

In this issue

Elasmobranch Conservation *Challenges in Indian fisheries*

Fish species such as sharks, guitarfish and rays have plate-like gills and are described as elasmobranchs in Greek where elasm means plate and branchia is gill. The share of elasmobranchs in the estimated annual marine fish landings in India reduced from 3.4% in 1985 to under 2% in 2005 and now, it is only between 1% and 2%. Concerned about the conservation of marine biodiversity and sustainability of marine fisheries, ICAR-CMFRI, Kochi held consultations with national experts on elasmobranchs in February 2020. A General Article in this issue summarises the main points that emerged in the three-day discussions.

The Wildlife (Protection) Act 1972 in India covered only terrestrial mammals and reptiles and, much later, it was amended to include birds. Fish came into focus only in 2001. Unlike in the case of mammals, reptiles and birds where hunting and capturing are mostly targeted, elasmobranchs were mostly bycatches, accidentally caught in the net. But the rising demand for the meat of some of the elasmobranchs and other by-products, such as shark fins and shark liver oil, created a movement of targeted fishing. The introduction of elasmobranchs into the group of protected species has pushed the trade into illegal channels. Moreover, the fishers cannot avoid accidental capture of the protected species in their net. This creates confusion even among law-abiding fishers.

What can researchers, conservationists, policymakers, specialist fisher groups, elasmobranch traders and law enforcing agencies do to conserve marine biodiversity while ensuring the livelihoods of fishers and nutrition for the populations? Turn to **page 292** for answers.

Increase Onion Seed Set *By protecting pollinators*

Internationally, India is only next to China in onion production. But the productivity per hectare of onions in India is poor compared to international standards. A part of the reason is the quality and viability of the onion seeds used. Onion farmers in India depend mostly on the seeds they produce themselves. Only about 40% of the seeds come from the organised sector.

Onion is mostly cross pollinated by insect pollinators. A large number of insect species are reported to visit onion flowers. However, their capacity to pollinate and improve seed sets varies. A Review Article in this issue examines the floral biology of onions, the foraging habits of insect visitors and their relative efficacies in seed set. Since honeybees provide the best pollination services, instead of depending on pollinators in the wild, farmers could perhaps grow two colonies of honeybees per acre to improve onion seed yield, the authors advise.

The authors also warn that using pesticides and fungicides impacts insect pollinators and thus seed yield. Turn to **page 304** for more.

Ancient Iron Technology *In medieval Kerala*

Iron in the form of wootz steel came to be used in India more than 2100 years ago. Heating black haematite in a sealed clay crucible along with carbon derived from plant materials separated iron in the form of wootz steel from slag. Wootz steel, having high carbon content, was used to make swords that were extremely hard, yet very flexible.

In 2020, two iron swords, one tripod and 16 potteries were found in a rock-cut cave in Malappuram district, Kerala. The examination of the

pottery by the state's Archaeology Department suggested similarities with potteries recovered from nearby sites dating back to the 1st millennium BC. The material of the two swords and the tripod was analysed by researchers from IIT Gandhinagar using a battery of methods and instruments. And they have interesting results to report in the Research Article on **page 333** in this issue.

Psychiatric Disorders *Financial burden of Telangana*

The cost of psychiatric disorders to patient, family, society and the government is quite high. Even a conservative estimate of costs for the implementation of the Mental Healthcare Act, 2017 is about 94,073 crores at a national level.

But now, a Research Communication in this issue estimates the cost of psychiatric disorders per annum in Telangana, to be 140,963 crore rupees. Meanwhile, the total health budget of the state is only 10,954 crore rupees.

Direct costs, such as those for consultations, diagnostic investigations, medicines, travel, etc. are a small percentage of the total costs. Among indirect costs, lost income due to the disorder and loss in productivity were the highest. Disability benefits, expenses for faith healing, loss of taxes on earnings, patients in conflict with the law, etc. were also included in this holistic reckoning of financial burden.

This means that the government can reduce the costs incurred by ensuring proper treatment and rehabilitation of people with psychiatric disorders.

Flip to **page 355** for details.

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