

PART I

Investigations on the bark and stem of Aleurites montana:
isolation and elucidation of the structure of Aleuritolic 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 are 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 perianth like involucre, surrounding a solitary pistil). 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. 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 stylearms; 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.

Aleurites Forst^{1b}

Trees with simple or stellate pubescence. Leaves alternate, long - petioled, broad, entire or 3-7-lobed, 3-7 nerved from the base, petiole 2-glandular at the top. Flowers in lax terminal paniced cymes, mono- dioe- clous. Male flowers: Calyx subglobose, bursting into 2-3-valvate lobes. Petals 5, longer. Stames 8-20, on a conical receptacle, 5 outer opposite the petals, alternating with small glands, filaments free; anthers erect, adnate cells parallel. Pistillode 0. Female flowers: Perianth of the male. Disk obscure or of glands alternating with the petals. Ovary 2-5 celled; styles with 2 linear 1-5-celled. Seeds with a thick woody testa, albumen thick hard; embryo straight, cotyledons broad flat.

Aleurites montana^{1c}, a much-branched partially deciduous tree of moderate height (25-30) with cordate leaves and monoecious flowers. The fruit is egg-shaped, 1½ - 2" long and 1½ - 1¾" broad, pointed at the summit and flattened at the base. It has generally 3, and sometimes 4, one-seeded segments. The outer surface has wavy transverse ridges. The pericarp is thick, hard and woody.

A. montana occurs in the sub-tropical parts of southern China and in some of the southern Sahn States (Burma). Like A. Fordii, this is also a hill side species but it can thrive in warmer climates and withstand heavier rainfall, provided they are is well drained. Its growth is vigorous in slightly acidic soli. Experimental cultivation in different parts of India and Burma has shown

that this species is better suited to the climatic and soil conditions of these countries than A. fordii. It has done very well in the alluvial soil of Assam. A. montana is reported to give much better yield of fruits than A. fordii.