

## THREATENED HERBAL HERITAGE OF TRIBAL LAND JHARKHAND

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### Introduction

There is now a general and gradual realisation of a stark reality that several thousand species of plants and animals are threatened; many are fast vanishing and a few are already extinct. The real threat has now developed is the potential danger from increasing human population during the last several decades due to development in various spheres. Species of flora are dying out also due to certain natural phenomenon such as land upheavals, volcanic eruptions, glaciation, protracted periods of drought or even rain, forest fires and change in the habitat. Further, the general awakening to resort to natural herbs for the treatment of human/animal ailments is resulting in unscrupulous exploitation of these herbs. These influences are so complex that it is not an overstatement to refer to them as being rooted in the contemporary human condition (Soule, 1991).

### Floristic studies

A knowledge of flora is essential for evaluation of threat and rarity. Hence, the Botanical Survey of India organised a symposium on 'Floristic Studies in India' in 1977. Subsequently, several fascicles on Flora of India stimulated floristic and taxonomic studies in our country. Consequently, provisional lists of endangered species were prepared for the following regions :

- (i) North-Western Himalayas
- (ii) Western and Central India
- (iii) Eastern India
- (iv) Peninsular India
- (v) Andaman and Nicobar Islands
- (vi) Special groups
- (vii) Cryptogams

Lists of species have been prepared for U.P. including Garhwal (now Uttaranchal), North-West Himalaya, Gujarat, Rajasthan, Madhya Pradesh, Orissa, West Bengal, Meghalaya, Arunachal Pradesh, Sikkim, Assam, Tamil Nadu, Andhra Pradesh (Tirupati Hills), Maharashtra and Andaman & Nicobar Islands; but, no such list has been prepared for flora of Bihar/Jharkhand. To be specific, Medicinal Plants have not been looked in totality in respect of Jharkhand State except by Prasad (1988). Also a list of 315 medicinal plants of Santal Parganas (Jharkhand) have been presented in his thesis by Kaushal Kumar (1997) but only a passing reference about threatened status and conservation. There was an effort to list the herbs of undivided Bihar by Singh (1955). Another attempt was after four decades by Unnikrishnan (1995).

An attempt is being made here to discuss the threatened status of medicinal herbs of Jharkhand relying on the author's past experiences and exposure in various local workshops and seminars.

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### Threatened herbal wealth of Jharkhand

The International Union for Conservation of Nature (IUCN) has categorised conservation-prone plants as below :

- (i) Threatened plants
- (ii) Out of danger
- (iii) Indeterminate
- (iv) Endemic
- (v) Extinct.

The above classification may also be applied to medicinal plants as discussed herein after in respect of herbs of Jharkhand.

Threatened medicinal plants may be put into two categories :

- E : Endangered  
V : Vulnerable

#### Endangered

Included in this list are taxa whose numbers have been reduced to critical level or whose habitats have become drastically changed as much as they are in danger of extinction. Some of them are as below :

- (1) Apocynaceae :
  - (a) *Rauvolfia serpentina*, Benth ex Kurz in Singhbhum forests near Kumdih F.R.H.; Rajmahal Hills near Taljhari forests (plant is locally known as 'Chandogad').
  - (b) *R. tetraphylla* Linn. was successfully introduced in Nawada forest near Bishnugarh on way to Konar dam, (Hazaribagh) by Forest Research Division.

- (2) Magnoliaceae :

*Michelia doltsopa* Buch-Ham. whose fruits and seeds are prized by the local tribals for healing cracks in feet in Karampada and Tholkobad areas (Singhbhum).

- (3) Asclepiadaceae :

*Sarcostemma acidum* (Roxb) Voight. (Somlata, Soma) is disappearing from its habitat in Horhap forest (Ranchi).

- (4) Gnetaceae :

*Gnetum scandens* Roxb. in Saranda (Singhbhum) needs special protection.

#### Vulnerable

Species likely to slide into endangered category in near future if unhealthy factors continue operating ; that is, their population is decreasing due to over-exploitation, extensive destruction of habitat or other environmental disturbance. A few examples are given here under :

- (1) Gentianaceae :

*Canscora decussata* Roem & Sch. (Sankhpuspi)

- (2) Acanthaceae :

*Andrographis paniculata* Nees. This plant is under serious threat throughout its range of occurrence as last named species.

- (3) Bombacaceae :

*Salmaal malaberica* Schott & Endl. Matchstick factories are languishing because of non-availability of this species.

- (4) Liliaceae :

(a) *Chlorophytum arundnaceum* Baker. Pretty 'Safed musli' having white star like flowers is becoming rare in the Sal forests of Jharkhand.

(b) *Gloriosa superba* L. Kalihari (Langalika) which used

commonly available in Hazaribagh National Park area is being pushed into endangered category.

#### *Out of danger :*

New researches are being carried out at national and international level to find out herbs towards the cure of several ailments esp. Malaria, Typhoid, Malignancy, HIV, AIDS, etc., besides common cough and cold due to allergy. Consequently, no medicinal herb shall fall in this category because there is a positive inclination to switch over to natural remedies from allopathic remedies and there is negligible effort for conservation and/or to supplement the existing resources by plantation.

#### *Indeterminate*

Taxa that are suspected of belonging to any one of the above categories but for which insufficient information is currently available, e.g. *Clitoria terneata* L. (Aparajita), *Tinospora cordifolia* Miers (Amrita, Gurich) etc.

#### *Endemic*

Taxa which have regional occurrences in specific areas shall fall in this category such as *Sarcostemma acidum* (Roxb) Voight., etc.

#### *Extinct*

*Strychnos nux-vomica* L. may be classed in this category. Yet this author has seen fresh seeds being sold in Morabadi on roadside (Ranchi), but only once. When questioned about the source, the villager said that he got these from the nearby village, but refused to show that place.

Out of ten seeds purchased by the author only two sprouted. They are growing in earthen pots.

#### *Conclusions and recommendations*

There is no doubt that herbal herbarium of this tribal land Jharkhand has fallen into a system of diminishing returns. Many areas have been threatened with disturbances on the ground, under the ground and above the ground. On the ground, the relentless spread of agriculture displaces and destroys many species especially in Santhal Parganas and Singhbhum by 'jhumming'. The tapping of vast mineral wealth under the ground causes serious concern to the vegetation above ground. The wide spread pollution above the ground contributes to the diminishing herbal population.

Creation of herbal sanctuaries on the lines of Wildlife Sanctuaries would help in conserving the herbs. It is suggested that Parasnath hill, Netarhat Plateau, Ichhatan hills (Ranchi District) and Ligirda swamiji (Sarada forests) may be declared as herbal sanctuary to start with, followed by Tribeni hills (Deoghar) and Rajmahal hills sanctuaries. Also, establishment of a 'living herbarium' of natural herbs currently in demand, on the lines of arboretum, shall go a long way to preserve the gene pool of herbs in Jharkhand.

There are more than five hundred medicinal herbs in Jharkhand, the list of which is being published by the author separately under the title Gene pool of herbs of Jharkhand. Out of these, different species falling in the categories discussed above are listed here as Appendix I to II. This list is just preliminary. Assessment may have to be made by a team of research

workers for each one of such species regarding :

- (a) actual present status,
- (b) distribution,
- (c) habitat and ecology,
- (d) potential value,
- (e) descriptions and illustrations

available and date of last plantation.

The State Government and Central agencies as well as Central Government will have to be approached for Jharkhand's herbal wealth to survive and to contribute to the State's economy in a much more meaningful way.

### Appendix - I

#### List of endangered species (E)

1. **Apocynaceae** :  
(i) *Rauvolfia serpentina*, Benth ex Kurz.  
(ii) *R. tetraphylla* L.
2. **Asclepiadaceae** :  
*Sarcostemma acidum* (Roxb) Voight.
3. **Caesalpineaceae** :  
*Saraca asoca* (Roxb) Dewilde.
4. **Gnetaceae** :  
*Gnetum scandens* Roxb.
5. **Liliaceae** :  
*Scilla hyacinthina* (Roth) Macbride.
6. **Magnoliaceae** :  
*Michelia doltsopa* Buch.-Ham.
7. **Papilionaceae** :  
*Psoralea corylifolia* DC.

### Appendix II

#### List of Vulnerable species (V)

1. **Acanthaceae** :  
*Andrographis paniculata* Nees.
2. **Apocynaceae** :  
*Holarrhena antidysenterica* Wall.

3. **Asclepiadaceae** :  
*Gymnema sylvestre* Br.
4. **Anacardiaceae** :  
(i) *Spondias pinnata* (L.f.) Kurz.  
(ii) *Lannea coromandelica* (Hout) Merrill.
5. **Combretaceae** :  
(i) *Terminalia belerica* Roxb.  
(ii) *T. chebula* Retz.
6. **Celastraceae** :  
*Celastrus paniculata* Willd.
7. **Convolvulaceae** :  
*Evolvulus alsinoides*.
8. **Gentianaceae**  
*Canscora decussata* Roem-Sch.
9. **Liliaceae**  
*Gloriosa superba* L.
10. **Menispermaceae** :  
(i) *Tinospora cordifolia* Miers.  
(ii) *Cissampelos pareira* Linn.
11. **Rubiaceae** :  
*Randia dumetorum* Lamk.
12. **Sterculiaceae**  
(i) *Sterculia urens* Roxb.  
(ii) *S. foetida* Linn.
13. **Verbenaceae** :  
(i) *Gmelina arborea* Roxb.  
(ii) *Adina cordifolia* Hook. f.

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## Appendix III

*List of Indeterminate species (I)*

1. **Anacardiaceae :**  
(i) *Buchanania lanzan* Spreng.  
(ii) *Semecarpus anacardium* Linn. f.
2. **Euphorbiaceae :**  
(i) *Phyllanthus fraternus* Webster  
(ii) *Emblca officinalis* Gaertn.  
(iii) *Mallotus philippinensis* Muell.  
(iv) *Croton roxburghii* Balak.
3. **Geraniaceae :**  
*Biophytum sensitivum* (Linn) DC.
4. **Lecythidaceae :**  
*Careya arboea* Roxb.
5. **Labiatae (Lamiaceae) :**  
(i) *Leucas cephalotus* Spreng.  
(ii) *L. plukenetii* Spreng.
6. **Leguminosae :**  
(i) *Mimoso pudica* Linn.  
(ii) *Abrus precatorius* L.
7. **Meliaceae :**  
*Chloroxylon swietenii*, DC.
8. **Malvaceae :**  
*Abutilon indicum* (Linn) Sw.
9. **Oxalidaceae :**  
*Averrhoa carambola* Linn.
10. **Simarubaceae :**  
*Ailanthus excelsa* Roxb.
2. **Asclepiadaceae :**  
(i) *Pergularia extensa* N.E.Br.  
(In village of Palamau)  
(ii) *Sarcostemma acidum* (Roxb) Voughl.
3. **Berberidaceae :**  
*Berberis asiatica* Roxb.  
(Parasnath about 1,220 m)
4. **Compositae (Asteraceae) :**  
*Saussurea candicans*, Clarke  
(Hills of Kolhan, Singhbhum).
5. **Coniferae :**  
*Pinus roxburghii*, Sargent (Netarhat)
6. **Euphorbiaceae :**  
(i) *Macaranga indica* Wight.  
(ii) *M. peltata* Muell Arg.  
(Deep ravines of Singhbhum)  
(iii) *Antidesma bunius* Spreng.  
(Parasnath near the top).
7. **Gnetaceae :**  
*Gnetum scandens*, Roxb.  
(Saranda in Singhbhum)
8. **Labiatae (Lamiaceae) :**  
*Dysopylla andersoni* Prain. (Tirilpos savannah at 600 m in Singhbhum)
9. **Lauraceae :**  
*Machilus macarantha* Nees. (Evergreen forest near ravines in Palamau ascending to Netarhat 910 m).
10. **Malvaceae :**  
*Abelmoschus moschatus* Medicus  
(Hundrufall of Ranchi) Syn. *Hibiscus abelmoschus* L.
11. **Menispermaceae :**  
(i) *Tinospora sinensis* (Lour), Merril  
(Kathikund, Gopikandar in Sandhanu Parganas)  
(ii) *T. cordifolia* Miers (Rajmahal hills)
12. **Meliaceae :**  
*Aglais roxburghiana* Miq.  
(Pithoria in Ranchi).

## Appendix - IV

*List of Endemic species (END)*

1. **Apocynaceae :**  
*Rauwolfia serpentina* Benth ex Kurz.  
(Rajmahal hills in Sahebganj and Saranda in Singhbhum)
12. **Meliaceae :**  
*Aglais roxburghiana* Miq.  
(Pithoria in Ranchi).

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13. **Oleaceae** :  
*Schrebera swieteniodes* Roxb.  
(Saranda in Singhbhum).
14. **Polygonaceae** :  
*Polygonum alatum*, Ham. (Parasnath).
15. **Ranunculaceae** :  
(i) *Clematis gouriana* Roxb. (Kundrugutu ravine of Singhbhum).  
(ii) *Thalictrum foliosum* DC. (Ichadag hill in Ranchi and Netarhat).
16. **Rhamnaceae** :  
*Rhamnus dahuricus* Pall  
(Netarhat Plateau).
17. **Rosaceae** :  
*Rubus moluccanus*, L.  
(Pendra valley, below Netarhat).
18. **Rutaceae** :  
*Zanthoxylum budrunga*, Wall  
(Bishunpur in Ranchi).
19. **Scrophulariaceae** :  
*Lindenbergia urticaefolia*, Lehm.  
(Pithoria in Ranchi, Parasnath).
20. **Solanaceae** :  
*Datura stramonium* Linn.  
(Bishunpur Ghat in Ranchi).
21. **Tamaricaceae** :  
*Tamarix dioica* Roxb (Rajmahal hills near and in the Ganges in Sahebganj).
22. **Tiliaceae** :  
*Grewia flavescens*, Juss  
(Pachambha in Giridih).
23. **Urticaceae** :  
(i) *Girardinia zeylanica*, Decaisne.  
(Pithoria, above 600 m in Ranchi).  
(ii) *Laportea crenulata*, Gaud (Deep shady ravines of Karampada forest in Singhbhum).
24. **Verbenaceae** :  
*Vitex glabrata* R.Br. (Rajmahal hills in Sahebganj).

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#### Appendix V

##### List of Extinct species (Ex)

1. **Loganiaceae** :  
*Strychnos nux-vomica*, L. (Kuchala)?
  2. **Palmaceae** :  
*Caryota urens*, L. (Mari, Indian sago-palm) ?
  3. **Asclepiadaceae** :  
*Sarcostemma acidum* (Roxb.) Voight.  
(Kulutuar, Somlata)?
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### SUMMARY

The present paper deals briefly about threatened herbal flora of Jharkhand. The threatened status has been classified as suggested by IUCN for conservation-prone plants. Eight species and 7 families have been listed under endangered class, while 18 species of 13 families have been included in vulnerable category. Indeterminate category has 16 species spread among 10 families. Under endemic category are listed 30 species of 24 families. It has been suggested that process should be started for the creation of 'herbal sanctuaries' at different places to conserve the gent pool of herbs of Jharkhand.

आदिवासी भूमि झारखण्ड की विलुप्त खतरे में आई जड़ीबूटियों का पितृदाय

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सारांश

प्रस्तुत अभिपत्र में झारखण्ड के विलुप्त खतरे में आई औषधीय पेड़पौधों का संक्षेप में विवेचन किया गया है। विलुप्ति

स्वतंत्र की स्थिति का वर्गीकरण संरक्षण-उन्मुख पादपों के लिए दिए गए सुझावों के अनुसार किया गया है। आठ जातियाँ और सात कुल संकटापन्न श्रेणी में रखे गए हैं जबकि तेरह कुलों की अठारह पादप जातियों को परजेय श्रेणी में लिया गया है। अनिश्चित श्रेणी में दस कुलों में फैली हुई सोलह जातियाँ रखी गई हैं। स्थानसीमित श्रेणी के अन्तर्गत चौबीस जातियों की तीस जातियाँ सूचीबद्ध की गई हैं। यह सुझाव भी दिया गया है कि झारखण्ड के पौधों के जीन संचय को संरक्षित करने के लिए भिन्न-भिन्न स्थानों पर औषध पादप शरण्य बनाने के लिए प्रक्रिया को शुरू कर दिया जाना चाहिए।

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