

More Trees for Farms.

In some respects trees may be regarded as crop and their culture Agriculture. Their haphazard introduction in our Farms without any consideration of their actual needs and of the conditions prevailing in the locality may often end in failure. Various factors govern their distribution of which the most important is the amount of moisture in the soil. With reference to this factor trees may be easily grouped into (1) those which love moisture and (2) those which can resist drought either of a periodic or permanent nature. As a rule trees flourish well in places that receive a large amount of rainfall and a careful selection is therefore necessary only of those that can endure drought due to low annual rainfall and high temperature. Intensity of light has also to be considered.

The loss of water from plants occurs mainly through leaves and it is well known that there are numerous devices by which drought resistants are able to check too much loss of water and thereby manage to flourish with a scanty supply. Some of these devices are seen in the diminution of leaf surface, strong development of cuticle, sunken stomata and presence of hairs and an examination of the leaves for the above points is sure to be of value in determining the suitability of the plant for a new region.

With prolonged exposure to intense light the green colour, chlorophyll, is likely to be decomposed and this difficulty is obviated to a considerable extent by the strong reflection of light from the leaf surface or by movements of leaflets in the case of pinnate-leaved plants. This latter peculiarity is seen in many of the Leguminosæ and it is no wonder that some of our most successful avenue trees belong to this class of plants (e.g. the Rain Tree, Tamarind, Goldmohur etc.) The drooping of leaves and leaflets in the case of some of the Leguminosæ which results in the so-called "sleep movements" also serves the same purpose.

The choice of particular species of trees will largely be a matter of personal preference and will also depend on the special purpose for which they are to be planted, whether for shade and avenue, for serving as wind break, for screening, for any incidental economic use as well e. g. timber and firewood, or for mere aesthetic effect. There can be no doubt that evergreens should largely be preferred to deciduous trees for shade and avenue planting or for beautiful effect. An ever green may be defined as a plant in which the older leaves are not shed when the new leaves unfold. But this varies according to situations so that evergreens have a tendency to shed their leaves when under extreme drought.

I have tried to bring below into greater prominence a few trees that deserve to be more generally cultivated in our Farms because of their several good qualities.

(1) *Azadirachta indica* (Nim or Margosa):—a tree eminently suited for planting in all situations. Branches, intricate and horizontal. The light green sickle-shaped leaflets rustling in the air produce a most delightful and refreshing breeze. It has an excellent appearance when it is grown to a low form on lawns. The trunk is rarely straight which makes it unfit for continuous avenues but it has a beautiful effect when planted singly or in groups. The trees are affected by an insect pest (*Helopeltis antonii*) in the dry season as shown by Mr. Y. Ramachandra Rao (Vide Agriculture Journal of India Vol. X page 412) and present a most distressing aspect with leaves looking as if scorched by sun, though they recover after some months. Young trees may perhaps be protected wherever possible by copious watering. Flowering commences in March.

(2) *Peltophorum ferrugineum*:—A hardy and drought resistant tree. Its branches arise about 7 feet above ground. The tree always has a charming appearance when in flower which is independent of the seasons. The smooth bark, the ever-green nature of the tree, together with the branching make it one of the most successful of

trees for planting in narrow avenues and streets. They must be planted about 15 feet apart.

(3) *Pithecolobium saman* :—(Rain Tree). A well-known tree quick growing when young and very responsive to moisture. When planted in rows it forms an “effective grand arch of considerable beauty.” Its branches make an angle of about 45° with the axes. The roots extend superficially for a great distance in the soil so that for plants with similar superficial root system the tree is injurious. The pods are said to have considerable nutrition as fodder for cattle. The leaflets droop at about 2 or 3 P. M. and come in contact towards the upper surface exposing only the lower to light. This is covered with fine hairs which keep off the heat of the sun thus protecting the inner tissue. It is also interesting to note that owing to exposure to light the lower moiety of the leaf develops a palisade tissue similar to the one towards the upper surface.

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(*To be continued.*)

Reviews.

The Indian Science Congress Number 1919.

The 1919 Indian Science Congress Number of the Pusa Agricultural Journal, published as Vol. XIV Part III, is a bulky volume running to nearly 140 pages and is interesting reading. It opens with a very interesting article, by the President of the Agricultural Section, entitled “Economic factors of Agricultural Progress.” For rapid agricultural progress, the Hon’ble Mr. G. F. Keatinge C. I. E., I. C. S., considers, that the farm should be a fixed and permanent unit, to admit of permanent and continuous improvement; and the farmer “a fluid and movable unit,” so that the fittest man may get into the job. In India the conditions are exactly the reverse of the above. The frequent