## PHARMACY AND POISONS

## PART VI.

#### To be completed in all cases.

. 1 declare that all my answers to the foregoing questions are true to the best of my knowledge and belief.

Signature .....

Date.....

Given under the Official Seal of the National Health Insurance Joint Committee this 11th day of January, in the year One thousand nine hundred and twenty-six.

> W. F. Wackrill, Secretary to the National Health Insurance Joint Committee.

Given under the Official Seal of the Ministry of Labour this 11th day of January, One thousand nine hundred and twenty-six.

> H. Conacher, Secretary, to the Ministry of Labour.

Given under the Official Seal of the Ministry of Finance this 11th day of January, One thousand nine hundred and twenty-six.

G. C. Duggan,

Assistant Secretary to the Ministry of Finance.

## PHARMACY AND POISONS.

Pharmaceutical Society of Northern Ireland.

MADE BY THE COUNCIL OF THE PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND, PURSUANT TO THE 3RD SECTION OF "THE PHARMACY AND POISONS ACT (NORTHERN IRELAND), 1925."

1926. No. 123.

Regulations under Schedule 2 Part V for the Preliminary Certificate of Apprentice to a Pharmaceutical Chemist.

1 A candidate for the Preliminary Certificate of Apprentice to a Pharmaceutical Chemist shall submit to the Council documentary evidence of having passed in :---

(L.S.)

(L.S.)

(L.S.)

English and Mathematics and

Three other subjects (one of which must be a language) from the following list : Latin, Greek, French, German, Spanish, Italian, Modern History, Geography, Botany, Chemistry, Physics, or Mechanics.

2. The five subjects must have been passed at one, or not more than two, of the examinations indicated in Appendix 1 (a);

3. This evidence shall be referred to the Education Committee and reported upon to the Council.

4. Upon acceptance of a candidate the Council shall forward to him by registered post a copy of the Regulations under Schedule 2, and a Preliminary Certificate of Apprentice to a Pharmaceutical Chemist according to the form prescribed in Appendix 1 (b).

5. Any application for the Preliminary Certificate of Apprentice to a Pharmaceutical Chemist must be accompanied by an Entrance Fee of Three Guineas payable to the Treasurer of the Society.

## Regulations under Schedule 2 Part V. for the Certificate of Assistant to a Pharmaceutical Chemist.

1. A candidate for the Certificate of Assistant to a Pharmaceutical Chemist shall submit to the Council documentary evidence that he has fulfilled the requirements of Schedule 2 Part V (a) and (b) (viz. that the duration of his apprenticeship has been not less than four years; and that his age is twenty one years or more) and also that he has previously been granted the Preliminary Certificate of Apprentice to a Pharmaceutical Chemist under the Act or, alternatively and provided that such application be made before September 30th, 1926, full details of his education.

2. This evidence shall be referred to the Education Committee and reported upon to the Council.

3. Upon acceptance of the Candidate the Council shall notify the accepted person and summon him to the next Examination for the Certificate of Assistant to a Pharmaceutical Chemist.

4. The candidate shall be examined by the Board of Examiners on the syllabus prescribed in Appendix 11 (a).

5. The Council shall deliver to each Candidate who satisfies the requirements of the Board of Examiners a Certificate of Assistant to a Pharmaceutical Chemist according to the form prescribed in Appendix 11 (b) and signed by at least three of the members of the Board.

6. When applying for the FIRST TIME for the Certificate of Assistant to a Pharmaceutical Chemist, each camdidate must remit an Examination Fee of Six Guineas.

7. A candidate who, having paid his Examination Fee, submits before the date of the examination a medical certificate of his

unfitness to attend shall be entitled to examination at a subsequent date without further payment.

8. (a) A candidate who, having paid his Examination Fee, fails to satisfy the Board of Examiners or fails to attend and does not furnish a good and sufficient reason for his absence shall be entitled to examination at a subsequent date on payment of a further fee of Three Guineas.

(b) A candidate who, having paid his Examination Fee, is not accepted by the Council, shall have his full Examination Fee of Six Guineas returned to him.

9. No period of Apprenticeship shall be recognised except that served after registration as an apprentice under the Act, provided that pre-registration apprenticeship periods shall be recognised if served by a person who, at the date of the passing of the Act, was or had been an Apprentice or Assistant, or who has served for a period of four years after the passing of the Act as an apprentice to a registered chemist and druggist, or registered druggist as prescribed under Schedule 2 Part V of the Act.

10. The Board of Examiners shall meet in or about the first week of December and last week of June for the purpose of conducting the examination under Section (4) of these Regulations.

## General Regulations for the Certificate of Pharmaceutical Chemist:

1. When applying for the FIRST TIME for the Certificate of Pharmaceutical Chemist, each candidate must remit an Examination Fee of Twelve Guineas, except as provided in paragraphs 9 (c) and 13 (b) of the Regulations under Schedule 2, Part IV.

2. A candidate who, having paid his Examination Fee, submits before the date of the examination a medical certificate of his unfitness to attend shall be entitled to examination at a subsequent date without further payment.

3. A candidate who, having paid his Examination Fee, fails to satisfy the Board of Examiners or fails to attend and does not furnish a good and sufficient reason for his absence shall be entitled to examination at a subsequent date on payment of one half of the original fee.

4. A candidate who, having paid his examination fee, is not accepted by the Council, shall have the Examination Fee returned to him.

5. The Special Board of Examiners and the Board of Examiners shall meet in or about the first week of December and the last week of June for the purpose of conducting the examinations under Schedule 2 of the Act.

6. Additional Fee. A candidate for examination under Schedule 2, Part I, II or III, must remit with his first applica-

## PHARMACY AND POISONS

tion for the Certificate of Pharmaceutical Chemist, in addition to the Fee of Twelve Guineas for that Examination, a Fee of Three Guineas in place of the Fee required on application for the Preliminary Certificate of Apprentice to a Pharmaceutical Chemist.

## Regulations under Schedule 2 Part I.

1. A candidate for the certificate of Pharmaceutical Chemist shall submit to the Council documentary evidence that he has fulfilled the requirements of Part II (6) (1) (a) or (b) of the Act, viz., (a) an apprentice or an assistant to an existing pharmaceutical chemist, registered chemist and druggist, or registered druggist, or (b) registered in the existing register as a registered druggist for a period of less than five years before the passing of the Act, and also the requirements of Schedule 2 Part I (a) and (b).

- (a) that the duration of his apprenticeship or assistantship or registration, or the duration of two or all of them taken together, has been not less than four years.
- (b) that his age is twenty one years or more.

2. This evidence shall be referred to the Education Committee and reported upon to the Council.

3. Upon acceptance of a candidate the Council shall notify the accepted person and also the Special Board of Examiners, specifying in both cases under which part of the Schedule the candidate is to be examined.

4. The candidate shall then submit to the Special Board of Examiners documentary evidence of having passed the preliminary examination in force at the time of his application or alternatively full details of his education.

5. Upon acceptance of the Candidate the Special Board of Examiners shall summon him to the next Examination under Part I of Schedule 2.

6. The Special Board of Examiners shall then examine the candidate on the syllabus prescribed in Appendix III of these Regulations.

7. The Council shall deliver to each candidate who satisfies the requirements of the Special Board of Examiners a Certificate of Pharmaceutical Chemist according to the form prescribed in Appendix V (c) signed by at least two examiners and endorsed with the statement that "M\_\_\_\_\_\_ has passed the examination for the Certificate of Pharmaceutical Chemist under Part I of the Second Schedule of the Pharmacy and Poisons Act (Northern Ireland), 1925."

## Regulations under Schedule 2 Part II and Part III.

1. A candidate for the Certificate of Pharmaceutical Chemist

shall submit to the Council documentary evidence that he has fulfilled the requirements of Part II 6, (2) (a) or (b) of the Act viz. :

(a) registered in the existing register as a registered chemist and druggist, or registered druggist, who has been so registered for a period of not less than five years before that date, and who has been either principal or responsible manager of a business for a period of not less than three years, or

(b) an assistant employed in a business where dispensing is carried on, who has been so employed for a term or terms of not less than nine years (including any term of apprenticeship); or of

Part II 6, (3) of the Act which "shall apply to every person desirous of being registered as a Pharmaceutical Chemist under this Act and being at the date of the passing thereof a registered chemist and druggist or druggist who has been so registered in the existing register for a period of not less than fifteen years before that date, and who has been either principal or responsible manager of a business for a period of not less than seven years."

2. This evidence shall be referred to the Education Committee and reported upon to the Council.

3. Upon acceptance of a candidate the Council shall notify the accepted person and also the Special Board of Examiners, specifying in both cases under which Part of the Schedule the candidate is to be examined.

4. The candidate shall then submit to the Special Board of Examiners documentary evidence that he has fulfilled the requirements of Schedule 2, Part II (a) or Schedule 2, Part III (a) whichever applies in his case, viz., that his general education is of a sufficiently high standard to merit exemption from the preliminary examination.

5. The candidate, if accepted under paragraph 4, shall be summoned to the next examination under Schedule 2 Parts II and III, and shall be examined by the Special Board of Examiners on the syllabus prescribed in Appendix IV.

## Regulations under Schedule 2, Part IV, and under Part II, 6 (4) of the Act.

1. A candidate for the Certificate of Pharmaceutical Chemist

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shall submit to the Council documentary evidence that (a) he has fulfilled the requirements of Part II, 6, (4) of the Act (viz., The provisions of Part IV of the said Schedule shall apply to every person desirous of being registered as a Pharmaceutical Chemist under this Act, who may after the passing of this Act be granted a preliminary certificate as an apprentice or a certificate as an assistant to a Pharmaceutical Chemist under the provisions of Part V of the said Schedule, and who produces such evidence as may be prescribed by regulations under this Act that he has received a sufficient practical training in the subjects of the examination as specified in Part IV of the said Schedule) INCLUDING evidence that he has attended to the satisfaction of the authorities a systematic approved course of instruction in an institution or institutions recognised for the purpose by the Council on the report of the Education Committee; [The course in Botany shall extend over at least 140 hours; in Chemistry. Part I, 140 hours ; in Physics, 70 hours ; in Chemistry Part II, 140 hours; in Pharmacognosy, 100 hours; in Pharmacy, 56 hours; in Practical Pharmacy, 84 hours. The candidate shall be required to have attended in each subject as least 75 per In case of prolonged sickness or other just cent. of the classes. cause the Council shall have power to modify this regulation.] (b) Also that he has fulfilled the requirements of Schedule 2, Part IV (a) and (b) viz.:

That the duration of his apprenticeship has been not less than four years ; and that his age is twenty-one years or more.

2. This evidence shall be referred to the Education Committee and reported upon to the Council.

3. Upon acceptance of the Candidate the Council shall notify the accepted person and also the Board of Examiners, specifying in both cases under which Part of Schedule 2 and under which Syllabus the candidate is to be examined. The Council shall also summon the Candidate to the next examination under Schedule 2 Part IV.

4. The Board of Examiners shall then examine the candidate on the syllabus prescribed in Appendix V (a) of these regulations; or alternatively until 30th June, 1928, on the syllabus in Appendix III, together with an oral examination in Physics and Business Methods, provided that the Candidate has clearly marked his original application for examination as "Old Syllabus."

5. The Council shall deliver to each candidate who satisfies the requirements of the Board of Examiners a Certificate of Pharmaceutical Chemist according to the form prescribed in Appendix V (c) of these regulations, signed by at least three members of the Board.

6. Under paragraph 1 (b) no period of apprenticeship shall be recognised except that served after registration as an apprentice under the Act, provided that pre-registration periods of appren-

ticeship shall be recognised if served by a person who, at the date of the passing of the Act, was or had been an apprentice or an assistant, or who has served for a period of four years after the passing of the Act as an apprentice to a registered druggist or a registered chemist and druggist as prescribed under Schedule 2, Part IV of the Act.

7. (a) Until December, 1929, a candidate shall present himself for examination in all subjects in the first place, but a candidate who fails in one subject, or not more than two subjects, may enter for re-examination in that subject or those subjects, provided that (1) the Board of Examiners report him as "referred" in the subject or subjects, and not as having "failed"; and (2) the candidate has been examined on the syllabus in Appendix V (a). The fee for such re-examination shall be Three Guineas, to be paid on application for re-examination.

(b) Or alternatively until December, 1929, and compulsorily after that date, a candidate shall present himself for examination in the subjects of Part I first, and shall present himself for examination in the subjects of Part II, only after obtaining a certificate that he has already passed in all the subjects of Part I.

## Regulations for Candidates taking the Examination in two Parts.

8. The subjects of Part I, shall be Botany, Chemistry Part I, Physics and Business Methods.

9. A candidate applying to take the examination in two parts shall :---

- (a) submit the evidence of Preliminary general education required as in paragraph 1 (a);
- (b) submit the evidence of practical training in Botany, Chemistry and Physics required as in paragraph 1 (a);
- (c) pay Four Guineas as a first instalment of the total fee, subject to the conditions prescribed in the General Regulations for the Certificate of Pharmaceutical Chemist;
- (d) present himself for examination in the subjects of Part I, or alternatively submit to the Board of Examiners documentary evidence that he has passed the Intermediate Examination of the Queen' University of Belfast in all the subjects of Part I.

10. The Board of Examiners shall examine the presented candidate on the syllabus prescribed for the subjects of Part I in Appendix V(a).

11. The Council shall deliver to each candidate who satisfies the requirements of the Board of Examiners a certificate that he has passed in the subjects of Part I, in the form prescribed in Appendix V (b) of these Regulations, and signed by at least three Members of the Board. 12. A candidate who fails in one subject, or not more than two subjects, may enter for re-examination in that subject or those subjects, but he must pass in all subjects of Part I at not more than two examinations. The fee for such re-examination shall be Two Guineas, to be paid on application for re-examination.

13. A candidate who has passed in Part I, shall be admitted to the examination in the subjects of Part II, when he has :---

- (a) submitted to the Council documentary evidence that the duration of his apprenticeship has not been less than four years; that his age is twenty one years or more; that he has had the practical training in the subjects of Part II, as required in Paragraph I ( $\alpha$ ), and that he has passed in all the subjects of Part I at not more than two examinations.
- (b) paid Eight Guineas as a second instalment of the total fee, subject to the conditions prescribed in the General Regulations for the Certificate of Pharmaceutical Chemist.

14. (a) Such a candidate shall present himself in the first place for examination in all the subjects of Part II, namely, Chemistry, Part II, Pharmacognosy, Pharmacy, Practical Pharmacy, Latin and Prescription Reading, but a candidate who fails in one or not more than two subjects may enter for reexamination in that subject or these subjects, provided that (1) he has passed in Pharmacy and Practical Pharmacy, and (2) that the Board of Examiners report him as "referred" and not as "failed" in the subject or subjects. The fee for such re-examination shall be Four Guineas, to be paid on application for re-examination.

(b) Alternatively, such a candidate may submit to the Board of Examiners documentary evidence that he has passed the examination in all the subjects of Final Part I, for the B.Sc. in Pharmaceutics of the Queen's University of Belfast and present himself for oral and practical examinations in Pharmacy, Practical Pharmacy, Latin and Prescription Reading. A candidate who fails to satisfy the examiners in any one of these three subjects must present himself in all three subjects at any subsequent entry for examination. The fee for such re-examination shall be Four Guineas, to be paid on application for re-examination.

15. The Board of Examiners shall examine the candidate on the syllabus prescribed for subjects of Part II in Appendix V ( $\alpha$ ).

16. The Council shall deliver to each candidate who satisfies the requirements of the Board of Examiners a Certificate of Pharmaceutical Chemist according to the form prescribed in Appendix V (c) of these Regulations, and signed by at least three members of the Board.

#### APPENDIX I (a).

A. MATRICULATION EXAMINATIONS.

 The Matriculation Examination of the Queen's University of Belfast.
Any examination accepted by that University as equivalent to Matriculation Examination.

B. EXAMINATIONS NOT ACCEPTED AS EQUIVALENT TO MATRICULATION.

(3) The Pharmaceutical Preliminary Examination of the Queen's University of Belfast.

(4) Any examination accepted by that University as equivalent to the Pharmaceutical Preliminary Examination, including the P.E. of the Royal College of Physicians and Surgeons in Ireland, Educational Institute of Scotland (P.E. for Medical and P.E. for Pharmaceutical Students), College of Preceptors (P.E. for Pharmaceutical Students), Junior Certificate of the Ministry of Education, Northern Ireland, and until September 30th, 1926, the Preliminary Examination of the Pharmaceutical Society of Ireland.

## APPENDIX I (b).

#### PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND.

It is hereby certified that M.....and having been having passed.....and having been accepted by the Council, has the competence, knowledge and qualification to be registered as an apprentice to a Pharmaceutical Chemist under the Pharmacy and Poisons Act (Northern Ireland), 1925.

## (Signed)

# ......President.

......Secretary...

Date.....

## APPENDIX II (a).

PHARMACY. Recognition of the extracts, tinctures and powders of the British Pharmacopeeia; their ingredients and the proportions of the more active constituents. Recognition of the chemical substances of the British Pharmacopeeia; methods of manufacture and methods of analysis and testing for purity and adulterations. Poison Laws and Regulations, including the enumeration of the substances in the two Parts of the Fourth Schedule of the Act, and the conditions of sale, including also a general knowledge of the pharmaceutical applications.

PRACTICAL PHARMACY. Preparation of Pharmacoposial dilute acids, glycerins, infusions, limiments, lotions, mixtures, ointments, pill masses, powders, solutions; spirits, suppositories, syrups, tinctures, vinegars and wines. Compounding and dispensing of medicines as prescribed, including the labelling, finishing and directing of each package. Deciphering and expanding into full Latin or English of more or less normal prescriptions, together with the detection of dangerous doses of the more potent ingredients.

PHARMACOGNOSY. Recognition of the drugs of the Pharmacopœia; description of their characters and active principles; their botanical and geographical sources; the official preparations containing them; commoner adulterations.

BOTANY. The Plant; its external parts and internal structure as shown by representative Dicotyledons and Monocotyledons; its general physiology including The Transpiration Current, Carbon Assimilation, Respiration, Reseive Food-Materials, Growth and Movement. The recognition of the principal indigenous plants used in medicine, together with the description of their distinctive characters and of the characters by which they are placed in their respective natural families.

## APPENDIX II (b).

(Form of Certificate of an Assistant to a Pharmaceutical Chemist).

This is to certify that M..... has been duly examined in accordance with the provisions of the Pharmacy and Poisons Act (Northern Ireland), 1925, in Botany, Pharmacognosy, Pharmacy and Practical Pharmacy, and that he is hereby qualified to act as an Assistant to a Pharmaceutical Chemist.

## APPENDIX III.

BOTANY. The Plant, its external parts and internal structure as shown by representative Dicotyledons and Monocotyledons; its general physiology including The Transpiration Current, Carbon Assimilation, Respiration, Reserve Food-Materials, Growth and Movement.

The recognition of the principal indigenous plants used in medicine, together with the description of their distinctive characters and of the characters by which they are placed in their respective natural families.

The recognition, description and preparation of sections of the parts of plants commonly used in medicine, such as stems, leaves, roots, barks and woods, and dissections of flowers, fruits and seeds. PHARMACOGNOSY. Recognition of the drugs of the Pharmacopœia; descrip-

PHARMACOGNOSY. Recognition of the drugs of the Pharmacopœia; descriptions of their characters and active principles; their botanical and geographical sources; the official preparations containing them; commoner adulterations.

sources; the official preparations containing them; commoner adulterations. CHEMISTRY (Theoretical and Practical). The Elementary Laws of Chemistry, including Chemical Equations; recognition of the chemical substances of the Pharmacopeaia; description of the processes of manufacture; Qualitative Analysis (including the Tests of the Pharmacopeaia and Volumetric Analysis, A practical examination in Qualitative and Volumetric Analysis shall be compulsory.

**PHARMACY.** Recognition of the extracts, tinctures and powders of the British Pharmacopœia; their ingredients and the proportions of the more active constituents.

Poison Laws and Regulations, including the enumeration of the substances in the two Parts of the Fourth Schedule of the Act, and the conditions of sale, wholesale and retail, including also a general knowledge of the pharmaceutical applications of the Dangerous Drugs Acts and Regulations.

applications of the Dangerous Drugs Acts and Regulations. PRACTICAL PHARMACY. Preparation of Pharmacopæial dilute acids, glycerins. infusions, liniments, lotions, mixtures, ointments, pill masses, powders, solutions, spirits suppositories, syrups, tinctures, vinegars, and wines.

Compounding and dispensing of medicines as prescribed, including the labelling, finishing and directing of each package.

Deciphering and expanding into full Latin or English of more or less normal prescriptions, together with the detection of dangerous doses of the more potent ingredients.

#### APPENDIX IV.

Syllabus for Examination under Schedule 2 Part II.

PHARMACY. Recognition of the extracts, tinctures and powders of the British. Pharmacopœia; their ingredients and the proportions of the more active constituents.

Poison Laws and Regulations, including the enumeration of the substances in the two Parts of the Fourth Schedule of the Act, and the conditions of sale, wholesale and retail, including also a general knowledge of the pharmaceutical applications of the Dangerous Drugs Acts and Regulations.

PRACTICAL PHARMACY. Preparation of Pharmacopœial dilute acids, glycerins, infusions, liniments, lotions, mixtures, ointments, pill masses, powders, solutions, spirits, suppositories, syrups, tinctures, vinegars, and wines.

Compounding and dispensing of medicines as prescribed, including the labelling, finishing and directing of each package.

Deciphering and expanding into full Latin or English of more or less normal prescriptions, together with the detection of dangerous doses of the more potent ingredients.

PHARMACOGNOSY. Recognition of the drugs of the Pharmacopœia; descriptions of their characters and active principles; their botanical and geographical sources; the official preparations containing them; commoner adulterations

BOTANY. The Plant, its external parts and internal structure as shown by. representative Dicotyledons and Monocotyledons; its general physiology including The Transpiration Current, Carbon Assimilation, Respiration, Reserve, Food-Materials, Growth and Movement.

The recognition of the principal indigenous plants used in medicine, together with the description of their distinctive characters and of the characters by which they are placed in their respective natural families.

Syllabus for Examination under Schedule 2 Part III.

PHARMACY. Recognition of the extracts, tinctures and powders of the British Pharmacopoeia; their ingredients and the proportions of the more active constituents.

Poison Laws and Regulations, including the enumeration of the substances in the two Parts of the Fourth Schedule of the Act, and the conditions of sale, wholesale and retail, including also a general knowledge of the pharmaceutical applications of the Dangerous Drugs Acts and Regulations. PRACTICAL PHARMACY. Preparation of Pharmacopœial dilute acids, glycerins,

infusions, liniments, lotions, mixtures, ointments, pill masses, powders, solutions, spirits, suppositories, syrups, tinctures, vinegars and wines.

Compounding and dispensing of medicines as prescribed, including the labelling, finishing and directing of each package.

Deciphering and expanding into full Latin or English of more or less normal prescriptions, together with the detection of dangerous doses of the more potent ingredients.

#### APPENDIX V (a). PART I.

## CHEMISTRY, PART I.

An elementary knowledge of the following subjects :

The chief characteristics of chemical action, the distinction between elements and compounds; the laws of chemical combination by weight and volume; the hypothesis of Avogadro; atomic weight and molecular weight; chemical formulæ and nomenclature; valency; the distinction between metals and non-metals, and the periodic classification of the elements. . The general characters of the non-metals; the chief methods of preparation

and the typical reactions of the following non-metallic elements and compounds : Hydrogen, oxygen, ozone, water, hydrogen peroxide; chlorine, bromine and iodine, and their compounds with hydrogen and oxygen; fluorine, hydro-fluoric acid; nitrogen, ammonia, and ammonium compounds, the oxides of nitrogen, nitrous acid, nitric acid; sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid; phosphorus, phosphine, the oxides and oxy-acids of phosphorus, the chlorides of phosphorus; silicon, silica; boron, boric acid.

The general characters and classification of the metals, and the general methods of forming oxides and salts; the sources, the general methods of extracting and the chief properties of the undermentioned metals, also the modes of preparation and properties of their principal compounds-Potassium, sodium, lithium, barium, strontium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, nickel, cobait, arsenic, antimony, tin, copper, bismuth, lead, silver, mercury, gold and platinum.

Carbon, its oxides, methane, ethylene, and acetylene. The methods of determining carbon, hydrogen, oxygen, and nitrogen in organic compounds and of obtaining molecular formulæ.

Note.-The candidate is expected to solve simple problems relating to the weight and volume under différent conditions of temperature and pressure, of elements and compounds concerned in chemical reactions.

#### PRACTICAL EXAMINATION.

The candidate will be required :---

:

To exhibit a practical acquaintance with the methods of preparing the more important inorganic substances.

To identify by chemical tests the more important non-metallic elements and their compounds, as well as the metals and salts indicated in the foregoing list.

To analyse a mixture containing not more than two basic and two inorganic acid radicles.

To understand the principles of volumetric analysis and to prepare, standardise, and use volumetric solutions of inorganic acids, alkalis, potassium permanganate, and silver nitrate.

## PHYSICS.

An elementary knowledge of :-

Units; mass, weight; the balance; force, energy, and work; levers and pulleys; gravity; centre of gravity; distinctions between solids, liquids, and gases; transmission of pressure in liquids; water pumps; the syphon; Boyle's law; atmospheric pressure; barometers; air-pumps; diffusion; dialysis;

specific gravity; vapour density. Temperature; thermometry; changes in volume of solids, liquids, and gases with alterations of temperature; quantity of heat; specific heat; change of state; latent heat; boiling and freezing points; vapour pressure,

Propagation of light; laws of reflection and refraction; photometry; simple properties of mirrors, lenses, and prisms; the eye as an optical instrument; the principles of the correction of errors of vision by means of lenses.

Simple properties of magnets; simple phenomena of static electricity; electric currents; primary and secondary cells; the magnetic, chemical, and heating effects of currents; Ohm's law.

## PRACTICAL EXAMINATION.

The candidate will be required to perform simple experiments, solve simple problems, and to show a knowledge of the construction and use of physical apparatus, so as to illustrate the subjects detailed above.

#### BOTANY.

A knowledge of :---

The elements of Plant Morphology and Anatomy :- The external form of ants; Thallus, stem, leaf, root. The distinguishing features and commoner plants; Thallus, stem, leaf, root. modifications of these structures. Buds and verantion. Phyllotaxis and branch-ing. Inflorescence, flower, fruit. Pollination. Self and cross-fertilisation. The formation of the seed. Germination. A general acquaintance with the elements of plant anatomy; the vegetable cell; tissues, including meristematic, epidermal, fundamental, and vascular. The characteristic anatomical features of stems, leaves and roots of flowering plants. The method of increase in thickness of stems and roots, and the characters of primary and secondary tissues.

The elements of Physiology :- The nature and source of the food of plants, and the manner in which the raw materials are elaborated. Chlorophyll, its manner of occurrence in the plant ; its functions and the conditions under which it discharges them. Reserve materials, their nature, mode of deposition, and the manner in which they are utilised by the plant. The manner in which plants The manner in grow, and the conditions necessary for the growth of a plant. which plants respond to external stimuli, e.g., light, gravity, etc. Sexual and asexual reproduction.

Classification :--- A general knowledge of the chief divisions of the vegetable kingdom, including a special study of the plants and families named.

THALLOPHYTA.

Algæ :--Spirogyra, Fucus.

Fungi :- Agaricus, Saccharomyces, Bacillus.

BRYOPHYTA.

Pellia and Funaria.

PTERIDOPHYTA.

Dryopteris, Fili-mas.

SPERMAPHYTA.

Gymnospermæ :-- Pinus, with only the general external features of Cycas and Taxus.

Angiospermæ.

Dicotyledones :---Salicaceæ, Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Umbelliferæ, Scrophulariaceæ, Labiatæ, Solanaceæ, Compositæ.

Monocotyledones :- Liliaceæ, Gramineæ.

#### PRACTICAL EXAMINATION.

The candidate will be required to dissect, examine, and describe any plants or parts of plants, and to refer to their systematic position any plants belonging to the above-named groups and families. He will also be required to prepare for the microscope and to describe sections illustrating the anatomy of the plant structures enumerated above.

#### BUSINESS METHODS.

Book-keeping, including business books required in a Pharmacy; Double Entry; Balance Sheets; Commercial Law relating to Master and Servant, Leases, Agreements and Contracts. A working knowledge of matters likely to arise in Pharmaceutical practice relating to Licences, Insurance, Income Tax, Partnership and Company Trading, Elementary principles of advertising and salesmanship; Modern Methods of Window Display; Shop-craft, including arrangement of a shop, windows, heat, ventilation, counters, wall and countercases and general lay-out.

## APPENDIX V (a) PART II.

#### PHARMACOGNOSY.

The candidate will be required to recognise specimens of crude drugs mentioned in the British Pharmacopœia or in the annexed list; to be acquainted with their botanical or zoological, and geographical sources, commercial varieties, the natural orders to which they belong, and the mode of collection and preparation for the market; to indicate the morphological nature of such as are organised, and the mode of formation of such as are unorganised; to describe them correctly, and to point out diagnostic characters either chemical or physical, the latter as far as they can be ascertained by the use of a pocket lens; to name the chief active constituents of official drugs, to know the proportion present in good samples of the more important of them, and to possess a knowledge of qualitative Pharmacopical tests applied to crude drugs or their official products.

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Agar-agar	Inulæ Radix
Alkannæ Radix	Iridis Rhizoma .
Altheæ Radix	Lacca
Amomi Meleguetæ Semina	Lauri Fructus
Arecæ Semina	Lupulus
Arnicæ Rhizoma	Lycopodium
Cacao Semina	Manna
Calendulæ Flores	Mastiche
Cambogia	Moschus
Canellæ Cortex	Mylabris
Cantharis	Olibanum
Cassiæ Cortex	Papaveris Capsulæ
Cetraria islandica	Physostigmatis Semina
Chondrus crispus	Pilocarpi microphylli Folia
Chrysanthemi <sup>°</sup> cinerariæ	Pimenta
folii Flores	Piper longum
Cimicifugæ Rhizoma	Piper nigrum
Cocæ Folia	Pix Burgundica
Cocculus Indicus	Quercus Cortex
Conii Fructus	Rhamni Frangulæ Cortex
Convallariæ Flores	Sabinæ Cacumina
Crocus	Sandaraca
<sup>*</sup> Cumini Fructus	Sanguinariæ Rhizoma
Cydoniæ Semina	Sanguis Draconis
Elaterium	Sarsæ Radix
Eucalypti Folia	Scammonium
Euphorbium	Sinapis albæ Semina
Fœni-græci Semina	Sinapis nigræ Semina
Fncus vesiculosus	Stramonii Semina
Galbanum	Sumbul Radix
Guarana	Tonco Semina
Guttapercha	Ulmi fulvæ Cortex
Hellebori nigri Rhizoma	Vanillæ Fructus
Hyoscyami Semina	Veratri albi Rhizoma
Ignatii Semina	
The candidate is also required to recognise any of the plants in the following	
list :	

Anconitum Napellus Lavandula vera. Althæa officinalis Matricaria Chamomilla Anthemis nobilis Atropa Belladonna Mentha piperita Mentha Pulegium Avena sativa Mentha viridis Brassica alba Œnanthe crocata Brassica sinapioides. Bryonia dioica Papaver Rhœas Papaver somniferum Cochlearia Arnoracia Pinus sylvestris Colchicum autumnale Prunus Laurocerasus Conium maculatum Quercus Robur Cytisus Scoparius Rosa Canina Daphne Laureola Daphne Mezereum Rosmarinus officinalis Ruta graveolens Datura Stramonium Salix alba Digitalis purpurea Dryopteris Filix-mas Sambucus nigra Solanum Dulcamara Fœniculum capillaceum Taraxacum officinale Hordeum distichon Taxus baccata Hyoscyamus niger Triticum vulgare Juniperus communis Ulmus campestris Juniperus Sabina Valeriana officinalis

#### · PHARMACY.

A knowledge of the following :---

Operations requiring the use of heat. Evaporation, with particular reference to the preparation of extracts; special characters and modes of preparing the various classes of extracts; influence of surface, temperature, and pressure upon the rate of evaporation; water, steam, and sand baths; distillation, ordinary, fractional, steam, and destructive, distinctive characters and objects of each; official preparations illustrating the various kinds of distillation apparatus employed; the retort and receiver, still and worm; Liebig's condenser; principles on which they are constructed and used. The principles of sterilization. Sublimation: Its objects and applications in pharmacy; official products of sublimation, calcination and fusion. Desiccation; temperature best suited for drying particular drugs, loss in drying vegetable drugs; forms of drying ovens, principles on which they are constructed and used.

Disintegration of solid substances; cutting, bruising, and pulverisation; apparatus employed, principles indicating which is to be adopted in particular instances; methods for controlling the degree of comminution; sieves and sifting; trituration, levigation, elutriation, granulation, including methods for producing certain chemicals as fine powders, small crystals, scales, etc.

Filtration, objects and methods, filtering media, means of expediting filtration; dialysis, its application in pharmacy, construction and use of the dialyser.

Expression; methods of obtaining the juices from plants; recovery of the residual liquids from tincture marcs, etc., screw, hydraulic, and other presses.

Solution; its nature, solvent power of various menstrua, influences of (a) temperature; (b) state of division of the substance to be dissolved; (c) time; (d) position of the substance in the menstruum; lixiviation, infusion, digestion and decoction; maceration; percolation and displacement; principles on which the successful application of these processes depends; form and materials for percolators and other vessels employed.

The principles involved in the dispensing of medicines, particularly with reference to the best excipients and methods for forming pill masses; the preparation and nature of emulsions, the most suitable emulsifying agents, and the best means of suspending insoluble substances in liquids.

The processes by which official galenical preparations are made and the principles upon which they are based.

#### LATIN AND PRESCRIPTION READING.

The candidate will be required to read without abbreviation autograph Latin prescriptions, translate them into English, understand the grammatical construction, and render a literal as well as an appropriate translation of the directions for use; to detect errors, discover unusual doses, and have a general knowledge of posology; to calculate percentages and other quantities occurring in prescriptions.

#### PRACTICAL PHARMACY.

The candidate will be required :----

To perform such operations of the British Pharmacopœia, or such parts of them as may be practicable, involved in the processes for preparing collodions, confections, decoctions, dilute acids, extracts (solid and liquid), glycerins, infusions, juices, liniments, lotions, mixtures, ointments, pill masses, plasters, powders (simple and compound), scale preparations, solutions, spirits, suppositories, syrups, tinctures, vinegars, waters, and wines.

To compound and dispense medicines as prescribed; to write the directions in concise language and in *neat and distinct* handwriting; to finish and properly direct each package. [In assessing the work in this subject the time taken by the candidate is taken into account.]

#### FORENSIC PHARMACY.

The candidate will be required :---

(a) To enumerate the poisons contained in the Fourth Schedule to the Pharmacy and Poisons Act (N.I.), 1925, viz.

Poisons within Part I of the Schedule.

Poisons within Part II of the Schedule.

(b) To describe minutely the conditions required by the Regulations upon the keeping, selling, and dispensing of poisons, both those in Part I and those in Part II of the Schedule; and to write the proper entries required, according to the Regulations, for the sale of a poison coming within Part I of the Poison Schedule.

; (c) To state the conditions imposed on the sale of scheduled poisons by Wholesale and for Export, and upon the sale of a scheduled poison when forming an ingredient in a medicine dispensed.

(d) To have a general knowledge of the requirements of the Dangerous Drugs Acts and Regulations as they affect the pharmacist.

#### CHEMISTRY, PART II.

The candidate will be required to have a general knowledge of the preparation,

chloral hydrate, chloroform, iodeform, ether, ethyl acetate, acetamide, olein, oleic acids, soaps, glycerin, lactic acid, citric and tartaric acids, sucrose, dextrose, lactose, starch, salicin, urea, simple urethanes, and ureides.

Benzene, phenol, picric acid, phenolphthalein, nitro-benzine, aniline, ace-tanilide, benzoic acid, salicylic acid, acetylsalicylic acid, salol, gallic acid, tannic acid.

A general knowledge of the adulterations and contaminations which may occur in the elements and inorganic compounds included in the British Pharmacopœia, and such of the organic compounds mentioned above as are included in the British Pharmacopœia, and the methods by which the purity of these substances is determined.

#### PRACTICAL EXAMINATION.

The candidate will be required :----

To identify by chemical tests the following organic compounds :-

Cyanides, oxalates, acetates, tartrates, citrates, benzoates, salicylates, starch, sucrose, dextrose, lactose, salicin; cocaine, quinine, morphine, strychnine, and their salts; methyl alcohol, ethyl alcohol, acetone, formaldehyde, glycerin, chloroform, phenol.

To detect and identify the adulterations and contaminations which may occur in the elements and inorganic compounds included in the British Pharmacopœia, and in such of the organic compounds mentioned in the list of substances for identification as are included in the British Pharmacopœia.

To perform those volumetric determinations and those requiring the use of nitrometer which are described in the British Pharmacopœia.

To have a practical acquaintance with the methods of preparing the more im-so that he may be able to explain to the examiner the operations involved in their preparation, and, if called upon, to perform the operations or certain stages of them himself.

To determine quantatively the total alkaloids in cinchona bark and its official preparations, in the liquid extract of belladona and its preparations, and in the liquid extract of ipecacuanha; and also the strychnine in the extract, liquid extract, and tincture of nux vomica; the morphine in opium and its extract, liquid extract and tincture, any of the above alkaloids in any other preparation by methods involving principles similar to the above, and the resin in tincture

of jalap. The candidate will have the opportunity during his examination of consulting the British Pharmacopœia and the British Pharmaceutical Codex.

#### APPENDIX V (b).

#### Form of Certificate for Part I.

We hereby certify that M..... has passed in Botany, Chemistry Part I, Physics and Business Methods, as a Preliminary Scientific Examination for the Certificate of Pharmaceutical Chemist and that he may be admitted to Part II of the Final Examination.

#### APPENDIX $\cdot$ V (c),

Form of Certificate for Pharmaceutical Chemist. Pharmaceutical Society of Northern Ireland.

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This is to certify that M..... has been duly examined in accordance with the provisions of the Pharmacy and Poisons Act (Northern Ireland), 1925, and that he is hereby qualified to act as a Pharmaceutical Chemist.

President.....

Vice-President.....

Secretary.....

Examiners :

## PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND

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## Meetings of the Council.]

1. The Council shall meet on the third Friday of each month, at the hour of three, p.m., or on such other day or hour as the Council may from time to time decide. The Secretary shall send by post notice of each meeting to every Member of the Council at least seven days before the time of Meeting. Every such notice shall contain a Programme of the business to be transacted, and the business shall be taken up in order in which it appears on the Programme. Questions shall be the last item on the Programme, and shall be taken after all other business shall have been finished.

. II. The President, or, in his absence, the Vice-President, on the requisition of at least seven Members of the Council, shall summon a Special Meeting to be held on such a day and at such an hour as shall be most convenient, giving each Member four clear day's notice. No business shall be transacted at such Special Meeting other than that for which the Meeting shall have been called.

III. Should an amendment be proposed to any resolution, the amendment shall first be put to the vote, and, if carried, it shall then be put as a substantive resolution, on which it then will be competent for any Member of Council to move an amendment which, if carried, shall also be put as a substantive resolution, and, so on, so long as an amendment shall be proposed. If the final amendment be negatived, the original resolution shall be put to the vote.

IV. All resolutions carried at Meetings of the Council shall be acted upon without delay, except such resolutions as shall relate to the making, altering or abrogating of any Regulation, which resolutions shall take effect on such date or dates as the Council shall decide. No notice of alteration, abrogation, or addition, to these resolutions shall be discussed by the Council until the expiration of two months after such notice shall have been given.

V. When a division has taken place, any Member of the Council may require that the names and numbers of the majority and minority, and of those declining to vote, be entered on the minutes.

VI. The proceedings of each Meeting of the Council shall be entered by the Secretary in a book kept for that purpose.

VII. A fair copy of the minutes of each meeting shall be entered in a separate book by the Secretary, and be compared by the Chairman with the original minutes, and be confirmed by the signature of the Chairman.

VIII. The minutes of Meetings shall contain such motions and amendments as have been proposed and adopted or negatived, with the names of proposers and seconders, but without any comments or protests annexed.

IX. The election of the Secretary, Clerk and other Officers shall be by open voting, each Member declaring the name of the person for whom he votes.

X. Members of the Pharmaceutical Society and Associate Druggists when permitted by the Council, may be present at its meetings, but are not to take part in the proceedings.

XI. In the Intervals between the Monthly Meetings of the Council, a Member may send a Notice of Motion, in writing, to the Secretary, seven clear days before the time of Meeting; such notice not to be printed in the 'Programme of the business to be transacted' without the sanction of the President, or, in his absence, of the Vice-President.

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## Members [of the Council]. ...

I. A candidate for Membership, or a candidate who wishes to be an Associate Druggist, shall, at a Meeting of the Council, be proposed and seconded by Members of the Council, or in writing by Members of the Pharmaceutical Society, or by Associate Druggists of the Pharmaceutical Society, provided such letter be forwarded to the Secretary not later than ten days prior to the Meeting of the Council at which such name is to be proposed.

The name and address of every Candidate shall be inserted in the summons for the next meeting of the Council, when the Candidate may be admitted by a majority of votes.

II. Every Candidate for Membership, or Candidate who wishes to be an Associate Druggist, of the Society, shall lodge One Half a Guinea with the Treasurer before the day of election. The money shall be returned in the event of the Candidate's rejection.

III. The Annual Subscription of Members and Associate Druggists shall be due, in advance, on 1st September in each year.

IV. A Member or Associate Druggist who shall be elected on or after 1st July in any year shall not be required to pay a second subscription until the 1st September in the year following.

V. If any Member or Associate Druggist be in arrear of his Annual Subscription for two years, his name and address shall be omitted from the published "List of Members" or Associate Druggists.

#### Finance.

I. The Financial year shall commence on 1st September and shall terminate on 31st August in the following year.

II. The Fee for "Licentiate of the Apothecaries' Hall of Ireland" to be registered as a Pharmaceutical Chemist shall be Three Guineas.

III. The Annual Subscription of elected Members of the Society, or Associate Druggists, shall be One Half Guinea, payable in advance on 1st September in each year, or a life composition of Five Guineas.

IV. All Donations of Money to the Society shall be kept as a Reserve Fund, to be applied as a General Meeting of the Society may direct.

V. No sum of Money exceeding Five Pounds shall be voted or ordered for payment (except for Rent or fixed Salaries) without notice having been given in the Programme of Business to be transacted at the next Monthly Meeting of the Council.

VI. The fee for restoration to the Register of the name of a Pharmaceutical Chemist, or Registered Druggist, or Chemist and Druggist, struck off, shall be One Guinea.

VII. No recommendation for the erasure of a name from the Register shall be made without having been previously put on the Agenda, and authority given by the President and the Council.

#### Secretary.

The Secretary shall attend at the Office of the Society at such times as may be appointed. He shall attend, and take a record of the proceedings, at all meetings of the Council and committees, and at the Annual Meeting of the Society. He shall also attend examinations, elections, etc., conducted by the Society. He shall make a report of all matters that may come under his notice for the information of the Council and committees. He shall be responsible for the safe custody of all the books and documents, and other property of the Society. He shall consult, and act on the instructions of the President, or Vice-President on any business requiring attention between the various meetings. He shall have authority over the clerks and all rervants of the Society, whose wages he shall pay. He shall receive such a sum in advance as the Council may consider sufficient to pay the current expenses of his office.

#### Treasurer.

I. The Honorary Treasurer shall be elected from the members of the Council.

II. It shall be the duty of the Treasurer to open an account in the Ulster Bank, and to lodge all moneys as soon as possible after he receives them. He shall keep an account of all moneys received, and shall pay all accounts as ordered by the Council. All payments shall be made by Cheque, which shall be signed by the President or Vice-President, the Treasurer and the Secretary.

III. The Treasurer shall submit his financial statement to the Council at its meeting in September in each year, and also to the Annual Meeting of the Society.

IV. The Accounts shall be audited at least 14 days before the Annual Meeting, by two members of Council, who shall affix their signatures to the financial statement.

V. The Treasurer's alphabetical list of members and associate druggists who have paid their subscriptions shall be prepared for each Annual Meeting.

#### Annual Meeting.

I. The Annual Meeting of the Society shall be held during the month of October in each year in Belfast or other town.

II. The election of members to replace the retiring members of the Council shall take place at the Annual Meeting.

III. The new Candidates for a seat on the Council shall be proposed and seconded by members or associates of the Society. Such nomination shall be accompanied by a declaration by such candidates that he or she will act if elected. Such nomination shall be lodged with the Secretary by noon at least fourteen clear days before the Annual Meeting. The representatives of Pharmaceutical Chemists shall be replaced by Pharmaceutical Chemists, and those of the Druggists shall be replaced by Chemists and Druggists or Registered Druggists.

IV. Voting papers shall be sent by post to the registered address of every member and associate of the Society at least seven clear days before the Annual Meeting. Every such voting paper shall contain the names of the retiring members, with a list of their attendances at the meetings of the Council and committees since last elected or appointed, together with the names and qualifications of all new candidates, with the names of their proposers and seconders.

V. The voting papers shall be returned to the Secretary not later than noon on the date of the Annual Meeting.

VI. The scrutineers of the ballot shall be two members of the Council appointed for the purpose at the September meeting; together with the President or Vice-President. They shall meet at noon on the day of the Annual Meeting to count the votes and to deliver to the Secretary a record of the voting. The proposers and seconders of each new candidate may be present if they so desire.

VII. The Voter shall erase the names of those for whom he does not intend to vote; if more than the required number of names to fill the vacancies be left, the Voting Paper will be void.

The Voting Paper must be transmitted under cover to the Secretary, so that it shall be received by him not later than noon on the morning of election, and shall be opened by or in the presence of the scrutineers.

The Voter must write his name and address on the outside of the envelope, or the Voting Paper will be void.

In case of an equality of votes, the President or Chairman of the Annual Meeting shall have a casting vote.

VIII. At the Annual Meeting of the Society, a Member, or Associate Druggist, shall not be entitled to vote, unless he or she has paid his or her subscription for the preceding year.

the preceding year. IX. No motion shall be moved at the Annual Meeting of the Society without giving fourteen days' previous notice, in writing, to the Secretary, which notice must be inserted in the summons convening such Meeting.

#### Committees.

The Council shall appoint four Committees, General Purposes, Law, Education, and Finance; four members to form a quorum. The composition of the Committees shall be in the following proportions: six Pharmaceutical Chemists, three Chemists and Druggists or Registered Druggists, and one nominated Member. The President and Vice-President shall be *ex-officio* Members of all Committees. The President shall preside at all meetings of Committees, or in his absence the Vice-President. If the President and Vice-President are both absent, a Chairman shall be chosen by the Members present.

(SEAL).

## (Signed),

Horatio Todd, President. Fred Storey, Vice-President.

Dated this Fifteenth day of April, 1926.

## Free Distribution by Sanitary Authorities

In pursuance of the powers conferred upon me by Section 3 Sub-section 2 of the Pharmacy and Poisons Act (Northern Ireland), 1925, I, The Right Honourable Sir Richard Dawson Bates, Minister of Home Affairs for Northern Ireland, hereby signify my approval of the above Regulations.

(Signed), R. Dawson Bates.

Dated this Thirteenth day of April, 1926.

# POISONS.

# Free Distribution by Sanitary Authorities.

MADE BY THE MINISTER OF HOME AFFAIRS FOR NORTHERN IRE-LAND, PRESCRIBING THE CONDITIONS TO BE OBSERVED, AND THE PRECAUTIONS TO BE TAKEN, IN CONNECTION WITH THE DISTRIBUTION OF POISONS AND POISONOUS SUBSTANCES FREE OF CHARGE FOR THE PURPOSES OF THE PUBLIC HEALTH (IRELAND) ACTS, 1878 TO 1918.

## 1926. No. 16.

Whereas by the Pharmacy and Poisons Act (Northern Ireland), 1925, the Minister of Home Affairs was empowered to make regulations regarding the free distribution of poisons and poisonous substances for the purposes of the Public Health (Ireland) Acts, 1878 to 1918:

Now I, the Right Honourable Sir Richard Dawson Bates, Minister of Home Affairs for Northern Ireland, in pursuance of the power vested in me by Section 25 of the Pharmacy and Poisons Act (Northern Ireland), 1925, do hereby make the following regulations with regard to the aforementioned matter :

- (1) In the distribution of poisons and poisonous substances free of charge for the purposes of the Public Health (Ireland) Acts, 1878 to 1918, every bottle or container shall be conspicuously labelled "POISON," and no other label, save that relating to the poisons or poisonous substances contained therein, shall appear upon such bottle or container.
- (2) In the distribution as aforesaid poisons or poisonous substances should, whenever possible, be issued in bottles or containers of special shape (as provided for in paragraph 2 of the regulations prescribed by Order of the Privy Council, dated 12th August, 1912) and

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