FAMILY UMBELLIFERAE - AN INTRODUCTION
The angiosperms or flowering plants are divided into monocotyledons and dicotyledons. The dicotyledons are further divided into two groups: the Archichlamydeae and Sympetalae. The Archichlamydeae is further divided into 37 orders and about 226 families. The order Umbelliflorae includes seven families: Alangiaceae, Cornaceae, Garryaceae, Araliaceae and Umbelliferae. The family Umbelliferae includes about 300 genera and 3000 species (Trease:1972). In India, the family is represented by about 40 genera. The members of this family inhabit grooves, thickets, plains, marshes and wastelands, mostly of the north temperate regions (Krishna et al:1952). Most of the members are herbs, some of them are annuals like coriander, some biennials like hemlock and some perennials like ferula (Trease:1972).

The members of this family exhibit fistular, furrowed stems and usually divided or dissected large leaves which are often fragrant. The flowers are small and are white, pink, yellow or blue in colour; and are arranged in simple or compound umbels (Krishna et al:1952). Each flower is having five lobed calyx, five petals, five stamens which are inflexed in the bud; and an inferior two celled ovary (Trease:1972). The characteristic dry, ridged and grooved fruit is known as cremocarp, frequently crowned with a conspicuous stigma with disc called stylopod. The cremocarp consists of two indehiscent, one seeded carpels called mericarps, which on ripening separate from each other, but may frequently remain attached to the simple or forked carpophore which lies between the mericarps. Each mericarp contains a single seed, which consists of a large endosperm with a small embryo embedded near its apex. Five primary ridges containing fibrovascular bundles, run from base to apex in the pericarp and secondary ridges sometimes alternate with these primary
ridges. Between the primary ridges are present schizogenous oil canals called vittae. Such canals are also present in the cortex of root and stem of the plant (Trease:1972).

Next to the members of the family Gramineae which yield cereals for common daily use, Umbellifers yield a number of the common spices and seasoning products, as well as some articles of food. A large number of species are entirely harmless to man and animals while few plants like water hemlock (Cicuta virosa) of Kashmir and spotted hemlock (Conium maculatum) of Europe are deadly poisonous. In general, the aromatic members are carminative, stimulant and tonic and include several medicinal and kitchen herbs while nonaromatic members are acrid and narcotic poisons (Krishna et al:1952).

The carrot (Daucus carota) and the parsnip (Pastinaca sativa) are widely cultivated for their edible tuberous roots and the celery (Apium graveolens) for its leaf stalks. The leaves of parsley (Petroselinum crispum), coriander and sowa are esteemed as culinary herbs for flavouring soups, curries, stews, etc. The slightly aromatic leaves of the Asiatic pennywort called 'brahmi' (Hydrocotyle asiatica) are widely used in India in medicine. The fruits of number of plants are used as spices, as flavours for food, liquors and beverages and also in medicine.

Pharmaceutically, the family is better known for its plants which yield important essential oils like: ajowan, anise, caraway, coriander, cumin, dill, fennel, etc.; oleogumresins like: asafoetida, galbanum, etc.; furanochromones from visnaga; alkaloids like: conine, daucine, etc.; glycosides like: apiin, moschatin, etc.; toxic substances like: cicutoxin, cicutoxinin, oenanthotoxin, etc. Some of the essential oils of this family also serve as sources for the manufacture of certain compounds like: anethole, apiole, carvone, thymol, etc.