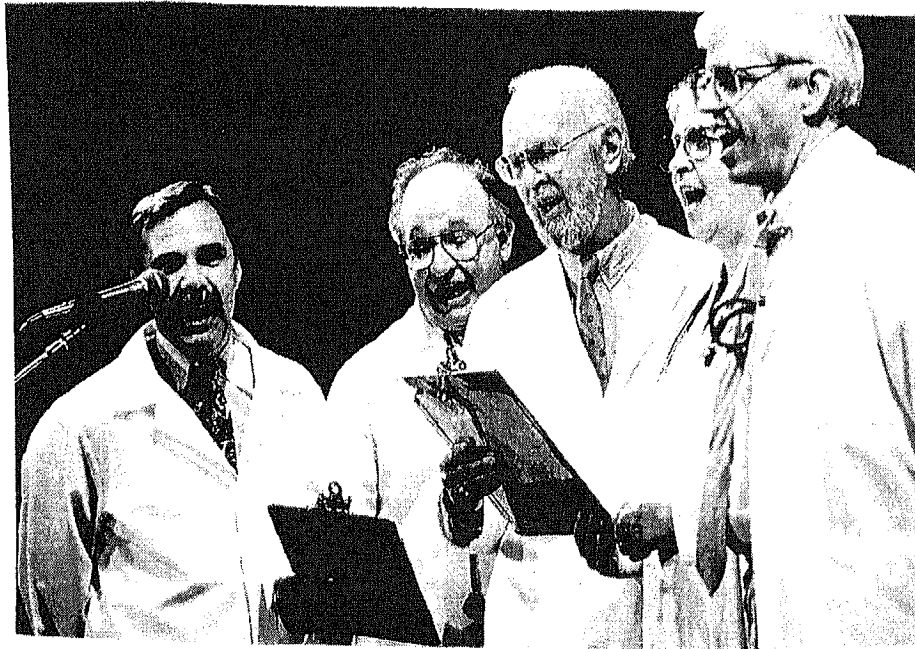


# Shifting Dullness

June 1993





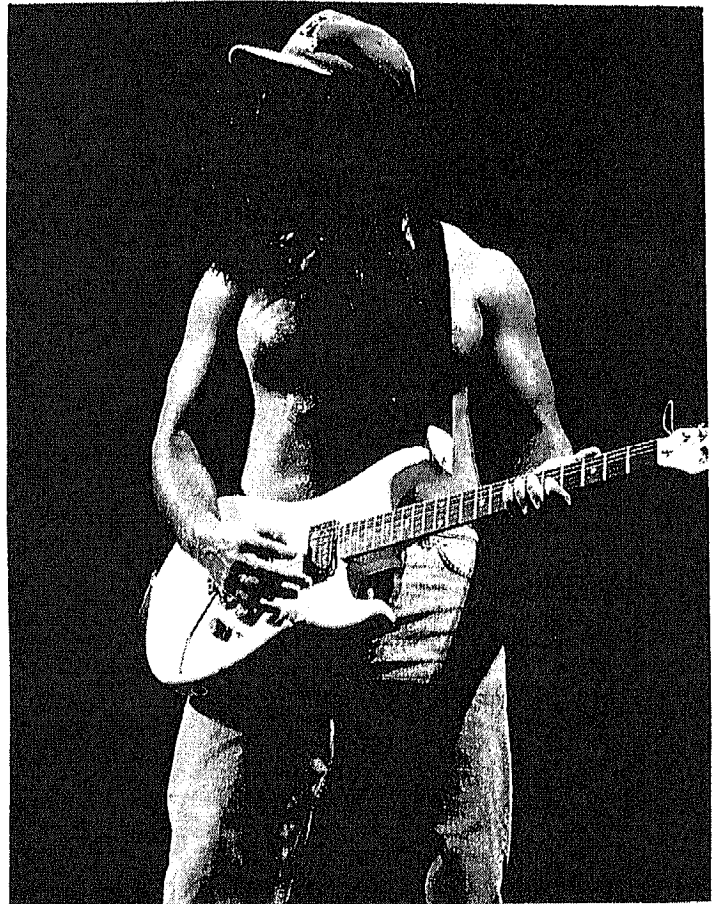
## Greg Lucas

• A gene coding for susceptibility to colon cancer has been identified by Albert de la Chapelle of the University of Helsinki and Bert Vogelstein of Johns Hopkins. The gene, which is located on chromosome 2, is felt to be primarily responsible for familial susceptibility to colon cancer as well as some sporadically occurring cases, or as many as 1/7th of the total cases. As many as 1 in 200 people in western countries are thought to carry the gene. These people may have a 95% chance of developing colon cancer in their lifetime. Surprisingly, the gene does not appear to function as a tumor suppressor, like many other genetic loci linked to cancer. Rather, its presence seems to be associated with wholesale instability of the entire genome during replication. Colon cancer is the second leading cause of cancer deaths in the U.S., however early detection is associated with a 90% cure rate. *Science* May 7, 1993.

• A new rapid test for the presence of drug-resistant *Mycobacterium tuberculosis* in an isolate has recently been reported. Multi-drug resistant strains of T.B. have emerged in many countries and have a fatality rate ranging from 40 to 60% in immunocompetent individuals and greater than 80% in the immunocompromised. However, because of the prolonged doubling time of T.B., current methodology does not allow determination of drug susceptibility for 2 to 18 weeks. A new test employs firefly luciferase, the stuff that makes fireflies in the backyard light-up. The enzyme catalyzes the reaction of luciferin with ATP generating a photon of light. Because of the high sensitivity of light-detection devices, luciferase has come to be used as an excellent assay for ATP levels. The test works in the following way: The luciferase gene is incorporated into isolates of T.B. via a phage. The cells are then cultured for a

short period of time either with or without various anti-T.B. drugs. When the cells are then challenged with the substrate, luciferin, only those isolates that are making ATP will emit light. Researchers have found that phage-transformed cells that are incubated with a drug to which they are resistant, will emit light when luciferin is added, whereas susceptible bugs, which aren't producing ATP, will not. *Science* May 7, 1993.

(see Journal, pg 3)



Steve Chul

Espo: One for the ladies.

# Computer News

## Emile El-Shammaa

Ready to start researching and comparing residency programs? CTL has a program on its network called AMA-FREIDA. This is basically a huge database of all the accredited residency programs. You can sort by residency type and location, and search for the features you're looking for. It has several pages of information about each residency program, including hours on call per week, hospital stats, salary, benefits, and much more. It also includes phone numbers and addresses of contact persons. It's a lot easier than using a book, and you can print out whatever information you want. This program is available on all the IBMs in M410 (call CTL for room availability), and on the one networked computer in the 24 hour cluster (M405).

**CURRENT IBM COMPATIBLE COMPUTER PRICES.** If you're considering buying or upgrading a computer, now's not too bad a time! Prices are going down, and technology's going up! As far as IBM stuff goes, you can now get a 486 system for the same price as a 286 system 4 years ago. This is partly due to the facts that 1) there are a lot of intel computer chip clones coming out, and 2) the next generation of IBM-type computers has hit the market — the new chip is called the Pentium (I would've expected 586\*). So you can now get an average (computer, VGA monitor, 120-170 Meg hard disk) 386 system for about \$900 new, and an average mid-range 486 system for about \$1500 new. Notebook computers are also cheaper these days. I've seen ads for 386 notebooks for about \$1100, and 486's for about \$1700. Used prices run about 1/2 to 3/4 the new price, depending on how old and what features (ie size of hard disk, type of monitor, CD-ROM, modem, etc). If you already have a system, you can affordably upgrade by buying a new motherboard (eg a 386/40DX for \$160), a new hard disk (eg a 170 Meg for \$200), a new modem (eg a 2400 modem/fax for \$60), or whatever else you want! Again, used is cheaper, but is more risky.

If you need any additional computer-related information, don't hesitate to call me at 382-0203.



Steve Chul

Norm consults with Celeste on the turns his life has taken.

(Journal, continued from pg 2)

- A recently reported study demonstrated that annual fecal occult blood testing with rehydration of samples decreased the 13-year cumulative mortality from colon cancer by 33% in participants 50 to 80 years of age. The massive study involved randomly assigning over 46 thousand participants into groups with annual guaiac screening, biennial screening and no screening. Positive tests were followed up with colonoscopy and appropriate therapy for cancers identified. The cumulative mortality from colon cancer in these three groups was 5.88, 8.33 and 8.83 respectively. Only annual screening was associated with a significantly lower mortality from colon cancer than the control group. *New England Journal of Medicine* May 13, 1993.

## Health and the Environment in Poland Laurel Sherwood

*Ed. Note:* Laurel Sherwood graduated from the Duke zoology program with an M.A. in 1992. She is currently working for the Peace Corps in Poland.

On a recent tour of Upper Silesia near Katowice, Poland, I found myself standing on a hilltop overlooking a small lake. I imagined the lake as it might have looked on a warm, sunny day...the blue of the sky, the shouts of the children playing, the splashes of swimmers and fishermen's sinkers, the sweet smells of summer. It hurt to think that there had not been a day like that for decades. Today the sky is grey and the landscape bleak. A stream of black smoke flows from a smokestack behind the hill which I had hiked up. The area is strangely and quietly deserted, even though thousands of people live around the lake. Fishermen and swimmers gave up long ago, because the wastewater from a nearby plant has converted the lake into a pool of phenol and other chemicals. I had thrown a stone into the water earlier, and it splashed up a thick reddish brown. The "hill" I was standing on was actually not a hill at all, but a giant mound of industrial waste. I tried to cover my mouth and nose to avoid smelling the fumes and hurried back to the bus, glad to escape.

For the approximately four million people who live in Upper Silesia, escape is impossible. They live in one of the most polluted areas of the world. Upper Silesia is the center of Poland's heavy industry and the primary source of its raw materials. Within the Katowice city limits alone there are over 90 large industrial plants, 6 coal mines, 2 steel mills, 2 nonferrous metal plants, 13 electro-mechanical plants and 2980 other factories manufacturing various commercial goods. Most of these places lack proper pollution control devices. Coal is the key fuel for generating power and heat in the region. Most of the coal consumed is brown coal, or lignite, which is more polluting and less energetically efficient than hard coal. Most automobiles in Poland run on leaded fuel and have outmoded engines. All of this leads to terrible air pollution. In the most heavily industrialized areas, the oxygen content in the ambient air is reduced on windless days to 18%, and the carbon monoxide content is eight times the standard. Average annual density of suspended particles is 14 times the standard. Sulphur dioxide exceeds the standard by three times the average, nitrogen oxides by five times, lead by up to 13 times, benzopyrenes by 10-24 times, and fluorine, formaldehyde, and phenol by 3-10 times.

Poor water quality is another serious problem in the region. Only 1.4% of the length of rivers and streams measured in the province of Katowice contained Class I water (water defined as drinkable after disinfection), and 65.5% contained unclassified water (water so contaminated it is virtually unusable, even for industrial purposes). The water is polluted principally by raw sewage

and industrial effluents laced with heavy metals and toxic (sometimes radioactive) chemicals. To give just one example: The Rawa, a river already polluted with untreated sewage from two towns before it reaches the city, leaves Katowice containing only 14% water, the remainder being chemical compounds. In addition to wastewater and emissions in the atmosphere, Silesian industry produces an immense amount of solid waste. The amount of solid waste which has built up over the past several hundred years has reached 1500-2000 million tons covering 6000 hectares. This situation has contributed to soil contamination, surface and groundwater pollution.

(See Environment, p. 5)

*Below:* Brian Fortuin in... da dum dam...The People's Court

Photo by Steve Chul



June 1993

## Environment, continued from p. 4

and destruction of natural vegetation. Soil quality, because of exposure to airborne pollutants as well as to the leaching of surface contaminants, is so poor that in the most heavily polluted areas only 40% of farms and gardens are considered suitable for unrestricted cultivation of edible plants. 17% of the land devoted to agriculture in the province cannot be farmed at all due to contamination by heavy metals and aromatic hydrocarbons. In parts of the Katowice area, lead levels in the soil reach up to 19,000 parts per million - about 50 times the acceptable level.

In view of the appalling environmental condition, it would not come as a surprise that the health prospects of people living in Upper Silesia are among the bleakest in the industrialized world. Residents of the Upper Silesia have a 15% higher incidence of circulatory illnesses, 30% more cancers, and a 47% higher rate of respiratory illnesses than the rest of their countrymen. Tuberculosis, pneumoconiosis, bronchitis and childhood illnesses are much more common than in other areas of Poland. Male and female urban life expectancy is more than a full year less than the national average, despite one of the best health services in Poland. The death rate is particularly high in the 39-50 age group, being 40% higher than the national average.

The 1989 infant mortality rate was 25.5 per 1000 live births in the city of Katowice, while the national average was 16.1. In the Katowice province there is also a higher incidence of premature births (8.5%), genetic birth

**Below: Drew Schneider Slashes and Slashes**

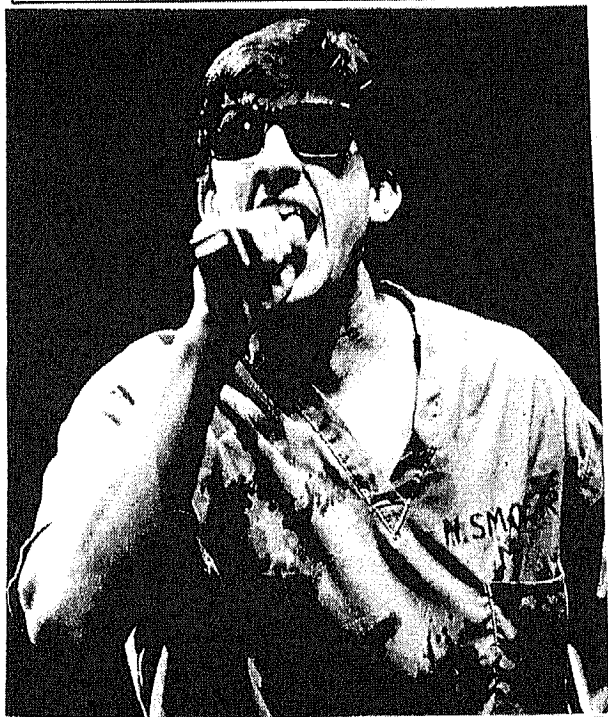


Photo by Steve Chui

Shifting Dullness



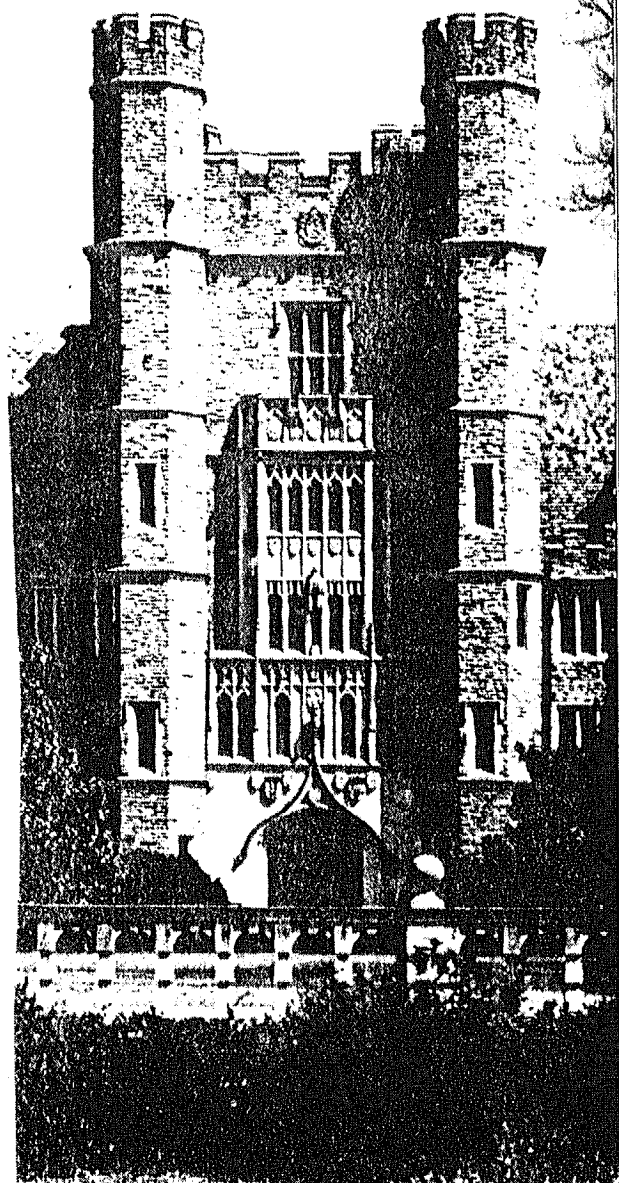
Photo by Steve Chui

**Above: Halstead diagnoses a terminal illness**

defects (10.1% of all live births), and spontaneous miscarriages than the rest of the country.

The health of the children in Upper Silesia also suffers. Chronic Bronchitis is reported in 35% of children in heavily polluted areas, compared to 4% in relatively unpolluted regions of Poland. High levels of lead in the bloodstream have been documented in studies of the "hot spot" areas in the Katowice province. Children in these areas also suffered from anemia, digestive tract diseases, chromosomal damage, and nervous system problems.

The environmental problems in Upper Silesia are somewhat reminiscent of the situation in the 1950s and 1960s in the steelmaking regions of Indiana, Pennsylvania, and the Ruhr Valley in Germany. Those areas, however, had the advantages of settled political institutions and mature market economies. Poland is committed to modernizing its industry, reducing coal consumption, replacing outmoded automobiles with more fuel efficient vehicles, and so on. Other industrialized governments and international lending institutions have offered considerable support. A project is underway to clean up the phenol lake and mound of solid waste in the areas I described above. Hopefully, the people in that region will once again have fresh air, pure water, and clean land.



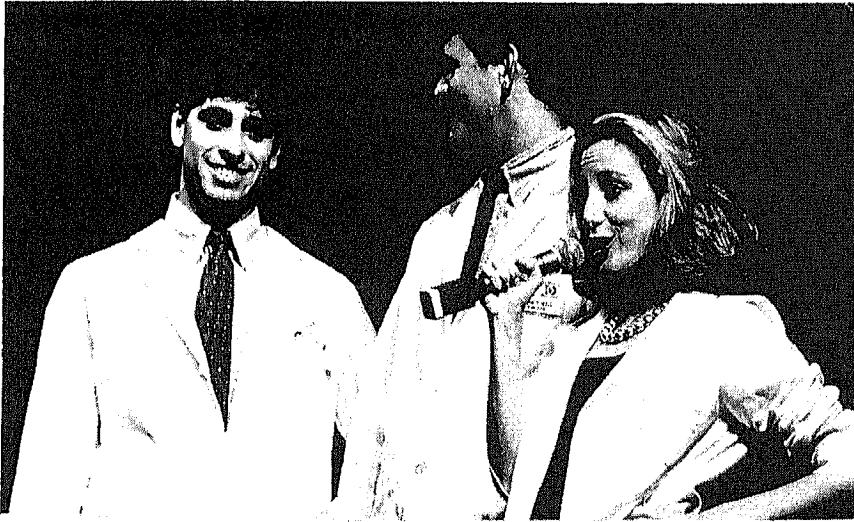
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Steve Chui

Clinical Arts students focus in on likely diagnoses for the standardized patient

## Calendar

### LITERARY LUNCHTIMES

Literary Roundtable meets on Fridays at noon.

- June 11, 18, 25 "A Virtuous Woman" by Kaye Gibbons will be discussed in the Dean's Conference Room, Green Zone, M133.

### ART

- American Dance Festival Display; June 11 to July 9. North-South Corridor.
- Winners of Employee Art Show; June 11 to July 9. North-South Corridor.
- Naturescapes, an art exhibition of the work of Nerys Williams Levy, will be shown May 28- July 6 in the Louise Jones Brown gallery, Bryan Center.

### MUSIC/THEATRE

- Triangle Brass Band - Great show tunes and movie music, Summer Festival of the Arts, 6 p.m., Sunday, June 13, Sarah P. Duke Gardens. Inclement weather site: Griffith Film Theatre.
- Member of the Ciompi Quartet with guest artists will perform at 8 p.m., Sunday, June 20, Griffith Film Theatre, Bryan Center.
- A Recital for trumpet and Organ - Don Eagle, trumpet, 5:30 p.m., Sunday, June 20, The Chapel.
- Musical Flatus - 8 p.m., Thursday, June 24, Duke South Washroom, Brown Zone.

Shifting Dullness

- The Mallarme Chamber Players - 8 .pm., Thursday, June 24, Reynolds Industries Theater, Bryan Center.
- Carillon Demonstration - J. Samuel Hammond, carillonneur, 7 p.m., Thursday, June 24, Chapel.

### FREEWATER FILMS

All shown at 8 p.m. In the Griffith Film Theater.

- June 3 - "Harvey"
- June 10 - "Midnight Cowboy"
- June 17 - "The Color Purple"

### Shifting Dullness Staff

Editors	Fred Rimmelle Greg Lucas
Writers	Greg Lucas Emile El-Shammaa Laurel Sherwood fred Rimmelle
Photographer	Steve Chui

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Several PTs, PAs, Grad Students, Med Students, and Physicians take an Ultimate break

## Skeptic, continued from p. 9

happen despite my warning, you may want to consider performing hara-kiri with one of your extra pencils.

Tip#5: Don't ever take time to philosophically muse during the exam. You'll inevitably wind up asking yourself, "Why am I doing this to myself?" and will waste inordinate amounts of time trying to rationalize the whole rancid enchilada.

Tip#6: Try to get as much sleep as you can before the exams. This is often easier said than done. Those people who do not spend the night insomniacally staring at the ceiling probably would be able to get some sleep were it not for their downstairs neighbor with the 26 inch base speaker who insists on playing "Rump Shaker" at 2:15 a.m. Look at the bright side - with the pounding base, at least you don't have to pay money to keep the bed vibrating.

Tip#7: Alarm watches are not allowed in the exam room, because 99% of the people taking the exam find the electronic peeping to be highly rude and annoying. Nevertheless, there is always at least one low grade moron who insists on setting his/her watch to go off every ten minutes (whether this is a pacing maneuver or a desperate bid to stay awake I can't say). Whatever you do, avoid the impulse to leap over several isles of chairs, lock your hands around Mr./Ms. Caslo's throat in an

attempt to compromise their airway and pound their occiput repeatedly against the nearest sharp edge, screaming all the while, "TURN THAT DAMNED WATCH OFF YOU USELESS SACK OF DOG MEAT!" While this action would no doubt be immensely gratifying, you could lose valuable time.

Tip#8: Never look back in the exam to check out what type of pattern you are making. There are two inherent dangers to this maneuver. First, you may realize you haven't answered "E" since 136 questions ago, and will waste valuable time worrying (EXCEPTION: If your pattern is a straight line, i.e. all your answers are "C," then I would waste time worrying). The second danger is that you may get mesmerized by all the pretty dots and completely zone out for twenty minutes or so (this is prone to occur in epileptics or Tetris players).

Tip#9: Avoid listening to any sort of music for several hours before the exam, or it will come back to plague you. When I took Part II, I spent three quarters of the final section listening to Jimmy Buffet sing "Why Don't We Get Drunk and Screw" over and over in my head. (The real tragedy here is that I did neither after the exam). Hey, at least it wasn't "Rump Shaker."

Tip#10: Relax! Don't worry! No one from Duke has failed either Part I or Part II...yet.



# The Septic Skeptic

Fred Rimmele

I've mentioned the Boards in my past two columns, and, to give you fair warning, I'm about to do it again. In fact, I'm not just going to mention them; I intend to dedicate this whole piece to the beloved USMLEs. I do this not only because I, like many of my compadres, recently suffered through Part I, but because so many other classes are doomed to suffer through them as well.

Several MS Is asked me if they should take Part I immediately after first year. I told them they should consider smearing themselves with molasses and burying themselves in a fire ant hill first. Several second years, presumably having difficulty in deciding the best way to gain an advantage over their fellow colleagues, have asked me when Part II should be taken (just take the damn thing already, will ya? Sheesh). Of course, multitudes of fourth years are hanging ten on a pipeline of anxiety, worrying about whether their performance on Part I will force them to attend one of those 'second rate' residency programs (oh, say, Barnes, UCSF, Mass General, Hopkins, or Brigham & Womens) as opposed to matching in their first choice (DUMC, of course). I don't know what the remaining third years are doing; I suppose they poked their heads out of their labs, saw their shadows, and decided to go back to research for another three months.

With all the communication and fine guidance the Dean's Offices have provided in regards to the Boards, there's really absolutely no reason we should all be more jittery than a vallium addict going through withdrawal. But we are, so in order to ease our distress, I'm going to spend this column talking about my recommendations about taking the boards. I won't tell you how to study, or what to study, or when you should take them (except to point out that USMLE is an anagram for MULES, which suggests to me that we just have to get our ASSES out there and get them over with). I will go over the finer details of taking the exam - what to do, what not to do, and emergency counselling hotlines you can call after it's all over.

Tip#1: Always bring at least eight pencils to the exam. You'll probably only need three. The extra five are for when the gunner who's sitting next to you (the same gunner who incidentally sold you down the river during that attending conference in Surgery) breaks the point off his/her last pencil and leans over, asking in a saccharine butt-kissing voice, "May I please borrow an extra pencil?" Then you can look them in the eye, smile as sweetly, and snap the points off all five extra pencils in rapid succession before saying, "Sorry, pal, but all mine are broken, too."

Tip#2: Lots of people bring food, usually chocolate, into the exam to snack on. Extra sugar does not, in fact, osmotically displace facts from your neurons, but they do have endogenous endorphin like qualities, which can somewhat ease your misery. 'Snickers' is very popular, presumably because "it really satisfies." At the risk of offending certain MS Is, let me say that I'm a 'Mounds' man myself. In any case, avoid getting chocolate smudges on your answer sheet. A chocolate smear is nearly indistinguishable from a #2 pencil mark, and it would be a shame to loose points because of the Hershey Corporation.

Tip#3: Both Parts I and II are two days each. Therefore, going to Sats after day #1 and celebrating by downing two pitchers of John Courage, one Vulcan Mind Probe, four Brain Tumors, two Tidy Bowls, and three Hop, Sklp, and Go Nekkeds is not only premature but probably highly detrimental to the next day's performance. (NOTE: This tip does not apply after day #2).

Tip#4: It is a good idea to occasionally check your answer sheet to make sure you are filling in the ovals to the corresponding questions. Nothing is more anxiety provoking than getting to the last question in the exam (often with only two minutes left) and finding out you are out of space on your answer sheet. A hurried search reveals that you have skipped question # 7, meaning that questions 8-199 are answered *incorrectly*. Should this

(See Skeptic, p.8)

