In this issue

Potable water for the poor

It was in the late 1970's that commercial Industrial scale desalination using reverse osmosis started. Today reverse osmosis (RO) is a commercial household technology found in many kitchens. The water that is wasted and the power that is consumed may perhaps be justified in the name of health – if it were the only technology for the purpose.

A General Article in this issue presents a cheaper, cleaner, less wasteful alternative that calls for lesser maintenance: photovoltaic powered membrane distillation. A polytetraflouroethylene membrane allows vapour to pass through. But it is hydrophobic, so it keeps water with contaminants from passing through. Staff members from two engineering colleges in Tamil Nadu integrated a solar photovoltaic system to provide the required energy. They report their findings on **page 1247**.

Clean water that does not depend on the electric grid. A technology that can be adopted by even the remotest villages. Given that more than 60 per cent of the groundwater in India has high levels of salts and that the poor of India have no access to RO technology, cheaper technology has the potential to enter the market. But since the Indian economy is in a hopeful mood, RO technology, that is already established in the market, will, perhaps, overtake this newer, but cleaner and user friendly technology. Unless wide scale translational research is immediately undertaken, to test the marketability of technology under different agro-climatic zones with varying water quality.

Demand management in traffic

When you are stuck in the city traffic next time, or standing in a bus terminus, waiting for the bus, open the *Current Science* website on your smartphone and read the research article in this issue, on precisely this issue: movements of people, large numbers of them.

Capacity expansion for traffic has limitations. What we now need is demand management strategies, the authors say. And, coming from Bengaluru, that has seen an unplanned explosion of traffic in the last two decades, they understand this.

But then, to manage the problem, some measure of demand is needed. And that means data collection. What are the different ways in which we can collect the data required for constructing travel demand models? What were the strategies used so far in different parts of the world? How reliable were the data so generated? What is the most effective data collection process? What are the fields required in the forms that are administered? What is the best layout of such data collection instruments? The questions raised by the research article are logical and coherent.

Standing on the shoulders of previous experiences and overcoming the limitations faced by earlier studies with thoughtful innovations, testing different alternatives using pilot surveys in the Bangalore Metropolitan Region, this article furthers a discipline that is barely two decades old. One more small step in the direction of traffic demand management in Bengaluru. A form that is better designed, that does not miss out on relevant data and is easy to administer.

The study finds that the best way is face-to-face data collection by educated male and female interviewers – a process that demands time from human resources. This, incidentally, is as abundant in Bengaluru as are traffic jams.

Take a look at the article on **page 1264**. You will remember it when you are stuck in traffic.

When archeology met botany

Scattered in the plains of Northern India, there appear some uneven mounds – more elevated than the surrounding agricultural fields or local habitations. People walk over them, unaware that ancient history lies beneath their feet. One such mound in Ahichchhatra, Rae Bareli district, was excavated in the early forties. Inside the mound, evidence of human habitations were discovered, dating back from 475 BC, all the way up to the thirteenth century AD. The pottery and coins recovered led to the conclusion that this was, perhaps, the northern capital of the Panchala kingdom.

As is usual in excavations, most parts of the mound, more than 5 square kilometers in this case, was left untouched. Only to be reopened in 2009. But this time, the questions were different. If those people had used money and had pottery, evidently they also ate. What did they eat?

Water floatation can separate carbonized and silicified plant materials from cultural deposits. These materials can then be examined microscopically and compared with the morphology of extant seeds to give us data to reconstruct the diet of those days. Collection from different depths can even help decipher changes in diet patterns. Scientists from the ASI collaborated with the Birbal Sahni Institute of Palaeobotany to examine a sample having dates calibrated to about 325–342 BC. They report their finding on **page 1293**. When archeology met botany, a study of culinary culture was born.

Archeologists, today more than ever, are collaborating with biologists, chemists and physicists to decipher the past. Yet science stream students in most universities do not have the opportunity to take up a course in Archeology during their Master's degree. Archeology is still considered as an art, belonging to the humanities. This research article makes us reflect on the need to mend our educational system.

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