

Mubarak takes over as Sadat's assassins identified

by W.G. Kirolos
United Press International
CAIRO, Egypt — Egypt's new prime minister Hosni Mubarak vowed to "never deviate" from the policies of slain President Anwar Sadat and defense officials identified Sadat's assassins as four Egyptians led by a revenge-seeking soldier whose brother was arrested in Sadat's crackdown a month ago.

president, said Wednesday in accepting a sweeping parliamentary nomination to the presidency. "We will never deviate from it."

The nomination will be put to the public in a national referendum next Tuesday — three days after Sadat is given a state funeral on Saturday — and Mubarak will be sworn in the following day, Egypt's official media said.

Mubarak, hand-picked by Sadat and groomed for the succession, already has been appointed prime minister

and commander in chief of the armed forces.

The details of Sadat's murder during a military parade Tuesday remained murky, but Defense Minister Lt. Gen. Abdul-Halim Abu-Ghazala said there was no evidence of a widespread plot involving large sectors of the armed forces or foreign countries.

In Washington, Secretary of State Alexander Haig held a news conference to warn "external powers" not to try to take advantage of the assassination and said U.S. intelligence agreed the plot involved on-

ly Egyptian Islamic fundamentalists.

Abu-Ghazala said one of four men who took part in the attack "was a Moslem fanatic. And he did it. That's all."

Only one of the attackers was a serving soldier, the defense minister told the newspaper Al Akhbar. "These traitors do not belong to any organization within the armed forces," he said.

The four (assassins) include one lieutenant, named Khaled," he said. "The three others are civilians, two of them former conscripts and the third a discharged reservist officer."

Presidential photographer Mohamed Rashwan died Wednesday, raising the number killed in addition to Sadat to six. Thirty-eight others, including three Americans, were wounded when the killers, all wearing military uniforms, jumped from an army truck and rushed the reviewing stand at a parade to mark the October 1973 war against Israel.

In the Al Akhbar newspaper, Maj. Gen. Mahmoud El-Masri, commander of the Republican Guard, charged with protecting Sadat, said the attack was led by Khaled, whose "brother was arrested in the recent incidents" — a reference to the purge of Moslem fundamentalists last month.

Sadat had ordered the arrest of nearly 1,600 political opponents and members of the Coptic Christian and Moslem fundamentalist groups he accused of creating religious unrest. The major targets of the arrests were Moslem fundamentalists opposed to his peace treaty with Israel.

El-Masri said the soldier managed to infiltrate three outsiders and weapons into the parade.

The commander, however, contradicted other officials who said Sadat refused to duck, saying the Egyptian leader stood up because he thought the assailants were coming to salute.

"He stood up to return the salute," El-Masri said. "Three of the traitors had jumped out of the army vehicle. The fourth was still in the vehicle. This man opened fire with an automatic rifle and hit the president immediately."

Workmen raised a 17,000-square-

foot mausoleum today near the spot where Sadat was assassinated and Egyptian police made plans to overcome the security nightmare of guarding dignitaries from around the world at Saturday's funeral.

Egypt's overtaxed security forces will have to protect an American delegation headed by Haig and including former presidents Jimmy Carter, Gerald Ford and Richard Nixon. Israeli Prime Minister Menachem Begin created an extra problem by insisting on walking in Cairo because of the Jewish sabbath.

Cairo newspapers said the state funeral will take place at Naar City, the eastern suburb of Cairo where Sadat was killed.

His body will be flown by helicopter from the nearby military hospital where he died to the scene of the shooting, for interment in the mausoleum.

The funeral procession will travel only 1,000 square yards, possibly to prevent the massive outburst of emotion that marked the funeral of Sadat's predecessor, Gamal Abdel Nasser, 11 years ago.

Mubarak, as expected, had no trouble gaining the nomination for president. Of the 392 members of parliament, 333 were present and all voted in favor, except for three ballots ruled invalid.

Despite the shock and grief over the assassination, the mood in Cairo was subdued, with little visible signs of extra security. Commerce, shops and industry closed today for a four-day Moslem religious festival.

Students arrested on pot charges after dorm search

by Karen Freitas
Staff Writer
Two State students were arrested on charges of felonious possession of marijuana Wednesday morning in what Public Safety called one of the largest drug busts in the history of the University.

Michael Casey Sigmon and William Robert Crawford, both of 507A Lee Dormitory were arrested and taken to the Wake County jail after Public Safety officers searched their room at 1:10 a.m. Wednesday and found 7½ pounds of marijuana.

"This is probably one of the biggest unifications of drugs in the history of State," Public Safety Capt. J. McGinnis said.

Several Public Safety officers assisted in the arrest, according to McGinnis. The room was searched on the basis of probable causes. The marijuana, packaged in several small and large plastic bags, was valued at more than \$6,000.

Both students were charged with one count felonious possession of a controlled substance and one count of felonious manufacturing for sale of the controlled substance.

Sigmon and Crawford were released on a \$10,000 bond and are scheduled to appear in Wake County District Court Nov. 10 at 9 a.m.

McGinnis declined to discuss the case in detail but said the investigation has been in effect for quite awhile.



Seven and one-half pounds of marijuana confiscated during a Wednesday morning drug bust lays out on a table at Public Safety's headquarters.

Delay in alcohol study delays action on bills

by Gina Blackwood
Staff Writer
Editor's note: This is the second in a series of articles dealing with raising the drinking age.

There has been a significant delay in the possible ratification of N.C. Senate and House bills to raise the drinking age due to a delay in the proposed study, according to Student Senate President Jim Yocum.

"The General Assembly will take no action to raise the drinking age until the study comes back," said Yocum, chairman of the University of North Carolina Association of Student Government program and politics committee which considers Senate and House bills that concern the UNC system.

"The study could have come back last Friday, but the legislators are pressed with the budget right now," he said.

The General Assembly will finish up this session on Friday, and will not reconvene until mid-June for a six-week summer session, Yocum said after meeting with Senate and House members last week.

"The earliest possible date for a vote is mid-June, and this is only if the study comes back," Yocum said.

According to one particular House bill there is statistical proof that raising the drinking age would result in a decrease of drinking among teenagers, a decrease in arrests of teenagers for driving under the influence, and ultimately a decrease in automobile accidents and casualties involving drinking teenagers.

Despite the delay in the bill, it will still come before the General Assembly. Several N.C. student body presidents contacted by the Technician are opposed to raising the drinking age.

"I think the minimum age is substantial where it is," Elizabeth City State University Student Body President Leroy Beatty said. "The legal age is 18, the voting age is 18, and I don't see a need to raise the drinking age to 20 or 21."

Although the government considers 18-year-olds competent enough to vote, leave home to live independent from their parents, and register for the draft in case there is a need to protect their country; there is doubt in the General Assembly as to whether 18-year-olds are competent enough to handle beer and unfortified wine, he said.

"It is, in my opinion, an attempt to assert authoritative measures to reduce the number of teenage drinkers," Beatty said. "Just wish that they would drop the whole issue."

Michael Hussey, student body president at Appalachian State University, feels that, even though ASU is located in a dry county, students there would support other North Carolina students by voting against raising the drinking age if and when it comes to a public referendum.

"There are a lot of students here that are very concerned about these bills," Hussey said. "They will effect us as much as they will students in wet counties."

"Since we are located in a dry county, students have to drive to Blowing Rock to get their alcoholic beverages. This sometimes causes problems because once they drive to purchase the alcohol, they have to drive all the way back."

According to Hussey, there is a petition in circulation now to make the town of Boone "wet." "The students here are not really pushing it, because we want to keep student-community relationships good," he said.

Duke University, although not a member of the UNC system, would be affected if these bills are ratified, according to Duke Student Body President Porter Durham.

"We serve beer and wine on our campus," Durham said. "Students can walk in and buy these alcoholic beverages just the same as they could in a public bar or convenience store."

"Drinking, as it has been and always will be, will not be sufficiently inhibited by the ratification of these bills. People are always going to drink."

According to Steve Koval, student body president of Emory University in Atlanta, Ga., as a united force students can beat this thing. Students in Georgia universities were involved in a similar situation last year and they successfully combated the General Assembly's efforts to raise their legal drinking age to 21.

"Students from most of the colleges in Georgia, especially around Atlanta, got together and presented their facts to the General Assembly," Koval said. "The key to beating this thing is to be prepared and to not let personal emotions show through."

"There are always emotions involved when a 12 or 13-year-old comes to school drunk or when a teenager is killed in an automobile accident because of alcohol, but teenagers of legal drinking age cannot be blamed for all of this."

"At this point there is very little students as individuals can do to help, other than write letters to their representatives in the General Assembly," Yocum said. "There is a very good chance that when the vote finally comes up the representatives would not even remember the letters."

Child-care center

Committee still not sure of location for 'high-quality' facility

by Sinthea Stafford
Staff Writer
A location has not been found for a planned child-care center proposed by State's child-care committee.

The facility will be open to children of State students, staff and faculty.

Carol McKnight, chairman of the committee and Cooperative Campus

Ministries member said efforts to locate the center in a University-owned house or a local church have not been successful.

"At the present time, there are no spaces on or near campus in which we could begin a program," McKnight said. "We were turned down at all the places we investigated during the summer."

McKnight said the committee is interested in hearing from anyone who knows of a space that might be available. She said that if a space could be found, the committee has enough money to buy the materials to start a small program.

The University administration has been working on specifications to be submitted to private contractors to

build a center on campus. McKnight said the committee has received these specifications and will meet with the administration to consider exactly which specifications should be included in a private contract.

As an alternative to using a private contractor, McKnight said members of the child-care committee are meeting with members of State's School of Education to discuss seeking sources for the private funding of the proposed child-care center and ways to raise money to build a non-profit child-care center on campus. The center would be under the direct supervision of the School of Education and a board of directors.

McKnight said using a private contractor to build a center would be time consuming and would make the project a long-range project. She said the child-care center is needed now. Graduate students, married students, continuing education students, faculty members and staff members have expressed the need for the center to committee members and the School of Education.

There are only two certified child-care centers near campus, McKnight said, and they both have long waiting lists.

The goal of the child-care committee is to establish a child-care program which will provide low cost, regularly scheduled, part-time care to preschool-aged (two-four years old) children of State students. Both full-time and part-time students will be able to use the program, McKnight said.

McKnight said the committee does not want to provide a baby-sitting program. It wants to offer people high-quality, educational child care.

"We want to provide an excellent child-care facility. We would like to be able to serve the University community and to use the resources of the University community. To do this, we are going to need the support of the University community," McKnight said.

A committee meeting has been scheduled for Wednesday, Oct. 14 at noon in the student center of West Raleigh Presbyterian Church to discuss the presence, including ways to raise money for the center. Anyone interested in the proposed child-care center is invited to attend the meeting, McKnight said.

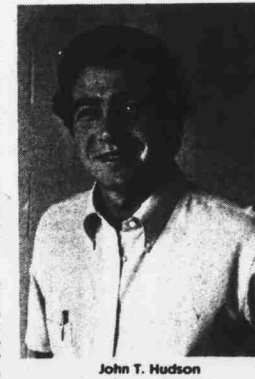
Legal Defense Corporation concerned with broad legal assistance only

by Elman Khalil
Staff Writer
"Assisting students who have legal problems with the University and providing law-related educational programs are the two main concerns of North Carolina State University's Legal Defense Corporation," Chair-

man John T. Hudson, a senior majoring in political science, said.

"Any student currently enrolled at State and paying full academic fees, as well as any University based organization, may petition LDC for funding for a legal action," Hudson said.

LDC takes on legal problems which affect a vast majority of students on campus. A case which affects an individual will not be taken.



According to Sandi Long, student body treasurer, there is a possibility that the Student Senate may finance the corporation in the future.

The history of the LDC shows increased activity over the past two years. Originally incorporated in March 1972 by the Student Senate, it became inactive in 1977. It returned in 1979 when student leaders decided to renew it. Its official date of return is September 1980.

Chairman Hudson raised points favoring the corporation saying, "It is a non-profit corporation which secures legal rights for students and takes legal action when it is needed."

In addition to pressing lawsuits, LDC tries to educate students about law-related matters. Last year, it held seminars with State's Legal Adviser

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weather

Today — fair skies with cool temperatures continue with daytime highs near 70. The lows will be dropping into the 40s.

Weekend — increasing cloudiness Saturday with a chance of some much needed showers on Sunday. Highs both days in the low 70s with lows in the 40s. (Forecast provided by student meteorologists Joel Cline, James Merrell and Allan Van Meter.)

Technician Opinion

A paper that is entirely the product of the student body becomes at once the official organ through which the thoughts, the activity and in fact the very life of the campus are registered. It is the mouthpiece through which the students themselves talk. College life without its journal is blank.

— Technician, vol. 1, no. 1, Feb. 1, 1920

Acceptance unacceptable

Violence, terrorism, revolution. The death of Egyptian President Anwar Sadat Tuesday should underscore the direction in which our civilization is heading. Since World War II, 40 world leaders have been assassinated. There have been attempts on the lives of others, including President Ronald Reagan, former President Gerald Ford and Pope John Paul II.

Revolution is not new. Throughout history man has chosen revolution to create change. The United States was founded because of revolution.

A difference lately has been the attitude of the general public when something of the magnitude of Sadat's death occurs. People seem to accept the death of leaders as something almost to expect.

It shouldn't be that way. We should all be shocked when any leader is assassinated. Perhaps Sadat's power and control of Egypt didn't leave open the possibility of peaceful change, but many world leaders have been killed when the avenue of peaceful change existed.

When there was an attempt on Ronald

Reagan's life some people shrugged it off with a degree of acceptance. Recently when Iran's leadership was killed in a bomb blast, many people not only accepted it but some even cheered as well. Our civilization currently accepts violence as an alternative to peaceful change.

When the pope was shot, the news was not of the horror of the day, but of the ramifications of the action. The same occurred with Sadat's death. The fact he had been killed was immediately accepted and the news then turned to the changes that would occur as a consequence.

What's to blame for this change in the consciousness of civilization? Maybe it's a media replete with television coverage that repeatedly — and instantly — brings directly into our living rooms the violent aspects of today's culture. Maybe it's just an autonomous change in the values of civilization.

Whatever the cause, we should all hope that someday attitudes will change and more value will be placed on humanity. We must never accept violence as a way of life.

Peace treaty no. 1

There's a rumor running around campus that State's administrators are actually flesh-and-blood people just like you and I. This rumor was confirmed Tuesday when Banks Talley, vice chancellor for Student Affairs, demonstrated the administration's ability to cooperate and listen to student input.

In a meeting with several administrators and student leaders, Talley announced that the University has withdrawn its proposal to institute four new all-freshman dormitories next year. The housing situation will remain as is, complete with random lottery and returning-upperclassman priority on room assignments.

The meeting was prompted by a letter to Talley, written by Student Body President Ron Spivey, which offered counter-proposals to the administration's plans concerning the mandatory meal plan and the proposed freshman halls. The letter suggested that: 1) the idea of freshman halls be discarded, 2) some freshmen be allowed to live on campus without having to eat in the dining hall, and 3) upperclassmen be allowed to participate in the meal plan to a greater degree than was originally planned.

Spivey struck gold with his first suggestion but his last two were rejected. All freshmen living on campus next year must participate in the meal plan and no more than 200-300 upperclassmen will be able to eat in the dining hall. This last condition, of course, will hold unless fewer than 2,500 freshmen apply for campus housing, in which case the remaining spaces in the meal plan will be allotted to upperclassmen.

The idea here of "You win one; you lose two" doesn't appear so great when it's outlined in black and white, but the situation is actually better than it sounds.

Talley's reason for rejecting Spivey's last two suggestions results from a basic insecurity on the part of the administration — the money to repay the dining hall revenue bonds must begin coming in as soon as possible, requiring all freshmen who reside on campus to participate in the plan will assure that a maximum amount

of funding is available during the first year of the dining hall's operation.

OK. We can see that. It's understandable that State's administrators might be feeling a little shaky about the financing of their latest megabuck baby. What's important about the meeting is that Talley said he and his crew would be open to alternative plans for future years — i.e., Spivey's rejected suggestions might be implemented at a later date.

Another point which Talley acknowledged during the meeting is the need for some evaluation of the dining hall after it is put into operation. He seemed to favor a student-faculty evaluative committee over a group of judges unaffiliated with the University. We hope, however, that he will not dismiss the latter idea since the decision of an independent panel of judges would be less influenced — or intimidated — by the opinions of administrative officials.

The administration's final plan contains only one potential dark cloud: its stipulation concerning the further limitation of the kinds of cooking equipment allowed in the dormitories. Cooking appliances cannot be restricted much more without eliminating them altogether. Administrators should work with student leaders to devise other methods than limiting cooking to control pests, fires and electricity consumption.

The ball has been tossed into the court of the student leaders. Careful thought and consideration must be invested in alternative proposals for the second and successive years of the dining hall's operation. One principle to remember in these considerations is: "mandatory" is a dirty word no matter how you say it but "choice" is a good word that gets better with repetition.

Spivey should be applauded for his sensitive voicing of the students' opinions; Talley deserves commendation for listening. Students should feel encouraged that their leaders and administrators have opened constructive lines of communication.



PLO signifies voice of Palestinian people

The current public debate in America on the political, historical, economic and moral feasibility of an independent Palestinian state, located on the West Bank of the Jordan River and the Gaza Strip, is continually at the mercy of stereotype, ignorance, apathy, misinformation and bias. The lack of information on this subject, especially as it is central to the Middle East, is complemented nicely by the well-orchestrated anti-Palestinian efforts (which fit into the larger anti-Arab dimension) to much of the TV, newspaper and literary media in this country.

Indeed, against the imminent reality of a Palestinian state is arrayed a disingenuous assortment of myths and half-truths. To address these myths and assumptions is to attack the attackers of any just resolution of the Palestine national question.

Among those opposed to the establishment of a West Bank/Gaza Palestinian state, there is a consensus that the Palestine Liberation Organization is nothing but a terrorist cult and that its continued refusal to accept U.N. Resolution No. 242 underlies the PLO's hostility toward Israel's right to exist.

Therefore according to this line of thought any PLO-led Palestinian state on the West Bank/Gaza would inevitably provide a springboard for terrorism into Israel. Add to these remarks the contention that a West Bank/Gaza Palestinian state would not be economically feasible and would also be a natural inroad for the Russians to the Middle East.

To respond to these accusations one need recall that aside from the virtually unanimous support given to the PLO by the world's 4.5 million Palestinian Muslims and Christians, the overwhelming majority of nations in the world recognize the PLO as the legitimate representative body of the Palestinian people. The United States is unfortunately not part of this majority — not today that is. In fact the United States cannot even communicate with the PLO without the prior notification and consent of Israel.

The United Nations' recognition of the PLO has allowed the Palestinian people to maintain a non-voting observer status in the United Nations. If the Israelis can argue that Western Europe's increasing support for the PLO is based on Arab oil considerations, then perhaps they can explain why many countries in Africa, Latin America, Asia, etc., which do not import Arab oil, recognize the PLO as the voice of the Palestinian people. Could this support not be based on certain shared historical experiences?

On the point about terrorism, isn't one man's terrorist usually another man's freedom

the activities of the Irgun Zvai Leumi, the Stern Gang, the Palmach and the Hagannah were considered "terrorism" by the British Mandate forces and the Palestinian Arabs.

For Israel to maintain, as it does, that violence perpetrated by these Jewish groups was done for legitimate nationalist reasons, but that violent acts conducted by Palestinian Fedayeen are purely recreational and involve

The insinuation that a Palestinian state will amount to a Soviet puppet state in the Middle East is absurd — even laughable — to those acquainted with the region. True, the PLO receives much of its weaponry from the Soviet Union, but those who supply the guns seldom supply the ideology, as the American experience in the Third World has taught us.

The PLO resorted to arms supplied by the Soviet Union only as a means of minimally offsetting the staggering amount and sophistication of arms supplied to the Israelis by the United States and Western Europe. Today, with the possible exception of South Yemen, none of the 22 Arab states can realistically be called a Soviet puppet and there is no reason to assume that a Palestinian state would be otherwise.

Briefly, the economic debate on a West Bank/Gaza Strip Palestinian state must contend with uncertainties and incomplete information. For example, what percentage of Palestinians living abroad would return to live in their own state? How much economic aid would be made available to this state by international agencies, individual Arab states, the United States, etc.? Would Israel compensate or pay indemnities to Palestinian Arabs whose lands have been expropriated by the State of Israel, etc., etc.?

Correspondingly, the Jews have built Israel into a going concern, but not without more than a little help from their friends. For example, since 1973 one-third of the total U.S. foreign aid has gone to Israel, most of this in non-repayable grants. Add to this the financial gifts donated to Israel by world Jewry and sympathetic nations like West Germany, which amount to billions more — for a population of fewer than 4 million (source of information: U.S. Department of State). Likewise, a Palestinian state, initially given a fraction of this kind of external support, could conceivably become economically viable.

Thus deprived of moral, political and economic arguments with which to impede the establishment of a West Bank/Gaza Strip Palestinian state, the Israelis have nothing but brute military force with which to block Palestinian national aspirations. However, that will increasingly not be enough — for as the French Humanist writer Victor Hugo once noted, "There is one thing stronger than all the armies in the world: and that is an idea whose time has come."

Lee Rozakis is a staff columnist. This column is reprinted from the March 18, 1981 Technician.



Lee Rozakis



forum

Sadistic policy

A matter which I feel is of great concern has recently come to my attention. Incredible as it may seem, a friend of mine and member of your community has, just last week, been kicked out of his dorm and actually arrested for having a bag of marijuana in the privacy of his room.

I must mention that he was forced out of his dorm prior to trial. This act alone makes a mockery of the American sense of justice because of the failure to consider him innocent until proved guilty. Aside from this blatant disregard of judicial morality, it was the dorm's resident adviser who instigated all of this by causing the police to be called in.

Perhaps I am ignorant of State's customs, but at the college I attend RAs do not desire to inflict pain and cause harm to fellow students. I assume that the function of any university is education. Unfortunately, my friend must now sacrifice study time in order to find another place to stay and to attend court.

This implies to me that academics is not your administration's primary concern. Rather, it seems devoted to the sport of being cruel to its students. The term for such policy is not "education"; it is sadism.

Mitchell C. Levine
Kenyon College, Ohio

Technician

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The Technician (USPS 455-050) is the official student newspaper of North Carolina State University and is published every Monday, Wednesday and Friday throughout the academic year from August through May except during scheduled holiday and examination periods. Summer publication is every Wednesday from May through August. Offices are located in Sultes 3120-3121 of the University Student Center, Cates Avenue, Raleigh, N.C. 27607 Mailing address is P.O. Box 5098 College St. Station, Raleigh, N.C. 27650. Subscriptions cost \$26 per year. Printed by Hinton Press Inc., Mebane, N.C. Second-class postage paid at Raleigh, N.C., 27611. POSTMASTER: Send any address changes to the Technician, P.O. Box 5098, Raleigh, N.C., 27650.

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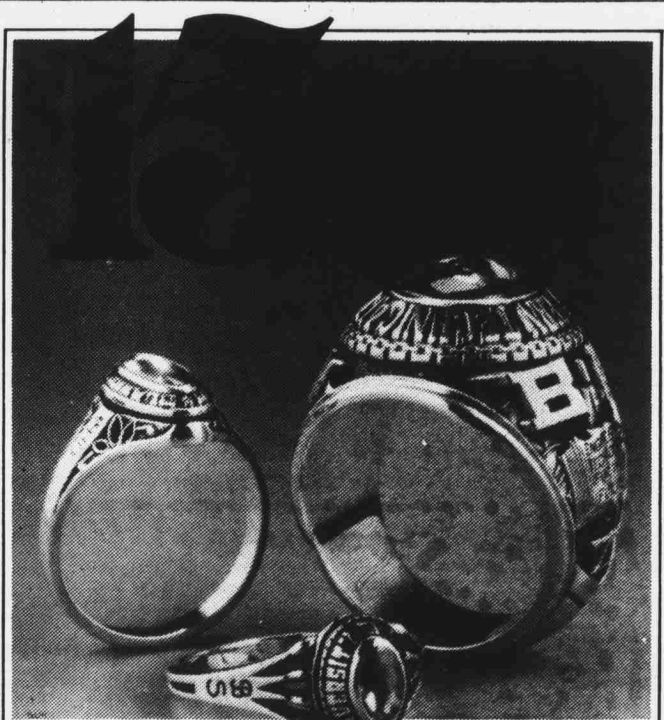
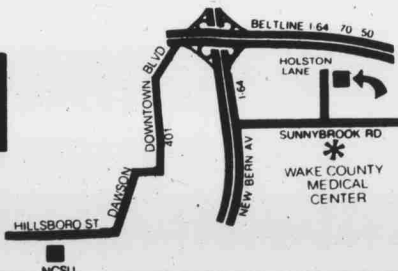
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CROP walk gives money, attention to hungry

by Mike Brown
Features Editor

Somewhere in the world, approximately 600 people die from hunger an hour. That might not mean a lot since most Americans take their material blessings — such as food — for granted. But last Sunday about 1,200-1,400 people participated in a 10-mile walk to raise both money and social awareness for the problem of world hunger.

The walk was organized to raise money for CROP, the Community Hunger Appeal of Church World Service. Organized in 1947, CROP serves in 36 different countries, mostly in agricultural development, to attack root causes of hunger and also responds to disasters in the United States.

According to Henry Campen, co-chairman of this year's effort, "A large part of our goal is helping people understand the hunger pro-

blem in addition to raising money each year."

In fact, the majority of people participating this year were young people, mostly members of church groups, Boy Scout troops and area high schools.

Thom Nelson, a Lutheran campus pastor, said, "There are more families and high schoolers than there are college people. It's just too bad we didn't have 40,000 more people to walk who went to the homecoming football

game Saturday. It would have been good for them and for this."

The 10-mile trek wound through downtown Raleigh, beginning and ending at Meredith College. Money was raised through the use of sponsors who would agree to donate a specified amount per mile traveled by the walker. Each walker carried a card which was initiated by volunteers stationed along the route and thus verified the amount of miles he had walked.

"The basic idea of it," Nelson said, "is to find people who are interested in it enough to sponsor you but not enough to walk."

Participants in the walk were enthusiastic about their reasons for pounding the pavement to help solve a problem many of them had never encountered.

"People do it from having a good time to making a physical statement about hunger and to feel involved with a worthy cause," Nelson said.

Kathleen Kelley, a freshman majoring in computer science and a member of Genesis II, a Catholic organization, said, "I'm able to help raise money for this organization and people learn from a demonstration. There is not much work involved and it's for a good cause."

"I also get to see Raleigh this way, since I'm not from this area."

When the walkers first left Meredith to tramp along Hillsborough Street, it looked as if the going would be sluggish because the rules stipulated that the walkers had to stay on one side of the



Staff photo by Jim Frei

These two Boy Scouts, who suffer from cerebral palsy, participated in the CROP walk for world hunger, which has so far raised \$44,000.

road and not cross the street.

But as the stream of walkers snaked further down Hillsborough, the crowd began to thin out and settle into groups that would remain together until the end of the walk.

To entertain themselves, some people looked at the scenery and the sidewalk, talking with other members of their group; some carried radios and cassette

recorders, dancing and singing along to the music; and there were even a few who strummed guitars and crooned to the passers-by.

And not all people walked. Robin Kay, a junior in computer science, and Keith Knoll, a sophomore in mechanical engineering, brought their bicycles. Upon finding a reasonably level surface of concrete and little traffic ahead, they would jump on the cycles and pedal a ways until they had to jump off or fall off.

"There were also the members of Boy Scout troop 389, composed of cerebral palsy victims. Most of these scouts were in wheelchairs and were pushed all the way. Even after several hours of monotonous walking, almost everyone was able to maintain a good humor about it and the cause they were working for."

A volunteer who was working at one of the five rest stops along the way said, "Nobody hardly stops except long enough to get a cup of water. I haven't seen anyone want to stop. They're enjoying the fellowship of walking and are getting caught up in the feeling of community participation."

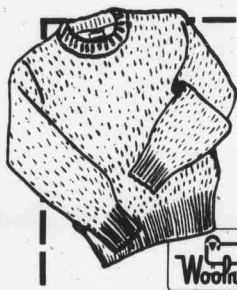
The last leg of the walk, from the corner of Salisbury and Hillsborough streets to Meredith, was perhaps the longest of the entire trip. Treasurers were stuffed to overflowing with styrofoam cups and wrappers from fast-food shops which happened to be along the route.

The line of people moved slower but never came to a halt until it reached Meredith, where the walkers got their cards verified and waited for friends to catch up.

Laura Hartness, a student at Meredith, said, "There are a lot of great people involved. I'm just contributing my little bit. People think they can't do something like this because they don't think they could contribute much but every little bit helps. If you take all the little bits away, you have nothing."

According to K.C. Ramsey, one of the workers in charge of the CROP walk, said, "We had a goal of \$50,000 and have so far collected \$44,000. We're still collecting, too. But every year the added pledges have exceeded the goal, so we've still got a short way to go. Everything went very well."

"This walk is an excellent way to get students involved and aware of the problem of hunger," said Don Patty, a minister to college students at Forest Hills Baptist Church and a member of the Wake County CROP Walk Steering Committee. "We have the resources and capabilities to solve this problem, yet 10,000 starve to death every day," he said. "After the walk was over, some of the people in my group were talking about going out to eat. When you stop to think there are people in this world who do this kind of activity every day and have nothing at all to eat, it puts the whole thing in perspective."



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When the guys at Miller asked me to write an ad on writing, I said, "Forget it. Not even if you held a gun to my head." So they held a bottle of Lite Beer to my mouth. They're a pretty persuasive group.

THINGS TO MUGS

If you're going to write anything, know what you're talking about. And that means three things: Research, research, and more research. The more you know, the more you can tell your reader.

Take my characters. A lot of them I base on actual people. There's this buddy of mine who pops up in every book I write. In one story he's a cop. In another, a private eye. Once, I made him a millionaire. Using him not only helped make character development a heck of a lot easier, he was so carried away by the rich image, he bought me a lot of free dinners (and a lot of Lite Beer from Miller). So use the people you know as models.

Even locations should be based on real things. If you're writing about a bar, know that bar. Hang out there. Watch the bartender. The customers. Whatever they drink, you drink. When they drink Lite Beer, you drink Lite Beer. Remember—research is most fun when you soak up as much subject matter as you can. It can only help you paint a better picture.

HI, DOLL

No caper is complete without dames (or ladies in proper English). Experience has shown me that in mystery writing, the sexier the dames, the better. Experience has also shown me that sexy scenes make great punctuation marks. This is where research has the greatest potential. Use your own discretion in this matter. But when you write about it, don't be too explicit. That way, your reader gets to paint a more vivid picture.

CAPER TO PAPER

O.K., you've got your characters, locations, and dames lined up. Now comes the good part: Putting your caper to paper. There's no mystery to it. As long as you write the ending first, the rest will follow. Write short, terse, to-the-point sentences. Be as clear as possible. And make sure you've got the right stuff around for when you get thirsty. After all, writing is pretty thirsty work.

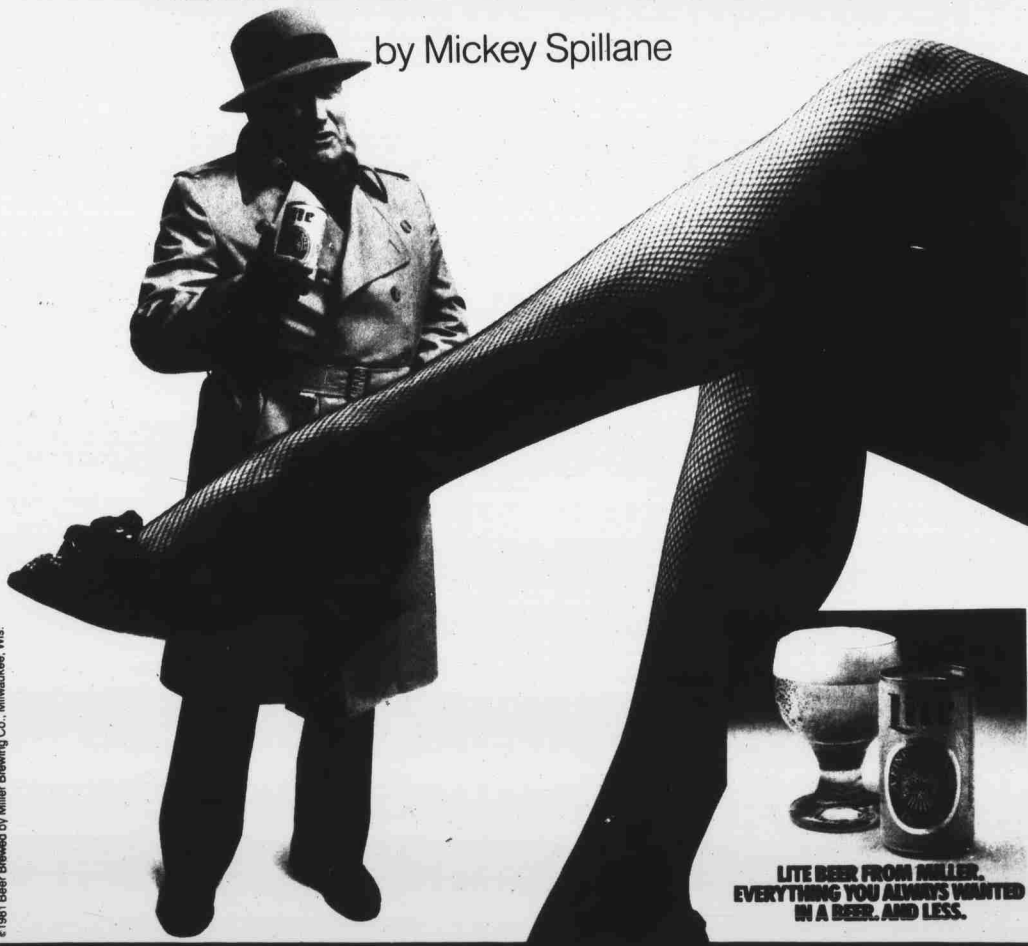
I suggest a couple of mugs of Lite Beer—who ever heard of a caper that didn't involve a couple of mugs?

Why Lite Beer? It's a lot like me and my books—great taste, less filling (some people can't get their fill of my books), and always good to spend time with.

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by Mickey Spillane



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crier

All Crier items must be fewer than 30 words in length and must be typed or legibly printed on 8 1/2 x 11 paper. Items submitted that do not conform to the above specifications will not be run. Only one item from a single organization will be run in an issue. The Technician will attempt to run all items at least once before their meeting date, but no item will appear more than three times. The deadline for all Criers is 5 p.m. the date of publication for the previous issue. Items may be submitted in Student Center suite 3120. Criers are run on a space-available basis and the Technician is in no way obligated to run any Crier item.

Dive trips will be planned and other programs. Skin divers welcome.

JEWISH STUDENTS - Sukkah raising party and pot luck dinner on Oct. 12, 5 p.m., at Lisa's. For info, call 833-1421.

"NOT A PRETTY PICTURE" - a one-hour film about "date rape" focused on the college scene. Three showings on Tues., Oct. 13 - 9 a.m., Noon, 2:30 p.m. in the Blue rm., fourth floor, Student Center. Discussion led by members of NCSU Rape prevention committee.

MED. TECH CLUB meeting Mon., Oct. 12, 7 p.m., Gardner 3533. Everyone invited.

CHASS Full Council meeting, 7:30 p.m., Wed., M & Link Building.

PRE-VET CLUB zoo trip will leave Harris Lot in front of Harris Hall Fri., Oct. 9, 12 p.m., will return by 7 p.m.

SOCIETY OF AFRO American Culture presents "Black Male/Female Relationships" workshop. Mon., Oct. 12, 7:30 p.m., Cultural Center Activity Room. All are invited.

LEOPOLD WILDLIFE CLUB meets Tues., 7 p.m., rm. 3533 Gardner Hall. Dr. Sam Julian will be guest speaker. Refreshments will be served.

PUMPKIN PATCH HELPERS needed for March of Dimes Halloween Carnival Oct. 29, 30, and 31. Fair for young children held at North Hills. Call Volunteer Services 737-3195.

A TYPE OF Economics text book found in front of library. To claim call 8532 and be able to identify.

BASKETBALL OFFICIALS - all persons interested in officiating basketball sign up in 210 Carmichael Gymnasium. Clinic. Nov. 11, 8 p.m., rm. 211, Carmichael Gymnasium.

NEW HORIZONS Choir in concert Oct. 13, 7:30 p.m., Stewart Theatre. Guest choir 82nd Airborne Army Choir. All are welcome.

THE CLAY TENNIS COURTS will be open to all faculty, staff, and students Mon. thru Fri. from Noon to 7 p.m.

ANYONE INTERESTED in writing for the 1982 Agroneck, please contact Kristin Long at 737-8283 or attend the copy staff meeting on Sun., Oct. 11, 7 p.m., Agroneck office.

ALLIANCE FRANCAIS DE RALEIGH Reunion le 15 Oct., 876-1943; 851-8650.

GIRLS! Are you torn between two lovers? If so, there is a person that can set your mind at ease. Call Dr. Roy Houston 737-5558 for experienced advice.

HP PROGRAMMABLE CALCULATOR user's group meets Mon., Oct. 12, 8 p.m., Brown Room 4th floor, Student Center. INFO call Kevin 737-5882 evenings.

AGROMECK LAYOUT STAFF who did not attend the meeting should pick up a questionnaire on the office door and fill out by the end of the week. Next meeting Sun., Oct. 25.

PAMS COUNCIL meeting Tues., Oct. 13, 6 p.m., Chem. Tutorial Room, 120 Dab. All reps should attend.

NCSU SCUBA AND DIVE CLUB meeting Wed., Oct. 14, 5 p.m., 214 Carmichael Gym.

Sparks fly in hot new film — *Body Heat*

by Tom Alter
Assistant Ent. Editor

The steamy new film *Body Heat* is a fairly good movie that features some good acting with an ingenious plot. However, the film's good points may be missed by anyone who is offended by the controversial and explicit sex scenes in the film.

The film's fascinating plot follows Ned Racine, a fast-talking playboy, who, once in a while, finds time to practice a little bit of law. William Hurt plays this role for all it's worth. He seems right at home as a man who smokes cigarettes while he jogs.

Hurt illustrates an uncanny range of emotions. He is able to express the bewilderment we expect from the unanticipated changes of events that happen when he falls in love

with a beautiful married woman, while also illustrating an uncanny sense of humor.

The woman whom he falls in love with is Mrs. Matty Walker, with Kathleen Turner as the protagonist. Turner does a fine job in developing the greed that Matty thrives on, while hiding the killer instinct that is really the backbone of her character.

At first, Matty will not give in to Ned's suggestions, but in a move of lust — more than of passion — the two spend the night together on one of the frequent weekends that her husband is away.

Matty and Ned agree their love is special — they spend the entire first half of the film trying to convince the audience of this — and feel that to be happy they will have to kill her husband. Thus the heroes begin to plot the one thing that will

change the course of their lives forever.

In his directing debut, Lawrence Kasdan has done a remarkable job with *Body Heat*. Except for Robert Redford and his film, *Ordinary People*, rarely has a rookie director put out such a fine product in his first attempt.

Kasdan has done a

how far one will go to get what he or she wants.

By accident Matty, her husband and Ned all have dinner together one evening. The conversation shifts to the subject of attaining success and happiness. Both Mr. Walker and Ned agree that the only way to get to the top is to possess "the killer instinct." They

sion through other techniques besides the plot. For example, throughout the film, the viewer is bombarded with hazy, foggy, smoky scenes. Rarely are any bright colors seen in the picture.

The use of the chimes on the porch, which Matty is so fond of, is to illustrate that, like the wind, some unseen force is acting upon the people in the movie. Other symbolism is used by the director to further the idea of some unknown force acting upon Matty and Ned's relationship. The shadows that are created from some Venetian blinds fall across the chest of Ned showing his trapped feelings. The same can be said for the striped clothing Matty always wears.

Actor Richard Crenna practically steals the show while portraying Ned Racine's friend, Assistant County Prosecutor Lowens-

tein. He adds that special touch that is often needed by a supporting actor to keep the movie progressing. The jokes he tells and the way he behaves — his favorite hobby is dancing — create light-hearted moments that the audience needs.

The subject of sex has long been a controversial issue in cinema. Sex plays an important role in society and many times it is only natural for sex to occur in a loving relationship. It is also used by producers to attract crowds, while at the same time trying not to offend anyone. This is a thin line to balance on. It is unfortunate that the sex in *Body Heat* apparently serves no other purpose other than to arouse our "interest." This is a shame because the film is genuinely good, yet many people will avoid it because of its almost lack of consideration to appeal to a mass audience.



The British are coming! The Royal Scots Dragoon Guards will be performing their world famous "Amazing Grace" at Reynolds Coliseum on Oct. 9 and 10 at 8 p.m. The Highland dancers will also be featured on their first trip across the Atlantic.

Movie Review

marvelous job in recreating the '40s film noir style. The writer of such box-office smash hits as *Raiders of the Lost Ark* and *The Empire Strikes Back*, Kasdan wrote *Body Heat* to keep the viewer on the edge of his seat by continuously twisting the plot throughout the story. He also finds time to concentrate on the theme of the "killer instinct" and

agreed that one must do whatever it takes. It was quite ironic that Matty did not take part in this conversation.

The twists that occur in the plot keep the viewer off guard. Confusion on the part of the audience is only compounded by Ned's confusion of the curious events that occur to him. The director creates this feeling of confu-

STATES SILVER SCREEN

by Karl Samsom
Entertainment Writer

Excalibur Friday, 7, 9:30 and 12 p.m.
Stewart Theatre Admission: \$1

This epic costume drama loosely follows the history of King Arthur, the Knights of the Round Table and the magic sword — Excalibur. With Merlin acting as master-of-ceremonies, the film leaps with lightning speed through the life of Arthur.

The Incredible Shrinking Woman Sat., 7 and 11 p.m.
Stewart Theatre Admission: 75 cents

Modern household conveniences become nearly insurmountable obstacles for Lily Tomlin, when she discovers that she is shrinking in this humorous spoof of the 1957 classic.

The Incredible Shrinking Man Saturday, 9 p.m.
Stewart Theatre Admission: 75 cents

With an excellent script and outstanding trick photography, this film has earned a place among the sci-fi horror classics. After being exposed to a mysterious fog a man learns a new perspective on the world.

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Booters crush Wesleyan behind Okpodu's four goals

by Devin Steele
Assistant Sports Editor

Wednesday afternoon behind Sam Okpodu's career-high four goals and Steve Green's two scores to record its fifth-straight shutout. The shutout, compliment-

tary of the Wolfpack's outstanding defensive efforts, was sophomore goalkeeper Chris Hutson's seventh of the season and 11th in 15 career starts. State, which travels to

Washington, D.C., Saturday to face a tougher challenge in George Washington, upped its record to 8-1-1 while dropping N.C. Wesleyan to 3-6-1.

It was a real gratifying win," said State coach Larry Gross, whose substitutes saw a large amount of second-half action. "We got the chance to see how good the rest of the team could perform. We told the team that we would work the key subs in the first 20 minutes of the second half, but we didn't take all our starters out. We let them play together to see how they would blend together."

The Wolfpack's first two goals were scored by goal leaders Chris Ogu and Okpodu at 33:10 and 29:43, respectively. Ogu's tally came on an assist from Okpodu, whose goal was assisted by Prince Afejuku and Steve Green.

Six minutes later, senior Jim Burman connected unassisted to put the Pack up, 3-0.

Then with the lightning-quick speed he has displayed all season, the 125-pound Okpodu maneuvered his way through the N.C. Wesleyan front line, weaving his way near the goal where he was one-on-one with the goalie. He met the nets from five-yards out at 13:41.

Less than a minute later, Okpodu was on the attack again. The freshman put the Pack up 5-0 with 12:56 remaining in the first half, taking the assist from Gerry McKeon and Danny Allen.

Green stepped into the picture next. The senior connected twice within five seconds at 1:22 and 1:18 on assists from Ogu and Budhy Barber to give the Pack the 7-0 halftime lead.

Okpodu's work for the day was done after his fourth goal at 37:52 to end scoring for the day. Afejuku assisted on the goal.

Hutson has allowed only seven goals in his 10 starts this season to give him a 0.77 goals-allowed average.

The Wolfpack's offensive number of 47 seasonal goals is eye-catching, too.

Okpodu, who has pulled hat tricks on two other occasions this season, owns 14 goals in 10 games and needs just eight more with as many games remaining to shatter State's 18-year-old school record of 21 goals in a season.

"We're halfway through the season and we're pretty much where we want to be as far as our record goes," McKeon said. "If we can perform the second half like we did the first, we'll be right on schedule for post-season action."

George Washington will certainly provide a test for State. The Colonials own a 7-2 record after losing a 1-0 touthie to Maryland, which held the Pack to a 0-0 deadlock last Sunday.

"George Washington will certainly be a more skilled team," Gross said. "They'll be at home and we expect a tough, tough challenge this weekend. They, like we,



Staff photo by Peter Maroulis
Gerry McKeon is a portrait of concentration as he passes the ball against N.C. Wesleyan.

have good speed on the front line. A main thing that concerns us is the condition of their field. It's real bumpy, which might negatively affect a team like ours."

Colonial coach Georges Edeline hasn't used his team

together all season due to injuries, but he expects to play all 11 players for the first time.

"We've had our share of troubles, but I'm satisfied with a 7-2 record," Edeline said. "This will certainly be

our toughest test ever. We played Maryland and Navy, but I don't think either are as tough as N.C. State. I saw them Sunday against Maryland and State was definitely the dominant team."

Athlete of the Week

State split end Mike Quick is this week's Technician Athlete of the Week. Quick led State to a 30-24 victory over Virginia last Saturday at Carter-Finley Stadium.

The 6-2, 186-pound senior from Hamlet caught three passes for a total of 97 yards and a touchdown. Quick, who is one reception away from tying the school career pass-catching record of 102 receptions by Don Buckley and also within 24 yards of Buckley's career school record for reception yardage of 1,735 yards, caught a 28-yard touchdown pass on his first reception to give State a 6-3 lead it would never relinquish.

His second catch, a 29-yarder, set up Todd Auten's second-quarter field goal. The three-year letterman's final catch was a 40-yard play that



Technician file photo
set up Vince Evans' third-quarter 17-yard touchdown run.

The speech and communications major was named to Southern Living's prestigious all-South pre-season football

team. Virginia has traditionally been a good game for Quick as he made four catches for 111 yards as a sophomore against the Cavs and totaled five catches for 76 yards in last season's Virginia game.

Riflers aim toward new season

by Ralph Graw
Sports Writer

Beginning the season with an "easy" meet is every coach's dream. That is how head rifle coach John Reynolds sees Saturday's match against the Monarchs of Old Dominion.

"Easy," said Reynolds. "But I'll have more to say after the match is over."

Reynolds' wife and assistant coach, Edie, is not quite as confident. "All the other times we've shot against ODU they've brought up teams that looked really good," she said. "Their positions looked good. Their equipment was in good shape. I think that their team probably doesn't get enough practice, but that doesn't mean they can't surprise us."

Practice time could be a factor Saturday since State's season was moved up one month to start early in October. Some team members, like Jeff Armantrout, feel that they could use more time to get ready for the season.

"Out here (the Army Reserve National Guard's rifle range) we've only got two nights a week to practice," Armantrout said. "That means I've only been able to shoot about 12 times to get ready for this match."

One other factor will be picking the first, or "red" team, whose four members' scores will be combined to determine the winning team. This selection is more difficult than in previous years because of the abundance of shooters who are

shooting at or above their averages of last season.

Whether State is prepared will be decided tomorrow beginning at 8 a.m.

"With the range out here at the airport we probably won't get many spectators, so anybody that does come will get a big welcome," Reynolds said.



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PREMIERE EDITION

BEYOND

Can You Survive
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New Fiction by
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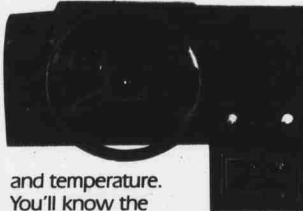


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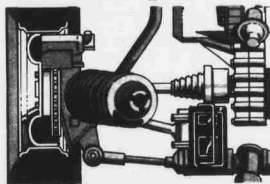
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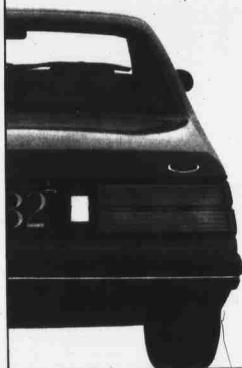
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input

In the past few decades we've been fortunate enough to see wonders foretold by such science fiction pioneers as Jules Verne and H.G. Wells become reality. The writings and imaginings — sometimes hope-inspiring, sometimes crushingly ominous — of such authors as Huxley, Bradbury, Asimov, Ellison, Clarke and Heinlein may indeed be closer to realization than we dare to think.

Man's accumulated knowledge — his use of his environment and the tools he has made — has evolved more and more rapidly, so that advancements in science and industry that once took years to develop are now accomplished in weeks. Devices that once occupied large rooms are now plastic-cased handfuls of microchips.


That bone hurled into space by the ape in Stanley Kubrick's *2001* is indeed a spaceship now.

Many of the sciences and disciplines currently studied in our universities did not even exist fifty years ago, and it's just as likely that they'll be outdated twenty years hence.

Imagination, Knowledge, Science and Technology will continue to propel us into the future. As students, you'll accumulate highly specialized information with exceedingly broad implications. *Beyond's* purpose is to explore the ever-changing boundary between Fact and Fiction and, in so doing, to give you fresh perspectives on your work and what it can mean to the world.

Launching a new publication is a challenging and exciting endeavor. We are looking forward particularly to making *Beyond* a meaningful, enjoyable part of your college experience. *Beyond* is written for you, but we also hope it will be "of" you. In fact, we specifically designed our *Input* section for your letters, thoughts, criticism, praise — whatever response and brain food you may wish to send our way.

Please let us know what you think of *Beyond*; it exists for you.

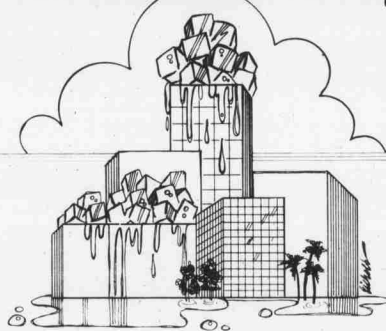


Durand Achée, Publisher, and the staff of *Beyond*

Readers: Please send your letters to *Beyond/Input*, 1680 North Vine, Suite 900, Hollywood, CA 90028.

output

BY BOB WOODS



Ice Cools

When it comes to cooling things off, ordinary ice does a pretty good job. This basic principle did not go unnoticed by Princeton University physicist Theodore Taylor, who has invented a low-cost, energy-efficient air-conditioning system that literally cools a building with ice.

Taylor's cooling system employs a relatively simple device: a snow-making machine, the kind used on ski slopes, which builds up a 5,000-ton iceberg during the winter. Come summer, when the mini-berg begins to melt, the cooled water is recycled through conventional air-conditioning pipes.

Taylor put together such an apparatus last winter. He covered his ice pond, as he calls it, with a snow-white vinyl dome, insulated just enough to keep the ice frozen in winter but also to allow for gradual melting in summer. Thus far, the system has maintained a comfortable 70-degree temperature in the building. But even before summer's end, Taylor was hired by Prudential Insurance to construct a half-acre ice pond that will cool Prudential's \$20-million office complex in nearby Plainsboro, N.J. Prudential is gambling \$400,000 that Taylor's calculations are right, and if so the company will save at least \$12,000 on next year's electric bill.

Investing in the Future

So, what to do with that little nest egg you've got stuffed in an old sock under the mattress? How about investing it in companies making products that would amaze even Buck Rogers?

You won't be alone. According to Wall Street analysts, the stock market is training a keen eye on the burgeoning field of high-technology industries. These firms range from Genentech, the bioengineering outfit that's manufacturing lifeforms, to SelectaVision, the videodisk entry from RCA. Scores of these companies, both large and small, are doing very well — an upward trend that is gaining widespread attention from investors.

One of the best examples is Apple Computer Inc. This modern-day financial phenomenon was the brainchild of two California computer whiz kids, fresh out of college and looking for a way to make a buck. They started building and selling microcomputers, being marketed today as "home" or "personal" computers. Like so many other fledgling businesses, this one needed venture capital to hold them over till they started making money, so they decided to "go public," that is, put the company up for sale to stockholders. The rest is history. Apple emerged as the leader in the skyrocketing home-computer market, and all of those shareholders who got in early are reaping the bounties. Other companies to watch in this field are Tandy Corp. makers of the popular Radio Shack line of personal computers, and Commodore, whose Pet unit is making inroads. The heavyweights — IBM, Hewlett-Packard, Texas Instruments and the like — are predicted to enter the game soon.

Biogenetics continues to be a hot issue on Wall Street, where they are still

bullish about Genentech, the San Francisco firm that didn't get off all when they went on the market last year. They've since been joined by Cetus Corp., Cytox, Enzo Biochem Inc and Hoffman-La Roche, as well as many large chemical and related companies which have begun gene-splicing operations. There's also a lot of chatter about some privately owned labs, especially those attached to major universities, going public. Harvard almost did it last year, but backed down at the last minute under ethical pressure. Some experts, though, feel that such demurrers might soon look the other way.

As in *The Graduate*, where the one word was "plastics," Wall Streeters are today whispering "CAD/CAM." CAD/CAM is short for computer-

assisted design and manufacture — essentially, a machine that allows a trained designer to do all his work on a computer instead of the conventional drawingboard. This cuts design time dramatically, not to mention the time it takes to get the product — be it a better mousetrap or an Italian sports car — into production. Right now, the clear leader in the CAD/CAM rush is Computervision, a company that contributed most to the 50 per cent growth in the market last year. Other leaders are Matrix and Calma, and catching up fast are Applicon and Auto-Trol Technology.

Maybe you'd like to go with more of a science-fiction scenario and plunk down your dollars on a robot manufacturer. These mechanical wizards are finding more and more jobs in heavy industry — namely auto making — and equal attention on the stock market. Cincinnati Millicron and Condec are two of the biggest names right now, but others are rapidly moving up.

If you're really serious about playing the high-tech market, you might check out any of the large brokerage firms — Merrill Lynch and the rest — that have formed specific high-tech teams, or any of the small brokerage houses that have flowered in direct response to this lively market of investing in the future.

Sunshine — The Original Natural High

Ever wonder why people seem to be — or at least claim to be — happier on a bright, sunny day? According to some researchers, these sun worshippers' claims have some validity.

It all comes down to the often-ignored pineal gland, the one you thought could never do anything except mix you up on an exam question. The tiny gland produces melatonin, a hormone known to affect animal behavior and which is now being studied as a factor in human biology. Hormones in lower animals control functions like reproduction and eating

beyond reason

This section, in future *Beyonds*, will contain weird, bizarre, outrageous, but true items provided by our readers. You, we will pay for such hot news. The items don't necessarily have to deal with scientific or technological breakthroughs, though those would be welcome; readers may submit muckraking exposes, hilarious scenes, or just amusing or amazing research reports. Personalities may be featured (don't be libelous), rats may be prominent. Or both. Each item must be no longer than one page, double spaced — 250 words. (If your item must be longer than that, call or write us, it may be an article.) We will pay \$25 for each item that we print. One more requirement: standard English must be used. None of that technical doublespeak. Send these dazzlers to *Beyond Reason*, 1680 North Vine, Suite 900, Hollywood, CA 90028.



The final word is far from being uttered, but the debate over whether marijuana is a cure or a curse still rages. Reports from recent studies offer both good and bad news — depending, of course, on your personal affections for the weed.

No matter their own opinion, though, many scientists are eager to get their hands on some pot. And just to make it a bit easier for them to score, the federal food and drug folks have classified THC, the active ingredient in marijuana, as a Class C drug, making it cool for clinical use. In fact, the government has long had its own pot fields flourishing at the University of Mississippi.

One of the greatest fears in connection with pot smoking is that THC and its related compounds do not dissolve in water, and therefore remain stored in various parts of the body. This led to indictments in the early Seventies that smoking pot lowers men's levels of testosterone, the male sex hormone. However, follow-up studies have dispelled most of these fears — yet it has been determined that male adolescent smokers may inhibit their normal advances into puberty.

In a parallel study at Columbia University, 16 healthy men smoked between five and fifteen joints a day for four weeks. At the end of the test period their sperm counts were low and some sperm cells were abnormal in shape, but this effect corrected itself after a few weeks. What this ultimately means is that pot smoking may keep marginally fertile men from becoming fathers.

habits, and similar hormonal systems in humans are now being related to such areas as mood and fertility.

Melatonin is actually produced at nighttime, after the sun's light has taken a somewhat roundabout journey. Light enters through the eye to the optic nerve, part of which goes to the brain's vision center and the other part to the hypothalamus (you remember that one, too, don't you?), often referred to as the body's internal clock. The light-generated nerve messages finally work their way to the spinal cord and then to the pineal gland, located in the brain, where the hormone is manufactured.

Dr. Alfred Lewy, a research psychiatrist, has conducted studies that have determined, for instance, that some people may have adapted to low-level artificial light while remaining sensitive to more intense natural light — sunshine. This may explain why some mental illnesses seem to occur at certain times of the year. It is often reported, for example, that temperate and polar regions cite seasonal patterns in depression, mania and suicide.

Dr. Lewy experimented with one patient who suffered extreme depression every fall. The man was exposed to intense natural-type light for six hours per day — three at dawn, three at dusk — and, according to the study, his depression lifted in four days. In essence, they made spring — and all its joys — come early for the patient.

Related studies have led to criticism of artificial lighting, the type used in schools, offices and other public places. Recommendations have been made that people get outside as often as they can and to keep doors and windows open whenever possible. You might just keep this in mind as an excuse the next time you want to cut class on a sunny day.

Marijuana — Curse of the Marginally Fertile?



Research on how marijuana affects women bears some bad tidings. Tests on rhesus monkeys, which have menstrual cycles almost identical to humans, have showed marked disruption. Nonetheless, there is still heated

argument over whether animal studies can be directly related to humans, since humans and animals react differently to marijuana.

The greatest fear about pot, most doctors think, is its psychological effects. Most agree that smoking dulls the senses, short-term memory and reaction times, making heavy use of the drug particularly detrimental to students and drivers. But in general, most experts concur that pot does not permanently impair overall intelligence.

And now the good news. Marijuana has been found to be one of the most effective anti-nausea drugs around; more than 12,000 cancer patients regularly use it to relieve nausea and vomiting that accompany chemotherapy. And those who suffer from glaucoma, the leading cause of blindness in the U.S., use pot to ease intraocular pressure. Controlled doses of THC have also been employed in treating people with multiple sclerosis. It turns out that the substance reduces spastic attacks. A test at Pennsylvania State University shows that pot smoking lowered spasticity in six of nine patients. This finding may be especially important in the treatment of stroke, cerebral palsy, paraplegia and spinal cord injuries.

Another pot derivative, cannabidiol, or CBD, is intriguing many scientists who are experimenting with epileptics. A team at the University of Utah found that in tests with rats, artificially induced epileptic seizures were reduced in intensity and frequency in every case. Human studies at the Paulist School of Medicine in Brazil came up with similarly promising results.

Designer Genes for the Farm

The biological revolution spawned by recombinant DNA research is generally associated with medical discoveries. Well, look again. Genetic engineering is moving down to the farm. In an effort to cure persistent world-wide food shortages and related energy problems, agricultural genetics is attracting new research talent as well as mega-dollars.

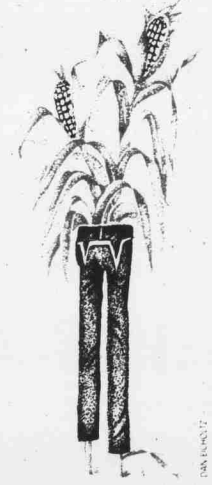
By fiddling with plants' genes, scientists hope to someday achieve such botanical feats as inducing crops to fix their own nitrogen, thereby requiring less fertilizer; to resist deadly herbicides; to grow in salty soil; and to secrete toxins that would kill invading pests. The fruits of their labors may be years down a long country road, but big business is willing to pay now for the future harvest. Dozens of small firms have blossomed in the plant genetics field lately, coupled with major commitments from such giants as DuPont, Upjohn, Monsanto and Cetus Corp., the oldest genetic company in the country.

Crossbreeders have been creating genetic hybrids for years, but since plants have nearly 10,000 genes, finding the specific ones farmers want is a time-consuming, trial-and-error process. For instance, it's taken more than 20 years to breed today's strains of commercial corn and rice. Gene speeding offers a shortcut, a way to slip up nature.

A good example is the "sunbean," developed by biologists at the University of Wisconsin, who transplanted a gene from a French bean into a sunflower. Similar studies are being conducted at the University of Georgia, where aggeneticists are working on the super soybean that will resist

herbicides.

Other researchers are concentrating on developing plants that fertilize themselves. Winston Brill, formerly with the University of Wisconsin and now working with Cetus' new lab in Madison, is experimenting with legumes such as alfalfa and clover. Brill and his colleagues have created nitrogen-fixing bacteria that cling to the roots of the plants. Cetus scientists are also injecting plants with genes that make chemicals



toxic to a common insect.

The risks are high, the competition is firming up and the return on investment is years away, but agribusiness anticipates a fertile future with the aid of genetics. As Winston Brill puts it, "Things will break left and right."

Holding Back Herpes

Sufferers of herpes simplex virus infections, one of the most common types of VD in the United States, should find some relief from a report out of Johns Hopkins University in Baltimore. Researchers there have developed a new drug, called acyclovir, which may prove to be the first effective treatment for herpes infections of the mouth and genitals.

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THE COVER

Plant of Salt by Fantasy and Paul Strussman reminded us more of our garden than plants with an orange. The illustration by Harlan Ellison, Night of Black Glass is one of the works of H.P. Lovecraft.

The drug was initially tested on patients who were to receive bone marrow transplants for leukemia or a severe type of anemia. Herpes simplex kills one in 20 of such transplant patients, whose natural immunity systems are lowered in the surgical procedure.

One of many drugs being tested to treat viral infections, acyclovir does not actually kill the virus or cure the disease. Rather it retards the production of the virus, controlling it throughout the drug-treatment period. The Johns Hopkins study, led by Ren Saral, was conducted over an 18-day period during which the drug was administered. The transplant patients did develop the herpes virus, but seventy was kept at a minimum and eventually the herpes was held in check.

Bob Woods is the editor of Future Life magazine.

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Composition: Type, Inc.

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JOURNEY TO THE CENTER OF THE CUBE

BY PETER BUTTERFIELD

I. Toward Solution

The friend who introduced me to Rubik's Cube had been on it for three and a half months and had found his own solution, yet he still was able to resist showing me what he knew, in order not to spoil my pleasure. He only said "You know, it takes quite a while to learn to look at it."

He was right. Learning to look at Rubik's Cube requires an appreciation for infinitesimal increments in understanding; it leads to many satisfied "ah ha's" at the crystallizing of each new insight. The purpose of this article is to lay a plan for exploring the cube without spoiling the fun by furnishing answers. You'll find here not so much a step-by-step "cookbook" solution, but rather an ordering of priorities that will enable you to systematically explore the cube on the way to ever-increasing mastery.

I had a lucky break on my way to solving the cube—which fact an expert estimates only one percent of the more than ten million cubists will ever achieve; last July a stifling heat wave in New York City made me wistful about the only physical motion bearable. For two weeks I lay pinioned by my couch, puzzling and clicking, cogitating and rotating. Fortunately, both the heat wave and the cube's mystery snapped before my mind could. Not every puzzle friend can count on this sort of good fortune: I hope the following builds your insights without subtracting from your pleasures of discovery.

The general problem presented by Rubik's Cube is to make each face a single color, but this statement of the problem is too simple to provide any procedural clues. To redefine the prob-



Front Edge
"Positioned"
"Disoriented"

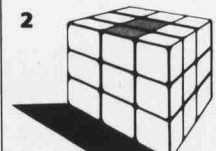
lem more insightfully a few observations and definitions are necessary. Rubik's Cube is composed of 26 sub-cubes: six single-colored sub-cubes, one at the center of each face, called "centers" hereafter; eight three-colored sub-cubes, one at each corner of the large cube and hereafter referred to as "corners"; and 12 two-colored sub-cubes, one found at each edge of the large cube, and hereafter called "edges." The single-colored center sub-cubes are immovable, they only rotate. Consequently the centers provide the essential fixed reference points for the wanderings of the movable edge and corner sub-cubes. A movable sub-cube is considered "positioned" when it is located correctly between the centers of the same color as the sub-cube's faces; e.g., the red and white sub-cube is correctly "positioned" if and only if it is located between the red center and the white center sub-cube. A correctly "positioned" sub-cube may be

either "oriented" or "disoriented." It is "oriented" when each face of the sub-cube is of the same color as the center sub-cube adjacent to that face. An edge sub-cube has two possible orientations, one "oriented" and one "disoriented." It may be helpful to think of the process of reorienting edge sub-cubes as a "flipping" process, and reorienting the corner sub-cubes as a "twisting" process; either clockwise or counter-clockwise twists are possible with corners. Study figures 1 through 4 until you totally understand the concepts "oriented," "disoriented" and "positioned."

Quiz: Is the "disoriented" corner cube in Fig. 3 twisted clockwise or counter-clockwise?

Now a more useful restatement of the general problem of Rubik's is possible: correctly "position" and "orient" each of the twenty movable sub-cubes. Not an elegant way of putting it, but understanding this new statement of the problem is the first step toward learning how to look at the cube.

In order to manipulate the 20 movable sub-cubes in an orderly and predictable manner, you will have to discover repeatable sequences of turns of the six faces of the cube. Each of these sequences will require both a functional and operational description. The functional description tells what the sequence does, such as "reorient the top front edge sub-cube." The operational description tells you do, such as "Turn the front face 90° clockwise." Because the operational description can have twelve or more steps and get pretty unwieldy, a short-hand notation is essential for any systematic exploration of the cube. The following notation works well for both Taylor and Singmaster in their respective "how-to-solve-it" books, and it will work for you. The six faces of the Cube are labeled R,L,F,B,U,D for the right, left, front, back, upper and (appropriately named, as you will discover) downer face. Only three operations are possible to any face—a 90° clockwise turn, indicated by the absence of a superscript, a 90° counter-clockwise turn, indicated by a "-" superscript, and a 180° turn in either direction, indicated by a "2" superscript. Using this notation the operational description of the above sequence is FU-RU. The more sequences you have, the more finely you can control the positions and orientations of the sub-cubes in your quest for a solution, so write them down in a notebook as you discover them, both operational and functional descriptions. Incidentally, schematic diagrams of the entire cube or a single face of the cube with arrows to show repositioning and orientation can often serve better than words as a functional description of a sequence.



Front Edge
"Positioned"
"Oriented"

Here's a list of some of the sequences you will need to discover along the way toward solving the general problem, each including under the strategic heading where it is needed, and roughly chronologically.

Step 1. Solving the top face.

a. Two sequences for positioning and orienting the top edge-cubes.

b. Two sequences for positioning and orienting the top corner cubes.

Step 2. Solving the center slice.

a. Two sequences for exchanging a sub-cube from the bottom face with a sub-cube from the center slice, without changing the top face.

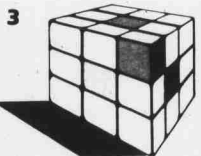
Step 3. Solving the bottom face.

a. Two sequences for repositioning the bottom corner sub-cubes without changing the top two-thirds of the cube.

b. One sequence for reorienting the bottom without changing the top two-thirds of the cube.

c. Two sequences to reposition the bottom edges without changing the top two-thirds of the cube or the bottom corners.

One sequence to change the orientation of a pair of bottom edge sub-cubes, and leave everything else about the cube unchanged.



Top Right Corner
"Positioned"
"Disoriented"

Steps 1 and 2 can be accomplished by concentrating on each of the 12 sub-cubes involved one at a time. Work with a single sub-cube until it is correctly positioned and oriented (remember: reference is always to fixed centers), then proceed to the next sub-cube, being careful not to undo your previous work. Try to pattern your procedures, make them specific even at this relatively simple step. Try writing down the sequences of turns using the notation given with this article's illustrations. Here's why: each successive step requires bodily messing up the previous step in ways that are supposed to be recoverable, but during your rookie season often aren't. Slip-ups take you to step 1 again, and if you haven't got it down, you'll forget where you were in the step 2 exploration by the time you solve step 1 again. When you are working on step 3, this becomes a major befuddling factor. To courageously explore a new step, the progress of the last step cannot be treated as too precious. When I first completed steps 1 and 2 after long effort, I stopped for several days, petrified to risk my hard-won accomplishments by proceeding. This is hardly a productive attitude.

Rubik's Cube is a closed system. Everytime you artfully position a sub-cube in a new location, you artfully position the previous occupant of that location somewhere else—a place you haven't thought about too much. Now, when you're attempting to work with

the bottom, the difficulty you are experiencing results from the absence of a garbage dump for those unwanted changes you were affecting in steps 1 & 2. The bottom row is no longer available for refugee sub-cubes from the top two-thirds. The terrifying consequence of this is that you can no longer focus on single cubes, now they all move around as little groups that follow the same rules as quarks and drive you crazy. Keeping this in mind I humbly tender the following approach: DO ANYTHING AT ALL that 1) recovers the top two thirds, and 2) affects any change at all in the internal affairs of the bottom face. Then analyze what change has occurred in terms of the position and orientation of the bottom corners. You can get by with only two sequences, which when successively or repetitively applied can entirely solve the bottom corners, and any sequence you find that affects the location of bottom corners at all is bound to be one of them. (This is a much bigger hint than you might realize.)

From this point on, you have only three more serious lines to follow, you are totally finished. Use the same method you used as before on the bottom corners, i.e. serendipity. Anything that does anything to the bottom edges is useful if you can recover the work you've completed. I can't say much more at this point without spoiling your fun, except to emphasize the importance of "before and after" diagrams for step 3.

II. Beyond Solution

There will be hosts of new things to try, once you've solved the general problem, or if you're risking impaired mental health by being hopelessly stuck on Step 1.

Start with a fresh cube. Buy a new one, get a friend to whip yours into shape, or just disassemble yours and reassemble the pieces in their original starting positions. The last suggestion is serious, and easier than it might sound. It's begun by rotating the top face 45° and prying an edge cube loose with an upward, twisting motion. With one edge cube out, rapid disassembly of the 20 movable sub-cubes is possible. To reassemble, use the reference centers as reference points for the placement of the 20 removable cubes.

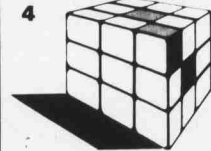
The two-face problem. Starting with a "solved" cube, mess it up again using only two faces. For ease of turning right-handies, tend to prefer the right and bottom faces and banders use the left and bottom faces. Any two faces will do so long as they share a common edge. (The non-intersecting two-face problem is pretty boring. My eighteen-month-old daughter can solve it.) Everything I said about exploring the general problem applies to the two-face problem. If you picked the right and bottom faces to jumble, then step 1 is to solve the top right edge cube, and the two top right corner cubes. Step 2 solves the right front and right back edge cube and step 3 solves the entire bottom face, first the corners, then the edges. Having only only two faces to work with and only 13 movable faces to position considerably narrows down the possibilities, so you'll probably progress through the three steps much more quickly than you did when at that tempting the general problem. Incidentally, any sequence of moves that you find useful solving the two-face prob-

lem is also applicable to the general problem.

You may notice that none of the edge sub-cubes needs orienting in the two-face problem. That's because it takes a minimum of three faces to disorient an edge cube. In solving the two-face problem, I found the positioning of the bottom edge cubes to be a real killer. It's much easier in the general problem. Because the bottom face is solvable in the two-face problem, you might assume that the bottom face of the general problem is solvable using only two-faced manipulations (Hmmm—that last phrase sounds vaguely political), and you would be right in this assumption except for the last step of orienting the bottom edge sub-cubes. It takes three faces to do that.

The two-color problem. Again, start with a solved Cube. This time jumble it using only 180° turns. You'll be left with no more than two colors on any face. Now try to solve this problem using only 180° turns. Try solving this free form, just whirling and twirling toward simpler and simpler patterns. It's a very pleasant change from the chaos of the general problem. The two-colored patterns formed will keep re-occurring until you find yourself recognizing them and perhaps naming them: "H," "Y," "CHEVRON," "L." If you tire of free-form manipulation and want some order to your process, try concentrating on solving the eight corners. That takes about three moves. Then finding edge-manipulating routines is a challenge. Some very useful sequences should come out of this exploration which can also be used in the general problem.

Other interesting sub-sets of the general problem are the three-face problems, analogous to the two-face problem, except (obviously) you jumble a fresh cube using only three faces.



Top Right Corner
"Positioned"
"Oriented"

There are two different three face problems: three sides with a common corner or three sides of which two are non-intersecting (i.e. do not share a common edge).

After some sessions with these problems, go back to the general problem again. Your speed will likely be greater. You might go on to something quirky, like solving all eight corners first, then all 12 edges. This is the second most common strategy for solving the cube. It requires finding a bunch of new sequences. Try it.

There are enough ideas in this article to provide hours of fruitful cube twisting, and to unlock the process for those (they number in the millions) who are still struggling with the general problem. You now know how to look at a cube.

Peter Butterfield is trained to actress, several chess players, and since the last heat wave, a plastic puzzle. A former engineer for Hughes, he is now a jazz musician.

BY DAVID GERROLD

So, you've made the decision and you're going to buy a personal computer, eh?

David Gerrold's credits occupy 10 1/2 column inches in the 1980 edition of Contemporary Authors. A science fiction writer since 1967, Gerrold has written three Star Trek episodes ("The Trouble with Tribbles," "The Cloud Menders," and "I, Mudd"), several novels (Yesterday's Children, Moonstar Odyssey, The Man Who Folded Himself, among others) and contributed to Star Trek Log and other publications. He owns a home computer.

Paul Ollswang, illustrator, musician and wood-splitting expert from Eugene, Oregon, plays the mandolin break on "Up Jumped the Devil" just like he draws an exploding computer.

And you're trying to decide which one. And you don't know what to look for, and you don't know what questions to ask. You don't know the difference between a RAM, a ROM, a REM, or a RUM. (Hint: the latter is available only at liquor stores.)

Listen, any good popular computer magazine can answer the easy questions, tell you how to kick the doors and slam the tires. What they don't tell you is how to live with the damned machine once you've got it installed in your house.

It's a question of consciousness — your own. Your computer will transform the way you manipulate your environment, and as a result of that, your experience and perceptions of your universe will also be changed. It might be a dramatic, drastic, even traumatic shift.

To start with, every other machine in the household is going to be immediately diminished. Your television set will no longer command as much of your time. Your expensive sound system (with the Richter-7 speakers) will start to gather dust. Your microwave oven will sulk. And your automobile will begin demanding ever more frequent trips to the mechanic for piddling little complaints. (Machines know when they're being neglected, and they'll take it out on you with a vengeance.)

Meanwhile, the new computer sits on your desk, humming softly to itself — absolutely not doing anything — while you sit in front of it trying to decipher the instruction manual. This is

the most crucial moment in your relationship with that machine. It's parked there as smug as a six-month old German shepherd puppy, absolutely certain that you are not going to paper-train it — this is when you must establish your determination to be its master, or forever after be a victim of its will.

Don't bring a box of microchips into the house and expect it to be a perfect slave. It won't be. It'll fight you every scorched micro-millimeter of the way. You're going to have to win the little bastard over to your side with a lot of love, trust, patience and respect.

It will be almost impossible for you to deal with your computer as if it were a simple machine. It is not simple, and in its capabilities it transcends machine. Your mind cannot help but anthropomorphize your computer because of its ability to interact. The nature of the interactions between you and your computer, whether they are pleasant or un-, will define your perception of its personality.

The first thing you're going to have to do is learn to speak its language, because it can't speak yours.

Most home computers speak BASIC; some are bilingual and can handle Pascal and Cobol. BASIC is the easiest to learn — but it still takes a real commitment on your part. If you're not willing to spend a couple weeks learning a computer language, forget about mastering the soul of the machine.

Computers love cockiness. they like to turn it into embarrassment.

On the other hand, if you're willing to speak to your computer in a language it knows, you'll find it a most responsive and willing partner in all sorts of endeavors: word processing, checkbook balancing, database management, hunting and killing Klingons, exploring the Colossal Cave, and so on.

You will quickly discover that your computer loves to play, and it's a quick study at all kinds of games. Computers love to play Monopoly, Chess, Othello, Poker, Blackjack, Go, Twenty Questions, and all sorts of old familiar games. They also love to play a whole bunch of brand new games that only computers know: Adventure, Star Trek, Wumpus, Hamurabi, and Zork.

You must resist the temptation to show off.

Most computers are as shy as six-year-old girls being told to "dance for Grandma." They will fuss and fidget, they will whine and stamp their feet, stick out their lower lips and pout. They will not "dance for Grandma." They'd rather see you die of embarrassment first. They will make your life miserable if you try to show off their tricks — before they're ready.

At the point at which your computer wants to show off, it'll happen by itself.

Someone will call you on the phone and ask you if you have a current address for a mutual friend. You just happen to be sitting at your terminal. You type a simple command and the address pops up onto the screen and you read it off. The person on the other end of the line will ask, slightly surprised: "How did you get it so fast?" And you will answer, "Oh, the computer did it."

Don't for a moment think that this is a result of all of your experience with the machine. Take it as a signal that the machine is ready to show its superiority. Don't get over-confident. Computers love cockiness. They like to turn it into embarrassment.

Everything you deal with has a distinct personality, based on the interactions it has with you; it either threatens or supports you, it either plays with you or intimidates you. It's all a function of how conscious you're willing to be about the nature of the machine. Are you going to demand that it do things? Or are you going to explore its capabilities and find out what it is able to do?

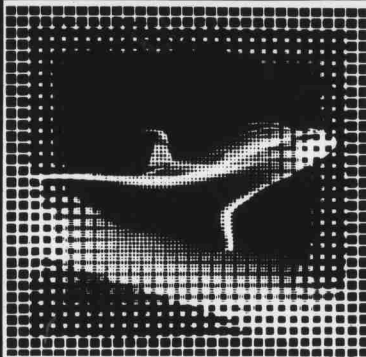
It is your attitude toward the computer that will determine how you interact with it, how much use you'll get out of it, how much you'll enjoy using it.

If you're looking for an exciting toy, you'll find a terrific playmate. If you're looking for a slave, you're going to find one more angry and rebellious thing to fight with. You see, the computer is the first tool in the history of the human race that amplifies the power of the human mind. (Unless you want to consider language and mathematics as tools, then it's the third.) All other tools merely amplify the muscle. Because the computer amplifies the power of your mind, it is also going to amplify whatever is in your mind; so the responsibility is yours to be very clean in your intentions and your attitudes. Be clear about what you want and what you expect before you buy the computer, because if you're confused about it now, you're going to be very confused about it later.

On the other hand, if you approach the machine as you would approach a new partner — with curiosity, openness, and a very real eagerness to discover what this new partner is capable of — you can develop a very warm and cooperative relationship. You do this by exploring the computer's capabilities without judgment. Find out what it can do for you and what it can't. Be willing to experiment. It's just like making love. Find out what works and what doesn't.

Because after everything else is said and done, it all boils down to this: are you willing to let the computer teach you?





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- Our job posting system provides our employees constant opportunities to upgrade or diversify their careers

Our primary lines of business are the Fleet Ballistic Missile Program (Polaris, Poseidon, and Trident) and advanced spacecraft systems. However, we are a diversified company and have developed an excellent reputation in the area of Ocean Systems (ocean thermal energy conversion, deep submergence vehicles, ocean mining, et al.), Remotely Piloted Vehicles and, especially, the Thermal Protection System which provides the thermal tiles to protect the Space Shuttle. Considering these lines of business, your career with us can involve you in the following areas:

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ME and AE Majors

Design and/or analysis involving mechanical design (ranging from small scale packaging to large scale missile-handling equipment), advanced composites, structural analysis, structural dynamics, vibro-acoustics, aerodynamics, hydrodynamics, mechanisms/separation analysis, mass properties, thermodynamics, heat transfer, loads, etc.

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 - Automatic Test result comparators for validation.
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In addition, there are training programs in a number of organizations. The Missile Systems Division features the Graduate Engineers Program which consists of five weeks of classroom lectures and laboratory demonstrations followed by three six-week rotational assignments. The Information Processing organization features online computer based instruction, formal and informal lectures and workshops, plus training by vendors and other outside organizations. Other departments within the company have their own formal and informal programs.

As you can see, the atmosphere and the attitude at Lockheed encourage continuing learning experiences.

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When he finally made the decision to slip off the end of the world, he took only one hundred dollars from the joint account, left Gwen no note, went to the Greyhound station and slipped fifty of the hundred through the window to the clerk, and said, "Send me as far as this will take me."

He wound up on the rocky coast of Maine.

He had never been to Maine, and he had no particular interest in going to Maine; but he wanted to walk off the end of the world and Maine was as likely a departure point as any. Was there still a Timbuktu?

He walked along the rocky beach. August. Still and salty. The sunlight shone off the softly undulating water like strips of mylar, catching his eyes painfully and then vanishing. The seagulls wheeled overhead, thousands of them, layabouts of the upper air, waiting for charity from the ocean.

It was early afternoon, a bit muggy, and

"But, Vinnie, for Christ's sake! He's been sniffing around you like a hyena for the last six months."

"And you knew it."

"And I figured you wouldn't be co-opted that easily... thought we still had something going here..."

"Yeah... well..."

And that had been the end of it.

Oh, it had crawled along for another six months, a thing that had had its back broken; but it was finished.

And he had taken one hundred dollars, and he had gone to the bus station, and he had slept most of the way to the edge of the world where now he stood staring down at the uncomplicated symbology lying in the sand at his feet.

He hunkered down and looked at the plastic frames, the one empty eye circle, the broken glass in the other — that had once caught sunlight and thrown it back. He picked it up and held the twisted thing in his hand, warm from the sun of August in Maine. Then he slipped them into the side

of. There was one place he feared more.

It no longer existed, it was gone into ashes and charred bodies; but in his memory it still stood. In Vietnam.

The town had once had a name, but if he had ever heard it, he could not remember. It had been six kilometers from Bien Hoa City, during the 7th period in 1968. His rifle platoon had been pinned down by sniper fire, and the tanks of the 2nd Battalion, 47th Mechanized Infantry were still fighting it out at the prisoner compound east of Bien Hoa City. They were all alone. Cut off and one by one being turned into meat for the earth's dining table.

Lying in the ditch with three men he didn't know, he heard the whump of a grenade launcher and the insect whine of the incoming round... and he knew this one was for them. He tried to screw *Get out!* but they wouldn't have heard it; he was already out of the ditch, scrambling through the saw-grass and the mud away from

was alone once more; as night descended gradually, dimming the ocean and shrouding the land behind him. He continued to stare out across the edge of the world, hoping his thoughts would come together and he would get an idea where to go and what to do.

But this was the edge, and there wasn't any other place to go.

He was thirty-eight years old, he had left behind everything that had made itself available: family, home, wife, career, friends. He was approaching the midpoint and he was alone.

But he knew that somewhere behind him he had missed the question, and the answer.

The moon was shaped like the blade of a scimitar. It cast very little light. He thought about the little girl with the Dutch bangs. A cheese sandwich. He smiled, thinking that very soon she would cease being a kid and turn into a human being; and then all the rest of her days would be spent chasing the memory of what she had left behind.

Night of Black Glass

BY HARLAN ELLISON

as far as he could see up the beach, he was alone. The sunlight flashed in his eyes and he looked away; he looked down.

A pair of broken sunglasses lay half-buried in the sand.

He stopped and looked at them.

He remembered the fight with Gwen, the afternoon he had slapped her, and her sunglasses had flown off her face, and he had crushed them with his foot.

That hadn't been the beginning, but it might have been the beginning of their final moments as a unit.

"I thought you said jealousy simply wasn't in your nature?" She said it with vehemence, with betrayal ringing in her voice, far back in her throat, clogging back the tears.

"It's not jealousy, God damn you! It's... it's that you couldn't *restrain* yourself. There's no macho in it. I don't feel cuckolded, I feel pissed off. I'm angry!"

"Angry? I'm angry, too. You just hit me in the face..."

"Yeah... well..."

She tried to turn away, but her frustration stopped her. "That's the best you can do, right? Yeah, well...? That's all I get for a punch in the mouth? Yeah, well...? That, and a bruise starting tonight?"

Billy Dunbar sat down on the edge of the pool, dangling his feet in the water, and talked to the empty air. "Jesus, Gwen; I was only away for three weeks. Why the hell did you have to get it on with Vinnie? Couldn't you wait for me to come back, couldn't you wait to talk it out, to try and find a way through this?"

She stood behind him, staring down at the broken glass and the twisted frame of sunglasses. It was uncomplicated symbology.

"I've waited two years, Billy. I've waited and I've tried to talk to you, and every time we started, when it got too hot for you, off you went. Off to sleep, off to work, off to the bathroom to sit in there and work crossword puzzles till I forgot where the starting place was. That's all the waiting anybody should have to do."

pocket of his light windbreaker, and stared out at the ocean.

The thought came to him that it was raw justice that he should come to the edge of the world and find himself at the ocean. He had never liked the ocean. There was an undercurrent of genuine fear when he thought of the great waters lying at either end of the continent.

The ocean, the sea, the great waters didn't give a damn for the little two-footed things that came down to the shore to fish and skip flat stones. The deeps held secrets like naughty society doyens, and they only gave them up when accompanied by death. He had lived in California for a while, after he'd come back from the Nam. And one night, with a woman he had met in a bar, he drove to Malibu during a spring thunderstorm. The Pacific had been deranged, rising, rising up and hurling itself at the beach with the sound of great armies in conflict.

The woman had been a little drunk, had pulled off her shoes, and had run down the crumbling hillside to the beach. Into the darkness, he had screamed for her to come back, that he wasn't going down there. He didn't scream that he was afraid, that he knew this insensate beast was furious, would sweep over them as if they were driftwood. He knew the ocean could simply belch once and swallow the whole state. And he wanted to get away from there.

He stood on the hillside above the conflict and screamed for her; but she had run up the beach, or into the water, or had vanished into the night... and he was too terrified to stay.

So he had dashed back to the car and had driven away, leaving her there.

He remembered that now. And Gwen. He had dashed into the night and left her behind. He had finally come to a place where he could run no farther. Raw justice had brought him to the place he feared the most.

them.

When it hit, they went up and sprayed. Parts hit him in the back and knocked him flat. He wouldn't be there; he kept scuttling on all fours, leaving his rifle behind, leaving the crater behind, leaving the wet things in the saw-grass to drain into the hungry earth.

The ocean was only the second most fearful place in the world. Even here at the edge, only second most terrifying.

Billy Dunbar sat on the rocky beach and thought of flight.

He had walked into Wiscasset for something to eat late in the afternoon. A sandwich, an Indian pudding, three cups of coffee.

He sat alone on the beach. Once, a little girl wandered past, stopped and looked at him, and sat down beside him. He looked at her, not wanting to get involved: there was always the chance her mother was somewhere nearby, watching; there was always the chance someone would think he was bothering the child. So he just looked at her.

She had Dutch bangs that came down to her eyes. She was wearing a playsuit. Perhaps ten years old.

"I am going to make a big boat," she said.

He didn't answer.

"And then I am going to sail it to the moon," she said.

He smiled. "You can't get there from here."

"Can too."

"How do you propose to do that?"

She thought about it for a moment. Her face worked itself into a scrunch of concentration. Then she bit her lip and said, "I will use magic stuff."

"Ohhhh," he said, "well, now, that makes a lot of sense. And what will you do when you get there?"

"I know?" She said, "I will get a cheese sandwich."

He nodded, losing interest. "Good thinking."

After a little while, she went away, and he

something moved out on the ocean.

At first he thought it was flotsam, something the deep had thrown up. He wondered whose death had made it possible. He watched as it moved in toward shore. The waves slid quietly toward the beach and vanished in the rocks and sand, but the tide seemed to come no closer.

It was a woman. She came walking in from nowhere, coming straight for him. He couldn't make out her features, or what she was wearing. Just a woman, with hair wet and hanging like seaweed. He watched, feeling the fear building in him again. Who walks out of the ocean in the night?

When she was close enough he saw she was wearing a dress, and she was barefoot. The dress was soaked through and her legs were dripping with mud and sea-scum. She stopped in front of him and looked beyond, toward the land.

There was something familiar about her. He thought for a moment that she might have been one of the tourists who had strolled past him during the day.

She didn't speak at first, and he felt he should ask her if she needed help. She seemed lost.

But he didn't want to start something. Who walks out of the ocean in the night?

"How are you, Billy?" she said. Her voice was thick and cold. It was a voice that had not been used in a long time.

"Some friends are going to be dropping by a little later," she said. She was still looking past him, toward the town. He stole a glance over his shoulder, but the beach was empty, and nothing moving from the town. He thought of the ocean, of the sound of armies in conflict.

"I wanted to say goodbye; you left and I didn't have a chance to say goodbye."

Billy Dunbar knew who she was. He thought of flamethrowers and saw-grass and the sound of incoming rounds in a far place.

(continued on page 14)

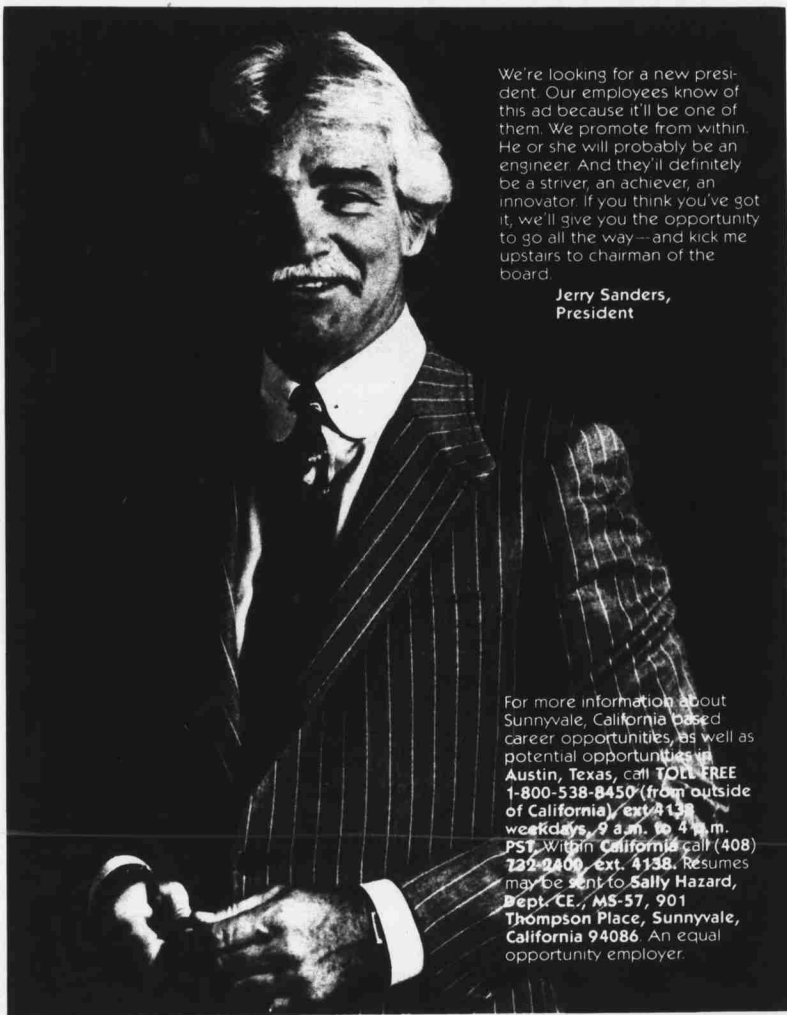


PAUL STINSON

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(Black Glass continued)

"Get away from me," he said. But she didn't move.

Oh, Christ, he thought. I'm losing it. I've got to get out of here.

And the ocean turned to black glass and flowed off into darkness beyond the edge of the world.

Gwen, he thought, and wanted more than anything to go back to the moment when he had slapped her and knocked the sunglasses from her face.

"I have to go now," she said. "But don't be afraid. The others are coming later."

Then she turned, still a little bit drunk and in love with the sound of the Malibu storm, and she walked back across the sea of black glass, into the faint glow of the scimitar blade hanging above him. And she was gone.

When he got to his feet, to get out of there and find a place in Wiscasset to sleep, the world was, of course, no longer there.

He had sought the edge of the world, and here he had found it almost without trying; and here he would sit till the ghosts of Christmas Past had had their way with him.

The terror was in *not knowing*. What, precisely, was the charge; what crime was he being set up to pay for?

He was thirty-eight years old. He had outlived his father, and his mother, and was still here when others had already gone under. That was an achievement, of sorts. Simply to hang on, to maintain, to still be there when the last wave rolled back out to the deep. Wasn't that worth something? To survive! Wasn't that worth the price of a little consideration?

Three of them came walking in across the black glass.

He knew at once who they would be. He remembered a ghost story he'd heard at summer camp when he was a child, about the monkey's paw, and about the thing that came to the door when the old couple wished for their dead son to return to them — and he was certain they would look horrible. They had sprayed.

He tried to run, but there was nothing behind him. The Maine coast was gone, Wiscasset was gone, the world from which he had come on a bus — was gone.

And he was here with those who, unlike him, had not survived.

They came close and stood staring past

him. And he understood now that, like the woman, they were looking beyond him to the world they had had stolen from them; the world he had fled. They could not return, but they wanted to see.

And the realization overwhelmed him: he could not return. Even if he wanted to.

One of them had lost both his arms. He seemed to be reaching toward the vanished world. Like the recent amputee still lying in his hospital bed, feeling the itch of his phantom limb, he seemed to be reaching toward the years of the life that had never been lived. Another had only half a face. The wistful look that he cast into the darkness at the edge of the black glass was sliced off. But he seemed to be content at the knowledge that his children were growing up well. The third man had a gaping hole where his abdomen should have been. He carried parts of himself in his bloody hands.

They stared past Billy Dunbar and murmured softly. "Thanks for the word," the one without arms said.

"Helluva guy," said the one with half a face.

"Long time no see," said the one without a stomach.

"I didn't do anything wrong," Billy said. He tried to keep his voice even, level, quiet, unshamed. He wasn't ashamed; he hadn't done anything wrong; he had survived; there wasn't any sin in that. "There isn't any sin in staying alive," he said.

"Okay," said the one with no arms. "Have it your way," said the one with half a face.

"Absolutely," said the one without a stomach.

He turned and walked away from them. He tried to walk back into the darkness, but there was pressure in the air; as if some quivering, invisible membrane had been erected from shore to moon. So he walked away from them, parallel to the sea of black glass. Because he could not go back the way he had come, back to the world that no longer existed for him.

He would not walk out onto that smooth plain of dangerous nothingness. They had come from out there, she had come from out there, and he had known enough empathy.

He put out his hand, toward the pressure where Maine had been, and as he walked away from them he pushed, hoping he could find an opening. But the pressure was



It was a dancer before

We made this Pioneer car stereo do a little twisting and shaking before it left our factory.

Twisting through temperatures ranging from -22° to 158° F.

Shaking 8-100 times a second with forces ranging from 2.9 to 4.4 times normal gravity.

Slamming to a sudden 80-G stop from 1760 mph.

This is the kind of routine every Pioneer

there, insistent, pressing back toward the palm of his hand.

"Leaving again?" the one with half a smile called after him.

"Getting the hell away from you guys!" he shouted back, not turning. "Just getting the hell away, I've had enough."

And the one with no arms had the last words: "Not nearly enough, fella."

Billy kept walking, and in a few moments they were lost in the darkness and he was alone once more.

The moon did not move, there were no clouds, the sea was black glass and was content to keep its treasures.

He walked until he could walk no more. Then he sat down, and waited. He was tired of running to find the answer. He would wait for the answer to come to him. Wasn't that the way these things worked: here was an answer, someone somewhere had a point to make and would let him know what was in store for him soon enough. Then he would get through that, he would maintain, he would survive, damned well survive and worry about what came after . . . after.

He put his hands in his jacket pockets, and felt the broken sunglasses he had



picked up from the rocky shore. He let his hand stay there, hoping a bit of the warmth of the day still lay trapped in the wreckage. But it was cold; and he wondered why he wasn't cold. There was nothing but night out here, at the edge of black glass; and it should have been cold.

He sat, he waited, but no one came to tell him what he had done.

And he survived.

The woman from Malibu beach never came again. The three nameless shamblers

never came again. Gwen did not come; the little girl who wanted a cheese sandwich from the moon never came; and he sat and waited.

There on the shore of black glass, unable to return, unable to follow them to the place where those who had not survived found peace, he sat alone. Surviving.

And sometime later, very much later, he knew what his crime had been, and why he would sit there on the shore for a time without end, a time without sunrise.

His crime was not in surviving; it was that he felt no guilt or shame at having survived. He could not pay the price for his life. And now the checkout counter was closed at end of day.

Harlan Ellison's literary accomplishments are too numerous to list here; suffice to say that the man has a wonderful house; never seems to sleep, eat or age; and has been extraordinarily helpful to this first issue of Beyond. We thank him.

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AUTO FM2

it became a singer.

model goes through before it goes into our line.

So it can go into any car. Withstand all of the above.

And always live to sing about it.

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The Best Sound Going.

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SYSTEMIC SHOCK

Dean Ing, *Ace Science Fiction*, \$2.50

BLAKELY'S ARK

Ian MacMillan, *Berkley Books*, \$2.25

HIDDEN VARIABLES

Charles Sheffield, *Ace Science Fiction*, \$2.75

A young man grows up and conquers the universe. See Paul Atreides of *Dune*, Heinlein's farmboys, Luke

Skywalker. Science fiction has always been a literature of promise, of discovery and of hope. A traditional expression of this has been a youth growing into manhood, his innocence giving way to wisdom and strength.

What happens when the youth faces a world of despair? How does he develop when an attractive civilization (ours) is rapidly disintegrating? Dean Ing's answer seems to be to hang on and follow it straight to hell. In *Systemic Shock*, the young

protagonist, Ted Quattrill, never becomes a man. Instead he is a creature of his time, a time of H-bombs and poison gas and man-made plague. Ten million die to be followed by ten million more. Ted learns the lesson well and continues to kill even when the war is over. His ultimate expression of commitment to others is murderous revenge. Love is death.

If this book were well-written, it would be chilling. Unfortunately, it reads like the instructions for a board game.

Blakely's Ark, on the other hand, was a pleasure to read and provided hope, despite the gloom. Ian MacMillan's world is in worse shape than Ing's. A virus has killed most of mankind and essentially all warm-blooded animals. The youth in this story, Dave Hunter, is one of the few who have a ticket into a "clean" city, the Complex. All his life he has been preparing to fulfill his father's dream, making it to the Complex. He makes the journey and, like Ted Quattrill in *Systemic Shock*, has the opportunity to join the vestiges of civilization. But the ignoble scramble for security does not appeal to him. He rejects comfort and safety and goes off to make history rather than to be made by history.

Being tested by a disintegrating culture, a culture that cries out for rescue and offers life and luxury, is something Luke Skywalker and other heroes of SF haven't faced. It seems to make sense to fight for America like Ted Quattrill or to rebuild from a secure center like Dave Hunter's father wanted him to. It takes imagination to see that the old society no longer provides the answers; it takes courage to break away and look for new answers. To promise and discovery and hope, add change.

Odd note. Charles Sheffield's *Hidden Variables*, a collection of "hard" SF short stories, just came out. Turn to page 173. The character George Andrews is this reviewer's brother. Really.

Peter J. Andrews

way beyond

SLIDE RULES YOU NEVER THOUGHT YOU'D NEED!

Creative and artistic readers are encouraged to submit their own items for *Way Beyond*. We pay real American dollars, twenty-five of them, for each item or piece of art used (art must be in black ink on sturdy white paper, with the artist's name clearly printed on the art). Cartoons are fine, but other forms are welcome too. Readers may submit more than one objet d'art. Send the goods to *Way Beyond*, 1680 North Vine, Suite 900, Hollywood, CA 90028.

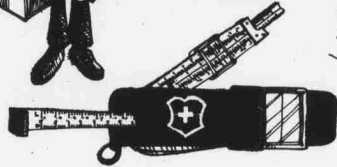
3.

Rebel's Cube is child's play with this stellar Cube Rule.



Calculations on the trail don't phase the Serfus Army Rule. Even on city streets, you'll feel extra rugged.

4.



6.

David Stockman insures his spot on the Reagan Squad with this custom tool—a cross-cut slide rule that won't calculate past 65.



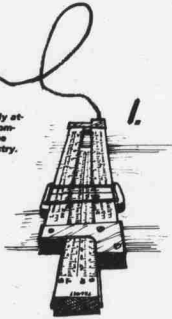
© James A. Lynch '81

Economists and novice body surfers have both made this model, designed to calculate inflation, a current must-have for

2.



This was an early attempt to stay competitive with the electronic industry.



The Pedal Steel Rule dominates a triangular area roughly defined by lines drawn between Nashville, Missouri and Topanga Canyon. If you've ever wondered why so many Country and Western records sound the same—they're playing by the numbers!

5.



7.

Because it overleaps more traditional engineering logic, the midsize slide rule was invaluable in the construction of the MX missile system.



8.

Finally, the perfect compromise between tradition and progress—the slide rule for those who never learned how to use one!



UNIVERSE

Don Dixon, Houghton Mifflin, \$35

Space illustrator Don Dixon, the 28-year old master of distant vistas whose work has graced *Omni*, *Future and Science Digest*, has created *Universe*, a book of rare beauty. Its aim is to give us a guided tour through the astronomical wonders Dixon has loved since the age of three. It is a total success.

Although the huge mass of data presented in *Universe* is as precise and scientifically up-to-date as *Voyager's* Saturn fly-by, it is presented with such love and effortless order that it never overloads the senses. A balance is maintained between lucid, informative text and some of the most staggeringly impressive spacescapes ever to see print.

The book is divided into four main sections: Beginnings (dealing with the origins of the Universe, our solar system, and Earth); The Inner Solar System (Mercury, Venus, Earth, and Mars); The Outer Solar System (Asteroids and Comets, Jupiter, Saturn, Uranus, Neptune and Pluto); and The Realm of the Galaxies.

Although known primarily as a painter, Dixon proves to have an engaging and fluid writing style. He becomes nearly poetic at times, sweeping us into his vision of future possibilities. On the subject of extraterrestrial intelligence, Dixon says: "... an encounter with true otherness, with strangeness, with minds born of other seas and other suns, could do much to drive home the lesson that we humans are of one species and one flesh, more alike than different, that we may someday have to speak with one voice..."

But his vision and enthusiasm never interfere with technical precision. He has the Gift, the vital talent for explaining complex concepts, and he shares it unhesitatingly.

(Continued on page 22)

American know-how is alive and well... and creating career opportunities every day at Rockwell International.

The Space Shuttle orbiter and main engines.

Valves for the largest gas transmission project in North America.

Axles for half of America's heavy-duty truck fleet.

Digital color weather radar. The list goes on and on. And behind every one of these advanced technology projects:

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That's American know-how at its best. And to keep it growing, we need America's best engineers and scientists...capable of developing, applying and innovatively managing technology for many of the world's unprecedented challenges.

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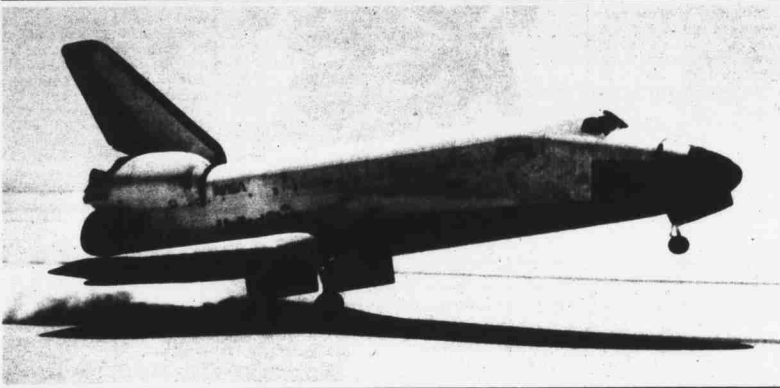
education as well as tuition reimbursement for advanced studies.

We'll soon be on campuses all over America to recruit engineering graduates for hundreds of positions we have available. We're looking for Electrical, Mechanical, Industrial, Aerospace, Civil and Chemical Engineers, plus Computer Science, Physics and Chemistry graduates.

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'LIMITED' NUCLEAR WARFARE:

KISS YOUR ASS GOODBYE

BY

JUDITH SIMS

A 10-megaton nuclear bomb detonated over a city the size of Boston on a clear day at ground level. (When it truly detonates, 90 percent of the country's population would disappear — Harvard, Stanford, MIT, etc.) This explosion would be heard a mile and a half miles in diameter and 30,000 degrees Fahrenheit. Even if you were in the center of the explosion, you would be dead. The explosion would be heard a mile and a half miles in diameter and 30,000 degrees Fahrenheit. Even if you were in the center of the explosion, you would be dead.

viruses, fungi and insects would spread everywhere and they'd be on the move for good.

The government would have to deal with the nuclear fallout. Physical and emotional destruction would be incalculable. But many — many — would die. Thousands of people would die. Homes to escape the nuclear fallout in surrounding areas would have to deal with the nuclear fallout of the blast, injured, sick and hungry people. Physical and emotional destruction would be incalculable.

...burst
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exploded)
home base
in the open
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in shelter at
we should con-
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burst within



UPI PHOTO

ANOTHER TECHNOLOGICAL ADVANCE FROM SHARP.

A REAL COMPUTER YOU CAN PUT IN YOUR POCKET.

It was a pipe dream only a few short years ago. A computer you could carry around in your pocket, so you could run programs at home or while traveling; a computer small enough both for your pocket *and* your pocketbook.

Herewith, the pipe dream made real: the Sharp PC-1211 Pocket Computer.

Not a fancy pocket calculator. A computer. With 1.9K RAM memory. Programmed conventionally through the keyboard. Or, using an optional cassette interface, able to load and unload programs using almost any cassette recorder around.

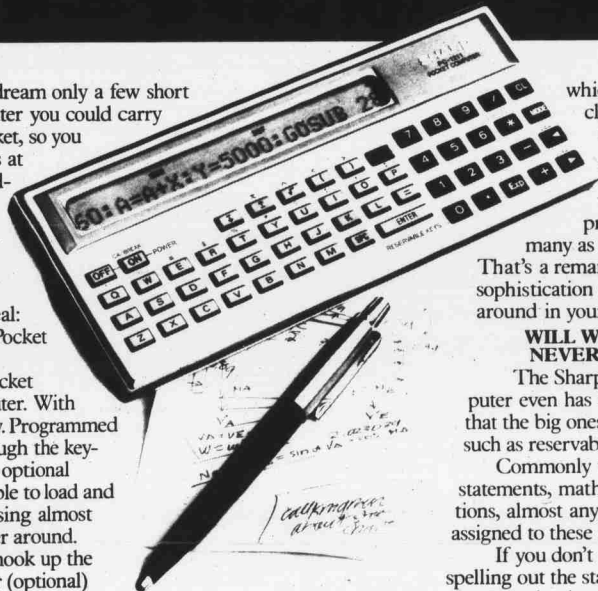
You can even hook up the PC-1211 to a printer (optional) and print out the program results or the program listing itself.

BASIC SPOKEN HERE.

The PC-1211 Pocket Computer has a dot matrix display that scrolls right or left, handling up to 24 alphanumeric characters.

This allows the program to display instructions asking for data, as well as any other prompting the program requires. It also allows you to look at the program listing, line by line.

If you don't know Basic, the PC-1211 is a good way to learn. There are 22 statements and 12 commands at your disposal,



which comes pretty close to the flexibility of a conventional size microcomputer.

It will run programs of as many as 30 or 40 lines. That's a remarkable degree of sophistication to be carrying around in your pocket.

WILL WONDERS NEVER CEASE?

The Sharp Pocket Computer even has some features that the big ones don't have, such as reservable keys.

Commonly used commands, statements, mathematical functions, almost anything can be assigned to these keys.

If you don't want to keep spelling out the statement PRINT, for example, you simply assign it to, say, letter "A." Thereafter you press one key instead of five. Mathematical functions like COS can be assigned. Or $A^2 + B^2$ Or RUN. And so on.



The PC-1211 with optional printer.

The PC-1211 has many more fascinating features. It's more than a fantastic tool. It's an intellectual adventure.

Go to your local Sharp dealer and fool around with one. You'll see that we haven't exaggerated in the least about the Sharp PC-1211 Pocket Computer.

Sharp Electronics Corp., 10 Keystone Place, Paramus, N.J. 07652

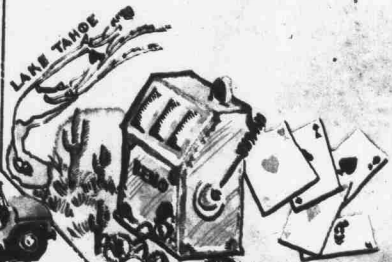
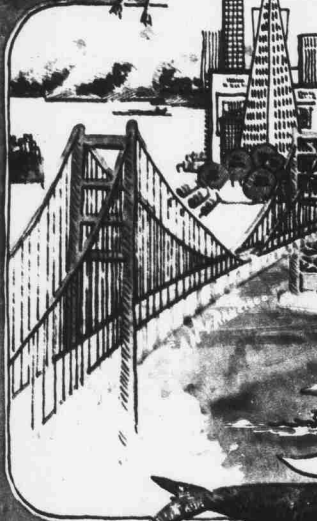
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OREGON

IDAHO

UTAH

ARIZONA



SILICON VALLEY

LAS VEGAS



LOS ANGELES

SAN DIEGO

California!

on site

Land of Milk & Honey, Chips & Money

BY BYRON LAURSEN



"California's a Garden of Eden, it's a Paradise to live in or see. But, believe it or not, You won't find it so hot, If you ain't got that Do re Me, boy — If you ain't got that Do re mi."

Woody Guthrie

There are at least twelve isotopes of calcium, as every country schoolboy knows, with half-lives ranging from about four minutes to about 800 years. One of them, calcium-249, is produced by the decay of berkelium-249.

While some personal friends of mine actively contributed to the decay of Berkeley (66-68), and while isotopes of a single element possess almost identical properties, California itself is a lot more complicated than all that. California encompasses more isotopes, subcultures, subregions, microclimates, natural wonders and urban thrills than it's had time to think about yet. And it can be even more expensive than Woody Guthrie's ironic Depression-era ballad says. Surveys show California is where most engineers would prefer to work. But is it the place for you to live and work? And if so, what particular aspects of this huge (3rd in area), populous (1st in population) state do you want?

All through the state's history, there have been attempts to split California into two separate entities. Though none of them ever succeeded, the persistence of that separatist notion has been remarkable. And, as someone who has lived in various California regions, I'll aver that it can feel like a lot more than just two different states.

First, there's a variety of topography, that's astounding. An Eureka pocket like Yosemite Valley, surely, the Creator's own conception of a cathedral — is surrounded by finely leeward country that leads south into America's lowest desert, one hundred and forty miles long, where ground temperatures can reach 165°. Twelve hundred miles of coastline, alternately voluptuous and rugged, balances across the state from America's most colossal tilt block structure rising precipitously from the Great Basin, the Sierra Nevada. Within that leading edge of the Rockies lies a 193 square mile, 1,600-foot-deep crystalline basin of snowmelt called Lake Tahoe.

Culturally, there's the everlasting rivalry between hilly, Victorian, snobbish, faintly regal San Francisco (a retirement community for young people, a backwater) — see the Los Angeles and sprawling, crass, moneyed, faintly evil Los Angeles ("Smog capitol of the world, plastic, a cultural desert," see the San Franciscans.) Apart from these focal-point cities and their satellites, — which regions hold most of the technologically oriented jobs — are outlands that can make William Faulkner's Yoknapatawpha County seem metropolitan: Boonville, Bostack, Reward, Lee Vining, Fruits Springs, Ocotillo Wells and Oakdale, where a sign hung over a barroom pool table admonishes "No Profound Language."

"Silicon Valley," which roughly encompasses the southern part of the San Francisco peninsula from Palo Alto to just below San Jose, offers a considerable bagful of employers, most of whom are in constant need of recruits. One giant firm employs the services of three different recruitment agencies because there isn't a single agency big enough to supply its needs. I constantly have jobs crossing my desk for Electrical Engineers, Computer Scientists, Physicists and Chemical Engineers, says one agent; a recent air-bill awestruck arrival from Buffalo, N.Y., whose husband was hired out of that financially troubled town by Field Aerospace. "Anybody who's good can find a job here."

If they can stand up, somebody will take 'em. Another agent out of Norcross is the demand for engineers and technicians high; there are also many jobs in drafting and clerical fields, as well as in the output of the former groups.

This is the closest thing to heaven for technicians and engineers, says yet another agent, whose clients are primarily in defense, semiconductor computers and computer games.

While some employers are almost exclusively interested in experienced personnel, others have well-developed training programs for those just out of college. With so many prospective employers in such a small area (San Jose is roughly the physical center) and with housing costs very high, more loyalty goes to one's real estate holdings than to one's employer.

There's not so much company av-

ality," affirms one Silicon Valley agent. "People trade around. They're an aggressive and ambitious bunch — they stay in the same house, but change employer."

Silicon Valley is a good choice for those who want to be near a city of cosmopolitan air. San Francisco has had the most time of any major California city to refine itself toward a sort of gentility. The opera lovers are generally smiling there. Climate is more seasonably varied than in Southern California, with an early Indian Summer being the most pleasant time of the year. Moving south along the peninsula, the suburbs are very expensive and appealing all the way down to Palo Alto, below which they are merely expensive. For recreation, many people strike out northward to the Russian River (a heavy favorite back in the Forties) and all the way to the quaintitudes of Mendocino ("Where life's such a groove, you'll blow your mind in the park," sang the Sir Douglas Quintet, circa 1969.)

Way up north are the legendary giant redwoods and the equally legendary deep fields, some people claim marijuana is the major cash crop of Humboldt and Del Norte counties.

Traveling eastward, there's reasonably quick access from Silicon Valley to Yosemite and Kings Canyon National Parks, and other magnificent terrain. And the foothills and valleys below these Sierra Nevada strongholds have a sprinkling of Gold Rush ghost and semi-ghost towns, plus a number of terrific white-water rivers. And, of course, the generous wine-tasting tours of the Napa valley, north and east of Silicon Valley, are a standard weekend activity for both newcomers and long-term residents.

As just as the pickings are up north, there's a far greater number of jobs in Southern California. They're also spread over a much broader swatch of terrain.

Most southern employment is close to Los Angeles itself, but extends even beyond Santa Barbara to the north, thanks to a number of defense jobs at Vandenberg Air Force Base. Many firms have recently placed divisions in the Pomona valley, directly east of Los Angeles, because open acreage is more available there. So are homes. But the smog problem is more aggravating

by Southern California. The coastal regions are milder in climate, with cleaner air, but inland one finds more sense of local culture. In time, a newcomer to Los Angeles realizes that this "plastic wasteland" actually has a fascinating variety of architecture and neighborhoods and subcultures stratified on ethnic, occupational and economic lines. There's a brutal aspect to Los Angeles, coupled to a current of vitality. Warren Zevon put it in a song like this: "I found something that will never be nothing/And I found it in L.A./Join me in L.A."

Comedians say Los Angeles has two seasons: fire and mudslide. Most of Southern California is a semi-arid desert, highly dependent on imported water; and there is an unmercifully wet period around January and a dangerously dry period around October — roughly speaking. The rest of the time finds Southern California either warm or hot. Weekend vacationers tend either toward the beach or the eastern desert resorts around Palm Springs. Skiers take the long haul up to Mammoth Mountain, which is closer to Northern California, but closed off in winter from its near neighbor by snows. Mexican vacations are cheap in terms of transportation, but increasingly less of a bargain once one arrives. "Who wants to pay New York prices for Mexican services?" one traveler complained recently.

Apart from the areas we've concentrated on, there's a growing number of firms in the state capitol, Sacramento. And there are cultural and natural attractions this article hasn't even hinted at. But there's also the reality of real estate. As Will Rogers was fond of saying, "They ain't making any more of it." Competition for the most congenial living spaces is probably the only major polarization on the rosy picture for engineers and technicians, in the words of that aforementioned Woody Guthrie song: "See at the point of entry say, You're number 14,000 here today! And if you ain't got that do re me, boy, If you ain't got that do re mi, Well you better get back to Beautiful Texas. Oklahoma, Kansas, Georgia, Tennessee."

There are a vast number of firms based in California offering employment for engineers and technicians. This list names a very few. Some of these are giants, with plants and divisions spread across California and several other states. New firms emerge, and little ones grow, on a regular basis and in a lusty manner. Luckily for upcoming technical talent, they all realize that prosperity is the prize of whomever can attract and hold quality employees.

Apple
Bechtel
Calma
Computer Science Corporation
Data Products
Fairchild Camera and Instruments
Ford Aerospace
Fujitsu America
General Dynamics
Getty Oil
GTE Sylvania
Hewlett-Packard
Hughes
Intel
International Rectifier
Kaiser
Lawrence Livermore
Lexel Corporation
Lockheed
Logicon
Martin Marietta
Aerospace
Microcomputer Systems Corporation
National Semiconductor
Northrop Aircraft
Pacific Telephone
Precision Data
Sierracin Corporation
Southern Edison
Syva Corporation
Technitron
TRW/Idvar
Verbatim
Xerox

MIND GAMES

A not-for-credit mind-bender fiendishly devised by the editors of GAMES magazine to drive you bananas.



TREK TEST

A Star Trek Trivia Quiz

There are few television programs that have developed as large and as loyal a following as "Star Trek," the voyages of the starship *Enterprise* as it boldly went where no man had gone before. I mean, have you ever heard of a film entitled *I Love Lucy—The Motion Picture!* "Star Trek" tapped the spirit of hope and adventure within all of us. And in doing so, it created a social phenomenon whereby today more people can name the 79 episodes of the series than can name the 50 states of the Union!

Below is a potpourri of "Star Trek" lore that even Mr. Spock would find most challenging. You might want to team up with friends if you plan on answering them all. Scoring is as follows: 0-4: lost in space, 5-9: another year or two in the Academy, 10-15: ready to command your own starship, 14-20: what did you do, videotape the entire series?

1. In what century does "Star Trek" take place?
2. How many moons does the planet Vulcan have?
3. What is the name of James Kirk's deceased brother?
4. What powers the *Enterprise's* matter/antimatter engines?
5. How many planets are members of the United Federation of Planets?
6. What is the full name of Dr. McCoy's assistant?
7. What is "xenopolycythemia"?
8. What form of communication is utilized by the *Enterprise*?
9. Captain Willard Decker, the displaced commander of the *Enterprise* in *Star Trek—The Motion Picture*, is connected to an earlier episode of the series entitled "The Doomsday Machine." In what way?
10. In "The Trouble With Tribbles," what kind of grain is being stored upon the space station?
11. What is Spock's blood type?
12. In a Federation court of law, what object replaces the gavel?
13. What does the Prime Directive state?
14. In the original series pilot, "The Cage," who was chief surgeon?
15. In what condition are tribbles born?
16. In her native Swahili, what does "Uhura" mean?
17. In *Star Trek—The Motion Picture* were introduced to the bald, yet bedazzling, Ilia. Of what planet is Ilia a native?
18. What symbol appears within the insignia of the members of Starfleet's Engineering & Support Services section?
19. On what stardate did James Kirk take command of the *Enterprise*?
20. Who came first, the Vulcans or the Romulans?

ANSWERS: 1. The 23rd century, 2. none, 3. George Sannes Kirk, 4. Dithurium crystals, 5. 1000, 6. Nurse Christine Chapel, 7. the fetal distress contact by Dr. McCoy in "For the World Is Hollow And I Believe in the Sky," 8. subspace radio, 9. Commodore Matthew Decker, the married hero of "The Doomsday Machine," was Will Decker's father, 10. quadrants, 11. T-regime, 12. a ball, 13. "You shall not interfere with a developing culture," 14. Dr. Joseph M'Benga, 15. freedom, 16. Delta, 17. Debra, 18. a spiral, 19. stardate 1356, 20. the formulae evolved from the Vulcans.

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Particularly brilliant and complete is his discussion of the stability of Saturn's rings, a 1500-word essay which ranks with the very best work in print.

Most importantly, of course, the illustrations which accompany the text are superb, a tribute to the talent of a young man who will be charting man's progress to the stars for many years to come.

His visions are deep and kinetic, rich in color and delicate shadow. To wander through a portfolio of Dixon art is to take a balloon ride into the winds of Jupiter, to pursue whisps of frozen gas through the cemetery halo, to walk the dead river valleys of Mars.

Particularly striking is an interpretation of Earth four billion years ago: savage lunar tides ripping channels through primeval rock. It is a study in blue and brown, the water churning into white foam, the moon a bloated, scarred specter squatting on the horizon. It is disquietingly lovely, evocative of and superior to the "Rite of Spring" images in *Fantasia*.

Dixon, who has done matte work for Roger Corman's New World Pictures as well as covers for fantasy role-playing games, has now emerged as a double threat, a visual artist who is also adept at verbal communication. Examining this book, sure to become a standard work in its field, one can only marvel, and wait impatiently for the next product of this fertile and disciplined young mind.

Steven Barnes



A sample of Don Dixon's artistry — this one appears in *Universe* and is also available as a color print or slide from Dixon Spacescapes, 17623 Scherzinger Lane, Canyon County, CA 91351. (Send \$2 for catalog.)

THE SHADOW OF THE TORTURER

THE CLAW OF THE CONCIATOR

Gene Wolfe, Simon and Schuster, \$11.95

Gene Wolfe, Timescape Books, \$12.95

These two novels, complete in themselves, are the first two volumes in Gene Wolfe's science fantasy epic, *The Book of the New Sun*. The two final books will arrive in 1982. Thus the story is like the moon: we can only see half of it. But the part we can see gives us plenty to look at.

If Kafka, Borges and Nabokov had collaborated on a story about Conan the Barbarian, they might have come up with something like *The Book of the New Sun*. But Wolfe's work here beggars comparison. It sets a whole new standard in science fiction,

and makes much "serious" contemporary American writing look shallow.

Severian, the hero and narrator, lives his life on Earth (or "Urth") in an era so remote that what we think of as "the future" is its prehistoric antiquity. The very desert sands are the pulverized glass of many vanished civilizations. Man's conquest of the galaxies is long past, and the race has retreated to its home world, slipping back over eons to Byzantine despotism. Yet *The Book of the New Sun* is no neoprimitive saga; Urth is still haunted by uncanny technologies and alien visitors.

Severian has been born into the Guild of the Torturers, whose tower is a long-immobilized spacecraft, who punish felons according to the dictates of the shadowy Autarch. The Torturers, who have a soothing bedside manner, are true to their own peculiar ethics. Severian violates them when he allows a woman he loves to commit painless suicide — rather than submit to the psychically-induced torment of a device called "the Revolutionary."

Severian is in fact a man of feeling. Nor is his story one of cruelty: "If you delight in another's pain and death, you will get little satisfaction from me." Nevertheless, he must make his way as a despised executioner when the Brothers cast him out.

There is an apocalypse brewing and his world hangs in the balance. Titanic intelligences, perhaps once human, long imprisoned beneath the seas, plot a desperate conquest — or escape. Rebellious nobles are their pawns; their opponents are the Autarch and his mysterious masked advisers from the stars who are "that foreign element that by its very foreignness is most universal." Meanwhile, the sun itself is dying — a black hole eats at it like heartworm.

Severian's journey is a mission of destiny, his goal a New Sun. He will be Autarch himself before the story is over. He defends himself with Terminus Est, a sword whose uniqueness comes not from magic, but sublime engineering. He is guided by the Claw of the Conciator, the half-sister relic of a being that was mankind's redeemer in ages past; a sentient jewel, the claw offers epiphanies at the oddest times. Evolution has twisted some of the creatures in Severian's world, but when the Claw's light falls on some monstrous attackers, "their faces were the faces of men."

Gene Wolfe, an editor of *Plant Engineering* magazine in his daily life, is a first-rate literary stylist. He draws not only on all the science fiction ever written, but most classical literature as well. These books are thrillers for the brain as well as the nerves. They are alive with new marvels.

There is the uncanny communion rite by which Severian takes into his mind the memories of his dead beloved; there is Jonas, the castaway star traveler from Urth's past, a metal man with flesh prostheses; there is the Autarch's maze of mirrors, where vision is transported faster than light.

If Severian is hailed by an angel through such a mirror (and he is), if he sweats blood at the sight (and he does), then Wolfe is careful to explain just how that can happen to a human body. Herein lies the genius of his method: his visions have the rigor of science; his world has a history that links it, however remotely, to our own; and every intelligence in it, however alien, has a soul to save or lose.

Still only half-visible, Wolfe's epic is already one of the only real masterpieces its genre has ever produced.

Jim Trombetta

Chaps

RALPH LAUREN



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