that elements whose atomic weights differed from each either by 16 or multiple of 16 fell along the same perp. line and showed nearly the same properties. However this classification also did not receive much attention.

1. Newlands law of Octaves: In 1865, an English Chemist, John Alexander Newlands observed that when the lighter elements were arranged in order of their increa- sing atomic weights, the properties of every eighth element were similar to those of the first one like the eighth note of a musical scale.

| e.g. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Li | Be | B | C | N | O | F |  |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |  |
| Na | Mg | Al | Si | P | S | Cl |  |

Thus sodium, the eighth element is similar to lithium and so is the next eighth element potassium. The same is true of Beryllium, magnesium and calcium; boron and aluminium and so on.

This generalisation was also discarded since it was applicable to only lighter elements having atomic weights up to 40 u. Further more, with the discovery of noble gases, the properties of the eighth element were no longer similar to those of the first one.

1. Lothar Meyer arrangement: In 1869, Lothar Meyer, a German chemist, studied the physical properties such as atomic volumes (gram atomic weight divided by density), melting point and boiling point of various elements.

He plotted a graph between the at. volumes and atomic weights of the elements and observed that elements with similar properties occupied similar positions.