

In this issue

Accurate monkey counting

'How many primates in the Western Ghats?'

'Err...Many?' replies the primatologist.

CONTIGUOUS canopy. Several different fruit-bearing plant species. And an evergreen cover. Such a habitat most assuredly would be home to our distant cousins: primates. It indeed is.

The Western Ghats – a biodiversity hot spot – is home to six species of primates. Lion-tailed macaques, bonnet macaques, Nilgiri langurs, southern plains gray langurs, black gray langurs, and Mysore slender lorises – all thrive in the forests of the Western Ghats. Unfortunately, however, hunting, urbanization, and the outbreak of diseases have pushed these primates towards the edge of extinction.

The forests of the Western Ghats have quietened. The forests have *been* quietened.

This is disturbing. These primates are a vital component of the Western Ghats' ecosystem. They not only contribute substantially to the mammalian biomass of the Ghats, but also, by dispersing seeds, play an important role in the regeneration of the forests. Therefore, considering the serious ramifications of species extinction, one would not be naïve to assume that a number of studies have endeavoured to develop conservation models to manage the remaining primates. This, surprisingly, is not the case.

Few, if any, studies have actually dealt with this issue of primate conservation in the Western Ghats. Why? Because before developing conservation strategies it is critical to have that one basic data point:

How many primates are out there?

Time and time again, studies have failed in estimating accurate primate numbers in the forests. And *'No!'* it is not because of a lack of intellectual and technological capital. It is because of the terrain of the Western Ghats. It is undulating. Highly variant. Veined by a number of perennial rivers. Owing to which, the data gleaned by standard survey procedures are often marred by noise.

A Research Communication, **page 118**, circumvents this problem by using a rather ingenuous survey method. This survey method involves, quite literally, a long stroll in the woods: the line transect estimation method.

Thus, by simply strolling along hundreds of kilometres of strict straight line paths (transects), the study succeeds in estimating the population density of three primate species: the lion-tailed macaque, the bonnet macaque, and the southern plains gray langur.

Green nuclear energy?

'It is not difficult to conceive of an entire planet powered by thorium' – K. Sorensen

WHAT would your reaction be if someone were to tell you that one particular nuclear fuel is a lot safer than enriched uranium? Not only safer, but also far more efficient. Not only more efficient, but so abundantly available that it was once dumped as waste. *Listen closer, it only gets better.* It could answer the energy woes of the world for the next 1000 years. *And guess what!* Even the name of this fuel alludes to an immeasurable source of electrical energy – the Norse God of lightning: Thor.

You should not be too surprised. This is old news, as old as independent India.

Thorium, a potential green nuclear fuel, is a radioactive metal that has long intrigued researchers. But even after almost fifty years of intense research, there is little to show. In fact, over the years several thorium-based research projects in the developed world have been shut down. Even China, not too enamoured by the prospects of thorium, continues to focus on uranium energy.

India, however, remains steadfast.

It has no other choice! India's uranium reserves are limited. Its fossil fuel reserves have been juiced out. And its per capita energy consumption is a most humble 1/15th of America's. Therefore, it is only by exploiting its abundant thorium reserves could India possibly meet its ever rising energy demands. But.

But, do we have the technological prowess to do so? Can we succeed where other more developed countries have failed?

A General Article, **page 30**, reports, *Almost...Almost there...*

Contaminated bottled water

How safe really is packaged drinking water?

PRESSURE sand filtration, reverse osmosis, ozonation – after being sieved through such stringent disinfection pro-

cesses, one would assume that packaged drinking water would be pure. Very pure. But a recent study in this issue of *Current Science* has a different story to tell. According to this study, certain contaminants in the water are birthed, ironically, by the disinfection process itself!

The disinfection process eliminates pathogenic organisms in the water by using chemical and physical agents. Sure, these agents are effective water cleansers, but they also react with the organic matter present in the unfiltered water and form disinfection by-products. These disinfection by-products are undesirable. They have bromate, chlorite, and chlorate oxyhalide groups – all three of which, the World Health Organization reports, are toxic. Bromate is a potential carcinogen; chlorite and chlorate have been known to cause haemolytic anaemia in animals.

It is surprising, however, that the Bureau of Indian Standards (BIS) has not paid any attention to these oxyhalide by-products. This is not to imply that the BIS does not ensure high purity standards. *No.* Its long list of water purity standards includes strict limits on physical, chemical, and even radioactive parameters. But for some reason, there are no stipulated limits for bromate, chlorite, and chlorate ions.

A Research Communication, **page 80**, steps in, and endeavours to shed some light on this issue.

This study, by using ion-exchange chromatography, measures the concentrations of the bromate, chlorite, and chlorate ions in as many as eighteen brands of bottled water which populate the shelves of the local Mumbai market.

The results are bittersweet.

On comparing the chromatograms of the water samples, it is found that although the chlorite and chlorate levels are well within permissible levels, the concentration of bromate in some water samples far exceeds 'safe levels'. But there is good news as well. Certain brands of bottled water have permissible levels of all the three oxyhalide ions. *The secret?* During their treatment they were subjected, by their manufacturers, to a particularly effective filtration process: ACF, Activated Carb—...

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