

union of the *mild* alkali with a stronger acid, occasions its effervescence.

The distinct properties of acids and alkalies in their action on the blue juices of vegetables, have enabled chemists to come at this point of saturation with the greatest exactness.

Alkaline solutions will invariably change the blue of vegetables to green. Acids will change the same blue to red,* while the neutral salt resulting from a saturation of the two, produces no alteration of colour.

Tinge a solution of alkaline salt, green, with some vegetable blue, add an acid until the blue colour is recovered, and the point of saturation is gained. If more acid is added the solution will redden.

The infinite variety of blue flowers, in the season of them, will supply the blue colouring matter

* Professor Bergman says, "The general rule, namely, that blue vegetable juices are made red by acids, and green by alkalies, is liable to two exceptions, already known, viz. lackmus is rendered more intensely blue by alkalies, and indigo dissolves in vitriolic acid without any change of colour." Vol. II. page 129.

What is said of lackmus and indigo is undoubtedly true; still it does not furnish any exception to the general rule, when it is remembered that neither of those substances is of the blue vegetable juice in its original state. Lackmus is a preparation of the vegetable called Archil, which vegetable, in its natural state, gives out a red colour; but when bruised, and the red juice is treated in a certain way with lime and volatile alkali, and evaporated to a consistence, it is changed into a blue pigment called Lackmus.

Indigo is well known to be obtained from a vegetable, by fermentation; and fermentation totally changes the property of every vegetable and animal substance.