

(AgCl), and Silver Nitrate, (AgNO₃) undergo in the light? (c) What weight of Mercury and Corrosive Sublimate must be taken to yield 3 Kilos of Calomel?

(a). To an aqueous solution in which Salts of all three are present, add

(1) K₂CrO₄ (yellow Chromate of Potassium,) Barium is precipitated as BaCrO₄. Filter and to the filtrate, add

HCl and (NH₄)₂CO₃ and boil CaCO₃ is precipitated. Filter and to filtrate, add

Na₃PO₄ Magnesium is precipitated, Mg NH₄PO₄ + 6H₂O.

(b). They are both gradually reduced to metallic silver (or sub Oxide Ag₂O?)

(c). HgCl₂ + Hg :: Hg₂Cl₂.

HgCl₂ = 200 + 71 = 271 parts of Corrosive Sublimate.

Hg = 200 parts of Mercury.

Hg₂Cl₂ = 400 + 71 = 471 parts of Calomel.

3 Kilos = 1000 × 3 = 3000 grammes.

Hence, 471 grammes of Calomel require 200 grammes of Hg.

∴ 3000 grammes Calomel require

$$\frac{3000 \times 200}{471}$$

$$3000 \times 271 = 1273.9 \text{ grammes of Hg.}$$

Similarly 3000 grammes Calomel require

$$\frac{1726.1 \text{ grammes of HgCl}_2}{471}$$

Q. 10. How much Oxygen is required to form 5 volumes of Ozone by means of a series of electric discharges passed through the gas.

12 vols. of Oxygen contract one volume in forming Ozone.

∴ 2 vols. of Ozone require 12 vols. of Oxygen, since 3 vols. of Oxygen condense to form 2 vols. of Ozone. Hence 5 vols. of Ozone require 30 vols. Oxygen.

UNIVERSITY OF TORONTO.—FIRST EXAMINATION, 1880.

ENGLISH, (Pass.)

Examination: FRED E. SEYMORE, M. A., J. H. LONG, M. A.,

1. Write a composition on one of the following subjects:

(1.) "An habitation giddy and unsure Hath he that buildeth on the vulgar heart."—*Shake.*

(2.) "A French family settled in England and edited the England Language."—*Earle.*

(3.) "A drop of ink, Falling like dew upon a thought, produces That which makes thousands, perhaps millions think."—*Byron.*

(4.) "Si vis me flere, dolendum est Primum ipsi tibi; tunc tua me infortunia laedent."—*Horace.*

2. Give the accidence of the English noun, tracing the history of its inflections, and explaining such anomalous forms as occur.

3. "The grammatical character of a word is only a habit, one actual habit

out of many possible ones." *Earle*, p 190. Explain what is meant by this statement, and illustrate by examples from Shakespeare and from the English of to-day.

4. Give a list of those particles, initial or terminal, by which a noun is converted into a verb, with illustrations of their use, and some account of their derivation and history.

5. Explain and illustrate what *Earle* means by "the three adjections."

6 Explain the chronological relation subsisting between *accent* and *rhythm*. Show how English rhythm was effected by the Norman Conquest.

7. Give an account of the principal writings of Thomas Sackville, note their literary characteristics and their influence upon the early English drama.