

or segregated in various ways. This tree can be propagated by cuttings, and retains its diversified character. The so-called trifacial orange of Alexandria and Smyrna¹⁰¹ resembles in its general nature the bizzarria, and differs only in the orange being of the sweet kind; this and the citron are blended together in the same fruit, or are separately produced on the same tree; nothing is known of its origin. In regard to the bizzarria, many authors believe that it is a graft-hybrid; Gallesio, on the other hand, thinks that it is an ordinary hybrid, with the habit of partially reverting by buds to the two parent-forms; and we have seen that the species in this genus often cross spontaneously.

It is notorious that when the variegated Jessamine is budded on the common kind, the stock sometimes produces buds bearing variegated leaves: Mr. Rivers, as he informs me, has seen instances of this. The same thing occurs with the Oleander.¹⁰² Mr. Rivers, on the authority of a trustworthy friend, states that some buds of a golden-variegated ash, which were inserted into common ashes, all died except one; but the ash-stocks were affected,¹⁰³ and produced, both above and below the points of insertion of the plates of bark bearing the dead buds, shoots which bore variegated leaves. Mr. J. Anderson Henry has communicated to me a nearly similar case: Mr. Brown, of Perth, observed many years ago, in a Highland glen, an ash-tree with yellow leaves; and buds taken from this tree were inserted into common ashes, which in consequence were affected, and produced the *Blotched Breadalbane Ash*. This variety has been propagated, and has preserved its character during the last fifty years. Weeping ashes, also, were budded on the affected stocks, and became similarly variegated. It has been repeatedly proved that several species of *Abutilon*, on which the variegated *A. thompsonii* has been grafted, become variegated.¹⁰⁴

Many authors consider variegation as the result of disease; and the foregoing cases may be looked at as the direct result of the inoculation of a disease or some weakness. This has been almost proved to be the case by Morren in the excellent paper just referred to, who shows that even a leaf inserted by its footstalk into the bark of the stock is sufficient to communicate variegation to it, though the leaf soon perishes. Even fully formed leaves on the stock of *Abutilon* are sometimes affected by the graft and become variegated. Variegation is much influenced, as we shall hereafter see, by the nature of the soil in which the plants are grown; and it does not

¹⁰¹ 'Gard. Chron.,' 1855, p. 628.
See also Prof. Caspary, in 'Transact. Hort. Congress of Amsterdam,' 1865.

¹⁰² Gärtner ('Bastarderzeugung,' s. 611) gives many references on this subject.

¹⁰³ A nearly similar account was given by Brabley, in 1724, in his 'Treatise on Husbandry,' vol. i. p.

199.

¹⁰⁴ Morren, 'Bull. de l'Acad. R. des Sciences de Belgique,' 2de séries, tom. xxviii., 1869, p. 434. Also Magnus, 'Gesellschaft naturforschender Freunde, Berlin,' Feb. 21, 1871, p. 13; *ibid.*, June 21, 1870, and Oct. 17, 1871. Also 'Bot. Zeitung,' Feb. 24, 1871.