LANDING ON THE MOON
by Deepak Chopra

"Bleeding! Bleeding! Bleeding!" Ghanshyam practically shrieked at me. He waved wildly in the direction of the village. I must come with him.

I have worked with calmer orderlies than Ghanshyam. He was good for throwing buckets of water on the walls of our dispensary. We did that to keep down the unbearable heat. He could hold one end of a bandage while I wrapped a farmer's foot after a bullock stepped on it. But he was absolutely hopeless in emergencies. I suspected at times that he must be the village halfwit.

"What's the matter, anyway?" I asked with irritation. I stood up in the stream and walked to shore. All my clothing -- one pair of khaki shorts, actually -- lay under a shady grove of trees. I put them on.

Ghanshyam was so disturbed he couldn't answer. He ran a few paces toward the village and then back to me, his turban unwinding as he ran. He was so out of breath he could only say "Bleeding, bleeding!" in broken gasps. It was naturally a bit unnerving. We both trotted off toward the end of the village where he had been pointing. After a bit I got some more information out of him.

"Dr. Sahib Khan is in trouble!" he cried. Saleem Khan was my partner at the dispensary. As soon as I realized that he was the one who wanted me, I knew that a serious complication must have arisen with one of our cases. We were both fledgling doctors, about twenty-three years old, and assigned here together by our medical school. It was our responsibility to take care of an entire village. An instructor from the medical school stopped by every three or four days with supplies. Otherwise, we were on our own.

When I turned toward the dispensary, Ghanshyam pulled my arm and pointed to Sarla's house instead. Just what I had imagined: Sarla was a seventeen-year-old girl whom we had examined that morning. She was pregnant, very near term, and had been forced to come to us by her husband, a bricklayer who worked in nearby Ghaziabad. That day he had missed his ride on the lorry and brought his wife in to us, complaining that she seemed sick all the time and had no energy.

Sarla certainly looked sick. Suspecting anemia, we gave her some iron pills. Her husband had walked in asking for a "blood tonic" for his wife. He reluctantly agreed to allow her to take the pills instead. We told her that after her baby came, she should make the trip to Delhi, about eighty miles away, for a kind of blood test called a hemogram. He refused to let her consider the blood test. We weren't too surprised. Most of the villagers were quite hesitant to take our medicines at all.

Poor Saleem, I thought. It must be a breech delivery. The local midwives, the *dais,* wouldn't be calling in a Western-style doctor unless complications had arisen. I hoped he remembered his manipulation procedures. Ghanshyam rushed into the house ahead of me. I stopped on the threshold for a second, surveying the room.

On a wide, comfortable-looking bed lay two people. One was Sarla, sitting up with a soft, loving smile on her face and a newborn infant sucking at her breast. The other was Saleem, lying half-fainted in a pool of blood.

"What's wrong. What's happening here?" I asked in English.

"Probably vasovagal syncope," Saleem said, sitting up. He was still pale, almost ghostly looking, but he was recovering.

"Oh," I said. I never knew that he couldn't stand the sight of blood.

"Dr. Sahib has fainted," put in the midwife. I had overlooked her entirely until she spoke. She looked both kind and proud. At one and the same time she had delivered a difficult baby -- it had been a breech birth, after all -- and resuscitated the doctor, too. "He cut his lip when he fell."

I could see that she was finishing with a bandage for Saleem's mouth. She offered him a glass of warm milk to make him feel steadier. He declined, with an open look of admiration in his eyes, and turned to get me out of there. I couldn't blame him. We congratulated the new mother and the midwife. Saleem usually found it hard to tolerate the ignorance of our villagers, but for a few days he didn't touch on that.

Our village, named Ramgarh, was little more than a cluster of mud huts surrounded by wheat fields. I had no idea how old Ramgarh was. It looked immortal, as though untouched by the centuries, but its population was dwindling rapidly. The younger men were fed up with walking behind their bullocks in the fields. Very few of the farmers actually owned a field, except for the handful of village landlords, all of whom were old. The future beckoned from the larger towns like Ghaziabad, so naturally that was where the young men went.

Our dispensary was built of brick, but, like all the other buildings, its floor was made of cow and buffalo dung. Dung serves very well as a flooring. It is clean enough to use in kitchens. It can be replaced every season with a new surface at no cost, and it greets the nose with a sharp, refreshing smell after it has cured in the hot, dry air. Saleem and I had been assigned to a rotation in Ramgarh for six months as part of our internship. We had a large enough house, complete with a courtyard and a servant to cook our meals.

The work was blissfully easy. For one thing, we had almost no medicines to work with and no equipment at all. We arrived with our black bags, a copy of Harrison's *Principles of Internal Medicine*, and the usual few pharmaceuticals you take to the countryside -- iron pills, anti-tubercular pills, and anti-helminth pills. (Helminths are parasitic worms very common to the tropics but almost unknown in the West.) Our villagers showed a very high incidence of tuberculosis. If anyone came to the dispensary looking half dead and wasted, we automatically gave out the anti-tubercular pill and usually the iron pill as well.

Most of the villagers did not believe in our prescriptions. They had relied for centuries on other ways, primarily the knowledge of the local Ayurvedic vaidya. His advice was the ultimate authority, along with the village elder's, and his herbs were the ultimate cure. Saleem, who was already showing his brilliance in microbiology, was not suited for village life. He hated the absence of air conditioning (so did I) and the feeble, twinkling electricity. He hated the ignorance of these farmers who preferred to call in a grandmother and a midwife when a baby was due, rather than a doctor, and who stubbornly rejected our explanations about germs because they all knew that men got sick because demons got into them.

But a village posting is a perfect place to

decelerate from the grind of med school. Saleem and I liked nothing better than to lie in the courtyard whenever the sun was bearable, generally in the late afternoon. We didn't move much or talk at all. The radio would be turned to the cricket matches between Australia and India. We stared for long stretches at the swaying branches of the peepul trees, whose enormous heart-shaped leaves were good vehicles for self-hypnosis, and we forgot that we were doctors. It was just what we wanted.

Our last days in school were behind us. By any standard we were modern physicians; therefore, by Indian standards, we were absolutely elite physicians. To be a graduate of the All-India Medical Institute carried enormous prestige. None of that seemed very significant, however, once you left Delhi behind. Now that we were in Ramgarh, it meant nothing. If anything, what we noticed was how much our professors had failed to tell us.

The visiting lecturers from the West had everything to say about the latest modality for treating arthritis or chronic depression, as taught at Yale or Johns Hopkins. Cholera, however, is not commonly seen at either Yale or Johns Hopkins, so lectures on that subject were scarce, though cholera is never absent for long from India and fitfully rages into fearsome epidemics.

We also heard practically nothing about leprosy or elephantiasis, which are both endemic throughout the subcontinent. Some of the diseases we studied had all but disappeared. We were told that smallpox immunization had accomplished something unheard of in the course of our planet's evolution. It had wiped a strain of bacteria out of existence.

Last week that fact came to mind again as I watched a TV program about a medical team's desperate attempt to stop a rash of disease that had flared up in Bangladesh and threatened to sweep down the rivers with the native boatmen. The year of the outbreak must have been about 1983. Huge rewards were offered for anyone who could turn in a verified case of the disease. Squads of investigators combed the countryside. Every local train was being stopped to alert the passengers about the possible epidemic. Single unreported cases, escaping detection after everyone around them had been checked, caused hundreds of deaths in a few weeks. The medical team feared the worst but did not have the heart to dwell on it. What if the disease spread, as it could easily do, from Bangladesh to India, then quickly to Afghanistan, Iran, and eventually the entire continent of Africa? They were very anxious, and they had a right to be. The disease was smallpox.

It was the summer of 1969 when we were posted to Ramgarh, and a striking thing happened soon after we arrived. Saleem had taken a short break to go to Delhi -- to escape the boredom of the country life and to remind himself that air conditioning still existed. I couldn't blame him. The temperature hit 120 degrees almost every day. We would have Ghanshyam throw buckets of water, not just on the walls, but right onto the beds in our rooms before we crawled in to sleep. Few patients came to see us, so I spent my time down in the stream or padding around in bare feet and safari shorts.

One afternoon, when it was almost too stifling to move, Ghanshyam came to my room, almost hysterical. (This was before I got used to him.) "Dr. Sahib must come quick," he exclaimed. "The village elder has a grandson who has just gone mad." I pressed him for details, but there was only one idea in his head at a time. "He's gone mad," he muttered, "he's gone mad." We both ran toward the village elder's

compound while I tried to recall as best I could the section on heat stroke in Harrison's *Principles.* The only thing I could think of was that the boy had become delirious from the heat.

"Do we have any ice?" I asked Ghanshyam. He shook his head.

"Only at the ice cream factory in Ghaziabad," he said. I couldn't bring myself to ask him to get on his bicycle and travel thirteen miles in the sun. I decided to examine the boy first. Inside the house when we arrived stood a group of people. The village elder approached, a dignified old man in his seventies with a pointed beard. He talked to me in a calm, assured voice.

"The boy's all right now. It was too much heat. He's still out of his head, but I'm sure he'll be all right when he is cooler. He thinks that there are men on the moon." He invited me to look at the boy.

I found him in the next room, lying naked on the bare floor while two women, probably his mother and aunt, lightly sponged him with cold water. He was about twelve. He looked comfortable, though my hand came away from his forehead a little hot. My first impulse was to sit him up to test him for cranial nerve function and motor or sensory deficits. But I felt awkward, and I didn't have any of the equipment with me, anyway.

"He has a little delirium," I told his grandfather when I came out. "He might say strange things for a while. It's common with heat stroke."

"He thinks there are men on the moon." The elder shook his head. "We always thought he was a little moonstruck."

That evening, when I turned on the radio for the cricket scores, I heard some news. The Americans had landed on the moon. Neil Armstrong had taken the first step. Pictures were coming back on TV. I couldn't make out much more than that. The reception from Delhi made it sound as if the announcer was on the moon with them. The next morning I rushed back to the village elder's house and told him that the boy was right. The elder was shocked.

"You have been to school," he protested, "and you believe such nonsense? You think there are men on the moon, too?"

I kept from laughing at him, and when he was slightly less incredulous, he convened a special meeting of the *panchayat.* These are the five men, mostly large landowners, who sit as the village council. One could see them, all over seventy, holding long discussions in the village elder's courtyard. They deliberated all important matters concerning Ramgarh. On the outskirts would be several old men, *ganja* addicts, smoking their hookahs, listening on, and falling into a semistupor. That was village life.

I described for the *panchayat* what I knew of the Soviet and American space programs. They listened to me, clearly baffled, not a little suspicious. Finally the elder spoke.

"We find what you say completely strange. How can it be that men of this earth have stepped onto the moon? But you are educated, and stranger things have happened." He paused for a moment. I could see them thinking about Hanuman, the monkey king, who plucked up a mountain and flew back with it to bring a single herb to Lord Rama. If he decided to tell me the story, it would take a long time. He didn't.

"It may still be that you are mistaken," he said. "We only hope that nothing bad comes out of this foolishness."

I laughed on the way home, and when I found Saleem in his room, I told him the story. He was already grumpy from having to abandon his air-conditioned study in Delhi. I got to hear his opinion of such ignorance. A while later, I discovered that the elder's grandson had heard about the

moon landing when he walked to Ghaziabad that morning and happened to take too much sun.

Another time, an older villager summoned us to his house to see his son. We walked in and found him in the middle of a seizure. He was about twenty-two, and while his father anxiously held him down, the son jerked and thrashed on his bed. I could see him biting his tongue. He had lost control of his bladder, and at intervals in the thrashing he seemed to doze off. Saleem and I agreed that we were seeing an instance of epilepsy, what is called a grand mal seizure. Luckily we had some phenobarbital in our bags, and we injected the young man. His seizure subsided. Nothing happened all that night, but the next day we heard that the patient, whose name was Govind, started to have fits again.

I gave him another shot of phenobarbital while Saleem rushed to Delhi to get the preferred drug for epilepsy, Dilantin. We administered both medications to Govind all that week. The onset, duration, and character of his seizures followed the textbook pattern. Most grand mall seizures are due to idiopathic epilepsy. (Idiopathic means "without cause.") Govind did not respond to treatment, however. This meant that other conditions that can cause seizures had to be considered, such as a tumor in the brain. We were quite anxious for him. We had started him on twice the usual dosage of Dilantin; now we nearly doubled that and gave him considerably larger injections of phenobarbital as well. Govind kept having the seizures, and they started coming closer together. He was now having five or six of them a day. Moreover, he grew unsteady and found it hard to walk. This could have been due to a toxic reaction from the Dilantin, which is very powerful. But the possibility of a brain tumor became stronger.

We advised Govind's father to send his son to the medical school's hospital in Delhi. He would need a brain scan, EEGs, and then who knows what -- surgery? radiation? But first he needed the tests. Govind's father refused. Instead, he called in an Ayurvedic doctor from Ghaziabad, We were disapproving but curious. What did the vaidya say?

"Vaidji says he has an imbalance of the *doshas,*" the father informed us. *Doshas* are the three basic divisions of natural functioning which make up the material world, including the human body. After fining an imbalance in Govind, the Ayurvedic doctor recommended what he always did, a new diet and a few herbs. He told the family that all would be well in a few weeks. Saleem was bitter when he heard this and angry at the credulity of these people.

"Are you going to follow Vaidji's advice?" I asked the father.

"In time," he replied. "For now, it is in our hands." What did that mean? He didn't want to tell us what they were going to do. He did say that his great-uncle had suffered similar fits. Eventually the evil spirits inside him had had to be driven out. If we wanted to see what that entailed, we could come to the village square that night.

We witnessed a frightening ordeal. Govind was seated in a chair, bound hand and foot with ropes. Another rope secured him to the chair. As the villagers looked on, two men whipped him with lashes. Govind screamed in terror. The spectators watched in silence. I thought of rushing in to save Govind somehow, but the moment I began to edge through the crowd, an old man held me back.

"Be still," he said, "or the spirits will come back."

I went to see Govind the next morning.

He was badly bruised from the night before, but he was smiling. The seizures had stopped. His father was jubilant.

"We have stopped all the medicines," he told me. Now they were ready to start with the vaidya's diet and herbs. Did Vaidji approve of the beating? The man smiled secretly. They didn't dare tell Vaidji, for fear that he would not give them the herbs.

The next time the vaidya visited Ramgarh, I saw that he was beaming over his patient's progress. He showed me some special herbs wrapped in a brown paper packet and began to pronounce Sanskrit terms that were meaningless to me. The herbs looked like sweepings from the floor of a tobacco shop. What about the beating? I asked him. Vaidji merely quoted from an Ayurvedic text, which said that anything in the world, absolutely anything, can serve as medicine if administered at the right time and in the right place.

"You don't think Govind had demons inside?" I asked.

Vaidji shrugged. "We could say there were impurities," he said.

"How would a beating drive them out?" I protested.

"How did they get in to begin with?" he replied.

After that, we did not have much interaction. The vaidya's comings and goings were an unobtrusive part of village life, as they had been forever. Although our patients regularly mixed visits to our dispensary with visits to the vaidya, we kept to our separate territories.

One time, however, on a weekend furlough to New Delhi, I sought out a bookstall that specialized in Ayurvedic texts. It was just a narrow slot, not much wider than my shoulders. I squeezed in past the shopkeeper, who sat stooped over an old book with his afternoon cup of spice tea.

The back room was dusty and badly lit, but I could see that I was surrounded from floor to ceiling by medical books. Most of them appeared to be in Sanskrit and had been written before the year A.D. 1000. After browsing for a few minutes, I got discouraged and left. The shopkeeper did not look up from his tea as I squeezed back out.

I waited four months for Govind's next seizure. It never came. A year later, back in Delhi and ready to go to America, I went back to Ramgarh. It had become a cherished spot to me. Saleem and I had often spent evenings walking to the neighboring village, where two of our classmates, also on a rural posting, would give us a good supper. One time, on the way over, the sky had filled with red light from one end to the other. That sunset became Ramgarh in my mind. Its wheat fields were like the floor of an immense crimson dome. As I got off the bus from Delhi, I saw the same fields and the dwindling mud huts. The sky was an immense blue dome that day. I looked for Govind, but he wasn't home. He had taken the bullocks to the fields to plow for the new seed. He had not had a seizure since I left.

I did not learn much about Ayurveda in Ramgarh. I learned a lot, however, about what medical care has to be. It has to suit the people a doctor cares for. It has to agree with their temperaments and what they expect from life. It must be affordable and humane. And it must work. It never occurred to me that Ayurveda would work. In its present form, although it blends in with the daily traditions and common beliefs of the people, the way of the vaidya seems greatly diluted from what it once must have been. In the ancient times, Ayurvedic doctors were paid only if they kept the people well, which they managed to do for thousands of years. But that era is far

removed from the India of recent centuries.

The ancient texts of Ayurveda reveal an astonishing sophistication. Sushruta, the paramount authority on surgery, tells us explicitly about his techniques and even provides pictures of his tools. They look almost exactly like the scalpels and retractors of modern surgeons. Sushruta used to take the heart-shaped leaves of the peepul tree, the same kind I gazed at to hypnotize myself on a hot afternoon, and fashion them into models of noses. When one of these models satisfied him, he went to work. Sushruta possessed the skill to rebuild damaged or even lost noses. This delicate and painstaking procedure, called a rhinoplasty, does not reappear in medicine until modern plastic surgery. Sushruta's reputation still runs so high that American plastic surgeons have a society that goes by his name.

Sushruta also knew about the circulation of the blood. He could keep wounds from becoming septic. He submerged cadavers in clear, running streams and observed the fine details of anatomy as the water sloughed off layers of tissue. He seems in every respect to embody the deepest inquisitive spirit of a researcher and also a physician's most knowing skills. When exactly he lived is a matter of argument, but apparently it was many centuries before the birth of Christ.

There is something far more important about Sushruta than his position in the annals of the history of medicine. Few doctors, even among those who have heard of him, realize that his celebrated discourse on surgery comes at the end of his book, the *Sushruta Samhita*. He had far greater knowledge than just that. He understood every possible aspect of the art of healing, which means that he understood every aspect of man. He was, like Hippocrates, an angelic doctor. After many chapters on the spirit of healing, on medicines to extract from plants, on purifying diets and correct habits, Sushruta finally arrives at surgery only as the physician's last resort. After the doctor has failed, he must rely on surgery.

Sushruta bequeathed to Ayurveda a view that man is infinite in scope. He himself had a mind that displayed infinite qualities. More than a physician, he was a rishi, a seer. He had looked as deeply into Nature as our spirit can, and only then did he turn to ordinary work. Motivated by his own perfection, he approached patients, not as victims of malady, but as people who could potentially perfect themselves, too. That aspiration lies at the core of Ayurveda, and of course it is not seen, not on a large scale, in India today. She is too poor, too wretched, too afraid of the next epidemic that might sweep down the rivers. Sushruta and his perfection are as far away in time as the moon is in space.

But there is gravity to keep the moon from ever really escaping, and the same is true of Ayurveda. As tenuous as it may appear to us, the core of Ayurveda has not been lost. It may be that its most wonderful flowering has yet to occur. I have met the vaidyas and the modern rishis, who give me hope. More than hope. The potential is there for transforming the face of medicine entirely, and not just in India. All that is needed is to accept the possibility that such a change can take place, then to reach the depths where transformation is effortless and most powerful. Our servants wait on us, but they wait inside. Teilhard de Chardin gave us a wonderful glimpse of our future state: "The day will come when, after harnessing the winds, the tides, and gravitation, we shall harness for God the energies of love. And on that day, for the second time in the history of the world, man will have discovered fire."

And that day, for the second time, man will land on the moon.