

**INDIGENOUS KNOWLEDGE OF HERBAL MEDICINES IN BANGLADESH.
3. TREATMENT OF SKIN DISEASES BY TRIBAL COMMUNITIES
OF THE HILL TRACTS DISTRICTS**

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Key words: Indigenous knowledge, Herbal medicines, Skin diseases, Tribes, Bangladesh

Abstract

Indigenous knowledge of herbal medicines for skin diseases like boils, eczema, scabies, septic abscess, itching and skin allergy, burns, chicken pox, warts and leucoderma, fungal and bacterial infections, including healing cuts and wounds has been documented by randomly interviewing *Chakma, Marma* and *Tanchunga* tribes of the Hill Tracts districts of Bangladesh since 1995. The plant parts of 60 species belonging to 40 families were known to be used. The plant specimens were collected, identified and preserved at the Herbarium of Chittagong University. An enumeration of these plants is presented along with their tribal names, categories of skin diseases, plant parts with preparation and route of administration.

Introduction

The Hill Tracts of Bangladesh includes three districts, *viz.*, Bandarban, Khagrachari and Rangamati, and are located in the south east corner of the country with Kaptai Watershed area between 21°25' and 23°45' N and between 91°45' and 92°52' E.

A large number of tribal populations under 14 major tribes, *viz.*, *Chakma, Marma, Murong, Tanchunga, Tripura, Chack, Bhome, Pangkhao, Kheyang, Rheyang, Rakhain, Lushai, Kuki* and *Khumi* live as forest inhabitants in the remote areas throughout the Hill Tracts where there is no or poor introduction of education and modern medical systems of health care (Rahman *et al.* 2003a). A vast knowledge of use of plants as sources of medicine was known to be available among elderly men and women, specially among traditional herbalists who are known as *baiddaya*. This valuable indigenous knowledge is disappearing day by day due to the development of modern health care systems in the hilly areas (Rahman *et al.* 2003b). The documentation and publications on the indigenous knowledge or the use of plants by tribal people are meagre (Alam 1992, Rahman 1997, 1999, 2007, Rahman and Uddin 1998, Rahman *et al.* 1998, 2003a, 2003b, 2007).

Preparation of a complete inventory of this indigenous knowledge of herbal medicine are in progress under the Biodiversity Link Project between Chittagong (Bangladesh) and Aberdeen (UK) Universities since 1995. The first report of the series was made on the herbal treatment of *Jaundice* (Rahman *et al.* 2003a) and the second report was on the cure of *diarrhoea, dysentery, indigestion* and *stomachache* (Rahman *et al.* 2003b). The present communication, the third of the series, deals with the indigenous knowledge of treating skin diseases among three major tribes, *Chakma, Marma* and *Tanchunga* of the Hill Tracts districts of Bangladesh.

Materials and Methods

Documentation of the knowledge of herbal practices for the cure of skin diseases including healing cuts and wounds of skin, was made under Biodiversity Link Project among three major tribes, *Chakma, Marma* and *Tanchunga* of Bandarban, Rangamati and Khagrachari districts, Bangladesh. Information/data were recorded by taking random interviews of the herbalists, elderly men and women. The vernacular names, methods of preparation and route of administration were

recorded through repeated interviews of practitioners. The source and location of plant material were traced out and recognized with the help of informers. The fertile plant samples were collected, photographed and preserved at the Herbarium of Chittagong University (HCU) as voucher specimens. The plant specimens were critically examined with the help Long-arm Stereo Microscope (LSM) and identified by comparing with the identified specimens of Bangladesh National Herbarium (DACB), and HCU and Bangladesh Forest Research Institute herbarium (BFRIH). The *Flora of Bangladesh* and recently published other local *Floras* including Ahmed *et al.* (2009) were also consulted for current nomenclature.

Medicinal and ethnobotanical literature such as, Chopra (1958), Chopra *et al.* (1956), Dastur (1977), Hassan and Huq (1993), Hassan and Khan (1986, 1996), Jain (1991), Ghani (2002), Khan *et al.*, (2002), Mia and Huq (1988), Rahman and Uddin (1998), Rahman (1999), Yusuf *et al.* (1994, 2009) were consulted for pharmacological properties and ethnobotanical reports of recorded species. An enumeration of these plants is prepared with the documented information.

Results and Discussions

The ethnobotanical investigation on skin diseases among *Chakma*, *Marma* and *Tanchunga* tribes revealed that mostly elderly men and women are commonly suffering from eczema, scabies, septic abscess, fungal/bacterial infection, boils, wounds and skin allergy. More than 70% of them receive herbal treatments from either *Baiddaya* or elderly women. It was revealed that mostly *Chakma* tribe of Rangamati district have their vast knowledge of herbal treatments compared to other tribes, and that the herbal treatments still remain as an integral part of the health care systems. The documented data also revealed that the bacterial and fungal infections, eczema and skin allergy are more common and herbal medicine is usually the means of treatment.

Screening of the voucher specimens resulted in the identification of 60 plant species of which 25 are used for the treatment of boils, 10 for allergy and itching, 9 for fungal/bacterial infections, 8 for healing cuts and wounds, 6 for each of eczema and scabies, 5 for septic abscess, 1 for each of wart, acne, leucoderma, chicken pox and measles. Twelve species are found to have been using for the treatment of more than one category, and *Cardiospermum helicacabum* L. is remarkably used by almost all tribes for the treatment of chicken pox. The medicinal literature, so far reviewed, revealed that none of these recorded species has its pharmacological properties against skin ailments. However, the plants used for the treatment of several categories of skin diseases are enumerated in Table 1.

Table 1. Enumeration of plants used for the treatment of skin diseases by tribes. (Abbreviations: R, Rangamati; K, Khagrachari and B, Bandarban; C, Chakma; M, Marma and T, Tanchunga).

Botanical name, Family/ Voucher number and area of collection	Tribal names of plants	Disease category	Plant parts	Preparation and route of administration
1. <i>Abelmoschus moschatus</i> Medik. Malvaceae/ L2961: K; Fig. 16	} <i>Konigaas</i> (C)	Wounds	leaf	Fresh leaves of both plants crushed, made into paste and applied
2. <i>Thladiantha cordifolia</i> (Blume) Cogn. Cucurbitaceae/ L3148: K				
3. <i>Achyranthes aspera</i> L. Amaranthaceae/ L1820: K; Fig. 20	<i>Upolengra</i> , <i>Ublengra</i> (C)	Boils	leaf	Fresh leaf-paste applied to the affected areas
4. <i>Allophylus triphyllus</i> (Burm. f.) Merr. Sapindaceae/ L3421: R	} <i>Dhendrema</i> , <i>Jhandhara</i> (C)	Scabies	leaf	Infusion of leaves of both plants used in washing infected areas twice daily for 3-4 days
5. <i>Azadirachta indica</i> A. Juss. Meliaceae/ L4046a: R				

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6. <i>Amomum dealbatum</i> Roxb. Zingiberaceae/ L4493: R; Fig. 22	<i>Palachengay</i> (C)	Septic abscess	rhizo- me	Rhizome extract applied to affected areas
7. <i>Ardisia solanacea</i> Roxb. Myrsinaceae/L3457:R ; Fig. 9	<i>Barochulliya</i> (C)	Boils	leaf	Fresh leaf-paste applied externally
8. <i>Asparagus racemosus</i> L. Liliaceae/ L4493c:: R	<i>Sati-sara</i> (C)	Septic abscess	leaf, root	Leaf-/root-paste applied 2- 3 times
9. <i>Bidens sulphurea</i> (Cav.) Sch. Bip. Asteraceae/ L4000: R	<i>Shumo phul</i> (C)	Acne	flower, leaf	Flower and leaf paste and applied to affected areas
10. <i>Boehmeria nivea</i> Urticaceae/ L4493b: R	<i>Hurumbuto- pada</i> (C)	Wound, septic abscess	leaf	Leaf-paste applied twice a day
11. <i>Bridelia retusa</i> (L.) Spreng Euphorbiaceae/ L4481: R	<i>Shukujja gaas</i> (C)	Skin infection	leaf	Leaf-paste applied to affected areas
12. <i>Bridelia stipularis</i> (L.) Blume Euphorbiaceae/ L3143: K; Fig. 13	<i>Bangari bhanga gaas</i> (C)	Allergy	leaf	Leaf extract given to drink 2-3 times a day
13. <i>Byttneria pilosa</i> Roxb. Sterculiaceae/ L2962: K; Fig. 10	<i>Sola ludi, Chalaludi</i> (C)	Boils, Scabies	stem, leaf	Stem-paste applied to boils; infusion of leaves used in baths for scabies
14. <i>Caesalpinia bonduc</i> (L.) Roxb. Caesalpinaceae/ 3450: R	<i>Kumujja ludi</i> (C)	Skin infection	leaf	Fresh tender leaf-paste applied to affected areas
15. <i>Cardiospermum helicacabum</i> L. Sapindaceae/ L1547: R; Fig. 7	<i>Ketha boitta shag, Kedabok shag</i> (C)	Chicken pox	whole plant	Hot water extract of whole plant given to drink 2-3 times a day
16. <i>Centella asiatica</i> L. Apiaceae/ L3048b: R	<i>Mingooni</i> (C)	Eczema	leaf	Leaf-paste applied to the twice daily
17. <i>Costus speciosus</i> (Koenig) Sm. Costaceae/ L1553: R; Fig. 4	<i>Ketoki, Kedogi Ma laksmi ma</i> (C)	Boils, itch	leaf	Fresh leaf-paste applied to affected areas 2-3 times
18. <i>Crinum asiaticum</i> L. Fig. 31 Amaryllidaceae/ L663: R, Fig. 27	<i>Koba rashun</i> (C)	Boils	leaf	Fresh root-paste applied to the boils until it gets dry
19. <i>Crotalaria verrucosa</i> L. Papilionaceae/ L1314: K	<i>Kuduk jhunjhuni</i> (C); <i>Easygaas</i> (T)	Allergy, Infection, wounds	leaf	Leaf extract applied to the affected parts
20. <i>Cuscuta reflexa</i> Roxb. Cuscutaceae/ L5314: B	<i>Pargasa</i> (C) <i>Zigro</i> (M)	Eczema	whole plant	Paste of plant applied to affected areas until recovery
21. <i>Cyclea barbata</i> Miers. Menispermaceae/ L1737: K	<i>Patalpur</i> (C), <i>Wambokhor</i> (M)	Allergy, itching	leaf	Leaf extract given to children for drink twice daily
22. <i>Cymbidium aloifolium</i> (L.) Sw. Orchidaceae/L.: R; Fig. 21	<i>Suri mach</i> (T)	Boils	leaf	Leaf-paste applied to boils twice daily
23. <i>Dendrophthoe falcata</i> (L.f.) Etting. Loranthaceae/ L. s.n.: R	<i>Sat-jat parsallo</i> (C)	Itching, allergy	root	Root extract applied 2-3 times a day

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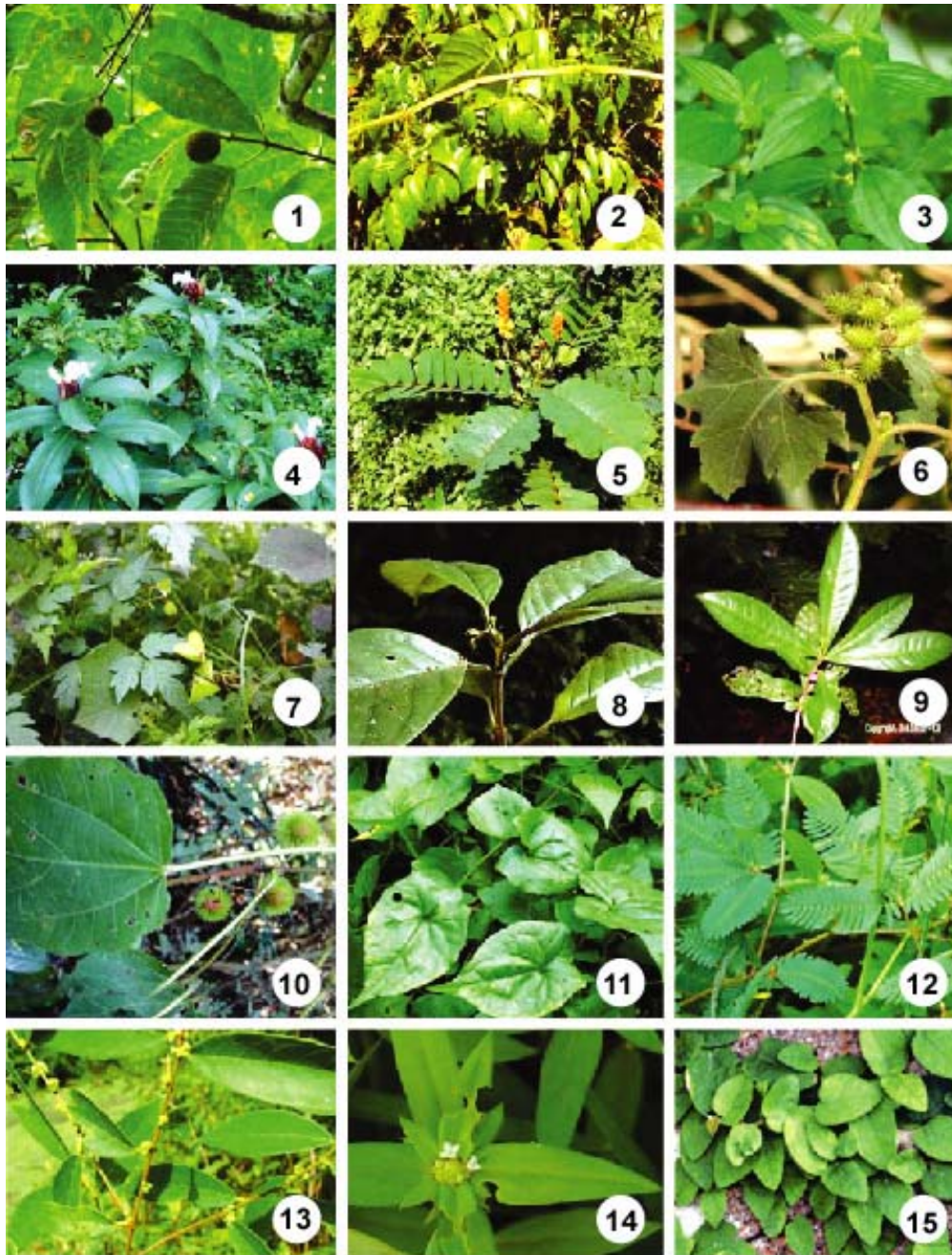
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24. <i>Dracaena spicata</i> Roxb. Agavaceae/ L4470: B	<i>Kadorateng</i> (C)	Measles	leaf	Pills prepared from leaf-paste taken with warm water twice daily
25. <i>Eclipta alba</i> L. Asteraceae/ L1741: R; Fig. 23	<i>Kalashona</i> (C)	Boils	leaf	Fresh leaf-paste applied twice daily at night
26. <i>Embllica officinalis</i> Gaertn. Euphorbiaceae/cult.	<i>Kada mola</i> (M)	Skin infection	fruits	Young fruits crushed, made into paste and applied twice daily
27. <i>Eupatorium odoratum</i> L. Asteraceae/ L1741a: R	<i>Deshmara hargaas</i> (C)	Boils, wounds	leaf	Fresh leaf-paste applied to boils twice daily at night
28. <i>Ficus mollis</i> Vahl. Moraceae/ L4003: R; Fig. 15	<i>Chongralace</i> (C)	Boils	leaf	Leaf-paste applied to affected areas
29. <i>Holarrhena antidysenterica</i> Wall. Apocynaceae/ L2813: R; Fig. 26	<i>Kuruk gaas</i> (C), <i>Kuruk</i> (T)	Boils, itching	bark	Bark extract applied twice daily
30. <i>Hyptis suaveolens</i> (L.) Poit. Lamiaceae/ L4470: R; Fig. 17	<i>Jangulijungol</i> , <i>Chunga dana</i> (C)	Boils, itching	roots	Root-paste applied over boils and root extract applied to cure itching
31. <i>Impatiens flavida</i> Colebr. Balsaminaceae/ L674b: R	<i>Haturi nola kher</i> (C)	Boils	leaf	Leaf-paste applied 2-3 times
32. <i>Leea indica</i> L. Leeaceae/ L4470: R	<i>Hashkurobak-sara gaas</i> (T)	Septic abscess	leaf	Fresh leaf-paste applied twice daily
33. <i>Limnophila repens</i> Benth. Scrophulariaceae/ L5428a: R	} <i>Maittya anos</i> (C)	Leucoderma	leaf	Both plants parts are made into paste and applied.
34. <i>Mimosa pudica</i> L. Mimosaceae/ L4024: R			roots	
35. <i>Litsea glutinosa</i> (Lour.) Robin.; Lauraceae; L5191: B	} <i>Moner moton gaas</i> (C), <i>Sukujja gaas</i> (T)	Healing cuts and wounds	leaf	Fresh leaf-paste applied to affected areas
36. <i>Macaranga peltata</i> (Roxb.) Muell.- Arg. Euphorbiaceae/ L4027: R; Fig. 24			<i>Nainna bichi gaas</i> (C)	
37. <i>Maesa acuminata</i> A. DC. Myrsinaceae/ L2461: R	<i>Leddushibang</i> , <i>Muruli</i> (C)	Boils	leaf	Leaf-paste applied to affected areas
38. <i>Merremia vitifolia</i> (Burm.f.) Hallier f. Convolvulaceae/2795: R	<i>Babhoi toring</i> (C)	Eczema	leaf	Paste prepared from fresh leaves applied 3-4 times daily
39. <i>Mikania micrantha</i> Kunth Asteraceae/ L2342: R; Fig. 11	<i>Asham ludi</i> (C)	Healing wounds	leaf	Leaf-paste applied to the affected areas
40. <i>Mimosa intisia</i> L. Fig. 12 Mimosaceae/ L3453: R	} <i>Shada lajurikher</i> (C)	Boils	root	Paste prepared from roots of both plants applied to boils
41. <i>Smilax zeylanica</i> L. Smilacaceae/ L3453a: R; Fig. 29			<i>Kankoku-maicha</i> (C)	
42. <i>Mussaenda roxburghii</i> Hook.f. Rubiaceae/ L1535: R; Fig. 19	<i>Ranirtak</i> , <i>Sheodima</i> , <i>Patto mormoijja</i>	Boils	leaf	Fresh leaf-paste applied to boils
43. <i>Neonauclea sessilifolia</i> (Roxb.) Merr. Rubiaceae/ L1546: R; Fig. 1	<i>Kam gaas</i> (C)	Skin Infection	leaf	Fresh leaf-paste applied twice daily

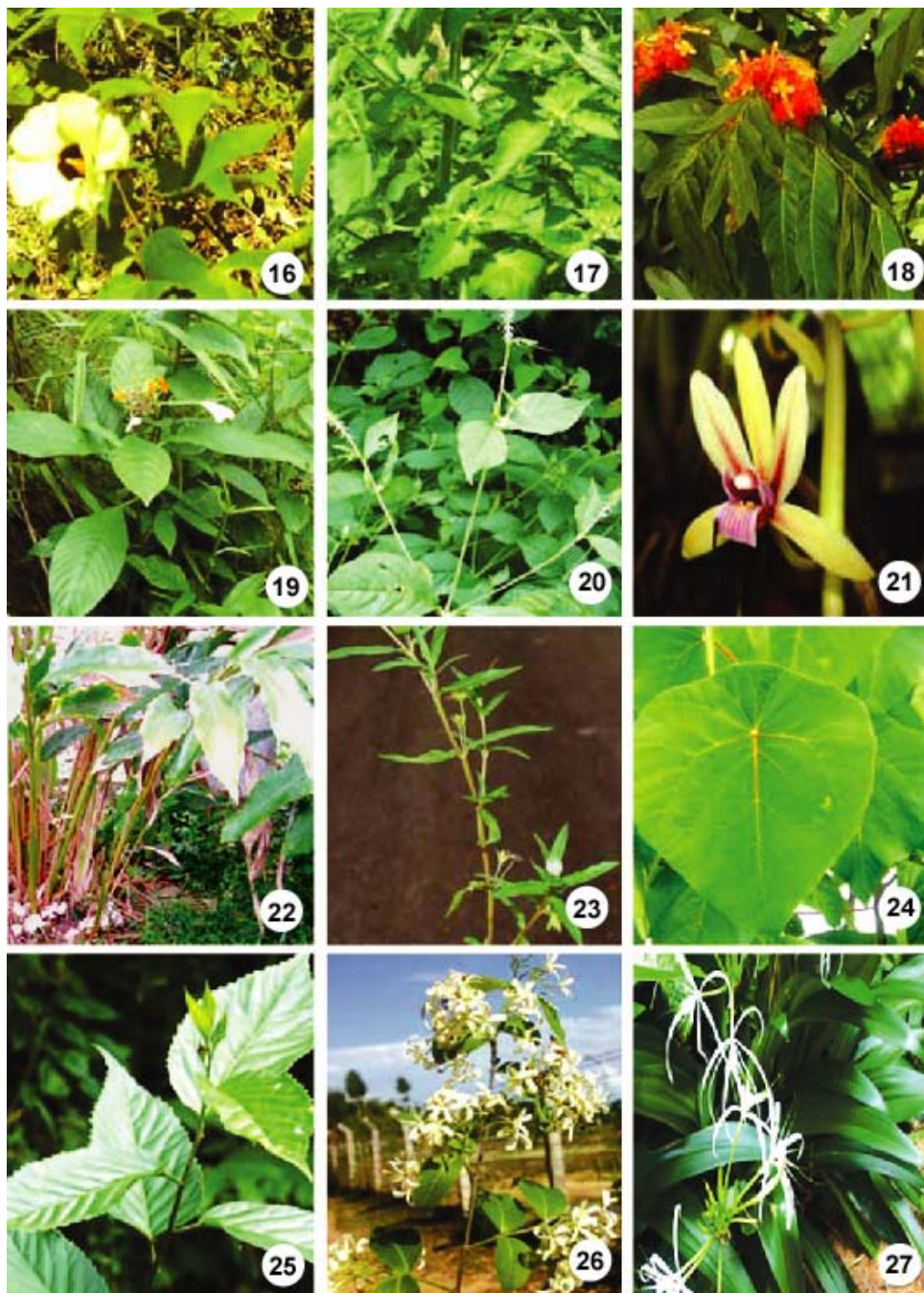
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44. <i>Peristylus constrictus</i> (Lindl.) Lindl. Orchidaceae/L5180: R	<i>Bhuinora</i> (T)	Boils	root	Root-paste applied to boils 2-3 times a day
45. <i>Plumbago indica</i> L. Plumbaginaceae/ L5086: R	<i>Aguni tita</i> (C)	Scabies	leaf	Leaf-paste applied to affected areas
46. <i>Pouzolzia sanguinea</i> (Blume) Merr Urticaceae/ L1712a: K; Fig. 3	<i>Mogjangaillya shak</i> (T)	Skin infection	leaf	Leaf extract applied for several days
47. <i>Premna esculenta</i> Roxb. Verbenaceae/ L5341: R; Fig. 25	<i>Silazra, Lelom pada</i> (C) <i>Laham shak</i> (M)	Fungal/ Bacterial infections		Leaf-paste applied to affected areas
48. <i>Saraca asoca</i> (Roxb.) Wild. Caesalpiniaceae/ L.2801a: R; Fig. 18	<i>Moma gaas, Paillang moma, Kalamagma</i> (C)	Itching	Leaf	Leaf extract applied 2-3 times a day
49. <i>Sarcochlamys pulchirrima</i> Gaud. Urticaceae/ L1174: R	<i>Jangaillya shak</i> (C)	Boils, blisters Eye-itching	Leaf	Leaf-paste applied to affected areas; fresh leaf extract applied as eye drop
50. <i>Saurauia roxburghii</i> Wall. Actinidiaceae/ L3611: R	<i>Bhola kadam</i> (C)	Boils	Leaf	Infusion of leaves used in baths, specially for children
51. <i>Senna alata</i> (L.) Roxb. Caesalpiniaceae/L3048a: R; Fig. 5	<i>Delong pata</i> (C) <i>puishibang</i> (M)	Eczema	Leaf	Leaf-paste applied twice daily
52. <i>Spermacoce stricta</i> L.f. Rubiaceae/kher; L4489: R; Fig.14	<i>Bishmijal, Mijlick</i>	Scabies	Leaf	Leaf-paste is applied to affected areas
53. <i>Tarenna campaniflora</i> (Hook.f.) N.P. Balakr. Rubiaceae/ L3126: R; Fig. 8	<i>Rebekphul gaas, Harulodi, Barochallya</i> (C)	a) eczema b) scabies c) warts	Leaf	a) Leaf extract applied externally b) infusion of leaves used in baths c) leaf-paste applied to affected areas
54. <i>Trema orientalis</i> (L.) Bl. Ulmaceae/ L1204:K	<i>Sugarar amila</i> (T)	Septic abscess	Stem	Stem-paste applied twice daily
55. <i>Trichosanthes anguina</i> L. Cucurbitaceae/ L1737: K	<i>Horinkan shak, Faranga ludi</i> (C)	Boils	Leaf	Fresh leaf-paste applied to affected areas
56. <i>Uraria prunellaefolia</i> Grah. Papilionaceae/ L662a: R	<i>Belio lengur</i> (C)	Boils	Leaf	Leaf-paste applied over boils 2-3 times at night
57. <i>Vernonia patula</i> (Dryand) Merr. Asteraceae/L4519: R	<i>Daduppon</i> (C)	Wounds, Skin burn	Whole plant	Plant extract applied twice daily
58. <i>Vitis pentagona</i> (Roxb.) Lawson Vitaceae/ L1713a: K; Fig. 2	<i>Hajjangludi</i> (C)	Eczema, infection	Leaf	Leaf extract applied to affected areas
59. <i>Xanthium indicum</i> J. Koenig; Asteraceae/ L3450a: R; Fig. 6	<i>Bengal lengera</i> (C)	Infection Of fingers	Leaf	Leaf-paste applied to affected areas
60. <i>Ziziphus oenoplia</i> Mill. Rhamnaceae/1938: R	<i>Bon boroi</i> (T)	Boils, itching	Leaf	Paste prepared from fresh tender leaves applied twice daily



Figs 1-15. Habit of plants: 1. *Neonauclea sessilifolia* (Roxb.) Merr. 2. *Vitis pentagona* (Roxb.) Lawson. 3. *Pouzolzia sanguinea* (Blume) Merr. 4. *Costus speciosus* Miers. 5. *Senna alata* (L.) Roxb. 6. *Xanthium indicum* J. Koenig. 7. *Cardiospermum helicacabum* L. 8. *Tarenna campaniflora* (Hook. f.) Balakr. 9. *Ardisia solanacea* Roxb. 10. *Byttneria pilosa* Roxb. 11. *Mikania micrantha* Kunth. 12. *Mimosa pudica* L. 13. *Bridelia stipularis* (L.) Blume. 14. *Spermacoce stricta* L. f. 15. *Ficus mollis* Vahl.



Figs 16-27. Habit of plants: 16. *Abelmoschus moschatus* Medik. 17. *Hyptis suaveolens* (L.) Poit. 18. *Saraca asoca* (Roxb.) Wild. 19. *Mussaenda roxburghii* Hook. f. 20. *Achyranthes aspera* L. 21. *Cymbidium aloifolium* (L.) Sw. 22. *Amomum dealbatum* Roxb. 23. *Eclipta alba* L. 24. *Macaranga peltata* (Roxb.) Merr. 25. *Premna esculenta* Roxb. 26. *Holarrhena antidysenterica* Wall. 27. *Crinum asiaticum* L.

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(Manuscript received on 16 May, 2010; revised on 24 November, 2010)