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## Tales of the Turkmen Desert

ASHGABAT, Turkmenistan

September 15, 1997

By Adam Smith Albion

### MR. SMITH CHANGES TRAINS

Many people on boarding a train are gripped by a sense of drama and adventure that they do not experience with other modes of transportation. Travelers' imaginations, while dulled by the thought of seven hours on a bus, and grown accustomed to the miracle of flight, still quicken at the prospect of a *railway journey*. Clouds of romantic associations mysteriously gather about trains like the stacks of smoke that their dirty, noxious (but secretly lamented) steam engines used to puff into the air.

Some trains virtually have personalities. The exoticism of the Orient Express, the daring of the Trans-Siberian, are attributes that the passengers, at least for the extent of the journey, imagine onto themselves. And when we are not anthropomorphising trains, we are coloring them with symbolic overtones. Anna Karenina's death under the wheels of a locomotive is generally credited with more pathos and dignity (if that term may be applied to a suicide) than if she had cast herself under a barouche-and-four or an omnibus.<sup>1</sup>

I think it is only the Western mind that fetishizes trains. Perhaps they strike chords in the psyche because they evoke images of explorers and pioneers, the Industrial Revolution, colonialism and the age of the machine — in other words, the very combination of factors that shaped the modern Western outlook. Then it should not be surprising if trains rouse no special enthusiasm in Central Asia, where the indigenous populations were at the receiving end of these developments. Their first experience of the railways was traumatic. The Russians' primary purpose in building the Trans-Caspian Railroad was neither to provide passenger service nor to promote trade, but to facilitate the military subjugation of the Turkmen tribes who harassed Russian troops from their desert strongholds.<sup>2</sup> The iron horse that was the instrument of a glorious expansion into Central Asia for the Russian Empire was an iron yoke for the locals. Setting out from the Caspian port of Krasnovodsk (now Turkmenbashi), the first trains arrived in Ashgabat by 1885, Samarkand by 1888 and the Ferghana valley by 1899. All

<sup>1</sup>By way of contrast, who does not stifle a laugh over the inappropriate death of Roland Barthes? The firebrand Marxist literary critic was run over, if memory serves, by a milk truck.

<sup>2</sup>*Central Asia: 130 Years of Russian Dominance, A Historical Overview*, ed. Edward Allworth (Durham and London: Duke University Press, 1994), p.327. In fact, all the Tsar's railways were originally built for reasons of state security — the comfort or convenience of ordinary people being a very low priority in Russia then as now. Even the thinking behind the St Petersburg-Moscow mainline was military-logistical: to ensure a swift injection of soldiers into Moscow from the capital in case of riot or insurrection.

Turkmen territory was under Russian control by 1886.

The Turkmen dubbed these snorting monsters “fire machines,” an appellation that survives in the language to this day. Just last month in a Turkmen village I heard an express train called a *tyz otlysy*, “fast fire-thing” and a freight train called a *yuk otlysy*, “load fire-thing.”<sup>3</sup> The Uzbeks’ first impressions of the railroad were not exactly positive either: they referred to trains as “the Wagons of Satan.”<sup>4</sup> When the tracks were approaching Bukhara the Emir and his mullahs forbade the devilish contraptions to come anywhere near, forcing Russian engineers to make a fifteen-kilometer detour around the holy city.

The line now extends to Bukhara; the old terror is long gone. But that does not mean that a Western-style romance-of-the-railroads has arisen to take its place. It is tourists who make something special out of traveling by train. It is the intrepid back-packers, and the recent travel writers on Central Asia, whose shameless cravings for an old-fashioned Turkestan adventure of their own imagining require that they experience the Trans-Caspian Express.<sup>5</sup> As I have indicated, why someone moving on rails is experiencing the romance of Central Asia any more than someone carried on rubber tires is exceedingly mysterious, all the more so when one considers that rail passengers are riding the conquerors’ vehicle. But there it is. Buses lack panache; they lack “personality.” I suppose that the Trans-Caspian will also develop a personality over time, as Central Asia becomes more accessible to tourists. I recently got a glimpse of what that might be, on a station platform in Mary, Turkmenistan, when I fell into conversation with a Dutch couple.

Like all Dutch couples one meets in remote places, they spoke English rather better than most native speakers. They were very enthusiastic about their trip so far, which was taking them in exactly the opposite direction from my own. “We had intended to fly from Baku to Tashkent, but we decided to go slowly instead in order to absorb the landscape. We’re thrilled that we chose to do this. You don’t touch the heart of a place if you fly. We love trains, and we wanted to take in the desert,” they said. They mounted the Trans-Caspian in Turkmenbashi, having arrived by ferry from Azerbaijan, and had racked up 14 hours on the train crossing the Karakum desert. I asked them about their impressions. “It’s so bleak out there,” said he, “just endless expanses of sand. You look out the window and wonder how anyone could live there. We’ve spotted a lot of camels, but no one seems to be tending them. There’s a gigantic mosque in the middle of nowhere at Gokdepe, but otherwise between the big cities there’s nothing to see.” Did they find the journey

monotonous, then? “Oh no,” said she, “because we wanted to see *the real Central Asia*. It’s not a boring trip at all. *It’s very ascetic.*”

Here is food for thought for the Turkmen Tourist Board, whose campaign to attract visitors to Turkmenistan is sorely foundering. The first step in market research, whatever the product, is to identify its defining qualities in the public mind. Perhaps the Trans-Caspian is poised to become one of the great railways beside the Orient Express and the Trans-Siberian, if only its quintessence can be discovered and advertised. Could this be it? “SOME TRAINS MAY BE EXOTIC, OTHERS MAY BE DARING,” the publicity posters will read, “BUT ONLY THE TRANS-CASPIAN IS... ASCETIC! BOOK YOUR TICKET TODAY.”

The Dutch happily went their way. I, however, was left vaguely troubled by our conversation. Pacing about on the platform, I tried to unravel my feelings:

*First*, whenever someone says “the real Central Asia” I get about as juiced up as a bull eyeing a red rag.

*Second*, the implication that this mythical place (the real Central Asia) is best viewed by train stirred up anew all my frustration with the railway rhapsodists.

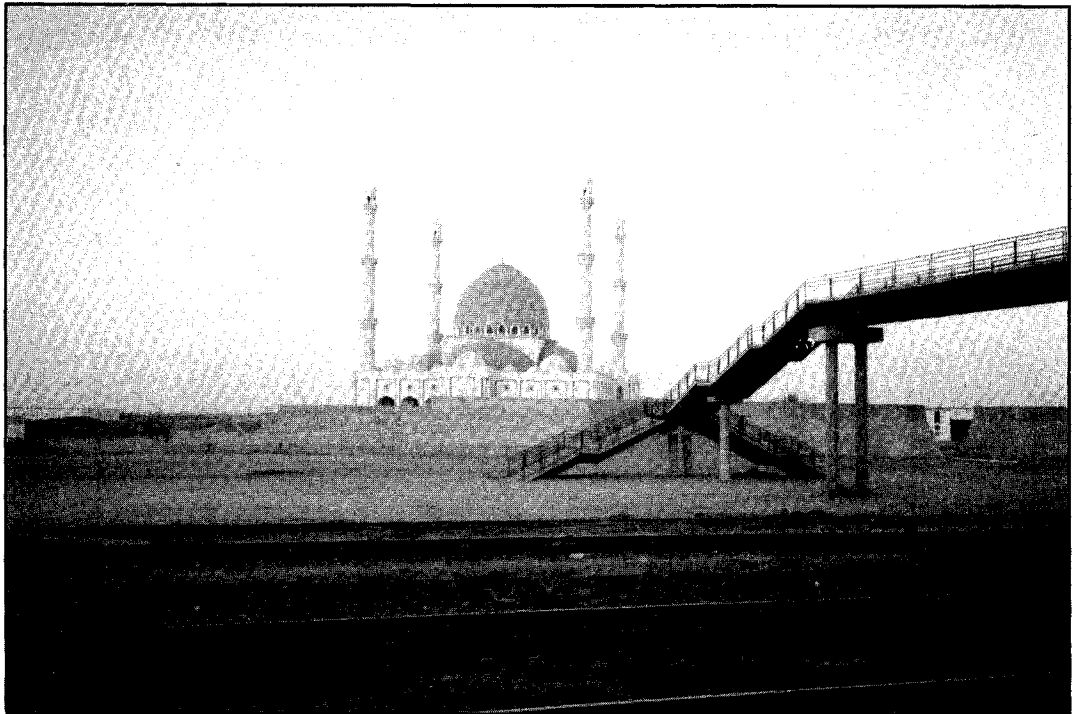
*Third*... But here I do not mean to deprecate the Dutch. I did admire their plucky decision to eschew the airplane and encounter the land at closer quarters. Moreover, I found them more earnestly adventurous, and certainly less self-congratulatory, than the host of travel authors who also describe what *they* observed through the windows of the Trans-Caspian. What I had never noticed before, however — and the Dutch unwittingly pointed it out — was this: Everybody sits in their carriage and watches the desert go by and feels good about themselves for taking the train; but *no one ever gets off*. Yet if their object is to get to grips with the landscape — and 80 percent of Turkmenistan is desert — then the failure to disembark is a serious strike against the whole enterprise.

At this point I began to feel a little less good about myself. I reflected guiltily that the reason for *my* standing on the platform in Mary that morning was the imminent arrival of the 10:35 intercity that would whisk me comfortably to the capital, Ashgabat. My coign of vantage onto the intervening territory would *also* be a box on rails...! I quit pacing. Radical measures are required when an

<sup>3</sup>Better educated Turkmen have simply adopted the Russian word for train: *poyezd*.

<sup>4</sup>Interestingly, the same phrase in Turkmen (*sheytan araba*) meant “a bicycle.”

<sup>5</sup>The true romantics scorn even the train, and dream of trekking from oasis to oasis by horse or camel-caravan; sensing this, a few indigenous travel agencies have actually sprung up in Tashkent and Ashgabat to these fantasies.



*Mosque at Gokdepe as seen from the Trans-Caspian*

ICWA fellow's self-esteem is under threat!

"I want a refund on this ticket."

"Impossible. Too late, too late... Go see the station-mistress."

The station-mistress was thumbing through my passport. "Adam Smith... Mr. Smith?"

"Not exactly..."

"But the train to Ashgabat is almost here, Mr. Smith. Why do you change your mind at the last minute? This is not regular... Where do you want to go again?"

"Repetek."

"Repetek? What in the world are you going to do there?"

"I'm going to *get off*."

\* \* \* \* \*

A further advantage of busses over trains, at least in Turkmenistan, is that there are no transport police, since they are charged only, with patrolling the railways and airports. The rail checks are especially frequent between Ashgabat and Tejen, where the line runs close to the Iranian border. On various trains my documents were scrutinized at Ashgabat, Kaka, Dushak, Mary, Bayramaly (twice) and Uchajy (twice). I must report, however, that the Turkmen police were disciplined and polite, even apologetic about the rigmarole of registering all my particulars, and never once bullied me for bribes, although

squeezing money out of foreigners is standard practice on trains in Uzbekistan and Kazakhstan.

Nevertheless, the inspector raised an eyebrow when I declared that my destination was Repetek. He fetched his superior, a plain-clothes policeman who reluctantly produced an ID at my insistence and methodically reviewed all my papers again (passport, visa, ticket, letter of invitation to Turkmenistan, and accreditation letter from ICWA, the latter in English — he did not understand the contents, but liked the embossed gold seal). Everything seemed to be in order. The formalities over, he lit a cigarette and said:

"I suppose you know a lot about snakes?"

I flailed around for a suitable reply. None came to mind. I was afraid "snakes" might be slang for "slippery police officers" — in which case the answer would have to be "yes." So I judged it prudent to remain silent. After a pause, he narrowed his eyes and said, "It's the snakes you're after, isn't it?"

I assured him earnestly that I had no designs on his or anybody else's snakes. At last my vehemence appeared to satisfy him. Anyway, he shook my hand and disappeared down the corridor on the trail of other malefactors, snake-related or otherwise, leaving me baffled by the exchange.

Dusk was falling. The stations we stopped at were becoming smaller and smaller. There was a constant circulation through the train of Turkmen women who got on at one place and got off further down the line. Without exception they wore traditional costume — crimson or purple velveteen dresses with embroidered collars,



gaudy metal brooches at their throats, and saffron-colored headscarfs. They were village women who spoke Russian poorly or not at all. They were hawking camel's milk, sausages and sweets out of baskets. They had obviously come to an understanding with the conductor who let them onto the train. As they passed his den at the end of the wagon, he taxed them for the privilege by simply snatching anything he fancied from their baskets, like the monster Scylla plucking men to eat out of Ulysses' ships.

One old lady who entered my compartment removed the handkerchief from her basket to reveal not comestibles but dried roots. These, I learned later, came from the giant rhubarb, a spring ephemerid with leaves a meter long that grows in the desert. She and I had a pantomime discussion about them supplemented by my primitive Turkmen. "What are they for?" I asked.

Sometimes you eat, she explained with her hands, and then suffer from diarrhea (this was demonstrated vividly by mimicking a flowing spigot). Yes? Then boil the root and drink the preparation (slurp slurp). Very quickly no more diarrhea (spigot off)! Your stomach becomes hard as a rock (clenched fist).

I understand. But if my stomach is already solid (fist)?

Ah now, her hands replied, you are suffering from (fist)? No problem — just boil up the rhubarb again. (Slurp slurp), and this time guaranteed within a few hours (flowing tap).

This seemed to cover all the contingencies. I bought a couple of her roots.

She disembarked at "Halt no. 54," a settlement so obscure the station did not even have a proper name. I watched as she and her basket passed down the platform, illuminated by a single lamp nailed to a post, and slipped into the night. The desert was quite dark now save for the sky, where the stars shone preternaturally bright, especially the band of the Milky Way, which I have never seen so clearly. Nigh on 10 p.m. the conductor, as I had requested, called down the corridor: "Mr. Smith, Mr. Smith! Repetek!"

I descended to the platform, into nothingness as it seemed. I must say I felt pretty lonely. But aside from the conductor, at least one pair of eyes saw me go. For as the long line of carriages rattled past I caught the gaze, vigilant and inscrutable, of the plain-clothes policeman standing at one of the windows. Perhaps he was still of two minds about me, suspecting me of odious designs on

snakes. At any rate, as the train gathered speed we continued to watch one another until he and his window slithered away into dark nullity.

*Orbis in extremi iaceo desertus harenis*

(Ovid, Epistles I.3): "I live in the sands at the end of the world, abandoned by everybody...."

There are two Repetek. The first is a mixed Turkmen-Kazakh village (*aul*) of 450 souls living in shacks and yurts that stretch along the railroad tracks. They breed livestock, mainly sheep and camels and a few cows. Behind the *aul* is a sand quarry (opened in 1935) where some of the menfolk used to find work. Beneath the yellow sand is a layer of grey sand that has commercial value, being particularly suitable for mixing building materials. A rail siding leads directly into the quarry for easy loading. The quarry is now abandoned, however, although nowhere near exhausted. The regional government in Charjou has no more money for building, and freight cars stand idle at the foot of the dunes. It has become a favorite spot for camels, who thread between the wagons to rest in their shade. When the camels are returned to their pens at night, their protests resound mightily over the sands. They roar the inhabitants to sleep.

A little way off, on the opposite side of the train tracks, is another clump of buildings hidden behind thickets of saxaul bushes. A dozen simple, white-washed structures and an outdoor privy are connected by neatly rock-lined paths. Just inside the fence (erected to fend off animal rather than human intruders) stands a representation in concrete of a sand-dune — a statue of a *barkhan*, to be precise. As any desert scientists will tell you, a *barkhan* is a crescent-shaped sand dune with a gentle windward

slope and an abrupt slip face — like a biscuit with a bite taken out of it — that is a typical formation in the Karakum desert. On the left is a meeting hall, which has been shut for a long time. On the right is the director's office and the archive-library including a unique private collection of books from the beginning of this century, covering the geography, geology, flora, fauna and ethnography of Central Asia's deserts.

This is the Repetek Sand-Desert Research Station, whose 38-year-old director, Jora Rakhmanov, received me with great generosity, lodged and nourished me and did not bat an eyelid when I expressed a desire to be spend some time in the desert. "My wife will give you a basket of food and our driver will drop you off in the North Valley," he said encouragingly, "but watch out for snakes."

I begged to know what all the snake-excitement was about. "I'm afraid there have been incidents in the last few years," he explained, "foreign visitors who turned out to be snake trappers. Four out of the twenty-eight species of snakes in Turkmenistan are poisonous — *cobra*, *efa*, *yrza* and *shitomorknik*. Their venoms are highly prized because they are used in medicines, especially for treating rheumatism and impotence. But it's illegal to export snakes, so the local police keep a sharp lookout now. Actually, it's a little early for snake season. It's still too hot, so you'll probably be all right," he concluded cheerfully.

The station was founded in 1912, the brainchild of Russia's first great desert scientist Vladimir Dubyanskii. (It was destroyed in the 1917 post-Revolution chaos — the British actually invaded Turkestan from Afghanistan and skirmished with the Red Army — and refounded in



Repetek director  
Jora Rakhmanov  
and his wife

1925 with a government grant, sizeable in those days, of 1000 roubles.)

Dubyanskii was originally sent to Turkestan on a research mission connected with the Trans-Caspian railroad. By 1888 the line had been extended through the Karakum desert to Charjou. Between Uchajy and Repetek the engineers had encountered a dense forest of black saxaul, a hardy desert bush indistinguishable from a tree (to the layman's eye — see photograph). Four companies of 70 men had been specially employed to cut down the thicket and make way for the tracks. But within a decade serious problems were arising with this stretch of the railroad. The tracks kept filling up with sand, making them impassable. St. Petersburg suspected the obstructions were deliberate, the work of Turkmen saboteurs. Dubyanskii was sent to investigate.

His report absolved the Turkmen of malfeasance; the culprit was Nature. He was the first to provide detailed information on the eolian regimes prevailing in the Karakum and the phenomenon of "dancing *barkhans*" — dunes that advance and regress two meters/ year or more under the wind's influence (it blows north-westerly in summer, south-easterly in winter). The destruction of the saxaul forest had left the track vulnerable to sand invasion.

Dubyanskii then researched the methods the Turkmen themselves had developed to protect their own houses and gardens from the desert. As a result of his investigations, he recommended collecting reeds from the banks of the Amu Darya river and planting fences of them along the tracks. This method is still employed today. The fences are 20 centimeters high and criss-cross in the shapes of grids; each square of the grid is about one square meter in area. Seeds blown by the wind are captured by the grids and lodge there — various cereals like *selin* (*A. ristida pennata*), sand acacias (*Ammondendron Conollyi*), *turanga* trees (*P. diversifolia*) and white and black saxauls. Thus a barrier of vegetation grows naturally out of the grid, both protecting the railway from sand and dust storms, and stabilizing the shifting sands with their roots. This use of plants to arrest the movement of sand and improve the quality of the land surface is widespread in Turkmenistan and known as "phytomelioration."

Some of the most practical desert-related research being conducted today in Turkmenistan concerns improved methods of protecting highways from sand encroachment, focusing particularly on desert trees, grasses and sedges with phytomeliorative properties. This work proceeds in tandem with efforts to improve transport infrastructure, which is a pressing need for independent Turkmenistan as it tries to capitalize on its geography as Central Asia's gateway to the Caspian Sea and the Persian Gulf. The north and south of the country,

divided by the Karakum desert, are virtually isolated from one another. The priorities are upgrading the P-1 highway from Ashgabat to Konye-Urgench, and building a road from Konye-Urgench to Turkmenbashi. Both these highways are vulnerable to extreme desert conditions.

It should be pointed out that some of the difficulties that infrastructure engineers contend with in Turkmenistan are self-inflicted. Roadworks churn up the grasses and sedges that fix the sand, which then spills onto the highways. Cars are forced to drive progressively farther off the roads, exacerbating the problem and sometimes spoiling the desert turf for 500-800 meters around. In areas where oil or gas is being prospected for (e.g. Darvaza, the very heart of the Karakum) drilling towers are dragged whole from spot to spot by bulldozers, leaving grievous scars on the face of the desert. In addition to encouraging storms of loose sand, these wounds dramatically alter the ecology of subsurface water collection, especially if the surface in question is "takyr soil." Takyr is shallow clay depressions covered with desiccation/shrinking cracks, very widespread in the Karakum. The run-off from takyr is a prime source of water in the desert, but their ability to function as catchment basins is destroyed or seriously compromised by poorly-managed roadworks.<sup>6</sup>

Jora, who comes from Kerki on the Amu Darya River, described his own family's war with sand encroachment. "The winds are strong there along the river. Sometimes the *barkhans* move five meters a year. There was a big dune 50 meters from my father's apricot garden, so first he encircled the plot with a brushwood fence and a three-meter clay wall (*duvar*) so less sand would be blown in. Then, between our garden and the *barkhan*, he planted a second garden of poplars, willows, tamarisks and mulberry trees to serve as an additional barrier, and because these trees are phytomeliorative. He seeded the dune with camel-thorn, which also holds back the sand a little. The *barkhan* was ultimately unstoppable: it engulfed the second garden and eventually reached the first one, but by that time twenty-four years had passed, we had planted a third garden farther back, and won ourselves maybe a decade more than we might have had."

Before becoming Repetek's director two years ago, Jora worked in the Kugitang Nature Reserve in the southeast corner of the country. His task was monitoring geological processes such as wind erosion and soil sedimentation. However, as he explained, his duties extended beyond his job description: "I carried an automatic pistol with me, a 7.63 mm Mauser actually. After 1991 [when the USSR fell and Turkmenistan became independent] the government cut the park's budget drastically. We had only enough money to hire one man to guard the caves of agate and onyx. People began coming, locals and foreigners, with hammers in their pockets to hack the gems

<sup>6</sup> Cf. A. G. Babayev, *Problemy osvoyoeniya pustyni* ["Problems of Desert Development,"] (Ashgabat, 1995), pp. 288-291. Takyr wells yield under natural circumstance 300 cubic meters of water a year, but can be technologically enhanced to yield 700-800 c.m./year.



out of the cave walls. Once we caught two people with rucksacks stuffed full of stones. The guard had to sleep sometimes, so the park workers took turns substituting for him. And one night someone came and shot me" — he indicated a spot above the knee — "here."

The government was equally indifferent to the fate of the park's rare fauna. On the territory of Turkmenistan, at last count, there live 255 *arkhar* (Bukharan mountain sheep, with spiral-shaped horns like the Marco Polo) and 277 *markhur* (wild rams, with long horns shaped like drills). Both animals are in the "Red Book," the list of endangered species. Nevertheless, the first party of officially-approved hunters arrived from Germany in September 1992 and were succeeded by many more. The early groups paid \$3,500 for the privilege of shooting a ram. Rams are more attractive targets since they weigh 300 kg, twice as much as a mountain sheep. By 1995, the price of hunting a ram had jumped to \$17,000, while to kill a sheep cost \$15,000. At first, hunting had been forbidden during the breeding season in spring and restricted to autumn when the animals were fat. But by 1995 parties were arriving with permission from the Ministry of the Environment to shoot all year round. "So much for protected species. And needless to mention, the park saw none of this money," commented Jora. "It all went into the pockets of officials in Ashgabat. 1995 is when I left."

## THE SCIENCE OF DESERTIFICATION

As Repetek director, Jora is responsible not only for the station, but for 34,600 square kilometers of desert-designated a national park in the 1940's and a UNESCO Biosphere Reserve in 1979. The work of the station is supposed to address the problems of ensuring a balanced relationship between humans and nature. This involves distinguishing man-made changes in the environment from natural fluctuations, and studying the causes and effects of soil salinization, overgrazing, excessive wood-cutting and desertification generally. During the past 20 years Repetek scientists — over 40 permanent workers in the 1970's-80's — produced impressive maps and charts illustrating the distribution of groundwater and wells, climate and wind patterns, dynamics of flora and fauna, and the evolution as a whole of the Eastern Karakum's ecosystem. Today, desert research in Turkmenistan is feeling the effects of the post-Soviet economic collapse. Repetek's scientific staff has fallen to two: Jora, and the station's botanist-ecologist Vladimir Kuz'menko. They are supported by the driver, an ex-sheep shepherd named Dobrangeldi Madirayimov who doubles as park-ranger,

and an accountant whom I never saw. Furthermore, all upkeep around the station comes out of Jora's pocket.

Turkmenistan is not the only Central Asian country that has put its scientists on short relations, humiliating them with exiguous budgets while erecting eye-popping palaces for its top officials. Here, however, the price for retrenching on the wrong things is likely to be especially high. Knowledge about the desert, its agricultural potential, its water and wind regimes, is not a luxury but an exigent requirement for the 4.4 million Turkmen who never live far from it and whose numbers are increasing at a rate of 3.5 percent annually (implying a doubling of the population in 20 years). If the government is serious about improving the future for its citizens — sometimes, one wonders — these new people will need more irrigated fields, more grazing lands, more roads, more water mains and gas pipes, that will have to be dug and clawed and coaxed out of the sands of the Karakum.<sup>7</sup>

Systematic efforts to develop the Karakum began relatively recently. The Turkmen population was concentrated around the fringes of the desert when the Russians first encountered them. The first major penetrations of the Karakum were the laying of the Trans-Caspian railway in the last century, and the construction of the Karakum Canal beginning in 1952. The canal drew water from the Amu Darya river and was extended westwards in stages, linking up oases like a string threading pearls — first the Murgab oasis (centered around Mary), then the Tejen oasis — reaching the capital in 1962. As a result Ashgabat is a leafy green city with plenty of shade and fountains, in marked contrast to the sere Soviet outpost that people remember before the canal arrived. Today the canal stretches all the way to Kazanjik, 1100 kilometers from its source. Although its main purpose was irrigation, the canal was conceived as part of an integrated development plan to improve the region's infrastructure. Its construction proceeded apace with the laying of power cables and gas lines, the building of roads, and the extension of the telephone network.

The Karakum Canal was altogether a remarkable feat of hydrotechnical engineering for which Soviet planners should receive condign praise. On the other hand, no sensible person would want to condone the serious errors that they made or overlook their consequences. The Aral Sea catastrophe is a direct result of the diversion of the waters of the Amu Darya, which used to debouch into the sea. Much of that water now flows through the Karakum Canal. Worse, much of that water is wasted: the Institute of Water Problems in Ashgabat now thinks the canal

<sup>7</sup>The general underdevelopment of the country may be inferred from the words of President Niyazov himself: "In 1989 I said: 'My dream is to see in every house a stable with a cow and a calf in 5-10 years time....' [Now] I am deeply convinced that in 5-10 years' time each family will have a house of their own and a car and will be five to ten times better off... By the year 2000 every family will have natural gas, water supply and a telephone" [*Address to the Peoples of Turkmenistan*, 1992]. When one makes allowances for the fact that even this rather poor vision is a grossly over-optimistic version of the true situation, one begins to grasp Turkmenistan's predicament. Compared with 1992, when these words were spoken, very few Turkmen are richer or better fed; quite the contrary.

could have been built to 30 percent greater efficiency. By some estimates, during the summer months 28 percent of the water evaporates and is lost. Furthermore, since most of the canal is not concrete-faced, along some stretches almost 40 percent of the water just seeps away, leaching into the ground to a distance of 25 km from the canal and raising the water-table in places as much as 20 meters. Whole new lakes have appeared, especially around Karamet-Niyaz, near the canal's head.

This unintended leakage is not all bad: it benefits animal and plant life, for example, and the soil is so wet some people have begun planting rice. However, harmful salts rise to the surface together with the groundwater, poisoning fields, polluting drinking water supplies and sometimes turning the ground into *solonchaki*, or salt marshes. All of Turkmenistan's oases are suffering from salinization to one degree or another (35-40 percent of the Tejen oasis suffers from groundwater salt, for instance). "Other countries make fresh water out of salt water," as one Turkmen irrigator put it to me. "We make salt water out of fresh."

These are problems that concern the desert scientists as much as the irrigators. Salinization in particular is one of the early signs of impending desertification. Now is not the time for the government to curtail desert research, especially in light of its strategy to extend the Karakum Canal two-hundred additional kilometers to Nebitdag as a springboard for developing the south-west of the country. This part of Turkmenistan is a subtropical zone (known variously as "Little Egypt" or "the Second California") where, it is speculated, oranges and even bananas can be grown. If the plan is realized, the canal will irrigate a total area of over one million hectares. To judge by the blemished record of desert development so far in Turkmenistan, an accurate and constantly updated fund of knowledge about the geology and ecosystems that humans will be tampering with will be crucial if the project is to do more good than harm. Such information is what desert scientists provide. To reduce them to impotence at this juncture, on the grounds that the president needs a new palace, is not wise.

Jora, incidentally, opposes the plans to extend the canal, or to claim any new territory from the desert. It is doubly wrong, in his opinion: "There are always unforeseen consequences if we attack a problem too hastily. Our recent history — the environmental disasters — have proven that. Anyway, are we getting maximal use out of the land we have already? Not by a long margin. Consider last year's wheat figures." He had them by heart. "The average crop in Turkmenistan was 1.2 tons/hectare.

Well, even the Uzbeks do better than that. In Western Europe they get six times more wheat per hectare than we get. Maybe that's partly because our fields are poorer, but the main reason is the inefficiency of our farmers who lack fertilizers and tractors and initiative and incentive. Our problems are not agricultural *per se*, but economic. How else do you explain the *spread* in the wheat figures — in Mary district the average yield was 0.6 tonnes/hectare, but in Lebap district it was 3.5. The difference lies not so much in the fields as in the workers. Lebap people are from the Ersari tribe, the hardest workers in Turkmenistan. Even President Niyazov says so he singles us out in his speeches." He stopped himself, then added apologetically, "I'm not just saying this because I'm an Ersari."<sup>8</sup>

Barely explored are a plethora of ways in which the resources of the desert may be exploited besides irrigating it. Work done at the Agro-Forest Amelioration Station at Nebitdag has demonstrated the possibility of growing wheat, barley, carrots, potatoes and grapes directly in the sand *without* irrigation, as long as there is a suitable source of ground-water. The surface of the sand, it appears, is surprisingly fertile since it is lightly powdered with soil blown off the oases.

More wells need to be dug. In the desert, wells are wealth, prestige and power (as anyone knows who recalls Omar Sharif chopping off heads in *Lawrence of Arabia*). In the past Turkmen tribesman owned not land but wells. The main users in terms of the volume of water consumption are not people but animals. Considered individually, sheep and camels drink relatively little (their average annual intake is 2 cubic meters and 11 c.m respectively). *En masse*, however, an estimated 6 million sheep and 100,000 camels graze in the Karakum today, requiring a capacious water supply. During the 1940's the Soviet government instituted a campaign to increase the number of wells and many thousands were dug, which have more or less sufficed up to now. But President Niyazov has recently announced a sheep-breeding drive — his aim is to raise their number to 15 million — so that Turkmenistan will have an excess for export. Such an explosion of lambs will require desert scientists either to prospect for more wells, or to invent creative solutions for improving the yield and efficiency of the existing ones.

The desert's potential to generate wind and solar power is almost too obvious to mention. According to Jora, the Karakum could also be source of thermal energy. He reported to me the discovery of a huge ocean of hot water (70-100 degrees C) lying a kilometer and a half beneath the surface of the desert. How it came to be there, what is heating it, and how such an extraordinary resource might be

<sup>8</sup>Crop figures might be marginally better this year, as the government has begun cautiously experimenting with land redistribution. Collective farms are being broken up and farmers given plots to work themselves for a trial period of 1-5 years, during which time they enjoy a land-tax holiday. This arrangement partly addresses the incentive problem. But fertilizer remains a scarce resource since the chemical factory in Charjou (the biggest in Central Asia) has virtually shut down. As for tractors and other farm equipment, they remain under the control of the collective farm managers, who certainly will require bribes before producing the keys that open the sheds.



exploited, are questions hitherto unanswered.

## THE ANIMAL THAT SAW HYDYR, AND THE ABOMINABLE SANDMAN

One day Jora and I took a stroll around the *aul* with the roaring camels. It was often said of the nomadic Turkmen tribes that they loved their horses more than their women. My impression, though, is that Turkmen women actually come in third, after the camels. I was informed in the *aul* that a popular girl's name is Maya, meaning "white camel" since that is one of the most gorgeous animals in creation. To say of a woman that "she is as beautiful as a camel" is high praise. And it is considered a blasphemy to make socks, carpets, *koshmas* (Turkmen rugs made of beaten wool) or anything the feet might touch out of camel hair. The hair may be woven into robes, but it is forbidden to dye or color them in any way, and only men may enjoy the honor of wearing such robes, tucking them up carefully when they sit down lest their posteriors defile material derived from such a noble animal.

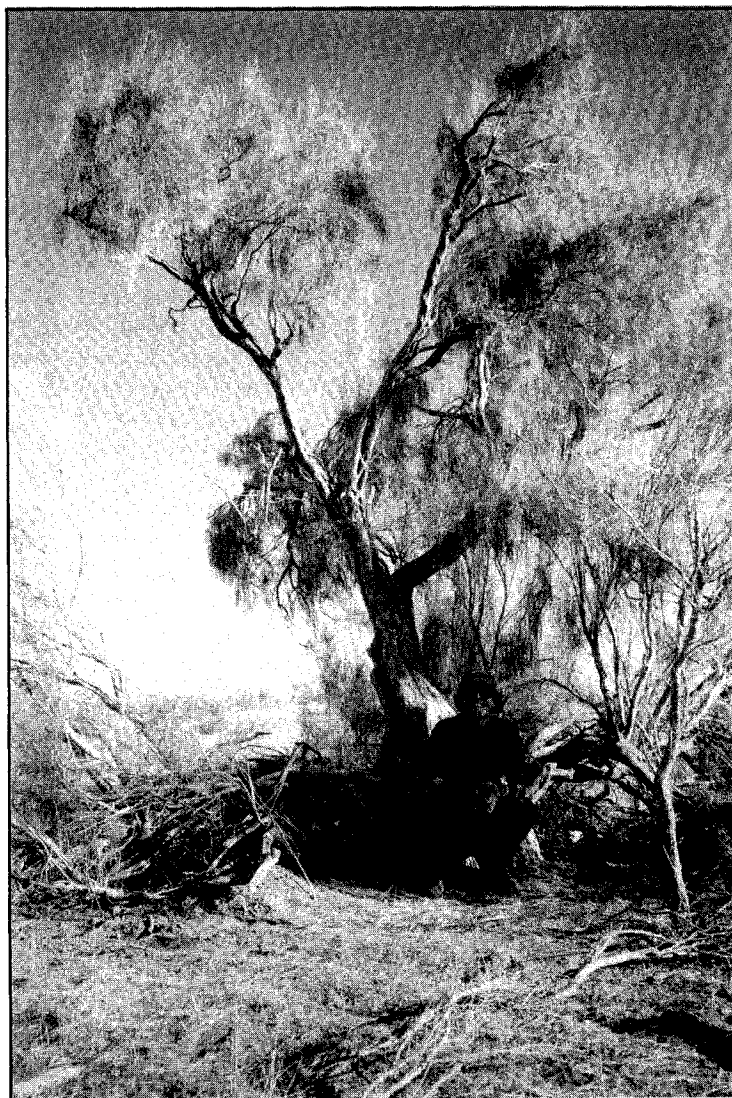
The Turkmen affectionately refer to the camel as *Hydyr goren mal*, "the animal that has seen Hydyr." In other words the camel is a supremely fortunate beast, since Hydyr is a kind of lucky fairy who often takes the form of an old man with twinkling eyes. If one should ever encounter him, one must grasp him by the little finger and he will grant your wish. (The Uzbeks call him Hyzyr.)

Nevertheless, the camels that the members of the *aul* were raising so lovingly were periodically led off to be sold in Charjou market. The maximum price an average 350-kg animal might fetch would be two million *manat* (\$370). Quite apart from being aesthetic objects that delight the Turkmen's eye, camels make good drinking and eating. Their milk, mixed with water and called *chal*, is the national beverage. It is sour, similar to Turkish *ayran*, occasionally fermented, wholesome and delicious. I drank buckets of it in Turkmenistan. The meat of young camels is good too, in my opinion, tasting like beef. But the meat of older ones has an unattractive smell and is so watery I could wring it out with my hands — about 20 percent of its mass boils away on cooking. *Caveat emptor*.

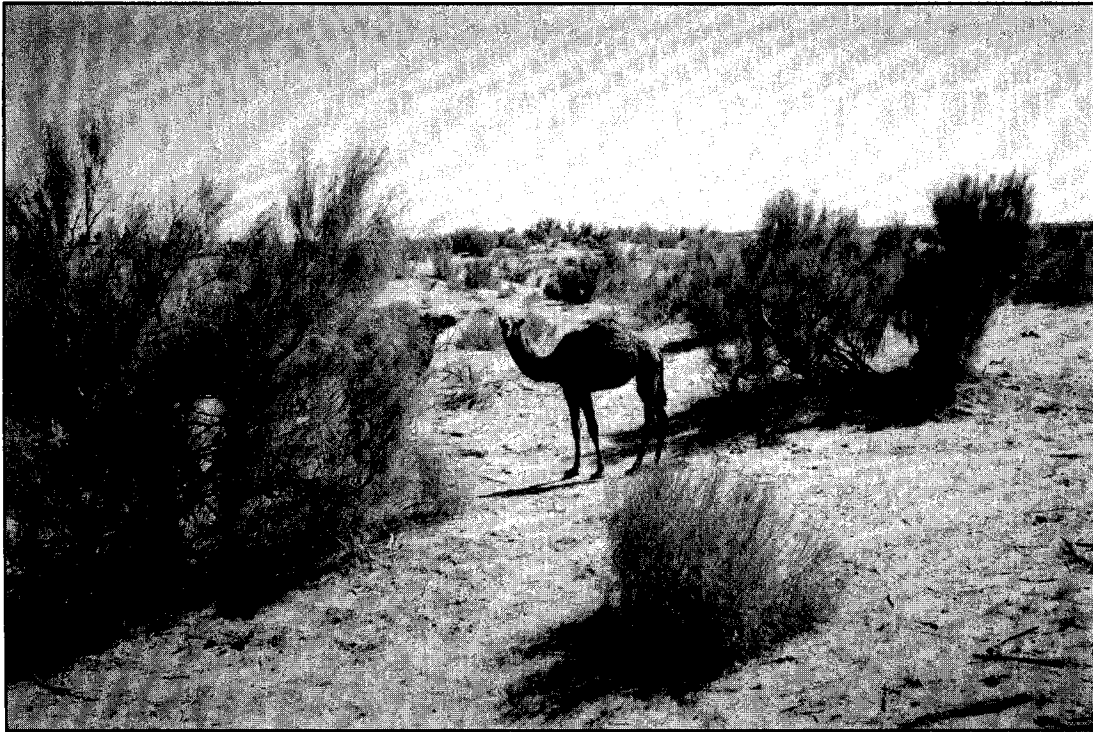
I must spare a word for the greybeard of the community, 83-year-old Mutabai. He recounted this story from his childhood: "I remember one day when I was seven. I was tending sheep a little way from our *aul* when I spotted a tremendous eagle. I ran back to tell my father but he and the others had seen it too. As it came nearer it shrieked terribly and we were afraid it would attack our animals. Everybody came out of their houses and we shouted,

beat buckets with sticks, waved our hands, anything to frighten it away. It circled once and eventually we did manage to scare it away. We were all very happy and congratulated one another." He coughed softly into his beard and looked at the ground. "Only much later they told us it was an airplane."

Early the next morning I piled into the jeep with park ranger Dobrangeldi and we drove into the North Valley. It was a rough ride. If we slowed down the jeep burrowed into the sand and we were stuck. Although he was an experienced driver, thrice we were forced to excavate the wheels and build rafts of saxaul branches under them to provide enough grip to carry us forward. Choosing the lesser of two evils, Dobrangeldi sped up until we were crashing over each small dune like a boat tossed on the high seas. The hardy vehicle that survived this battering was a 1982 UAZ-469 made in the Ulyanovsk Auto Factory, the toughest general-purpose vehicle produced in the Soviet Union. He left me in a spot from which the railroad was just discernible on the horizon in case I got



*Black saxaul (Haloxylon aphyllum) in the KaraKum desert*



*Typical desert landscape in the SE KaraKum*

hopelessly lost. He handed me my supplies and a compass, indicated the direction home and barreled off.

The Karakum confounded my expectations. The desert is not an empty wasteland, but full of bushes and a few trees. The abundance of vegetation is what sets apart the Karakum ("Black Sands") from the much more depauperate Uzbek desert, the Kyzylkum ("Red Sands"). From the air, the Karakum really does look darker because of the density of plants. Admittedly, the plant life is not very diverse — primarily black and white saxauls. The two species of saxaul are in fact not distinguishable by color but by taste. The former grows where the soil is salty and has salty-tasting leaves, while the latter's are sweet. (Saline soil saxaul is an old name for the "black" variety.) From my point of view, the best thing about saxauls, save for the shade they provided, was that their branches make an excellent fire — easy to ignite, giving a moderate, long-lasting flame and sweet-smelling smoke.

According to Jora, before the Trans-Caspian railway workers destroyed the forests of saxaul, there were about six million of them growing in the Repetek area. In fact, almost 15 percent (6000 hectares) of the southeast Karakum was covered in saxaul; today perhaps 0.2 percent of them are still standing. Many were chopped down during the civil war, an instance of man-made desertification. The Soviet authorities attempted to repair some of the damage with an intensive replanting

program from 1968 until the USSR collapsed in 1991.

There is a passage I once transcribed into a notebook from Thor Heyerdahl's account of the Kon-Tiki expedition, where he notes that someone who sits still, quietly observing, sees more than someone who charges past.<sup>9</sup> I can say the same about my limited experience of the desert. It is full of life, if one waits patiently for it to appear. An endless succession of gopher-like rodents (*Rombonis opimus*) emerged from holes to take a look at me. A mini-iguana called an *agama* scampered by. I soon gave up trying to count all the lizards. Troops of camels plodded around me indifferently, at one point pursued by a camel-herder on a motorcycle. (Dobrangeldi, in his capacity as park ranger, was annoyed when he heard about this: "He had no right to do that, it's supposed to be a nature reserve.") I enjoyed poking a large black beetle with a stick until it put its face to the ground and squirted ink out of its proboscis-shaped hindquarters. And an eagle — not an airplane, I am sure — wheeled high in the sky. No snakes, though.

"But did you meet the *Kumli*?" inquired Jora the next day.

The *what*?

"You know, the Sand-Thing. The Man-of-the-Desert. The *Kumli* — you didn't run across him, by any chance?"

<sup>9</sup>"A sportsman who breaks his way through the woods may come back and say that no wild life is to be seen. Another may sit down on a stump and wait, and often rustlings and cracklings will begin, and curious eyes peer out. So it is on the sea too. We usually plough across it with roaring engines and piston strokes, with the water foaming round our bows. Then we come back and say that there is nothing to see far out on the ocean." From Thor Heyerdahl, *The Kon-Tiki Expedition*..

No, I missed him!

“Never mind!” he shouted, slapping my back, “maybe next time.”

Had he ever encountered the *Kumli*?

“Well...” he said thoughtfully, “not personally, but... I’ll tell you what I know.”

## TWO STORIES ABOUT THE *KUMLI*

“In Scotland there are reported sightings of a monster in a lake, right? And the Northern Tibetans living in the Gobi desert believe there is a Hun-horhoi, a man-worm thirty centimeters long, who sucks their cows’ udders and steals their milk. Some say the Hun-horhoi is man-sized and has even been known to steal women. All races have different stories to tell. For centuries the Himalayan races have passed down rumors of a creature who leaves giant footsteps in the snow. Who says that they are wrong? There is a lot we don’t know.

“The Turkmen have also heard of a mysterious man-beast who lives in the Karakum, the *Kumli*. I once met a camel-herder who had actually seen him. Here is what he told me: ‘I was in the desert when suddenly I spotted a man in the distance, running toward me. At first I thought he was a man, but he was a horrible thing. He was much taller than me, covered in thick black hair like a yak. He threw himself on me as if he was enraged and fought me to the ground. He was far too strong for me. I thought, Oh God, help me! and began reciting a prayer. The terrible creature heard me and loosened his grip. The louder I prayed the weaker he became, until he released me altogether and fell to his knees in front of me as if begging me for something. He was trying to speak to me in some animal language that I couldn’t understand. I stood up, amazed, and I tried to tell him kindly in words and signs that I meant him no harm if he would go his way without harming me. At that he turned around and fled without a sound. It was the *Kumli*, I am sure of it.’

“In Kerki I heard another tale from an old man, a shepherd of long experience whom I knew well. Here is the experience that he related: ‘This happened when I was a young man. The other shepherds and I used to lead the sheep into the desert in two-week shifts. A few days before I was due to return, I found myself in an area thick with *barkhans*. It was evening, the sheep were already fed and expecting a stop soon, so I tied up the donkey and lit a fire on the top of the highest dune from which I could see all the area around. I ate and had my tea, the dogs

went to sleep and then I fell asleep too.

“In the middle of the night I woke up. I felt as if someone was spraying sand in my face. The fire was down, but there was enough light for me to make out fifteen or twenty small people dancing around me like flames flickering. There were barely over a meter tall. I immediately hid my head in the blanket and wondered if I was really awake or simply dreaming. I peeked out again — and they were still there. My first reaction was to dive under the blanket again. I grew very frightened, because I thought they might attack me, and I recited anything from the Koran that I could remember. Then I pulled myself together, took off the blanket — and now they were gone. I could have died from relief. But then I looked at the donkey. It was terribly agitated, with its mouth open and its ears standing straight up. It was staring at the neighboring dune. I followed its gaze, and there they were again, dancing on top of the next *barkhan*. Well, I collected my things at once and woke up the sheep and the dogs and got away from there.

“The next morning I reached the nearest well where there was a shepherds’ base camp. I told the elder, who knew me, what I had seen. He asked specifically whether I had slept on the big *barkhan* and I said yes. He explained to me that I had camped on the precise spot where a caravan of forty women and children, who were fleeing to Afghanistan during the Civil War, were caught by the Bolshevik army and ruthlessly slaughtered. He had meant to warn me about that *barkhan* but had kept forgetting.

“He urged me to rest at the base camp but I was still far too shaken by the experience, so I set off at once to get home while it was light. In the late afternoon I was approaching the oasis, when I felt their presence again. I urged the sheep to go faster. I began to sweat, because I was horribly afraid. Then I cast a glance over my shoulder and I saw them again very clearly in the daylight, twenty pygmies with dark skins dancing behind me. They kept their distance but followed me all the way to the narrow canal (*aryk*) dividing the oasis from the desert. Then they stopped. I ran over the bridge, looked back, and they had vanished.

“Other people confirmed later that a caravan of innocents really had been slaughtered on the *barkhan* where I slept. After that I always gave the accursed place a wide berth. Were they really the souls of the dead? Had I intruded on their resting-place? Or were they *Kumli*? I don’t know. But I know that the desert has spirits who watch over it. They are its guardians. They are its masters.” □



*The author with the driver Dobrangeldi and the jeep.*

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## Fellows and their Activities

**Adam Smith Alblon.** A former research associate at the Institute for EastWest Studies at Prague in the Czech Republic, Adam is studying and writing about the republics of Central Asia, and their importance as actors within and without the former Soviet bloc. A Harvard graduate (1988; History), Adam has completed the first year of a two-year M. Litt. Degree in Russian/East European history and languages at Oxford University. [EUROPE/RUSSIA]

**Christopher P. Ball.** An economist, Chris Ball holds a B.A. from the University of Alabama in Huntsville and attended the 1992 International Summer School at the London School of Economics. He studied Hungarian for two years in Budapest while serving as Project Director for the Hungarian Atlantic Council. As an Institute Fellow, he is studying and writing about Hungarian minorities in the former Soviet-bloc nations of East and Central Europe. [EUROPE/RUSSIA]

**Chenoa Egawa.** An enrolled member of the Lummi Indian Nation, Chenoa is spending two years living among mesoAmerican Indians, studying successful and not-so-successful cooperative organizations designed to help the Indians market their manufactures, agricultural products and crafts without relying on middlemen. A former trade specialist for the American Indian Trade and Development Council of the Pacific Northwest, Chenoa's B.A. is in International Business and Spanish from the University of Washington in Seattle. [THE AMERICAS]

**William F. Foote.** Formerly a financial analyst with Lehman Brothers' Emerging Markets Group, Willy Foote is examining the economic substructure of Mexico and the impact of free-market reforms on Mexico's people, society and politics. Willy holds a Bachelor's degree from Yale University (history), a Master's from the London School of Economics (Development Economics; Latin America) and studied Basque history in San Sebastian, Spain. He carried out intensive Spanish-language studies in Guatemala in 1990 and then worked as a copy editor and Reporter for the *Buenos Aires Herald* from 1990 to 1992. [THE AMERICAS]

**Marc Michaelson.** A program manager for Save the Children in The Gambia, Marc has moved across Africa to the Horn, there to assess nation-building in Eritrea and Ethiopia, and (conditions permitting) availing and unavailing humanitarian efforts in northern Somalia and southern Sudan. With a B.A. in political science from Tufts, a year of non-degree study at the London School of Economics and a Master's in International Peace Studies from Notre Dame, he describes his postgraduate years as "seven years' experience in international development programming and peace research." [sub-SAHARA]

**Randi Movich.** The current John Miller Musser Memorial Forest & Society Fellow, Randi is spending two years in Guinea, West Africa, studying and writing about the ways in which indigenous women use forest resources for reproductive health. With a B.A. in biology from the University of California at Santa Cruz and a Master of Science degree in Forest Resources from the University of Idaho, Randi is building on two years' experience as a Peace Corps agroforestry extension agent in the same region of Guinea where she will be living as a Fellow with her husband, Jeff Fields — also the holder of an Idaho Master's in Forest Resources. [sub-SAHARA]

**John B. Robinson.** A 1991 Harvard graduate with a certificate of proficiency from the Institute of Kiswahili in Zanzibar, John spent two years as an English teacher in Tanzania. He received a Master's degree in Creative Writing from Brown University in 1995. He and his wife Delphine, a French oceanographer, are spending two years in Madagascar with their two young sons, Nicolas and Rowland, where he will be writing about varied aspects of the island-nation's struggle to survive industrial and natural-resource exploitation and the effects of a rapidly swelling population. [sub-SAHARA]

**Daniel B. Wright.** A sinologist with a Master's Degree in International Relations from the Nitze School of Advanced International Studies of the Johns Hopkins University, Dan's fellowship immerses him in southwest China's Guizhou Province, where he, his journalist-wife Shou Guowei, and their two children (Margaret and Jon) will base themselves for two years in the city of Duyun. Previously a specialist on Asian and Chinese affairs for the Washington consulting firm of Andreae, Vick & Associates, Dan also studied Chinese literature at Beijing University and holds a Master of Divinity degree from Fuller Theological Seminary of Pasadena, California. [East Asia]

**Teresa C. Yates.** A former member of the American Civil Liberties Union's national task force on the workplace, Teresa is spending two years in South Africa observing and reporting on the efforts of the Mandela government to reform the national land-tenure system. A Vassar graduate with a juris doctor from the University of Cincinnati College of Law, Teresa had an internship at the Centre for Applied Legal Studies in Johannesburg in 1991 and 1992, studying the feasibility of including social and economic rights in the new South African constitution. [sub-SAHARA]

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