

In this issue

Occupational Accidents

Construction and manufacturing

Manufacturing and construction industries are very important for national economy but unfortunately, both are fraught with accidents. Many a limb and life have already been lost. How can we reduce and if possible, eliminate such occupational accidents?

Shabir Hussain Khahro from the Prince Sultan University in Saudi Arabia compares the differences and similarities between accidents in the construction and manufacturing industries of Pakistan in a Research Article in this issue of your favourite journal published from India.

While people work mostly in the same location and under controlled environment in steel and cement industries, the workers of the construction industry work in uncontrolled environments and frequently changing locations. Shabir highlights the differences between the manufacturing and construction industries in terms of accidents, frequency of occurrence, impact as well as their direct and indirect causes.

Accidents in the construction industry have higher impact and frequency than those of the manufacturing industry and the attitudinal change of the management to accidents in work spaces is the most crucial factor to reduce harm to workers. For more details turn to **page 243**.

Yadahalli Wildlife Sanctuary

Chinkara in Karnataka

Chinkara, the Indian gazelle, was once widely distributed in arid and semiarid regions from Iran to Afghanistan, Pakistan and India. These animals are shy, highly vigilant and keep away from humans. The expansion of human populations led to a reduction in chinkara populations and so the Indian Wildlife Protection Act 1972 accorded highest protection to the species.

Though the species was recorded in the Yadahalli Reserve Forests in Karnataka in 2008, and the area was declared a wildlife sanctuary in 2016, as per IUCN, the state is considered to

be devoid of the species. Now, researchers from six different institutions in India have come together to prove otherwise.

The Yadahalli Wildlife Sanctuary is nearly a hundred square kilometres of dry mixed deciduous forest with thorny trees and scrubs. Chinkara keep out of sight because they do not form herds like other antelopes – a small group of four individuals share a home range of about two square kilometres. So they are difficult to study.

The researchers divided the sanctuary into grids of 2 square kilometres. And installed camera traps. Since the cameras tend to 'disappear' if installed near human populations, they avoided the edges of the sanctuary.

They divided the grids further into four for sampling and started walking through them to locate middens, as the community toilets of chinkaras are called. Sheep and goat do not have such hygienic practices. So the middens are a sure sign of the presence of the elusive species.

They thus walked more than 200 kilometres from February to May of 2016 and found middens in 30 out of 62 grids. They also recorded the species of vegetation seen in each area.

Since the researchers used GPS technology, now there is a detailed map of the occupancy and abundance of chinkara in the Yadahalli Wildlife Sanctuary. And photographs that can identify more than 80 individuals.

For researchers who want to monitor and study the ethology of the species and the ecological role it plays, it has become easier. Read the Research Article on **page 264** in this issue.

Language Crisis in Science

The Indian context

A large majority of Indians learn English as a second language and science in vernacular till 10th standard. Over the next two or three years, they have to be ready to learn science or engineering in English. Since teaching English does not include the vocabulary that is needed to deal with learning science and engineering subjects, the students go through rote learning

without understanding the subjects, to pass exams.

Uma Maheswari and Shahin Sultana in their attempt to teach English at the B. S. Abdur Rahman Institute of Science and Technology, Chennai, recognised the problem. With support from the Suhasini Shankar Sattva Training Academy in Australia they undertook a laborious lexical analysis of the NCERT textbooks for English intended for 11th and 12th standard as well as Physics and Chemistry textbooks of 11th, 12th and of the first year of engineering courses, to find the gaps between English text books and the English vocabulary in science.

In a Research Communication on **page 271** in this issue, they provide the quantitative aspects of their analysis. They also offer the categorised lexical resources generated for those who wish to write text books that reduce rote learning and improve the language skills of our future scientists and engineers.

Pigments on Palm Leaf

Palm leaf has been the material of choice for writing in the coastal areas of India before the production and distribution of paper began in earnest. Many of the old manuscripts, now stored in museums, libraries, temples and households, contain coloured illustrations. The conservation of the illustrations and paintings on palm leaf is therefore a major concern.

The first question is, of course, what are the nature and characteristics of the pigments used? Deepakshi Sharma, a researcher at the National Museum Institute found it difficult to get samples to study: people were not willing to share palm leaf manuscripts and many had worshipful attitudes to the manuscripts. At last she sourced four palm leaf paintings from Odisha.

The results from the investigations that ensued, presented in the Research Communication on **page 285** in this issue, challenge traditional beliefs about the pigments used and provide clues about conserving them.

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