On the Relation Existing between the Chemical Composition and the Mechanical Properties of Steels, V. DESHAYES, Eng. at Terre-Noire.—Not suitable for abstraction. An elaborate article, giving complete details in regard to this important subject.

Idem, No. 5.

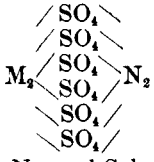
Note upon a Recent Work of M. B. Aronheim, P. SCHUTZENBERGER.

On the Chlorostannates of the Rare Earths, P. T. CLEVE. — The following have been prepared:

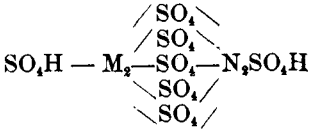
$$2La_2Cl_6,\ 5SnCl_4,\ 45H_2O.$$
$$Ce_2Cl_6,\ 2SnCl_4,\ 18H_2O.$$
$$Di_2Cl_6,\ 2SnCl_4,\ 21H_2O.$$
$$Y_2Cl_6,\ 2SnCl_4,\ 16H_2O.$$

The composition of the chlorostannates is thus shown to be perfectly analogous to that of the chloroplatinates.

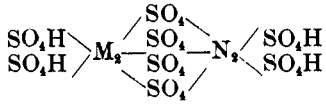
Researches upon Sulphates, A. ETARD.—Most mixed sesquisulphates can be represented by the general formula $M_2(SO_4)_6N_2$. Only one salt of the type, $2[M_2(SO_4)_3]N_2(SO_4)_3$, has been observed. According to the theory of the author, by heat the acid salt changes as follows:



Neutral Salt.



First acid salt.



Second acid salt.

Some of the salts made are:

Acid double sulphate of iron and alumina—
$$[Al_2(SO_4)_6Fe_2\ SO_4H_2].$$

Acid sesquisulphate of iron and chromium—
$$[Cr_2(SO_4)_6Fe_2\ SO_4H_2].$$

Sesquisulphate of aluminum and manganese—
$$2[Al_2(SO_4)_3]Mn_2(SO_4)_3.$$