

Malaria as healer: The Heimlich oeuvre on malariotherapy for AIDS

I inspected, recently, the splendid review article¹ in which the authors correctly identify *Plasmodium*'s survival strategies as one of the 'worst scourges of mankind'. The likely major flipside of this scourge, maybe intriguing for readers.

In 1927, Wagner Juaregg received the Nobel Prize for his discovery of malariotherapy to cure neurosyphilis. Over a period of 50 years, malaria eradicated that scourge. Now Henry Heimlich, the inventor of the Heimlich valve used in millions of chest operations all over the world (because he refused to patent it), of the Heimlich manoeuvre for choking, more recently for drowning victims, and

most recently for asthma (all therapies which cost exactly zero), has come up with what may be his most significant near-zero cost therapy – the use of malariotherapy for HIV-AIDS control. Technical details, are available at the website www.heimlichinstitute.org. National leaders of many African countries are flocking to Cincinnati to learn the technique. No research is permitted in the US, hence Heimlich obtains all the data by collaborating in East Asia. What a great opportunity for Indian medical institutions to respond to the greatest single health challenge facing the developing world, by setting up a major research

base on the positive value of our own scourge of scourges – malaria.

1. Ramya, T. N. C. *et al.*, *Curr. Sci.*, 2002, **83**, 818.

RUSTUM ROY

Materials Research Laboratory,
The Pennsylvania State University,
University Park,
PA 16802, USA
e-mail: rroy@psu.edu

Cuscuta europaea Linn. (Dodder plant): An emerging threat to plant diversity of Valley of Flowers

The genus *Cuscuta*, a stem parasite with branched climbing cord, is comprised of about 175 species world-wide. Of these, 12 species are reported from India¹. *Cuscuta europaea* Linn. is a climbing annual stem parasite. The stem is pink and thread-like. The flowers are small, waxy and arranged in globular heads. The species is observed to twine on different plant species (Figure 1c). *Cuscuta europaea* is distributed in West and Central Asia and Europe. In India it occurs in temperate Himalaya from Kashmir to Sikkim up to an altitude of 3600 m asl. In Garhwal Himalaya it is reported to occur in Sundergaon and Bhyundar Valley, on the way to Dunagiri between 2800 and 3800 m (refs 1, 2).

Considering the biodiversity richness, the Valley of Flowers was declared a National Park in 1982. Several issues related to grazing, proliferation of weeds and other people-nature conflicts in the Valley of Flowers are being addressed in different fora.

Based on our regular visit to the Valley of Flowers, we report here a potential threat to the floristic diversity of the area. It has been observed that *Cuscuta europaea* (Dodder plant) grows as a

parasite on various flowering plants, some of which are of high medicinal value, e.g. *Dactylorhiza hatagirea* (Figure 1a). The parasite appears on different hosts and is distributed in patches in

the Valley of Flowers (Figure 1c). As stated earlier, it is a total stem parasite, which coils around stems of plants and draws nutrition from the host through haustoria. Among others, *Dactylorhiza*

Table 1. Status of *Cuscuta europaea*-infested individuals in alpine pasture of Valley of Flowers

Species	Density (Ind./m ²)	Frequency (%)	Infested individuals	
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<i>Bistorta macrophylla</i>	4.30	75	1.25	45
<i>Danthonia cachemyriana</i>	3.00	70	0.70	35
<i>Potentilla</i> spp.*	2.05	60	0.55	20
<i>Dactylorhiza hatagirea</i> *	1.50	65	0.50	30
<i>Anaphalis triplinervis</i>	2.71	40	0.50	20
<i>Polygonum polystachyum</i>	1.90	45	0.50	30
<i>Gentianella moorcroftiana</i> *	1.65	40	0.30	10
<i>Geranium wallichianum</i>	1.70	50	0.25	10
<i>Anemone obtusiloba</i>	0.35	20	0.20	10
<i>Selinum tenuifolium</i> *	0.35	20	0.10	5
<i>Swertia paniculata</i> *	0.60	15	0.05	5
<i>Heracleum pinnatum</i>	0.15	10	0.00	0
<i>Rumex</i> spp.	0.05	50	0.00	0
<i>Picrorhiza kurrooa</i>	1.05	10	0.00	0
<i>Sibbaldia cuneata</i>	0.55	10	0.00	0
<i>Crementhodium arnicoides</i>	0.05	50	0.00	0
Others	2.25	40	1.25	30

*Medicinally important.



Figure 1. *Cuscuta europaea* infestation on (a) *Dactylorhiza hatagirea* (b) *Potentilla* spp. (c) Different alpine herbs.

hatagirea, a critically endangered medicinal plant, was infested by the parasite. On the basis of 20 randomly laid quadrats (size 1×1 m) in an approximate area of 0.7 ha, the density and frequency of the affected individuals was estimated. It was observed that infestation of *Cuscuta europaea* can adversely affect the size and density of medicinal plant population, especially those which show low density. For example, the density of *Dactylorhiza hatagirea* was 1.5 individuals/ m^2 and of these 0.5 infested individuals/ m^2 were recorded (Table 1). Similarly, other medicinally important plants like *Gentianella moorcroftiana*, *Swertia paniculata*, *Selinum tenuifolium*, *Potentilla* spp. have some infested individuals (0.3, 0.05, 0.1, and 0.55 individuals/ m^2 respectively). Excessive spread of this parasite may pose a threat not only to the medicinal plant species but also to the floristic diversity of the region. Further studies on variation in phenology of infested and normal individuals of various flowering plants and spreading pattern of the parasite in the Valley of Flowers will be an important step towards conserving the biodiversity of this unique valley.

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2. Naithani, B. D., *Flora of Chamoli*, Botanical Survey of India, Howrah, 1985, vol. 2, p. 445.

SOUMAI KANT JOSHI*
SANJAY GAIROLA

Conservation of Biological Diversity,
G.B. Pant Institute of Himalayan
Environment and Development,
Kosi-Katarmal,
Almora 263 643, India

*For correspondence.
e-mail: som_kj@yahoo.co.in

Chloroplast transformation as a tool for prevention of gene flow from GM crops to weedy or wild relatives

There have been large-scale releases of transgenic crops, mostly with traits such as resistance to herbicides and insect pests. Globally about 78% of genetically

engineered crops are endowed with these two traits, and area under such transgenic crops is increasing progressively¹. While on one hand, area under transgenics is

increasing, on the other hand, fear of GM crops out-crossing with neighbouring crops is emerging as a scientifically proven reality². Bergelson *et al.*² showed