

Essentials of

GYNECOLOGY

E. STEWART TAYLOR

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Third Edition

*358 Black and White Illustrations and
27 in Colour on 10 Plates*

LONDON
HENRY KIMPTON
134 GREAT PORTLAND STREET, W.1

1965

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First Edition, 1958

Reprinted, 1959

Second Edition, 1962

Third Edition, 1965

Library of Congress Catalog Card Number: 65-24800

Printed in the United States of America

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Preface to Third Edition

ESSENTIALS OF GYNECOLOGY has the objective of presenting to medical students and the young practitioners of gynecology the fundamentals and essentials of this branch of medicine. The classical references to the various chapters have been preserved, while new reference material has been added where necessary. A new chapter titled "Events That Have Shaped Gynecology" has been added. This surveys the significant events of medical science of the past 400 years that have contributed to the development of gynecology. I am indebted to Dr. Harold Speert for his splendid book *Obstetric and Gynecologic Milestones; Essays in Eponymy* for much of the material included in this chapter. It is important that students have an appreciation of their medical heritage as well as some understanding of the derivation of the many eponyms that sprinkle our daily conversation and writing.

The material in this textbook has been carefully selected to correlate physiology, anatomy, and pathology of gynecology with clinical practice. Methods of examination, history taking, diagnosis, and special laboratory tests and their interpretation are given in the text. Treatment of benign and malignant gynecological diseases is emphasized as is the management of endocrine disorders. The medical and surgical treatment of all the usual gynecological conditions is covered. Operative techniques are discussed in principle and with enough technical detail so that the student can visualize the operative procedures that are common to gynecology. No attempt is made to give complete technical details of operations, but since gynecology is a surgical specialty as well as a medical specialty, certain procedures should be understood at least in concept by students.

The modern medical student spends more and more time on the wards, in the clinics, and in the operating room, and less and less time at formal lectures. This text is a supplement to his clinical experience and should serve as a guide for him when he sees patients with the usual and unusual diseases in his clinical clerkship. If the student will study his patient, refer to his patient's condition in the text, read the applicable textual material, be guided by the key references given at the end of the particular chapter, and ask questions of his teachers, he will learn gynecology.

Since the last edition of this book, several important innovations in endocrinology, cancer therapy, surgery for urinary stress incontinence, and in cytogenetics have occurred. The chapters on "History Taking, Physical Examination, and Office Laboratory Examination," "Physiology and Endocrinology of the Female Genital Tract," "Developmental Abnormalities of the Female Genital Tract," "Cancer of the Cervix," "Adenocarcinoma of the Endometrium," "Cancer of the Ovary," "Stress Inconti-

nence," "Management of Dysfunctional Uterine Bleeding," "The Pituitary Gland in Gynecology," "Primary Gonadal Failure," and "Infertility" have been extensively revised. The other chapters of the book have been revised to incorporate new knowledge when it applies. The source material in the reference lists has been modernized.

I wish to thank my wife, Ruth, Dr. Robert A. Munsick, Dr. Robert E. Dean, Mrs. Irene Brown, and Mrs. Vera Drose for their valuable aid in the preparation of the manuscript. I wish, also, to acknowledge the help given to me by Mr. John F. Spahr and the staff of Lea & Febiger.

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Chapter

1

Events That Have Shaped Gynecology

THE art and practice of gynecology dates back to the Egyptians, the Old Testament, and the Greeks. Many thoughts and practices about gynecology were vested in superstition and based on empiric observation. In Leviticus 15: 19-32 of the Old Testament, rules concerning menstruation and sexual conduct of male and female are recorded in ancient law. Significantly, these rules are catalogued with dietary instruction and health regulations. Soranus, Hippocrates, and Galen taught about diseases of the uterus and observed mental attitudes and traits in women that they related to the uterus and its humors.

The following pages give a brief outline of the important events in science during the last 400 years that have permitted gynecology to advance and become an effective medical and surgical specialty. With the emergence of medicine from the Middle Ages, gynecology profited from direct observation of the human body just as medical science as a whole prospered.

In 1561, Gabriele Falloppio of Venice gave the vagina its scientific name and described the oviducts. The fallopian tubes, the oviducts, now bear the name of this great teacher and anatomical investigator.

The first important textbook on operative gynecology was published in Amsterdam in 1663. The author was Hendrik van Roonhuyze.

Reinier de Graaf, in 1672, demonstrated that the human ovum arose within the ovary from what is now known as the Graafian follicle. He also described in later studies the pathologic anatomy of chronic salpingitis, although he made no reference to the etiology of this condition.

Robert Houstoun, in the year 1726, reported incision of a woman's abdomen in order to release ovarian dropsy from a large ovarian cyst. The patient survived and was much improved by the procedure.

In 1764, John Bard of London performed the first successful operative procedure for ectopic pregnancy. Before this date and, as a matter of fact, for 120 additional years or more, ectopic pregnancy was synonymous with death of the patient except for the rare self-cure that occurred.

In 1789, Matthew Baillie of Philadelphia gave the first classical account of dermoid cysts of the ovary.

An account of the dissection of a hermaphrodite dog is described by Sir Everard Home in 1799. In this article, he also gives the first recorded instance of artificial insemination in man.

Modern gynecological surgery dates from 1809 when Ephraim McDowell of Kentucky performed on Jane Crawford the first ovariectomy for a large

ovarian cyst. The operation was successful and laid the foundation for abdominal and pelvic surgery.

C. J. Langenbeck was the first to perform a vaginal hysterectomy. This was in 1813 and was reported in 1817.

John King, 1817, through a vaginal incision delivered an advanced ectopic pregnancy. Both the mother and the child lived.

Marie Anne Victoire Boivin, in 1827 and 1833, provided classical descriptions of hydatidiform mole and female urethral cancer.

In 1849, John Peter Mettauer of Boston reported the first successful closure of a vesicovaginal fistula. He used metallic sutures and a retention catheter, but James Marion Sims of Alabama and New York, in 1852, is the person who is usually credited with the surgical correction of vesicovaginal fistula. He performed many successful vesicovaginal fistula closure operations and contributed silver wire suture material, the Sim's position, and the Sim's speculum to the technical perfection of the operation.

Walter Burnham performed the first successful abdominal hysterectomy in 1853. The indication was sarcoma of the uterus.

Probably the biggest single advance for gynecological surgery was the introduction of ether anesthesia for relief of pain during surgery. Crawford Long of Georgia (1842), and Morton of Boston (1846) introduced ether anesthesia. Horace Wells, a dentist of Hartford, Connecticut, introduced nitrous oxide anesthesia in 1843. Sir James Y. Simpson of Edinburgh, (1847), first used chloroform for general anesthesia.

In 1860, Hugh Lenox Hodge of Philadelphia described the vaginal pessary for support of the prolapsed uterus.

Louis Pasteur (1861), first made the discovery that living organisms lead to fermentation and to tissue destruction. Joseph Lister of Glasgow, the surgeon, read of Pasteur's work and from it conceived the principles of antiseptic surgery. After his principles of antiseptics became accepted, the frontiers of surgery accepted no bounds. His first publication on antiseptics appeared in 1867.

In 1865, Sir Thomas Spencer Wells made a classical contribution to the study of ovarian disease.

It was in 1872, that Emil Noeggerath first pointed out the relationship between gonorrhea and female sterility.

Leon Clement Le Fort of Paris in 1877, gave his name to an operation for the surgical cure for uterine prolapse.

Wilhelm Alexander Freund of Berlin, in 1878, did the first successful abdominal hysterectomy for cancer of the uterus using Lister's antiseptic technique.

Much excitement and promise was felt when Robert Lawson Tait of England successfully operated on a patient with ruptured ectopic pregnancy. He reported five patients that had ruptured ectopic pregnancies on whom he operated successfully. This was in 1884.

Wilhelm Konrad Roentgen, Wurzburg, Germany, discovered x-rays in 1895. This was followed in 1898, by the discovery of radium by Pierre and Marie Curie in Paris.

Alwin Karl Mackenrodt, in 1896, described his operation for plastic repair of the vagina. The cardinal ligaments, the main supports of the uterus, are named for him.

In 1898, Howard Atwood Kelly, Professor of Gynecology at the Johns Hopkins School of Medicine, wrote his two-volume text on operative gynecology which became a standard guide for students and practitioners. His operation for cure of urethrocele bears his name and is useful today. Two years later, Thomas Stephen Cullen, a pupil and successor of Kelly's, gave the first clinical description of endometrial hyperplasia.

Ernst Wertheim, in 1900, described his radical operation for cancer of the uterus. His classical work on this operation for the treatment of cancer of the cervix appeared in 1911.

In 1900, Karl Landsteiner discovered the major human blood groups of O, A, and B. Landsteiner was an Austrian and later joined the Rockefeller Institute for Medical Research. His discovery of the major blood groupings made human blood transfusions safe and possible.

Margaret Cleaves, an American physician, in 1903, treated the first patient with cancer of the cervix with radium. This introduced the whole field of radiotherapy for the treatment of cancer of the female genital organs.

Fritz Hitschmann and Ludwig Adler, in 1908, were the first to demonstrate the cyclic physiological changes in the endometrium which characterize the menstrual cycle. This laid the basis for gynecological endocrinology.

Isidor C. Rubin of New York, in 1910, wrote a most significant paper called "The Pathological Diagnosis of Incipient Carcinoma of the Uterus," which gives an excellent description of carcinoma *in situ* of the cervix. It was more than thirty years later before his concept was accepted and applied in clinical gynecology.

The first demonstration of radiographic salpingograms was made by William Hollenback Cary in 1914.

Robert Schroeder, in 1919, first described the histopathological entity of metropathia haemorrhagica and correlated it with the clinical history of the disease.

Intrauterine and tubal inflation with oxygen was introduced by Isidor C. Rubin in 1920. This test has since been known as the Rubin test and has had lasting value in the diagnosis and treatment of female infertility.

The isolation of estrogen by Edgar Allen and Edward A. Doisy in 1923, was the beginning of the understanding of ovarian hormones.

In 1928, Selmar Aschheim and Bernhard Zondek made the important discovery of the biological test for pregnancy which bears their names.

George W. Corner and Willard M. Allen isolated progesterone in 1929, and this laid the foundation for further studies and understanding of this ovarian hormone.

Carl Kaufmann first used estrogen, in 1933, to produce cyclic endometrial changes in women who had had their ovaries removed.

Irving F. Stein and Michael Leventhal of Chicago, in 1935, published their first paper on the polycystic ovary syndrome which now bears their names.

Chemotherapy was introduced by Leonard Colebrook and Meave Kenny, in 1936, in the treatment of human puerperal infections. Although the original experience was with puerperal patients, the benefits of chemotherapy (sulfanilamides) for the treatment of septic abortions, pelvic inflammatory disease, and surgical infections became immediately apparent.

Another important landmark in the development of gynecology and

female endocrinology was Harold L. Sheehan's work in 1937, describing postpartum necrosis of the anterior pituitary gland.

In 1938, Sir Edward Charles Dodds, L. Goldberg, W. Lawson, and R. Robinson discovered diethylstilbestrol, a synthetic compound with estrogen activity.

Sir Alexander Fleming's discovery of penicillin, in 1929, should be considered an extraordinary step forward in gynecology as well as in the other branches of medicine. It was 1940, however, before Chain and Florey purified penicillin for clinical use.

The contribution of George N. Papanicolaou and Herbert F. Traut of the vaginal cytological and screening tests for cancer of the cervix in 1941, is probably the most significant discovery in cancer control of this century.

Richard W. Te Linde and Gerald A. Galvin rediscovered carcinoma *in situ* of the cervix and, in 1944, suggested that the cervix and uterus should be removed when carcinoma *in situ* of the cervix was found in order that carcinoma *in situ* might be prevented from becoming invasive cancer of the cervix.

With Murray Barr's discovery of the sex chromatin body (1949) and Tjio and Levan's identification of 46 chromosomes as the normal human karyotype (1956), cytogenic study of many gynecological diseases and syndromes became possible.

C. H. Li, M. E. Simpson, and H. M. Evans (1949) first isolated pituitary follicle stimulating hormone. In 1958, Carl A. Gemzell of Sweden reported induction of ovulation in women through the use of human pituitary gonadotrophins. Robert L. Greenblatt introduced clomiphene as a chemical agent for artificial induction of ovulation in human beings. This was in 1961.

Abraham Lash (1950) and V. N. Shirodkar (1955) discovered a surgical treatment for, and recognized the syndrome of, incompetent cervical os.

M. C. Li, Roy Hertz, and D. B. Spencer, working at the National Institutes of Health, Bethesda, Maryland, first cured metastatic choriocarcinoma, using an antifolic acid preparation, 4-amino-N-10-methylpteroyl-glutamic acid. This was reported in 1956.

The introduction of 1-beta-hydroxyethyl-2-methyl-5-nitroimidazole for the successful treatment of trichomonas vaginalis vaginitis is an important contribution to gynecology. Nakamura was the first to isolate this drug (1955) and Cosar and Julou used it on mice in 1959.

These previous paragraphs list the important milestones in the development of gynecology, but while this four century span was becoming part of our heritage we find literally dozens of names that are part of the lexicon of gynecology. It is interesting to note who some of these men were:

Caspar Bartholin, anatomist, was born in Copenhagen in 1655 (Bartholin cyst).

Antoine Basset was born in Paris in 1882. He was a general surgeon. (Basset's operation for vulval cancer.)

Fritz Brenner was born in Osthofen, Germany in 1877. Dr. Brenner in 1958 was a general practitioner in Johannesburg, South Africa. (Brenner tumor.)

Emma Louise Call, born in Massachusetts in 1847, graduated from the

University of Michigan in medicine. She worked under Exner in Vienna. (Call-Exner bodies.)

Johann Baptist Vitus Liberalis Chiari was born in 1817 in Salzburg, Austria. He was professor of obstetrics at Prague and in Vienna (Chiari-Frommel syndrome).

Jules Germain Cloquet was born in Paris in 1790. He was an anatomist and successful surgeon (Cloquet's node).

Albert Döderlein was born in Augsburg, Germany in 1860. He was professor of obstetrics and gynecology at Munich (Döderlein's bacillus).

James Douglas was born in Scotland in 1675. He was an anatomist, obstetrician, and physician to Queen Caroline (*cul-de-sac* of Douglas).

Siegmund Exner was born in Vienna in 1846, and became a professor of pathology in Vienna (Call-Exner bodies).

William Edward Fothergill was born in Southampton, England in 1865. He was professor of obstetrics and gynecology at the University of Manchester (Manchester-Fothergill operation).

Ferdinand Frankenhauser was a professor of obstetrics and gynecology at Zurich. He died in 1894 (Frankenhauser's plexes).

Julius Theodor Richard Frommel was born in 1854 in Augsburg, Germany. He was professor of obstetrics at the University of Erlangen in Munich in 1887 (Chiari-Frommel syndrome).

Hermann Treschow Gartner was born in 1785 in the West Indies, but was educated in Copenhagen. He practiced in Copenhagen and was also a military surgeon and an anatomist (Gartner's duct).

Alfred Hegar was born in Darmstadt, Germany in 1830 and became professor of obstetrics and gynecology at Freiburg (Hegar dilator).

Hugh Lenox Hodge was born in 1796. He invented the Hodge pessary and was professor of obstetrics and diseases of women and children at the University of Pennsylvania in 1835.

Max Hühner, a New York urologist, was born in Berlin in 1873 (Hühner test).

Friedrich E. Krukenberg was born in Halle, Germany. He was a physiologist and pathologist at Marburg (Krukenberg tumor).

Theodor Langhans was born in 1839 in Usingen, Germany. He was professor of pathologic anatomy at Giessen and at Bern (Langhans' cells of the placenta).

Michael L. Leventhal, born in Chicago in 1901, was affiliated with Michael Reese Hospital in Chicago, and served in evacuation hospitals in Africa, Sicily and Italy in World War II (Stein-Leventhal syndrome).

Alwin Mackenrodt was born in 1859. He was professor of gynecology in Berlin (Mackenrodt's ligaments).

Joe Vincent Meigs was born in Lowell, Massachusetts in 1892. He described the syndrome of hydrothorax associated with ovarian fibroma. His was not the first description of this interesting syndrome but his name is associated with it. Dr. Meigs was clinical professor of gynecology at Harvard Medical School.

Giovanni Battista Morgagni, the founder of pathological anatomy, was born in Forli, Italy in 1682. He was professor of anatomy at Padua (Hydatids of Morgagni).

Johannes Müller was born in Coblenz in 1801. He was a foremost German physiologist. He, also, occupied chairs of anatomy and pathology (Müllerian ducts).

Martin Naboth was born in 1675 in Saxony. He became a professor of chemistry at Leipzig (Nabothian cyst).

Albert Ludwig Siegmund Neisser was born in 1855 in Schweidnitz, Lower Silesia. Neisser was a dermatologist interested in venereal infections (Neisserian infection).

Anton Nuck was born in Harderioyck, The Netherlands, in 1650. He was professor of anatomy at Leyden (Nuck's canal).

Johannes Pfannenstiel's name is associated with the transverse abdominal incision. He was born in 1862 in Berlin. He was professor of obstetrics and gynecology in the University of Giessen.

Anders Adolf Retzius was born in Lund, Sweden, in 1796. He was a professor of anatomy (Space of Retzius).

Johann Christian Rosenmüller was born in Hessberg, Germany in 1771. He was an anatomist in Leipzig (Organ of Rosenmüller).

Walter Schiller was born in Vienna in 1887. He was a pathologist, particularly interested in gynecological pathology. He noted that cancer cells failed to contain as much glycogen as normal cells. This he adapted to a test for cancer of the cervix known as Schiller's iodine test for cervical cancer.

Harold Sheehan was born in 1900, is professor of pathology at the University of Liverpool, and has contributed significantly to the understanding of the pathology of pregnancy as well as describing Sheehan's syndrome.

Alexander Johnston Chalmers Skene was born in Aberdeenshire, Scotland, in 1838. He was professor of gynecology at the Long Island College Hospital in Brooklyn, New York (Skene's glands).

Irving Freiler Stein, born in Chicago in 1887, is senior attending physician in the Department of Obstetrics and Gynecology at the Michael Reese Hospital in Chicago (Stein-Leventhal syndrome).

Friedrich Trendelenburg of Leipzig was born in 1844. He was a professor of surgery and his name is associated with the Trendelenburg position and with the test for competency of venous valves in patients with varicose veins.

Henry Turner was born in Harrisburg, Illinois, in 1892. He is a professor of medicine, University of Oklahoma (Turner's syndrome).

Max Walthard was born in Bern, Switzerland, in 1867. He was head of the Universitäts-Frauenklinik in Zurich (Walthard cell islands).

Caspar Friedrich Wolff was born in Berlin in 1733, and was an anatomist who did his work in Russia (Wolffian body and duct).

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