



Merremia tuberosa (L.) Rendle

Fig. 1

THE WOOD ROSE

Merremia tuberosa (L.) Rendle

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THE fact that the Woodrose 'lasts for several years when properly prepared' (Hawkes and Sutton, (1974) has contributed to its popularity as a component of floral arrangements, a popularity that is increasing not only locally, but abroad as well. In recent years exports of Wood Roses have been made from Trinidad to Curacao and Canada. Although so widely used, the Wood Rose remains an enigma to many and rarely is it realised that the popularly used structure is neither a rose nor indeed a flower but the fruit of *Merremia tuberosa* (L.) Rendle.

Merremia tuberosa is a member of the family Convolvulaceae to which *Ipomoea batatas* — the sweet potato, *Ipomoea purpurea* — the Morning Glory and *Cuscuta americana* — the Dodder or Love Vine belong. The plant — a native of tropical America now grown widely as an ornamental throughout the tropics (Adams, 1972) — is a robust, perennial, hairless climber which possesses tuberous roots, hence the specific name. It grows from seed or cuttings, though the latter root only with difficulty. The vine, once established, grows rapidly and climbs even to the crown of tall trees; it is described by Menninger (1970) as being too vigorous for better parts of the garden.

The leaves of the plant are palmately divided into seven entire elliptical lobes with acuminate tips (Figure 1). The floral axes develop in the axils of the leaves, flowering taking place after two years growth, in warm climates (Menninger, 1970). The flowering period extends from October to December with a peak in late November — early December. The flowers are borne in cymose inflorescences; that is, the main axis is terminated by the oldest flower, subsequent branching of the inflorescence taking place laterally. Each lateral branch is itself terminated by a flower, further branching taking place from the pedicels of each lateral. The youngest flowers are therefore peripherally placed in the inflorescence (Figure 1).

Each flower consists of a calyx of five free sepals which overlap irregularly; a corolla of five yellow petals, fused to form a slightly lobed trumpet; honey guides of a deeper yellow lead from the periphery to the tube of the corolla; five stamens of unequal length each attached to the corolla; and a pistil consisting of a bicarpellary ovary with short style and bilobed, globose stigma. A disc-shaped nectary surrounds the ovary (Figure 1a).

At maturity the flowers exhibit diurnal rhythm, opening between 8.30 and 9.00 a.m. and closing between 3.30 and 4.00 p.m. on the vines observed in the St. Augustine area.

During the open period insects, principally *Apis mellifera* (the ordinary hive bee) are observed visiting the flowers. Percival (1965) points out that many so-called 'bee-flowers' are yellow, blue or purple, often with coloured nectar guides forming recognisable contrast for the bees' eyes. Further, 'bee-flowers' open during the day, each species having its own rhythm: this

behaviour is geared to that of the bees which are stimulated to forage by a high light intensity.

Some species that exhibit a diurnal rhythmic movement open and close more than once, the movement being less rapid and complete as the flower ages. In *M. tuberosa* opening occurs on one day only; three days after opening the withering corolla with attached stamens is shed. The persistent sepals close over the ovary and both continue developing, the sepals becoming larger and woody in texture. During development the fruit is surrounded by a liquid enclosed within the calyx. Mature fruits are found between late December and March. The fruit is a four valved, one layered, translucent, irregularly dehiscent capsule containing three to four dark brown seeds with thick testas. At fruit maturity the woody sepals surrounding the capsule open outwards giving the whole the appearance of a rose (Fig. 1b) hence the name.

Merremia tuberosa has been placed in the genus *Operculina* on account of the fact that the pericarp (fruit wall) of the irregularly dehiscent capsule separates from the receptacle, forming an operculum or lid. It has however been pointed out by Van Ootstroom (Wilson, 1960) that this manner of dehiscence is different from that of *Operculina* in which the fruit wall is two-layered and only the outer layer separates from the receptacle, the inner remaining intact. The simple key below separates the genera, *Ipomoea*, *Merremia* and *Operculina* on the basis of capsule dehiscence, anther shape and pollen type:—

Capsule operculate (dehiscing transversely)

Operculina

Capsule opening by valves

Pollen grains smooth; anthers twisted after dehiscence

.. *Merremia*

Pollen grains spinose; anthers straight

Ipomoea

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