

Occurrence of *Helminthostachys zeylanica* (L.) Hooker in Surai forest range, Uttarakhand

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Genus *Helminthostachys* belongs to one of the most primitive living family Ophioglossaceae of the class Filicopsida and subclass Ophioglossiadae. *H. zeylanica* plants are green to purplish in colour, 30-43 cm high with thick, fleshy and creeping rhizome (Panigrahi and Dixit 1969d). Commonly it is known as kamraj or fruiting fern. They are known to occur in Sri Lanka, Malay Peninsula, China, Japan, Philippines, Solomon Islands, New Caledonia, New Guinea, Australia (Clausen 1938), and Nepal (Chandra et al. 2008). In India, they are reported from western forests of South India upto an elevation of 3000 ft and from Central India (Chandra et al. 2008). In the North-East India, records are from Bengal plains to Assam and Cachar and from the forests of Uttar Pradesh and Uttarakhand in North. It grows in open grassy swamps on the edges of the Terai forests and along river banks of Bahraich, Nishangara (Panigrahi & Dixit 1969d) Gorakhpur (Dixit & Tripathi 1956; Roy & Kumar 1966), Banbasa near Tanakpur (Fraser-Jenkins 2008a).

An individual of *H. zeylanica* was recorded while sampling the vegetation in the Surai range of Terai East Forest Division (TEFD) near Khatima, Uttarakhand. Vegetation sampling was carried out under the project entitled Terai arc tiger conservation landscape phase II. Data were collected for shrubs and saplings by laying nested plots of 5m radius at an interval of 250m along transects during April-May, 2007. Vegetation plots were also laid in Kilpura and Khatima ranges of TEFD. Out of 169 plots, *H. zeylanica* was found in only one plot along with *Grewia sapida* Roxb. ex DC., *Flemingia macrophylla* (Willd.) Merr. and saplings of *Syzygium paniculatum* Gaertn. Tree species in 10 m radius nested plot at the same location represented by *Eucalyptus* sp., *Terminalia bellirica* (Gaertn.) Roxb., *Syzygium cumini* (L.) Skeels and *S. paniculatum*. *Shorea robusta* Gaertn. f. occurs as dominated species in the Surai range, but there are plantations of *Tectona grandis* L.f. and *Eucalyptus* sp. also. *H. zeylanica* individual was found in blackish muddy soil and bearing clusters of sporangia on stem of fertile, spike like frond at the base of tripartite lamina, which



Figure 1: *Helminthostachys zeylanica* in Surai forest range, Terai East Forest Division, Uttarakhand. © Meraj Anwar

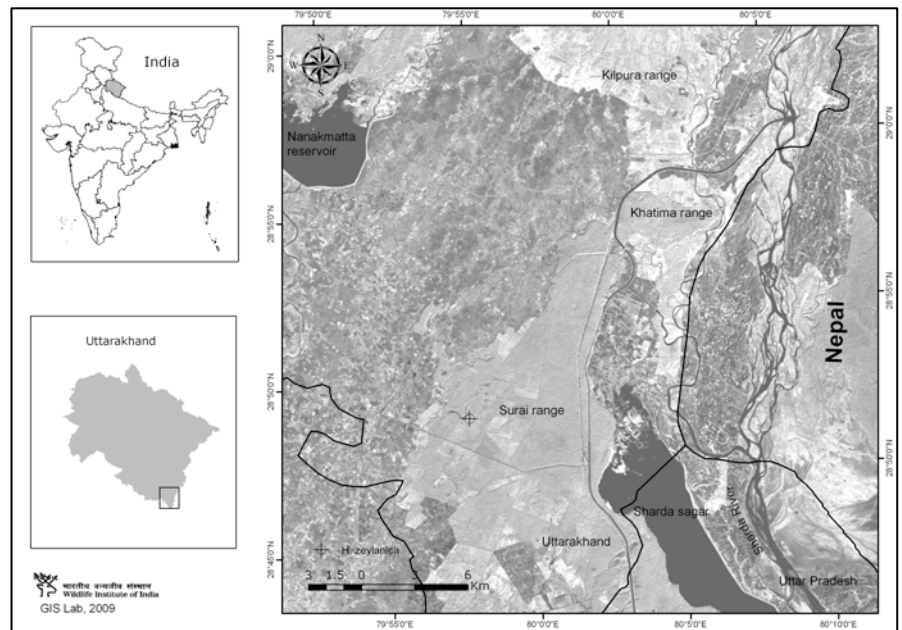


Figure 2: Location of *Helminthostachys zeylanica* in Surai forest range, Terai East Forest Division, Uttarakhand

were used as distinguishing feature for its identification in the field. Leaves were lanceolate with the margins entire or irregularly serrated. A photographic record (Fig. 1) was taken for confirmation of the species in the herbarium at Wildlife Institute of India, Dehradun. Its features were found in agreement as described by the Beddome (1866). Figure 2 shows location of the plot where

Helminthostachys zeylanica was found in Surai range, TEFD.

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Velvet fracture in Hog Deer (*Axis porcinus*)

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Most deer species have a pair of large and complex horn-like appendages, present only in males as true horns, called antlers. Each antler originates from an attachment point on the skull called a pedicle. In the initial stage, when the antler is growing, it is totally covered by a highly vascular skin structure termed as velvet. This outer cover supplies essential oxygen and nutrients to the antler. The antler becomes devoid of velvet cover, once it is matured / attained proper size. This matured antler without vascular structure is a dead bone structure which usually falls off after every mating season.

Prior to maturation, the velvet is highly vulnerable to injury due to fighting among inmates, leading to surgical management. This becomes common in zoological parks due to confinement of deers within enclosures, unlike free-range. This kind of surgical condition affecting the growing antler in a hog deer is very rarely reported in spite of common occurrence. The present report is about the surgical management of fractured and lacerated velvet in a hog deer (*Axis porcinus*).

Case History

A male hog deer aged about 2 years with body weight of 38 kg showed traumatic injury of the velvet, causing profuse serosanguinous discharge..

Clinical Examination

For carrying out a detailed clinical examination the animal was immobilized using Ketamine hydrochloride (5mg/kg) and Xylazine hydrochloride (2 mg/kg). Detailed examination revealed that the left velvet of growing antler had a fracture of about 2 cm from the top and the area was infested with maggots. Maggots were removed manually and turpentine gauze was applied. Blood sample was collected for routine clinical examination.

On close examination it was revealed that the fractured velvet was partially necrosed and hence it was decided to remove the fractured, necrosed part of the velvet.

Surgical Management

The animal was transferred to the sterile area. The site was prepared for aseptic surgery. Cornual nerve block was given using 2 ml of 2% lignocaine hydrochloride. The necrosed area of the velvet was removed by using a hand held hacksaw blade. After removal sterile gauze soaked in povidone iodine was bandaged around the site. The whole operative procedure was completed in 20 minutes. Inj. Yohimbine hydrochloride @ 1 mg/kg was given intravenously to reverse the anesthetic effect of Xylazine hydrochloride. After 30 minutes of sedation, the animal showed uneventful recovery with no side effects.

Postoperative Management

The animal was given injection Streptopenicillin 1 gm daily for 3 days and injection B-Complex with liver extract 1 ml intra muscularly on alternate days using blow pipe. The povidone iodine gauze bandage was removed on the 7th day post surgery. Topical application of hexachloro cyclohexane over the surgical wound was carried out for quick healing. The wound completely healed in 10 days.

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