

PART - I

Reinvestigation on the bark of *Sapium sebiferum* Roxb.

Isolation and structure elucidation of a new triterpene-

Sebiferenic acid.

CHAPTER - I

MORPHOLOGICAL FEATURES OF THE PLANTS OF EUPHORBIACEAE FAMILY^{1a}

Euphorbiaceae 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 usually shrubs, herbs and trees often with milky juice.

Leaves alternate or opposite, rarely divided or compound usually stipitate. Inflorescence various; flowers usually small, often minute, always unisexual (in *Euphorbia* consisting of single naked stamens in a parianth like involucre, surrounding a solitary pistil). Parianth 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. Ovary 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 style-

arms; ovules 1-2 in each carpel, pendulous, from the inner angle of the cell, funicle often thickened. Fruit either a capsule 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. Seed 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.

Sapium, P.Br.^{1b}

Sapium species are usually trees or shrubs. Leaves alternate, entire, serrate or toothed, penninerved; petiole often 2-glandular at the top. Flowers in terminal simple or paniced spikes or racemes, monocious apetalous, moles several in each bract; female in the lower part of the spikes, or in separate spikes, solitary in the bracts. Calyx membranous, shortly 2-3 lobed or toothed or split to the base into 2-3 valvate sepals. Stamens 2-3, filaments free; anther cells ovoid, distinct, contiguous, parallel. Calyx 2-fid or -partite. Ovary 2-3 celled; styles free or connate at the base spreading and recurved; undivided, cells 1-ovuled. Capsule crustaceous, fleshy or pulpy, rarely woody, at length loculicidally (not

elastically) 3-valved, globose, estrophiolate, usually long persistent on the columella, testa crustaceous, albumen fleshy; cotyledons broad, flat. Twenty five species all tropical have been identified.

Sapium sebiferum Roxb. which is called Toyapippali in Sanskrit, Vilayati shisam in Hindi and Momchina in Bengali is a native of China, the juice of the tree is acrid and vesic². The plant is cultivated in various part of India and elsewhere in warm countries. In Bengal it is available in Tarai Hills and plains³.

Leaves long petioled ovate orbicular-ovate or subrhombic quite entire finely acuminate glaucous beneath, racemes simple terminal solitary, fruit capsular sub-acute.

Sapium sebiferum is a small tree. Leaves $1\frac{1}{2}$ - 2" sometimes broader than long; nerves 6-10 pair, very slender almost transverse; petiole $\frac{1}{2}$ - $1\frac{1}{2}$ " ; 2-glandar, slender. Racemes 2-4"; the earliest in the year all male; bracts short, acute. Male flower clustered, $1/20$ " diameter, pedicelled; calyx cupular, truncate, anthers large exserted. Female flower longer and more stoutly pedicelled; sepals ovate, acute. Ovary glabrous narrowed into a stout style, with recurved stigmas. Capsule coriaceous, the size of the pea, subglobose, shortly pointed. Seed globose with a coating of wax under the epidermis.