

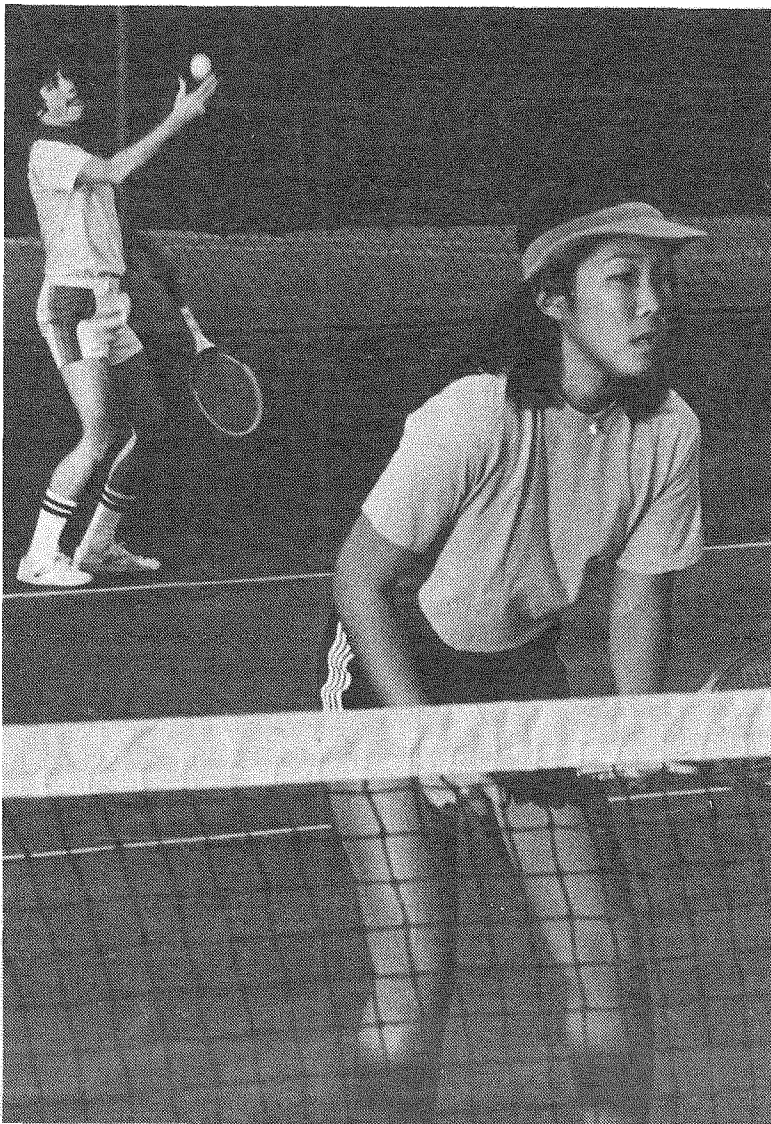
Cagers Besmirch LIFE

by G.J.V. Kiadie

In their first post-holiday basketball confrontation the Beavers emerged victorious in a hard-fought battle against LIFE Bible College. Leading throughout the contest, the Techers had to ward off a game-closing comeback by their adversaries to finish with a 68-62 victory. Pat McMerty and Bart Croes led the effort with clutch baskets and solid defensive play. Charles Curatalo and Greg Blaisdell, however, carried the team in the last moments to insure victory.

Last Wednesday the inspired Beavers gave highly touted Redlands all they could handle for three quarters with a balanced scoring attack and fine floor leadership by Peter Edwards. Trailing by 10 points at the finish of the loosely contested first half, the squad cut the deficit to just four points early in the second half. However, victory was not to be had as a final salvo of points and a tough zone defense by their opponents left the Techers nonplussed and eventual losers by 20 points, 83-63.

Apparently numbed by the lough defeat to Redlands, the cagers played a miserable game against the LaVerne Leopards and were trounced 98-68 on the opponents' home court. The offensive attack never got on track and the defensive play was its worst of the season. Leading scorers for the Beavers were Pat McMurry, Greg Blaisdell, and Charles Curatalo, with 11 points each.



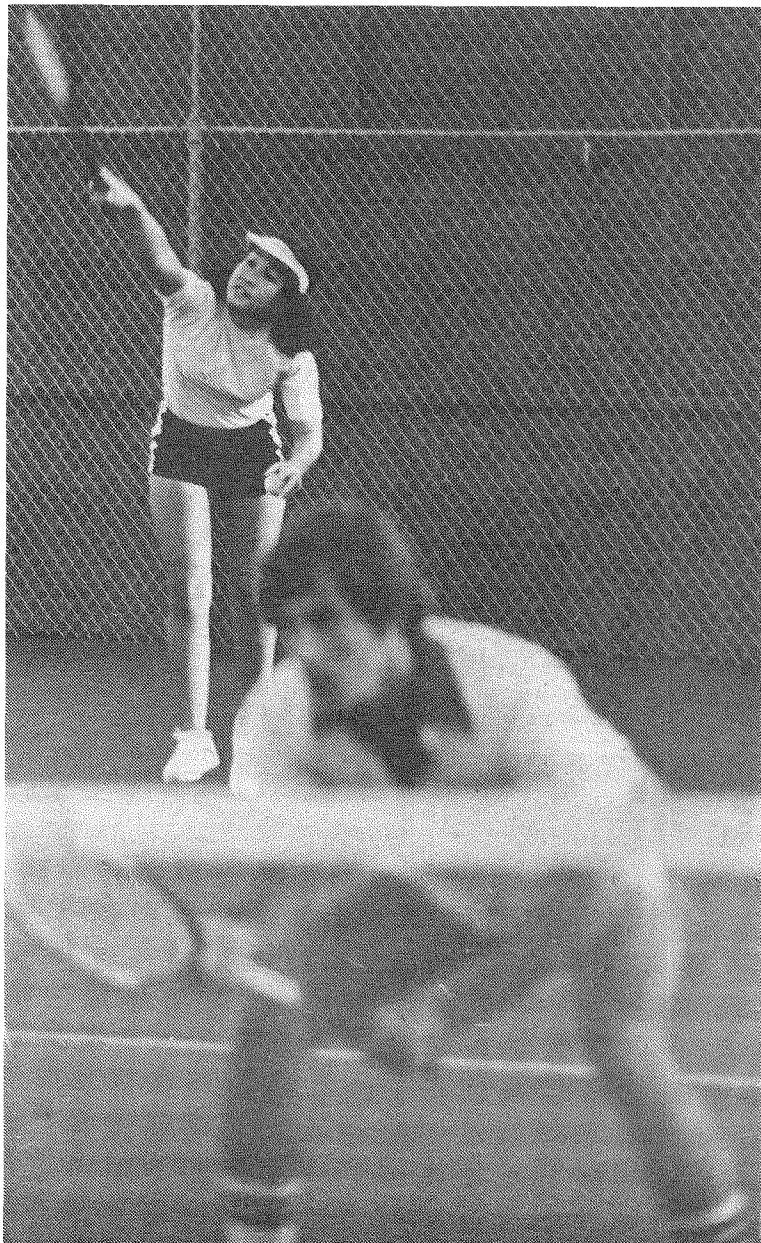
This won't hurt a bit.

Photos by Alan Loh

The squad's next game is against L.A. Baptist (Saturday, the 20th, at 8 pm, away) and is a good chance for a Caltech victory. In their first meeting of the season Tech lost by only 1 point in a well-played game. Pat McMurry and Charles Curatalo scored 29 and 17 points respectively in that heartbreaker.

IH Tennis

Now if I can only remain out of focus for a while.



Tech Scientists Help Trap a Thrust

Scientists from the University of Mexico (UNAM) and Caltech successfully "trapped" the November 29 earthquake in Oaxaca—using a concentrated array of portable seismometers to monitor in great detail the entire life cycle of the earthquake. Their results, say the scientists, mark a breakthrough in data gathering for earthquake prediction research.

The scientists were led by Caltech Senior Research Fellow Karen McNally and Professor Lautaro Ponce of the Institute of Geophysics of the University of Mexico. They plan to release the specific results of their monitoring in publications and scientific meetings next spring. However, they are already confident that they were able to capture the entire progress of the earthquake, which measured more than 7 on the Richter scale. Their records include about two weeks of relatively low seismicity before the earthquake, a week or so of foreshocks, the main shock, and thousands of aftershocks.

Only once before have such detailed studies of an earthquake been accomplished. A January 14, 1978, earthquake of magnitude 7, which took place on the Izu Peninsula in Japan, was similarly captured by

Japanese scientists. The Oaxaca results, however, mark the first time that an earthquake of the "thrust fault" type has been captured. This type of earthquake is produced by the movement of one continental plate beneath another. Another example of a thrust fault region is the area of Alaska where the Pacific plate undercuts the Alaskan mainland. The Japanese earthquake was of the strike-slip variety, in which two plates grind against one another laterally. The San Andreas Fault in California is an example of a strike-slip fault. Marci

Normally, earthquakes are detected only at relatively great distances by seismometers scattered widely to cover the maximum area. In such cases, many of the finer details of an earthquake's progress are missed, so seismologists greatly prefer to obtain data from a dense network of seismometers as close to an earthquake's epicenter as possible. They also prefer to obtain baseline data on an area's seismicity long before an earthquake.

An opportunity for such studies presented itself in 1975 when scientists at the University of Texas detected a "gap" in seismicity within a 100-kilometer-diameter region near Oaxaca. This gap consisted of an almost total disappearance of the normal, continuous succession of small earthquakes in the area. The gap indicated that strain was building that might be released in the form of a large earthquake. Thus, the Texas scientists forecast that a magnitude 7 or greater earthquake would take place within the area, although they could not predict exactly when.

Dr. McNally, whose specialty is the study of microtremors and their possible use as earthquake predictors, believed that the forecast was significant because of the seismic environment of the area. The nature of a subducting plate boundary is such that a downward slippage producing earthquakes in one region along the boundary produces a strain along other sections, and they will also inevitably slip. Thus, a gap in seismicity is likely to be followed by earthquakes (or aseismic slip) as that area "catches up." Izzy

Last summer, tremors recorded by the sparse seismic network around Oaxaca indicated that seismicity in the gap was increasing. Professor Ponce invited Dr. McNally to join the Mexican scientists in an intensive study of the area in September. Funds were authorized by the U.S. Geological Survey, and on November 1, Caltech graduate student Eric Chael arrived in the area to begin work with Mexican seismologists to install seven suitcase-sized portable seismometers to be monitored by the team. The seismometers were installed in a coastal area south of Oaxaca, between the towns of Puerto Escondido and Puerto Angel.

see Thrust: Page 6, Col. 5

U.S.G.S. Director will give Watson Lecture

H. William Menard, Jr., director of the U. S. Geological Survey, will talk on "Mineral Resource Information and National Policy" as part of the Earnest C. Watson Caltech Lecture Series at 8 pm on Wednesday, January 24, in Beckman Auditorium. The lecture is free and open to the public.

Menard will discuss international policies concerning the ocean's mineral resources that were established by the United Nations Conference on the Law of the Sea, and the difficulties in maintaining these policies because of conflicting national actions. He will stress that, because scientific information in this area is scant, policy concerning seafloor minerals is often based on anticipated rather than actual resources—and frequently with regrettable results.

A Caltech alumnus, Menard is an internationally recognized scientist with extensive experience in marine, atmospheric, and solid earth sciences. He was nominated to his post with USGS by President Carter in 1978. Before joining USGS he had been a professor of geology at Scripps Institute of Oceanography in San Diego.

Menard will deliver the John P. Buwalda Memorial Lecture in the fall-winter Watson Lecture Series. The lecture honors the founder of the Division of Geological and Planetary Sciences at Caltech, and its first chairman, from 1926 to 1947.

Hikers-1, Swimmers-0?

Camp Comments Sought

We are seriously considering holding Freshman Camp next September at 1000 Pines in the San Bernardino Mountains near Crestline. The Glee Club has attended this camp during the last several years. Anyone with ideas about this change should discuss them with either Ray Owen or David Wales in the very near future as decision must be made soon.

Science and Society

Well, I'm back after a hiatus of several issues. Today I'd rather talk about society than about science, specifically the social life here at Caltech. This column has evolved from a number of sources: long, heated discussions with fellow students and faculty; articles I've read in the Tech; my own observations and comparisons with previous college experiences; and overheard comments from various undergraduates. I've only been here for one term so far, but I think that's sufficient time to recognize a serious problem.

I want to make clear that the arguments presented here refer mainly to undergraduate life. From my own experience I know that graduates have their own problems, but I find several major differences. First, graduates are older, more mature

and have had time to make social adjustments; secondly, the relation of graduate student to institute comes close to that of trained laborer to large employer—it's a job, and one takes the good with the bad or else moves on.

My observations distill to these two empirical facts: the freshmen entering here are socially maladjusted, and once they get here they tend to remain frustrated and unfulfilled. Obviously, there are exceptions apparent to anyone willing to look. There are well-adjusted, happy, active people here; my point is that there are too many people who aren't as happy as they could be.

Have you noticed that (except for a few Y noon hours and the Interpretive Music class there are no concerts sponsored at

Caltech. How about parties? Has anyone checked the number of people interested in joining the school paper? Have you checked out the Student Center any night lately—my god, the place is empty, barren! Enough said?

Perhaps explanations can be made for some of these deficiencies. Granted both that Caltech must maintain very high standards and that the large number of students from diverse cultures may contribute to this situation, it is a fact that in modern American society undergraduate life is important as much for growing up and *having fun* as for learning science and engineering. Eighteen-year-olds are still adolescents; they are maturing and experiencing. They are learning to live away from home for the first time; they are learning to (hopefully) deal with women and form complex interpersonal relationships (both male and female). Any environment that stifles these learning experiences does the student a disservice.

In discussions I've learned that there are two separate problems here. First, the admissions process seems to select a fairly high percentage of people who are socially maladjusted. (It

almost seems as if intense devotion to science acts as a sublimation of the social urges—or is it that intense interest in science may promote social deficiencies? I don't know.) Secondly, the atmosphere at Caltech seems to aggravate the problems of many students.

Before I present my own opinions as to how to handle these problems, I'd like to deal with two statements that I've heard time and time again. The first is that there's basically nothing wrong here, that there is nothing the Institute ought to do to change student life. Faculty and staff (a few) hold this opinion. For obvious reasons, I don't agree with it. The second statement is more subtle than the first; it says that without compromising on student quality, the Institute will always have maladjusted freshmen entering. Furthermore, the psychological nature of Caltech undergraduates is such that any efforts made by the Institute are doomed to failure. "Parties? Why should we? Nobody will go."

I can't agree with that attitude either. The whole matter rests heavily on atmosphere and intentions. Perhaps it would be

of overall benefit to the image of Caltech to admit a few people with (marginally) lesser academic qualifications if they prove themselves exceptional in other areas such as political involvement, student government journalism, drama, etc. Why not

Without trying to improve student life, nothing good will happen. It amazes me that ASCIT isn't more involved bringing in popular concert sponsoring parties, outings, clubs. There ought to be a separate well-funded Student Culture Board. As a sign of good faith the Institute could pump some money into the board for the first few years of its existence emphasize that both ASCIT and Student Affairs must work to create the opportunity for enjoyment—more than that, they must stress that the best students are those who find time to have fun.

In addition, it is up to the Institute to educate faculty as to the needs of undergraduates. Is it fair for any teacher of a 9 hour course to assign *written* (I haven't included reading assignments, etc.) homework of 35-40 hours of homework a week? What if even the teacher did that? Have you tried to do 35-40 hours of homework a week?

I don't claim to have all the answers. I do think, though, that some of my proposals ought to be looked at closely by the members of ASCIT, the Student Affairs office, and Dr. Goldberg.

—Pat Frank



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Run And Runoff

Elections for ASCIT offices, and a runoff for senior class president, will be held Mon. January 29 (note change of date from previous announcement). Nominations for ASCIT offices close next Tuesday at 5 pm.

Tow It Away!

Over the past year particularly the Athenaeum has been transformed from a rather defunct faculty lunchroom to a vibrant, attractive facility. This has resulted in greatly increased use by the membership—both faculty and friends of Caltech, such as the Associates. This use has become rather heavy in the evenings, on weekends, and during academic vacation periods. The parking area at the Athenaeum is minimal to begin with, but when spaces are taken up by student and staff cars, the situation becomes intolerable at times.

While the recent custom may have been to overlook student use of the Athenaeum parking lots after regular Caltech hours and on weekends, this is not the intended use for these lots, and it has become necessary to free the space for use by the Athenaeum membership. Security has been advised to enforce the "No-parking rules and regulations" established for the Athenaeum which include the towing-away of vehicles illegally parked.

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- Monday, January 22, 1979, IMPROVISATIONAL THEATRE WORKSHOP with Dee Markus from the OFF THE WALL Comedy Group. 7:30-10:30 pm in Winnett Lounge. Sign up now in the Y office. Limited to 35.
- Monday, January 22, 1979, Sign up for a CROSS COUNTRY SKI TRIP on Saturday, January 27. Skiers will leave for the Grassy Hollow area at 9:00 am Saturday morning.
- Wednesday, January 24, 1979, UPDATE NOON DISCUSSION SERIES with Dr. Donald Coles, Professor of Applied Science speaking on "Great Expectation in Turbulence Research." In Clubroom 1 at noon.

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The CALIFORNIA Tech

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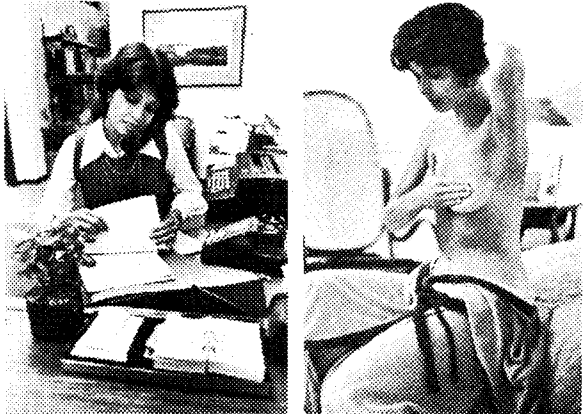
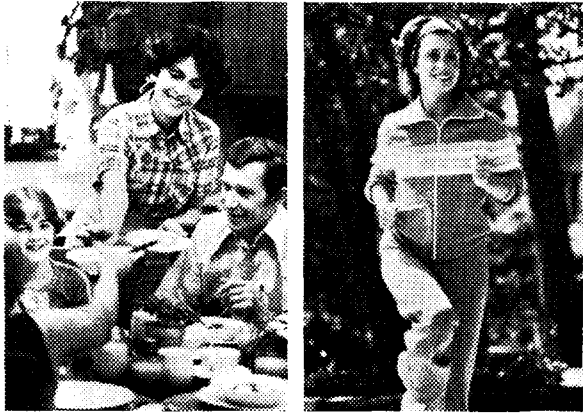
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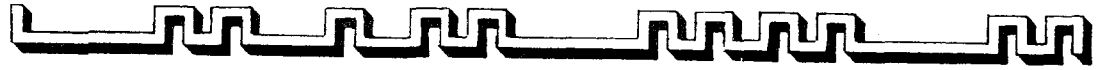
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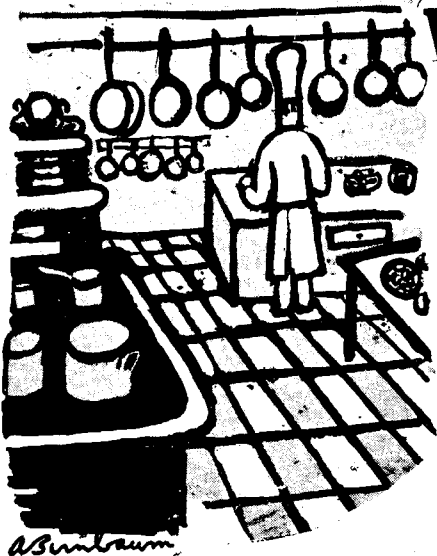
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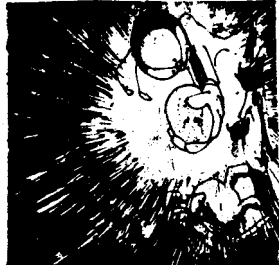


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audience

by Nick Smith

Ace Books, long a leader in the science fiction paperback field, went into a period of decay a few years ago, when Donald A. Wollheim left to form DAW books. Relatively recently, Jim Baen (formerly editor of *Galaxy* magazine) joined Ace, and started re-vamping their science fiction line. The new releases of the last couple of months reflect the new image that Ace is trying to convey, along with their snazzy new logo. They have some of the best packaging I've ever seen for science fiction, with covers by such well-known artists as Boris Vallejo and Gray Morrow. They have several well-known writers: Larry Niven, Gordon Dickson and others. They even have distinguished backgrounds, since the new books continue works conceived or written by such authors of the past as E. E. 'Doc' Smith and Robert E. Howard (of Conan fame). Now if only the books lived up to all of that...

Lord Tedric, by Gordon Eklund, is the first in a series of indeterminate length based on an idea that Doc Smith didn't get around to writing before he died. That is, Doc Smith had a basic idea, and Gordon Eklund has the fun of fleshing it out. Gordon Eklund, while not as famous as some other authors, has won at least one Nebula award for his writing, so the basic craftsmanship is there. Doc Smith wrote stories that have become classics, and was an expert at mind-boggling incredible heroes and their battles against evil. Read the

"Lensman" stories, for example. So what happens when you combine the ideas of a great creative mind with the writing of a talented writer? In this case, very little. *Lord Tedric* is a 188-page prologue to the rest of the series, as far as I can tell. Nothing very important happens, and it is genuinely hard for me to care about Tedric or his mysterious mentors, meddlers on a cosmic scale who decide that their problem is more important than whatever else Tedric was doing at the time, and grab him out of his own world and into theirs. In his own world, Tedric was a rampaging, homicidal monomaniac out to destroy anything having to do with magic (he came from a Sword and Sorcery universe into a Hard Science Fiction one). He supposedly saw unnameable horrors (conveniently so, since they have little to do with the real plot) in a wizard's castle, and came to the great logical conclusion that he should therefore kill all wizards. The people who whisked him into another world (interfering with his quest, as far as the flashbacks tell) by mysterious means are not subject to his wrath, however, for they are 'Scientists' rather than wizards. In any case, these 'Scientists' are a mysterious group of people working for the betterment of mankind, in this case by substituting the most likely hero they could find into a potentially crucial point in the progress of civilization. It is their feeling, apparently, that one person in the right place at the right time will make the

difference. That person is Tedric. To be honest, I would not want to depend on this guy to save civilization.

The plot is a Doc Smith-ish one, about the graduating class of the Academy of the Corps of One Hundred, sort of an elite officer corps of the Earth-based empire. Tedric has been installed in this Academy, along with some of the other main characters, including one villain. They all go off and solve the problems at a mining planet. Tedric manages to impress all sorts of people (and a few aliens) with his abilities as a leader and all-around guy, getting himself out of a court-martial and several other minor scrapes. For more of a plot description, you'll have to read the book. It is not outright terrible, and there is hope that this book really is just a prologue to the real action. But that second book had better be very good to make it worth this one.

* * *

Pro, by Gordon Dickson, is listed as an 'Ace Illustrated Novel'. I must admit, it is illustrated, and rather well. Unfortunately, it is rather too short to be properly classified as a novel. About one-third of the book is either illustrations or chapter headings, and there are only 34 lines to a page. Call it about 50,000 words by my rough estimate. Anyway, it is rather good, a story about an over-ambitious Sector Chief in the Expansion Service, whose job it was to smooth the way for new planets to be absorbed by Earth-based civilization. This one could have been just another

story about the bad-guy Earthman and the good-guy natives, but Gordon Dickson is as much a 'pro' as his 'protagonist' (one can't say 'hero' in this case). Basically, Harb Mallard, the sector chief, tries to force the natives into changing their civilization into one that would be more easily dealt with. He does this by trying to create a great conqueror, one of those kind who would go down in history as that planet's Genghis Khan or William of Normandy. The methods and the results of this plan are a part of the plot, and I leave those to be learned at Dickson's pace. This one is worth reading, although \$1.95 seems high for this short a work. I guess they paid the artist a lot.

Earth Magic by Alexei and Cory Panshin, disappointed me greatly. It started out like an excellent medieval-fantasy adventure novel, struggled its way through nearly 250 pages of such, and then turned into weird metaphysics right at the end. The main character is the son of a chieftain of the Gets, near-barbarian conquerors of a weak kingdom, surrounded by other weak kingdoms. If you read *Prince Valiant* in the Sunday papers, Gets are just like the current bad guys. Anyway, Black Morca, the father, is betrayed, and Haldane, the son, barely escapes with his life. He and his father's wizard make their way across the now-hazardous countryside, and have adventures. If you can either stomach or ignore the last twenty-or-so pages, it is a very good book.



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THRUST from One

For two weeks, the seismometers registered only low activity—about ten earthquakes per day of magnitude 1 to 4.5. However, during the third week, this number jumped to about 20 such earthquakes per day. On November 29 the mainshock occurred, situated almost exactly in the center of the array. During the first day after the mainshock, the scientists detected over 100 aftershocks, and monitoring continues.

Immediately after the mainshock a team of five Caltech scientists and engineers flew to the earthquake area to supplement the array with four strong-motion seismometers, which were able to measure tremors that would drive the more sensitive high-gain seismometers off the scale. Additional high-gain seismometers were installed by both Caltech and the University of Mexico's Institute of Engineering, bringing the total to 17. The Caltech team consisted of Dr. McNally, graduate students Marius Vassiliou and Tom Nearn, engineer John Lower, and seismological technician Mary French.

Current plans are to complete analysis of the data at the University of Mexico in January and to publish scientific papers on the findings this spring. The scientists also plan to deliver papers on their findings at the annual meeting of the Seismological Society of America to be held in April in Denver. The published reports and delivered papers will detail the locations and magnitudes of the foreshocks, mainshock, and aftershocks and will discuss the mechanism of the earthquake.

"Aside from the extremely valuable data obtained, we have learned from this experience the enormous advantage of being able to act quickly when such an opportunity presents itself," said Dr. McNally. "Once the gap was recognized, we were able to work with the University of Mexico scientists to install equipment rapidly, to obtain baseline data, and luckily, also the foreshocks, mainshock, and aftershocks of the Oaxaca earthquake.

"We hope that funding mechanisms and international cooperative arrangements can be set up to investigate other gaps that may appear, as well as to quickly instrument areas of swarms of small earthquakes that may precede large quakes," she said.

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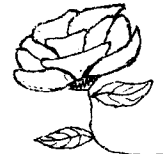


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Who Knows What Hunger Lurks in the Hearts of Men?

The Masked Munchie Knows!

It's really something when a store advertises 'Lowest prices in town' and means it! In these days of outrageous inflation (erasable restaurant menus becoming the rage), for any new business to start out offering reasonable prices at all is unusual. Sure, a few sales and come-ons, 'Grand Opening Specials' and the like, but to be followed in most cases by enormous price increases to make up for all the profit the business didn't make on the specials.

The P&J Deli, on Lake Avenue above Orange Grove (754 N. Lake) opened its doors a few months ago, advertising 'Domestic & Imported Meats & Cheeses, Lowest Prices in Town'. I went in, and found it to be a small deli, with refrigerator cases for drinks, and typical butcher cases for meats and cheeses. The thing that caught my eye was the price for their sandwiches, 99 cents. Right, I thought. Stale cheese and bologna or something. Next, the sandwich menu: a choice of roast beef, ham & swiss, capocola (a sort of spiced ham), mortadella, salami, turkey. A simple submarine sandwich was offered for only 79 cents! Even better cheeses were being

offered for as little as \$1.49 a pound, for jack, cheddar and others.

These were indeed 'Grand Opening Specials', in that they only lasted temporarily: about three months. Recently, their prices on the sandwiches were raised to the astounding price of (gasp) \$1.15 for the regular stuff, and 99 cents for the submarine. And these were not skimpy sandwiches, either. These were in nice french rolls or pita bread, stuffed with meat or cheese or both, along with lettuce, tomatoes, pickles, and, if you let them get carried away while making a sandwich, mustard, mayonnaise, and, occasionally, something that resembled Italian salad dressing.

They don't have a fancy menu, don't have cute names for the sandwiches, and don't have tables for eating in the deli, but they do have a 19 cent serving of salad that is just about the right amount for eating with a sandwich, usually coleslaw and potato salad being available. Being a real deli, you can get other delicacies ranging from kosher pickles to marinated mushrooms. You can get fresh-ground coffee of several different varieties to take home

and put in your percolator (including turkish and mocha types). You can get meats and cheeses by the pound (or wheel, in the case of the more interesting cheeses) to take home and munch later. More importantly, you can get all of these things at reasonable prices. This week they had ½-pound wheels of white cheddar cheese for absurdly little, and were giving out samples of this and other cheeses that had just come in. The people there are friendly, and go out of their way to please customers. And I have never, repeat never, gotten a sloppily-made, badly-filled, or just bad sandwich at P&Js. A certain better-known and more expensive sandwich shop we all know and love has given me all three at times.

754 N. Lake is a long way to go just for lunch (they're only open from 9 to 6), but well worth the trouble for several sandwiches or for a cheese purchase. Anyway, it's just at the south end of Fast Food Row, so if you'd travel that far to MacDonalds or Steak Corral, this is a much better deal for the distance. Try it sometime.

—The Masked Munchie

IT'S ADD DAY

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