PHOTOGRAPHS.

PLATE I.

OVARIAN HISTOLOGY.

1. General Structure of Ovary x 50.

NOTE. Ovarian stroma - young ova' and young follicles with ovum & nucleus. A mature Graafian follicle is seen at the top lefthand of Section. Note the theca externa formed by the compression of the stroma and theca interna less condensed, enclosing the membrana granulosa with the discus stretching across the cavity.

2. Shows the same structure - but note the germinal epithelium on the surface which is heaped up in the lower part of the Section. x 50.

3. Young ovarian follicle with a single layer of columnar cells - with large deeply stained nuclei - round the ovum with its clear nucleus and well marked nucleolus. Tissue outside the columnar cells looks oedematous. x 300.

4. Graafian follicle with theca externa and interna and the membrana granulosa extending all round the follicular cavity with the projecting discus. The liquor folliculi is seen. There is a young ovum at the top of the Section. x 50.

The cells of the membrana which line the wall of the follicle and those in contact with the ovum are firmer and less swollen looking than those in contact with the liquor folliculi.
5. Graafian follicle almost mature. The two coats of the follicle are here seen. The two divisions of the cavity are about to coalesce - the thin bridge of cells on the side of the ovum, away from the discus is being absorbed. x 50.

6. Luteal tissue cells to show their structure - large clear cells with well defined nuclei - they resemble cells found in the adrenal. This is from a rabbit 12 days pregnant and is typical. x 50.

7. Section across the normal uterine cornu in the rabbit. The muscular and mucous coats are easily distinguished and the two different layers of the muscle seen.

NOTE. the abundant and thick mucous coat thrown into folds - and lined with columnar epithelium which dips down and forms the uterine glands. The cavity is almost obliterated by the folds of mucous membrane. x 5.

The serous coat is not distinguishable by this power.

8. Transverse section of the tube - which shows the 3 coats - serous - muscular and mucous. The mucous coat thrown into many folds and these folds again have other small indentations. No glands present. x 50.
9. **EXPERIMENT 1.**

**PLATE III.**

Both Cornua distended (Hydrometra). The left the more so and contained about 3 cc. saline fluid.

10. The specimen removed from the body. The Constriction of the ligature is clearly seen.
PLATE IV.

11. Section of the Right distended cornu – note the lumen increased and some thinning of the walls. X 5.

12. Section of the Left cornu of same rabbit. Note considerable distension – with thinning of all the coats. X 5.
13. **EXPERIMENT 1A**

**PLATE V.**

Right cornu extremely dilated. Hydromdtra after double ligation - The walls are reduced to quite thin layers. X.5.

15. EXPERIMENT 2. PLATE VI.

Note the large rent in the gestation sac of right cornu - through which at term the foetal rabbits were extruded.


Fistula still patent after many months. Needles are passed into the cornu in both directions.

17. EXPERIMENT 4.

Fistula rabbit opened, note the dark line of the probe - at the left hand margin - passing up into the cornu, showing its patency.
18. EXPERIMENT V.

Note probe passing through fistula into lumen and pressing against the tubal end of the right cornu.

19. EXPERIMENT VI.

Almond like body with cleft across the surface - projecting from the uterine wall into the lumen.
Note structure (Adenoma) - a piece of the uterine muscle is seen at its point of attachment in the right hand top corner of section. X 5.

20. EXPERIMENT VI.

Structure of this almond like body clearly shown - Spaces lined with columnar epithelium. - Adenomatous polypus. X 50.

22. Same, but showing also the calcareous foetal remains which were found in the peritoneal cavity and had been retained for months. The foetus had probably ruptured through the cornu at the site where the adenoma has developed.
23. **EXPERIMENT VII** \textsuperscript{B}.

Hydrometra and pregnancy co-existing, full time
pregnancy in left horn – Hydrometra in right.

24. **EXPERIMENT VII** \textsuperscript{B}.

The same as above – but with left horn laid open to
show foetal rabbit with pultaceous material about
it, which obscures the detail.
25. Section of the left uterine cornu of EXPERIMENT 7B. shows the great hypertrophy and the arrangement of the muscle fibres. x 5.

26. Section of the right horn - Hydrometra of EXPERIMENT 7B. walls very thin and dilated. x 5.
27. **EXPERIMENT VIII.**

Photo shows the cornu thickened but not distended.

28. Shows the cornu slit up exposing the ligature which had cut through, thus re-establishing the lumen.
29. **EXPERIMENT IX.**

Section of left ovary normal young gland - ova indistinctly seen. X 5.

30. **EXPERIMENT IX.**

Right ovary removed 6 weeks after the Left. It shows uniform growth of all the tissues both ova, follicles and stroma, and had increased about 4 times. General structure of Ovary well seen. X 5.

31. **EXPERIMENT IX.**

Photograph of the above enlarged Right Ovary 6 weeks after removal of the Left.

32. **EXPERIMENT X.**

Twelve months after both Ovaries removed note the reduced and atrophic condition of the cornu shown here in transverse section. All the coats had wasted - although Ovarian extracts had been given. X 5.
33. **EXPERIMENT XI.**

Uterus shown in situ 3 months after double Oophorectomy. - Small sacculations distinctly seen in both cornu. To the naked eye there does not seem any change from normal.

34. **EXPERIMENT XI.**

Hydrosalpinx - persisting although both Ovaries have been removed. - Note the dilated tube indicated by the probe to the right of plate.

35. **EXPERIMENT XI.**

Section of the Cornu showing the top of the mass which was projecting into the lumen - it has here been cut too much through the core. It is an Adenoma. X 50.
36. EXPERIMENT XI A.

Greatly atrophied Cornu – reduced almost to size of a Fallopian tube – animal is well nourished – this is 14 ½ months after double Oophorectomy. Right sided hydrosalpinx well seen.

36a. This is a specimen not described in the text. It shows pregnancy in the right cornu – co-existing with a Hydrosalpinx on the left side. It is corroborative that Pregnancy does not arrest nor cause absorption of this saline watery fluid.

37. EXPERIMENT XI A.

Section of Cornu slightly obliquely cut. Note the greatly atrophied state of all the layers. X 5.
38 & 38a. EXPERIMENT XI\textsuperscript{B}. a & b. PLATE XV.

Ovaries of pregnant rabbits of same age. Those to the left of the plate are from an animal treated with the watery saline secretion – Note there is no retarding of the luteal tissue growth.

39. EXPERIMENT XI\textsuperscript{B}.

Section shows typical luteal tissue of pregnancy. X 50.
40. **EXPERIMENT XII^A.**

Right ovary removed and 5½ months later the left excised - It shows marked compensatory hypertrophy. No coitus had been permitted.

41. **EXPERIMENT XII^B.**

Similar compensatory hypertrophy. Right ovary excised. 12 months later left ovary showed marked hypertrophy. - Note the haemorrhagic follicles on the surface.

42. **EXPERIMENT XII^C.**

Right ovary had been removed on 10th day of pregnancy - note the corpora lutea raised on surface. The left removed 12 months later. The left had gained 0.145 grammes weight.

43. Shows left ovary in Rabbit 125. still in situ. Note its size. Haemorrhagic follicle and opaque follicles seen. Both cornu are of equal size and are healthy.

44. Section shows hyaline degeneration in the follicles - note the pale clear areas. X 50.
Ovaries which do not show compensatory hypertrophy — the actual weight of the Right which was first removed was greater than the Left removed 6 months later. Right Ovary actual weight 0.187 Grms. Left Ovary actual weight 0.155 Grms. The photograph does not bring out very well the depth of ovarian tissue in the Right Ovary. This Rabbit had been treated with X.Rays.

Photo shows the uterine cornua of Rabbits A. and C. of this experiment with the right ovary attached in each case. The animals were of the same litter and A. was treated with X.Ray. C. was control. Note the marked difference in growth — both were kept under identical conditions.

After removal of Thyroids and one Ovary, the remaining Ovary does not hypertrophy. The Right Ovary and both Thyroids were removed. Six months after removal of Thyroids the left Ovary was examined, and showed actual loss of weight. Weight of Right Ovary 0.33 Grms. that of Left 0.205 Grms. Actual loss 0.125 Grms.
48. **EXPERIMENT XV^A.**

Ovary of growing Rabbit after X Ray. Note the broken down and atrophic condition of the tissues which stain badly. X 5.

49. **EXPERIMENT XV^B.**

Ovary of growing Rabbit which had received half the dose of X Ray given to A. Changes are less marked and the tissue stains better. X 5.

50. **EXPERIMENT XV^C.**

Control Rabbit's ovary for A and B. Note the many Graafian follicles and ova of normal young ovary. The rabbit was of the same litter as rabbits A and B. X 5.

51. **EXPERIMENT XV^A.**

Section of ovary. The tissues are very broken up. The ova and follicles are shrunken and irregular and the stroma stains badly. The changes are very striking when compared with the section from the control. X 50.

52. **EXPERIMENT XV^C.**

Control. - The tissues normal and stain well. Note the ova and follicles numerous. X 50.
53. EXPERIMENT XVIII.

Section shows ovary with distinct stroma—ova-and follicles and tendency to proliferation of germinal epithelium.—There seems to be an excess of small cells in the stroma with large nuclei—suggests an increase of stroma cells. This rabbit had had the Uterus removed and Extract of Uterus supplied. X 50.

54. EXPERIMENT XIX.

Section from pole of the ovary—Note increase of small cells with deeply stained nuclei similar to but more marked than those in Experiment 18. There is a comparatively small number of ova and follicles. This animal had no Extract of uterus given after hysterectomy. X 50.

55. EXPERIMENT XX.

Section from corresponding pole to that of XIX. The difference is striking.—There are fewer small stroma cells; ova and follicles are abundant—and the germinal epithelium is heaped up. This animal had extract of uterus supplied. X 50.
56. Photo shows state of nutrition of the animal after subtotal hysterectomy and treatment with uterine extract. The intestines have been removed to show the large quantity of fat embedding the kidneys and in the pelvis. Fat was well distributed throughout the body.

57. EXPERIMENT XXI.

Animal of same age and kept under same conditions, excepting that normal saline was used instead of uterine extract. Note the entire absence of fat — one looks straight on to the muscle. — In the region of the left kidney the appearance is fatty but this was due to the light. The animal was much thinner than its fellow.
58 & 59. Show very well a point brought out here in regard to the development of the cavity in the maturing Graafian follicle and the consequent formation of the Discus Proligerus. The accepted teaching is that a line of cleavage occurs in the strata of cells round the ovum and those lining the follicle and this gradually widens. My sections show clearly that as the fluid is secreted, several, 3, 4 or more fluid spaces form in the mass of cells and that these gradually coalesce and absorb the intervening bands of cells until the ovum is left with only one attachment, the discus. The cells before breaking down seem to become swollen and have a gelatinous appearance.

60. Photo of the specimen of the foetal remains retained within the left cornu for ten months without injuring the health of the Rabbit to any extent. The skeletal remains can be distinguished. The animal seemed strong and well - and apart from a few adhesions, there was no disease to account for the retention of the pregnancy in the cornu.
PLATE XXII.

Water colour by Mr Richard Muir.

This drawing illustrates my observation on the formation of the cavity in the graafian follicles. — Several are seen in the various stages with 2, 3 and more fluid spaces — the number depending on the different areas which have broken down. — Note the close arrangement of the membrana cells at the periphery and discus and the swollen and disintegrated ones bordering the fluid.

x50 drawn