ORTHOPEDIC SURGERY

AND

DISEASES OF THE JOINTS.

LECTURE I.

INTRODUCTORY.

History of Orthopedy.—General Considerations which should induce the Student to make it a Subject of Special Study.—General Plan of Instruction.

GENTLEMEN: The Faculty of this college have intrusted me with the very important duty of instructing you upon the subject of deformities of the human frame, their cause, methods of correction, and means of prevention.

I propose to do this in a series of theoretical and clinical lectures. In the former I shall endeavor to render you familiar with the nature, causes, diagnosis, and general treatment of deformities; and in the latter I shall place before you abundant clinical material, and offer you ample opportunities to realize and test the practical bearing and application of the abstract principles which I shall endeavor to teach.

In this combination you cannot fail to master the subject thoroughly, and to prepare yourselves efficiently for the performance of your future duty in this particular branch of your profession.

Heretofore, our subject has not received that attention at the hands of medical teachers it so eminently deserved. Students met with few opportunities to study it, either in theory or practice, and the profession at large was hardly prepared to take charge of deformities and treat them successfully. For this rea-

son they were left to mere mechanics or professional pretenders, who, if they could construct any sort of machine, professed to cure all kinds of deformities.

Any one at all acquainted with the importance and magnitude of this branch of surgery will not for a moment question the propriety of treating it under a special head, and constituting it the sole object of a professorial chair.

This school, I believe, was the first to establish a special professorship for orthopedic surgery; and I am happy to see that our good example is being followed by other institutions, as such teaching must necessarily enhance the value of the instruction students will receive from their *Alma Mater*.

The importance of studying the treatment of deformities was admitted by the ancients, for we have from Hippocrates himself, who has been styled the "Father of Medicine," a treatise "On Articulations," in which he taught the proper method of bandaging, in cases of the infantile deformity of club-foot, which even in this day might be employed with advantage; for any theory of treatment founded upon correct ideas remains true forever. Celsus described the radical cure of hare-lip, and of various other congenital deformities, in a manner similar to that of the present day. As time went on, various persons attempted to ascertain the correct method of remedying deformities of the human frame. Empirics, and pretenders of all sorts, appeared from time to time, who professed to have discovered "the true secret," and as there has always existed, and still exists, in the human mind, a disposition to admire the marvelous, and to be governed by decided assertion, without proper and careful investigation into facts, so men then became, as they now become, the dupes of the designing quack, who flourished and grew important through their weakness.

This tendency of human nature has shown itself, however, quite as much in other branches of the medical art as in that of orthopedy. Nothing can check this but the proper education of the mind, whereby it is accustomed to examine and study into the *truth* of every proposition presented for its consideration.

Pretenders and quacks invariably publish accounts of their wonderful cures, and the miracles they have performed, never laying down any laws or rules to aid another in performing the same cure in similar cases. And this, gentlemen, constitutes

one of the essential differences between an honorable physician and the quack. The one labors to disseminate and diffuse his knowledge for the benefit of his whole profession, in order that he may relieve as much of human suffering as is within his power; the other endeavors to conceal the little knowledge he may possess for his own particular profit or gain.

Prof. Andry, of Paris, is looked upon as the founder of orthopedy, from the fact that he was the first who attempted to comprise all the deformities of the human frame *under one head*, and adopted this comprehensive appellation *orthopedy*, from ορθὸς, *straight*, and παιδεύω, *I educate*. He tried to find out their common causes, and establish general principles and indications for their efficient treatment; and published his work, "L'Orthopédie, ou l'Art de prévenir et de corriger dans les Enfans les Déformités du Corp," at Paris, in 1741.

Andreas Venel, of Switzerland, in 1780, established an institution in which he treated deformities of the human frame—club-foot, spinal curvature, etc.

In the year 1789, Thilenius, a physician of Frankfort, described the division of a contracted *tendo-Achillis*. The operation here first described by Thilenius was, in fact, performed by Lorenz, who performed the operation March 26, 1782; but, as Thilenius first described it, he has generally been thought the first to have performed it. Scarpa, in 1803, applied an apparatus for the relief of a distorted foot. Michaelis and Sartorius also divided contracted tendons. Dupuytren and Delpech also investigated and labored in the same direction without, however, accomplishing all they desired. Stromeyer, in 1830, first performed *subcutaneous tenotomy* for the relief of club-foot, and established it as a principle in operative surgery. Possessed of great talent, ardor, and energy, he caused his new principle to be generally known, and many great cures have since been effected by its application.

The names of Brückner, Camper, Wenzel, Palletta, Jackson, Sömmering, Heine, and others, must not be forgotten, as each one assisted to develop scientific knowledge and orthopedic surgery. Also, Dieffenbach, Langenbeck, and many others in Germany, accomplished much; while in France we find those of Bonnet, Guérin, Marjolin, Major, Delpech, and Malgaigne, conspicuous.

In England, Dr. Little stands preëminent, having introduced orthopedy into that country. Having suffered himself from congenital club-foot, he knew how to estimate the relief afforded; and to his exertions and energy London owes the establishment of the Royal Orthopedic Hospital. Within the first ten years succeeding its establishment, *twelve thousand* patients were there treated, which alone is a proof of its necessity. Dr. Little's colleagues, Tamplin, Lonsdale, Broadhurst and Adams, have also done good service in the cause of orthopedic surgery and science.

In our own country orthopedy met with very serious obstacles, the profession at that time being seriously opposed to any innovation, and particularly to any subdivision of medical science into specialties. And many medical men of even great professional attainments, unwilling or unable to take the tedious trouble of attending to serious cases of deformity, would recommend such cases to various instrument-makers in order to get rid of them; and these, mere mechanics, sustained by such recommendation, soon began to assume the name and responsibilities of "doctor," and would undertake the treatment of deformities, instead of adhering to their legitimate business, which was the manufacture of such instrumental aids as an intelligent surgeon might devise.

The injury thus inflicted on medical science and professional honor can only be properly appreciated by those who, like myself, have had frequent opportunities to witness its disastrous results.

Dr. David L. Rogers was the first to perform tenotomy in this country; he divided the tendo-Achillis in 1834, assisted by my colleague, Prof. James R. Wood.

Dr. Detmold, who is now a Professor of Orthopedic Surgery in the College of Physicians and Surgeons in this city, a German himself, and who had enjoyed the advantages of Prof. Stromeyer's instruction in Germany, introduced among us subcutaneous myotomy in 1837, three years subsequent to the introduction of tenotomy by Dr. Rogers, and made zealous efforts to render us conversant with its technicalities and therapeutic efficacy.

Dr. Valentine Mott, in his "Travels in the East and in Europe," published in 1842, expressed himself in the highest terms of admiration of orthopedic art, as he had seen it in Paris. It is but just to this distinguished surgeon that I should quote from his narrative, above referred to, in order to show how immeasurably he was in advance of the profession at that time. In fact, in his declining years, we here see abundant evidence that he was still entitled to the appellation of a *pioneer*.

He says: "It was my happy lot, even at my advancing time of life, to have resided in this capital (Paris), and to have witnessed, also, the dawning, as well as the meridian splendor of another new and illustrious era in the healing art; I refer to that beautiful and exact science, *limitedly* denominated *orthopedic surgery*.

"This great improvement, both in mechanical and operative surgery, is destined to be to the human frame what vaccination is and has been to the human features. As the discovery of Jenner has rid the world of a loathsome pestilence, and banished from our sight those disfigurations which made the most lovely lineaments and complexions hideous to behold, so will orthopedic surgery, by its magic touch, unbind the fettered limbs, restore symmetry to the distorted form, give mobility to the imprisoned tongue, and directness to the orb of vision.

"Like many other of the glorious achievements of surgery, it is based upon such simple and self-evident principles that it cannot but be attractive, and carry home conviction to the plainest capacities. Its adoption must therefore be universal; and the more so, because liberally and extensively as the knife may be used, untwisting, as it literally does, the most misshapen and revolting and convoluted masses of deformity, by dividing deep, yet safely, under the skin, through the thickest and broadest muscles; yet are these operations, in many instances, almost *free from pain*, and without a *drop of blood!*

"And another remarkable feature, and one which gives the charm of magic to this truly brilliant triumph of our art, is the almost instantaneous restoration of every distorted part as soon as cut, and the righting of the limbs, the trunk and head, to their wonted beautiful symmetry and proportions, as the proud ship that has been bent down to the rude storm, recovers her position, and resumes her stately course, when the shrouds have been cut away."

And further on he says: "Having myself pursued this new branch, as a student with my friend Guérin, for the last three years, and personally traced it through every step of its rapid progress from its birthday, I may say to its present perfect con-

dition, I have thought that I could in no manner so well express my gratitude to him, to my country, and to my friends, for the kind feelings with which they have been pleased to cherish my name, as by attempting to found in this city of New York an American Orthopedic Institution, by which the principles and practice of that interesting science may be diffused far and wide through this my native land."

It was a great and melancholy misfortune, for our age and profession, that his career was so suddenly terminated; that thus the great desire of his life was not carried into practical execution.

Gentlemen, the ardent zeal with which this distinguished surgeon—the acknowledged head of his profession—devoted himself to the study of this new branch of the healing art, is well worthy of your admiration and imitation. We here see one whose name was already recorded in the undying history of surgery on its very brightest pages, and who had already won its most brilliant and unfading laurels, applying himself for three long years as a student under the distinguished French surgeon, Jules Guérin, in order that he might become a perfect master of this new art. Strange to say, we find at the present day some young gentlemen complaining that three years is almost *too* long to obtain a perfect knowledge of *all* the *different departments* of our profession. Yet a man who had devoted his life to this great work, who had more knowledge and reputation than almost any man our country has produced, and who had performed some of the most wonderful operations in the world, was thus willing to devote *three separate years* to this *one* branch of our profession.

You have in this fact exhibited one of the principal causes of this great man's most brilliant success. It was his constant and undeviating devotion to the study of his choice; his faithful application, and his unwearied toil, his determination to master all that genius had conceived, or industry developed, which was *new* in the profession of his adoption, which might add to its utility or give the power of relieving human beings in suffering and misery. It is an example worthy your imitation, and will lead any young man, who will make it his model, to ultimate success and honorable distinction.

Dr. Henry J. Bigelow, of Boston, published a work in 1845—it being a dissertation upon orthopedic surgery—which obtained

the Boylston Prize for 1844, and was written on the following question: "In what Cases and to what Extent is the Division of Muscles, Tendons, or other Parts, proper for the Relief of Deformity or Lameness?" It was written after studying the works of Guérin, Bonnet, Velpeau, Phillips, Duval, and Little.

The word *orthopedy*, as used by Andry, in Europe, has been considered as embracing the study of all deformities of the human frame, and in that enlarged sense we shall use it. The etymological composition of the technical term is evidently derived from *ορθὸς, straight*, and *παιδεύω, I educate;* as such we shall adopt it and use it, thinking that to relieve deformities is to educate them straight.

At present orthopedic surgery is but imperfectly understood among us, and but few feel competent to practise it. It shall be our endeavor so to develop this department of surgery that no surgeon hereafter shall feel himself thoroughly educated in his profession until he has also fully mastered this particular branch.

The importance of the subject no one can deny, who pays the slightest attention to the numerous cases of malformation and deformity which we observe in every-day life. You can scarcely walk a block in this crowded city, or visit any of the smaller towns and villages of our wide-spread country, without seeing malformed or crippled sufferers, whose countenance bears the impress of mortified pride at their unfortunate condition, frequently connected with expressions of intense pain, produced by their abnormal physical position; hence, the necessity of giving a special course of lectures on this particular department of surgery.

My theoretical lectures, however, will form but a very subordinate part of the plan of instruction. I am restricted in the time allotted for the purpose, and this fact must necessarily determine the character of my lectures. I shall have no time to indulge in unproductive speculation and hypothesis. I shall, therefore, study to make my lectures brief and concise, and shall endeavor to make them preëminently practical. I shall illustrate them by cases bearing upon the rules which I shall lay down, and from my private as well as from my hospital practice. I shall bring before you cases that will demonstrate practically what I shall strive to inculcate theoretically.

I can hardly lay stress enough upon the necessity of your

attention to these practical, clinical illustrations of the theories inculcated. What I lay down to you in theory, if you should chance to lose it, you may, if God spares your lives, some time find an opportunity to study out for yourselves, or hear from another, probably very much better expressed than by myself; but, if you neglect the practical cases which come up before us, the loss can never be repaired. Therefore, you must give your close attention to these cases, and, no matter how much you may neglect the lectures, *watch* carefully the *cases*, lest you never find another opportunity to see them. They are the great, unfailing tests, which you have placed before you; the practical tests by which you may know whether I am correct in the principles which I endeavor to teach.

I wish, therefore, to urge upon you again to neglect no opportunity of improving the time by strict attention to the clinical instruction which I may be enabled to give you.

As I have said before, if you lose a lecture, you may make it up, but if you lose a clinical case, you can never make *that* up; for, when the time comes when you would repair the damage, the living illustrations of disease have departed, and the peculiar manifestations of the symptoms they have developed have been lost to you forever.

If, therefore, I shall at any time lay down any doctrine the truth of which I cannot practically demonstrate and establish by bringing before you genuine cases to illustrate it, you are at perfect liberty to discard such teaching.

Never be governed by the *ipse dixit* of any man unless the demonstration accompanying it, or your own careful investigation, shall convince you that the principles enunciated are true. If, by means of clinical cases, I shall succeed in clearly substantiating the doctrines I shall teach, please endeavor to learn the precise method of management adopted in each case, so that whatever success I may secure by treatment you may also obtain.

Such, gentlemen, is a brief outline of the history of our subject; the general considerations which should induce you to make it a subject of special study; and the general plan which I shall follow in my course of instruction.

At my next lecture I shall take up the subject of deformities in general, their classification, causation, and general treatment.

LECTURE II.

DEFORMITIES.

Definition.—Special Divisions and Definitions.—Etiology.

GENTLEMEN: To-day we begin the study of deformities, their divisions and subdivisions, causation, and general treatment.

Deformity has been defined to be a morbid alteration in the form of some part of the body (Dunglison).

Deformities affecting various parts of the body have received special names: for example, deformities of the feet are chiefly embraced under the general term *talipes*. Of talipes, however, we have the distinct varieties known as varus, valgus, equinus, calcaneus, and plantaris.

Deformities of the spine are mainly *curvatures*, and of these we have two—the angular and lateral, or rotary lateral.

Certain deformities are embraced in the general term *hip-disease*, and, when this general term is used, the mind at once pictures to itself the characteristic deformity attending that disease.

In the same manner have deformities of all parts of the body received technical names, which will be especially considered hereafter.

Deformities are again divided into congenital and acquired.

A *congenital deformity* is that which is present at birth.

An *acquired deformity* is one which has been developed subsequent to birth.

Congenital deformities are again divided into congenital malformations and congenital distortions.

A *congenital malformation* is one in which, at birth, there is a deficiency or absence or increase in the number of parts belonging normally to the body, or in which there are abnormal parts or fissures. Monstrosities are also to be classed under this head, and some other deformities which will be described later in the course.

A *congenital distortion* is one in which, at birth, there is simply a distortion of some of the normal parts of the body, such as most cases of club-foot, etc.

Acquired deformities are divided into three groups: