

Spanish nuts, oblong and longitudinally striated in Cosford's, and obtusely four-sided in the Downton Square nut.

*Cucurbitaceous plants.*—These plants have been for a long period the opprobrium of botanists; numerous varieties have been ranked as species, and, what happens more rarely, forms which now must be considered as species have been classed as varieties. Owing to the admirable experimental researches of a distinguished botanist, M. Naudin,<sup>136</sup> a flood of light has recently been thrown on this group of plants. M. Naudin, during many years, observed and experimented on above 1200 living specimens, collected from all quarters of the world. Six species are now recognised in the genus *Cucurbita*; but three alone have been cultivated and concern us, namely, *C. maxima* and *pepo*, which include all pumpkins, gourds, squashes, and the vegetable marrow, and *C. moschata*. These three species are not known in a wild state; but Asa Gray<sup>137</sup> gives good reason for believing that some pumpkins are natives of N. America.

These three species are closely allied, and have the same general habit, but their innumerable varieties can always be distinguished, according to Naudin, by certain almost fixed characters; and what is still more important, when crossed they yield no seed, or only sterile seed; whilst the varieties spontaneously intercross with the utmost freedom. Naudin insists strongly (p. 15), that, though these three species have varied greatly in many characters, yet it has been in so closely an analogous manner that the varieties can be arranged in almost parallel series, as we have seen with the forms of wheat, with the two main races of the peach, and in other cases. Though some of the varieties are inconstant in character, yet others, when grown separately under uniform conditions of life, are, as Naudin repeatedly (pp. 6, 16, 35) urges, "douées d'une stabilité presque comparable à celle des espèces les mieux caractérisées." One variety, l'Orangin (pp. 43, 63), has such prepotency in transmitting its character, that when crossed with other varieties a vast majority of the seedlings come true. Naudin, referring (p. 47) to *C. pepo*, says that its races "ne diffèrent des espèces véritables qu'en ce qu'elles peuvent s'allier les unes aux autres par voie d'hybridité, sans que leur descendance perde la faculté de se perpétuer." If we were to trust to external differences alone, and give up the test of sterility, a multitude of species would have to be formed out of the varieties of these three species of *Cucurbita*. Many naturalists at the present day lay far too little stress, in my opinion, on the test of sterility; yet it is not improbable that distinct species of plants after a long course of cultivation and variation may have their mutual sterility eliminated, as we have every reason to believe has occurred with domesticated animals. Nor, in the case of plants under cultivation, should we be justified

<sup>136</sup> 'Annales des Sc. Nat. Bot.' 4th series, vol. vi. 1856, p. 5.

<sup>137</sup> 'American Journ. of Science,' 2nd ser. vol. xxiv. 1857, p. 442.