

probably depends on multiple parts being of less physiological importance than single parts; consequently their structure has been less rigorously guarded by natural selection.

Compensation of Growth, or Balancement.—This law, as applied to natural species, was propounded by Goethe and Geoffroy Saint-Hilaire at nearly the same time. It implies that, when much organised matter is used in building up some one part, other parts are starved and become reduced. Several authors, especially botanists, believe in this law; others reject it. As far as I can judge, it occasionally holds good; but its importance has probably been exaggerated. It is scarcely possible to distinguish between the supposed effects of such compensation, and the effects of long-continued selection which may lead to the augmentation of one part, and simultaneously to the diminution of another. Anyhow, there can be no doubt that an organ may be greatly increased without any corresponding diminution of an adjoining part. To recur to our former illustration of the Irish elk, it may be asked what part has suffered in consequence of the immense development of the horns?

It has already been observed that the struggle for existence does not bear hard on our domesticated productions, and consequently the principle of economy of growth will seldom come into play, so that we ought not to expect to find with them frequent evidence of compensation. We have, however, some such cases. Moquin-Tandon describes a monstrous bean,⁷ in which the stipules were enormously developed, and the leaflets apparently in consequence completely aborted; this case is interesting, as it represents the natural condition of *Lathyrus aphaca*, with its stipules of great size, and its leaves reduced to mere threads, which act as tendrils. De Candolle⁸ has remarked that the varieties of *Raphanus sativus* which have small roots yield numerous seed containing much oil, whilst those with large roots are not productive in oil; and so it is with *Brassica asperifolia*. The varieties of

⁷ 'Tératologie Vég.,' p. 156. See also my book on 'The Movements and Habits of Climbing Plants,' 2nd edit,

1875, p. 202.

⁸ 'Mémoires du Muséum,' &c., tom. viii. p. 178.