
LEGAL
MEDICINE

R. B. H. GRADWOHL

LEGAL MEDICINE



Edited by

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Dedicated to
J. EDGAR HOOVER

Director, Federal Bureau of Investigation,
who, in addition to many noteworthy and
outstanding contributions to law enforce-
ment, has done so much to further the prog-
ress of forensic science.

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PREFACE

Many books on legal medicine have been written in the German, French, Italian, and English languages. Some are classics. Many are now outdated and out of print. The fundamental subjects that were considered in these older books were pathological anatomy and toxicology. Legal medicine has far outgrown these two considerations. While these remain firm pillars, other supporting columns have since been added to strengthen the modern structure.

The planning of the programs of the annual conferences of the newly founded American Academy of Forensic Sciences convinced the Editor of this volume (the founder and first President of the Academy) that a textbook utilizing the subject matter of these various meetings might well accomplish the making of an up-to-date textbook. With that end in view, the Editor selected a group of authors who, he felt, could well give their views and experiences in making up a reliable and trustworthy book. Even with this plan, the last word has not yet been written because of the rapidly changing pictures that are developing in law-science relationships. We do hope, however, that those who need such a book—medical and law students, members of the medical and legal professions, jurists, law enforcement officers, pathologists, and toxicologists—will find here exact information on these various aspects of legal medicine.

Most appropriately, Sir Sydney Smith, of Edinburgh University, Scotland, Dean of the Faculty of Medicine and Professor of Forensic Medicine, was selected to discuss the history of legal medicine. Sir Sydney Smith, who might well be termed the Nestor of legal medicine in the British Isles, hardly needs an introduction at our hands because he is well known for his almost limitless knowledge of the literature of legal medicine—a renowned teacher, a contributor to journal and textbook literature—a leader in his field; his chapter constitutes a complete history of this subject.

The medicolegal autopsy requires special and detailed treatment. To this end, Dr. Frederick Newbarr, Chief Autopsy Physician to the Coroner of Los Angeles, and his associate, Dr. Richard Myers, discuss it fully and succinctly.

Dr. Louis J. Regan, Counsel to the Los Angeles County Medical Society, has written a chapter on the legal authorization for autopsies. This, we believe, will be very useful information to our readers.

Professor Elwyn L. Cady, Jr., Lecturer in Law-Medicine Relations, University of Kansas City School of Law, gives an excellent synopsis of laws relating to medical practice.

Dr. George S. Strassmann, Pathologist to the Metropolitan State Hospital, Waltham, Massachusetts, a former professor of legal pathology in Germany, has written very fully on forensic thanatology, postmortem changes, vital reactions,

effects of high and low temperature and electric currents, mechanical asphyxia, pathological findings in poisonings, and pregnancy and abortion.

L. R. Janes, M.A., M.B., Pathologist, the Royal Sussex County Hospital, Brighton, England, who has performed over many years numerous medicolegal autopsies, discusses the common causes of unexpected deaths. This is one of the most important chapters in the book.

Wounds of the head and body and their interpretation are considered in Chapter 9 by Francis S. Camps, M.D., Lecturer in Forensic Medicine, the London Hospital, London, England. This covers very completely incidents relative to this type of trauma.

From the standpoint of the physical anthropologist, Dr. T. D. Stewart, Curator of Physical Anthropology, United States National Museum, Washington, D. C., has given the principal points relative to evaluation of evidence from a study of the skeleton.

Dr. David B. Scott, Dental Surgeon, United States Public Health Service, Bethesda, Maryland, has given the latest views on dental science in identification and criminology.

Dr. W. E. Evans, an eminent pathologist of the Charing Cross Hospital, London, devotes a chapter to a thorough discussion of the examination of hairs and fibers.

Dr. R. B. H. Gradwohl, Director of the Police Laboratory of the St. Louis Police Department, has written four chapters: one on blood identification, another on the proof of nonpaternity by blood tests, a third on examination of seminal fluid, and a fourth on infanticide. Dr. Alexander S. Wiener has very kindly read and approved both manuscript and galley of the chapter on proof of nonpaternity.

Mr. Sidney B. Schatkin, Assistant Corporation Counsel for the City of New York, also has written on paternity proceedings and blood tests. Mr. Schatkin has had a wide experience in court and has a rare understanding of both the legal and the scientific phases of this subject.

Dr. John J. Connor, Chief Autopsy Physician of the Coroner of St. Louis, Missouri, has written the chapter on rape.

Owing to the frequent discussion of abortion and the law, Dr. Louis J. Regan, of Los Angeles, California, has discussed the laws of the United States on these points.

Dr. Jesse Lawrence Carr, Clinical Professor of Pathology, Clinical Professor of Legal Medicine, and Director of the Department of Legal Medicine, University of California at San Francisco, discusses sudden death in infants. A very important aspect of this subject deserved a special chapter at the hands of Dr. M. David Orrahood, Instructor in Pathology, St. Louis University School of Medicine, and Associate Pathologist, St. Louis City Coroner, who gives an interesting review of the medicolegal aspects of septal pneumonia in infants.

One of the most important aspects of legal medicine is the subject of toxicology and microanalysis. This very extensive chapter has been handled by Mr. Sidney Kaye, Toxicologist to the Chief Medical Examiner, Richmond, Virginia, and Dr. Leo Goldbaum, Toxicologist, Army Medical Center, Walter Reed Hospital, both highly trained and experienced toxicologists.

In another chapter, Dr. William V. Eisenberg, Chief, Micro-analytical Branch, Division of Microbiology, U. S. Food and Drug Administration, Washington, D. C., discusses the microscopic-crystallographic procedures for the identification of drugs.

Recent advances in the treatment of poisonings are discussed by Dr. A. W. Freireich, Assistant Clinical Professor of Medicine, Post-Graduate Medical School, New York University, and Toxicologist, Office of Chief Medical Examiner, Nassau County, New York. This is a very practical and complete story of the numerous advances that have been made in this department.

Alcohol has become a subject of increasing importance in textbooks on legal medicine, especially in view of the importance of alcohol in the blood of the alleged drunken driver. Dr. C. W. Muehlberger, Toxicologist, of the Michigan Department of Health, Lansing, Michigan, a renowned American authority, discusses this fact fully.

The medicolegal aspects of workmen's compensation are taken up by Mr. Edmund Thomas, Chief Counsel, Industrial Accident Commission of California, San Francisco, California.

There is no subject in legal medicine more interesting and more important than forensic psychiatry. Dr. Val B. Satterfield, Assistant Professor of Clinical Psychiatry, Washington University School of Medicine, and Consulting Psychiatrist to the St. Louis Metropolitan Police Department, discusses this in a most thorough and original manner. Immediately following that chapter is one by Professor Elwyn L. Cady, Jr., on the legal relations of the mentally ill.]

A textbook on legal medicine would hardly be complete without a review of the legal aspects of neuropathology. This chapter was written by Dr. Cyril B. Courville, Consultant in Neuropathology, Coroner's Office, Los Angeles County, and Director, Ramon Cajal Laboratory of Neuropathology, Los Angeles County General Hospital, and one of the nation's leading neuropathologists.

One of the modern weapons in the investigation of crime is lie detection. This is discussed by Dr. Herbert P. Lyle, Coroner, Hamilton County, Ohio, an authority on this subject. Further, narcoanalysis for criminal investigation is handled by Dr. James H. Matthews, Clinical Instructor in Anesthesiology, University of Minnesota Hospitals, Minneapolis, Minnesota.

In the development of scientific crime detection, there has been a remarkable development in the United States of the police laboratory. Mr. Clemens Maise, Associate Director of the St. Louis Police Laboratory, gives an outline of police laboratory administration.

Mr. Clark Sellers, a well-known authority on questioned documents, of Los Angeles, California, discusses very broadly the question of expert testimony. This subject is further embellished by the chapter by Dr. E. M. Hammes, Clinical Professor Emeritus of Neurology and Psychiatry, the University of Minnesota Medical School, on the so-called "Minnesota Plan" of expert testimony.

Frequently in court arises the question of where trauma and disease overlap. An eminent member of the St. Louis Bar, Mr. J. L. London, discusses this question.

The final chapter of the book is by the Editor on official medicolegal investigations in the United States.

As intimated before, no one can write the last word on the subject of legal medicine, but it is hoped that the collected thoughts of so many outstanding authorities will go very far to bring the reader of this book, whether he be a pathologist, a toxicologist, a practicing physician, a law enforcement officer, a lawyer, or a teacher, well to the front in an understanding of these problems. The book is offered in the hope that it will be a worth-while contribution of this highly diversified and important subject, legal medicine.

R. B. H. G.

St. Louis, Mo.

LEGAL MEDICINE

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LEGAL MEDICINE



CHAPTER 1

THE HISTORY AND DEVELOPMENT OF LEGAL MEDICINE

SIR SYDNEY SMITH, C.B.E., M.D., F.R.C.P.E., D.P.H.

EDINBURGH, SCOTLAND

Forensic medicine may be defined as that body of medical and paramedical scientific knowledge which may be of service in the administration of the law. In discussing its history it is obviously impossible to indicate any particular date when forensic medicine emerged as a recognizable, separate scientific discipline. Medicine probably has a history as ancient as man himself, for in his search for food, substances must have been tried which had medicinal qualities, and by process of trial and error he would certainly obtain a knowledge of those substances which could be used to assuage pain and combat disease and of others which were capable of causing death. Such knowledge, no doubt, was handed down from generation to generation, and as certain individuals became specially interested in matters of health and disease, the medicine man was evolved. His knowledge of drugs, blended with a knowledge of simple surgical procedures and reinforced by magic and witchcraft, made him a powerful and influential member of society.

Similarly, the law may be said to be as old as society, for when men began to live in groups it must soon have become obvious that no member could be allowed to do just what he wished but that the actions of all must conform to certain rules if the group was to survive. Sanctions had to be applied to curb the antisocial propensities of the few, and thus the law was born.

We cannot begin to think of forensic medicine as an entity, however, until a stage of civilization is reached in which we have, on the one hand, a recognizable legal system, and, on the other, an integrated body of medical knowledge and opinion. Furthermore, we cannot know much about such matters until some means of recording them has been achieved, and our earliest written history takes us back only about five thousand years, when, strangely enough, writing of one sort or another was evolved about the same time in several unconnected places.