

# TEXTBOOK OF GYNÆCOLOGY

*By*

**J. H. PEEL**

**M.A., B.M., B.Ch.(Oxon.), F.R.C.S., F.R.C.O.G.**

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**WILLIAM HEINEMANN • MEDICAL BOOKS • LTD**

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## PREFACE TO FOURTH EDITION

THERE have been no major changes in the general design of the work, the plan of which has, I think, proved satisfactory to the student. Instead there has been a good deal of minor textual alterations throughout. This conforms to the fact that there have been very few changes in the general principles of gynæcological practice in the last five years to affect the student. I have concentrated therefore on a careful revision of the text. Some new theories about disorders of menstrual function have been included; the section on syphilis has been almost completely deleted as largely outside the sphere of a textbook of gynæcology; and newer methods of radiotherapy have been included. The section dealing with X-rays has been entirely rewritten by Dr. Shawcross, to whom I am greatly indebted. Finally, a completely new set of drawings of the principal gynæcological operations has been included, and for these I am grateful to Mr. R. N. Lane, who took endless trouble to achieve that accuracy of detail so essential in medical illustrations. Finally, as always, I am indebted to Mr. Owen R. Evans and his staff for their help throughout in the preparation of this fourth edition.

J. H. P.

LONDON,  
1955.

## PREFACE TO THE FIRST EDITION

WHEN I was first asked to assist in the revision of Forsdike's text-book, I gladly assented because I thought I should have Mr. Forsdike's experienced and guiding hand. Scarcely had the task begun when unhappily he was taken ill and passed away. It was a sad blow to all who knew him and worked with him. Personally, I felt there could be no better way in which I could express my appreciation of all that a senior colleague means to a younger man than by carrying on his good work and attempting to bring his popular text-book up to date. There was much in the original text to be preserved, some sections that required expansion and some that I thought needed to be rewritten. Accordingly, I used the original text rather as a skeleton around which to build a new body.

Firstly, the general arrangement of the book has been radically changed so that the subject-matter is presented in what I conceive to be a more orderly fashion : for example, the chapter on Symptoms in Gynæcology has been inserted towards the end of the book, instead of at the beginning. Secondly, the whole subject matter has been expanded and in large measure rewritten. Thirdly, entirely new chapters have been inserted, dealing particularly with the more modern ideas on the physiology of the female reproductive organs and the rapidly advancing subject of female endocrinology. Reviews of the previous editions praised the section on radium and therapeutic measures. Accordingly this final section of the book has been brought up to date, rearranged and expanded to include seven separate chapters on treatment in gynæcology. One of these chapters, dealing with the use of X-rays in gynæcology, has been written by Dr. E. W. H. Shawcross, to whom I should like to express my appreciation and thanks. Fourthly, as favourable comments were passed on the original illustrations the majority of these have been retained. The total number has thus been increased from 142 to 216. Lastly, an appendix of the available hormone preparations for clinical use has been incorporated.

My debts of gratitude to be recorded are numerous. I should like to express my thanks to Mr. E. O. Sonntag and his two artists, Miss Kathleen Bloom and Mrs. Suzanne Pain, for the microphotographs and drawings ; to Dr. Gilpin, the Curator of the King's College Hospital Museum, for permission to use some of the specimens therein and to Miss Josephine Hunt for her skill in photographing them as well as some of my own specimens ; to my secretary, Miss Nora Curran, for the untiring energy expended in the typing, reading, correcting and arranging of the text and index ; to the authors of text-books,

monographs and original articles too numerous to be named individually; and lastly, to the publishers. Mr. Johnston Abraham has very kindly given me the benefit of his helpful criticism and encouragement throughout; Mr. Cavender and his staff have always shown me the greatest consideration and courtesy.

J. H. PEEL

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*June, 1943.*

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Fig. 93, Witherspoon, *Gynæcological Pathology* (Kimpton), modified from Polak, *Manual of Gynæcology* (Lea & Febiger).

Fig. 166, Teacher, *Gynæcological Pathology* (Oxford University Press).

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## Section I

# ANATOMY—EMBRYOLOGY—PHYSIOLOGY OF THE FEMALE GENITAL ORGANS

## CHAPTER I

### ANATOMY OF THE FEMALE PELVIC ORGANS

#### Vulva

THE external genitals consist of the mons pubis or veneris in front, the labia majora and minora laterally, and the perineal body posteriorly. These structures define a space in which is found the clitoris, vestibule, the external urethral orifice, the vaginal orifice, the hymen and fourchette.

*Mons Pubis or Veneris.* This is a centrally placed cushion of fat in front of the pubis, and covered with skin containing short curly hair.

The *labia majora* are two folds of skin composed of fat and connective tissue, which are continued anteriorly into the mons veneris. They run backwards in contact, enclosing the pudendal or vulval cleft, and are lost posteriorly in the skin of the perineum. The outer surfaces are covered with hair, and contain sebaceous and sweat glands. They are poorly developed in children, and after the menopause they atrophy. Behind them on either side lies a mass of erectile tissue, the bulb of the vestibule, homologous with the urethral bulb in the male.

The *labia minora* are two narrow folds of skin, one on each side of the middle line within the labia majora. The skin is moist and anteriorly they divide into two folds. The upper fold unites with the one from the opposite side to form the prepuce of the clitoris, while the lower unites with its opposite to form the frenulum clitoridis.

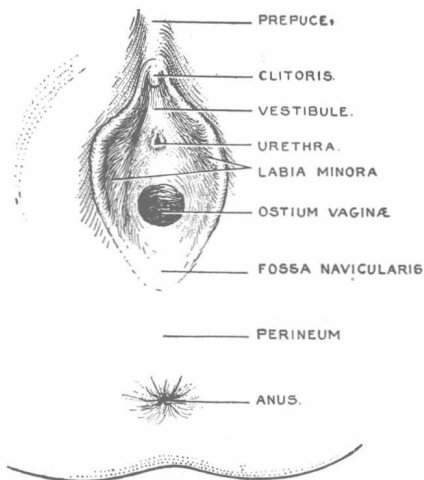


FIG. 1. The external genitalia.

Posteriorly the labia minora unite to form the fourchette or frenulum labiorum pudendi. In front of the fourchette, between it and the vaginal orifice, is situated the depression called the vestibular fossa or the fossa navicularis.

The *vestibule* of the vagina is a triangular space with the apex at the clitoris and the base at the posterior end of the vaginal orifice. It is enclosed by the labia minora and in its floor are the external urethral orifice and para-urethral tubules of Skene, the openings of Bartholin's glands and the orifice of the vagina.

The *clitoris* is the rudimentary homologue of the penis, and consists of a

- (1) Glans composed of erectile tissue and freely supplied with sensory nerves.
- (2) Body consisting of the corpora cavernosa, which are attached to the ramus of the pubis on each side, where they are partly embraced by the erector clitoridis muscle (ischio-cavernosus).

The vaginal orifice lies in the posterior part of the vestibule, and is partially occluded by the hymen.

The *hymen* is a fibrous membrane covered with squamous epithelium, which partially closes the mouth of the vagina. The opening varies in size and position, and may be single or multiple (cribriform); occasionally the hymen is imperforate and may be the cause of retained menstrual blood. It is usually torn at the first coitus, but may be rigid enough to prevent penetration, and occasionally it is so elastic as to persist until labour takes place.

*Carunculae myrtiformes* are the remains of the hymen after complete laceration, and appear as small sessile tags of skin around the vaginal orifice.

*Bartholin's glands* (the greater vestibular glands) are bilateral racemose mucous glands which lie behind the vestibular bulb on either side of the vaginal orifice (see Fig. 2) and are covered by the superficial perineal fascia; each has a long, narrow duct which opens on the inner aspect of the labia minora at the junction of the anterior two-thirds and posterior third.

The urethral orifice is situated in the anterior part of the vestibule immediately in front of that of the vagina. The openings of Skene's tubules are found, one on either side, immediately inside the orifice.

**Blood Supply of the Vulva.** The external genitalia are very richly supplied with blood. The main vessels are the internal pudendal arteries from the internal iliac arteries and the external pudendal arteries, which are branches of the femoral artery. Veins accompany the corresponding arteries.

**Lymphatic Drainage.** The lymphatic drainage is into the superficial inguinal glands.

**Nerve Supply.** The nerve supply is derived from cutaneous branches



of the ilio inguinal nerve, the posterior labial and perineal branches of the pudendal nerve and branches from the posterior female cutaneous nerve.

## SUPERFICIAL STRUCTURE OF THE PELVIC FLOOR

Beneath the skin and superficial structures forming the vulva lies the superficial portion of the pelvic floor. The diamond-shaped space, bounded by the ischio-pubic rami, tuberosities of the ischium, sacro-sciatic ligament and coccyx, is divided into two triangles, anterior and posterior, by the transverse perineal muscles and ligaments.

**A. Anterior Portion or Urogenital Triangle.** Anteriorly beneath the subcutaneous fat lies Colles' fascia. This is continuous anteriorly with Scarpa's fascia on the lower abdominal wall, and posteriorly blends with the base of the triangular ligament.

**The Triangular Ligament.** This consists of muscular tissue enclosed between two fascial membranes. The two fascial membranes fuse anteriorly and are continuous with the sub-pubic ligament. Laterally they are attached to the ischio-pubic rami; posteriorly they fuse together in a line passing between the tuberosities of the ischium and are united with Colles' fascia at the central point of the perineum. The superficial and deep fascial membranes are pierced by the urethra and vagina. Between the superficial layers of the triangular ligament and the fascia of Colles lie Bartholin's glands, the crura of the clitoris, the bulb of the vestibule and the following muscles:—

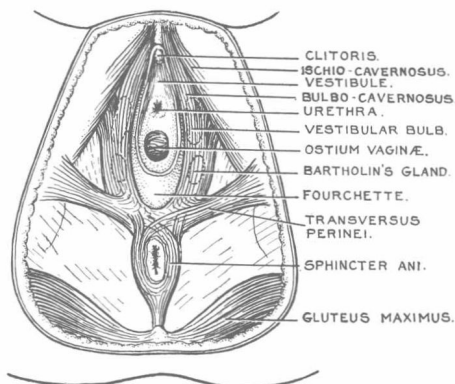


FIG. 2. Muscles of the perineum and vulva.

(1) The bulbo-cavernosus (sphincter vaginae) is a thin muscle covering the vestibular bulb which surrounds the orifice of the vagina. It arises from the central point of the perineum, and is inserted into the corpora cavernosa of the clitoris. It acts as a sphincter of the vagina and compresses the erectile tissue of the bulb and the dorsal vein of the clitoris.

(2) The ischio-cavernosus muscle arises from the tuberosity of the ischium and from the ramus of the ischium and is inserted into the crus clitoridis on each side. It compresses the crus and so assists in the erection of the clitoris.