opinion, would constitute a prime sample of Opium? (*d*) Name the adulterations, impurities or deteriorations of Gum Opium, and state (*e*) briefly how would you detect them? (*f*) Give the preparations.

7. *Microscopically.*—Differentiate: (*a*) Powdered Licorice from Compound Liocrice Powder. (*b*) Powdered Rhubarb from Insect Powder. (*c*) Hiera Picra from Powdered Cloves. (*d*) Powdered Ginger from Powdered Orris. (*e*) Powdered Senna from Powdered Cinchona.

8. *Cardamoms.*—Give (*a*) Habitat and parts used? (*b*) Constituents; (*c*) Preparations; (*d*) from what are the following obtained:—Berberia, Daphnin, Chrysarobin: Delphnine, Jervine, Saponin Narcein, Pelletierine, Saccharin, Picrotoxine.

9 and 10. Oral Examinations.

Values. 8, 10, 10, 10, 10, 10, 12, 10, 20.

PHARMACY.

Examiner—F. T. Harrison.
(Time allowed, two hours.)

1. Percolation:
   (*a*) Give brief description of process, state principles involved, and give points to be specially observed in packing a percolator.
   (*b*) Name classes of drugs for which it is well suited, also those for which it is not suited.

2. How would the following substances be affected if left in an open dish exposed to air and light: Camphor, Sulphate of Iron, Chloride of Calcium, Lead Plaster, Phosphorus, Santonin.

3. Give quantity of each of the following substances that would be equivalent to one grain of powdered Opium: Tincture of Opium, Compound Tincture of Camphor, Extract of Opium, Compound Pill of Soap, Wine of Opium, Compound Powder of Kino, Compound Powder of Ipecacuanha, Compound Powder of Opium.

4. *Æther Purus:* Say in what respect it differs from, and how it may be prepared from Ether, and give reasons for process.

5. Give description of the following, state from what they are prepared and give any common names by which they are known: Acetanilide, Glucide, Phenazone, Caffeine, Sulphonal.

6. Name the menstruum employed and state strength of each of the following: Tincture of Ergot, Tincture of Buchu, Tincture of Kino, Tincture of Iodine, Compound Tincture of Lavender, Tincture of Nux Vomica.

7. Describe and explain fully the preparation of Lead Plaster, and state all the official preparations into which it enters.

8 *Liquor Ammonii Acetatis Fortior:* From what is it prepared? Describe process and state just how you would determine when the process is finished.

9 and 10. Oral and recognition of specimens.

Values. 8, 4, 9, 12, 8, 12, 12, 8, 7.

CHEMISTRY.

Examiner—Paul L. Scott
(Time allowed, two hours.)

1. Give the chemical formula of: Zinc Sulphite, Aluminium Chloride, Potassium Hypophosphite, Ferrous Ferricyanide, Sodium Arsenite, Magnesium Citrate, Calcium Bichromate and Ferric Orthophosphate.

2. Give a brief account of the chemistry of Mercury.

3. Define the terms: Valence, Molecule, Ketone, Paraffin, Normal Volumetric Solution, Sublimation, Catalytic and Electrolysis.

4. Show by equations the action of:
   (*a*) Chlorine upon moist Slaked Lime.
   (*b*) Sodium Corbonate upon Zinc Sulphate in Solution.
   (*c*) Hydrogen Sulphide upon Copper Sulphate in Acid Solution.
   (*d*) Hydrogen Sulphide upon Potassium Chromate in Acid Solution.
   (*e*) Water upon Bismuth Nitrate ($Bi(NO_3)_3$).

5. Name the chief commercial sources of Sulphur compounds. Give the names and formulas of three Sulphur Acids. Mention three allotropic forms of Sulphur and the conditions under which they occur. Account for the occurrence of allotrophy.

6. What volume of steam measured at 110°C., under a pressure of 770 m.m. will be formed during the preparation of 100 grams of Metallic Iron, according to the following equation:

$$Fe_2O_3 + 3H_2 = 2Fe + 3H_2O.$$

(Atomic wt. of Iron = 56.)

7. Give the empirical and the structural formula, commercial sources and preparations of Acetic Acid. Give the name of the homologous series to which it belongs, and the name and formula of another acid of the same series. Give tests for the recognition of Acetates.

8. Mention the three chief sources of Nitrates. Give tests for the recognition of Nitrates and Nitrites. Mention the most prominent chemical properties of Nitric Acid, and give examples.

9 and 10. Recognition of specimens and oral examination.

Values. 8, 12, 10, 12, 10, 8, 10, 10, 20.

PRESCRIPTIONS.

Examiner: A. R. Fraser.
(Time allowed, two hours.)

1 Translate into English, describe *very fully* the manner of mixing, pointing out any errors as to doses which may occur in the following:

Recipe—
Hydrargyri Biniodidi grana septem.
Tincturæ Gentianæ Compositæ uncias duas.
Potassii iodidi drachmas duas cum semisse.
Syrupus Trifolium Compositæ uncias tres.
Aquam Menthæ Viridis ad Uncias Octo.

Misce fiat Mistura Capiat Cochlearia magna unam post jentaculum et post prandium quotidie et bis hebdomatum Capiat Pilula Hydrargyri, grana quinque si vires sinunt.

2. Translate into English and describe *very fully* the manner of mixing the following, pointing out any errors which may occur:

a. ℞ Strychnine..... gr. ii.
Syr: Flores Aurant. . ʒss.
Aq: Dist. ad..... ʒii.
M.
ʒi. T.D.S. sesquihora post cibi ex. aq. ʒiss.

b. Pot: Permang:..... gr. i.
Conf: Rosæ Q. S.
M. ft. pil. i. Mitte xii.
Unam hora somni sumend et alt noctibus repetend.

3. Give best solvent for following drugs: Iodoform, Camphor, White Vitriol, Acetanilid, Corrosive Sublimate, Sulphonal, Phenazone.

4. Give English and full Latin for the following abbreviations:

Sesunc:, post prand:, Aq. Fluv:, Cochleat:, F.L.A.:, Sesquih:, Seg pars hor:, perendie:, C.M.S.:, lat dol:.

5. Give dose of following:
Homatropia Hydrobromate., Ext: Nux Vomica,
Liquor Trinitrin, Argenti Oxidum,
Aconitine, Acid Carbolic, Grey Powder,
Gregory's Powder, Butyl Chloral Hydrate.
Liquor Hydrarg. Perchlor.

6. What do you consider the best excipient for Pills of Croton Oil, Nitrate of Silver, Pepsin, Quinine.

7. What rules are necessary to observe by druggists in the sale of certain poisons, viz., those in Part I., Schedule A, of the