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Plant invasions

Invasion of species affects the ecology and the economy of a region where they invade and is considered as the second largest threat to the biodiversity after habitat destruction. In India plant species likes *Cytisus scoparisu*, *Chromolaena odorata*, *Eupatorium adenophorum*, *Lantana camara*, *Mikania micrantha*, *Mimosa invisa*, *Parthenium hysterophorus* and *Prosopis juliflora* are among terrestrial exotics, and *Eichhornia crassipes* and *Pistia stratiotes* are among aquatics, which are posing serious threat to the native flora. The problem is alarming as many of the biological invasions seem to be irreversible and high cost is involved in complete eradication of these species. G. P. Sharma *et al.* (**page 726**) have attempted to elucidate the process of invasive plant establishment, naturalization and spread. Synchrony between the attributed character of invasive plant species and the habitat that is being invaded is also discussed as a possible mechanism of success of invasive species in a new environment. Management strategies including widespread public awareness of the ecological and economic impacts of invasive species have also been discussed in the article.

Wetland rice system

Wetland rice production system in Asia is an excellent example of sustainable productivity and soil fertility maintenance. In this system, rice crop is grown in submerged soils. However, due to impending fresh water shortages there is a case to shift the growing of rice in submerged soils to practices that are water-wise. K. L. Sahrawat (**page 735**) examines the underlying principles that govern the maintenance of organic matter and fertility in wetland rice systems. Research shows that the wetland rice system has a great ameliorative effect on soil fertility largely as a result of convergence of soil pH in the neutral range and better availability of nutrients, and accumulation of organic matter. It is emphasized that the benefits of growing rice employing submerged conditions must be considered and weighed in the context of a likely shift to growing rice under alternate water management practices that are water-wise.

Weather conditions around Gangotri glacier

There is significant contribution of snow and glaciers in the annual runoff of the Himalayan river systems. The importance of the Himalayan river systems can be noted from the fact that out of total hydropower generation of the country, about

A view of snout of Gangotri Glacier (Gomukh) during summer period

78% is generated from the Himalayan river systems. In addition to the power generation, these river systems play an important role in irrigation and drinking water supply. Despite such a high importance of the water derived from snow and ice covered parts of the Himalayan basins, hydro-meteorological aspects of these high altitude basins are not much investigated. In a research conducted by Pratap Singh *et al.* (**page 753**), which was primarily based on the field-oriented study, meteorological data were collected near the snout of the Gangotri Glacier by establishing a meteorological observatory and running the monitoring program for the whole summer period (May–October). The analysis of collected meteorological data for a four-year period (2000–2003) has been presented in the paper.

Wind profiler/radio acoustic sounding system

A 404 MHz Wind Profiler/Radio Acoustic System fabricated by the Society for Applied Microwave Electronics Engineering and Research, Mumbai has been commissioned for utilization in the R&D mode at the India Meteorological Department, Pune. The system is capable of measuring all three components of vector wind, viz. zonal, meriodional and vertical wind velocities. The system as configured has a typical height coverage of 6–10 km (depending on weather conditions) with a resolution of 300 m for wind and 2–3 km for temperature measurement. Regular observations with the system have commenced since June 2003. G. B. Pant *et al.* (**page 761**) give brief introduction to the system and present preliminary results for wind and temperature obtained during the monsoon season 2003 and discuss the further application potential of the indigenously developed system.

Human placental extract

Placenta, being a link between mother and fetus, provides all nutrients and protective agents to the baby. This biochemical treasure house is capable of producing just about any substrate found in any organ of the body. Developed from the folk knowledge, an aqueous extract of placenta is used as a licensed drug in wound healing. While in India it is extracted from human source, in Europe and other countries it is derived from animal sources. Scientific assessment of this drug is essential for its better acceptance in medical practices worldwide.

It is clinically tested that secondary infections during long-term healing from burn injuries, surgical, chronic and infected wounds are prevented by placental extracts. Chakrabarty and Bhattacharyya describe (**page 782**) that human placental extract has an effective inhibitory role on the growth of different microbes like *E. coli*, *S. aureus*, *C. albicans*, etc. (type strains and also clinically isolated forms of these microbes). Drug-resistant strains of *E. coli* and *P. aeruginosa* were also significantly inhibited. Polydeoxyribonucleotide fragments appear to be the causative agent.

Placenta being the only discarded human organ, a large volume of investigations has been done on it. In comparison, properties of the aqueous extracts that depend on the method of extraction are less well known. It is expected that investigations will explore hitherto unknown properties of the extract for its wider applications.