

ADDITION TO THE FLORA OF RAJASTHAN FROM SOUTHERN ARAVALLIS

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Many authors like Bhandari (1990), Sharma (2002), Sharma and Tiagi (1979), Shetty & Pandey (1983), Shetty & Singh (1987, 1991, 1993), Singh (1983) and Prasad *et al.* (1996) have contributed to our knowledge about flora of Rajasthan. Recently, Sharma (2000, 2001, 2002 a,b,c), and Sharma *et al.* (2005) have recorded presence of many species from southern part of Rajasthan which are new to the state. This part of the state has eight sanctuaries namely, Mt. Abu, Phulwari, Kumbhalgarh, Todgarh-Raoli, Sitamata, Sajjangarh, Jaisamand and Bassi. Among these, most of new plants were recorded from three sanctuaries, namely, Mt. Abu, Phulwari and Sitamata (Sharma 2000, 2001, 2002 a,b,c; Sharma *et al.*, 2005). Continued surveys revealed several species which are new records for the area and the state. A brief description of them follows:

Family: Burseraceae

1. *Protium serratum* (Wallich ex Colebr.) Engl.,

This is an evergreen tree species, has imperipinnate leaves. Rachis of leaves brown tomentose; leaflets 5-7, ovate-oblong to elliptic-lanceolate, pubescent when young. Young branches are also pubescent. Panicles lax, axillary, up to 20cm long. Flowers bisexual.

According to Aima (2003), this species is present all over India. In Rajasthan, we recorded this species above 900m in submontane habitat from two localities, namely, Kamalnath Reserve Forest Block, Range Jhadol in Udaipur district and Mt. Abu Wildlife Sanctuary in Sirohi district.

A dense sacred grove on the banks of a perennial stream between Kamalnath temple and Shanideo temple consists of *Mangifera indica*, *Putranjiva roxburghii*, *Protium serratum*, *Ensete superbum*, *Ficus arnottiana*, *Syzygium heyneanum*, *Dalbergia volubilis*, *Hiptage benghalensis* etc. Many epichormic branches are present on the basal part of each tree of *P. serratum*. Similarly, this species was also seen occurring in patches along the way leading to Gomukh at Mt. Abu.

Mehta (1979) had studied the flora of Mount Abu area but he didn't record this species from there. Hence, it is an addition to Mt. Abu flora and Rajasthan flora as well.

Local status of species: Rare.

Family: Loranthaceae

2. *Dendrophthoe falcata* var. *coccinea* (Talb.) Sant.

Of the two varieties of *D. falcata*, namely, *D. falcata* var. *falcata* and *D. falcata* var. *coccinea*, the latter was recorded by us for the first time from Rajasthan. *D. falcata* var. *coccinea* is a red-flowered plant, very commonly seen on the stem and branches of *Boswellia serrata* as parasite all over the state. *D. falcata* var. *falcata*, the nominate variety, is similar to *coccinea* but with white flowers. The corolla tube of this variety is of white colour with green tip (Samvatsar, 1996). This variety is not seen on *Boswellia serrata*. It likes to grow on *Mangifera indica*, *Miliusa tomentosa*, *Tectona grandis*, *Albizia lebbeck* and *Cassia siamea*. The white-coloured variety is seen in the forests of southern Rajasthan only as given under:

Udaipur district: Daiya, Ambasa, Katawali Jer, Kawel, Lathuni, Ambavi, Bujha and Bhader Baosi (All sites are present in Phulwari Wildlife Sanctuary); Dungarpur district: Rata Pani, Ved, Vanjoi-ki-Nal, Ratanpur, Bichhiwara and Nagphani; Banswara district: Banswara city.

D. falcata var. *coccinea* and *D. falcata* var. *falcata* are sympatric in distribution in southern Rajasthan and adjoining forest of northern Gujarat. These both the varieties are present in many forest pockets of Banaskantha and Sabarkantha districts of Gujarat State like, Raygarh, Shyamlaji, Khokhra, Vijai Nagar, Polo Forest, Antarsumba, Khedbramha, Balaram, Ambaji Sloth Bear Sanctuary and Vartol. This is the teak forest zone of northern Gujarat.

Local status of species: Common

Family: Asteraceae

3. *Zinnia elegans* Jacq.

This plant has naturalized in many pockets of southern Aravallis. It is commonly seen during monsoon along road sides, rolling grasslands and degraded forest areas. It can be seen in Kamalnath, Madri, Pai, Peepalwas, Banki forest, Ubeshwar, Neemachmata, Thuria Magra, Sajjangarh and Kumbalgarh Wildlife Sanctuaries, Kailashpuri etc. The red flowered plants can be seen amidst grasses from August to October. A small patch of yellow-flowered plant is seen near "anicut viewpoint" in Sajjangarh Wildlife Sanctuary near tar road which leads to Sajjangarh palace.

Local status of species: Abundant

Family: Verbenaceae

4. *Clerodendrum serratum* (L.) Moon.

According to Shetty & Singh (1991), *C. serratum* is a cultivated species in Rajasthan. On July 14, 2006, while studying the biodiversity of Pratapgarh forest division in Chittorgarh district, *C. serratum* was seen growing wild in the ravines of Sivna river near Sanoti village. Locally this species is called *faredetu*. *C. serratum* is a common shrub over here and grows along with *Lantana camara*, *L. wightiana*, *Acacia nilotica*, *Phoenix sylvestris*, *Mimosa hamata*, *Dichrostachys cinerea*, etc.

Local status of species: Common. Restricted to ravines only.

Family: Liliaceae

5. *Chlorophytum borivillianum* Sant.,

Two species of Genus *Chlorophytum* are reported from Rajasthan, namely, *C. laxum* and *C. tuberosum* (Shetty & Singh, 1991). A third species, *C. borivillianum* was recorded by us in the forests of Udaipur district. This species is present in Phulwari Wildlife Sanctuary, Kamalnath, Jhameri, Nal Mokhi, Ogna, Ram Kunda, Ladan, Tinsara and other forests. The root-stock of *C. laxum* and *C. tuberosum* comprises of many long root fibers ending in tubers (Shetty & Singh, 1991) while *C. borivillianum* possesses finger-like sessile tubers.

Local status of species: Presently rare.

Aloe vera, a Liliaceae plant, commonly seen in the state, especially in well-drained and less rainfall zones. Red coloured flowers of this species appear on a scape during the winters, locally called "sinduri" which are used in making vegetable. The red colour form is quite common all over the state. A small patch of yellow-flowered form is seen inside Kumbalgarh fort in southern Aravallis

Family: Orchidaceae

6. *Peristylus constrictus* (Lindl.) Lindl.

This is a terrestrial, tuberous orchid, very close to the genus *Habenaria*. After first few monsoon showers, it appears here and there on the ground below shady trees in dense forests. Its flowering is seen during August and September. The plant with flower reaches a height of 55-65cm. Its leaves cluster 7-10cm above the ground and look like that of *Habenaria* species. Inflorescence about 20-25cm long spike, cylindrical, dense and many flowered. Petals white in colour. Lip white, side lobes narrow-lanceolate, falcate, with apical part bent upward. Spur globose in shape and darkish in colour. The description of plant fully matches with that of Bose *et al.* (1999).

P. constrictus commonly grows below *Madhuca indica* tree at Tinduri and Katawali Jer in Daiya Forest Block of Phulwari Wildlife Sanctuary. This species is also seen below *Madhuca indica* trees near Valmiki Ashram in Sitamata Wildlife Sanctuary.

Local status of species: Rare and patchy.

REFERENCES

- Aima, R.K. (2003). *Pictorial Guide to Plants*. Published and distributed by Ms. Rekha Watal, 51, Takle Road, FRI, Dehradun.
- Bhandari, M.M. (1990). *Flora of the Indian Desert*. MPS Repros, Jodhpur.
- Bose, T.K., S.K. Bhattacharjee, P. Das & U.C. Basak (1999). *Orchids of India*. Naya Prokash, Calcutta.
- Mehta, M.R. (1979). *Flora of Mount Abu*. Ph.D. Thesis. University of Jodhpur (Unpublished).
- Prasad, V.P., D. Mason, J.E. Marburger & C.R.A. Kumar (1996). *Illustrated Flora of Keoladeo National Park, Bharatpur, Rajasthan*. Bombay Natural History Society & Oxford University Press.
- Sharma, N. (2002). *The Flora of Rajasthan*. Avishkar Publishers, Distributors, Jaipur.
- Sharma, S. & B. Tiagi (1979). *Flora of Northeast Rajasthan*. Kalyani Publishers, New Delhi, Ludhiana.
- Sharma, S.K. (1996). Presence of Wild Plantain (*Ensete superbum*) in Rajasthan. *Journal of the Bombay Natural History Society* 93(2): 322-323.
- Sharma, S.K. (2000). On the occurrence of *Leea macrophylla* Roxb. (Vitaceae) in Rajasthan. *Journal of the Bombay Natural History Society* 97(3): 456-57.
- Sharma, S.K. (2001). New record of *Nervilia aragoana* in Rajasthan. *Journal of the Bombay Natural History Society* 98(3): 493.
- Sharma, S.K. (2002a). Presence of *Commiphora gileadense*, Family Burseraceae in Rajasthan. *Journal of the Bombay Natural History Society* (6): 152-53.
- Sharma, S.K. (2002b). Occurrence of *Habenaria longicorniculata* Grah. Family Orchidaceae in Mount Abu Wildlife Sanctuary, Rajasthan. *Journal of the Bombay Natural History Society* 99(1): 156.
- Sharma, S.K. (2002c). Occurrence of *Butea monosperma* var. *lutea* (Witt.) Maheshwari in Rajasthan. *Journal of the Bombay Natural History Society* 99(3): 547.
- Sharma, S.K., S.S. Katewa & C. Bhatnagar (2005). New Records of Plants From Rajasthan. *Zoos' Print Journal* 20(9): 1984-85.
- Shetty, B.V. & R.P. Pandey (1983). *Flora of Tonk district*. Botanical Survey of India, Calcutta.
- Shetty, B.V. & V. Singh (1987). *Flora of Rajasthan*, Vol. I. Botanical Survey of India, Calcutta.
- Shetty, B.V. & V. Singh (1991). *Flora of Rajasthan*, Vol. II Botanical Survey of India, Calcutta.
- Shetty, B.V. & V. Singh (1993). *Flora of Rajasthan*, Vol. III. Botanical Survey of India, Calcutta.
- Singh, V. (1983). *Flora of Banswara, Rajasthan*. Botanical Survey of India, Calcutta.
- Samvatsar, S. (1996). *The Flora of Western Tribal Madhya Pradesh (India)*. Scientific Publishers, Jodhpur.

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ABOMASAL PLASTIC BEZOAR IN A SAMBAR DEER *RUSA UNICOLOR*

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plus web supplement of 1 page

Abomasal trichobezoars in a Spotted Deer (Shakila & Devasena, 2000) and reticular phyto bezoars in a Barking Deer (Sharma & Chauhan, 1997) have been reported earlier. The present paper describes a case of abomasal plastic bezoar in a Sambar Deer.

Case history: An adult male Sambar Deer (*Rusa unicolor*) belonging to the State Museum and Zoo, Thrissur was found dull and emaciated. It was isolated from the herd and maintained under individual feeding with additional supplements of vitamins. It did not respond to treatment and after about a month it died and autopsy was carried out.

An almost round mass with irregular smooth surface was recovered from the pyloric end of the abomasum. The mass was with 18cm circumference and weighed 200g (Image 1^w). The mass when cut into two halves was found to be very hard and consisted mainly of coiled plastic threads, pieces of polythene carry bags and stone like deposits (Image 2^w).

Shakila and Devasena (2000) recovered abomasal trichobezoars from a Spotted Deer which was reared on a diet mostly consisting of tamarind leaves without concentrate. In the present report, the bezoar was recovered from a Sambar Deer which was maintained on green leaves, concentrates and water *ad libitum*. Since the mass consisted of plastic threads and pieces of polythene carry bags, it is obvious that the animal might have received and consumed these materials from visitors who put them in the enclosure or from the neighbourhood.

REFERENCES

- Shakila, S. & B. Devasena, B. (2000). A rare case of trichobezoar in a deer. *Indian Veterinary Journal* 77: 270-271.
- Sharma, S.C. & R.S. Chauhan (1997). Phyto bezoars in a Barking Deer (*Muntiacus muntjak*). *Indian Journal of Veterinary Pathology* 21: 168-169.

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^w See Image 1-2^w in the web supplement at www.zoosprint.org

