Random Samples:

Cyclosporin Turns Five

Ten years ago, people with failing hearts or kidneys faced a tough choice: continue with traditional treatments or undergo a risky experimental transplant. It wasn't much of a choice: for example, 1 year after the operation, only 66% of transplanted hearts would still be ticking, and only 65% of transplanted kidneys would still be cleaning up the body's wastes. The problem was simple: the body's immune system worked to reject the new part.

Then, in 1983, the Food and Drug Administration agreed to rush through approval of a new drug called cyclosporin, an immunosuppressant that had shown promise in organ transplants.

Today, largely because of cyclosporin, organ transplants are considered routine. Last year surgeons performed some 1200 liver transplants, 1500 heart transplants, and 9000 kidney transplants, according to the American Council on Transplantation. And the 1-year survival rates are dramatically better; 80% for hearts and 91% for kidneys. It's those survival rates (or, more accurately, the survivors) who have most touched cyclosporin's discoverer, Jean-Francoise Borel.

"It's been a revelation for someone like me who spent his time injecting mice in a sort of ivory tower," Borel says, "just to realize that my work has affected tens of thousands of people. To have them come up to you at meetings and thank you. It shows that whatever you do in science has consequences. You can't just do something that interests you and think it doesn't matter, because it does."

Borel was the earliest believer in the drug, which turned up in 1970 in fungus in a soil sample brought back from Norway to Sandoz Ltd.'s labs in Switzerland. The fungus produced a substance that at first looked like it might work as an antibiotic. When trials showed that it didn't, there was pressure to drop study of the drug.

But Borel won approval to study the drug part-time, and found its immunosuppressant properties. Cyclosporin's discovery has become something of a pharmaceutical legend, an illustration of how serendipity works in science. Borel, speaking to reporters before he received the Discoverers Award from the Pharmaceutical Manufacturers Association in September, said he's not so sure.

"The only serendipity was that the drug came to me after the antibiotic trials," he said. "The fact that it was found at all is not really serendipitous."

It's clear that Sandoz doesn't regret its decision. Cyclosporin, marketed as Sandimmune, has become big business. Annual sales of the drug in the United States, which accounts for about 50% of worldwide sales, reach $100 million. If the drug lives up to its early promise to help in the treatment of autoimmune diseases like juvenile onset diabetes and rheumatoid arthritis, that figure could increase substantially.

I'll Have the Rehydratable Beef Patty, Please

If you're wondering who the most alert crew member of the space shuttle Discovery was, a good bet might be George D. (Pinky) Nelson. He's the only one who drank coffee.

In its preflight media kits, NASA not only spelled out in great detail the various maneuvers and experiments the shuttle would perform, it thoughtfully included the daily menus for all five men. Thus, we know that alone of the five, Nelson likes his coffee. He also likes junk food, scarfing down chocolate-covered cookies, chocolate pudding, and Life Savers with his Meal Bs (astronauts don't have breakfast, lunch, and dinner, they have Meal A, Meal B, and Meal C). We know, too, that Rick Hauck, the flight commander, looked after himself well by eating bran flakes or granola every morning.

The astronauts' diets consisted of those all-time American favorites rehydratable chicken à la king, thermostabilized turkey and gravy, and intermediate moisture crunchy peanut butter. Regrettably, most of the snacks in the ominously named "contingency pantry" were fruits, vegetable sticks, and trail mix, the kind of things the doctor says are good for you. Fortunately, there were also 20 packs of "candy-coated chocolates" and 20 packs of "candy-coated peanuts." Could that be NASA-ese for M&Ms?

Reason for Caution in Monsoon Season

A team of researchers in Los Angeles reports that condoms don't like smog (or monsoons) any better than people do.

Writing in the 9 September issue of *JAMA*, Richard F. Baker, of the University of Southern California School of Medicine, and associates tell how they exposed nonlubricated latex condoms to ozone. Forty condoms were loosely fitted over inverted Pyrex test tubes. Twenty of the condoms were exposed for 3 days to 0.3 part per million of ozone at 21°C in a controlled environmental chamber. Those conditions approximate what's called a stage 1 ozone episode for the Los Angeles area. The other 20 condoms were not put in the chamber.

David Clark

The treated condoms had obvious perforations and failed a standard air-burst test. Scanning electron micrographs of the condoms revealed sizable craters on the treated condoms, but not on the untreated ones.

The authors warn that condoms distributed unwrapped, a not uncommon practice in family planning clinics and in some developing nations, may do little good if they've been damaged by ozone. In particular, they say, a 1986 report of condom deterioration among supplies in storehouses in developing nations may have been due to the heavy ozone concentrations created by lightning flashes during monsoons.

A possibility the authors don't raise is equally frightening: latex lab gloves left exposed to high levels of ozone may not offer the protection they should. Another group of researchers writes in the 1 September issue of *Nature* that latex gloves from four manufacturers showed pitting and cavities throughout the thickness of the gloves. They recommend double-gloving for anyone handling HIV or hepatitis B virus–infected material. Given the ozone findings, lab technicians, nurses, and physicians might also do well to keep their gloves sealed until use.

The Way We Are

"Fraud in science is not merely the false floor in the edifice of truth; it is also the serpent in the garden. We wish to eliminate it not only because it serves utilitarian purposes to do so, but because it shows ourselves and others that we are the kind of community we believe we are, and say we are." — Stanford president Donald Kennedy, from his Monsanto lecture at the Marine Biological Laboratory at Woods Hole.

■ GREGORY BYRNE