

In the other groups they seem to combine more or less the characteristics of both families.

The first group will serve to illustrate the nature of the classification. It includes the metals of the alkalis, lithium, sodium, potassium, rubidium, and cesium, together with the three heavy metals, copper, silver, and gold. Between the two families the resemblance is not very strong, so that the *group characteristics* are reduced to a general resemblance in the type of compounds, e.g., MCl , M_2O , etc., where M stands for any metal of the group. However, silver forms an alum in which it plays the part of an alkali metal. The *family characteristics* on the other hand are well defined. Those of the alkali family are given at p. 368 of the Text Book. To the statement given there may be added the formation of isomorphous alums (p. 336 of Text Book), of other double sulphates, and of chloroplatinates (p. 314). These series of compounds show the *gradation in properties* generally well marked in the natural families of the elements. This is well shown in the solubilities of the alums and chloroplatinates, which decrease from lithium to cesium. The same feature is seen in the physical properties of the metals:

	COMBINING WEIGHT.	MELTING POINT.	BOILING POINT.	SPECIFIC WEIGHT*.	FLAME COLOUR.
Lithium....	7	180	Above 1000	0.59	Red
Sodium ..	23	95	Above 900	0.98	Yellow
Potassium .	39	58	720	0.87	Violet
Rubidium ..	85	39		1.52	Violet
Cesium ...	133	27°		1.88	Blue

* See p. 25.

Copper
each other
have m
durable
in the
white c
soluble i
also form
and Au
type, Cr
cases is
iron and
between
Gold for
is a wea
metals.
salts rec
These co
many sin
distinct r
from the
the grou
more or
family ar
from thi
that of
aluminum
law place
with whi
iron, nick
so that f
etc.) this