TWIGS OF THE COMMON HACKBERRY.

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Our Hackberries demand careful study in the field in order that some of the obscurities may be removed which now appear in the descriptions of our Manuals. Celtis occidentalis L. is said to have "glabrous twigs" and "leaves smooth above." Celtis crassifolia Lam. is said to have "the young shoots puberulent" and "leaves scabrous above." Now, we can find all of these characters on different twigs of the same tree.

So far as Celtis occidentalis is concerned, I have not found a Hackberry in Ohio or Kansas that did not have pubescent twigs. The tree has two types of twigs; fruiting twigs and twigs which bear no flowers. The fruiting twigs have a few scattered hairs when young but these usually fall off early. The leaves are very glabrous above and of a peculiar appearance. These fruiting twigs dry off at the outer ends while the fruit ripens and they are then very abundantly detached, a brittle layer being developed at the base. Often the twigs come down with the drupes still attached. The purely vegetative shoots are usually quite pubescent when young, the pubescence extending to the leaves. In most cases the pubescence is persistent on the twigs and the mature leaves are quite scabrous or hairy. As one goes westward the pubescence of the vegetative shoots appears to become more pronounced, and one can find trees with very smooth fruiting twigs and very hairy vegetative twigs.

Are there any characters to establish the species, Celtis crassifolia Lam.? From an examination of supposed C. crassifolia and C. occidentalis identified by competent botanists I can find no specimens in either set which cannot be duplicated by twigs

taken from one tree. The shape of the leaf is also exceedingly variable in the Hackberries, so that one can find leaves of a decidedly ovate type or of a decidedly lanceolate type on the same individual.