrigerator payments only \$13 raoninity Call Goodyear University Mail, 549-2107 for details. B5683Af89 "HIPPO HANDS", COLD weather motorcycle riding mits, 538 new-asking \$25. AMFM receiver, tuner needs adjustment 5, We.AM radio, \$5. 457-7753, early AM. 5723A190

ABSOLUTELY BEAUTIFUL ONYX chess sets and pipes. Also thick, handmade wool sweeters. All imported from Mexico. Excellent prices, call 453-8573 after 5:30 p.m. 5717Afted

Electronics



126 5. 18. 549-8415

ELECTRONIC REPAIR ASSOCIATES: Service done by SIU electrical engineers, most equipment repaired in 13 days, service guaranteed, marita returned, for lowest prices in lovn, call us last. 540-4792. 10 a.m. -10 pm. 5714Ag9.

CASH

Ve buy use d stereo equipr Good condition or needing repair nan land 101.000

Pets & Supplies

AQUARIUMS, MURPHYSBORO, TROPICAL fish, smr I animala, Hermit tree crabs, birds and supplies. Back and cat food and supplies. Beekman's Company, 20 N. 17th St. 6646811. B5316Ah91C

COCKER SPANIEL PUPPIES AKC Registered. \$75 - \$33-\$351. 5055Ab90

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GREAT DANE. CHAMPION breil. Outstanding pedigree. Obedienze trained. Excellent watch dog. Great with children. House Jroke. Call after 5, '0. 942-4746. 5698Ah90

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GIBSON ACOUSTIC SMALL body 6 string \$150. Pedal steel Sho Bud \$200. Sunn Dymos Amp 100 watt (2) 12'' \$325. 684-6757. 5666Ars9

MUST SELL: LIKE new Fender 100-BassMan \$540; Hofner Bass Guitar, excellent condition \$130. After 6pm. 457-6986, 5683An91

FOR RENT

Apartments

C'DALE HOUSING ONE bedroom furnished apartment, 2 bedroom furnished house with carport, air, absolutely no pets, across from Drive in Theater Old Route 13 West, Call 684-0145. B3381Ba9 Route 13 B5381Ba90

CARBONDALE. SUBLEASE, 2 bedrooms, carpeted, air, 1245 month. Immediately available. 684-3555, 314-528-7128. 5582ria93.

TWO BEDROOM APARTMI_NTS Close to Campus 51'1-0880 129-1082

MURPHYSBORO FURNISHED APARTMENT for rent single or inarried couple adults only. No pets. Call 684-4367 or 687-9582. B5596Ba88

THREE ROOM FURNISHED apartment in Murphysboro, gas heat, couple only, no pets. 877-2643. B5599Ba88

FURNISHED APT. 2 bedrooms, excellent. Call Evans 453-4352, 8-50m. 457-7941, 8-5pm. 5554Ba88

CALL

ROYAL PENTALS For Spring Cancellation Efficiencies: \$125/month 2 bedroom mobile home:

\$100/month

457-4422

UNFURNISHED TWO BEDROOM, 5 miles from campus, Bir, full carpet, storage and more. Water, trach paid. \$220.00, 529-1943. 5647Ba89

APAPTMENTS AVAILABLE. ONF and two bedroom. Apply at rental office 511 South Graham Street, Carbondale. 457-4012. B5612Ba104C

2 BEDROCH FOR rent, 400 N. Oakland 20 minute wais from SIU. Unfurnished, 457-4694. 5719Ba92

NICE 2 BEDROOM, furnished, carpet, air, \$210 includes water, no pets, 457-4954, 457-6956. 5711Ba92

2 BEDROOM APT., fully furn., close to campus, luxurious, 549-2835. B3715Ba92

Spring Contracts Furnished 1 bedroom apts. 3 blocks from campus No Pets

Glenn Williams Reutals 510 S. University 457-7941

Houses

CARBONDALE, TWO BEDROOM, by mile from Cedar Lake, just insulated, on 5 acres, 437-2094. 5641Bbes

TWO BEDROOM HOUSE 2 or 3 people at 410 East College. Air conditioned rest of term. Call 548-4416. 5644Bb87

OLD-FASHIONED FARMHOUSE. 13 miles southeast of Carbondaie, located on private lake. Available immediately. One person needs one or two more. Total rent to be divided: \$125 a month. Call 457-4334. BS676Bb91

AVAILABLE FEBRUARY 1, modern 3 bedroom, central air, 320 Lynda, \$360 s month, call 457-4334. B5675Bb91

THE BASEMENT HOUSE 41/2 miles south on Route SI furnished. Cal. 528-1052 or 549-2250. B5702Bb91

1 BEDROOM FURNISHED, single or couple, 3 minutes to campus. Immediately open. 549-1882 any time. 5713Bb92

WANTED MALE TV share house and expenses, Murphysboro, must be responsible. New three-bedroom h.me with fireplace and all modern conveniences. Call 604-5370 or 684-3811. 5513Be90

ROOMMATE NEEDED IMNEDIATELY, 2 bedroom apartment (Lewis Park) (2 can share 1 room) 549-6826, 5 19-3025.

MATURE PERSON WANTED for roommate in brand new two bedroom trailer in Roxance TC. \$90.00 phm half utilities. 457-6573.

MALE ROOMMATE NEEDED for 12550 fully furnished, 2 bedroom trailer. \$110 monthly, utilities furnished. Many extras, never yet snowed in! Call after five Sun -Thurs, anytime Fri. & Sat, 546-5631Res8

FEMALE ROOMMATES FOR nice, large, privately owned trailer at Carbondale Mobile Homes. Dog O.K. 549-6571. 5649Bets

4 BEDROOM HOUSE, own bedroom, good neighborhood, female preferred. Call 349-4056 after 5 p.m. B5677Be9

RESPONSIBLE ROOMMATE SUMMER. Monticello Apts. furnished, two beritoorn, åi5 monthly, utilities urchuded. Nee deposit soon. Greg, 413-5867.

FEMALE NEEDED IMMEDIATELY for spring semester. To buy contract. Close to rampus. Call 549-5291. 5657Be90

OWN ROOM IN nice house. 800 month plus one third utilities. Quiet area, 14 miles from campus. Prefer serior ar grad. Call 529-1362 or 549-752? after 3 p.m. 5688B688

IMMEDATELY AVAILABL^T 14x60. Clean, mellow roommate free bus, p.vol. 800.00 plus utilitivs 549-4273, ask for Oscar. 5692Be88

RESPONSIBLE, MATURE FEMALE, own small room in nice house \$55 plus '2 utilities. 457-6037. \$712Ee90

MALE OR FEMALE, 3 bedroom touse, furnished, \$100 a month, 411 Last Freeman, call 549-2378. 5710Be92

NEED FEMALE ROOMMATE for three bedroom house. Off Giant City Road. Immediate occupancy. 549-1003, 457-5236. 5706Best

ROOMMATE FOR 2 bedroom trailer. Giant City blacktop, 3 miles from campus and Little Grassy. \$100 monthly, ¹/₂ utilities. 540-6916. 570058691

ROOMMATE NEEDED FOR furnished apartment close to campus. \$106 monthly, 710 W. Mill 457-8820. 5699Be92

Duplexes

TWO WEEKS FREE rent, unfurnished, 2-bedroom in Cambria, cl-an and well maintained One sngle or couple, No dogs, \$160, Century 21 House of Realty. Carterville. 457-3521. Monday-Friday, \$3:30 only. SX/387:01C

UNFURNISHED, TWO BEDROOM npstairs, stillity room, centrai air, available last week in February, 8190, very rice Call 549-4582after 5:00. 5533B75

14 MILE SOUTH of Arena utilities and furniture furnished 5200 One room efficiency 14 mile south of arena utilities and furniture 'urnished \$100. Three room apartment 1 mile south of arena utilities and furniture furnished \$170. 549-0357. B56078/80

ONE BEDROOM. COUPITRY location. Heat water, and trash provided. Recently renovated. Available immediativity, \$165. Cali 985-3468 anytime weekends.

weekday, after 6. 5648Bf8 CARBONDALE BEAUTIFUL NEW 2 bedroom, unfurnished, no pels. 8275 monthly, Woodriver, 457-5438 or 457-5643. B5671Bf1087

Mobile Home Lots

CARBONDALE MOBILE HOMES

Swimming pool, free bus to and from SIU. Highway 51 North. 549-3000. B5058BbbC

BIG SPACES, TREES, pets welcome in scenic sub division, 5 miles south of SiU. \$50, first month rent free, Phone 457-233, 4776167, Racon: Valley. 8\224Bist

HELP WANTED

RECEPTIONIST AND TYPIST Carbondale, unencumbered, reliable hard-working Hand write full particulars with address and telephone number to P. O. Box 71, Carbondale. B5371C87C

965-3468 anytime weekdays after 6.

m in well couple. House of

5648B/86

5427 Re00

SALARAD

Mobile Homes

CARBONDALE MOBILE HOME PARK NOW BENTING

For Spring 283

Bedroom Mobile Homes Furnished & Air Conditioned.

> FREE BUS TO & FROM SIU 7 TRIPS DAILY RT. 51 NORTH 549-3000

TWO BEDROOM, \$135 per month, furnished, and air conditioned, Located past Crab Orchard Spillway, Absolutely no pets. 549-6612 or 549-3002. B5114Bc91C

SINGLES ONE BEDROOM, 5145 per month, includes heat, water, trash and maintenance, furnished and air conditioned. Absolutely no pets. 3 miles east on New 13. 549-6612 or 549-3002. B5115Bc91C

TRAILERS \$75 - \$160 per month Walking distance to campus **CHUCK RENTALS**

549-3374 CUTE 8x20 TRAILER, 2 miles south of campus. Call Bill or Bruce 545-5092. 5388Bc88

OUT IN COUNTRY but close to town, 10x50, two bedroom, air conditioned, and furnished. Vater and trash p-ctup hacluded. 529-2200, 549-4377. 553411c89

12x60 MOBILE HOME, carpeted, furnished, air conditioned, anchored inderpinzed, pool, sorry no children ir pets. 549-8333. BisserBase B5562Bc88

SINGLE MALE TO share 2 bedroom 12x60 furnished, quiet, no pets 684-46A1 after 6p.m. 5540Bc88 pets 684-4681 after 6p.m.

MURPHYSBORO. QUIET NEIGHBORHOOD, ideal location. No caldren or pets. Winter rates. 607-3303. 5580Bc89

FOR RENT OR rormmate needed. 12' wide, 2 bedrooms free water, transportation to campus. \$180, 457-2602. 5619Bc69 TWO BEDROO ouiet, extra clean, 10 camprs. rets. 457-12x60, Two hurnished, quiet, en from

minutes from campus. Reasonable, sorry no pets. 457-5266. B5639Bc89

PLEASE SUBLET MY trailer. Available immediately. Ren: paid to Feb. 15. \$85.00 monthly. Pets allowed. Country setting. 549.8464 or 549.3282. 5679Bct

SUBLEASE 1 BEDROOM, clean first 1/2 month rent free utilities \$20 rent \$145. Call 549-5248. 5684Bcr9

MUST SUB-LEASE carpeted 2-bedroom trailer. Nice locabon 457-7084. 2 roomies needed for spacious S-bedroom house 1 block North of campus. Call 457-5027 or 457-7034. 5689Bct9

19:50, ONE BEDROOM, country setting, lots of trees, garden plot available, 867-2649. B5691Bc91

CAMBRIA 10x59 2 bedroom carpet large lot gas heat 985-4436 or 985-4509. 5718Bc93

Rooms

PRIVATE ROOMS BONDALE, in aparts

\$45.50 PER WEEK, cable TV, maid service. King's Inn Motel, \$25 E. Main, 549-4013. 15613Bd103C

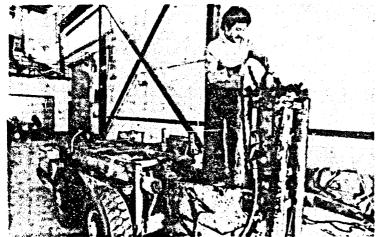
CAR

CAR-BONDALE, in apartments for students. Key to room, full bitchen and lounge facilities, share with others in apartment. All utilities paid, very near campus, very competitive. Call 457-732, or 546-7039. B617Bd1047

Roommates GRADUATE Student preferred. Hruse, Murphysboro \$68 plus 14 d'itties. Call Carl, 536-7763, 549-748. \$395Be68

175 FER MONTH plus half of utilities. Call Jim. 529-1622 - days, or 549-1015 - nivhts R5615Bell





Issam Kheniser, graduate student in mining engineering, works on the machine he built that

could increase the productivity photo by Mike Roytek)

Machine could dig more coal

By Ann Conley Staff Writer An SIU graduate student in muning engineering is working on a hydrolically operated machine that should have the capability to oroduce an estimated shullon estra as of coal per average-sized mine per vear

per year. The student, issam Kheniser, said the roof bolting machine, which is pert of his research project, "The Development of the Pin Set Concept of Roof Bolting," could tremendously increase the nation"s coal productivity. He mentioned

that coal productivity is slow and that the nation's goal for the 1990s is to mine between 1 billion and 12 billion tons of coal yearly by the conventional mining methods.

conventional mining methods. If the pin set concept is put to use, Kheniser said, an average mine could produce an extra 296 tons of coal per uni, per eight-hour shift. Kheniser said that nost mines have Khensier said that n.ost mines have at least five separate units operating at the same time to increase productivity. At present, conventional mining methods produce only 400 tons of coal every eight-hour shift per unit.

The purpose of the machine, Kheniser said, is to increase efficiency and productivity to reach the nation's coal demands by the 1980s. Kheniser cited that America is sitting on the world's largest 1960s. Khenser cited that America is sitting on the world's largest energy source, coal. If only it could be produced faster, coal mining as at least a short-term arswer to the nation's energy shortages, he said. Kheniser said that his project increases production by saving time. He added that conventional roof bouing is done by furst drilling into the earth's strata and then (Construed on Page 15)

Gampus Briefs

A personal journal workshop is scheduled for Feb 16-18. The workshop is designed to help each person explore his or her inner life through the use of a journal and writing exercises. Registration deadline is Feb. 9. Call University Christian Ministries at 549-7387 to register.

The English Graduate Organization will sponsor a symposium at 7 p.m. Tuescay in Lawson 131 on Robert Pirsig's contemporary novel, "Zen and the Art of Motorcycle Maintenance." Several short papers will be presented and a discussion will follow.

The annual meeting of the Southern Illinois Bird Observatory will feature a short film which uses special bird photography to provide training on how to look at birds, identify them, observe their behavior, habitat and special patterns of flight. The meeting will be from 7:30-9:30 p.m. Tuesday at the Carbondale Savings and Loan, 500 W. Main. Paul Yambert, professor of forestry at SUU will also present a discussion entitled "Building an Environmentally Sound House You Can Afrord."

The Thomas Payne Memorial Program will be held at 6 p.m. Monday in Morris Library Auditorium. The program, sponsored by the English Department, features three lectures about Paine.

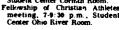
WSiU (FM) radio will have a general staff meeting for all disc jockeys, production persons and air shift personel at 7 p.m. Tuesday in Room 1046 of Communications Building.

Alpha Sigma Alpha Sorority will hold a rush party from 7-8 p.m. Monday at 405 S. Beveridge. For rides call 529-9031.

Activities

Room. Disco Dance meet, 64:30 p.m., Student Center Roman Room.

IBM Products Show, 8 a.m. to 5 U of I Art Exhibit, Mitchell Gallery p.m., Student Center Ballroom C. Saluki Athletics, noon to 1:30 p.m., Student Center Massispip River Room. Disco Dance meet, 64:30 p.m., Student Center Roman Room. Student Center Roman Room.





Page 14, Daily Egyptian, January 29, 1979

Monday's Puzzie



January marks Zulu victory

By Matt Franjois ss Write

By Mait Franjola Associated Press Writer ISANDHLWANA, Scuth Africa (AP) - A Zulu herdboy named Cheimsford Nanai waiches over his cows on the field where 100 years before his warrior ancestors washed their spears in the blood of an invading British army. The boy is named after Lord Cheimsford, the Briton who commanded the force sent out to destroy the mighty Zulu kingdow which stood in the way of a British confederation of Sovich Africa. Fought in January 1879, the battle on this rocky field under the shadow of a b ootshaped hill in eastern South Africa murked the most devastaing defeat wer inflicted by a "native" army on the forces of the world's greatest cohemial power. Twenty-five the usand Zulu warriors descended ca Cheimsford's force of 1,800 white soldiers and black auxiliaries. By sunset nearly 1,000 Britons and 550 of their black allies fell under the thrusts of the Zulu assegais, or short spears. And 2006 of the Zulus law dead

alites tell under the tarusts of the Zulus assegatis, or short spears. And 2,000 of the Zulus lay dead It is not fsandhiwana, but the sequel at nearby Rorke's Drift, a tiny military garrison on the site of a 1 utheran mission, that was in:mortalized in British military

legend. There, forewarned by two

survivors of Isandhiwana, 104 men stord off hour after hour of furious assaults by 4.500 Zuius. From behnd barricades of wagons, biscuit tins and sacks of oats, the garrison held out till the Zulus withdrew at dawn, leaving behnd 400 dead. . There were only 27 British dead, and 11 Victoria Crosses were to be awarded for the remarkable defense.

defense. In the mud and reed huts of the Zulus dotting Isandhiwana valley, however, it is that battle that still excites the pride and possion of one of the fiercest nations to have

excites the pride and passion of one of the firercest nations to have flourist of in Africa. Cheimsdord Ntanzi, 16, can point to the spot where his great-grandfatter fell wounded and can trace his ancestor's anguished route to the Bulfalo River where four days later he died. As he relives the great hattle, his cattle graze hi the sparse grass among the cairne covering the bones of slain British solders, buried where they fell On a rocky hill called Black's Koppie, the site of the last stand of the British, a memorial stards to mark the romantic past. But the othe present. "We murdered them well," writes a 'ulu visitor on Sept. 4, 1978.

"Let us learn from it," writes a

visitor from London. "Interesting, but sad and tragic," says one from

visitor from London. "Interesting, but sad and tragic." says one from Johannesburg. Only six months after the battle of Isandniwana, the Zulus were crushed by Chelmsford at the battle of Ulundi and their powerful king was exiled, eventually to be defeated by a rival. Their unity shattered, the Zulus fell to fighting among themselves and eventually ceded large portions of their lands to the Boers and the British But the subjugation of the great warrior tribe did not er 1 its struggle. The fieror regiments, or impas, no longer terrorize the green hils of what is now Natal Province, but the Zulus have emerged as probably the most potent black political force in South Africa. Under Chief Gatsha Buthelezi, the chief minister of the Kwazulu tribal borndiard the Zulus have forced

Under Chief Gatsha Buthelezi, the chief minister of the Kwazulu tribal homeland, the Zulus have forged their Inkatha "cultural movement" into a powerful and discoplined political organization of more than 100.000 members.

0,000 members. The 5.5 million Zulus are by far the largest tribal grouping among South Africa's 19 million blacks.

Inkatha already has forced a toos alliance with the Indian and colored - mixed racecommunities, and Buthelezi has appealed in other ethnic groups to ion

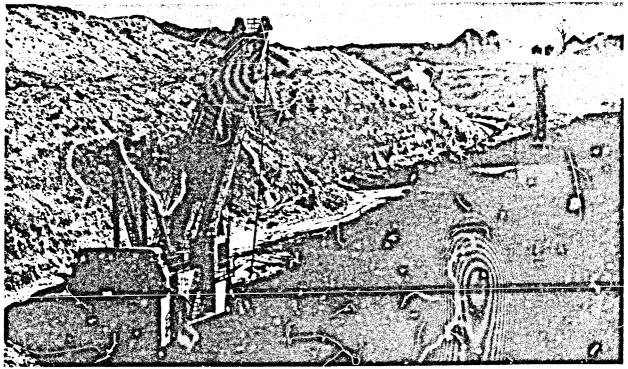
Idea could increase coal production

(Continued from Page 14) inserting a metal bolt through a sheet of wood to stabilize the strata. Kheniser said the pin set concept reduces this drawn-out, timereduces this drawn-out, time-consuming process to one step. The machine is automated to force a metal pin, usually four feet long, and wood directly into the earth's strata. This process, its said, leaves no gaps between the strata and the pin when inserted. Traditional roof holting methods, he explained, can create problems because the bolts inserted into the strata cannot be fitted exit(y), which causes some of the strata to fracture allowing water seepage Eventually. Kheniser said, the water will settle forcing miners to stop digging and pump out the water. In contrast, he said with the ore

set concept there is no gap to fill Kheniser said fine details and further improvements must still be worked out before the pin set encept is completed. He added that the nachine, if manufactured on the market, would cost at least \$30.000 The roof bolting machine was disnated to SIU by Le Noss Munufacturing Co in September, 1977

In contrast, he said, with the pin 1977 \sim





It takes four persons to operate this electric coal shovel in the 150-foot ditch at the Consolidated Coal Company, DeSoto

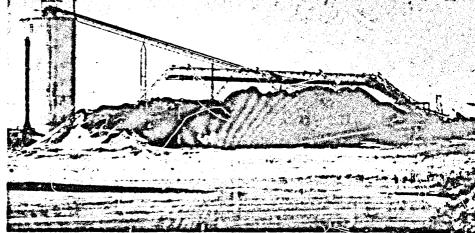
Coal... Southern Illinois' energy lifeline



Bussed to and from their work area, 250 miners shower and change in this large room where

their ciothes are hung puileys.

Staff photos by George Burns



The coal eventually heads to Missouri, but not until the snow lets in railroad cars.

Page 16, Daily Egyptian, January 29, 1979