CHAPTER - I

SECTION A

Morphological features of the plants of Flacourtiaceae family.

Flacourtiaceae is a family of seventy Genera and more than five hundred species, which are chiefly found in tropical and sub-tropical countries.

Members of this family are usually shrubs or trees[1].

Leaves are simple, alternate, stipules often soon falling off.

Flowers are unisexual, often dioceious or polygamous and variously arranged. Sepals are sometimes indistinguishable from petals, imbricate or open in bud. Petals sometimes are not arranged regularly in relation to the Sepals-large, small or absent, with or without an opposite scale inside the base imbricate. Stamens numerous, rarely few hypogynous, free; anothers 2 celled, often short, opening lengthwise by slits. Ovary 1 celled with one or more parietal placentas or rarely the placentas meeting in the middle; ovules two or more on each placenta; styles or stigmas as many as the placentas. Fruits indehiscent, mostly a berry or drupe, very rarely a capsule, sometimes large. Seeds with fleshy endosperm, medium sized embryos; cotyledons often broad.

Gyno Cardia, R. Br.

A perfectly glabrous tree[2]. Leaves quite entire. Flowers axillary or truncal, fasicled, dioecious. Calyx cup shaped, 5 toothed or brusting irregularly. Petals 5, with a ciliate scale opposite each. Fl. O : Stamens many; anthers basifixed, linear. Ovary O. FL. O : Staminodes 10-15 villons. Ovary globose, 1-celled; styles 5, stigmas large cordate; ovules many, on 5 periental placentas. Berry subglobose, rind thick, hard, rough. Seeds obovoid, immersed in pulp, testa thick, albumin oily; cotyledons flat, subreniform, redicle ovoid. Gyno Cardia Odorata, R. Br. in Roxb. Cor. Pl. 95, t 299 (the only species). In Bengali it is called Chaulmoogra. In Nepali it is known as Bandre or Gante or Ramphal. It is a large ever green tree, perfectly glabrous, wood hard, red or brown. Leaves oblong or linear oblong abruptly accuminate shining above. Bennet pl. Jav. Rav. 207. Chaulmoogra Odorata, Roxb, FL. Ind. ii. 835, Chilmoria dodecandra, Hamilt in Trans. Lin.. Sox. xiii 500. It grows in sub-Himalayan tract, ascending to 4000 ft, from Sikkim and Khasia Hills eastward to Chittagong, Rangoon and Ten Asserim.

Branches slander, flexuous, leaves bifarious, largest 6-10 by 3-4 inch, smallest 4-6 by 1½ - 2 inch; coriaceous, strongly reticulate beneath; petiole 1/4-1 inch. Flowers sweet scented, yellowish in very large fascicles on the trunk,

solitary or few together in the leaf axils, very variable in size, 1/3 - 2 inch diameter, the females largest; peduncles 1-3 inch, bracts basal, minute. Calyx coriaceous. Filaments wooly. Fruit globose, 3-5 inch diameter. Seeds 1 inch long.

SECTION B

Review of the plants investigated

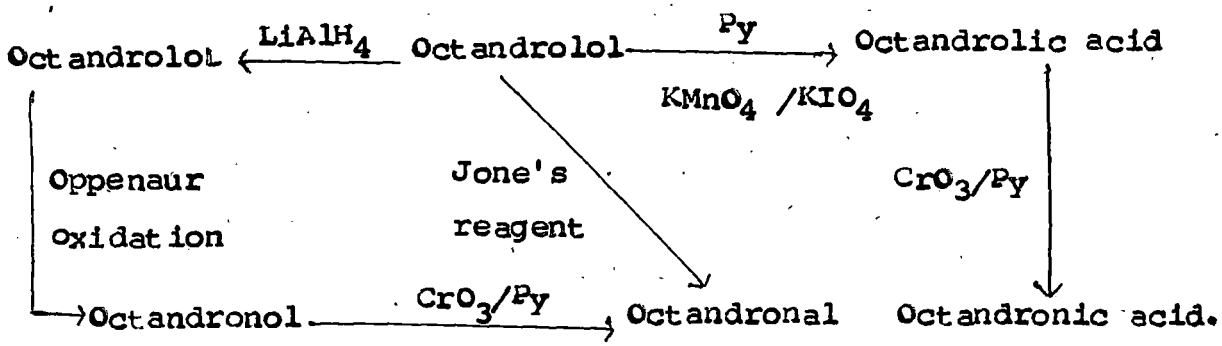
The flacourtiaceae is well known for its characteristic medicinal oils obtained from their seed karnels. Some of the plants are reported to have medicinal applications in liver diseases, diarrohea, enlarged spleen and to relieve nausea. A brief review of the plants of this family with reference to triterpenoids isolated out of them which have been investigated by different workers are given below.

Hydrocarous Kurzii King Warb

Chaulmoogra oil[3] obtained from the seed karnels of H. Kurzii King Warb has been used for a long time for the treatment of skin diseases and specially for Leprosy[4] and as an oinment for tuberculosis[5] patients. Many fatty acids, monosaccharides and glycerides have been reported from the seed extract and bark extract of the plant, but no triterpenoid has been reported.

Hydnocarous Octandra

S.P. Gunasekera et al[6] isolated mangostin from the bark of H. Octandra. Six new triterpenoids viz. Octandrolal, Octandrolol, octandrolic acid, octandronal, octandronol and octandronic acid have also been reported[7] from the bark of the plant. All these compounds belong to friedelane skeleton.



Hydnocarpus Venenata Gaertu

Therapeutically effective oils have been isolated from Hydnocarpus Venenata[8]. The bark of the plant has been found to contain small quantity of acetyl betulinic acid (0.004%), acetyl ursolic acid, betulinic acid, ursolic acid, β-sitosterol.[9]

Hydnocarpus Anthelminthicus Pierra

Therapeutically effective oils have also been obtained from seeds of Hydnocarpus Anthelminthicus pierra[10]. The seeds have also been found to contain monosaccharides and glycosides.[11]