



Startling word from Scotland about the cloning of a sheep. A trip to Mars. A child born to a 63-year-old mother. How long will it be before certain desired traits are singled out for reproduction so that humans might not be conceived in a body so much as assembled in a laboratory? (Green eyes go nicely with yellow hair, don't they?) Now that a new age of reproductive possibility—and planetary exploration—is hard upon us, here is one vision of the life and times of a daring young woman who has faced the future of medicine.

Love and Sex in the Year 2047

Talia surrendered to him without so much as a glance at the tattoos that revealed his infection/fertility status. She was too caught up to care. by John Sedgwick

When the sun dropped to a certain angle, Talia thought as she sat at her console, the surface of the Jovian moon Io looked just like Cape Cod, the lunar dust surprisingly beachlike and inviting, even if no sea lay beyond. In fact, the slight rise where the twitchy, spiderlike bots were, under her careful guidance, now skittering about in their ceaseless quest for precious minerals, reminded her of the secluded dune where she and Ricardo first snuggled together. It was a radiant February afternoon, and the two were savoring the last moments before the supersummer heat would drive them indoors until fall. "Just to get out of the wind," Ricardo had said, his eyes full of mischief, as he nudged her down into the little hollow behind. They had both laughed: The Greater Atlantic Alliance flag hung absolutely limp on the pole at the hovercraft landing.

As Ricardo fumbled with the strings of her bikini—so charmingly retro—Talia had surrendered to him without so much as a glance at the tattoos that revealed his infection/fertility status. He was clean and up-to-date with his annual spermicidal injections, as it turned out. But right then, Talia was way too caught up to care. She would gladly have died for him—or, almost as daring, gotten pregnant by a man whose genotype was completely unknown to her. That was three years ago, in the year of our Lord, 2044. Despite everything that had happened since, the memory of the first time made her flush with unadulterated happiness, a tingly warmth that ran deeper and felt purer than the jolts of synthetic pleasure she dialed up in the Leisure Center after work. And it distracted her attention from the screen, where a couple of the bots had gotten their legs entangled and shorted out.

"C'mon, Tal," her supervisor—a crusty cyborg everyone called Hal—declared into her headset with a metallic into-

nation no amount of computer power could erase. "You got two down out there. Start paying attention, wouldja?"

Talia looked up at the screen with a start.

"Get 'em up, kiddo," Hal continued. "Time's money. Time's money." With the press of a few buttons, Talia quickly dispatched a bot repair crew. "Sorry."

"Apology accepted," Hal intoned. "Now concentrate."

If only she could. Her brain-wave indicator blinked an urgent red—as if she didn't know she was stressed. To calm herself, she snuck a look at a dog-eared photograph she'd zippered into the breast pocket of her jumpsuit. It was of her very own little Ashley, a doe-eyed darling who was, in fact, still waiting to be born. The photo showed a prototype of the girl at age four. The genetic engineering company still couldn't absolutely guarantee this precise phenotype, but, according to *Consumer Reports*, it was the most reliable of the major suppliers. Ashley's image never failed to soothe. What a cutie.

"Better stick to business," the raspy-voiced attendant at the next console advised sotto voce. That was Jeannie, who had taken it upon herself to mentor Talia in the ways of mining camps—when she wasn't regaling her with tales of her own riotous youth back on Earth. Jeannie had been a wild one and a fierce, dark-eyed beauty in her younger days, but, to her credit, now that she'd hit the big 5-0, she'd refused to resurface herself by laser-polishing her wrinkles. By current cosmetic standards, she looked 80, but she didn't care. She was who she was, and she didn't need a bunch of technology to obscure that fact. Of course, Jeannie was nearing the end of her two-year hitch, so she could afford to let herself go. "All the cyborgs are acting pissy today," Jeannie whispered, "because the company's so far behind schedule. You know how they're programmed," she added significantly.

"Harvey's been a little bit clumsy lately," Talia explained, referring to one of the fallen bots, as she surreptitiously tucked the photo back in her pocket.

"That's another thing. You better not anthro around here." Anthropomorphizing, Jeannie meant, which was a common temptation with the bots. "You know the cyborgs hate that. They'll think you've gone maternal."

"Maybe I have."

Something about the way she said that caused Jeannie to wheel around and stare at her. "You're not—?" Jeannie couldn't even bring herself to say the word.

Talia nodded slowly. "Um-hmm," she added with a smile.

"Christ—how?" Jeannie demanded. Triton Exploration was very strict about pregnancy, since it slowed down productivity so drastically. The company scanned women's wombs to make sure they were fetus-free before they embarked on the Io mission, and it administered annual sterility injections to all the men to keep them from impregnating anyone while they were in High Country.

"I smuggled in a couple of zygotes," Talia replied. "Flash-frozen. I hid them inside a skin-conditioner tube, if you want to know," she added, pleased with her ingenuity.

Jeannie shook her head in amazement. "That's pushing the envelope a little, isn't it?"

kidneys. Some parents stocked up on spare extremities, too, but Talia and Ricardo figured that it would be easy enough to regrow a finger or toe—even a nose or ear these days—from her own tissue, if it came to that. Brain replacement was out of the question, though. They found it absurd that there should even be a market for such a thing.

Major organs were a job to install because of cost-containment; only a handful of surgical centers on the continent were equipped for the procedure, and it could involve quite a wait. Because of their complexity, these organ transfers required human surgeons to be on-site—not to work hands-on, obviously, but to pool brainpower on the more difficult cases. No surgeon was as sure-handed as a well-crafted robot. Those bots could inscribe their manufacturer's name on a strand of hair, and sometimes did, just to leave their mark. Compared with that, a surgeon's scalpel was a meat cleaver.

Talia was determined to have the child the old-fashioned way, using her own womb to nurture the zygote for the last seven months at least. Her early fertility workups were a breeze. Basic medicine, gynecology, all that routine-physical

stuff, were done at home, usually in the medicine closet off the bathroom. Talia found it hard to believe her mother's stories about spreading her legs for a gynecologist to peer between. And the instruments they used—how barbaric! She preferred most aspects of her medical care to be impersonal. She enjoyed her biannual gynecology kits, with their delicate, sponge-like probes that—at least with the brand she bought—had a delightful self-pleasur-

ing feature. She was happy to learn from the display that she was, even at 31, in peak fertility. Thank goodness her foresighted parents had signed her up for the menarche-delaying program. Who wanted to start having periods at nine (now the average age of menarche for unadjusted girls)? Twenty-one was plenty soon, especially when you considered how crazy it could make a person to go hormonal during the all-important college years.

The memory of the first time with him made her flush with happiness, a tingly warmth that felt purer than the jolts of synthetic pleasure she dialed up in the Leisure Center after work.

"I'd have lost her otherwise," Talia added, referring to Ashley. "The zygotes only last a few months, you know, and she's all I have left of Ricardo." Her eyes started to moisten, and her brain scanner flashed red again.

"Well, I'll be damned," Jeannie replied.

Ricardo and Talia had married three months after their dune-side tryst and, with temporary visas, moved in with her parents in their charming underground bungalow in Arizona, while they saved for a place of their own. Talia got a job with Triton, which offered hefty surplus medical benefits beyond the bare-bones universal health coverage she received as a citizen of the G.A.A. Meanwhile Ricardo finished up his degree in aquatic farming, a booming field ever since the Twenties, when the first big shortfall in the Earth's grain harvest put a fright into everyone. They'd done all the usual family planning, consulted all the DNA catalogs for the best genetic material they could afford, and accumulated a number of simulation videos of possible children, with various projected life outcomes. She'd pulled the still photo off one of them. After considerable discussion, and not a few tears on Talia's part, the couple agreed on the red-haired little moppet to be named Ashley McGuire-Pena, with an IQ that was guaranteed to be at least 130 and minimal predisposition to the major dementias. Because Ricardo was still a student, Talia's parents had had to co-sign the bank loans for the extra genetic material and for the backup organs to be raised for Ashley at the biofarm, in case anything should go wrong with her originals. They only had money for the biggies—heart, liver,

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Except for a few geriatrics too set in their ways to change, hardly anybody saw a physician in person anymore. Talia much preferred to get her diagnoses on-line from MD Net. She typed in her symptoms, placed the probe where directed, and MD Net identified her illness and prescribed a treatment she could pick up at the merchandise mart. If she needed more info, she could pull it up on-screen—with 3-D holographic illustrations—in a twinkling. The computer network

handled the everyday stuff (sniffles, sore throat, flu) better than human doctors ever could, since humans quickly got bored seeing the same old things every day.

Everything was set for Talia's maternity, and she and Ricardo had chosen little Ashley's birthday: June 22. She liked the idea of a birthday on the summer solstice—it

Talia needed to make a break with the past. So when Triton announced it was looking for space colonists, she thought this was the answer.

seemed somehow momentous—and she'd be cooped up indoors because of the heat anyway. But then, on the very day that Ricardo was planning to drop off his DNA card at the maternity lab to start assembling the zygote, his wrist monitor detected a phase-two heart condition. Talia had always teased him for wearing one of the little black gadgets, since it had an annoying tendency to misread Ricardo's sexual excitement as a heart attack, letting off a shriek during his orgasm. This time, she thought that the wristlet was simply picking up on the thrill of fatherhood Ricardo was experiencing. But the readout showed that, while his pulse had remained within the normal range, his blood pressure had skied well above the accepted norms for a 32-year-old Euro-Latin male. The follow-up biosystems probe revealed a couple of dangerously clogged arteries. Nobody could figure out what had happened until Talia checked the files on his fecal analysis off their computerized toilet. Ricardo had been sneaking a prodigious quantity of baked goods high in trans-fatty acids, and his bedside treadmill and weight machines had gone unused for months.

Normal protocol was to let loose the nanomachines—microscopic, computer-driven sanders, really—to clean off the plaque and rebuild the arterial wall, but the nanotechnicians, after calculating the degree of arterial distension, feared Ricardo's aorta might blow any second, and it could take a week or two for the nanos to complete their work. Plus, his brain waves revealed alarming levels of psychological stress—he was up to 3.4 on the Calibresi scale and rising daily. Ricardo was prone to anxiety attacks after 3.6, and he was likely to go into a deep-trough depression at 4.2. Since Talia had the extra coverage through Triton, she was able to buy the more expensive option: microsurgery. Ricardo bunked in at the local surgical theater, where a crack team of heart surgeons supervised state-of-the-art bots.

Surgical interventions are always risky. Talia knew that, especially for a rare condition like heart disease, now even

less common than the maladies that used to be grouped together under the term *cancer*. But she was still not prepared for what happened. She couldn't imagine that, with so much technology and so much knowledge at everyone's disposal, accidents could still occur. In this case, a lightning strike at the regional fusion plant caused a power surge during the operation. Ricardo must have felt it—he was awake throughout the procedure, having been anesthetized locally and only lightly sedated, as if he'd downed a martini—because he stiffened slightly just as the lasers began cutting out the ballooned section of his artery. One of his torso restraints came loose, God knows how, and Ricardo's sudden stiffening, slight as it was, threw off the laser guides, and the electron beam nicked his abdominal aorta. Blood started spewing everywhere. Ricardo was dead in seconds, a ghastly look frozen on his face. The outrageous thing was, the stupid bots had no idea what was happening, and they kept slicing him up even after all his vital signs had expired. It was horrible! The cryogenics team rushed in to try to salvage what it could, but it was too late. Starved for oxygen, Ricardo's brain cells were beyond all hope of repair.

Talia couldn't believe that Ricardo was gone. Yes, people died, of course they did. But only because they had not availed themselves of the medical system, or because they were seriously old. The normal life span had gone from 75 at the end of the last century up toward 120 in this. To die at 32 was to perish in your crib. Both Talia's parents were alive, as were both of Ricardo's. Talia's loopy mother, at 62, was thinking of having one last child, her fifth, before menopause finally set in. But so many sexagenarians were doing that now—the story had made all the on-line 'zines. All four of Talia's grand-

Prince, one of the more annoying cyborgs, came up and tapped her on the shoulder. She gasped in surprise, and Prince forced an abortion pill down her throat. She tried to gag, but there was no refusing it.

parents were going strong, the oldest at 107, one of a burgeoning number of "tri's, as the over-100s were called. And she still had a great-grandparent at 113, who had lived through the past 10 American presidential administrations, although she had no memory of any except the final, hapless one of Chelsea Clinton, since the others had passed before her mental boosters kicked in.

Everything on Earth reminded Talia of Ricardo. Sunsets, dust storms, neo-blues syntho-harpists, sky-grams, the funny, gasping sort of whirl that her computer management system made when it did its auto-boot in the morning. They'd only been married a year, but it seemed to Talia, in her mourning, that they had lived together from the beginning of time. She needed to get away, to make a break with the past.

Besides, even in a relatively advanced sector like Arizonia, it really wasn't safe for a single woman, especially one as pretty as Talia, to go hovering about alone—and public transportation was out of the question. Per- *Continued on page 252*

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IMPROVING ON NATURE

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enhancer: "The key is bioavailability—how much gets into the skin at the right pH to be active and to produce results."

So far, only two product lines appear to have mastered this equation: Skinceuticals, which employs scientific technology developed at Duke, and Anti-Aging International's Cellex-C line, the most widely distributed brand, containing tyrosine and zinc. Other companies use derivatives of C, including ascorbyl palmitate and magnesium ascorbyl phosphate. These compounds are easier to stabilize than ascorbic acid, but it's not known whether they can be chemically converted to ascorbic acid by the skin or, if so, in what concentrations.

What does this addition to nature's pharmacopoeia mean for you? As with any new treatment, read the labels of C products—in this case, to be sure that the product you buy contains active L-ascorbic acid. Expect a period of trial and error, cautions Dr. Alster. You may experience irritation; with the exception of Osmotics Corporation's dermal patches (made to be applied directly to lined skin), the best C products have a low pH (less than 3.5) to keep them active and stable, which means that they're acidic and can sting. Creams and especially serums may turn yellow or brownish after being exposed to air and light, and some may even temporarily tint your face or hands; but an altered color doesn't necessarily mean product deterioration—shelf life is about nine months, producers say. Finally, "topically applied C won't make you look like a teenager," admits Lorraine Meisner, M.D., co-inventor of the patented technology used in Cellex-C. "It will help protect you from sun damage, smooth fine lines and firm your skin." (Anti-Aging International offers a refund to any consumer who has used its Cellex-C products for two months and isn't satisfied.) Adds Alster: "It's a skin booster, and seems to work synergistically when alternated with other antiaging ingredients like glycolic acid or Renova."

One thing you can count on: Vitamin C for the skin won't be a passing fancy. Its sun-protective qualities alone guarantee it a place in nature lovers' cosmetics kits. In fact, you may eventually see it in sunscreens. ☛

For further information, see beauty details, page 256.

LOVE AND SEX IN THE YEAR 2047

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versely, the widespread adoption of the infection/fertility tattoos only increased the predatory sex, in which bands of lower-class males, jacked up on the virtual sex entertainments that had become nearly ubiquitous, roamed the countryside in search of uninfected females for the real thing.

So when Triton announced it was looking for space colonists to run the lo mining program, Talia thought this was the perfect answer. Space colonization had been expanding rapidly after the discovery of priceless quantities of beryllium on Mercury, and then the congestion, disease and increasing political strife on Earth made high-altitude living (as it was called) more attractive. The closer planets like Venus and Mars had decent entertainment infrastructures (with the possibility of regular "virtual" trips home) that made them vaguely tolerable, but Jupiter was just coming online, so to speak. It took forever to get there, at least two months, and several hours for even the most compressed data to transmit to and from Earth. Triton had to offer triple pay to attract candidates. Talia thought it offered her the perfect opportunity to start over.

If only the company didn't have such a strict no-pregnancy rule! In the G.A.A., and in other enlightened countries, this would have been a gross violation of her civil rights, but G.A.A. statutes had no force on other planets. It was a tantalizing prospect: She and Ashley on Io as true pioneers, like those grizzled gold miners who drove their wagons to the American West two centuries before. Ricardo's death was no impediment. It had been some time since procreation required genuine sex. For an educated and careful woman like Talia, sex was purely a recreational activity, although, with Ricardo, it had retained some vestigial romantic overtones. (In this sense, sex was just like virtual sex, only more so.) No, procreation was a matter best handled by the maternity labs. Sexual reproduction, in the original meaning of the term, was way too random and rather clumsy. Performed breathlessly, in the heat of the moment, often in the dark, it admitted none of the cool rationality that modern fertilization methods required. Talia had received Ricardo's DNA code

as part of his estate, and, for fear the information might somehow be corrupted if she waited too long, she had gone ahead and created two zygotes (the second as a backup), and then preserved them cryogenically. Encased in crystal, they had a kind of talismanic significance for her, like diamonds.

Tempted as she was, she hadn't planned to impregnate herself on Io. She honestly had not. All she had wanted from the zygotes was to feel closer to Ricardo and pleasantly motherly, there in the vast and lonely High Country terrain. But Io proved to be too much. Although she had spent months preparing, and engaged in more simulations than she cared to recall, she wasn't ready for the solitude—a solitude that was somehow compounded by all the androids lurking about. A person didn't know what loneliness was until she went to a Jovian moon, with its endless expanse of nothingness, and the unimaginably vast, cloud-enshrouded planet of Jupiter behind. Io was worse than the Lone Star Nation—encompassing much of the former Texas, Oklahoma and northern Mexico—in the drought decades, when nothing grew for 17 years. Talia and Ricardo had hovered across it on their wedding trip and couldn't believe the devastation. At least there were some old tree stumps, a smattering of abandoned towns and a few cattle skeletons to break up the monotony. Here, there was just fine-particle dust, light as talcum powder, as far as the eye could see—and only the roving bots to give the impression of life. If you peered up into the funereal blackness to where the Earth should be, you saw only a speck of brightness. At such moments, Talia would sneak a look at little Ashley's photo and try very hard not to weep.

So she had done it. The faceless MD Net had told her how to thaw and implant the zygote, and her uterus had accepted it as if it had been Talia's own, all-natural creation. It felt so good to have something growing inside her, and comforting to think that she was bringing life to this dust-dry, absolute-zero wasteland. Pregnancy distracted her, no question, and she found herself looking at the photo a hundred times a day. It also gave her a certain glow

and filled out her breasts pleasantly.

Inevitably, the happiness was too good to last. She was sitting with Jeannie at the stargazer pavilion in the Leisure Center, where they were toying with the new retinal magnifiers, a kind of contact lens that acted like a pair of 10,000X binocular-scopes. Talia had been remarking that, even at that magnification, the Earth was little more than a blurry dust mote, when Prince, one of the more obnoxious roving cyborgs, came up and tapped her on the shoulder. She gasped in surprise, and Prince forced an abortion pill down her throat. No matter how hard she tried to gag, there was no refusing it. The pill did its miserable work in hours.

Talia cried for days, and seven of the Triton women went on strike in sympathy for her. Eventually, their point made, they returned to work and Talia,

Ashley looked almost exactly as the genetics company had claimed, although her hair was more strawberry-colored than red and somewhat curly besides.

too, dragged herself through the motions of her job. She pleaded with the cyborgs to let her take the next shuttle out, but she had signed the two-year contract, and that was all there was to it. They wouldn't give in.

Talia still had the backup Ashley zygote, and having had a taste of motherhood, she was determined to see her act of creation through. Jeannie was her only hope—she'd be shuttling back to Earth in a matter of weeks.

The two were sitting together in the cafeteria when Talia dared to ask the question that had been consuming her.

Jeannie's eyes narrowed. "I'm not exactly the Mom type."

"You have a uterus, don't you?" Talia replied sharply. She hadn't realized how desperate she felt.

"Yes, and I've got feet too, sweetheart, but they don't make me a sprinter."

"You don't have to be a supermom," Talia begged. "Come on, Jeannie. You're my—our—last hope."

Jeannie looked *Continued on page 254*

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LOVE AND SEX IN THE YEAR 2047

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out the porthole window at the snow-white moonscape and the twinkling stars. "Looks just like Christmas out there," she said. She turned back to Talia. "Maybe I should give you a present."

Ashley was born nine months later, almost to the day. Jeannie sent a message to Talia on Io: "I could get used to this." The first image arrived a few days later, and it showed Ashley plopped on Jeannie's lap, looking almost exactly as the genetics company had claimed, although the hair was more strawberry-colored than red and

somewhat curly besides. Talia beamed when she saw it. Ashley's hair was just like hers after all. And she had Ricardo's lively eyes, she noticed. Talia and Jeannie sent a blizzard of E-mails back and forth between Earth and Io in the next few months—Talia's filled with questions and maternal observations, Jeannie's with inadequate answers and her own jokey wisdom. Gradually the exchanges tapered off as Talia realized that Ashley was Jeannie's now.

After that, Talia spent much of her free time at the stargazer pavilion, looking not back toward Earth, but out toward Pluto and beyond. A bot-repair specialist named Judd started occupy-

Facts Behind the Fantasy

The genetic engineering that lies at the heart of this little drama is, of course, very much with us already.

For this scenario of medicine 50 years from now, I have extrapolated, sometimes fancifully, from present trends. If this tale seems far-out, it is only because medicine is moving so rapidly right now—pushed by biotechnology, market forces (the ones that have brought us managed care), increased longevity and computerization—that extrapolations must go that much further to stay ahead of the times.

The cloning of a sheep in Scotland marked a huge leap toward the cloning of a human being. After that, reproductive biologists may cull only the particular traits they seek from the rich stew of genetic possibility, mixing and matching as their customers require. The \$3 billion Human Genome Project should yield the locations of the genes producing most inheritable diseases and, if the more extreme geneticists are right, certain attributes, like a high IQ or a cheerful disposition. Once it does, it will doubtless make one's own genotype, whose broad outlines are already discerned for DNA fingerprinting, about as much a part of one's basic identity as one's place of birth is now. It will lead to individualized biotech pharmaceuticals. It may also give rise to designer babies like little Ashley. The flash-frozen zygote is not yet available, but frozen sperm has, of course, been around for a while, and, now, we have the flash-frozen sperm-maker. Ralph Brinster, V.M.D., of the School of Veterinary Medicine at the University of Pennsylvania, has recently succeeded in freezing the sperm-producing cells of a rat, thawing them and implanting them in the testes of a mouse. The prospect of actually regrowing lost or damaged tissue is

being developed by Ioannis V. Yannas, Ph.D., professor of polymer science and engineering at M.I.T. His colleague, Linda Griffith, Ph.D., and Charles Vacanti, M.D., of the University of Massachusetts Medical Center in Worcester, did the extraordinary work of growing an ear from cow cartilage cells onto the back of a mouse, giving rise to the possibility of bio-farms where spare organs might someday be raised from human genes.

To ward off diseases, early detection will be the order of the day. The Japanese have already developed a computerized toilet for fecal and urine analysis. Currently, an infrared scanner allows doctors to check blood flow of diabetics from a remote location. The wrist-mounted heart monitors are coming, but the brain-wave scan might take a while. Menarche delaying has been proposed by epidemiologist Malcolm Pike, Ph.D., to prevent breast cancer. For those whose skin has begun to age, lasers are already being employed for resurfacing wrinkles. Computers can help virtually everything else. While nanotechnology could be used, as in the story, to fight heart disease, it could also work proactively to boost a patient's immune system. Although the "mental boosters" are still for the future, Alex P. Pentland, Ph.D., of M.I.T.'s Media Lab, is working on a pair of glasses that will flash the names of, say, the guests at a party on the inside of the lenses as an aide-memoire.

As for the structure of the medical health industry, Wanda J. Jones, of the New Century Health Care Institute, believes there will be a scaling-down effect in which primary care will be replaced by self-care, specialty care by

ing the seat beside her, and Talia didn't tell him not to. He was a heavily resurfaced 45-year-old, but she wasn't picky about appearances. He had a roguish sense of humor. She checked out his genome and surprised herself that she was willing to completely overlook some potential trouble on chromosome four. When her two years were finally up, she didn't return to Earth but signed on with Judd for an exploratory voyage farther out in the galaxy. Pregnancy regulations on such extended trips were slack, and they planned to take full advantage. They didn't have a clue where they'd end up.

JOHN SEDGWICK is SELF's national correspondent.

primary care, and so on. With the rise of computerized databases and on-line services, what I have called "MD Net" already exists to expand the possibilities of self-care, although not to the point of self-prescribing. At the other extreme, Jones expects that the place on the top of the health care totem pole now occupied by hospitals will eventually be taken over by medical practice groups. The occupancy rate of hospital beds has been declining drastically for the past decade. I suspect that the rise of antibiotic-resistant bacteria, already becoming a problem at some hospitals, may end up keeping people away. Telemedicine, as it is called, is already being practiced in sections of the U.S., allowing physicians to "see" patients in remote locations; 120 programs are now in effect domestically, according to David Balch, director of telemedicine at East Carolina University. Telesurgery, long an interest of the space program, is further off, but the first significant steps toward it have been taken with the development of computer-guided cameras for laparoscopy. Eventually, the scalpel will be computer-guided as well. It is not hard to imagine that patients of the future would rarely see a doctor in person, even for surgery.

Will we be mining Io by 2047? Most projections for space colonization, like a possible target date of 2018 for a human flight to Mars, are based on government timetables. Andrew Lawler, a reporter/writer for *Science* magazine, believes that the prospect of commercial gain is a likely lure for space exploration. After all, it was gold that brought European explorers to the New World. As for the possibility that political unrest might cause the breakup of the United States, it isn't so farfetched given the dissolution of the former Soviet Union and the potential division of Canada. For those ills, there is no medicinal cure. —J. S.

FASHION DETAILS

Table of contents Page 10 Red turtleneck by Searle, \$395. At Nordstrom; Saks Fifth Avenue; Searle, NYC. Black leggings by Ralph Lauren Polo Sport, \$69. At Macy's East, Bloomingdale's, Dillard's. Sneakers by DKNY, \$84.99. At Lady Foot Locker, Saks Fifth Avenue, Nordstrom.

Mindful move of the month: the wave Page 68 Ivory cami bra top by Dance France, \$24. Call 800-421-1543. Black shorts by Danskin, \$29. Call 800-288-6749.

Earth-friendly therapy Page 70 Twill Bush hat by J. Crew, \$30. Call 800-562-0258. Cream turtleneck by Ralph Lauren Polo Sport, \$175. At select Meier + Frank stores; Polo/Ralph Lauren, Beverly Hills. Khaki Cargo shorts by J. Crew, \$34. At J. Crew stores, or call 800-562-0258.

Words worth Page 70 Necklace by Jeanine Payer, \$400. At Barneys New York, NYC; Fred Segal, Santa Monica, CA; TwistNorthwest, Portland, OR.

Jewelry allergies Page 76 Necklace by Agatha. Call 800-AGATHA-7.

Move of the month: scissors Page 116 Navy zip bodysuit by Ralph Lauren Polo Sport, \$175. At Polo/Ralph Lauren, Beverly Hills; Macy's. White leggings by Ralph Lauren Polo Sport, \$69. At Polo/Ralph Lauren, Beverly Hills; Nordstrom. Air Turf Raider cross-trainers by Nike, \$85. Call 800-344-6453.

Empowering suits Page 166 Some organizations similar to Dress for Success New York that are located around the country: Attitudes & Attire, Dallas, 214-630-1667. Bottomless Closet, Chicago, 312-527-9664; Los Angeles, 310-788-5064; and Milwaukee, 414-223-7751. Career Closet, San Jose, CA, 770-448-3215. A Miner Miracle, San Francisco, 415-541-0222. New Options for Women, Tacoma, 206-589-6575. Opportunity Closet, Cincinnati, 513-825-6000. Successful Imaging, Charlotte, NC, 800-849-1841. Suited for Change, Washington, DC, 202-293-0351. Suited for Success, Coral Gables, FL, 305-669-4245; and Oklahoma City, 405-728-0412. Tailored Transitions, Denver, 303-298-8869. The Working Wardrobe, Philadelphia, 215-568-6693. Wardrobe for Opportunity, Walnut Creek, CA, 510-253-0920.

A sense of proportion Page 170 For information about the Paris Gordon Collection, call 212-575-9085.

One great piece: the camisole Page 172 Black ribbed camisole by Mark Eisen, \$198. At Alene's, Boca Raton, FL; Frances Heffernan, Winnetka, IL; Intermix, NYC. (1) White stretch shirt by Mark Eisen, \$198. At Alene's, Boca Raton, FL. Jeans by Liz Claiborne, \$38. Call 800-555-9838. Black sneakers by Fila, \$40. At Fila. (2) Bracken lattice-knit T-shirt, \$217, and bracken lattice-knit skirt, \$215; both by Mark Eisen. At Neiman Marcus, Dallas; La Capricieuse, Coconut Grove, FL. Brown strappy mules by Lerre for Mark Eisen, \$350. At Neiman Marcus, Dallas; La Capricieuse, Coconut Grove, FL. (3) Black ribbed long cardigan by Mark Eisen, \$297. At Alene's, Boca Raton, FL; Frances Heffernan, Winnetka, IL; Intermix, NYC. Black-and-white stretch-tweed pants by Mark Eisen, \$347. At Alene's, Boca Raton, FL; Frances Heffernan, Winnetka, IL; Intermix, NYC. Gray felt shoes with leather trim by Isaac, \$175. At Shoes Etc., Hilton Head, SC. (4) Ash wool jacket, \$497, and skirt, \$173; both by Mark Eisen. At Jaime, Nashville, Indiana; Peoples, Atlanta. Black classic loafers by DKNY, \$178. At Nordstrom, Saks Fifth Avenue, Bloomingdale's. (5) Bracken leather skirt by Mark Eisen, \$349. At Neiman Marcus, Dallas; Intermix, NYC. (6) Black-and-white stretch-tweed long jacket by Mark Eisen, \$598. At Champagne, Redondo Beach, CA; Frances Heffernan, Winnetka, IL. Black ankle boots by Lerre for Mark Eisen, \$450. At Champagne, Redondo Beach, CA; Frances Heffernan, Winnetka, IL.

The shiatsu pillow Page 172 Pillow available at Takashimaya, NYC. Call 212-350-0100.

Why I love shoes: this fall they're made in the suede Page 174 (1) Black suede pumps with steel heels by Ralph Lauren Footwear, \$295. At Polo/Ralph Lauren, NYC; select Dillard's and Saks Fifth Avenue stores. (2) Berry Wallabees by Clarks, \$90. Call 800-4-CLARKS. (3) Gold suede Mary Janes by Casadei, \$275. At select Saks Fifth Avenue stores, or call 212-765-6846. (4) Orange-and-periwinkle suede Antiochs by Rockport, \$80. Call 800-ROCKPORT. (5) Perfect Patch suede boots by Kenneth Cole, \$190. At Kenneth Cole stores, or call 800-KEN-COLE; call 800-487-4389 for catalog. (6) Suede wedges by Joan & David, \$240. Available in black or in black-and-brown leather at Joan & David boutiques. (7) Tricolor suede ankle boots by Bruno Magli, \$350. At Bruno Magli boutiques, Bal Harbour, FL, Short Hills, NJ, and NYC.

SELF's fit city awards Page 209 Red long-sleeve shirt by Agnès B, \$90. At Agnès B, NYC. White bikini bottoms by Joseph, \$149 (sold with top). Call 212-570-0077. Original Country running shoes by Adidas, \$55. Call 800-448-1796. **The best exercises from L.A.** (All items without credits are model's own) Pages 210 and 211 Black Sport bra by Mossimo Body, \$36. At Ron Jon's, Cocoa Beach. *Continued on page 256*

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