

Fighting for the Amazon

Belém

ON the waterfront in Belém, flat-bottomed river boats, hammocks swinging between their open decks, bring all the curiosities of the Amazon to market. There are huge fish and unfamiliar fruits. A row of stalls sells medicines and charms — herbal oils, lizard skulls, alligators' teeth, dolphins' penises, turtle shells, and blue-and-white banded snakes, with milky, opal eyes, suspended in jars of fluid. Close by, a little shop sells the curious paraphernalia of the African-derived Umbanda religion, which includes among its pantheon St George (complete in shield and armour, slaying the dragon), Iemanjá, white-robed African goddess of the sea, and Pai João, a cigar-smoking black slave.

Even the ice creams are Amazonian; alongside the familiar tropical tastes of pineapple, guava and mango are açaí, bacuri, caju, cupuaçu, muruci, graviola and genipapo*. Several of these fruits are collected from the forest and not yet grown in cultivation. Even so, it is just a matter of time before they reach New York: the agricultural research station in Belém has worked out how to spin-dry and powder some of the fruits for long-term storage.

Belém is just south of the Equator, 2,000 miles north of Rio de Janeiro and 80

miles from the open sea. It is the capital of Pará, a state almost six times the size of Great Britain. Although an exotic place for the visitor, Belém is also the home of three of the most important scientific institutions within Amazônia: the Emilio Goeldi Museum, which is the region's oldest scientific institution, the Federal University of Pará, and the Centre for Agricultural Research in the Humid Tropics (Centro de Pesquisa Agropecuária do Tropicó Úmido, CPATU). The heads of all three institutions have much on their minds — the parlous state of their finances, politics, their research plans and, not surprisingly, the emergence of the Amazon as a world issue. On this latter issue they all agree that rational, sustainable development of the Amazon is the only way forward (not the irrational development of some of Brazil's giant projects, nor the rational non-development of diehard conservationists), but they disagree on other points, particularly on how well Brazil has done so far and on the role foreigners might play. □

*These fruits are *Euterpe oleracea*, *Platonia insignis*, *Anacardium occidentale*, *Theobroma grandiflorum*, *Byrsonima crassifolia*, *Annona muricata* and *Genipa americana*. Some are found only in the Amazon region, others are cultivated throughout the tropics.

An Amazon University for Amazônia

NILSON Pinto Oliveira is rector of the Federal University of Pará, which occupies a campus down by the river on the outskirts of Belém. The university would not come on anyone's list of the best universities in Brazil, but it is the best in the Amazon — and not just the Brazilian Amazon, but the whole region.

Oliveira knows the potential of the region and the reality of his resources. The university has 1,500 faculty but just 135 with doctoral degrees — one trained researcher for every 36,000 square kilometres of the Amazon. But as Oliveira says, there is no time to stop, "the Amazon is not simply a place to admire, its a country where people live and will continue to live. The people are poor, they need money for the next day."

Oliveira has been rector for three months and clearly chafes at the many restrictions under which he has to operate. His first priority is to raise the level of training of the university staff and help improve Amazon educational standards.

"We cannot talk about the protection of the Amazon region if we do not give to the Amazon people the possibility of learning and understanding their problems", he says. The university, along with other institutions in the region, is running a scheme to retrain school teachers. At sites

throughout the Amazon, some 2,000 schoolteachers come to twice-yearly three-month courses. Raising university standards is exceedingly difficult. Most of the faculty, perhaps 90 per cent, do no research but simply attend the university to teach. A considerable number bend the rules and hold other jobs elsewhere. The four-year-old freeze on appointments prevents new staff being brought into the university. And central control by the Ministry of Education prevents change.

If Oliveira had his way, he would prefer 500 well-trained researchers than the 1,500 staff he has now. He sees lack of flexibility as an even bigger problem than inflation or shortage of money. "All universities are considered to be the same by the ministry", he says, "But the priorities here are completely different from the University of Rio de Janeiro. I cannot create posts in the area they are needed."

The university hopes to consolidate its resources in environmental research in a Centre for Ecological Science. Foreign help is needed to train people.

But Oliveira, like others in Brazil, is convinced that foreign help must be true co-operation which will build up expertise in the Amazon.

Perhaps 70 to 80 people at the university are involved in research. Geoscience is one active area and is involved in a collaborative project funded by the US NSF to study the Amazon shelf off Marajó Island. Another active basic research group, in primate genetics and evolution, is run by the husband-and-wife team of Horacio and Maria Cruz Schneider.

Their research has received a bonus from the construction of some of the



Oliveira: making the best of things.

Amazon's controversial hydroelectric dams. When the reservoirs are flooded, power companies are under obligation to catch large animals trapped by the rising waters and release them elsewhere. The Schneiders collect blood samples from captured monkeys. Study of blood groups, serum proteins and chromosome types enables questions of New World primate speciation and evolution to be tackled.

The Schneiders' efforts are quite heroic. The laboratory roof sometimes leaks, the water and electricity supply are unreliable, and 90 per cent of their electrophoretic reagents have to be imported with all the delay and bureaucratic uncertainties that involves. The university is too poor to afford journal subscriptions. Instead, the primate group has banded together to pay for airmail delivery of *Current Contents*. They then write for reprints to the authors of relevant work. The team has great spirit; all 15 primate researchers are young and are committed to refusing any side jobs. They are also building their international links; members of the group are slowly being 'strategically placed' on fellowships at universities in the United States, Japan and Europe. □



The Federal University of Pará's riverside campus.