

BRAZIL

Two Brazilian ecologists are making progress in their fight to save the "mico"—a small, round-faced, long-tailed monkey of the genus *Cebus*—from extinction. A generation ago, when Rio de Janeiro's famous Copacabana beachfront neighbourhood was a quiet, distant retreat for fishermen and weekend trippers, with hardly any permanent residents, countless thousands of micos played in the branches of trees that proliferated in that district. Now, with Copacabana turned into an overpopulated jungle of high-rise apartment buildings, almost no micos are left in Rio. (Fewer than 1,000 are known to exist in the whole of Brazil.)

For several years, however, ecologists Adelmar Coimbra Filho and Alceu Magnanini of the Rio State Engineering and Environment Foundation, have been battling to prevent the mico from disappearing. They started out by keeping a few micos in the safety of their back yards and encouraging them to breed. In 1972 they obtained a foreign grant and created a biological preserve in Rio's still-untouched Tijuca Forest. Today the mico population there has grown to 58.

The prospects for keeping the mico from becoming extinct are now better than ever before. Brazil's federal Land Reform and Colonisation Institute has promised Coimbra Filho and Magnanini that it will expropriate a wooded tract of land north-east of Rio—a former natural habitat of the mico—and turn it into a restricted-access biological area where the principal priority will be to preserve this species of monkey.

Magnanini, who at one point in his career was ready to pronounce the mico extinct (until his partner, Coimbra Filho, happily discovered one), says the mico had the misfortune to be best adapted to Brazil's humid Atlantic coastal region—where development of the country has been most intense.

● Brazil's Health Ministry has released partial results of its most intensive

survey to date on the incidence of Chagas Disease, and the picture is not very bright. Researchers found the ailment prevalent in 1,238 of 1,750 counties that were surveyed (Brazil has nearly 4,000 counties). These results led to estimates that 8 million people in this country may have the disease, either in its latent or acute form.

Chagas Disease is a Latin American malady for which there is no known cure. It is caused by a protozoan parasite known as *Trypanosoma cruzi* and is transmitted by an insect known colloquially as the "barbeiro" (Portuguese for "barber bug") or "chupao" ("sucker"). Chagas Disease, which attacks the heart, causes long term debility, often resulting in death. Most fatalities are among people 25-50 years old who come from rural areas.

The disease is transmitted in a bizarre way: "barber bugs" living in the thatched roofs or mud-brick walls of peasant farmers' shacks come out at night and bite people, usually near their eyes. Then the insect defecates into the bite, sending the dangerous parasite directly into the person's bloodstream. The Health Ministry survey showed that Chagas Disease is further spread through unsupervised blood transfusions—even in seemingly modern, advanced cities such as Belo Horizonte and Sao Paulo, where there are large colonies of farm migrants.

"In Brazil, most cases of Chagas Disease go unrecognised, because of a lack of good medical care in rural areas," declared Dr J. Romeu Cancado, head of the medical clinic at the Federal University of Minas Gerais Medical School. He added that the problem of Chagas Disease has been further complicated by failure to include a detailed study of the disease in leading Brazilian medical schools. Most medical researchers at present doing work on Chagas Disease are in fact non-Brazilians.

Asked about prospects for finding a cure for Chagas Disease, Dr Cancado said that several drugs had been pre-



sented recently as cures for Chagas Disease, but most had turned out to be too toxic or ineffective in humans.

● Brazil is seriously determined to cut its petroleum consumption (it had to import four-fifths of its crude oil in 1975, at a cost of around US \$3,800 million), and President Ernesto Geisel has asked petroleum researchers to develop an efficient Brazilian product that would contain 20% alcohol.

Brazil has great potential for producing alcohol. It is the world's biggest cane-sugar grower, and it has vast plantations of cassava root and sweet potatoes, which are thought to be alternative sources of extractable alcohol. The nation's present rate of alcohol production is 270 million litres a year. Based on figures for petrol consumption, Brazil would have to boost alcohol production to 3,000 million litres annually to meet the 20% goal.

Brazilian gasoline now contains about 5% alcohol. Some say that the alcohol mixture can be increased to 20% without lowering the efficiency of automobile engines, but Mario Gellini, an engineer with the Brazilian subsidiary of the Ford Motor Company, says that 15% is the maximum amount of alcohol that can be tolerated if cars are not to run badly.

Bruce Handler
Rio de Janeiro



Competition 5

As correspondents continue to point out, *Nessiteras rhombopteryx* is an anagram of "Monster hoax by Sir Peter S." or "Yes both pix are monsters, R." (for Rines). A prize of £10 is offered for the best anagram of any scientific concept. Closing date for entries is March 10.

For **Competition 4** readers were invited to submit about 100 words culled from the pages of *Nature* 100 years hence. Entries from F. P. Hughes and S. Gilbert deserve special mention, but the winning entry came from R. Ternbach, of Cambridge, Massachusetts, who receives £10 for this submission:

The Lunar Observatory for Orthomolecular Nebulosity has surveyed one of the twelve equally spaced peculiarities recently shown to surround the galaxy at cosmological distances. Optical plates exposed through the moonstation telescope show a ring (head) with an arc (horns) above.

Gas clouds are ejected from twin singularities (nostrils) in the head at a rate of 10 min^{-1} (breathing rate). Glitches in the ejection rate (snort bursts) have a mean inter-snort interval of 1 sec. Absorption spectra of snort gases suggest a molecular composition strikingly similar to bovine breath.



Fig. 1 Appearance of the peculiarity on optical plate made at the Lunar Observatory for Orthomolecular Nebulosity.