

actual measurement to be twelve and one half feet, while its umbrageous branches cover an area having a circumference of one hundred and eighty feet.

O. J. J.

LUBBOCK ON LEAVES.

(Continued from page 108.)

HITHERTO I have dealt with plants in which one main consideration appears to be the securing as much light and air as possible. English trees may be said, as a general rule, to be glad of as much sun as they can get. But a glance at any shrubbery is sufficient to show that we cannot explain all leaves in this manner, and in tropical countries some plants, at any rate, find the sun too much for them. In illustration, perhaps the clearest evidence is afforded by some Australian species, especially the eucalypti and acacias. Here the adaptations which we meet with are directed, not to the courting, but to the avoidance, of light. The typical leaves of acacias are pinnate, with a number of leaflets. On the other hand, many of the Australian acacias have leaves—or, to speak more correctly, phyllodes—more or less elongated or willow-like. But if we raise them from seed we find, for instance, in *acacia salicina*, so called from its resemblance to a willow, that the first leaves are pinnate, and differ in nothing from those characteristics of the germs. In the latter ones, however, the leaflets are reduced in number, and the leafstalk is slightly compressed laterally. The fifth or sixth leaf, perhaps, will have the leaflets reduced to a single pair, and the leafstalk still more flattened, while, when the plant is a little older, nothing remains except the flattened petiole. This in shape, as already observed, much resembles a narrow willow leaf, but flattened laterally, so that it carries its edge upwards, and consequently exposes as little surface as possible to the overpowering sun. In some species the long and narrow phyllodes carry this still further by hanging downwards, and in such cases they often assume a