Summary
India is a country with large ethnic diversity of about 68 million tribal people belonging to 227 ethnic groups and consisting of 573 tribal communities living in different geographic locations. Kanikaran or kani is one of the tribal living in Kanayakumari district and Tirunelveli district of Tamil Nadu State. These indigenous people are using a historical continuity of resource use and are aware of the biological diversity and the natural resource that exist around their habitat in the forest eco-system. Now a days it has been realized that wild plants play a vital role in herbal medicinal use. Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illness or maintain well-being. The traditional medicine has given some of the valuable and prized herbal drugs to the modern medicine. The traditional healing arts practiced by ethnic groups in Western Ghats of South India provide alarming ethnobotanical information. An attempt has been made to validate scientifically a few of them in a systematic manner in the present study.

*Flacourtia indica* (Burm.f.) Merr. (Flacourtiaceae), *Flueggea leucopyrus* Willd. (Phyllanthaceae), *Stephania wightii* Dunn. (Menispermaceae) and *Ventilago maderaspatana* Garten. (Rhamnaceae) are some of the medicinal plants used by the Kanaikars whose medicinal values are unrecognized.

One of the main aspects of study on *Flacourtia indica*, *Flueggea leucopyrus*, *Stephania wightii* Dunn., and *Ventilago Maderaspatana* Garten deals with botanical and physico-chemical parameters of these plants. The study provides detailed morphological descriptions followed by microscopic structure of leaf, petiole, stem and root. Epidermal
morphology, mesophyll orderliness, structure of the stem and root (*Stephania wightii*) are described in detail. All descriptions are supplemented with photomicrographs. The significance of microscopic feature in the herbal science is highlighted in the discussion. The results of fluorescence analyses of the aerial parts and roots of these plants and extracts in various solvents such as petroleum ether (40\(^{\circ}\) – 60\(^{\circ}\)), benzene, chloroform, ethanol, and water have been discussed. The total ash, acid – insoluble ash, water soluble ash and extractive values in different solvents have been determined. The fluorescing spots are located by using UV fluorescence viewing cabinet (254 nm, 365nm). These macroscopic and microscopic characters, physico-chemical characters and fluorescence characters can be used as an analytical tool for the standardization of these plant drugs and also to test adulteration.

Preliminary phytochemical screening of the various extracts of the four plants has been performed to find out the presence of steroids, triterpenoids, reducing sugars, alkaloids, phenolic compounds, tannins, xanthoproteins and flavonoids and the results are presented.

Thin layer and paper chromatographic behavior of the various extracts of the leaf, stem of three medicinal plants and root of *Stephania wightii* have been studied in different solvent systems. The fluorescing spots are located by using UV light (365nm) and the R\(_f\) values of the fluorescing spots have been determined. The plates were then developed in an iodine chamber and the the R\(_f\) values of the spots have been measured and compared.

Phytochemical fractionation of ethanol extract of the roots of *Stephania wightii* over silica gel column resulted in the isolation of a compound. By using IR, NMR, Mass spectral studies as well as XRD studies the isolated compound is found to be (S)-(−)-
tetrahydropalmatine, (13a,S)-2,3,9,10-tetramethoxy-6,8,13,13a-tetrahydro-5H-isoquinolino[2,1-b]isoquinoline monohydrate.

![Chemical structure of tetrahydropalmatine](image)

Even though this compound is already known it has not been isolated from this plant as per the literature review. For the first time the compound tetrahydropalmatine monohydrate has been extracted from the roots of this medicinal plant used in traditional healing arts practiced by Kannikkar tribes of South India.

Trace elemental analysis of these plant samples were performed by using Atomic Adsorption Spectroscopy. By wet digestion method, the macro and micronutrients present in these plants have been determined and tabulated. Among these sample the roots of *Stephania wightii* contains high quantity of iron, sodium, barium, copper and zinc.

Pharmacological studies revealed that ethanolic and aqueous extract of root of *Stephania wightii* has significant hepatoprotective effect against Isoniazid and Rifampicin induced hepatotoxicity in experimentl animals. It has been shown markedly changes occurred in Total Bilirubin, total protein, ALP, AST, ALT and GGTP values.
The antimicrobial activity of chloroform, ethanol, and aqueous extracts of the aerial parts and root has been determined and the inhibition zones are tabulated. The ethanol extract of *Stephania wightii* possess greater antimicrobial activity. The isolated compound Tetrahydropalmatine also possess antimicrobial activity which has been presented in table.

Pharmacognostic studies reveal the identity of the plants. Phytochemical studies reveal the presence of useful bioactive compounds. The ethanol extract of the root of *Stephania wightii* yielded tetrahydropalatine monohydrate which is also showing a remarkable antimicrobial activity. Pharmacology on the plant *Stephania wightii* used by the Kannikar tribes suggests scientifically the hepatoprotective action.