

LECTURE XII.

Corns.—Bunions.—Ingrowing Toe-Nails.—Supernumerary Toes.—Displacement of Tendons.—Bow-Legs.—Genu-Valgum, or Knock-Knee.

GENTLEMEN: The amount of agony and torment suffered on account of corns, bunions, and ingrowing toe-nails, is all the apology I can offer for bringing these subjects before you. Our business, as surgeons, is to relieve human suffering if possible, no matter whether it comes from a corn or a cancer. There is a wide-spread opinion that the general surgeon knows nothing about corns, or, if he does, that he regards it beneath his dignity to undertake their treatment; therefore patients go to some chiropodist to get their corns taken care of. One of the greatest insults ever offered to my professional ability was given by a gentleman, whose family physician I had been for many years, when he remarked with a scowling face and snarling voice, "A storm is coming; I must go to my corn-doctor and get my corns fixed." I asked him how he could trust his life and that of his family in my hands if he did not think I was capable of taking care of his corns? He replied that he was ashamed to ask me to look at his corns, as he did not think I would stoop to notice a corn.

Now, gentlemen, I do not feel it beneath my dignity, and I hope you will never consider it beneath yours, to stoop to do anything that will relieve human suffering. A corn is infinitely more painful than a cancer, and is capable of inflicting torment sufficient to destroy the sweetest disposition, and upset the best-regulated families. This is no fancy sketch of mine; for, without exaggeration, it can be practically demonstrated that entire families have had their peace and comfort destroyed for years, because one of the members had been tormented with inflamed corns. I have one family in my mind now (the gentleman's just referred to) in which domestic turmoil was the rule rather than the exception, and continued so for years, until the senior member got his corns cured. So great was the change in the disposition of that man, that one of his family remarked, "We really believe that father is becoming religious," simply be-

cause peace and quiet have been restored to the household in consequence of his being relieved of the pain produced by his corns, and he and the family have been happy ever since.

Now, what is the nature of these tormenting formations?

A CORN is simply a localized hypertrophy of the skin, caused by abnormal pressure. These hypertrophied epidermal and dermal layers become like dry scales or shells, with a central point of hardening, which is called the "core" of the corn. This little concretion dips down and presses upon the nerves beneath like a sharp-pointed instrument, and produces indescribable torment.

There are two varieties of corns, the hard and soft.

The *soft corn* is excessively tender, and is much more liable to become inflamed than the hard corn. This variety is more frequently found between the toes than elsewhere.

The *hard corn* has already been described.

As before remarked, the cause of corns is abnormal pressure, which may be continuous or intermittent, and, in general, is produced by bad shoeing. The shoes, instead of being made sufficiently wide at the toes and across the ball to permit perfect freedom of motion at the metatarso-phalangeal articulation, so that the foot may expand to its full extent with every step, are made so narrow that undue pressure is brought upon certain points not intended by Nature to receive it, therefore not properly protected, and corns are soon developed. The irritation produced by pressure upon these formations may give rise to reflex muscular contractions, which will draw the toes up, and it is not at all uncommon to see a row of corns over the second phalangeal articulations, caused by the elevations of these joints against the shoe from this reflex muscular contraction.

How are corns to be treated?

In the first place, you must insist upon the patient wearing properly-constructed shoes. Shoes must be worn which will permit expansion of the foot in all directions at every step, and then corns will never be produced; but, if they have been formed, we must treat them. You begin by paring the corn, carefully removing the hard shell with a sharp knife as much as can be done *without drawing blood*. When that is done, rub the surface of the corn over with the solid stick of nitrate of silver; this will remove within a few days an additional layer of hardened tissue,

which cannot be done with the knife without drawing blood. Now the corn is ready to "collar" with adhesive plaster. This is done most conveniently by taking narrow strips and building a "cob-house" around the corn, carrying it up until sufficient elevation is obtained to completely protect the corn from pressure.

For the *soft* corn the application of concentrated nitric acid, or the solid stick of nitrate of silver, is the most serviceable treatment that can be adopted.

First remove, by means of a knife or scissors, the thickened skin which covers the corn; then wipe the parts dry and apply the acid or nitrate of silver. These first applications are somewhat painful, but they are also exceedingly beneficial. After the application has been made, place a pledget of cotton between the toes so as to permit the free entrance of air. In a few days the dry and hardened skin caused by the caustic can be easily removed with the forceps and a second application made if necessary. This second application is not generally painful unless done too early, and very seldom has to be repeated.

The reflex muscular contraction excited by a row of corns upon the top of the toes, along the second phalangeal articulation, is sometimes so great as to produce a subluxation of all the metatarso-phalangeal joints. Sometimes such crooked and deformed toes can be harnessed into the normal position, by strapping them to a level surface with strips of adhesive plaster. It frequently happens, however, that this cannot be done; if it cannot, then subcutaneous section of the contracted tendons will be necessary.

BUNIONS.—A bunion is an enlargement and inflammation of the bursa situated upon the side of the great-toe, at the metatarso-phalangeal junction. Inflammation of this bursa is frequently so severe that the reflex contractions which follow produce a subluxation at this joint. In consequence of the subluxation, the phalanx is made to press against the nerve that supplies this portion of the great-toe to such an extent as to produce the most exquisite and torturing pain.

This condition of affairs can be easily relieved by taking a strip of adhesive plaster and commencing between the great-toe and the one adjoining, carrying it over the end of the toe, adjusting it, and then continuing the plaster along the inner side of the foot, around the heel, and as far back as the base of the fifth

metatarsal bone, where it is firmly secured with another strip of plaster and a roller-bandage.

It is usually necessary, before applying the long strips of adhesive plaster, to place one or two thicknesses of the plaster just behind and before the bunion, to make a little elevation before passing over the great-toe joint. It is occasionally necessary to divide the tendon of the extensor proprius pollicis which has been long contracted, before the toe can be replaced in its normal position.

In several instances under my own observation, these bunions have gone on to such an extent as to produce periostitis, and ending in caries of the joint. Under such circumstances, exsection was resorted to with complete success. In some cases the great-toe becomes so everted and drawn over the end of the adjoining toe that it cannot be brought *immediately* into position and retained by the adhesive plaster as above described.

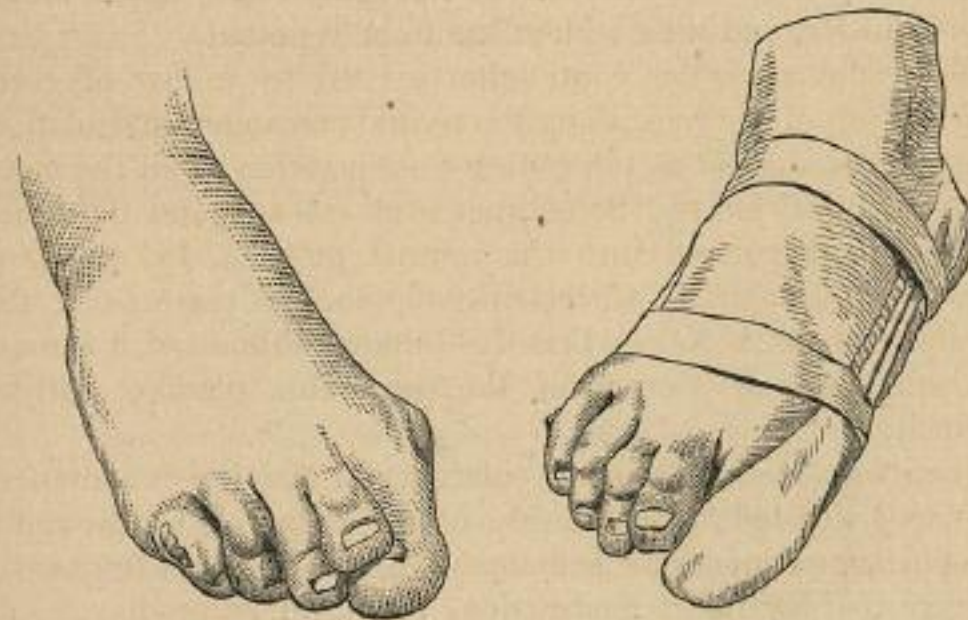


FIG. 92.

FIG. 93.

In such cases it is necessary to apply a tractile force, that by its constant action will in time overcome the deformity, after which it is easily retained in position by the simple dressing before referred to.

To do this, a buckskin or linen glove can be made to fit the toe, and to this attach a few inches of elastic webbing, which is again attached to a piece of adhesive plaster to go around the foot, and is retained in place by two other pieces, as seen in Figs.

92 and 93, photographed from a patient of Dr. Chas. H. Lathrop, of Lyons, Iowa, and which give a very good idea of the deformity and the mode of treatment.

INGROWING TOE-NAIL.—The most prolific cause of this difficulty is wearing narrow-soled shoes and boots. That class of people who will insist upon wearing narrow-soled shoes, on the supposition that such shoes and a high instep are elements of great beauty, will sooner or later become cognizant of the fact that ingrowing toe-nails are their legitimate offspring. Such abnormal pressure causes the nail to cut its way into the tissues; the consequence is, the tissues surrounding it become hypertrophied, and very commonly a large mass of granulations spring out from the side of the nail.

The first thing to be done in the way of treatment is to guard these fresh granulations from the pressure of the sharp cutting edge of the nail, which can be done by placing a layer of cotton between them. The proper instrument to perform this operation with is a narrow thin blade *without* a cutting edge. (See Fig. 94.)



FIG. 94.

Double a few threads of cotton over the instrument, and then carefully carry it down between the granulations and the nail until the edge of the nail is reached, when the instrument is gradually turned flatwise and carried beneath it.

The first application of cotton in this manner is sometimes exceedingly painful; the cotton, however, should be applied in such a way that pressure made on the ball of the toe causes no pain whatever. But the toe cannot be cured until all redundancy of tissue is gotten rid of.

Sometimes it becomes necessary to remove the granulations with the scissors; nitric acid is an excellent application, and nitrate of silver is nearly as good. After the application of the cotton, therefore, the granulations should be brushed over with the acid or silver.

As soon as the layer of dead tissue made by the caustic applications is ready to fall off without producing hæmorrhage, it may be removed together with the cotton fibres, and the cotton again

introduced. The second application of the cotton is not, as a rule, very painful. The granulations are then to be brushed over with the caustic, and, when the layer of dead tissue again separates, the dressing is to be renewed. This treatment should be continued until the nail has had time to grow out and protect the tissues by its own presence, and retain them in their proper position. The nail is there for the protection of the flesh, and if improperly cut, in addition to the abnormal pressure made by improper shoeing, serious trouble will be much more readily produced. The nail should always be cut squarely across, so as to leave the corners altogether free from the flesh, and permit them to act as a shield for its protection.

A very common method of treatment is to recommend the patient to go to some specialist on corns and toe-nails, but you ought certainly to be able to treat them yourselves.

Another plan of treatment is to cut a gutter in the centre of the nail, which has a tendency, it is said, to elevate the corners. Still another plan is to divide the nail and then strip it off. This operation must be repeated within a short time unless the matrix is also removed.

All these plans of treatment have received the approval of the profession, and some of them have been extensively practised; but I believe the better plan of treatment to be that which I have indicated; at all events, removal of the nail should never be resorted to unless hypertrophy of the tissues about it has gone to such an extent as to make it impossible to repair the parts without removing the cause of irritation. If the nail is removed, it is necessary to remove the matrix in order to prevent the return of the nail.

SUPERNUMERARY TOES AND FINGERS.—I call your attention to this class of deformities, almost solely for the purpose of impressing upon you the importance of their early correction.

All such deformities should be attended to before the child arrives at an age when they will produce any mental impression. If permitted to remain until the child is old enough to recognize them, they are ever afterward a source of mortification, and, in some cases, produce such mental agitation as to be the cause of alarming nervous symptoms.

The very fact of being conscious that the feet or hands are not like those of other children may be sufficient to ruin the child,

unless the deformity is removed, thereby relieving him of the self-accusation of his deformity, and the constant observation and taunting of those with whom he may be associated. An example of the influence which such deformities may have upon the nervous system has been already given in my third lecture. These deformities can be much more easily corrected while the child is young; growth obliterates very many of their effects, and the mental impression which they are liable to produce will in that way be avoided. (*See case in Lecture III.*)

DISPLACEMENT OF TENDONS.—There is a disability of the foot, caused by the displacement of tendons, which must be briefly referred to.

The tendons which may be displaced are those in the groove behind either malleolus, in consequence of too great weight being thrown upon the anterior portion of the foot, thereby giving rise to undue strain upon the annular ligament; rupture or stretching of the ligament takes place, and the tendons are dislocated forward upon the malleoli.

Where such an accident happens, the patient can no longer stand, and will shut up suddenly, like a jack-knife, and as quickly as though he had received a blow upon the medulla.

The accident may occur in descending stairs or steep declivities, while wearing high-heeled shoes, which throw the weight of the body upon the front part of the foot, and the extra effort made for the purpose of retaining the body within the centre of gravity, produces a direct strain upon these tendons, causing rupture or stretching of the annular ligament, sufficient to allow them to be displaced.

Now, if you examine the foot while the patient is sitting, the most careful inspection may not reveal anything abnormal; the foot can be placed at right angles with the leg and the motions of the joint will be apparently perfect; and, to all appearance, the foot and leg may be normal, the tendons in the sitting position having slipped back into the groove. The moment, however, these patients attempt to walk, or their feet are placed in the position assumed in walking, the tendons will slip from behind the malleoli, and down they go.

I cannot illustrate this peculiar accident better, than to give you a brief outline of a case which fell under my observation some years ago, and which has been fully published in the "Trans-

actions of the New York State Medical Society," for the year 1870.

Miss J. S. T., of Connecticut, aged nineteen, came to my office upon crutches, December 8, 1869. She walked in a most peculiar manner; she would balance herself upon her crutches, and swing both feet in front of her from eight to ten inches; then bring her crutches forward, and again swing her feet forward about the same distance, and this was the extent of her ability to walk. The boots which she wore were stout; tightly laced around the ankles, and additionally sustained by iron bars bolted under the soles, and extending up on either side of the leg to the knee, and then securely fastened around the leg with strong leathern straps. The patient had discovered that she could not stand at all unless these iron bars were perfectly rigid, consequently no joints were allowed opposite the ankle-joints. Upon removing these boots and irons, it was found that motion at both ankle-joints was free, and the feet and legs in every way seemed perfectly normal. The examination was made while she

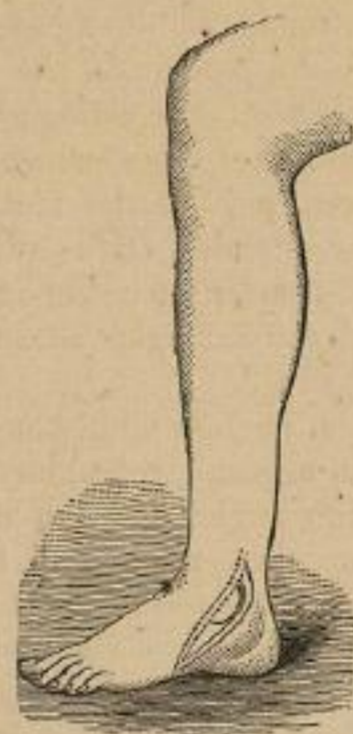


FIG. 25.

was sitting: When, however, I asked her to stand up, she replied that it was impossible, as she had not walked for four months,

and could not take a single step. She was lifted upon her feet, but she stood very awkwardly; and the moment she undertook to walk she suddenly fell—with her feet flexed at an acute angle; in fact, the dorsum of the foot was pressed almost against the tibia.

She had fallen in this way while descending the Groton monument in Connecticut, about four months before, and had been unable to take a step since that time. A closer examination of this girl's feet revealed the fact that whenever they were extended upon the leg, as is necessary in stepping forward and backward, the tendons behind the malleoli were thrown forward from their grooves. (See Fig. 95.)

This condition was believed to be due to rupture or stretching of the annular ligament; the grooves below the malleoli could retain the tendons while the foot remained at a right angle with the leg; but, as soon as extension was made as in the act of

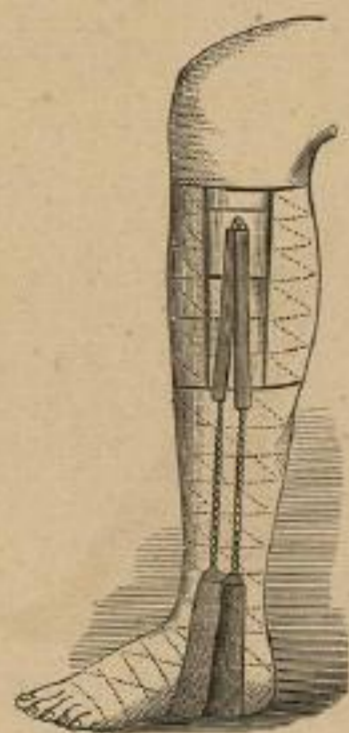


FIG. 96.



FIG. 97.

walking, the grooves were rendered more shallow, the ligament placed upon a stretch, and the tendons slipped at once from

their places, and were found upon the malleoli. When this had occurred, the command of the foot, of course, was immediately lost, and the peculiar "shutting up" of the limbs resulted. The treatment in this case was the application of a modified club-foot dressing. The dressing consisted of broad pieces of adhesive plaster, applied on either side of the leg, laying over them pieces of tin, having eyelets at the top, and securing them with a roller-bandage after the plan of Barwell's dressing for club-foot.

A folded piece of plaster was passed under the foot, with eyes attached at each end for the purpose of attaching the hooks of the artificial muscles, and secured in position by means of a well-adjusted roller-bandage. (See Fig. 96.) By the assistance of this dressing, the patient was at once able to walk with comfort,



FIG. 98.



FIG. 99.

and experienced but little more difficulty in locomotion than any sound person. The dressings were changed every four or five weeks, until September 20, 1870. This patient at that time had entirely recovered, and was able to walk without artificial sup-

port. Fig. 97 is a photographic front view of the limbs, with the India-rubber muscles attached. Fig. 98 is a view of the same after being dressed with shoes and stockings, in which she could walk with ease and grace, and even dance when the chains were hooked sufficiently tight to give her security, but the instant the artificial muscles were unhooked she would fall suddenly as though she had been struck by lightning. It is possible for a person to walk upon a floor or level ground with the present style of high-heeled boots (see Fig. 99) without any great danger, although such persons always walk, or rather *waddle*, in a most ungraceful manner. But to descend a very steep hill or flight of stairs, with the heels thus elevated, so diminishes the grooves behind the malleoli, that the muscles which are put upon a severe strain to prevent the body from falling forward, cause the tendons to slip out of these shallow grooves, either by stretching or rupture of the annular ligaments. This is the reason why ladies wearing these high-heeled shoes are frequently compelled to go down-stairs backward. You can see them every day descending the stoops of our fashionable residences in this manner, making a pretense of talking to some imaginary person in the front-door as an excuse to hide their awkward movements. The shoe taken from one of our fashionable shops, represented in Fig. 99, is not in the least an exaggeration of what is seen every hour of the day in our streets, but is much higher in the heels than the ones that were worn at the time the injury here described was produced.

Genu-Valgum or Knock-Knee.—This deformity consists in a bending of the knee inward. It is sometimes known by the term calf-knee.

It results from weakening of muscular support, the joint being unable to properly sustain the body, and with this there is stretching of the internal lateral ligament. Sometimes the support is so feeble, and the relaxation of these ligaments so great, as almost to permit luxation.

The pain which is sometimes produced by walking, when the patient is fully grown, will excite reflex contractions in certain muscles, and the biceps may become so firmly contracted, that it is impossible to bring the limb into its normal position without an operation. If you see these cases before reflex contractions have been excited, the limbs can be easily restored to a straight

position, but will as readily return to the abnormal position when the retaining force is removed. When, however, adult life has been reached, and *contracture* of the biceps muscle has occurred, it will be necessary to divide it before the deformity can be corrected. It also becomes necessary in some cases to divide the fascia as well as the muscle before proper relief can be obtained. When the necessary sections of contracted tissues have been made, you must make extension from the foot, and at the same time at right angles with the side of the leg.

This can be done by placing the patient upon a bed, the foot of which is elevated, and making extension upon each leg from below the knee by the adhesive plaster and weight-pulley, applied in the usual way. An upright is placed on either side of the bed opposite each knee, and a broad band, passed around the inside of the knee, terminates in a cord which runs over pulleys in the upright, and to which is attached a weight which can be increased or diminished according to the patient's comfort.

These two constant tractile forces are continued until the wounds made in performing tenotomy have entirely healed, by which time, in many cases, the legs will have become compara-

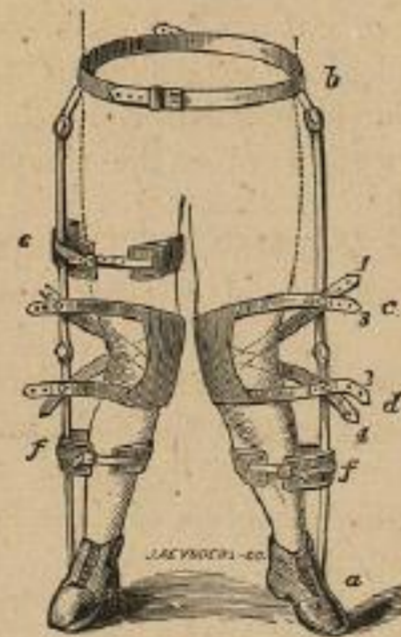


FIG. 100.

tively straight. But, in the majority of instances, the patients will be compelled to wear an artificial support to keep them in

this position for many months, before perfect restoration will have taken place.

The instrument for this purpose consists of a circular belt of steel around the pelvis (*see* Fig. 100, *b*), to either side of which, opposite the femur, a rod passes down, jointed at the hip and also at the knee, terminating in a circular band, which half surrounds the leg just above each ankle (*f*), or in the outer side of the shoe at *a*. These two rods are made of spring-steel, and *bowed outward*. Opposite the knee-joint an elastic band (*c, d, 1, 2, 3, 4*) passes around the inside of the knee, and is secured to these flexible rods above and below the knee; "*e*" is a circular band around the thigh.

The following case very well illustrates the deformity, as well as the practical application of the instrument:

CASE.—Antonio, a native African, aged seventeen years, was brought to me from Cuba, May 14, 1864, suffering from *genu-valgum*, caused by injuries received during his passage from



FIG. 101.

Africa, by being too closely packed in the ship, and also by carrying heavy loads of sugar-cane in Cuba.

PRESENT CONDITION (*see* Fig. 101).—The internal lateral ligaments of the knees were very much relaxed, and the external ones very much contracted, which caused the considerable deformity of the limbs seen in the photograph. He had great difficulty in walking, and had become completely useless to himself or anybody else.

TREATMENT.—I divided the tendons of the biceps muscles and the fascia; then straightened the limbs and kept them so for several days by extension and counter-extension, in the two directions (as before described), by which means they became quite straight.

I next applied an instrument by which the knees could be supported, while at the same time they could be flexed. (*See* Figs. 102 and 103, taken from photographs.)



FIG. 102.



FIG. 103.

By reference to the figures the result can be better seen than described. The limbs are now perfectly straight.

Bow-Legs.—This deformity consists in a bending of the legs outward.

In these cases the external lateral ligaments give way. The de-

formity is almost always dependent upon softening of the bones; hence bow-legged children are usually those who have some constitutional disease. The deformity then is really dependent upon some cachexia or diathesis; and the disease chiefly productive of this condition is rachitis.

The treatment, therefore, which is necessary in such cases is both local and constitutional. Locally, some kind of mechanical apparatus will be necessary to bring the legs into the proper position and hold them there. Constitutionally you are to resort to such remedies as give support to the system, such as cod-liver oil, etc., but the lactate and phosphates of lime are the most important. The object of administering these remedies is to furnish some of the elements necessary to give the bone hardness and power of resistance to pressure. Internal treatment should not be commenced until the deformity has been corrected by the application of some mechanical apparatus.

This may consist of a well-fitting splint of sole-leather upon the outer surface of the thigh, well lined and firmly secured by a roller-bandage. The splint should be long enough to extend below the knee for a considerable distance. The portion of the splint below the knee is left free, and projecting straight from the surface of the thigh. Around this portion of the splint and the leg place a rubber band. The constant tendency of this band will be to spring the bones into a straight position.

The bending must be done gradually, but, if the elastic tension is steadily applied, the outward curvature of the bones of the leg can be overcome and the leg made straight.

Such a plan of management you will find much easier and better than any attempt to adapt an instrument to the distorted limb. In order to make this splint more stiff, it is well to secure, on the outer side of the leather which surrounds the thigh, an iron rod or piece of wood extending down as long as the limb; the leather which nearly surrounds the thigh will keep this rod or wooden splint in position, and the iron rod or strip of wood will prevent the leather from bending.

If, however, it is desirable to have the benefit of some nicely-arranged instrument, the one illustrated in the annexed diagram may be employed.

It consists of two upright lateral bars fastened to the band, which encircles the thigh above *b*, and terminates in a shoe below.

At *e* is a joint opposite the ankle-joint, and a pad which presses against the foot. At *d* is a pad which presses against the thigh



FIG. 104.

and at *a* and *c* are bands which pass around one of the upright bars, and the leg where the limb is most curved, for the purpose of bringing the leg in a straight position.

LECTURE XIII.

DISEASES OF THE JOINTS.—ANKLE-JOINT.

Anatomy of the Ankle-Joint.—Pathology of Disease of.—Symptoms.—Treatment.

GENTLEMEN: We will next study diseases affecting the ankle-joint. This subject is a proper one for consideration by the orthopedic surgeon, for the diseases of this joint frequently terminate in deformity, and, as "an ounce of prevention is worth a pound of cure," the method of preventing deformity during the continuance of the disease makes it a proper subject for consideration in our department. It is to the pathology, symptoms, and treatment of the disease, then, that I shall specially direct your attention. Before proceeding, however, to the study of the dis-