D-15 A preliminary study on pollination and breeding mechanisms of selected mangrove genera in southern Sri Lanka

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Mangroves in Sri Lanka are threatened to extinction due to over exploitation. Conservation demands a thorough knowledge of floral biology, pollination and breeding mechanisms. Studies on these aspects of *Rhizophora mucronata*, *Rhizophora apiculata*, *Bruguiera gymnorhiza*, *Bruguiera sexangular* and *Cariops tagal* were carried out in Rekawa, Dondra and Galle lagoons. Flowers of reproductively mature individuals were treated by emasculating, selfing, crossing and subsequently covering with bags to study the mode of pollination. Anther dehiscence and the dropping of floral parts were observed. Peak of stigma receptivity of Bruguiera spp. parts were observed. Peak of stigma receptivity of *Bruguiera* spp. was worked out by hand pollinating emasculated flowers. Fruit formation and development of hypocotyl were followed in all treated flowers. Diurnal survey of insect visitors was carried out. Insects were collected and stored in 70% ethyl alcohol.

All species bear perfect flowers. Fruit formation was not observed in treatments permitting only selfing or if formed in small numbers, fell without developing into hypocotyl. Apomixis was found to be absent. Cross pollination seemed to be favourable. *Bruguiera* spp. and *Ceriops tagal* seemed to get pollinated by

animals. They bear either brightly coloured or sweet scented flowers with nectar and are often visited by Hemipterans, Hymenopterans and Dipterans. Sun birds were seen associated with *Bruguiera* spp. and moths with *Ceriops tagal*. *Rhizophora* spp. bear inverted, colourless flowers without any odour. Pollen / ovule ratio is comparatively high. Wind pollination seemed to be more favourable. Observations indicated protandry in all species. Pollen is released within the unopened flower bud, when stigma is not yet ready to accept it. In *Bruguiera* spp. stigma receptivity peaks on the second day after blooming. Percentage fruit formation was always less than 10% in all species.