similar positions. Thus the alkali metals, lithium, sodium, potassium, rubidium, and cæsium, occupy the crests of the waves; the halogens, fluorine, chlorine, bromine, and iodine, fall about midway between crests and troughs, and a little further study discloses a host of other corresponding relationships.

Similar periodic variations may be shown to occur in other physical properties of the elements; — the melting points, the boiling points, the magnetic characteristics, etc. Even more striking are the periodic variations in chemical properties, including the general characteristics which first led to the idea of rational classification, and more specific qualities like the combining powers for hydrogen, oxygen, and other elements.

The clearest proof of the value of the periodic classification has been the prediction of "new" elements, and accurate foreknowledge of their properties. Thus when Mendeléeff first described the system, the element germanium, discovered by Winkler in 1886, was unknown; but from the properties of the elements surrounding a gap in the system the Russian chemist was able to predict its properties with almost incredible exactness, as the following table shows.