

RESEARCH NOTE

IMPACT OF MINING ON THE FLORA OF MOTIJHARNA,
RAJMAHAL HILLS (BIHAR)

Motijharna is the most beautiful waterfall in the whole of the Rajmahal Hills. It is situated about 3 kms South-west of Maharajpur Railway Station at the head of picturesque glen. There are two falls each 50 or 60 ft. in height by which the water of a small hill stream tumbles down over two ledges of rock. The greater rainfall (1500 mm) and relative humidity (70-80%) make Motijharna and its adjoining areas ideal habitat for a number of typical tropical elements such as *Beilschmiedia dalzielii*, *Byttneria grandifolia*, *Carallia brachiata*, *Musa paradisiaca*, *Gouania tiliaefolia*, *Siphonodon celastrineus*, *Xylosma longifolia* and a few others.

For the past 20 years, we have been surveying the flora and monitoring the floristic changes brought about by mining of road metals in Motijharna and adjoining areas in the Rajmahal Hills. More than 200 species have been collected, documented and deposited in the Bhagalpur University Herbarium.

An analysis of our field data reveals that at present mining operations in Motijharna area may be categorised into three phases. The first phase of mining has resulted in clearing plant cover of the mining areas. This led to the removal of a large number of plant species. Some of

them are : *Atlantia monophylla*, *Bauhinia vahlii*, *Beilschmiedia dalzielii*, *Byttneria grandifolia*, *Callicarpa arborea*, *Carallia brachiata*, *Cayratia pedata*, *Clematis gouriana*, *Cordia monoica*, *Coffea bengalensis*, *Dalbergia lanceolaria*, *Diospyroa melanoxyton*, *Ficus rumphii*, *Gouania tiliaefolia*, *Hyptianthera stricta*, *Lepisanthes rubiginosum*, *Ligustrum robustum*, *Litsea monopetala*, *Miliusa velutina*, *Musa paradisiaca*, *Neodistemon indicum*, *Polyalthia suberosa*, *Siphonodon celastrineus*, *Sterculia urens*, *Strobilanthus scaber*, *Symphorema involucratum*, *Tetrastigma lanceolaria*, *Vitex peduncularis*, *Xylosma longifolia*. The clearing of forest cover has not only made the area barren of vegetation but the ecological balance has also been disturbed to a great extent making the area unsuitable for the growth of the above indigenous plants.

Second stage of mining includes human settlement in the mining areas which has resulted in excessive denudation of surrounding vegetation. Demand for fuel and timber has resulted in depletion as well as degradation of the adjoining forests leaving behind scrub jungle which are now inhabited by plants like *Aerva scandens*, *Ageratum conyzoides*, *A. houstonianum*, *Anisomeles indica*, *Argemone maxicana*, *Barleria cristata*, *Breynia rhamnoides*, *Calotropis gigantea*, *C. process*, *Capparis*

1989]

C. zeylanica, *Carissa opaca*,
Hyptis elliptica, *Chromolaena odorata*,
Cassia gynandra, *C. viscosa*, *Crotalaria*
C sericea, *Croton roxburghii*,
Flacourtia indica, *Holarrahenia pubescens*,
Hyptis suaveolens, *Ipomoea hederacea*, *Naringi*
arenulata, *Ocimum basilicum*, *Passiflora*
foetida, *Porana paniculata*, *Solanum indicum*
Streblus asper, *Teperosia purpurea*, *Teramnus*
labialis, *Tragia involucrata*, *Trema orientalis*,
Urena lobata, *Zizyphus mauriana* var.
fruticosa and *Z. oenoplia*.

The third phase includes post-operational stage where mines are left abandoned after extraction of stones. The damage of land by open cast mining has completely made the land unsuitable for the indigenous plants to grow. Consequently, this has resulted in the colonisation of mined out areas by aggressive exotic weeds such as species of *Cassia*, *Chromolaena*, *Hyptis*, *Lantana* thus making the land unproductive and poor in species diversity.

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It is evident from the above account that due to erratic, irrational and uncontrolled mining of road metals in Motijharna area, the land has not only been stripped bare of its verdant cover, but the ecological balance has also been disturbed considerably, causing disappearance of a number of rare and interesting, Indigenous species from this area.

In order to save and protect the heritage of biological diversity of Motijharna, the following protective measures are suggested :

1. Mining within a radius of 2 km of Motijharna should be stopped immediately.
2. Reclamation and afforestation in mining fields should be done by planting indigenous species.
3. Stream banks should be intensively vegetated to prevent the discharge of sediments into the stream.

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