been made to form a classification-on the contrary, Diel, Dochnahl, and Lucas have each produced one, each of which is a modification or altered form of the other; but the characters upon which they are based are to my mind too varying and not sufficiently apparent to render them as useful as could be desired. In my work on the Apple, which was published five-and-twenty years ago, I gave a kind of classification to assist stu-dents in pomology to ascertain the names of the different varieties; but it has never served that purpose. Previous to this I had attempted to apply Diel's system and failed. Ever since that time I have been assiduously observant of every character in the structure of the Apple which I thought served as a basis for a classification, and at last I fixed upon those which I have accepted as the principles of the new system which I am now about to describe.

The characters upon which this system is based are well known, and have been noticed in descriptions of fruit so long as by Diel and other German pomologie's; but, just as the pre-Linnean botanists observed the stamens and pistils in plants, and entertained certain views with regard to their functions without employing them as bases for classification, so has it been with the pomologists, who, while aware of the presence of the characters, have hitherto overlooked them as being applicable to classification.

For some years past I have endeavoured to apply the characters I have now adopted. The light I had at first was small and dim, but by repeated application to the subject every recurring fruit season I began to see the foundation of what has now grown up to the structure which I now offer to the world.

My reason for not giving publicity to it before this was that I wished to work it thoroughly before I committed myself to it. To do so I have procured in various years collections of fruits from different parts of the country, from different soils and climates, and also at different seasons of the year; and in every case I was gratified to find that the characters which I observed in each variety of fruit were equally well-marked in that variety from whatever district, soil, or climate it came, or at whatever season the examination took place. For instance, Wyken Pippin trom Tweedside, from Chiswick, from Sussex, from Worcester, from Somcrset, and from Devon invariably presented the same characters of eye open, seedcells closed, calyx-tube conical, and stamens median. This I merely give as an example, and it is applicable in every case.

I must remark, however, that in this, as in every other classification of natural

constant, and there are varieties which refuse to submit to any scheme of man's Nature refuses to be bound, devising. and we must adapt our ideas to her laws. In every system it is so, as the botanist well knows. When he would class plants into those which are hypogynous, perigynous, and epigynous, he finds there are son's that reject his interference and assert .. double alliance. And so it is with fruits. There are those in which some varieties have the eye open or partially closed, seed-cells of the same character, calyx-tubes in which it is difficult to determine whether they are conical or funnel-shaped, and stamens which waver between a marginal and median position, or a median and a basal. But these are difficulties which are easily got over, as I shall show further on.

The characters which I have adopted as the basis of this classification are the eye, the seed-cells, the calyx-tube, and the stamens. These supply the primary and most important divisions; but they may be extended and broken up into fruit round, roundish, or oblate, and fruit conical, obloug, or ovate, and these for convenience may be farther divided into pale, coloured, and russet. I will now treat of the leading characters.

1. The Eye .- This is the pomological term used to signify what botanists call the sepals or limb, and mouth of the calyx. In French it is called *ail*.

If we examine a great number of varieties of Apples, we find that in some the eye is wide open, and the segments quite reflexed, in some cases so much so as to be quite flat on the surface of the fruit. This is very apparent in Blenheim Pippin, Wyken Pippin, and Court of Wick. In many cases the segments are crect and spreading or reflexed at the tips, and this form of structure also leaves the eye open though not so much so as in the previous examples. Between the spreading and the erect open eye there are many gradations which will be remarked by any observer who examines the different varieties

The other form is the closed eye. It will be observed in this case that the segments are erect and connivent at the tips, forming a small cone. In some cases of this form of closed eye the tips are spreading ; but there is another very distinct form of the closed eye in which the segments are quite flat and convergent, closing in the eye like a trap-door in five divisions, as is seen in Trumpington. These two characters of eye open, and eye closed, I propose to employ as my primary divisions.

2. The Sced-cells.-These constitute what is popularly called the core of the Apple, and contain the seeds or pips. They are usually five, but they vary in objects, the characters are not always number, and are occasionally three, four,

and even six. They differ very much in structure, and are either open. to the axis of the fruit or closed; and between the closed and wide-open cells there are as many gradations as in the closed and open eye. Some have perfectly closed cells, some have them open, and in others again they are wide open. In the last are to be found all the Codlins, and varieties having the Codlin character.

The seed-cells form the second great divisions of my system, which are dis-tinguished as cells open, and cells closed.

3. The Calyx-tube .- In making a longitudinal section of an Apple, in a line through the centre of the eye to the stalk, a more or less deep cavity will be observed under the segments of the eye and between them and the core. This is called the calyx-tube, or kelchröhre of the Germans. It is of very varied form, but all of these are modifications of two, or perhaps three, which may be regarded as distinct, and these I have called the conical and the funnel-shaped. As in the cases of the open and the closed eye and the open and closed cells these run into one another, and there are instances in which it is difficult to distinguish to which of them the individual belongs. In the examples of the conical tube, some are wide and deep, and others narrow and The funnel-shaped tube also asshort. sumes various forms. The third form is the cup-shaped, which very rarely occurs.

The calyx-tube is the character on which the third division is based, and is divided into calyx-tube conical and calyxtube funnel-shaped.

4. The Stamens.-These are little bristle-like bodies which are found forming a fringe found the inner surface of the calvx-tube, and it is on the position they occupy that the fourth character of this system is founded. On examining a number of different varieties of Apples it will be seen that the stamens are not always in the same position. Some will form a fringe immediately under or near the base of the segments, and these I call marginal. Others occupy a midway pcsition between the margin and the base, and these are called median ; and a third are situated near the base, which are termed basal.

Taking the position of the stamens as my fourth great division, we have-1, Stamens marginal; 2, Stamens median; 3, Stamens basal.

To prolong the subdivisions even beyond this point to which we have arrived, we can have-1, Calyx-tube short coni-cal, and deep conical. Then we can have short funnel-shaped, and long funnelshaped. These may again be further divided into-1, Fruit round, roundish, or oblate; and 2, Fruit conical, oblong, or ovate.

I have already called attention to the