

into the $\text{H}_2\text{S O}_4$, that is, for every 5 ($56+64$) = 600 kilogr. used we get $64 \times 4 = 256$ kilogr. of Sulphur; $\therefore$ from 300 kilogr. used we get $\frac{256}{2} = 128$ kilogr. of Sulphur to enter into the $\text{H}_2\text{S O}_4 = 2 + 32 + 64 = 98$; $\therefore$ for every 32 kilogr. we have in 128 kilogr. Sulphur we have 98 kilogr. of pure Acid; $\therefore$ we get $98 \times 4 = 392$ pure, and $\therefore \frac{5}{4}$ of 392 = 490 commercial Acid.

X. (a). "Explain the hypothesis accounting for allotropism of elementary bodies, together with experimental evidence of its truth. (b). Explain the use of the terms 'atom,' 'molecule,' 'compound radical,' and 'combining weight' as differing from 'atomic weight.'"

(a). Allotropism of elementary bodies is explained by supposing that the various forms of an element are caused by a different arrangement, or a different number, of atoms in the molecules of which it is made up. The truth of this may be seen in the case Ozone, which is an allotropic form of Oxygen. If a

current of electricity be passed through pure, dry Oxygen, it will condense to form Ozone, which is found to have 3 atoms to the molecule, whereas Oxygen has but 2.

(b). An 'atom' is the smallest portion of an element which can enter into chemical combination.

A 'molecule' is the smallest portion of an element or compound which can exist in a free state, and is generally composed of two or more atoms.

'Compound radical' is the name given to those groupes of elementary atoms which act collectively as elements.

The 'atomic weight' of an element is the ratio between the weight of a given volume of the element and that of the same volume of Hydrogen.

The 'combining weight' of an element is the fixed proportion by weight in which it is found to enter into chemical combination.

GEOGRAPHY.

The following is intended to supplement our text books on the Geography of the Dominion.

British Columbia is noted chiefly for its mineral wealth, its fisheries and timber products. The principal agricultural region lies south of the Thompson river. The mineral wealth is illimitable, but has not been developed for want of capital. Iron ore is especially abundant, and it is expected that the construction of the Pacific railroad will develop vast resources of gold and silver. The country is more mountainous than our geographies represent it to be. The railway will enter the province at Yellowhead Pass, descend the valley of the Thompson, and crossing the Fraser river, will have its ter-

minus at Burrard Inlet, north of New Westminster. The Rocky Mountains are gradually connected on the East with the vast prairies which stretch away South from the Mackenzie river, and include the country South of the Saskatchewan, Manitoba, Minnesota, Dakota, Iowa, Illinois, Missouri, Kansas, the Indian Territory and Texas. The 49th parallel of latitude is the boundary between Canada and United States in this part, and the prairie north of this is described as a vast extent of excellent farming land, the most fertile parts being the valleys of the Peace, Saskatchewan and Red River. Prof.