Professor Dugald L. Gardner

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Professor Dugald Gardner ScD (Cantab), MD, PhD (Edin), MSc (Manch), FRCP (London and Edinburgh), FRCSEd, FRCPath has presented a large amount of material. He plans to write an overview of his career and his research, to accompany this latter material. (April 2009)
The material consists of two distinct parts.

The first is related to Professor Gardner's publication
Box 1 126 compact disks of images used
Box 2 Sheets of printed images; Preparatory material, reprints etc

The second and much larger is described here.
Professor Dugald Lindsay Gardner BA (Cantab ) 1945, MA 1952, ScD 1990; MSc (Manch) 1981; PhD (Edin) 1957, MD 1948; FRCP; FRCP; FRCPEd; FRCSEd
Notebooks: student lecture and practical class notes (1942-1948), PhD, MD and collaborative research protocols and records (1953-1977), questions and notes for MRCPEd examinations (1949-1950), notes from Boston meeting of the American Pathological Association (1959)

NOTEBOOK 1– Front part
CAMBRIDGE 1942-43 ANATOMY LECTURE NOTES

2nd October 1942
Sex. The subject of my notes among which are a large number of simple line drawings, first record developmental anatomy: the sex organs; the embryo; and the placenta; the developing innervation of the skin and muscles of the limbs; reflex arcs; the autonomic system; and the development of the circulatory and lymphatic systems (Cremona).
7th July 1943
There follows topographical anatomy, especially of the upper limb.
11th October 1943
Detailed reviews of the CNS follow, then the phytogeny of the brain. Insanity as mentioned. Motor and sensory pathways follow, then the functions of selective parts of the cerebral cortex and of the cord. Stopford's anatomical theory is mentioned.
28 January 1943

Heart – diagram – vagal control - sympathetic vasoconstriction
local blood flow regulation
Blood oxygen and CO2/O2 saturation curves – blood gases – CO2 saturation curves

composition of filtrate – renal plasma flow – water diuresis – diuretics –posterior pituitary; Innervation of
bladder

Digestion
Salivary glands; Phases of gastric activity; Intestinal flow; pepsin – test meal; Pancreas; Intestinal secretion ;
enzymes; Bile; Mechanical propulsion of food; Stomach contractions – vomiting; Intestinal movements

Absorption Of Food
Allergic reactions; amino acid absorption; fat absorption; carbohydrate absorption

22 April 1943

Ductless Glands
Thyroid – thyroxin – iodine; Parathyroids; Suprarenal cortex; Insulin and its effects; Pancreatic diabetes – actions
of insulin; Anterior pituitary – hormones – types of disease – Cushing’s syndrome - Fröhlich’s syndrome;

Posterior pituitary – hormones and their actions

Temperature Regulation

6 May 1943

Reproduction
Oestrous and other cycles; Pregnancy and parturition

NOTEBOOK 2 – BACK PART

26.1.43
Practical experiments (presumably demonstrated, not conducted personally although this is not stated) Graphs
are included

2.2.43
1. Estimation of O2 capacity of the blood
2. Effects of bile salts on surface tension
3. tests for pigments, litmus, spectrophotometer;4.2.43 Action of glomeruli – filtrate – blood pressure

11.2.43 Smooth muscle; 23.2.43 Isoelectric point – liberation of CO2; Physical fitness tests; 2.3.43 Isoelectric
point – casein; 4.3.43 Respirator quotient; 22.4.43 Frog’s heart conduction; 24.4.43 Chemistry of fats; 29.4.43
Tetanus in frog muscle; 1.5.43 Proteins; 6.7.43 Revision chemistry; 9.7.43 demon of salivary secretion; 10 7 43
Metabolic rate

12.7.43 Bile & pancreatic secretion; 19.7.43 Carotid sinus and body; 11.10.43 Constituents of urine – effects of
Ringer’s on heart – refractory period; 1.11.43 Investigation of proteins; 24.1.44 Effects O2 lack & CO2excess on
ventilation pattern of normal person; Some lecture notes - How reflexes coordinate

NOTEBOOK 3 – FRONT PART

Cambridge 1943. Physiology lecture notes

12.10.43 CNS integrated action cells - action of anaesthetics –CSF; Blood supply of brain; Spinal reflexes: stretch,
crossed, scratch; 27.10.43 Control of spinal paths of brain; 3.11.43 Postural control – basal ganglia;
Hypothalamus – sleep – the Cerebrum – auditory and visual areas; 17.11.43 Autonomic NS – spinal ganglia; 3.12.43 Audition – Helmholtz theory; Definitions and summaries

NOTEBOOK 4 BACK PART
Cambridge 1942-43 Biochemistry Lecture (Baldwin)

Much time was devoted to biochemistry, one of the University’s most prominent subjects. Biochemistry was under the aegis of Sir Frederick Gowland Hopkins the first to discover a vitamin, ascorbic acid - vitamin C. However, the burden of teaching the wartime medical class fell on the skilled shoulders of Dr Ernest Baldwin who was both a talented teacher and an expert in his own field. He would often appear for his afternoon lectures dressed in the uniform of an air-raid warden since the country, and in particular London, was being subject to the full might of the Luftwaffe's bombing attacks. One half of the notebook (1942) is devoted to theory, the complementary half to practical classes.

NOTEBOOK 4 – FRONT PART
Cambridge 1942-43. Biochemistry practical classes

[Each note is initialed by presumably a class tutor]
19.1.43 Pentosans; 21.1.43 Blood sugar; 23.1.43 Manometer; 23.1.43 Glycogen estimation; 30.1.43 ditto; 2.2.43 pigments; 4.2.43 Acetoacetic acid; 11.2.43 Porphyrins

NOTEBOOK 5 – FRONT PART
Cambridge 1943. Practical biochemistry/microbiology

DLG notes are accompanied in many cases by typed and printed work sheets provided by teachers, and by lists of reference books

NOTEBOOK 6: Front part
Cambridge 1944 – 45. Experimental pathology & Bacteriology,

<table>
<thead>
<tr>
<th>18.1.45 Titration of haemolysin</th>
<th>22.1.45 Bacteriology of the pneumococci</th>
<th>23.1.45 Grouping of streptococci</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.45 Complement fixation</td>
<td>C. diphtheriae</td>
<td>Wasserman reaction</td>
</tr>
<tr>
<td>Acid-fast bacilli</td>
<td>19.2.45 The sulphonamides</td>
<td>Filterable viruses</td>
</tr>
</tbody>
</table>

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### TABLE

<table>
<thead>
<tr>
<th>Description</th>
<th>Date</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin &amp; Brilliant green</td>
<td>27.2.45</td>
<td>1.3.45 Human influenza viruses</td>
</tr>
<tr>
<td>6.3.45 Isolation of vaccinia elementary bodies from rabbit</td>
<td>5.3.45</td>
<td>12.3.45 Anaerobic spore bearers</td>
</tr>
<tr>
<td>2.1.45 Observations</td>
<td>19.11.45</td>
<td></td>
</tr>
<tr>
<td>Accession of acetylcholine</td>
<td>15.10.45</td>
<td></td>
</tr>
<tr>
<td>Action of acetylcholine, adrenaline and oxytocin on the isolated rat and rabbit uterus.</td>
<td>22.10.45</td>
<td></td>
</tr>
<tr>
<td>Action of cocaine, homatropine, physostigmine, pilocarpine, ephedrine on the internal muscles of the eye.</td>
<td>29.10.45</td>
<td></td>
</tr>
<tr>
<td>Effects of atropine given simultaneously “Solutions A and B (acetylcholine, muscarine) were administered to CPH (61 Kg) (Colin Hay) and to DLG (75 Kg). There was little effect and it was concluded that the amounts given were too small. Larger amounts cause pupil dilatation and acceleration of the pulse.</td>
<td>5.11.45</td>
<td></td>
</tr>
<tr>
<td>Study VI</td>
<td>12.11.45</td>
<td></td>
</tr>
<tr>
<td>Effects of exercise, adrenaline, and amyl nitrate on blood pressure – JHS (Jocelyn Sandison) and KMC (Katherine Carmichael) joined DLG and CPH</td>
<td>19.11.45</td>
<td></td>
</tr>
<tr>
<td>Study VII</td>
<td>26.11.45</td>
<td></td>
</tr>
<tr>
<td>Absorption, distribution and excretion of drugs – KI, sulphanilamide made up in different strengths studies with test papers and colorimetry.</td>
<td>19.11.45</td>
<td></td>
</tr>
<tr>
<td>Rabbits were used. CNS depressants – general anaesthetics, basal anaesthetics, motor depressants, hypnotics, analgesics. Wide individual variation in response to barbiturates</td>
<td>26.11.45</td>
<td></td>
</tr>
<tr>
<td>Local anaesthetics- procaine, ?naplocaine, cocaine, tested on the rabbit cornea and intradermally. Carefully tabulated results. Cocaine easily penetrated mucous membranes.</td>
<td>26.11.45</td>
<td></td>
</tr>
</tbody>
</table>

### NOTEBOOK 6 Back part

1953  Response of blood platelets to radiotherapy. Detailed blood counts of 37 cases

### NOTEBOOK 7

**Edinburgh 1945-46. Practical pharmacology**

These appear to have been demonstrations rather than experiments conducted by students themselves. My notes are extensive and formal

8.10.45 Effect of changed intestinal pressure on the activity of the mammalian gut – diagrams – contractions shown as traces? smoked drums. A ‘critique’ follows

15.10.45 Action of acetylcholine, atropine and other compounds on movements of the isolated gut

22.10.45 Action of acetylcholine, adrenaline and oxytocin on the isolated rat and rabbit uterus.

29.10.45 Action of cocaine, homatropine, physostigmine, pilocarpine, ephedrine on the internal muscles of the eye.

5.11.45 Effects of atropine given simultaneously “Solutions A and B (acetylcholine, muscarine) were administered to CPH (61 Kg) (? Colin Hay) and to DLG (75 Kg). There was little effect and it was concluded that the amounts given were too small. Larger amounts cause pupil dilatation and acceleration of the pulse.

12.11.45 Study VI

Effects of exercise, adrenaline, and amyl nitrate on blood pressure – JHS (Jocelyn Sandison) and KMC (Katherine Carmichael) joined DLG and CPH

19.11.45 Study VII

Absorption, distribution and excretion of drugs – KI, sulphanilamide made up in different strengths studies with test papers and colorimetry.

26.11.45 Study VIII

Rabbits were used. CNS depressants – general anaesthetics, basal anaesthetics, motor depressants, hypnotics, analgesics. Wide individual variation in response to barbiturates

   Local anaesthetics- procaine, ?naplocaine, cocaine, tested on the rabbit cornea and intradermally. Carefully tabulated results. Cocaine easily penetrated mucous membranes.

### NOTEBOOK 8

**Surgery lecture notes as a 4th year student 1947**

Many of the lectures were given by Professor Sir James Learmonth. It became apparent that his surly manner towards a large class was attributable to certain shyness. He would stop half way through a lecture and say ‘Now children, boys and girls, I’ll give you to minutes to blow your noses and cough before I resume’. This manner did not show during personal chats when he was very easy to talk to. He stopped me one day at the top of Middle Meadow walk and asked how I was getting on – he realized I was a friend of Sir James Fraser who had inherited the title from his father, the distinguished surgeon and former Principal of the University of Edinburgh who had died during our 4th student year. The chat was very friendly and relaxed. The notes that came from these lectures are often* very detailed. They are accompanied by pages of the rough notes I made during the lectures which were transcribed in the evenings after the lectures.

Peripheral vascular disease*; Gangrene; Frost bite; Hand infections*; Carcinoma of tongue; Dysphagia; Cholecystitis; Ulcer; Rheumatoid arthritis*; Osteoarthritis; Appendicitis*; Pernicious anaemia; Pyogenic
osteomyelitis – Brodie’s abscess; Tuberculosis* of long bones, spine; Intussusception; Carcinoma of colon; Bleeding diseases; Peritonitis; Urinary obstruction; Renal tuberculosis; Sciatica; spinal injury

**NOTEBOOK 9**

**1947 Medicine undergraduate lecture notes and case notes, Edinburgh (volume v)**

<table>
<thead>
<tr>
<th>Surface markings of heart &amp; lungs</th>
<th>Cheyne Stokes respiration</th>
<th>Congenital heart disease</th>
<th>Clinical analysis of heart disease</th>
<th>Haematemesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aortic stenosis</td>
<td>Cavernous breathing; pectrotiloquy</td>
<td>Lung collapse; hiccough</td>
<td>Mediastinal tumour</td>
<td>Emphysema</td>
</tr>
<tr>
<td>Cystic disease of breast</td>
<td>Silicosis</td>
<td>Pleural effusion</td>
<td>Empyema</td>
<td>Tests for sensation</td>
</tr>
<tr>
<td>Plantar responses</td>
<td>Brain tumours</td>
<td>Pituitary</td>
<td>Coma</td>
<td>Hyperthyroidism</td>
</tr>
<tr>
<td>Fits</td>
<td>Blood clotting</td>
<td>Purpura</td>
<td>Splenectomy</td>
<td>Banti’s syndrome</td>
</tr>
<tr>
<td>RES diseases</td>
<td>Diabetes Mellitus</td>
<td>Sprue</td>
<td>Systematic ophthalmoscopy</td>
<td>Ocular palsies; the pupils</td>
</tr>
<tr>
<td>Eyelids</td>
<td>Large section on syphilis</td>
<td>Tabes dorsalis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subacute combined degeneration</td>
<td>Muscular atrophy</td>
<td>Motor neurone diseases</td>
<td>Cervical rib</td>
<td>Syringomyelia</td>
</tr>
<tr>
<td>Neuritis</td>
<td>Jaundice</td>
<td></td>
<td>Tetany</td>
<td></td>
</tr>
<tr>
<td>Adrenal diseases</td>
<td>Skin pigmentation</td>
<td></td>
<td>Metazoa</td>
<td></td>
</tr>
</tbody>
</table>

These notes are followed by a few summary case reports

**NOTEBOOK 10**

**Edinburgh 1949-50. Notes prepared in revising for the examinations for the MRCPEd.**

Many of the abstracts are summaries of journal articles such as those in the Quart J Med on ankylosing spondylitis by Hart.

**NOTEBOOK 11**

**Edinburgh 1950. MRCPEd examination papers**

In preparation for the MRCPEd examinations which I sat in the autumn of 1950, I collected old question papers for study. The dates of the questions are shown here:

**NOTEBOOK 12**

**1950 Edinburgh. medicine notes + abstracts**

Notes made in 1950 during preparation for the MRCPEd examinations

Surgery of lung abscess; Surgery of pulmonary TB; diagnosis of bronchial stenosis; Pharyngeal diverticula; Bronchiectasis; cystic lung disease; Bronchial carcinoma; Bronchial adenoma; Haemangioma; Lung complications of dysphagia; Recurrent laryngeal nerve paralysis; Pulmonary eosinophilia; Ciliary action; Suppurative pneumonia

Diaphragm: development & hernia; Valvotomy for mitral stenosis; Differential diagnosis of tachycardia; Anatomy of the abdomen; Surface markings of the lung; Some CNS subjects

**Heart and circulation**

1946 (date of original exam questions)
March  Disease pathogenesis and treatment of atrial fibrillation; July Causes + manifestations +
treatment of circulatory failure in acute toxic infections; September Causes of pericarditis; December Sinoatrial
node disturbances
1947
March  Significance + treatment of low blood pressure; June  Lesions causing abdominal symptoms;
September Signs, course prognosis of aortic coarctation; December Actions of diphtheria
1948
March  Treatment + prognosis of hypertension DD retrosternal pain; June Causes of loud 2nd sound in
2nd left space; September Is the heart normal or not? December Acute LV failure
1949
March  Acute + chronic heart failure due lung disease; Diagnosis + treatment of intermittent
claudication;
June Control of the fetal circulation at term; December Advice to the young female with mitral stenosis during
the first trimester of a first pregnancy;
1950
June  Diagnosis and significance of slight cardiac enlargement in young men; December Significance of
substernal pain in a man of 50 years
1951
June  Significance of distended jugular veins

Gastric
1946
September  Achlorhydria
1949
June  Anorexia
September  Indications for surgery in peptic ulcer
December  Significance of flatulence
1950
June  Signif of variations in gastric acidity

There follow questions on: Intestinal, Kidneys, Liver, Parasites, Blood, CNS, Metabolism, Paediatrics, Skin,
General, Occupational, Endocrinology, Anatomy, Psychiatry, Fluid, Infection, Bones + Joints, Intoxications,
Pharmacology, Anatomy

1950 Medicine notes, volume 1: extracts from the literature

<table>
<thead>
<tr>
<th>GL secretion</th>
<th>Medical sympathectomy</th>
<th>Respiratory studies in poliomyelitis</th>
<th>Intermittent claudication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idiopathic thrombocytopenic Purpura</td>
<td>Dysarthria</td>
<td>Meningococcal fever</td>
<td>Demyelinating diseases</td>
</tr>
<tr>
<td>Regulation of blood acid/base balance</td>
<td>Base conservation by kidney</td>
<td>Mode of action of salicylate in rheumatic fever</td>
<td>Actions of compound E (dehydrocorticosterone)</td>
</tr>
<tr>
<td>Polycythaemia vera</td>
<td>Ophthalmoscopic grading of hypertension</td>
<td>Prognosis of bronchial carcinoma</td>
<td>Castle’s intrinsic factor</td>
</tr>
<tr>
<td>Porphyria</td>
<td>Lead poisoning</td>
<td>Classification of dust diseases</td>
<td>Xanthomatosis</td>
</tr>
</tbody>
</table>

NOTEBOOK 13
<table>
<thead>
<tr>
<th>Blood coagulation (long section)</th>
<th>Pruritus</th>
<th>Lung disease due metals</th>
<th>Electrolyte depletion in pyloric stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemolytic anaemias</td>
<td>Unipolar lead patterns</td>
<td>Ventricular hypertrophy</td>
<td>Isotopes</td>
</tr>
<tr>
<td>Gastric secretions</td>
<td>Pancreas</td>
<td>Anoxia</td>
<td>Dyspnoea</td>
</tr>
<tr>
<td>Splenomegaly/ Splenectomy</td>
<td>Hepatic fibrosis</td>
<td>Vesicular emphysema</td>
<td>Tests of thyroid function</td>
</tr>
<tr>
<td>Purpura</td>
<td>Addisonian crisis</td>
<td>Cerebral arterial disorders</td>
<td>Thyroid activity</td>
</tr>
<tr>
<td>Suprarenal cortex</td>
<td>Pathology of thyroid</td>
<td>Pathology of anterior pituitary</td>
<td>Congenital dyslexia</td>
</tr>
<tr>
<td>Uraemia</td>
<td>Metabolic defects in proximal tubular disease</td>
<td>Optic Nerve</td>
<td>Hypokalaemic syndrome; liver function tests</td>
</tr>
<tr>
<td>Fungi in tissues</td>
<td>Diabetic ketosis</td>
<td>Treatment of anuria</td>
<td>Hepatic coma</td>
</tr>
<tr>
<td>Innervation of eyelids</td>
<td>Typhoid</td>
<td>Paratyphoid</td>
<td>Suipestifer</td>
</tr>
<tr>
<td>Pupillary reflexes</td>
<td>Dysarthria</td>
<td>Optic atrophy</td>
<td>Headache</td>
</tr>
<tr>
<td>Lung nomenclature</td>
<td>Dinitrophenol poisoning</td>
<td></td>
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</tr>
</tbody>
</table>

**NOTEBOOK 14**  
**Medicine notes 1950 volume II, part 1: Fevers & infectious diseases**

<table>
<thead>
<tr>
<th>Scarlatina</th>
<th>Erysipelas</th>
<th>Diphtheria</th>
<th>Measles</th>
<th>Rubella</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whooping cough</td>
<td>Mumps</td>
<td>Smallpox</td>
<td>Vaccination</td>
<td>Chickenpox</td>
</tr>
<tr>
<td>Meningococcal infections</td>
<td>Typhoid</td>
<td>Paratyphoid</td>
<td>Suipestifer</td>
<td>Dysentery</td>
</tr>
<tr>
<td>Brucellosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTEBOOK 15**  
**Medicine notes volume III: Notebook inscribed ‘Helen Harrower, Hygiene (Linklater)**

<table>
<thead>
<tr>
<th>Neuroses of larynx</th>
<th>Functional examination of the ear</th>
<th>Schick test – diphtheria immunization</th>
<th>Tuberculin tests</th>
<th>PAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood CO2</td>
<td>Some congenital syndromes</td>
<td>CDH</td>
<td>Insulin test in vagotomy</td>
<td>DDT poisoning</td>
</tr>
<tr>
<td>Pituitary adenoma</td>
<td>Facial nerve lesions</td>
<td>Pulmonary infarction</td>
<td>Pulmonary atelectasis</td>
<td></td>
</tr>
<tr>
<td>Lung gangrene</td>
<td>Pneumocociosis</td>
<td>Pneumothorax</td>
<td>Empyema</td>
<td>Examining the CNS</td>
</tr>
<tr>
<td>Gynaecomastia</td>
<td>Phenergan (antihistamine)</td>
<td>Thymectomy for MG</td>
<td>Hypothalamus</td>
<td>Leprosy &amp; sulphones</td>
</tr>
<tr>
<td>Nitrites in angina</td>
<td>Parathyroids</td>
<td></td>
<td>Adrenalectomy</td>
<td></td>
</tr>
<tr>
<td>Adrenal cortical compounds</td>
<td>Eczema</td>
<td>Psoriasis</td>
<td>Impetigo</td>
<td>Scabies</td>
</tr>
<tr>
<td>Tinea</td>
<td>Myopathies</td>
<td>SLE</td>
<td>Refractory anaemias</td>
<td>Sympathectomy; Glycogen storage disease</td>
</tr>
<tr>
<td>Cirrhosis</td>
<td>Triple heart</td>
<td>Reticuloses</td>
<td>Diaphragmatic</td>
<td>Blood coagulation</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Cases</th>
<th>Dates</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>26.10.49</td>
<td>F 4 Diabetic coma</td>
</tr>
<tr>
<td>Case 2</td>
<td>2.11.49 F 65</td>
<td>Carcinoma of rectum</td>
</tr>
<tr>
<td>Case 3</td>
<td>26.9 49 F 65</td>
<td>Ruptured aneurysm Circle of Willis, subarachnoid haemorrhage</td>
</tr>
<tr>
<td>Case 4</td>
<td>10.11.49 F 65</td>
<td>Acute gastric ulcer, haematemesis</td>
</tr>
<tr>
<td>Case 5</td>
<td>17.11.49 F 65</td>
<td>Hypertension, cardiac failure, diabetes mellitus</td>
</tr>
</tbody>
</table>

**NOTEBOOK 16**

1949 LOUTH. Records of fatal medical cases. Postmortem reports not inserted – not available from Grimsby

Detailed clinical notes are given of diagnosis treatment and outcome

Case 1 26.10.49 F 4 Diabetic coma
Case 2 2.11.49 F 65 Carcinoma of rectum
Case 3 26.9 49 F 65 Ruptured aneurysm Circle of Willis, subarachnoid haemorrhage
Case 4 10.11.49 F 65 Acute gastric ulcer, haematemesis
Case 5 17.11.49 F 65 Hypertension, cardiac failure, diabetes mellitus

**NOTEBOOK 17**

1953 Cambridge. Studies of platelets and white blood cells

It is probable that this work was to form the basis of a thesis. The origin of the idea stemmed from DLG' study of the case in Edinburgh in 1948-49 where he recorded the effects of pneumonia on the white blood cell counts in a case of lymphocytic leukaemia.

Book contains detailed records of sequential counts made on blood of 134 patients from Addenbrookes Hospital in June 1953.

From 1 to 18 counts were recorded for each case, over a period of days. The dates are not recorded.

It is stated that graphs were made of 44 cases but the graphs are not contained in the book.

**NOTEBOOK 18**

Cambridge 1953-54

Proposal for work on platelet counts in patients receiving wide-field irradiation, not necessarily for metastatic carcinoma. Notebook contains summaries of 22 methods describing methods of platelet counting and related methods, and referring to 100 titles of other direct and indirect techniques.

**NOTEBOOK 19**

Edinburgh 1954-55. Bone marrow + blood cell in rheumatoid arthritis

At the Northern General Hospital Edinburgh, Prof JIR Duthie was studying anaemia in rheumatoid arthritis. With Dr. Now Prof John Richmond, DLG made counts of the bone marrow cells in33 cases of RA, in a further ‘old’ case of RA and in one earlier case of rheumatic fever.

Particular attention was given to the iron content of the marrow and the specimens were stained for iron, the quantity present graded as large (100 u +) aggregates (10), medium-sized (30-60 u) aggregates (5), small (5-10 u) aggregates and crystals, and minute (0.5 – 1.0 u) grains.

There were 5 control cases. The conclusions were published in *Ann Rheum Dis.* (see my C.V.)

**NOTEBOOK 20**

Edinburgh April 55. Bone marrow + blood cell in rheumatoid arthritis

This notebook contains the records of a further 35 cases of rheumatoid arthritis and of 3 normal control cases in which the bone marrow cells and peripheral blood were studied in the same way as those recorded in Notebook J.

The work concluded at the end of September 1955 when DLG moved to a Lectureship in the Department of Pathology of the University of Edinburgh.
NOTEBOOK 21
EDINBURGH 1955

Notebook is entitled “Observations on the architecture, cytology and mineral content of the bone marrow in rheumatoid arthritis”

Covers literature review and experiments to be part of the paper/report on ‘Anaemia in Rheumatoid Arthritis’. This was also incorporated in DL Gardner’s 1957 Edinburgh University PhD Thesis. Among the histochemical methods tested was the rubeanic acid method for copper in which DLG had become interested in Cambridge in 1953-54.

NOTEBOOK 22
Edinburgh (Teviot Place) 1955. Experimental hypertension; Experimental adjuvant arthritis

Note: At least half the pages of this notebook have been cut out. Their present location is not known.

Contents are therefore restricted to a list at the beginning of the book, and a few scattered pages of notes later in the book.

P 25 Preparation of hypertensive rats
P 40 imi of rats with Imferon (iron dextran)

P 45 Experiment 19 – Injection of rabbit with extract of rat synovia (see Favour et al 1955) Required: synovial tissue from 6 rats; adjuvant (oil, tubercle bacilli etc)

p 46 Injection of rats with homologous muscle + adjuvant

26.9.55 As stock tissues, normal g pig spleen, liver, muscle, suprarenal, heart, kidney and lung were rapidly frozen and stored. Some tissues were simply held in the deep freeze.

p 48 Rat homologous muscle/DD
p 50 Reinjection of rats (AA) (see p 18) with homologous spleen + adjuvants
p 51 Injection of g pigs (A) with homologous synovia + adjuvants
p 53 Rabbit (A) Intraarticular typhoid antigen
p 54 Rabbit (B) Iron
p55 G pig (B) Injection of homologous spleen
p 56 G pig (D) Caragheenin expts
p 58 Rabbit (C) Caragheenin expts
p 61 G pig E Mucopolysaccharide expts; G pig G Synovial fluid injections + biopsies
p 65 Hydralazine admin to dogs (A)

Response of the dog to oral hydralazine

The American description of the ‘hydralazine syndrome in patients with systemic hypertension, with its similarities to SLE, led to extended tests of the reaction of the normotensive dog to this antihypertensive drug

With the support of Professor Sir James Learmonth, I was allowed access to a small colony of dogs housed in the animal house located at the top of the Wilkie Research building of the Medical School

This and he subsequent work on hypertension, was incorporated in DL Gardner’s 1958 MD thesis.

21.3.56 Oral administration of hydralazine to dogs (p 85)

Dogs were fed aliquots of hydralazine daily. They were weighed, the diet monitored. Plasma protein levels, haemoglobin, white blood cells, ESR and cholesterol were measured, and LE cells searched for.

Response of the hypertensive rat to hydralazine
Since it was impractical to induce hypertension in dogs on a sufficient scale, a second large series of experiments was made with rats in which hypertension could be induced more readily in sufficient numbers of animals to allow hydralazine to be evaluated.

### NOTEBOOK 23
**Extensive experimental results 1955 and histology**

<table>
<thead>
<tr>
<th>Anti-collagen arthritis</th>
<th>Synovial fluid studies</th>
<th>Hydralazine</th>
<th>Imferon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homologous muscle, spleen and synovia arthritis</td>
<td>i.a typhoid O in rabbits</td>
<td>G. pig i.a.i Caragheenin</td>
<td>Marrow punctures for iron</td>
</tr>
<tr>
<td>Iron content of tissues</td>
<td>Histology of RES</td>
<td>i.as. caragheenin in rabbits</td>
<td>i.a. bacterial extract in g. pig</td>
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<tr>
<td>Feeding of hydralazine in dogs</td>
<td>g. pig synovial fluid</td>
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<td></td>
</tr>
</tbody>
</table>

### NOTEBOOK 24

Notebook, beginning 10.10.55 and extending into 1956, contains basis of DLG’s PhD studies on experimental arthritis. It contains 331 pages summarizing 225 abstracts of relevant papers from the literature, plus 50 abstracts on the hydralazine syndrome.

### NOTEBOOK 25

Notebook devoted to the details of experiments on the hydralazine syndrome in rats and dogs, 1955 - 1956

### NOTEBOOK 26

Notebook starting 22.8.57, entitled hypertension, hormones, renal structure and hydralazine. Contains abstracts, a few comprising title only of papers on these subjects. Includes paper by Floyer, Wilson & Byrom, Ledingham, Koletsky & Gardner.

### NOTEBOOK 27

Experimental observations, volume 4. Starts 31.1.58 with Edinburgh work on hydralazine model. Continues at page 33, with ‘Preliminary program for experiments at WRU. Goes on to page141 at 29.6.60, including studies with IIS. 1960 experiments include trials of methoxamine on rat vascular structure, some using autoradiography.

### NOTEBOOK 28

**Cleveland Ohio: experimental vascular studies, from 6.3.59**

Experiments made in the laboratory of Dr EH Bloch, Physiology Department WR, Cleveland Ohio Head: Dr George Sayers), March-April 1959 + July-August 1959

6.3.59 Mesenteric arterioles in rat renal HT
   Mesenteric arterioles in normal Rat
11.3.59 Mesenteric arterioles in steroid HT
18.3.59 Effect hydralazine on carotid BP and on mesenteric arterioles in normal rat
1.4.59 Effect hydralazine on carotid BP and on mesenteric arterioles in steroid HT
8.4.59 Effect of applying Goldblatt clamp to renal artery, on mesenteric arterioles and on carotid BP
6.7.59 Measurement of renal artery pressures in normal rat
7.7.59 Effects of insertion microcanula into rat renal artery + recording of renal artery BP without interrupting blood flow; effect of hydralazine on renal artery BP
Microcanulation of mesenteric arterioles
10.7.59 Effect of repetitive intraarterial injection of saline under high pressure, on mesenteric arterioles and on systemic BP

NOTEBOOK 29
Institute of Pathology, WRU, Cleveland Ohio 1958-59
Material seen at the Institute of Pathology, Western Reserve University graduate teaching sessions – pathology + histopathology with notes on organization, techniques, preservation, collection, reporting of the cases etc., starting 13.9.58. The number of cases is approximately ……, the notes very extensive

Details of teaching, classes, training of residents, supervision of research etc given in separate book
Teaches included Drs. Moritz (Chairman), Reagan (gynaecological pathology), Bolande, Koletsky, Ebert, Ivemark, Moore, McCorquadale (?McQuorqyal), Peterjohn, Lapham (neuropathology). On Sept 27th Alistair Currie, at that time Head of Pathology at the Cancer Institute, London, was a reluctant visiting speaker.

NOTEBOOK 30
Boston meeting of the American Association of Pathologists, April 1959
The meeting cost me $32.70: 4& for breakfasts, $5.20 for lunches, $20.50 for suppers of which $6.75 was for the official dinner
The Lymphocyte course was $10.00, registration for the whole meeting $3.00.
A bus tour was $2.75, a film $5,80.

Lymphocyte Course 2.4.59

<table>
<thead>
<tr>
<th>Gross</th>
<th>Effects of α amino propionitrile</th>
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<tbody>
<tr>
<td>Bloom</td>
<td>Lineage of cells like micromyeloblast</td>
</tr>
<tr>
<td>Sundberg</td>
<td>Origin of lymphocytes</td>
</tr>
<tr>
<td>Ackerman</td>
<td>Phase contrast and histochemical studies of nucleic acids, enzymes, lipids and other molecules</td>
</tr>
<tr>
<td>Low</td>
<td>EM of monoblasts, myeloblasts, lymphoblasts</td>
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<tr>
<td>Hamilton</td>
<td>Nucleic acid metabolism of lymphocytes</td>
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<tr>
<td>Bollman</td>
<td>Older techniques for measuring output of lymphocytes</td>
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<tr>
<td>Harris</td>
<td>Tissue transplantation (‘incoherent’)</td>
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<tr>
<td>Dougherty</td>
<td>Lymphocytes and the endocrine system</td>
</tr>
<tr>
<td>Schrek</td>
<td>Effects of irradiation</td>
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<td>Jones</td>
<td>Lymphocytes malignancies in animals</td>
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<tr>
<td>Schwartz</td>
<td>Murine leukaemia</td>
</tr>
<tr>
<td>Custer</td>
<td>Changing pattern of lymphoma</td>
</tr>
<tr>
<td>Brewster</td>
<td>Enzymes of lymphocytes</td>
</tr>
</tbody>
</table>

NOTEBOOK 31
Brief, roughish notes on blood pressures and salt intakes referring to DOCA hypertension and others with unilateral nephrectomy. Most of notebook unused.

NOTEBOOK 32
June – August 1967. Results of 9 groups of experiments on Adrenal Regeneration Hypertension (ARHT), with Dr. P Gorevic, and DOCA hypertension. – 84 rats.
Bone marrow cytology in rats 1-55
NOTEBOOK 33
Brief (8 pages) student records of renal and DOCA hypertension in April 1965

NOTEBOOK 34

NOTEBOOK 35
Records of

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>2.8.67</td>
<td>Turkey joint structure</td>
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<tr>
<td>10.9.70</td>
<td>Experimental production of Caragheenin lung;</td>
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<tr>
<td></td>
<td>Tissue responses to caragheenin;</td>
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<td></td>
<td>Histology of tissues responding to rubidomycin in</td>
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<td></td>
<td>adjuvant arthritis, experiments 127 + 128</td>
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<tr>
<td>23.7.70</td>
<td>In vivo observations of human cartilage structure</td>
</tr>
<tr>
<td>1.3.70</td>
<td>Ext 148 Pig cartilage structure</td>
</tr>
</tbody>
</table>

NOTEBOOK 36
Notebook kept by Dr. DC MacGillivray, visiting Canadian Research Fellow, Kennedy Institute, London, October 1969-October 70. I was Director of the Institute and Head of the Division of Experimental Pathology.
Experimental studies of the bearing surfaces of pig knee joints and of turkey joints. The pig joints were collected from the Progeny Testing Station of T Walls & Sons, Hastoe, Tring, Herts.
The notebook gives other telephone numbers and addresses of people who took part in the work. Specimens were collected for Dr Helen Muir (Biochemistry) as well as for Pathology. The book also lists the apparatus and equipment needed for each day's work. The team, including Dr MAHA El Maghraby, was carried to Tring by minibus.

NOTEBOOK 37
Course attended by DLG in Glasgow on radioisotopes. 28.3.60 – 8.4.60. 50 pages of lecture and demonstration notes.

NOTEBOOK 38

NOTEBOOK 39
Studies (1970-1973) in the Pathology Department of which I was the Head, of the Queen’s University of Belfast, with Dr Barry Longmore PhD, of effects of mechanical pressure on structure of articular surfaces.

NOTEBOOK 40
Research 1979 in Department of Histopathology of the University of Manchester, where I was Professor of Histopathology, with Mr. Bland, on the effects of aortic constriction on the evolution of rat adjuvant arthritis