### CHAPTER VIII

### THE SURGICAL NOVICE

"Between the young graduate in medicine and his ultimate responsibility—human life—nothing interposes. He cannot nowadays begin with easy tasks under the surveillance of a superior; the issues of life and death are all in the day's work for him from the very first."—Abraham Flexner in Carnegie Foundation Bulletin No. 4.

If it seems to the reader that the illustrations of surgical incompetence given in the preceding chapters are exceptional, and that the average surgeon, by reason of accumulated experiences, must have acquired a high diagnostic and operative skill, what is to be said for the young doctor who begins the practice of surgery without any experience whatever?

Everyone knows what happens when a man takes up an art or trade—he begins by spoiling a lot of material, that is, unless he is watched and constantly aided. Thus the printer's devil gets the type mixed in the fonts, and the shoemaker's apprentice wastes leather, and the amateur cook spoils the broth, and all are restrained in proportion to the value of the materials with which they work. An apprentice at sea, having been an able seaman or a midshipman for a number of years, enters upon the higher duties of navigation as a junior officer, where he remains many years more under the careful supervision of his seniors. Otherwise he might sink the ship, and ships are too valuable to be placed in charge of a tyro.

But the graduate of a medical school, who knows less about the actual technique of surgery than the printer's devil knows about operating a linotype machine, may settle down in this land of liberty, and practise any sort of surgery without let or hindrance. Of course, if he is wise and really ambitious, he will endeavor to enter a hospital, or try to secure a position as assistant to some capable surgeon; but this is as he will. He may elect, and in most cases he does elect, to practise independently, making his unfortunate patients pay for his mistakes. And the material he wastes? Only human limbs and organs, and, of course, human life itself.

Of the 4,741 students who graduated in this country in 1908, probably a thousand, or more, have by this time attempted at least one major operation which they were no more competent to undertake than a newly-fledged boatswain is competent to navigate a battle-ship through a hurricane. And many of them, bear in mind, are not graduates of the few moderately efficient institutions that we can boast of, but come from the hundred and one ill-equipped little colleges that I have already attempted to describe. Truly the American public is long-suffering in more ways than one!

Of course, by "novice" I do not mean only the recent graduate. Perhaps even a worse offender is the older practitioner who, without any practical experience in surgery, and with but hazy memories of the hospital operations that he witnessed in his youth, "brushes up" by reading the few obsolete works on surgery that he may happen to possess, and presto! he is a full-fledged surgeon.

I knew an old physician, Doctor O., who, after twenty-five years of general practice, suddenly decided to go in for surgery, because, as he explained, "there's more money in that line of work." Almost his first case was a young man who, as a result of fast living, had developed an infection of the glands of the groin, which were hard and nodular and quite prominent. Doctor O. quite properly advised that the glands be cut out, and the young man, having entire faith in him, left the matter in his hands. As the operation was a simple one, Doctor O. decided to operate himself, and this was the result.

Cutting the glands out he cut altogether too deeply into the groin and accidentally pierced the femoral artery (the main artery of the leg). After an exciting time the hemorrhage was stopped and a ligature put around the artery. The operation of course came to a standstill, and the patient, who was nearly dead from loss of blood, was put back to bed. But the blood supply being cut off, gangrene soon set in, and the leg had to be amputated at the hip joint. A real surgeon was now called in to perform the amputation, but the shock was too great and the young man died.

Fortunately for the public, Doctor O. gave up surgery and is now practising medicine again, but in another city.

A similar case was that of a physician of Des Moines, Iowa, who thought he would like to specialize in rectal work. Accordingly he came to New York to learn all he could by taking a three months' course, and returned home ready to perform any operation pertaining to this specialty.

One of his first victims was Mrs. K. C., who had large external and some internal hemorrhoids (piles). Of course, operation was advised, and as Doctor N. was supposed to have made this work a life study, the patient's consent was readily secured.

The operation was performed, and the hemorrhoids were clamped and seared off according to the approved methods of the day, or at least the doctor thought so. Nevertheless, the patient developed a stricture of the anus, which at times occurs when a novice operates, and the new "specialist" did not feel very well about it. Instead of treating the stricture as he should have done, however, he advised an immediate second operation for the formation of an artificial anus. This was done, and the poor patient condemned to a life of wretchedness simply because she had been so unfortunate as to place herself in the hands of a tyro. As a matter of fact, the deluded woman thinks she owes her life to this "specialist," but some day she will probably learn the bitter truth.

Another novice, although a surgeon of some standing and connected with a New York hospital, recently mistook a chronic inflammation of the tongue for cancer. He advised an immediate operation and took out the tongue, including the glands of the neck and almost everything he could get at without destroying life upon the operating table.

After the operation a specimen of the tongue and glands was sent to a pathologist for his report on the case. Three days later it came—"Simple inflammation of the tongue; glands not affected,"—whereupon the surgeon and the pathologist had a bitter altercation. But events proved that the latter was right, and that a healthy tongue had been ruthlessly destroyed.

Had this butcher in the first place removed a small snip of the tongue for microscopical examination, the true condition would have been revealed to him. But in that event he would have had no excuse for operating. The fact was that he had never before taken out a tongue and wished to do so very much. When the opportunity came, he elected to main the patient for life rather than risk losing the case.

It may seem incredible, but it is no less a fact that many novices in surgery have such an imperfect knowledge of anatomy that they are unable to recognize certain internal organs when they see them, and not infrequently they mistake one for another. The next case is an example of such "surgery."

Mrs. G., a lady of wealth and of high social position, had suffered from several attacks of appendicitis. On the last occasion but one she called in the gentleman whom I will call Doctor R. The reader has already guessed correctly that Doctor R. advised an immediate operation. Mrs. G. consented, and after undergoing an operation of some sort, made an uneventful recovery. The bill was a large one, but was duly paid, and both patient and surgeon went on their way rejoicing.

Mrs. G. never ceased to congratulate herself that she was now and for all time free from the dangers of appendicitis, and hence retained a lively gratitude toward the skilful surgeon to whom she owed her immunity. She was ever ready to sing the praises of modern surgery, and her favorite theme was the diagnostic acumen and surgical skill of Doctor R. As might be expected, this lady's gratitude and enthusiasm were the means of bringing many patients to the fortunate doctor, and his fame and income grew apace.

A little more than a year had passed when, rather suddenly one morning, Mrs. G. developed pain in the neighborhood of the appendixless region. Other alarming symptoms followed, and in a few hours she was

forced to admit that she had an attack that much resembled her former attacks of appendicitis. Of course she lost no time in sending for Doctor R., but much to her regret he was for some reason unable to come to her, so, on the recommendation of a friend, she sent for Doctor S., a really capable surgeon.

After the latter had examined her and learned the history of her case, he said:

"Really, Madam, I don't know what Doctor R. may have done to you, but you have appendicitis now."

Mrs. G. was thunderstruck. "How can that be, Doctor," she exclaimed, "when Doctor R. removed my appendix more than a year ago?"

"I can't say as to that," he replied; "all I know is that you have appendicitis now."

What did it mean? How could she have appendicitis without an appendix? Could it be possible that she had two appendices and that Doctor R. had only removed one?

In the absence of Doctor R. she continued to employ Doctor S., and as her attack was severe, it soon became apparent to the latter that an operation must be performed. Doctor R. returning about this time was astonished at the condition of his former patient. Arrangements had already been made to have Dr. S. perform the operation, but on Doctor R.'s request he was courteously permitted to be present.

Doctor S. was a much more experienced, skilful and rapid operator than Doctor R. As soon as the patient was fully under the influence of the anæsthetic, he reopened the abdomen. In a few minutes he drew forth before the astonished eyes of Dr. R. a typical vermiform appendix, though badly inflamed. Dr. R. was rendered

speechless by this convincing demonstration, but when the operation was nearly completed he was heard to exclaim:

"My God! If that is her appendix, what did I take out?"

This case is by no means exceptional. There are many so-called surgeons who could not tell an appendix from an ovary.

Doctor Senn records a case somewhat similar to the one just described, but here the sequel proved that fraud had been practised. The patient, a woman, had been previously operated on for appendicitis by two obscure doctors. They told her that the appendix had been cut out, and showed her a specimen in a bottle. Afterwards she developed an acute attack, and Doctor Senn himself removed her appendix. She instituted legal proceedings against the two impostors, and, I believe, was awarded damages.

In this connection I might mention a group of reputable charlatans who pretend to make diagnoses of serious abdominal or other internal conditions, and then persuade the victims to undergo operation. The patient is brought to the operating table and put under the influence of an anæsthetic. The false surgeon makes an incision through the thickness of the skin, but no more. This he sews up again and applies a dressing. The patient believes that she (for it is generally a woman) has been operated on and the cause of her trouble removed. If she is of a hysterical, neurotic type her absolute faith in the impostor may result in some real benefit. The operator gets his fee and everybody is pleased. This is a highly profitable and tolerably safe form of surgical charlatanry, and it is

probably employed to a far greater extent than most medical men are aware of.

The two following cases, like that of Dr. O., illustrate the wanton sacrifice of life by the inexperienced or overambitious novice. Innumerable fatalities similar to these have occurred and will occur so long as such "legalized assassins" are permitted to operate at will.

A young surgeon of New York, who is famous in his own household, was anxious to perform a gastroenterostomy. This is the formidable operation, described in the preceding chapter, for the relief of cancer or ulcer of the stomach. It consists of connecting the stomach with a loop of intestine beyond the obstruction. Doctor M. had been looking around for years for a victim, and at last an 86-lb. man was carried into his office. When he caught sight of this man's emaciated condition he immediately suspected cancer somewhere, and "gastroenterostomy" flashed through his brain. There was, of course, only one thing on earth to do, and that was to cut into this poor cadaveric individual and satisfy his surgical aspirations.

He accordingly opened the abdomen, sewed the intestines to the stomach and treated the man as well as he knew how, which is not saying much. Four days were enough to finish the poor creature. After he had passed away, the surgeon turned the case over to his assistant and begged him, in a quivering voice, to please protect him and explain to the family. He also asked him if possible to secure the consent of the family to a postmortem examination, as he was anxious to find out if any of his stitches had held. The assistant made the request, but the family, being devout Catholics, refused point-blank. This surgeon stood in with the undertaker,

however, and just before the unfortunate victim was carried out of the hospital he went with both hands into the abdominal wound and found, much to his disgust, that the stitches had not held, and that the broth he had given to the man twelve hours before his death was in the abdominal cavity.

Doctor M., though he would resent being called a tyro, is certainly not an expert in this particular branch of surgery, and from the way he operated there will be many more victims before he becomes proficient. A few years of study under Dr. William Mayo might have lessened his self-confidence.

A poor woman took her boy, suffering from tuberculosis (consumption) of the spine, to a New York clinic, hoping that some relief might be obtained. It was a strange case and had puzzled many medical men, though all agreed that the disease was absolutely incurable. There was one dissentient voice, however, that of a young surgeon whose confidence and ambition usually got the better of his judgment.

This genius, whose boasted skill has since lost for him what little reputation he ever had, saw his chance to operate on the poor dying creature. After explaining to the mother what might happen if certain things were not done immediately, he frightened her into sending her unfortunate boy into the hospital to have his life fairly cut away.

Before entering the hospital, however, the mother was consulted as to how much money she had. She told the young surgeon that her husband had just been buried, and that every cent she, had in the world was eighteen dollars. The young man replied that she could pay fifteen dollars down for the operation and the balance when she was able.

So the poor mother sacrificed her scanty means as well as her son's life, for he lived but a short time, and the heartless surgeon did not even see him after the operation.

As a matter of fact this surgeon must have known that the prognosis was sure death, and that there was no possible hope of surgical interference helping the boy. But he also knew that the mother was strong and able to work for a living, and that she had eighteen dollars, fifteen of which would line his pocket temporarily. He therefore took advantage of this poor creature, not altogether for the money, but for a chance to operate at her expense.

The following, I will frankly admit, is an exceptional case, though our "system" would permit of its recurrence just as often as greed and ignorance might dictate.

A young man was graduated with honors from a certain Eastern university. But although he had no hospital training and poor medical judgment, his successful work on paper made him a licensed doctor, at liberty to plunge into any branch of medicine or surgery. He chose surgery, and with more sense than the average graduate, attempted to gain admission to a New York hospital.

Unfortunately the opportunity did not occur. Hospitals are controlled entirely by cliques. Unless one has the key to the forbidden door one is never able to enter the inner circle. The key represents money, influence, social standing, pressure, grit, perseverance, pull and moderate ability. For certain reasons this young man could not enter the real clique.

But his family had money. After trying in vain,

therefore, for a number of years to get the son into one of the city hospitals, the alternative presented itself of directing their efforts to the establishment of a new hospital, over which he should preside as chief and only surgeon. And this was actually done.

In due course of time the hospital was opened. People were given to understand that it was a charity hospital and run conjointly by the City and the State Board of Charities. It was, however, a one-man affair. made and controlled solely by this one shrewd young doctor whose ambition in life was to become a surgeon, regardless of human suffering, or of bereaved friendsin short, regardless of everything but his selfish ambition. So he is to-day the proud possessor of a small hospital, surrounded with a clique of puppets whose positions on the staff are kept by them because of their ability to furnish patients who pay the great benefactor for the privilege of being operated on, how and when and where he may elect. Yet this institution has on its Board of Directors a number of prominent men who are hoodwinked into thinking they are conducting a charity hospital.

Surgical catastrophes at this establishment cannot possibly be prevented, for there is no one to dictate to the surgeon. It is, as I have said, a one-man hospital over which he is lord and master. It was founded for him, it is run for him, it is controlled by him, and he alone reaps whatever benefit there is in it.

He entered the ranks a few years ago as an apprentice. With little natural ability he is blundering along, practising surgery on a large percentage of the patients, and yet showing but little more skill than when he performed his first vivisection. That which he should have learned in an accredited hospital under a good surgical tutor he is slowly acquiring at the expense of these poor patients who look upon him with reverential awe, not knowing on what a diminutive pedestal he stands. And yet he is not wholly to blame, since his application for admission to the established institutions was so persistently refused.

Our laws, of course, afford no protection to the poor innocent sufferers who place themselves in his care, and the public have no conception of the conditions that prevail. Many an unsuspecting victim enters its portals without the slightest chance of ever returning to his loved ones.

Associated with this ambitious gentleman was another novice who had all the energy necessary to make a successful surgeon, but none other of the absolute essentials, namely, the skill and science which come only from long study and training under a master.

This colleague was called suddenly to the hospital one morning to see a woman who was brought in with the upper bone of the arm fractured. In receiving this fracture she had suffered severe contusion, so that the arm was black and blue from one end to the other.

The young surgeon examined the case very carefully, according to his way of thinking, and with hardly a word of warning to the patient, decided that instead of setting the arm he had better amputate.

The next day, much to the horror of the patient and her friends, the young surgeon took off the arm, explaining that unless it had been done gangrene would have set in, and the woman have died from blood poisoning.

This, I will admit, is one of the most outrageous

cases of malpractice I have ever known. It was a simple fracture that this novice had to treat, but instead of putting up the arm in splints and giving nature a chance, he performed a mutilating and wholly unnecessary operation, making the woman a cripple for life. Such a monstrous blunder may seem almost incredible, but the facts are exactly as I have related them.

A malpractice suit, I believe, is, or was, on foot. If it comes up for trial the young man will have several of his clique upon the stand to swear that there was nothing else to do under the circumstances. They will perjure themselves, of course, but this, as I have shown, is the proper etiquette under such compromising conditions. Many another surgical malefactor has escaped in this manner, when, if justice were done, he would now be serving time in the State's Prison, or waiting his turn in the electric chair.

The same assistant had an ordinary case of metrorrhagia (bleeding from the uterus) to treat, but instead of using simple methods, which in six ordinary cases out of ten will effect a cure, he decided to take out the uterus through the vagina. This is a difficult operation, requiring great surgical skill and anatomical knowledge. A vaginal hysterectomy, done by such men as Dr. J. Riddle Goffe, or Dr. Howard Kelly of Johns Hopkins, although a serious operation, would undoubtedly be successful. But for a novice to attempt the removal of the uterus, even though his diagnosis were correct, is something inconceivable. Ordinarily it would mean that such a man was entirely lacking in common sense. In the present case, however, I have reason to believe that it was the deliberate act of a human fiend whose sole desire was to get all the difficult operations possible,

regardless of results, in order to perfect himself as a surgeon.

The operation was ordered, the patient consented, and everything being in readiness, he proceeded to slash away. After cutting through the upper tissue as rapidly and dashingly as possible, he cut clean into the bladder. Of course, as the urine trickled down over his hand he realized his mistake. But instead of stopping the operation at once, as he should have done, allowing a fistula to form and thus giving the woman a chance for her life, he next proceeded to cut in through the abdomen and sew up the bladder, afterwards removing the uterus by the abdominal route. It is scarcely necessary to say what happened to the poor patient. She, at least, can never testify to the criminal incompetence of those to whom she entrusted her life.

I have since seen this young man do some very good surgery, and some very poor surgery. The good surgery that he has done has been simple surgery; the poor surgery has been difficult surgery, which means that he is not capable, and possibly never will be, of becoming a great surgeon. He should be suppressed, and if he attempts to operate on any more difficult cases, his license should be revoked. He has no more earned the right to perform a major operation than a first-year student.

This scandalous state of affairs, unlike some of the abuses I have endeavored to expose, has long been realized by our leading physicians and surgeons, many of whom have scathingly denounced the evil in the medical press. But the attacks have been, at best, desultory, and the "ethics" of the profession has always stood in the way of an organized campaign against the of-

fenders. To seek general publicity, and sound a note of warning to the victimized public, would be unpardonable disloyalty, and few have dared attempt such radical measures. Yet there have been several notable exceptions, and even in England, where conditions are immeasurably better than in this country, a reputable physician has braved the wrath of his conservative associates by contributing an article to a lay review, advocating the legislative control of surgery. I refer to Dr. James A. Rigby, whose paper, "The Surgeon's Power of Life and Death," will be considered in a later chapter. In the lay press of this country, I know of no such drastic proposal since January and February 1897, when the Arena published a symposium entitled "A Court of Medicine and Surgery." This, however, was ineffective since the public knew little of the evils which the proposed "court" should abolish.

Turning to the medical journals, we find sufficient authoritative testimony to convince the most exacting tribunal that the indiscriminate practice of surgery by young graduates, in fact by all novices, is but another name for butchery—human butchery. And the excerpts here given are but a haphazard selection from scores of similar protests.

Dr. J. H. Percy (of Galesburg, Illinois), President of the Illinois State Medical Society—"Some of the Problems of the Internist Which Concern the Surgeon." A paper read before the Illinois State Medical Society (Section on Medicine), May, 1906, and published in the Illinois Medical Journal, August, 1906:—

<sup>&</sup>lt;sup>1</sup> For a fuller report of Doctor Percy's paper, and the comments thereon, see Appendix E.

"There are too many men going into surgery as soon as they leave the medical school. I met one of them a few years ago. He had had his diploma just two weeks. He was an average graduate of a medical school with a good reputation. This young man had not prepared himself specially for anything but good average work. He had not had the training of the average hospital interne, he had not served as assistant to a real surgeon, he had not got up his surgical technique by animal experimentation, he knew nothing of the practical application of asepsis or even antisepsis, neither had he learned in the great school of general practice; yet this doctor, who was just two weeks out of the opera chairs of his medical school, announced to me that he was ready to cut anything. And he did. Circumstances favored him so that he got surgical cases, and for a year or two he was literally doing surgery. Is he doing surgery to-day? No! Surgery has done him! He is in a position now where he has to commence all over again, if he wants to be a surgeon. But he probably never will. If the actual results of this man's work, while he was attempting to practise surgery, could be known, it would be a record heart-rending in the extreme. Some of you say that he was a fool. No, he was not. If I thought he were, I would not have made him a part of this paper. Neither would I have mentioned this case if it were an isolated or uncommon one. But what I have just described is being enacted in scores of places not only in this state, but in every one of our states. human life and suffering count for anything, as they do, then this is a condition of affairs that, to put it mildly, is unfortunate for the most desirable and truest advance of both internal medicine and surgery."

Editorial in American Medicine, September, 1908:— "The surgical fledgling whose education has been acquired in a post-graduate course of instruction, and whose sole conception of treatment is summed up in a cutting operation, is all too common. Unlimited assurance—such as ignorance often confers—and business ability may give him an undeserved prominence in a community; but viewed in his true light he is a disgrace to the specialty he professes to follow, and to him is attributable no small share of the distrust on the part of the physician towards surgical modes of treatment in internal diseases.

"But the profession has the right to demand—and so has the public—that no one shall be entitled to practise general surgery until he has fulfilled certain fundamental requirements, and these, at the minimum, should consist of an interneship in the surgical service of a hospital and an adequate term of clinical work under supervision of a competent surgeon, at least as regards major operative technique."

# Dr. J. L. Wiggins (of East St. Louis, Illinois). From the paper quoted in the preceding chapter:—

"... By the time he graduates he is imbued with the idea that surgery is the only department of medicine worth considering. This position is accentuated if perchance he has served a short period in some hospital as an interne. To this end every endeavor is directed to the exclusion of much that is essential for general practice. When the latter subject is broached he becomes listless, deems interest an element of weakness; but mention a gastroenterostomy, and note the heightened color, the flashing eye, the nervous interest. Thus the heroic appeals alike in medicine and war, and each has its background of blood and carnage.

"Suppose we go a step farther—the post-graduate school. Here the matter of surgeon making is taken

up supposedly where the medical college left off. In truth, it is at a period remote, when much that is indispensable for intelligent operative work is forgotten. Notwithstanding this, a finished product warranted not to shrink or fade is guaranteed in a six weeks' course of instruction irrespective of fundamental attainments, practical experience, anatomical or pathological knowledge; and this finished product is manufactured largely by watching some expert operator working at a distance."

Dr. Henry B. Luhn (of Spokane, Washington)—
"Conservatism in Surgery." A paper read before the
Associations of the Pacific North-west (Section on
Surgery), July, 1909, and published in North-west Medicine, January, 1910:—

"Twenty years ago but a small percentage of the graduates took up surgery as a special feature and kept apace with the surgical world. Now, in consequence of the wonderful advance in operating which is made perfectly safe or nearly so on account of the perfected technique, the majority of young men are taking up surgery, and flaunting themselves upon the public as surgeons without special preparation, and with very limited personal or practical experience. I do not question for a moment the right of these 'embryos' to take up surgical work, but I do question the justice to themselves and their patients when they fail to take a special training and thoroughly equip themselves.

"By these young men of no experience much harm is being done to surgery, as they realize that they can operate with very little danger to the patient's life, and they operate with little idea of what they really intend

<sup>&</sup>lt;sup>1</sup> Portions of the discussion following Doctor Luhn's paper are given in Appendix F.

doing; and, further, their experience is so limited that they are not really capable of recognizing a pathologic condition when they see it. This class of men will, without an intelligent idea of indication and a diagnosis made only for the patient, attempt operations that have come into prominence through able operators and men of wide experience. The patient will survive, the operation may be noted as a success, though probably no benefit has resulted and oftentimes the patient is made worse.

"This observation holds true especially in gastrointestinal anastomosis, or gastroenterostomies. A few years ago this was a most popular operation and it seemed that almost every man who ever opened a belly was doing it, and I do not hesitate to state with but a limited percentage of benefits, and a large percentage of patients being made worse."

Dr. Henry H. Cordier (of Kansas City, Missouri)—
"Some Elements of Success in Surgery." A paper read
before the Thirty-fifth Annual Meeting of the Mississippi Valley Medical Association, October, 1909, and
published in the Lancet-Clinic, January 15, 1910:—

"Our medical schools, the teachers, the short postgraduate courses, and the surgical demonstrations to transients, of individual operators, are in a measure responsible for the many disasters in surgery that are of daily occurrence. This is no idle fancy of mine, but can be seen any day if you will visit the open-door hospitals or the many private sanitariums that are springing up all over the country. I do not desire to do an injustice to the well-qualified surgeon, with his private

<sup>&</sup>lt;sup>1</sup> Doctor Cordier's paper brought out an interesting discussion, portions of which will be found in Appendix G.

hospital, he who has, by hard conscientious labors, fitted himself for this great work. All credit is due to him, and of such there are many. It is the young graduate who, with no practical experience as an assistant, with no hospital training; or the older practitioner who takes a post-graduate course of six weeks in all branches, and suddenly blossoms out as an universal specialist; or he who witnesses a few operations by a skilled surgeon, goes home, takes a night's sleep, and awakens the next morning a full-fledged surgeon, in his own mind. I am dealing in truths, not exaggerations, when I make these statements.

"Now, what are the results of this state of affairs? Operations are begun that, if completed, are attended with a high rate of mortality; if they are not completed, the case is pronounced an inoperable one, and the patient goes from bad to worse, and either dies or seeks a surgeon who completes the operation with much difficulty and an increased mortality, caused by the previous failure and delay. Organs are sacrificed and functions are destroyed by untimely delay and bad surgery. The patron of the surgeon has much coming to him, and our every effort should be to give him all that skilled modern surgery implies."

"But why multiply these groans?" asks a medical writer, facetiously, commenting on such conditions as are herein described. "The young cub must learn for himself by bitter experience, and e'en though 'the paths of glory lead but to the grave,' still we may pluck some flowers and avoid some thorns after awhile."

This voices only too well the genial optimism of the average doctor. "It is hard on the public, but they will stand for it, and we have to learn—and there you are!" But will the public stand for it when they hear

the facts—the whole gruesome recital of unnecessary sufferings and mutilations and deaths?

"Our tolerant attitude," writes Dr. James E. Moore,¹ from whom I have already quoted, "is no longer tenable, because these evils are growing, and unless we are outspoken in denouncing them, the whole profession will be condemned for the sins of the few. When the laity wakes up, as they will in the near future, they are likely to have drastic laws enacted which will overshoot the mark and be a serious handicap to legitimate surgery. It behooves the profession, therefore, to give these grave matters careful consideration, and to map out a definite course for their suppression."

To sum up the situation, the surgical novice before very long will come to be regarded as an anachronism—a relic of barbarism. He may yet claim thousands, even hundreds of thousands of victims, but his bloody record is being investigated and will soon be published broadcast, and it is but a question of time until his unsavory career has been brought to a close. Whether by the remedies suggested in the final chapter, or by some unlooked-for short-cut to reform which even the long-suffering American public have at times been known to effect—whatever the procedure, the ultimate suppression of this horrible and altogether useless form of human butchery seems inevitable.

<sup>1</sup> "Conservatism in Surgery." From the Journal of The American Medical Association, March 20, 1909. Doctor Moore, who is Professor of Surgery in the University of Minnesota, contributed an outspoken letter to the symposium in the Arena above referred to, and deserves great credit as one of the pioneer reformers in this field.

## CHAPTER IX

#### THE AMATEUR ANÆSTHETIST

"The general administration of anæsthetics as performed to-day is the shame of modern surgery, is a disgrace to a learned profession, and if the full, unvarnished truth concerning it were known to the laity at large, it would be but a short while before it were interfered with by legislative means—and properly so."—Dr. J. M. Baldy.

We now come to another novice to whom the hapless patient is frequently exposed, a bungler who is often employed by the most skilful and conscientious surgeons, yet whose ignorance and incompetency are responsible for innumerable fatalities. I refer to the untrained anæsthetist.

"Anyone and everyone thinks he can give an anæsthetic," writes Dr. James Taylor Gwathmey 1 (of New York), "and yet there is nothing that requires such constant practice in order to attain perfection. No sleight-of-hand performer should ever rehearse his part oftener than should an anæsthetist who wishes to be master of his art. No one should give anæsthetics who does not have this daily rehearsing in some public hospital."

"Furthermore," he writes in another paper, read before the American Medical Association,<sup>2</sup> "because a man has given an anæsthetic many times during his hospital service and irregularly afterwards, it is no evidence of

<sup>&</sup>lt;sup>1</sup> "Warm versus Cold Anæsthetics." From the New York State Journal of Medicine, February, 1908.

 $<sup>^2</sup>$  Fifty-seventh Annual Session, June, 1906 (read in the Section of Laryngology and Otology).

his ability to do the same thing several years after, with even a reasonable degree of success."

Continuing, he says:-

"The wonderful advancement in all departments of medicine has come from men devoting their exclusive time to some one branch of it, and especially is this true of anæsthetics. We are indebted to England, where the professional anæsthetist prevails in hospitals as well as in private practice, for all recent progress in the administration of anæsthetics. Here in America, where both nitrous oxide gas and ether were first discovered and used, we seem still content to continue what might be called 'frontier' or 'border' life, with the mortality table the same as when anæsthetics were first introduced."

Commenting on Dr. Gwathmey's paper, Dr. R. C. Myles <sup>1</sup> (of New York) regretted that statistics of the fatalities due to anæsthesia could not be obtained. Those who have lost patients do not give the statistics for publication. They are perfectly willing to confer with one another on the subject, but not with the profession at large in the way of publication. He had frequently asked surgeons in different parts of the United States as to deaths from anæsthesia, and it is rarely the case that they had not had a fatal accident, but he did not believe that five per cent. are reported.

Doctor Gwathmey's paper, and the discussion that followed, created quite a sensation at the time, with the result that several symposia have been held on the subject by medical bodies, and in the medical press.

<sup>&</sup>lt;sup>1</sup> As reported in the Journal of the American Medical Association, October 27, 1906.

"This subject," said the Medical Times, delitorially, is of primary importance, though we would hardly think so from the haphazard and incompetent manner in which narcotism is induced. The patient is then really on the borderland between life and death, and much too frequently has this line been crossed in the most ghastly manner when the exhibition of adequate skill and the observance of essential precautions would have obviated any such fatality. Much too frequently, we repeat, and much oftener than the statistics would lead us to suppose."

The attitude of our nation toward surgery and anæsthesia is certainly unique. America is the home of some of the greatest surgeons that the world has ever known, yet we allow a host of incompetent graduates to mutilate or kill as they please; and though the birth-place of modern anæsthesia, the discovery of which has brought relief to countless thousands, we permit the administration of anæsthetics by any Tom, Dick or Harry who can be pressed into service. The surgical novice at least has a smattering of theories and vague memories to guide him, if nothing better—the amateur anæsthetist may be anybody at all, down to the office boy. He may know less about the action and dangers of chloroform than a Bowery burglar.

A few years ago a young graduate came to my office and asked if I could employ him as an "expert anæsthetist." I talked for some time with him, but he failed to convince me, although he insisted that he had used chloroform and ether many times and was thoroughly capable. I felt sorry for him, but was forced to decline his "expert" services.

In spite of this, however, we became quite friendly, 'The Medical Times, February, 1907. and some months later he called me in consultation to see one of his patients. The case was obscure and an anæsthetic was necessary before the examination could proceed. He therefore volunteered to "give a little chloroform," and I foolishly allowed him to go ahead.

When the anæsthetic had almost done its work I asked him if the patient had false teeth, fearing that he might have overlooked this important detail. His answer was, "I don't know, but I think not," and before I could turn my head he had disappeared to ask some member of the family. He came back with the news that the patient had a small plate, which he hurriedly attempted to take out.

Quicker than it takes to tell it, this "anæsthetist" had pushed teeth and plate down the patient's throat and was making desperate efforts to regain them. After an exciting time, during which the half-conscious patient nearly choked to death, I was lucky enough to get the teeth. This little experience was enough for me and he never gave anæsthesia again, even to his own patients, with my consent. Afterwards he admitted that he "guessed he was a little careless."

Shortly after this episode, while this young incompetent was administering chloroform for another physician, the patient quietly passed away on the operating table. The last I heard of him was that he has given up chloroform as it "is not a safe anæsthetic to give," but "ether is perfectly safe." So I suppose he is still acquiring experience at the expense of the unsuspecting public.

There are many reasons why anæsthetics should be administered only by experts, not least of which is the greater freedom with which the surgeon can work when he is not troubled about his patient's condition. With a good surgeon and a capable anæsthetist the average patient has every possible chance of recovery, but with a good surgeon and a poor anæsthetist the results are often little better than if both were novices, since the surgeon's attention is divided. Even assistants and nurses, when they see the blunders of an untrained anæsthetist, are apt to become worried and forgetful, and so what should have been a smooth and successful operation becomes a series of mishaps, all due to the one disturbing factor.

Here are a few of the accidents to which the tyro who attempts to narcotize a patient is liable, and which I myself have witnessed.

The patient vomits repeatedly, or his tongue falls back into the throat, causing him to choke. At such times the anæsthetic must be temporarily withdrawn, and, in the latter case, the jaws have frequently to be forcibly opened. If there is danger of suffocation, a mouth-gag has then to be inserted—an operation that invariably loosens the teeth—and the tongue grasped by some barbaric instrument that cuts or bruises it almost beyond recognition. The mucus is next swabbed out of the throat so strenuously that for days after the patient can hardly swallow.

After these drastic measures, during which the operation has been entirely suspended, the patient has probably awakened, and is very likely kicking so violently that half the operating staff are needed to keep him quiet till more ether or chloroform is administered.

Sometimes a patient "comes out" of the anæsthetic at the most critical moment. The abdomen, perhaps, is opened and the intestines being examined; surgical

instruments, gauze pads, towels, and other necessary appliances are on a small table directly over the patient's body, when suddenly, without a word of warning, the whole paraphernalia is upset and the technique of the operating room spoiled. Sterilization must now be begun all over; but if the patient is in danger, the work must be hasty, and it is a lucky thing if infection does not set in.

In one case, similar to the above, that I witnessed, the young anæsthetist had been paying too much attention to what the surgeon was doing, and, mortified by his remissness, he administered such an overdose of chloroform that the patient was several hours in recovering consciousness. Whether this particular patient recovered or not I cannot say, but the chances of death or permanent disablement are certainly the direct result of these wholly avoidable blunders.

Before continuing my indictment of the amateur, however, I wish to mention a grave abuse practised by some of our leading surgeons, viz., delay in operating upon a patient already anæsthetized. The case of Doctor Q., narrated in a previous chapter, who interrupted an operation on an anæsthetized patient to have his lunch, is an example, although I never heard of another outrage quite so flagrant, but the instance I will now give is, unfortunately, only too common.

The attending surgeon of one of the large New York hospitals, a man deservedly famous, had a large office practice, as might well be imagined. This private practice often encroached on his hospital duties, especially in the morning. On such occasions it was customary for the house surgeon or an interne to telephone the great surgeon to inquire when he might be expected at the

hospital and when to prepare the first patient for operation. Doctor R. would then glance at the list of patients waiting in his ante-room, and after making a mental note of the approximate time each would require, he would issue instructions to begin the anæsthetic at a certain hour. Whereupon he would resume his consultations and only too frequently forget all about the operation and the poor charity patient about to be anæsthetized or perhaps already well under the influence of chloroform or ether. Another telephone message would often be necessary to remind him of his engagement, and of the flickering life he had so thoughtlessly endangered.

On one occasion he had proved unusually forgetful, but on receiving a hurried call for instructions replied that he would start immediately for the hospital. accordingly rushed through his office cases, got into his automobile and started downtown. On the way he met a brother practitioner whom he courteously took aboard, and then sped on. On passing a café, however, both men discovered that they needed a stimulant, and, of course, appropriate action followed. While they were enjoying their Scotch highballs at the bar, a third brother strolled Naturally they must all three have one together, and as a matter of etiquette the newcomer must reciprocate, and so on. In the genial atmosphere of the saloon time was forgotten until some chance word reminded Doctor R. of his patient, who had now been under the anæsthetic more than an hour. A final hasty drink, and the trio were speeding along again, the red cross displayed for the benefit of zealous policemen. After two more stops, to let off the other gentlemen, the surgeon arrived at the hospital, rushed up to the lavatory and was soon in the operating room. The patient was not in very good condition after the prolonged anæsthesia, but Doctor R. was a skilful and rapid surgeon and the operation was soon finished. The patient was removed from the table to his bed still alive, and therefore the operation was accounted a success.

The criminal indifference shown by surgeons in thus keeping a patient unnecessarily under an anæsthetic could not be too severely condemned, for it means the deliberate jeopardizing of life, not to mention the grave after-results should the patient survive. The fact that prolonged anæsthesia is always highly dangerous should be an incentive to all ambitious and conscientious surgeons to operate just as rapidly as the nature of the case will permit. None know this better than the surgeon just referred to, yet to take in a few extra dollars and to be a good fellow with his brother practitioners he was willing to expose a poor charity patient to the risk of instant death. This may sound harsh and exaggerated, but it is the simple truth about a state of affairs that no civilized community should tolerate for an instant.

I could cite many cases that have come under my own notice of death or permanent injury following the reckless administration of anæsthetics, but I prefer to present the views of others who are specially informed on this subject. As a matter of fact, a few isolated examples might create a wrong impression, for I sincerely believe that were a public investigation called for at the present time, the employment of trained anæsthetists, or the adoption of adequate measures for the safety of the patient, would be found to be the exception rather than the rule. But let us take a few brief extracts from the testimony of those who have thoroughly investigated the matter.

From "Chloroform Anæsthesia," by Vere V. Hunt, LL.D., M. D. (of Blackwell, Oklahoma). The *Medical Brief*, May, 1906:—

"'The giving of the anæsthetic is really the most serious part of every surgical operation.' How complacently have we heard our preceptor state this fact when we were students, and how complacently have we many times since repeated the assertion. Yet how recklessly do we use, or permit the use of, this dangerous

adjunct of surgery!

"The time above all others, for watchfulness, is the moment or two at the end of the stage of excitement, when, with rigid muscles and blue skin, the exhausted patient passes into complete narcosis. These critical moments are nearly always characterized by deep breathing, and the fatal dose of anæsthetic is most often inhaled at this time. Chloroform should at this time either be entirely withdrawn, or given most cautiously, in very small amounts, diluted with an immense amount of air. Yet it is generally at this most critical moment that the anæsthetizer, rejoicing in what he deems the conclusion of a perhaps tedious task, takes his eyes off the patient and tells the waiting surgeon-who should himself be paying sufficient attention not to require to be told-'Go ahead! I've got him under.' Too often has such action got the patient under—the sod."

From "A Primer on the Administration of Ether," by Henry S. Weider, M. D. (of Philadelphia, Pa.). The Therapeutic Gazette, December, 1907:—

"There are few in the medical profession, excepting surgeons and those experienced in anæsthetizing with ether, who realize its seriousness and the importance of its proper, careful, and scientific administration. Even among surgeons who would not think of allowing a

183

trained assistant to tie a ligature or sew up a wound for them, there are those who will often, and without the slightest compunction, entrust the administration of the anæsthetic to a student, nurse, or inexperienced anæsthetist. Only too common among general practitioners is the custom, in the course of a difficult confinement, of leaving the administration of the anæsthetic to the nurse (often not even trained), and of guiding directions as to when to add more ether by the amount of outcry or resistance the patient makes."

Indeed I can instance a confinement where the physician employed the services of the much agitated young husband. In this case chloroform was used and in such excess that the patient almost expired. After the delivery a hemorrhage set in which was only stopped when the weakened mother was again at death's door. The patient was in an enfeebled condition for weeks, owing to this asinine doctor's stupidity.

From "Anæsthesia and Anæsthetics at Our Lady of Lourdes Hospital, Hot Springs, South Dakota," by W. J. McRoberts, M. D. The Chicago Medical Times, December, 1909:—

"The surgeon who performs the operation is always named, but who ever hears of the anæsthetist? When you stop to consider the matter, and in the interest of the patient, is it not the anæsthetist who takes the life of the patient in his hands to care for and guide through the most dangerous of ordeals to which the patient, for the purpose of prolonging his usefulness to his family and to the community, submits himself? . . . Because of his accuracy in surgical diagnosis, his skilful touch, and scientific technique, the patient's life is in

184

very much less danger from the operation, as performed by the modern surgeon, than it is from the anæsthetic as administered by an untrained anæsthetist using slovenly and obsolete methods."

From "The Anæsthesia Peril in American Hospitals," by John B. Roberts, M. D. Read before the Philadelphia County Medical Society, October 23, 1907, and published in the *Therapeutic Gazette*, February, 1908:—

"During a recent visit in a metropolitan medical centre I was shocked at the reckless manner in which general anæsthetics were given. Observations during my surgical life in some ten or more hospitals in which I have operated has convinced me that a protest against the methods often pursued in American hospitals is urgently needed.

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"It is rather difficult for me to comprehend the attitude of many operators toward general anæsthesia. They seem willing to entrust the life of the patient to any assistant who is willing to assume the responsibility of giving the ether. They then proceed to the operative work with apparently no further thought of the danger of asphyxia, cardiac arrest, respiratory failure, or subsequent lung or liver symptoms from ether poisoning, than if they were working in a surgical laboratory on a cadaver. I cannot avoid the conclusion that no inconsiderable number of deaths attributed to post-operative shock are instances of anæsthetic death, due to a preoccupied operator and an ignorant or careless anæsthetist. I have sat on clinic benches and stood near operating tables more than once with thankfulness in my heart that the safety of no friend of mine was then in the hands of operators and anæsthetists so indifferent, or so oblivious, to the risk of ether and chloroform."

From "The General Practitioner as an Anæsthetist," by Douglas C. Moriarta, M. D. (of Saratoga Springs). The *Journal of The American Medical Association*, September 4, 1909:—

". . . . Why should not a patient have as much right to expect and exact skill in this branch of medicine as in the treatment of a fracture, in pneumonia or typhoid fever? And if a civil action were brought to recover alleged damages, and your attorney attempted to prove you qualified as a competent anæsthetist at the trial, how much teaching or clinical instruction could you certify as having had? About all that the average practitioner could say, if called on to prove himself qualified, would be that he was a regularly graduated physician and surgeon, and supposed to know and be familiar with anæsthesia. And, I ask, what percentage of us have received clinical training or instruction in the administration of anæsthetics? The number is so small that it is a disgrace to our colleges. And the general teaching has not materially improved. Even at this present writing there are only a few of our colleges where this most important branch of our curriculum is taught clinically; and, to repeat, is it not a disgrace to those in which it is not? And, if the actual state of affairs were appreciated by the public, even by the board of regents, would not a reform be demanded in this particular? "

From "Tonsils and Adenoids," by J. Martine Kershaw, M. D. (of St. Louis). The *Clinical Reporter*, January, 1910. Doctor Kershaw copies a list prepared

by Dr. Francis A. Packard (of Philadelphia)<sup>1</sup> of the deaths of 29 infants and children "attributable to the use of a general anæsthetic in the removal of tonsils and adenoids," and comments thereon as follows:—

"The table shows that, apart from the operations, children die from the anæsthetics employed while operating. But the number that die from the anæsthetics employed and from the operations themselves will never be known. Surgeons publish their successful cases, but few care to report their failures. It is most painful to a surgeon to lose a case and he dismisses it from his mind as soon as possible. We are all human, and it is but human under such circumstances to forget."

From "The Trained Anæsthetist," by M. Porter, M. D. (of Dayton, Ohio). The Lancet-Clinic, June 18, 1910:—

"Some of us have seen patients die from anæsthesia, and it is not a very pleasant experience. Many have had the patient stop breathing for a few moments, and that is an experience we do not care to have happen very often. Yet the majority of doctors treat anæsthetics lightly, and some delegate the giving of chloroform in obstetrics to the husband or the nurse while they use forceps in the delivery. Is there anything in the practice of medicine where we are as careless as in this one of anæsthesia? Would the surgeon allow some one to handle his instruments with unclean hands, or some of the laity to assist him in an operation?

"Placing a patient's life in unsafe hands has always seemed to me one of the most hazardous things in medi-

<sup>&</sup>lt;sup>1</sup> Doctor Packard's paper, entitled "Adenoid Operations," was read at the Sixtieth Annual Session of the American Medical Association held at Atlantic City, June, 1909.

cine and surgery, but it is practically what is done when the anæsthetic is given by some one who has had little experience. I will venture to say that if any doctor had to have an operation performed upon himself or a member of his immediate family, he would hesitate and consider the subject thoroughly as to who would administer the anæsthetic, and what experience he had. He would not accept some one merely because they had done some favor for him; it would require something more than the conferring of a favor for the doctor to trust his wife or child in inexperienced hands. And why should we not do the same for our patient?

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"Does the surgeon do the best for his patient when he employs someone to give an anæsthetic who has practically no experience? Is he giving the patient equal work for the anæsthetic that he gives in the work he performs? Would the surgeon trust some inexperienced operator to perform some difficult surgical operation while he stood aside and looked on, or have the nurse adjust a fracture, and expect as good adjustment as he would do himself? And yet with all this he would say that the anæsthetic is the easier of the two. There may be a difference of opinion, but this I will say: No surgeon is giving the patient just and proper treatment who does not employ an experienced anæsthetist, and he has no right to subject the patient to anything but the best obtainable."

From "The Trained or the Untrained Anæsthetist," by Hunter Robb, M. D. (of Cleveland, Ohio). Part of a symposium on the Manner of Administering General

<sup>&</sup>lt;sup>1</sup> The entire symposium is published in Surgery, Gynecology and Obstetrics, May, 1909.

Anæsthesia, held by the American Gynecological Society, New York, April 21, 1909:—

"If any one of us were going to be operated upon and had time to do so, he would—at least I, for one, would-make three stipulations. He would, I think, demand (1) the best hospital facilities; (2) a skilled operator; (3) a skilled anæsthetist. But by what right do we insist upon for ourselves what we do not demand for our patients? Having chosen a good hospital and a good operator, why should we not be content to receive the anæsthetic from the youngest interne, or a fourth-year, or even a third-year student? I fear very much that hitherto we have been too apt to belittle the importance of this subject. When a patient dies upon the table from the anæsthetic, we are very properly shocked; but how about the later sufferings, or even fatalities from an improperly administered anæsthetic? Consider for a moment how often it happens that a newly fledged practitioner or a student is called upon to administer an anæsthetic to an unprepared patient-for instance to a man who has met with an accident just after a hearty meal, or maybe one who has a faulty heart or diseased kidneys. May it not make a great difference in such a case how the anæsthetic is administered? I firmly believe that many untoward accidents must be attributed to the fact that medical schools do not furnish proper instruction in this subject."

From "The General Administration of Anæsthetics," by J. M. Baldy, M. D. The President's address read before the American Gynecological Society, Philadelphia, May, 1908, and published in the American Journal of Obstetrics, July, 1908:—

"The general administration of anæsthetics as performed to-day is the shame of modern surgery, is a dis-

grace to a learned profession, and if the full, unvarnished truth concerning it were known to the laity at large it would be but a short while before it were interfered with by legislative means—and properly so.1 In the traditions of our profession the poor receive as good service as the rich; so in the matter of anæsthetics is this true, only with this difference: in the first instance they both receive the best that is in us, in the latter they both receive the worst. Who of you is not familiar with the patient coming for a possible operation whose one dread is the approaching anæsthetic—a dread born of a past personal experience or the experience of a friend? Who of you is not familiar with the terrible struggle for breath so common to the etherizing room of the past, the congested, blackened face, the prolonged anæsthesia, the patient only partly relaxed, the delay in the operation, the difficulties of the manipulation after an operation began, the heart-sickness at a difficult and delicate operation made doubly and trebly so from the unnecessary chances of sepsis, hemorrhage and shock, the feeling of a patient lost from no lack of skill of your own, the slipping of a ligature and a secondary operation, or death, the immediate death on the table from failure of the heart, drowning due to inspired sputum, the vomiting on the operating table to the detriment of the operation, the prolonged after-period of naseau and vomiting to the great suffering and misery of the patient, the inspiration pneumonias and other pulmonary complications, the nephritis and urinary suppressions, all due in great part to faulty anæsthesia? How many deaths at the time of the operation, shortly after operation, or some days or weeks later, are due to the same cause? What relation does the anæsthetic bear to the large group of pulmonary complications reported from so many different sources, 1 The italics are mine, throughout.

190

and what is its relation to the thromboses and embolisms which have in the past caused so much suffering and disaster? What of the fatty degenerations of the liver, heart and kidneys? Who can tell? This fact is certain. however: more deaths following operations are due directly to the administration of the anasthetic than the profession in the past has dreamed of. Wherein lies the fault and where is the remedy? The present longestablished and time-honored custom of having the anæsthetic administered in hospitals by the resident physicians, in private homes by an available doctor in the neighborhood, is to be condemned. The man who is able and ready to pay any amount of money for the services of the most skilful surgeon available has his life and the lives of his family unknowingly put at the mercy of a boy just from his books, with absolutely no practical knowledge of anæsthetics, and with less teaching. One has only to recall his own experience and feelings during the first few weeks of his apprenticeship at anæsthesia to realize how thoroughly at the mercy of chance was the survival of the patient and how utterly helpless he would have been had anything gone wrong. Is it an exaggeration then to call such a condition a disgrace to the profession of medicine?"

The remarkable paper from which I have just quoted, following upon the repeated warnings of Doctor Gwathmey and others, caused no small stir among both surgeons and practitioners, and the symposium held at the next annual meeting shows that President Baldy's fearless utterances are not to be without results. Indeed, there seems to be such a general awakening in the profession to the scandalous negligence heretofore shown towards this important branch of medicine, that I will hazard the opinion that the amateur anæsthetist will

have been legislated into his proper place while the unrestrained novice in surgery is still hacking his way to fame or failure.

As Doctor Baldy says in his contribution to the symposium above mentioned: "It seems inconceivable that for so long a time the most important position in the operating-room, aside from that of the surgeon himself, should have been relegated to the hands of the most incompetent."

## CHAPTER X

## BACK TO MIDWIFERY

"The woman about to become a mother, or with her new-born upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the street has pity on her sister in degradation. when the seal of promised maternity is impressed upon The remorseless vengeance of the law, brought down upon its victim by a machinery as certain as destiny, is arrested in its fall at a word which reveals her transient claim to mercy. The solemn prayer of the liturgy singles out her sorrows from the multiple trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful time, should hazard it negligently, unadvisedly or selfishly!" -Oliver Wendell Holmes, "The Contagiousness of Puerperal Fever."

There is, perhaps, no branch of medicine, as practised in our large cities, in which a more radical departure has been made from the methods of a generation ago than in the science and art of obstetrics. This applies particularly to certain hospitals where the giving birth to a child has come to be regarded as a pathological phenomenon, pure and simple. Hence the most ordinary cases of confinement in these hospitals are handled with the same elaborate care as surgical operations, and, indeed, this is precisely what most of them have become.

Now, in urging a return to a simpler modus operandi, I would not be understood as underrating the marvellous advance we have made in asepsis, and in the perfection of various devices that have removed at least some of the horrors that were formerly associated with difficult or abnormal labor. I simply desire to sound a note of warning against the exaggeration of this pathological and operative side of obstetrics, and to show how willing Nature is to perform her functions, hampered though she is by our so-called civilization.

I mention asepsis as one of the most important factors in advanced obstetrics, yet it is from our knowledge of asepsis that we refrain from the repeated vaginal examinations that were formerly resorted to and were undoubtedly responsible for much of the puerperal infection that prevailed. The up-to-date physician, regarding Nature's warning of "Hands off!" contents himself so far as possible with external examination. In this one instance, therefore, he and Nature have come to a perfect agreement—why they should clash the moment a difficulty is encountered must be left to the physician to answer. "We cannot say," writes Dr. A. Heger 1 (of Germany), "that the management of childbirth in a contracted pelvis has reached a very high degree of perfection when the obstetrician must choose whether to bore into the skull of the child, cut open the mother's abdomen, or saw the bones of the pelvis. And yet, with our present methods of obstetrics, we do not seem able to progress beyond these inhuman and crude procedures."

Generally speaking, then, the man who will let Nature attend to his case, and simply assist whenever a little assistance is necessary, is the real obstetrician—the one

<sup>&</sup>lt;sup>1</sup> "The Operative Era in Obstetrics." ("Die operative Aera der Geburtshilfe.")—Beitrage zur Geb. und Gynaekologie (Leipsic) XII, No. 2.

appreciated by the patient. He is the ideal family doctor who has helped hundreds of children into the world with a very low mortality rate. While well-informed and thoroughly abreast of the times, he is not carried away with the new and ultra modern methods employed by the specialists. Of all the branches of medicine the practice of midwifery is ordinarily the most simple, for Nature will take care of things in perhaps ninety per cent. of all cases.

That this percentage is decreasing I will not deny—in other words that the American mother has been physically deteriorating—yet it is probably only a temporary setback, and hardly justifies the alarming statements of the over-specialized gynecologist or obstetrician. For example:—

"It is a matter of general knowledge," writes Dr. Herbert Martin Stowe (of Northwestern University, Chicago), 1 "that the physical condition of woman has deteriorated during the past fifty years. The changes in the manner of living, the lack of physical exercise, and the method of dress in vogue at the present time, illy equip the pregnant woman for the coming trial of parturition. Obstetric dystocia is increasing to a marked degree. Delivery is rapidly becoming a pathological phenomenon."

Dr. Franklin S. Newell (of Harvard University), in an article entitled "The Effect of Over-civilization on Maternity," <sup>2</sup> has given us a more detailed view of the conditions that endanger child-bearing, and far be it

<sup>&</sup>lt;sup>1</sup> "Puerperal Sepsis."—The American Journal of Obstetrics, August, 1909.

<sup>&</sup>lt;sup>2</sup> American Journal of the Medical Sciences, October, 1908.

from me to minimize these dangers, even if I think Professor Newell has somewhat over-emphasized them. He says:

"... Unless the standard of feminine accomplishments changes, and so long as girls (in school) are subjected to a strain which would break down the constitution of the average man, with their ambitions aroused not to fall behind their quicker companions, we must expect to see a constantly increasing difference between the women brought up to lead natural lives and those who belong to the over-civilized class. As time goes on, therefore, it is inevitable that unless some change takes place, the changed conditions which have arisen must become generally recognized, and a new obstetrics must be formulated to meet the new conditions.

"Those whose work takes them among the patients of the smaller communities, or the larger communities where over-civilization is comparatively of recent development, will unquestionably refuse to accept the truth of these observations; from their standpoint they are unquestionably correct, for never having had the opportunity to study such patients they naturally fall into the error of believing that such patients do not exist, and a man is naturally prone to disbelieve what

he has never had the opportunity to see.

"If, therefore, we admit that in certain communities a class of women has been developed who are unfit to bear the burdens of pregnancy and labor, but who nevertheless are subjected to the strain, the question must arise as to what methods of procedure in the care of these patients will give the best chances of a favorable result. Distinct differences of opinion will of necessity arise between those in the medical profession who admit the development of this unfit class and those who deny its existence; and even among those who recog-

nize present conditions, the problem of how they can best be met is far from settled. The ordinary duties which are incumbent on the obstetrician are to conduct an obstetrical case to a successful conclusion with a living mother and a living child; but the point is often lost sight of that the obstetrician has a further duty, which is to bring his patient through her troubles in such nervous and physical condition that she will be able to assume the functions and duties which properly belong to her after her convalescence is completed.

. . It seems to me that the time has come when we must recognize the fact that abnormal conditions, such as have developed in our older communities, must be met in an abnormal way if we are to do our full duty to our patients."

Doctors Stowe and Newell are not alone in their pessimistic outlook—practically all the leading obstetricians of the cities preach and practise the same theory, till midwifery as it was understood a few decades ago seems to them as remote as mediæval astrology.

These views, nevertheless, are combatted, and in no uncertain voice, by the practitioner of the type described above, whom I have designated as the ideal family doctor. And not only do they combat the theory by argument, but they adduce facts and statistics from their own practice to show the excellent results that follow from treating Nature throughout as an ally rather than an enemy. Nor will they accept the answer that old-fashioned midwifery methods may do among healthy country women but not in the cities, for some of their leading exponents are city practitioners, though the majority have undoubtedly acquired their experience in the towns and rural sections.

"If we country fellows," writes Dr. T. H. Line (of Marquette, Nebraska), "were to practise obstetrics like some of our great big brother city obstetricians would have us, it would be necessary to have a paraphernalia wagon follow us when we go to our obstetrical cases."

Doctor Line reports that in twenty-seven years he has handled "something like three thousand cases of confinement at full term or within a month or two," and adds: "I have not, up to this time, had a single death as a result of parturition or from abortion and . . . no sepsis of any importance." Such records as this are by no means exceptional, although they are invariably attacked by city specialists who, as a rule, can make no such favorable showing. In contrast to the average country practitioner, however, Doctor Line admits the free employment of the forceps, which, he contends, are a great service, if carefully used.

Here we have the whole matter in a nutshell. Despite the atrocious use of the forceps and other instruments, and the incalculable injury to both mothers and infants that has resulted from a premature interference, or from unskilful technique, the forceps are, or rather, might be, one of the blessings of civilization. It is not any particular instrument or remedy or procedure that I am attacking in these pages, it is the unscrupulous or unskilful doctor who wrongly employs such agents.

"The forceps," writes Dr. J. K. Quigley (of Rochester, New York),<sup>2</sup> "have been called the bloodiest of ob-

<sup>&</sup>lt;sup>1</sup> "Obstetrics in Country Districts"—a letter contributed to the (Philadelphia) *Medical Council*, December, 1907.

<sup>&</sup>lt;sup>2</sup> "The Obstetric Forceps."—New York State Journal of Medicine, August, 1908.

stetrical instruments; they may be, but need not be. I would not minimize the seriousness nor dangers of these instruments, but in experienced hands, with clean-cut indications for their use, forceps operations are not the mutilating procedure pictured by some."

Dr. Adam H. Wright (of the University of Toronto), after making the surprising statement that "the majority of obstetricians consider that the induction of labor is a serious interference with Nature's work, involving some danger "1—would that it were so in the leading American cities!—says:—

"If, however, we can perform the operation in such a way that it causes no danger, or at least very much less danger than the prolongation of the pregnancy, to the patient, we might justly conclude that early interference after term is not only justifiable but advisable. Those who have given up the barbarous methods adopted in so-called accouchement forcé are now inducing premature labor by simpler means and with the results of a few years ago."

And so an anonymous contributor to the (Philadelphia) *Medical Council*, who wrote under the caption "Medical Falsehoods":—

"We hear of the physician who has attended several hundred cases of confinement without having used forceps. It is possible, I dare say, but hardly probable that some of these cases did not call for instrumental interference. Statistics and men of ripe experience show us that in a certain proportion of cases it is neces-

<sup>&</sup>lt;sup>1</sup> "Induction of Labor at Term."—American Journal of Obstetrics, August, 1909.

<sup>&</sup>lt;sup>2</sup> The (Philadelphia) Medical Council, October, 1907.

sary to use instruments. The physician who leaves all his cases to Nature, in my opinion, places too much hardship on the real mother, who, I believe, should be relieved as much as possible of the suffering incident to childbirth. We are not animals, and our advancement along lines of civilization has brought more pain to our women in their hours of travail. The physician who leaves all his cases to Nature is wrong, and I fear at times does so from lack of understanding the use of what medical science has given us to relieve suffering humanity."

All of which is elementary, both to the profession and laity alike. Let us therefore turn to the other phase of the question and consider a few testimonies on the misuse of the forceps, and the altogether too prevalent accouchement forcé, which Dr. Wm. M. Robinson, the well-known editor of the Critic and Guide, defines as "the forcible hastening of a slow but sure labor that the obstetrician may keep a dinner or theatre engagement."

Dr. John Edwin James, Jr. (of Philadelphia), in a paper entitled "The Management of the Third Term of Labor," read before the Homeopathic Medical Society of the State of Pennsylvania and published in the Hahnemannian Monthly, December, 1906, says:—

"There is a tendency on the part of too many physicians to grasp at means that will shorten the number of hours their cases are in labor, presumably to conserve the strength of the patients, actually to allow them to finish with the tedious job and return to numerous other professional obligations."

Dr. Alexander Isaacson (of New York), in a letter upon the "Abusive Use of Forceps in Primipara," con-

tributed to the New York Medical Journal, July 9, 1910, puts the matter thus forcibly:—

"Putting aside the case where the use of the forceps is truly indicated, we come to the many cases in which haste and greed only are the paramount issues, and the forceps is applied to the detriment of the patient. A woman in labor is very readily influenced and convinced to allow the use of the forceps; particularly primiparæ, who are so impatient as to concede almost anything in order that their pains may be lessened; it is also a very common idea among the laity that primiparæ should be delivered with instruments, and many physicians will take advantage under these circumstances.

"I believe it is very unfair and unjust, non-professional, for a physician to apply the forceps simply because he is too busy and cannot wait for the natural forces to act, or because he is envious of his brother physician and desires to lead in the percentage of forceps deliveries performed. A forceps delivery, even in the hands of the most competent, is, nevertheless, an operation which should not be taken too lightly; it surely does not add to the safety of the mother or child; and to subject a patient to this ordeal for selfish reasons only, as is often done, constitutes, in my mind, a criminal act."

Dr. Charles S. White (of Washington, D. C.), in a paper entitled "Cerebral Injuries in the New-born," read before the Washington Obstetrical and Gynecological Society, November 6, 1908, and published in the American Journal of Obstetrics, May, 1909, presents some most instructive facts. Although he believes that "instrumental delivery, especially the low or medium forceps operation, deserves less blame than is generally ascribed to it," he instances many gruesome cases point-

ing to carelessness or criminal haste on the part of the obstetrician. "It has occurred to me," he observes, "that in our zeal to deliver a living child we have lost sight of the fact that the ideal condition is not fulfilled unless the offspring is healthy and has the right to live. Physically, surely all men are not born equal, and it is often a pelvis or forceps that shapes our ends."

In a later portion of his paper, Doctor White says:-

"It is at least interesting to note the relation of forceps to mortality of the fœtus. From a compilation by Dr. Julian M. Cabell, of the records of Columbia Hospital from 1874 to 1904, comprising 5,760 cases, forceps (high, medium, and low not always specified) were applied 236 times, and in twenty-four of these cases no mention is made of the child's condition or even whether it survived; but considering such cases as having recovered, I found that twenty-four died within a month and thirty-four were still-born, a mortality of 10.2 per cent. and 14.9 per cent., respectively, or 25.1 per cent., collectively. I would not interpret these statistics to mean that one-fourth of the infant mortality is due to forceps, because unquestionably the fœtus was dead before delivery was attempted in some cases, while in others death may have been purely coincident with and not dependent upon instrumental delivery. these figures indicate that forceps make an impression upon infant morbidity and mortality and must be reckoned with."

Discussing intercranial hemorrhage of the new-born, one of the commonest accidents in the careless use of instruments, he quotes some startling statistics from a German authority, showing a mortality of seventy-

<sup>&</sup>lt;sup>1</sup> Seitz: Munchener med. Wochenschrift, LV, No. 12,601.

eight per cent., and of the "remote" condition he is no less pessimistic:—

"Recovery from the acute condition does not warrant a roseate prognosis. Seeds have been sown for slower but irreparable changes. In the wake of intercranial hemorrhage is left the defective intellectuality of the epileptic, the pervert, degenerates, imbeciles and idiots. It is beyond dispute that milder cases may completely recover, but in the pronounced type the prognosis of the ultimate result must be purely conjecture."

"We may be said to be in the midst of a revival of accouchement forcé," writes Dr. W. E. Fothergill (of Victoria University, Manchester), in an article entitled "A Review of Recent Work in Obstetrics, Accouchement Forcé, and Vaginal Cæsarian Section," contributed to the Practitioner for April, 1905. Concluding, Doctor Fothergill says:—

"It is notorious that, in spite of the teaching of the schools, the forceps is often applied through an incompletely dilated cervix, and delivery is often attempted and carried out before the dilatation is complete. Also, when turning has been done before the cervix is fully open, the temptation to deliver is often too strong, and the child is pulled, head first, through an undilated canal. The disastrous results of the laceration and dislocation of the pelvic floor so caused are only discovered at a later date. The recent papers on dilatation and accouchement forcé paint these occurrencesthey are not accidents—in such lurid colors that it seems probable that the whole profession will at last realize that delivery must not be attempted until dilatation is complete. The forceps is an instrument for ending the second stage of labor, and not for use before the completion of the first. . . . In short, it is an atrocious blunder to end the second stage of labor before either Nature or art has ended the first."

Dr. P. Horrocks, in "The Midwifery of the Present Day," contributed to the British Medical Journal, March 10, 1906, after emphasizing the danger of infection from frequent examinations before or during labor, states:—

"It is little short of criminal to terminate normal labors as quickly as possible by the use of forceps or manual interference. It may be true that with all metal, boiled, aseptic forceps, with aseptic hands and parturient parts, a child may be delivered without setting up sepsis. But unless there is good reason, it is quite unjustifiable. There is no such thing as a painless labor, and no known method of rendering it painless without injury."

Sir J. W. Byers contributed an article to the same journal,—one of the most influential in the English-speaking world,—for August 7, 1909, entitled "Progress in Obstetrics," the keynote of which is that the ideal to be aimed at is not merely a living mother and a living child, but rather a living, healthy mother and a living, healthy child. Doctor Byers cites the statistics of the two largest Irish maternity hospitals (the Rotunda Hospital of Dublin and the Maternity Hospital of Belfast), which are exceptionally good, and comments thereon as follows:—

"Such splendid results have been brought about by recognizing that in at least 75 per cent. of the cases labor is a natural process not needing interference, and that its tendency is to prevent infection, and that our duty is to follow and aid it, and to interfere only when the resources of Nature fail to protect the interests of mother and child. The uncalled-for use of the forceps, early rupture of the membranes, douching-unless under very special circumstances—and the improper management of the third stage of labor are things of the past in properly conducted maternities. By the thorough application of the most minute surgical cleanliness as regards patient, nurse and doctor during labor and the puerperium; by the adoption of Crede's teaching, that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits (it can be well replaced by external examination) and by the immediate suture of any laceration occurring during the process of labor, these excellent results are possible of attainment."

Such testimony could be multiplied indefinitely, but I think I have submitted enough to convince the reader that a huge tragedy is being enacted through the ignorance or incompetence of those who should possess the very highest qualities both as physicians and as men. In fact, simple as is the practice of obstetrics, there is probably no branch of medicine to-day in which ignorance and irresponsibility play so large a part.

The young doctor lacks experience and patience, and the old doctor violates the fundamentals of asepsis, and in the one case in ten, or nine, or eight, or whatever the percentage may be, of those who have to be operated on or assisted with instruments, he fails to understand the serious consequences that may follow from the neglect of a lacerated birth-canal. The average practitioner, moreover, is too busy and the specialist, if I may so express it, is over-specialized and usually in too big a

hurry. There seems no consensus of opinion as to what is just the right thing to do, and often the man who has sense enough to let a normal case alone, has not knowledge or courage enough to recognize an abnormal case demanding the promptest operative interference. In a word, there are many doctors who put the whole burden on Nature and there is a host of specialists, or would-be specialists, who make every case a surgical one. It is but another example of the dilemma of the "frying pan and the fire."

In referring to specialists, I meant, of course, honest specialists, capable or at least conscientious men whose mistakes are due to an ill-focussed view of everything that relates to their specialty-men, in short, who are carried away by the "fads and fancies" of their pro-Besides these, however, are a number of socalled specialists who are simply unspeakable villains and murderers, men whose actions are so cold-blooded and remorseless that conscience in them seems dead. the head of the fœtus is unusually large or the pelvic outlet unusually small, and everything points to a hard forceps case necessitating no little vigilance and responsibility, such a man is in the habit of resorting to a craniotomy-puncturing the skull and delivering a dead child. And this he can do with absolute impunity, since he will invariably state that it was done to save the life of the mother. That is, an obstetrician in this Twentieth Century may, if he chooses, from the most selfish motives, and with no regard for the distress of the hopeful parents, deliberately murder a living child. Truly the cloak of "specialism" may cover a multitude of sins.

I met a graduate of a certain famous lying-in hos-

pital recently, who, in referring to Doctor J., one of the leading obstetricians in that institution, pronounced him "the worst scoundrel he ever saw." When I asked him what he meant, he replied: "Doctor, I have seen him do unnecessary craniotomies over and over again. It's monstrous for a man to kill babies, just to show students how brutal he can be."

The doctor of whom he spoke has acquired the unenviable reputation of performing this horrible operation quicker than any other obstetrician in the city, and his unnecessary Cæsarian operations are notorious.

Not long ago I had a discussion with a practitioner of thirty years' experience who had confined hundreds, probably thousands, of women. He assured me that he had used the forceps very little and had never had an occasion to do a craniotomy. He was intelligent and ambitious, and yet a conservative practitioner. Doctor J., the specialist just referred to, will do perhaps twenty forceps cases a week and three or four craniotomies, and have a mortality rate which is appalling. At the hospital there are no questions asked. The superintendent does not bother about it, and if the annual report shows an unusual mortality, it is explained by the assertion that as a rule only difficult cases are sent to the hospital. Nor does the report give the subsequent history of the forceps victims. They are delivered of a live infant, it may be, but little or no thought is given to the partially healed lacerations or to the little one so cruelly handicapped at the threshold of life.

The following case will illustrate the criminal methods of these perverted "specialists."

Doctor M. is one of the attending obstetricians of a large hospital in a large city. He is a very skilful man

and nearly all of his cases are operative cases. On one occasion he was preparing a paper to read at an important convention of physicians on modern Cæsarian operations, and, of course, he wanted to collect as many cases as possible, preferably his own. Consequently every pregnant woman who had a slightly narrow pelvic outlet, or was in any way abnormally developed, presented to his specialized vision a possible subject (or victim) for Cæsarian Section. A Cæsarian Section, by the way, is an operation in which a child is taken out of its mother's womb through the abdomen.

On this particular occasion a patient was brought into the hospital and referred to Doctor M. for exami-She had been in labor twelve hours and there nation. were no signs of progress. Considering that this was her first baby, and also that she was a very frail woman with a small pelvis, Doctor M. showed marked interest. Nevertheless, he said he wanted to be "particularly careful" not to go wrong in his diagnosis. After what he considered a thorough examination, however, he was sure it was a transverse position (in which the child lies across the womb), and that the head was "enormous." Satisfying himself upon these important points, he called the husband and other members of the family and explained to them that the patient could not possibly have her baby in the natural way, first because it was in an abnormal position, and secondly because the head was too large. There were only two things to do; one was to kill the child and take it away piecemeal; the other was to perform Cæsarian Section, which was a very severe operation both to patient and infant.

He had spoken to the patient and she had told him she wanted her baby at all hazards. Of course, then, he was willing to operate if the family also consented, and he thought he could save the life of mother and child.

Believing everything that he told them, the family consented, and so he gave orders, allowing them all to see the patient for a few minutes before she was prepared for the operation. Leaving the hospital to see two other patients and to get some "special instruments," he instructed his house surgeon to have everything prepared for the operation in two hours.

During his absence, however, and while the house staff and operating-room force were getting things in readiness, the patient was making progress. Frequent pains caused the house surgeon to wonder, and finally to recognize the unmistakable signs of impending delivery. In less than one hour from the time our specialist had left the hospital there was born a bright, healthy little chap of six and one-half pounds, who had given his mother very little pain but lots of anxiety before his appearance.

There remains little more to tell. Doctor M. came back with an assistant and a bag full of instruments, only to be met on the front steps of the hospital by the husband and the house surgeon, smoking their pipes and

shaking hands with each other.

"Meddlesome obstetrics" is one of the curses of civilization, and with surgery in general and the particular abuses that will be considered in the next chapter, calls for the most drastic reform. No one is readier than the writer to pay homage to the reputable obstetrician who meets a grave crisis with the skill and fortitude of a master, and by his energy and courage saves mother or child, or both, from what seems certain death. But if this skill and mastery produce an ill-balanced

temperament that misinterprets the normal processes of Nature, and views everything connected with child-bearing in a pathological light, then I say better far a return to the crude reign of the midwife.

But the obstetrician need not be abolished. Let him once look beyond the narrow bounds of his "specialty," let him be humanized, or socialized if I may so express it, and his patchy science and faulty "ethics" broadened out, and he will himself reject the over-specialization that he so confidently practised, and return to midwifery, a humble disciple of Nature whom it is his honor to serve and occasionally to assist.

## CHAPTER XI

## CRIMES AGAINST POSTERITY

"To ensure a sanitary marriage it is imperative to establish a quarantine station before the marriage license window, over whose gate should hang this legend: No Health Certificate, No License!"—Dr. Albert H. Burr.

"The effects of gonorrhæa on the female generative organs have been so destructive that no successful contradiction is feared when the belief is expressed that no disease of modern times has caused so much indirect mortality, mutilation and suffering, both mental and physical, as gonorrhæa."—Dr. Joseph Tabor Johnson.

Though the above title is open to the charge of ambiguity, I have chosen it as best expressing modern society's attitude of criminal indifference toward generations yet unborn. And as this book is a criticism of the present standards and practices of the medical profession, not of the public at large, it follows that by largely ignoring the public's share of responsibility an unjust emphasis may seem to be placed upon the shortcomings of the doctors. This, of course, while not my intention, is almost unavoidable, just as the elimination of the economic aspect of the problem gives a disproportionate view both of the ethical and the physiological.

The duty of the medical profession toward posterity is threefold: First, to preserve human life and health; second, to perform the services of midwifery; and lastly, both by instruction and by treatment, to promote the highest sexual standards. In this latter division should be included the important science (as yet so little understood) of eugenics, or race culture; but this subject is

such a vast one that I must reluctantly pass it by and hold to my unpleasant task of condemnation and exposure. I say reluctantly, because it is largely owing to the investigations of medical men and biologists that race culture has been rescued from the province of speculative philosophy, and rendered a practical, though as yet undeveloped, science, the importance and possibilities of which no one could be so bold as to estimate. All honor, then, to the disinterested men who are devoting their lives to this momentous problem, and dishonor to those who not only contribute nothing to the welfare of humanity but are themselves active factors of a physical and moral retrogression.

As the obstetrician's shortcomings have been set forth in the preceding chapter—and surely no greater crime against posterity could be perpetrated than the selfish, ignorant or reckless practices that I have instanced—we come naturally to the domain of the gynecologist, that branch of medicine and surgery which more than any other flourishes and fattens upon inhumanity and vice. For were it not for the blunders of the obstetrician, the selfish endeavors of modern women to avoid motherhood, and the criminal carelessness of the vicious brutes who communicate venereal diseases to their innocent wives, gynecology would be one of the least lucrative branches of the profession. In a word, therefore, the increased need of the gynecologist is in no small degree a sign of national decadence, physical and moral.

Of all the sins, both of omission and commission, with which I charge the physician, perhaps he is least culpable in the matter of the spread of venereal diseases, for here he is suddenly confronted with a law, or rather with a variety of laws, regarding professional confidences, all more or less strict and inelastic, and evidently framed with the idea of atoning for the scandalous license that prevails in nearly every other branch of modern medicine. Having liberty to main and kill pretty much as he chooses, which, if he is a man of any principle, he regards with abhorrence, he comes suddenly face to face with a "Thou shalt not," obedience to which, at times, means little less than his connivance at the most monstrous injustice.

Let it be distinctly understood that in ordinary cases I am in favor of the strictest, most scrupulous observance of professional confidences, and I do not think that the sacredness of the patient's trust in his physician could well be exaggerated. Even the New York State law forbidding a physician on the witness stand to disclose facts learned in the secrecy of the sick chamber is good in its intent. Where the iniquity of this law, and in fact of nearly all such laws, comes in is the lack of discrimination, the equal protection of innocent and guilty. When the secret concerns only the patient himself we all agree-physician and layman alike-that it should be held inviolate, but if the health or very life of another is involved, the doctor bound to silence becomes in reality, whether willing or unwilling, an accomplice in crime.

For instance: A woman may consult him with the purpose of inducing him to perform a criminal abortion. He is proof against her solicitations, whereupon she declares that if he will not commit the child murder she will get some other doctor to do it. He believes that the woman is in earnest, and knows that she can easily obtain the services of an abortionist, respectable or otherwise. Should this physician report the case to

the authorities and have the woman put under bonds to refrain from murdering her child? If in his conscience he believes such an act to be murder, then assuredly it is his duty to do all in his power to prevent the crime. If he neglects this duty he then becomes an "accessory before the fact," even though he salves his conscience with the assurance that he is obeying the law of "professional confidences." Thousands of honorable physicians have been placed in this position, not once, but often. Has a single one of them ever reported such a case to the authorities? If so, I have yet to learn his name.

But it is in the domain of venereal diseases that the most serious cases arise. The problem has been widely discussed in medical societies and journals, but up till now has not received the attention it should in the lay press, or in popular decent medical books written for the laity. Among periodicals, however, I must except the Ladies' Home Journal, which has conducted a most commendable educational campaign on this vital subject.

Let me now briefly illustrate the horrors of the venereal plague and the disastrous results that may, and so often do, affect the innocent wife and the unfortunate offspring in consequence of the protection afforded by those who should be the guardians of the public health and welfare.

A man having gonorrhea or syphilis, let us say, consults a physician. He is engaged to be married. The date is set. He is either not willing to have it postponed or he fears that to suggest such a thing would arouse suspicion on the part of his fiancée. The physician assures him that he cannot possibly cure him in such a short time, and that if he persists in marrying he will

surely infect his bride with the foul and loathsome disease.

The man, however, is obdurate. Neither reason, nor honor, nor pity can move him. Time passes, and at last it is the day before the wedding. What is the physician's duty under these circumstances? Should he bow before the fetish of "professional confidences," and allow this loathsome beast to be united at the altar to a pure and innocent girl? Or should he act the man, the protector of a defenceless and trusting womanhood, and expose the scoundrel's unspeakable vileness of body and mind before it is too late?

In New York, were he to adopt the latter course, he would find himself liable for damages to the outraged patient. In Massachusetts it would probably be the same, though professional confidences are not there regarded as quite so binding. Nevertheless, in Massachusetts and, I believe, in all the other states, neither the common nor the statute law defines the infecting of a woman with a venereal disease as anything worse than a misdemeanor. In some states it is not even that,

Thus, if a physician in almost any state in the Union should decide to prevent such an iniquitous marriage, he must bear in mind that he is not preventing a legal crime, whereas he is rendering himself liable to the law for violating his obligations to his infamous patient. For a man rotten with venereal disease to marry a pure woman is no crime, but for a doctor to expose such a villain is both dishonorable and illegal. greater travesty of morality and justice be imagined?

Let me give a concrete case that recently came to my notice. A certain physician was consulted by a young man suffering from an acute venereal disease. He was

engaged to be married, and had contracted syphilis from a prostitute since his engagement. The wretch refused to consider for a moment the doctor's advice to postpone his marriage for about two years. threatened personal violence if the doctor interfered in the matter. This doctor was a cautious and law-abiding man. He decided that his responsibility in the matter ceased after he had given the proper advice and warning, and so observed the usual professional secrecy. The marriage took place at the appointed time. The bride was a robust, handsome young woman, well known in society. A few months later she was a victim of severe syphilis, which broke out all over her body. Her hair fell out in handfuls, her mouth became a mass of foul sores, and before the first anniversary of their wedding that attractive bride was a repulsive invalid, her beauty gone, her constitution wrecked and her hopes of motherhood shattered for life.

Let us contrast the perfectly legal and "ethical" course adopted by this practitioner with the courageous stand taken by Dr. John C. King (of Banning, California). I quote from a letter from Doctor King to the Medical Record of February 6, 1909:—

"... I for one have reached the point where, under certain circumstances, regardless of damage suits or professional ostracism, I will not protect syphilities or gonorrheics.

"A young man was under my care for primary syphilis which rapidly developed secondary symptoms. I had given him complete instructions regarding the danger of communicating his infection to others. While mucous patches were present around his anus and in his mouth he married a pure and beautiful girl of twenty

years. Six months later she was the victim of malignant syphilis. The divorce court gave her freedom from the man who contaminated her, and also made him free to

infect another pure girl.

"A young woman of lovely character, whom I had cared for from babyhood, asked me if it was safe to marry a young man who was also my patient. I replied yes. Two weeks later, in the effort to test his potency before marriage, he acquired gonorrhæa. In spite of strenuous opposition he married the girl during the acute stage of his disease. I have since operated upon his wife.

"In a similar case another physician notified the girl's parents on the morning of the wedding day, thus preventing the marriage. This doctor had previously endeavored to induce the man to postpone the ceremony, but without avail. He then threatened to expose him and finally did so in spite of assurance of bodily in-

jury. I honor the doctor.

"A young woman whom I knew to be pure brought to me her lover on account of sore throat. Their wedding day was approaching. The man had secondary syphilis; his throat was badly ulcerated. He refused to postpone the marriage. I then told him to leave town within 24 hours or I would explain his situation to the girl. He left. Subsequently the girl married a decent fellow.

"In cases where venereal disease is necessarily contagious I will protect the girl and not the man; first, of course, endeavoring to induce the man to afford the needed protection. Most men will do so, but all of us have not instances where they will not?"

have met instances where they will not."

The statistics that have been compiled by those who are investigating and endeavoring to combat this frightful evil are most significant. They justify, nay, they demand, that every engaged girl, or her parents, should

insist that her lover submit to a careful physical examination by her own family physician. Such an examination would not always be infallible, but it would greatly help to safeguard the woman. No decent, clean man would object to this, and of any man who did, it might safely be set down that he had something to conceal. A girl should refuse to marry a man who could not show a medical certificate stating that he is apparently free from venereal or other diseases. Of course it must be admitted, and with shame, that there would be many doctors prepared to write any kind of certificate desired, if well paid for it. And again there are others who might mean well enough but would not be competent to make such an examination. Still where there is one medical knave or fool, there are, let us hope, two or three who are honest and capable, so that it would be a great safeguard to a girl if her fiancé were required to show her father a medical certificate of health.

It was my intention to go into this momentous question much more thoroughly, and to summarize the attempts that have been made in various states, particularly in Iowa, to stem the fearful tide of venereal infection, but space forbids. Suffice it to state that according to Bulkley, "New York City alone presents annually 50,000 people newly infected with gonorrhea or syphilis," while Doctors Valentine and Townsend 1 state that "the people infected actively or otherwise with these diseases are so numerous that the 120,000 physicians of the United States and Canada would not, even if all became venerologists and applied themselves to these ex-

<sup>&</sup>quot;Iowa's Endeavor to Control Gonorrhea and Syphilis." A letter contributed by Dr. Fred C. Valentine and Dr. Terry M. Townsend to the *Medical Record*, January 10, 1909,

aminations alone, have time to care for those of their patients whose ailments are of an uninfectious character." 1

The subject is a vastly complicated one, but when the above facts become better known, and it is generally understood that a large proportion of the women who are operated on by the gynecologists are the victims of this scourge, there will surely be a public awakening followed by the most drastic protective measures. Then it will be both "ethical" and legal for the physician to act in the interests of the mothers and children, and this particular evil will be regarded in its true light as one of the most heinous of crimes.

I wish for the honor of my profession that I could plead any extenuating circumstances for the widespread practice of abortion. Here, however, we find an utter disregard for the law even in those states which

<sup>1</sup> Since writing this chapter I ran across the following in a letter from Dr. F. G. De Stone to the American Journal of Clinical Medicine, August, 1908:-

"If there ever was a question, on which we as physicians should try to get legislation, this one of genito-urinary disease should cause us to come together, regardless of school affiliations, and fight the common foe. In the October Clinic, under 'Therapeutic Nuggets,' are given statistics that would almost make a dead man sit up and think. 'Eighty per cent. of blindness, and seventy per cent. of abdominal pelvic operations are due to gonorrhea, from which ninety per cent. of all men suffer at some time, and eighty-five per cent. of cases occurring in married women are contracted innocently from their husbands.'

"This is the damning charge. Is there any one so narrow that

he will not admit that our methods and our laws are inade-

quate?"

I have also received a copy of Dr. William L. Holt's remarkable paper on "The Venereal Peril," selections from which will be found in Appendix H.

have the most carefully devised enactments. The criminal code of New York State, for instance, as well as of various other states, makes criminal abortion or the killing of a child in utero a felony, the penalty for which is imprisonment with hard labor for a term of years. And yet to-day the abortionists of every large city are practising their nefarious trade with complete impunity. Why is it that the prisons are not filled with these criminals who are corrupting what was once an honorable profession? I think the answer lies in a name—because the successful abortionist calls himself a gynecologist. And so again we find specialism a cloak for cupidity and crime.

Criminal abortion, no matter by whom practised, is the felonious destruction of a living embryo, and whenever an act of this kind is committed by a physician he should remember that he is a murderer in every sense of the word, and ordinarily a despicable type of murderer at that, since he practises his dastardly profession for the money there is in it. It must be admitted, however, in all fairness, that with many it is a most distasteful operation which they perform, not for the fee involved, but because otherwise the valuable patronage of the family would be lost.

To illustrate what the family physician has to contend with, I will cite a case that was recently related to me.

A young married woman became pregnant, but did not wish to have her child. She consulted her physician and requested him to perform an abortion. The latter, who was an able, upright man, refused to commit the crime. He was a personal friend of her family, and his interest in the woman was therefore greater than if she had been

a stranger. He reasoned, advised and admonished to the best of his ability, but all to no purpose. The rash young woman insisted that she would have the operation performed, and that was all there was to it. The doctor, however, persisted in his refusal. She then told him that if he would not help her there were plenty who would, only she would prefer to have her own physician, as she would feel safer in his hands than with an unknown doctor. He declined to be won over by this appeal, and after a final remonstrance the young woman left his office.

On the following day the doctor called on a lady whom he knew to be in the confidence of his other consultant. He enlisted her services to dissuade her friend from the step she was contemplating. She promised to do her best, but told the doctor frankly that she knew her advice would be ignored. He admitted that he was of the same opinion, and that his main object in calling was to safeguard his young friend as much as possible if she persisted in her foolish and wicked purpose. Owing to the strong personal friendship he had had for her when she was a girl he felt that he could not remain passive and let her fall into the unscrupulous hands of an ordinary, crude abortionist. For that reason, and that only, he would now place in her friend's hands the names of three reputable doctors who, though they performed abortions, were, he knew, expert gynecologists who operated according to the most approved medical and surgical principles.

He made the lady promise, however, not to tell her friend that he had done this much for her, as he did not wish her to think that even for friendship's sake he would so far seem to condone her offence. The lady read the names of the three expert abortionists with some surprise. Instead of obscure or unknown names she saw those of prominent men. All three ranked high in the medical profession of that great city, while one of them, at least, enjoyed more than local fame.

The operation was performed, the child was murdered, and the mother, at last accounts, was doing well.

To what extent criminal abortion is practised we shall never know, but that it has increased at a most alarming rate in recent years is acknowledged by every medical authority and sociologist in the country. A study of the census and of the birth rate affords sufficient evidence. In a notable article that appeared in the *Delineator* for November, 1907, Mrs. Lydia K. Commander, who has pursued her investigations for many years, presented some startling facts. Probably 2,000,000 homes, she estimates, are without a child and have never had a child.

"A little more than one hundred years ago," says the editor of the Journal of the American Medical Association, commenting on these figures, "it was calculated that children formed one-third of the population of the country. According to the last census there were about 18,000,000 children in the country, which is less than one-fourth of the population. This difference does not seem to be much, but in cold figures it amounts to 7,000,000 children. Of course in the meantime many adults have been admitted as immigrants, and this has somewhat lessened the proportion that should exist in the matter, but there are at least 5,000,000 additional children that would be with us if anything like the old

<sup>&</sup>lt;sup>1</sup> November 23, 1907.

family life of our great-grandmothers' times still survived." Continuing, the editor says:—

"The interesting consideration is with regard to the next generation. . . . When a people become so individualistic that they do not care to assume the burden of rearing and caring for children, they have reached a stage in evolution that is apparently undesirable. It is true that it is they themselves who are the principal factors in bringing about this elimination, but then Nature always uses just this method. One might look for some great cataclysm in the natural order to get rid of an undesirable class of the population and might wonder how it could be brought about. As a matter of fact it works out so quietly that no one notices it much, and least of all are they who are affected by it aroused to any concern as to its real significance. Natural selection thus automatically removes the over-selfish from the scene and the drama of life continues with new characters."

I think the editor has overlooked the acute economic distress that has spread over this land of liberty and plenty, which is undoubtedly responsible in part for these conditions. But his charge of selfishness is certainly true of the leisure-class, and it is this very class who have corrupted the medical profession, who are in turn corrupting the people of lesser means till abortion has come to be all but a legitimate branch of medicine.

I say this advisedly. Williams 1 stated nearly a decade ago that "a conservative estimate would indicate that about every fifth or sixth pregnancy ends in abortion," and as far back as 1893 the *Medical Record* 2

<sup>&</sup>lt;sup>1</sup> Dr. John Whitridge Williams's Text-book of Obstetrics, edition of 1904.

<sup>&</sup>lt;sup>2</sup> June 3, 1893.

estimated that "only one out of every ten thousand cases of abortion is detected by the authorities," at which rate it calculated that New York alone had "at least 80,000 abortions" in that year. It has since been estimated by Justice John Proctor Clark that the cases in this city exceed 100,000 per annum.

Of course the profession has not become entirely shameless, and the avowed abortionist, that is, the fellow who advertises his skill in women's irregularities, etc., is entirely without caste. In the case of these rascals I do not understand why prosecutions are not successful in those states that have passed anti-abortion laws, for their advertisements are displayed in many of the leading papers and they have neither the cloak of a specialty to shield them nor the professional support of their fellow practitioners. Yet they flourish in every city from the Atlantic to the Pacific, and it is quite exceptional for one of them to come to grief.

With regular practitioners and reputable specialists the excuses and subterfuges resorted to are as varied as they are effective. Performance of abortion is everywhere permitted providing a woman has advanced kidney trouble or heart failure, or has a contracted pelvis, or, in short, is in any condition which, if the mother were to have a child, would jeopardize her life. These numerous provisions give the gynecologist ample scope, and if a doctor is anxious to get his share of such lucrative work, all he is obliged to do is to call in an assistant who confirms any diagnosis that is made. This makes the whole proceeding legitimate, so that, with a previous diagnosis and consultation on record, there is nothing to fear should the case turn out badly.

Here we have one reason for the wonderful popularity

of the curette and of the painful and by no means simple curettage of the womb so frequently resorted to. The clever doctor, who would as soon produce an abortion as bandage an injured finger, calls in a professional accomplice, and after an apparently deliberate consultation they finally decide to do a curettage (or emptying the womb by scraping it) for the benefit of the all too willing patient. After the operation is over they assure the family that the patient never could have had her baby on account of this or that ailment, and wind up by hazarding the opinion that should she become pregnant again another curettage will be necessary.

Discussing this phase of the question, Dr. A. B. Davenport (of Columbus, Ohio), in a paper read before the Academy of Medicine of his home city, May 29, 1909, says:—

"The disorders of pregnancy are often seized upon as an excuse for interference on the part of the physician. This one is a case of emesis requiring prompt emptying of the uterus; this is a case of threatened Bright's disease on account of a suspected or real trace of albumen in the urine. Here is a case of contracted pelvis which has been ascertained and demonstrated by rule of thumb, giving rise to visions of impossible delivery. Suppression of the menses from 'exposure to cold at the last menstrual period' is a very common excuse advanced why 'something must be done,' and, of course, this 'something' takes the form of medication with abortifacients, mechanical massage, the introduction of the uterine sound, or the dilation of the cervix and curettage of the uterus. No matter what the conditions are, there is only one line of treatment to

<sup>1 &</sup>quot;Criminal Abortion." Published in the Lancet-Clinic, September 28, 1909.

institute, and that is the prompt emptying of the uterus. While some of the conditions enumerated may be sufficient to justify interference, they are too often made to serve as an excuse for what is simply criminal practice. In a fairly wide experience of more than nineteen years in general practice, I have yet to encounter a single case in which I would be justified in terminating pregnancy for any of the reasons I have indicated."

In apportioning the blame for the alarming spread of this evil, he says:—

"I would have you understand that I do not think the commission of this crime is by any manner of means confined to those outside the pale of legitimate medical practice. I know, and you also know, it is not. Stress is here laid upon the part taken by the legalized practitioner of medicine in the commission of this crime. In the discussion of this subject he is generally not considered a factor of sufficient importance to justify including him among those guilty of this particular act. The midwife, the irregular practitioner of medicine, the purveyor of abortifacient drugs-anybody but he-are charged with the act. In my experience and opinion he is the most active of all in committing the crime, and to name him is to confess our professional shame, something too many of us hesitate to do; hence he escapes mention. These are the men we must reach in our own profession, and after we have done so we may rest assured the law will take care of the others engaged in criminal work."

This is apparently a rather sweeping statement, yet it is none the less true. Addressing the Section on Obstetrics and Diseases of Women at the Annual Session 226

of the American Medical Association held in Chicago, 1908, on "Criminal Abortion in its Broadest Sense," Dr. Walter B. Dorsett 1 (of St. Louis), the chairman, said:—

"Self-induced abortion, or abortion produced by a fashionable or fad doctor, is, as we know, a fruitful cause of the horrible pus cases in which we are now and then called to operate. This fad doctor is one with a lucrative practice, and is often 'the lion' at social functions. He it is who empties the uterus in cases of emesis gravidarum without first racking his precious brain in trying all recognized remedies and methods to check the vomiting. He it is who finds so many cases of contracted pelvis where it is utterly impossible to do anything but an early abortion to save the woman's life. He it is who finds so many cases of retention of menses, that require dilatation and curetment. He it is who finds the urine 'loaded with albumen,' necessitating an immediate emptying of the uterus to prevent death from Bright's disease. Such men and women prostitute the profession of medicine and should be exposed."

Instances of this kind have repeatedly come to my attention, and it has even been my unfortunate experience to see a member of the New York Academy of Medicine perform several such abortions, all upon selfish women who were able to pay him well, not only for a successful "operation," but for a plausible pretext that would silence any objection on the part of husband or family. Charity cases with him are on an entirely different footing, and I very much doubt if he ever yielded to the entreaties of a forlorn girl to end her pregnancy unless there was a substantial fee accompanying the re-

quest. In short, this physician practises his infamous profession almost solely among the rich and solely for the handsome fees he gets.

I have purposely refrained from mentioning the case of the young girl, who, through another's fault and her own weakness, faces the terrible ordeal that our self-righteous society imposes upon the unmarried mother. Here, not unfrequently, we encounter a double tragedy, the fall of the girl from her state of innocence and, equally far-reaching in its consequences, the fall of the sympathetic young doctor who yields to her entreaties and performs his first criminal operation. For, once the physician yields to temptation, no matter how disinterested his motives, his whole life is changed. Unknowingly he has begun, morally, to deteriorate, and the repetition of the crime (in time for the mere money there is in it) becomes all but inevitable.

Discussing this phase of the subject, Doctor Dorsett says:—

"The average student is not impressed by precept or example with the enormity of the crime, and coming into practice, often a poor young man, is first shocked when he is asked to procure an abortion; but after the wolf has howled at the door for a time he yields to the temptation and often drops into the practice. Far from the Hippocratean teaching of the ancients have our colleges wandered by their utter disregard as to the morals of their students."

To kill a child in utero is infinitely worse than to practise euthanasia. One is the destruction of a potential man or woman, an unfolding life whose character and destiny only the Creator can foretell; the other is the snuffing out of a life which has all but faded away. Phy-

sicians surely lose patients enough without deliberately taking up a form of murder as their regular practice. God knows it is bad enough to lose a case by accident, but when the destruction of life is made a legitimate branch of the profession and a wholesale slaughter is begun, it is time for us to call a halt and invoke a sentiment that shall sweep over our country and make this dastardly crime against posterity a crime here and now. The ending of uterine life and even the wanton destruction of cellular life is opposed to the spirit of the race and should be earnestly fought against, particularly by organized medical bodies who have it in their power to mould public opinion in these matters almost as they will.

The reform must come in two ways: First by uniform, drastic legislation in every state and territory, making the abortionist a criminal who can be extradited as easily as any other outlaw, and secondly by educating the public so that fœticide will become as abhorrent a crime to society as murder or rape or arson.

The following digest of the laws in effect two years ago (which is recent enough for our purpose) was carefully prepared by an able Western lawyer at the request of Doctor Dorsett, and shows how much has to be done before a uniform or approximately uniform code can be expected from our ignorant and apparently indifferent legislators. The questions are from Doctor Dorsett, the answers from the lawyer:—

- "Question 1.—Is the woman herself guilty of any crime? In how many states is she and in how many is she not?
- "Answer.—In nine states a woman who solicits, submits to, or performs an abortion on herself is guilty of

a felony. In seven states the above offence is a misdemeanor, and in the remaining states and territories, viz., thirty-five, the woman is guilty of no crime.

"Question 2.—What is the charge and penalty for giving away, selling or advertising abortive drugs and

drugs or appliances to prevent pregnancy?

"Answer.—The charge is a felony in but twelve states and territories out of fifty-one, and the penalties vary from imprisonment for from one to ten years, and in some states a fine ranging from \$20 to \$5,000. In twenty states the offence is only a misdemeanor. In thirty states and territories there are no laws on this subject.

"Question 3.-What is the charge and penalty as

dependent on the age of the fœtus?

"Answer.—In four-fifths of the states and territories the age of the fœtus is immaterial.

"Question 4.-What is the effect of death of the

woman operated on as to charge and penalty?

"Answer.—If the death of the woman results from the operation, in eighteen states and territories out of fifty-one the crime is murder and the punishment is death or imprisonment for life. In six states it is murder in the second degree, and the penalty is imprisonment for life or for a term of not less than three years.

"Question 5 .- May the offending physician or mid-

wife have his or her license revoked?

"Answer.—The license may be revoked in only fifteen states out of fifty-one. In thirty-two states there are no laws that can be invoked successfully for the purpose of depriving a physician of his license for this cause. In other words, he may successfully murder indefinitely and go unmolested.

"Question 6.—Is a physician who gives subsequent treatment allowed to testify, or is his information

privileged?

"Answer.—There is only one state, Missouri, in which it is provided by statute that a physician is allowed to testify as to facts learned while attending a woman on whom an abortion has been performed."

But, after all, public opinion—a strong moral sentiment—can accomplish more than all the laws in our statute books, and in the discussion that followed Doctor Dorsett's notable address, educational rather than legal measures were emphasized.¹ This also is the recommendation of Doctor Davenport, from whom I have already quoted, who concludes with these impressive words:—

"Make clear to both sexes the immorality of the crime of abortion. Teach them that from the hour of conception the child is a spiritual being and that its destruction is murder in every sense the term implies. Let a girl believe that the greatest and noblest duty of a woman is to become a mother; to bring into the world a living soul, to guide, train and direct the growth and development of that boy or girl, is a moral and spiritual duty second to nothing else. When she is imbued with this grand conception of her mission in life she will not soil her hands and soul with the blood of her own body through that of her child."

<sup>1</sup>The paper read by Doctor Dorsett and its discussion by prominent members of the American Medical Association meant a distinct advance for the progressive medical men of this country. I wish it were possible to reproduce the entire symposium, for such it really was; but this being impracticable, I have selected the most interesting part of the discussion, which the reader will find in Appendix I.