

him thus :—"The life of plants is, as Mr. Göthe very prettily says, an expansion and contraction, and these alternations make the various periods of life." "This '*prettily*,'" says Göthe, "I can be well content with, but the '*egregie*' of Usteri is much more pretty and obliging." Usteri had used this term respecting Göthe in an edition of Jussieu.

The application of the notion of metamorphosis to the explanation of double and monstrous flowers had been made previously by Jussieu.

Göthe's merit was, to have referred to it the *regular* formation of the flower. And as Sprengel justly says,<sup>9</sup> his view had so profound a meaning, made so strong an appeal by its simplicity, and was so fruitful in the most valuable consequences, that it was not to be wondered at if it occasioned further examination of the subject; although many persons pretend to slight it. The task of confirming and verifying the doctrine by a general application of it to all cases,—a labor so important and necessary after the promulgation of any great principle,—Göthe himself did not execute. At first he collected specimens and made drawings with some such view,<sup>10</sup> but he was interrupted and diverted to other matters. "And now," says he, in his later publication, "when I look back on this undertaking, it is easy to see that the object which I had before my eyes was, for me, in my position, with my habits and mode of thinking, unattainable. For it was no less than this: that I was to take that which I had stated in general, and presented to the conception, to the mental intuition, in words; and that I should, in a particularly visible, orderly, and gradual manner, present it to the eye; so as to show to the outward sense that out of the germ of this idea might grow a tree of physiology fit to overshadow the world."

Voigt, professor at Jena, was one of the first who adopted Göthe's view into an elementary work, which he did in 1808. Other botanists labored in the direction which had thus been pointed out. Of those who have thus contributed to the establishment and development of the metamorphic doctrine, Professor De Candolle, of Geneva, is perhaps the most important. His Theory of Developement rests upon two main principles, *abortion* and *adhesion*. By considering some parts as degenerated or absent through the abortion of the buds which might have formed them, and other parts as adhering together, he holds that all plants may be reduced to perfect symmetry: and the actual and constant occurrence of such incidents is shown beyond

<sup>9</sup> *Gesch. Botan.* ii. 304.

<sup>1</sup> *Zur Morph.* i. 229.