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Sida acuta Burm.f. (Malvaceae) as Indigenous brooms in Garo Hills of Meghalaya, India

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Abstract

Wild plants are used in a variety of ways by indigenous people in their day-to-day life, including for the purpose of obtaining food, fibre, traditional medicine, and the preparation of domestic items. Several dried plant components are used by people all around the globe to produce brooms, which is their primary means of subsistence. *Sida acuta* Burm.f., a plant belonging to the family Malvaceae, is not only an important ethnobotanical species but also used in preparing traditional broom. This plant is found in Meghalaya's Garo Hills, where it flourishes profusely. In addition to conduct an investigation on the traditional technique that the indigenous people of Garo Hills, Meghalaya use *Sida acuta* Burm.f. to make brooms.

Keywords: Broom, ethnobotany, Garo Hills, weeds.

Introduction

In various ways, wild plants are necessary for human life (Toledo et al., 2009). For the years, indigenous groups have depended on forest resources and forest products. The medicinal plants, fruits, vegetables and brooms from the protected areas, community forest and village forests utilized by the tribes are the non-timber forest products (NTFPs) (Sangma and Lalnundanga, 2019). In Indian homes, cleaning is a daily task and a fundamental life skill where broom plays a vital role for sweeping. Even though modern brooms are constructed of metal and plastic, old methods are still extensively used in some areas where bio–resources are easily accessible.

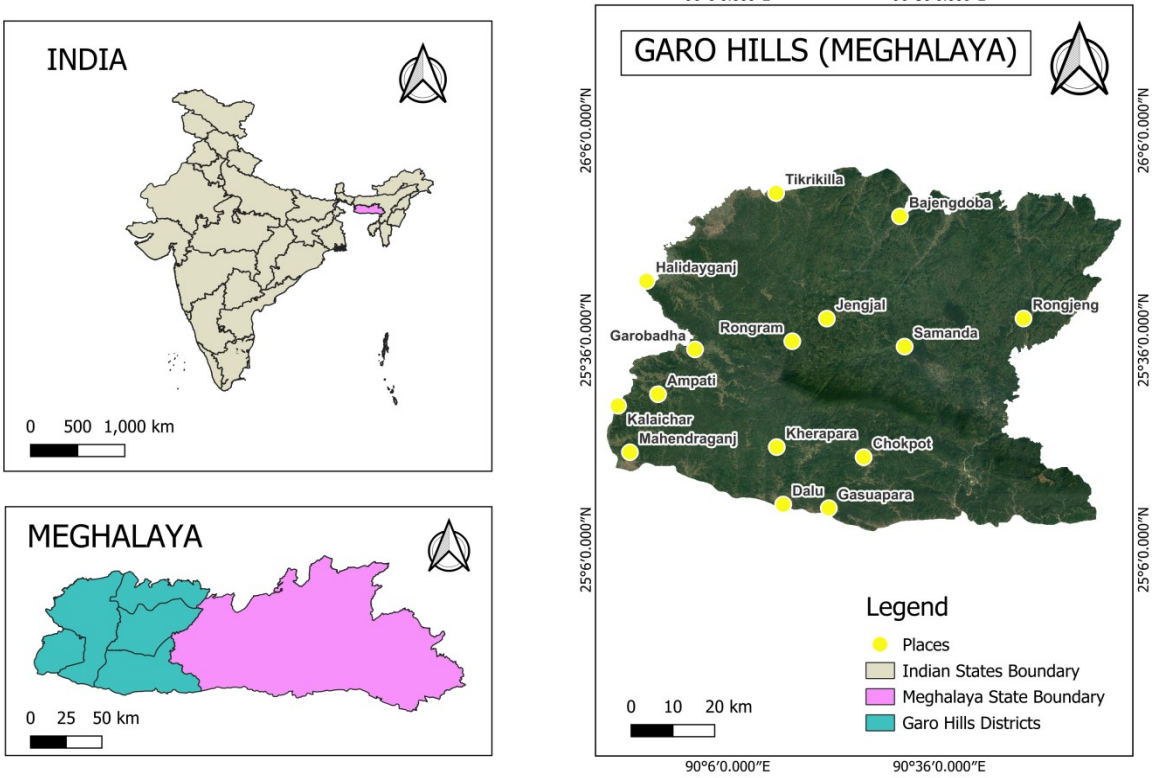
Garo hills (25.567938° N, 90.224464° E) are part of the Garo-Khasi range in Meghalaya state of India. It is home to unique flora and fauna. Garo community depends on plant resources for their

daily sustenance and livelihood needs. In India brooms are generally made of grasses, palms and bamboos. Broom making is an important source of income in India that provides rural employment to local communities (Rao and Suseela, 2002). During our survey we noticed that *Sida acuta* Burm.f. is widely used in making broom in this area.

Materials and Methods

Study area

The survey was carried out at Williamnagar (East Garo Hills), Resubelpara (North Garo Hills), Baghmara (South Garo Hills), Tura (West Garo Hills) and Ampati (South West Garo Hills), of Meghalaya state during the month of November, 2023.



Map 1: Location map of Garo Hills, Meghalaya

Methodology

The interviews were conducted with the help of a semi-structured questionnaire and in-person interviews with the local marketers, merchants, and shop owners in English language. The knowledge holders provided detailed information on the proper identity and uses of this species. Different data on the plant, i.e., local name, phenology, life forms, and parts used, were collected. Field photographs of the plant were taken. The collected plant samples were dissected under a microscope and identified with the help of authentic literature. The identity of the specimen was confined with the help of herbarium specimens available in CAL.

Results and Discussion

The species was identified as *Sida acuta* Burm.f., belonging to the family Malvaceae, which is common almost throughout India (Shittu, 2021). It is a drought-resistant tropical weed that grows on waste land, hedges, and thickets. This species is commonly known as Common Wireweed, Morning Mallow (English), *Kureta, Barela*

(Bengali), *Urusia/Bon methi* (Bangladesh), *Baraira* (Hindi), *Bala* (Sanskrit), *Bheemana kaddi* (Kannada), *Chikana* (Marathi), *Palambasi* (Tamil), *Muttavapulagamu* (Telegu), *Sunakhodika* (Oriya), *Uhal* (Manipuri), *Balu jhaar* (Nepali), *Khingkhih* (Mizo), and *Salpateng* (Garo).

General morphology

Erect undershrub, 1–3 m tall. Stem branched, with stellate hairs. Leaves variable, circular ovate or heart shaped, 2–6 x 3–5 cm, base cordate, margins crenate-serrate, apex acute; petiole 2–6 cm long, hairy; stipules free-lateral, linear, 2–5 mm long. Flower solitary, axillary, 4–5 cm; pedicel 0.3–1 cm. Sepals 5, gamosepalous, green. Petals 5, connate below and adnate to the base of the staminal colomn, yellow. Stamens monoadelphous, 5–7 mm, basifixed; anthers reniform, yellow. Ovary superior, many chambered; style branched, filliform; stigma capitate. Fruit ovoid-subglobular, flat topped, 1.5–2.5 cm, green when young, brownish black at maturity; mericarps 15-17, reniform, dorsally and ventrally hairy, laterally glabrous, stalked, shortly beaked, dehiscent apically. Seeds 2–3 per mericarp, reniform, 2–3 mm, sparsely stellate (Fig. 2).

Flowering & Fruiting: October–March.

Specimen examined: INDIA, Meghalaya, Khasia, s.die, *Griffith* 281 (CAL); INDIA, Tripura, Ananda Bazar, 01.02.1962, *D.B. Deb* 27373 (CAL); INDIA, Assam, 18.05.1957, *G. panigrahi* 9418 (CAL); INDIA, Assam, on the way from Guwahati to Barnuhat, 14.11.1956, *G. panigrahi* 4328 (CAL).

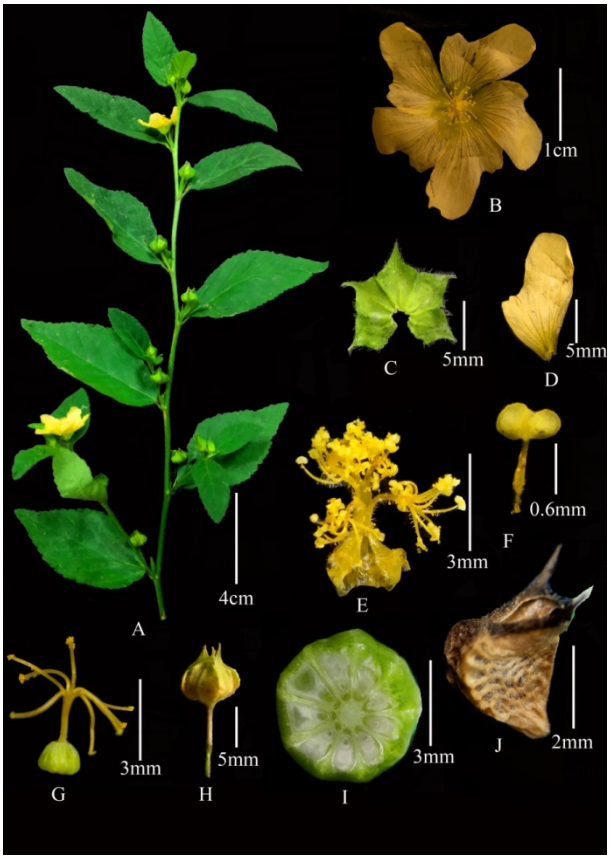


Fig. 1: *Sida acuta* Burm.f., A. A flowering and fruiting twig, B. Single flower, C. Calyx split open, D. Single petal, E. Monadelphous stamens, F. Single stamen, G. Gynoecium H. Single fruit, I. T.S. of young fruit, J. Seed.

Broom Preparation Methodology

In the Garo Hills, this weed is widespread. During the post-monsoon season, the Garo people harvest the 3–4 ft. long mature plants from the forest's natural fields. These plants are harvested and subsequently set aside to dry for 45–60 days in the direct sun. After proper drying of these plants, they take 10–15 plants to tie with rope to prepare a broom.These brooms are ready to be used at home and sold at the market.Some haats or markets of Garo Hills where the brooms are sold are given in Table. 1.

Table. 1: Local haats or markets of Garo Hills, Meghalaya

Name of Districts	Head Quarter	Name of the Haats	Latitude/ Longitude
East Garo Hills	Williamnagar	Samanda	25°35'05"N 90°31'05"E
		Rongjeng	25°39'06"N 90°47'57"E
North Garo Hills	Resubelpara	Bajengdoba	25°53'43"N 90°30'25"E
South Garo Hills	Baghmara	Chokpot	25°19'15"N 90°25'16"E
		Gasuapara	25°11'58"N 90°20'20"E
West Garo Hills	Tura	Dalu	25°12'29"N 90°13'51"E
		Kherapara	25°20'42"N 90°12'57"E
		Tikrikilla	25°57'03"N 90°12'51"E
		Rongram	25°35'51"N 90°15'09"E
		Halidayganj	25°44'28"N 89°54'29"E
		Jengjal	25°39'05"N 90°20'03"E
South West Garo Hills	Ampati	Ampati	25°28'16"N 89°56'06"E
		Mahendra-ganj	25°19'58"N 89°52'07"E
		Garobadha	25°34'41"N 90°01'21"E
		Kalaichar	25°26'37"N 89°50'26"E

The Rongjeng market in Wiliamnagar is one of the largest markets in the Garo Hills of Meghalaya, with most Garo tribes selling forest products including *Sida acuta* brooms, tiny seats, bamboo cane dustbins, and so on. The current price range of this broomsare15–25 INR. Some small traders buy these brooms from local markets and resell in their local areas on 5–10 rupees profit margin. The transportation cost also vary in different markets. These forest products generate revenue for the Garo Hills tribes.

Fig 2: *Sida acuta* Burm.f., A. Habitat B. Close-up of flower & fruit C. Mature plants D. Brooms E. Local indigenous people using broom to sweep backyard.

Conclusion

The Garo tribe in Meghalaya has a long tradition of making soft brooms from *Sida acuta* Burm.f. for sweeping. The lack of information transfer often leads to younger generations forgetting the centuries-old traditional method of broom creation. These small-scale merchants, the costs of transportation, and the time of year are the factors that contribute to the differences in selling and price fluctuations that occur throughout the markets. The comparatively small broom becomes a very important product, and the indigenous peoples of the Garo Hills have a significant cultural heritage that places a significant emphasis on the knowledge of how to utilise this species and the manufacturing process.

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Conflict of interest Statement

Authors declare no conflict of interest.

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