

Isolation of the geological community

In response to the article by Aswathanarayana¹, Joshi² has rightly pointed out that the geoscience curriculum has not adequately responded to present-day needs of geological competence for the industry. The problem, in fact, is not in terms of geological competence. It relates to the mindset of the geologists. The geological community prefers to work in 'grand isolation' *vis-à-vis* other scientific streams. The problem of 'isolation' of the geological community and the discipline of geosciences may be largely attributed to the working conditions, particularly in the Geological Survey of India (GSI), where majority of geoscientists get employed. The emphasis in GSI was for geological mapping and mineral exploration. However, GSI has had an important wing of engineering geology, followed subsequently over time, by environmental geology, glaciology, marine geology and other wings. Geoscientists receive their grooming for work in the specialist disciplines during the overall field and

training programmes of GSI. This has many advantages, but some disadvantages too.

Specialists like engineering geologists, environmental geologists, etc. were able to acquire detailed and comprehensive knowledge of dams, river valleys, infrastructure and other projects, but sometimes were not able to appreciate the larger perspective in which any particular project was envisaged. This and similar situations could be avoided if we had engineering geosciences as a specialized course of studies for awarding M Tech in the subject. Similar course curricula may be designed for other specialized branches. This will also go a long way in fulfilling the present-day industry requirement. GSI's 'talent pool' may be tapped for designing and implementing courses.

However, retrospectively, it should be appreciated that institutions like Indian School of Mines, Dhanbad and later on Sagar University had their M Sc/M Tech programmes in applied geology to meet

the demands of the mining industry. What is needed, therefore, is that necessary support be given to these and other institutions to restructure their course curriculum according to the requirement of the day. The emphasis should not merely be in terms of fieldwork in related industrial projects, but also towards an overall interaction with engineers, planners and administrators who are engaged in management and implementation of projects. This may also help to bring about a change in the mindset of the geoscientists preferring to work in grand isolation.

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S. C. ROY

2/133, Vikas Nagar,
Lucknow, India
e-mail: roypopli75@yahoo.com

Occurrence of threatened fragrant *Ceropegia* in Toranmal forests, Maharashtra

Ceropegia (family Asclepiadaceae) is a well-known genus owing to its special corolla structure. Forty-five species of *Ceropegia* have been reported in India¹ amongst which 28 are endemic. Unique amongst these is *Ceropegia odorata* Hook.f. owing to fragrant flowers that are not observed in any other species of this genus. It is also the rarest *Ceropegia* as it is known only from four localities, Salsette (Mumbai), Abu (Rajasthan), Pavagadh (Gujarat) and Tarubanda (Melghat Tiger Reserve, Maharashtra) in 165 years since its first report by Graham². The description of this plant was mainly based on old herbarium collections and its fragrance was doubted by McCann³, who renamed it as *Ceropegia blatterii* McCann. The name *C. odorata* was reinstated by Huber⁴, but its fragrant nature was never discussed as no living population was available for study. Ansari⁵

collected its tubers from Tarubanda and raised them in the nursery, confirming the fragrant nature. Ansari has discussed the detailed history of nomenclature of this plant based on various old collections in herbaria. However, he could not observe the flowering of the wild population in natural conditions and hence there was no report on the phenology, fragrance or pollinators of this species in the wild. Since then, this species has remained elusive, though the area of its occurrence has been extensively surveyed. Mishra and Singh⁶ reported this as a threatened species. In view of data deficiency about the species, this note is to place on record the occurrence of living population of *C. odorata* in Toranmal forest, Nandurbar district, Maharashtra.

The population was first noted in September 2002 in the Toranmal Medicinal Plant Conservation Area located at the

village Legapani, Ranipur range, Toranmal. The identification was confirmed when flowering occurred in September 2003. The species has a small population of 12 plants in 900 ha area in the wild. *C. odorata* is an extensive climber which grows mostly in shrub thickets in inaccessible regions. The peak of flowering occurs at the end of September and remains only for five to seven days. The flowers have a strong fragrance reminiscent of *Jasminum* species, which is present throughout the day and night but is stronger in the morning. Insect visitors, mostly flies were also observed on the flowers (Figure 1).

This note will facilitate identification of the plant in the wild. It is necessary to take up a detailed survey of the entire western Indian region to locate populations of this rare species. The earlier known localities of this plant are now



Figure 1. *a*, *Ceropogia odorata* inflorescence; *b*, Corolla tube cut open to show flies.

under heavy biotic pressure and it is doubtful whether the plants continue to survive in those localities. Evolution of fragrance in the otherwise non-fragrant genus is an interesting phenomenon. Whether this character has any ecological significance needs to be verified with further studies. In view of low population and rarity of this species, extensive

in situ as well as *ex situ* conservation programmes are needed.

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S. JAGTAP¹
S. DEOKULE²
A. WATVE^{3,*}

¹*Medicinal Plant Conservation Centre,
F3, Radha Krishna Apartment,
425/84, 2nd floor,
TMV Colony,
Mukundnagar,
Pune 411 037, India*

²*Department of Botany,
University of Pune,
Ganeshkhind Road,
Pune 411 007, India*

³*Department of Botany,
Agharkar Research Institute,
G.G. Agarkar Road,
Pune 411 004, India*

**For correspondence
e-mail: dip@pnz.vsnl.net.in*