

PART - IV

CHEMICAL INVESTIGATIONS OF INDIAN
MEDICINAL PLANTS

CHAPTER - I

INTRODUCTION

Duars and Tarai area of North Bengal are rich in plant species of various families. Quite a good number of plants of Euphorbiaceae family¹ grow in the foot-hill and altitude upto 5000 meters. Some of them possess remarkable medicinal values².

Nevertheless, only a few Euphorbiaceae species of this area have been chemically investigated so far. In continuation of a programme undertaken on the phytochemical investigation of plants of Euphorbiaceae family of North Bengal, we wish to report here our findings on chemical investigation of two Euphorbiaceae plants namely Antidesma acuminatum and Bridelia retusa.

Morphological feature of the plants of Euphorbiaceae family:

Euphorbiaceae³ is a family of two hundred genera and more than three thousand species, which are chiefly tropical and very rare in cold countries.

Morphological features: Members of this family are usually shrubs, herbs and trees often with milky juice. Leaves alternate or opposite, rarely divided or compound, usually small, often minute, always unisexual. Perianth simple and calveine, rarely petioled, often wanting in one or both sexes, rarely double, with the inner of 4-5 minute petals. Stamens various, anthers two celled, often didymous. Overy superior, of 3, rarely more or two carpels, free or united, entire or divided, stigmatic surface usually on the inner face of the style or stylerams, ovules 1-2

in each carpel, pendulous, from the inner angle of the cell, funnicle often thickened. Fruit either a capsule or of two valved 1-2 seeded cocci separating from a persistent axis, or a drupe with 1-3 cells or of one or more combined nuts. Seeds laterally attached at or above the middle of the cell with or without an aril or thickening of the hilum. Embryo straight, in a fleshy albumen, with flat cotyledons and a superior radicle, very rarely exalbuminous with fleshy cotyledons.

1) Antidesma acuminatum³: A large shrub. Leaves rather thin, often very large and 4 inch broad; base acute or rounded; nerves 8-15 pair, very slender; petiole 1/6 - 1/4 inch; stipules much longer, linear or lanceolate. Racemes often several inches long, with wide spreading branches; bracts lanceolate; pedicels many times longer than the calyx. Disk variable, usually lobed, but sometimes hemispheric; pistillode columnar or short and 2-3 lobed, or developed into an imperfect ovary. Fruit tipped with a very short slender style and minute stigmas-Habit and foliage of A. Menasu, and possibly not specifically different but the racemes are much more slender, the branches not so tomentose, and the pedicels much longer. The fruit is similar but smaller with a more distinct style.

This species is abundantly available in North Bengal and Tarai area ascending upto 2000 ft. It is locally known by the name "Kalo bilani" (nepali)¹ and medicinally used as liniment in the rheumatism².

ii) Bridelia retusa³: A deciduous-leaved large shrub or a tree 50-60 ft; young spinous. Leaves 3-5 inch, base rarely acute, glabrous above, glabrous and glaucous beneath, or finely pubescent; petiole $1/4$ - $1/2$ inch. Bracts small, obtuse, villous. Flowers in clusters of about $1/4$ inch in diameter, both axillary and in long spikes, pubescent or glabrous, of which the males are very slender. Calyx $1/6$ inch in diameter, tube pubescent, lobes usually glabrous. Disk of male pulvinate, of female enclosing the young ovary. Fruit size of a pea, purple-black, cocci dehiscing. The plant is abundantly available throughout the hotter parts of India, including foot of the Himalayas ascending to 3500 ft. The species is locally known by the name geio (Nepali), Kantakoi (Bengali)¹.

The plant is pungent, bitter, heating; useful in "vata", lumbago, hemiplegia. The bark is good for the removal of urinary concretions (Ayurveda)⁴. The root and the bark are valuable astringents. The bark is used as a liniment with gingelly oil in rheumatism.