

therefore, applies only to conditions obtaining in the Northern Circars and it will hold good only when the other conditions referred to above are satisfied. This note is only intended to indicate that unduly severe drying is not necessary.

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## THE INDIAN ELM (*HOLOPTELIA INTEGRIFOLIA*)

### A LESSON IN NATURE STUDY

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This common tree of Coimbatore which is known as the Indian Elm, based on the resemblance of its fruit to that of the European Elm, shows very peculiar behaviour which is well worth study by the student of nature.

This is a deciduous tree which sheds its leaves to such a large extent that at the end of the vegetative period the plant is rendered completely bare and presents a most distressing appearance. This happens usually in January—February and the very interesting phenomenon is soon noticed, viz., the appearance of flowers when the tree is leafless. These are dirty brown in colour appearing in clusters and, if carefully examined with a hand lens, disclose numerous flowers some of which—the males—are small with 4–8 perianth leaves and the same number of stamens, while others are bisexual carrying a prominent ovary raised on a stalk. With regard to the phenomenon of shedding it may be observed that, barring young trees which may show idiosyncracies of behaviour, the tree is one of those in which flowers appear after the leaves are shed, fresh leaves appearing only later. There are other trees in which flowers appear after the leaves or simultaneously with them as in *Pongamia* and *Margosa* respectively for instance.

The most striking peculiarity, however, is at the fruiting time, when the tree presents a very unique aspect with the flat, green, developing fruits which may be mistaken for leaves. In fact no leaves appear till after the fruits dry and fall off which generally happens in April and for another eight months the tree retains its foliage and a long period of vegetative activity ensues.

Of all the parts of the plant it is the fruit that compels attention. It is a thin flat rounded membranous body with the seed-containing portion in the middle surrounded by the wing which is really an expansion of the ovary wall. On account of the winged nature the fruit is known as a 'Samara' and the wing itself is usually considered to be an efficient adaptation for dispersal by wind in order to prevent overcrowding of seeds. While this explanation may be partly true, it is possible the expanded covering of the fruit may serve another useful purpose from the plant's point of view. An examination of the skin of the fruit under the microscope shows the presence of functioning stomata and the fruit also contains chlorophyll which may be extracted by means of hot alcohol. As the iodine test further shows the presence of starch there is no doubt that the winged green fruits assimilate starch and do the work of green leaves either for self nourishment or for the benefit of the plant as a whole which in the case of this particular tree is a special advantage because of its leafless nature for a period of three to four months.

The above observation made in the case of this tree raises an interesting question 'do fruits assimilate; if so to what extent?'