to the axis. Mr. Arnold, in Canada, varied the experiment in an interesting manner: "a female flower was subjected first to the "action of pollen from a yellow variety, and then to that from a "white variety; the result was an ear, each grain of which was "yellow below and white above."[139] With other plants it has occasionally been observed that the crossed offspring showed the influence of two kinds of pollen, but in this case the two kinds affected the mother-plant.

Mr. Sabine states[140] that he has seen the form of the nearly globular seed-capsule of *Amaryllis vittata* altered by the application of the pollen of another species, of which the capsule has gibbous angles. With an allied genus, a well-known botanist, Maximowicz, has described in detail the striking results of reciprocally fertilising *Lilium bulbiferum* and *davuricum* with each other's pollen. Each species produced fruit not like its own, but almost identical with that of the pollen-bearing species; but from an accident only the fruit of the latter species was carefully examined; the seeds were intermediate in the development of their wings.[141]

Fritz Müller fertilised *Cattleya leopoldi* with pollen of *Epidendron cinnabarinum*; and the capsules contained very few seeds; but these presented a most wonderful appearance, which, from the description given, two botanists, Hildebrand and Maximowicz, attribute to the direct action of the pollen of the Epidendron.[142]

Mr. J. Anderson Henry[143] crossed *Rhododendron dalhousiæ* with the pollen of *R. nuttallii*, which is one of the largest-flowered and noblest species of the genus. The largest pod produced by the former species, when fertilised with its own pollen, measured $1\frac{2}{8}$ inch in length and $1\frac{1}{2}$ in girth; whilst three of the pods which had been fertilised by pollen of *R. nuttallii* measured $1\frac{5}{8}$ inch in length and no less than 2 inches in girth. Here the effect of the foreign pollen was apparently confined to increasing the size of the ovarium; but we must be cautious in assuming, as the following case shows, that size had been transferred from the male parent to the capsule of the female plant. Mr. Henry fertilised *Arabis blepharophylla* with pollen of *A. soyeri*, and the pods thus produced, of which he was so kind as to send me detailed measurements and sketches, were much larger in all their dimensions than those naturally produced by either the male or female parent-species. In a future chapter we shall see that the organs of vegetation in hybrid plants, indepen-

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[139] *See* Dr. J. Stockton-Hough, in American Naturalist,' Jan. 1874, p. 29.

[140] 'Transact. Hort. Soc.,' vol. v. p. 69.

[141] 'Bull. de l'Acad. Imp. de St. Petersburg,' tom. xvii. p. 275, 1872. The author gives references to those cases in the Solanaceæ of fruit affected by foreign pollen, but as it does not appear that the mother-plant was artificially fertilised, I have not entered into details.

[142] 'Bot. Zeitung,' Sept. 1868, p. 631. For Maximowicz's judgment, see the paper last referred to.

[143] 'Journal of Horticulture,' Jan. 20, 1863, p. 46.