

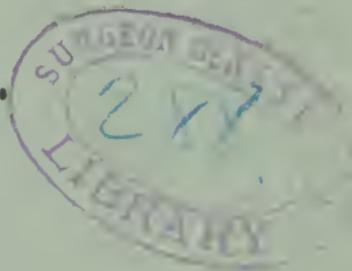
Morton (J. G.)

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CLINICAL LECTURE

ON

CASES OF PAINFUL AFFECTION
OF THE FOOT.



BY

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John Shaw Billings U. S.

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CLINICAL LECTURE

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THE FOOT.

SOME ten years ago I published an account of a "Peculiar and Painful Affection of the Fourth Metatarso-Phalangeal Articulation," and reported a number of cases of an affection of the foot involving the proximal joint of the fourth toe.* I then stated that I considered this malady of sufficient importance to be brought to the notice of the profession generally, especially as it unquestionably had not been recognized before that time.

My attention was first directed to this peculiar affection in 1870. After a careful study of a case which came under my observation at that time, I became convinced that I had an unusual condition to deal with. In this instance the symptoms were so clearly marked, and my patient,

* American Journal of the Medical Sciences, January, 1876.

who was an intelligent woman, gave such a positive account of her painful malady, that I was satisfied that I had to treat a condition which had not previously been described by systematic writers or in the medical journals, at least as far as I was aware. Since that time I have had such a number of these cases coming under my observation, and have learned of so many others in the hands of medical friends, that I have no hesitation in saying that the disease is a very common one, and that even up to the present time it has not been recognized by the profession as it should be.

This neglect or apparent indifference on the part of the profession may perhaps be due to the fact that the foot, to most persons, is not a very interesting portion of the human frame, so that, as a rule, a sufferer with any painful condition of the feet presenting no conspicuous abnormality is usually referred to the chiropodist, who is only able to cope with the simplest affections of this important region. Too often it happens that the general practitioner dismisses the cases which I shall describe as beneath his consideration: the pain is looked upon as a form of gout or rheumatism, even where this is not sustained by the family or personal history of the patient, and the case is sent away with directions to get less fashionable shoes, or with some other trifling recommendation, no diagnosis having been made. Consequently, the sufferer remains unrelieved, and in time

settles down to the conviction that he is the victim of some constitutional or incurable malady ; and so he goes on, suffering periodical attacks of almost intolerable agony with a disease which, if properly understood, could be readily and permanently cured.

This painful joint-disease, which is strictly local, may be of a mild or a severe type. Cases of the mild form of the affection, which are said to be bearable, may develop into the severe form. In them occasional attacks of pain are followed by periods of complete immunity, the neuralgia coming back again from time to time. The cases of the severer form are usually so from the commencement : they frequently result from a sprain or twist of the anterior portion of the foot or from undue pressure of a shoe. Occasionally the neuralgia has appeared simultaneously in both feet ; in such cases it may be dependent in part upon ill-fitting shoes : indeed, in two cases I have seen the disease was undoubtedly induced by ill-fitting ready-made shoes, and in one case the pain came on at once in both feet from a similar cause.

In my first account of this disease I only mentioned pain occurring in the metatarsophalangeal joint of the fourth toe ; but I have since seen instances in which the corresponding joint of the third toe was involved. Dr. Erskine Mason, of New York, has published the report of a case of metatarsophalangeal neuralgia which he suc-

cessfully treated by excision of the joint of the second toe.*

I have made some extended inquiries among the larger retail shoe-dealers, in order to find out if their attention had ever been called to this painful condition of the foot by their customers. I learned that this peculiar condition has not only been frequently recognized by them, but that it is also considered to be quite common. Almost every intelligent shoe-retailer has seen a number of persons to whom this disease has been a source of frequent suffering, and who believe their malady to be beyond relief by medical art. Indeed, it would seem that in some of the most severe of the cases it has been found impossible to obtain the serious consideration of their condition by their medical attendants.

The history given by the patient will generally be like the following, which should be sufficient to lead to a correct idea of the trouble. One of my patients wrote as follows :

" During the summer of 1868, while traveling in Switzerland, I made a pedestrian tour to the valley of the Faulhorn Mountain, and when descending a steep ravine I trod upon quite a large stone, which rolled from under my foot, causing me to slip, and throwing my entire weight upon the forward foot: though not falling, I found my right foot injured. The pain was intense and accompanied by fainting sensations. With considerable diffi-

* American Journal of the Medical Sciences, Oct. 1877.

culty I reached the valley of the Grindelwald, where for hours I endured great suffering. After this I found it impossible to wear a shoe even for a few moments, the least pressure inducing an attack of severe pain. At no time did the foot or toe swell or present any evidence of having been injured. During the succeeding five years the foot was never entirely free from pain: often my suffering has been very severe, coming on in paroxysms. I have been only able to wear a very large shoe, and only for a limited space of time, frequently being obliged to remove it to relieve the foot. Much of the time I have gone without any covering except a stocking, and even at night have suffered intensely: slight pressure of the finger on the tender spot causes the same sensation as wearing a shoe. During the past year or so I have walked but little, and consequently have suffered much less."

In this case a twisting of the foot was followed by acute pain, which was succeeded by permanent local sensitiveness or tenderness and neuralgia, brought on by pressure of the shoe or stocking, and sometimes without any known cause. The pain was always referred to the metatarso-phalangeal joint of the fourth toe, but during the severe paroxysms it extended up the limb as far as the knee and hip. On examination there was found neither redness nor swelling of the foot. The head of the fourth metatarsal bone, with the adjoining phalangeal base, was exceedingly sensitive, and pain was caused by the slightest pressure. In this case, at my suggestion, a deep excavation was made in the sole of the

shoe which she wore, which was sufficiently broad to permit the affected joint to be as free as possible from pressure, and local anodyne applications were made, but the patient obtained no relief. I then considered the propriety of excision of the joint; but the patient was threatened with pulmonary disease and not in a condition to undergo any treatment that would confine her indoors. In June, 1873, I again saw this patient, on this occasion in consultation with Dr. Ellwood Wilson. There had been no improvement in the affected joint from treatment during this period. A short time before visiting this patient, however, in the same year, I had had under my care a similar case which I had successfully treated by excision of the painful joint, but neither Dr. Wilson nor I deemed it advisable to perform this operation upon this patient, on account of her impaired physical condition.

In the following case an operation was successfully performed.

In March, 1873, I was asked to see Miss H. S., aged 26 years, who, while in Europe four years before, had injured her right foot by stepping upon a small stone. She said that she had at once experienced intense pain, which was soon followed by slight swelling and redness. From the date of the injury localized pain in the foot continued, especially while wearing a shoe. The pain was referred to the head of the fourth metatarsal bone. There was constant distress in the part, often of a sickening character. After wearing a shoe, pain came on with great intensity. At such times

the shoe had to be instantly removed, the least delay causing a paroxysm of great suffering. The boot or shoe had to be removed so often that a slipper was substituted. A marked lameness was induced by the patient's endeavor to spare the foot in walking. The pain was confined to the joint of the fourth metatarsal bone with the base of the associated phalanx. Pressure in this region or rolling the fourth and fifth toes upon each other caused violent pain, which extended up the limb. It was severe when pressure was made upon the base of the first phalanx of the fourth toe, which could be prominently felt between the third and fifth toes. Rest, anodynes, and other applications failed to relieve this patient. Dr. William Hunt, who had frequently seen this case in consultation, agreed with me in advising excision of the joint.

On March 22, 1873, after etherization, an incision two inches in length was made on the outer edge of the extensor tendon of the fourth toe; the metatarso-phalangeal articulation was then opened, and a portion of the shaft of the metatarsal bone, with the head of the bone, was excised; likewise a quarter of an inch of the shaft of the phalanx. The wound soon closed; the toe was shortened half an inch by the operation. The patient has since visited Europe on two occasions, and has remained in perfect health, and has been able to wear any form of shoe.

This, and the following cases, may be taken as types of the disease, of which I reported thirteen cases in my first paper, and have seen more than twice as many since, and several have been reported in the medical journals.

The following cases are such typical

illustrations of the affection that I abstract them from a previous article upon this subject.*

In April, 1872, Mr. W. K. M., of Rome, Noble County, Indiana, wrote me as follows: "I am a carpenter, and have been a hard-laboring man all my life. In 1866 I was suddenly seized with pain in the joint of the fourth toe of my right foot; at times was obliged to pull off my boot and sock, which gave me relief; many times I would wear my boot without my sock; at times the toe would puff up and become numb. In 1867 it was worse; I wore a larger boot, but was often very lame. In 1870 I had to use a cane, but kept at work until two years later, when I was unfit for business, for the pain was nearly constant.

"The disease was called rheumatism and gout; rest and quiet proved the best remedy for the time; the neuralgia then extended to the back of my heel, and was an aching, heavy, dead pain, so that I could not even bear the weight of the bedclothes."

In December, 1876, this patient came to Philadelphia. An examination showed the usual pain on pressure; the foot was normal in appearance. As there was some tenderness also in the same joint of the third toe, I excised the joints of the third and fourth toes.

Some months later Mr. M. wrote me, "My foot was tender for some time after I came home; but at the present time it is well. I have no pain, and can safely say that it is a permanent cure, and feel satisfied that the operation has saved my life." Four years later this patient reported himself as perfectly well and no lameness, and that he had worked steadily since his return.

* Surgery in the Pennsylvania Hospital, article entitled "Painful Affection of the Foot." Philadelphia, 1880. P. 109.

Dr. M. W. Alison, of Hagerstown, Maryland, called on me in the spring of 1875, seeking relief from neuralgia in his right foot, which had existed for years and was gradually getting worse, and stated that he was willing and ready to submit even to amputation of the leg. He gave the following history :

"About six years ago I experienced an unpleasant painful sensation in my right foot, which possibly originated in a strain: the pain was first observed in the fourth metatarsophalangeal region; in the course of a fortnight it was followed by most violent pain, which was simply unbearable and so severe that it terminated in a convulsion. A painful condition of the parts followed, and with the least provocation (wearing a shoe or boot), sometimes without known cause, paroxysms of intense pain returned at various intervals, lasting from one to forty-eight hours. The pain, with one or two exceptions, has been confined entirely to the section of the foot indicated. My suffering has been beyond all comprehension: very often I have been compelled to jump from my buggy or stop while walking, remove my boot, which has always been of ample size, apply ligatures to the limb or foot, use hypodermic injections of morphia, frictions, or call upon some one to assist me by standing on the foot. This affliction has been the burden of my life, and this burden has been increased after consulting many eminent medical men, who gave me no satisfaction as to the nature of the disease, nor even suggested a hope of relief. My health otherwise has been uniformly good. I am satisfied the cases you have had are similar to my own save in the intensity of my sufferings, and I shall gladly submit to the operation you have suggested."

Operation.—June 15 I made an incision on the upper side of the fourth metatarsal bone, the shaft of which was divided half an inch beyond the head of the bone; the base of the first phalanx was also removed; the toe was then found to be so isolated that it was removed; the adjacent soft parts were dissected away to insure the excision of the surrounding nerve. On the third day Dr. Alison left the city, and subsequently wrote, “Am happy to report all right; have not experienced any pain whatever, and am feeling better than I have for years, and feel assured that the operation will give me permanent relief.”

Dr. Thomas, of Savannah, Georgia, wrote me in 1876, reporting a case which had come under his notice: “I think your article throws some light on a case which has been under my advice for several years, and I have looked in vain through some of the surgical authorities for guidance. The patient is a young lady, with every comfort around her. For the past three or four years she has suffered with a severe pain in the fourth metatarso-phalangeal articulation of the left foot, sometimes brought on by long walks, and at other times without any immediate provoking cause. She does not know that she has ever hurt the part, though possibly has sprained it, but not enough to have noticed it. There has never been any swelling or redness perceptible, but always more or less sensitiveness to pressure or the touch. The joint, when handled, appears to be too loose; otherwise no abnormal indication save the pain.

“I have tried many things in the way of treatment, but all without proper success. She has applied tincture of iodine, belladonna plaster, capsicum plaster, etc. There are

times when she thinks that a comfortable-fitting shoe feels better than a looser one. My impression is that this neuralgia, or whatever it may be called, is more common than we would at first think, and the profession may be grateful to you for the article mentioned."

Mrs. C. H. K., of this city, a lady 50 years of age, gave me the following history: "'The queer feeling,' I have been accustomed to call it, which has been in my left foot for thirty years, is a painful condition. The pain is in and about the joint of the fourth toe, with occasional attacks of intense suffering, when the pain extends to the knee, and, if my shoe is not instantly removed when the attack comes, the pain reaches the hip. It does not matter whether I wear a large or a small shoe, as I have never worn a tight one, but it seems that the least pressure will produce the same result. Often my sufferings have been exceedingly acute, and coming on without any warning. Once I was taken while walking in the street, and the agony was so great that I was compelled to rest on a stoop, remove my shoe, and walk some distance in my stocking alone, the pain running in a straight line to the hip-joint. I then consulted Dr. Joshua Wallace, and was asked 'if there was any gout in the family.' In September, 1868, while at the Academy of Music, I had an unusually severe attack, and, not removing my shoe as quickly as I should have done, was obliged to walk to my carriage without the shoe, and suffered intensely for three hours. My eldest sister has been similarly affected still longer than myself, but in her right foot, same toe and joint. She has several times given up wearing shoes, but the attacks continued. She has not suffered so much during the past four years. Two of my friends suffer in like manner at the pres-

ent time. In one of the cases the pain is relieved by placing the foot on the ground with the shoe off, and thus spreading the toes. In neither of the cases I have known is there any deformity or lap of the toes."

Mrs. R., aged 43, from New York, consulted me at the Orthopædic Hospital, October 14, 1876, and gave the following account: "Some ten or twelve years ago, while skating, I injured my left foot, was attended by Dr. James E. Rhoads, of Germantown, who supposed at first that a tendon had been ruptured, but this opinion was not confirmed. My sufferings were very acute, and I was confined a long time to my room. After this, neuralgic attacks came on, sometimes at night without cause. I have always referred the pain to the joint of the fourth toe. For many years I have carried about me a vial of chloroform, the only application which has ever relieved the pain, and this is now losing its effect."

Mrs. G. C., of Philadelphia, wrote me as follows: "When 14 years of age, while jumping on a hard floor I slipped and fell, and at the time felt something give way in my foot; very severe pain followed, and for some five years afterwards I experienced in the foot a sensation of want of support; pain was felt during all this period, and has since continued. While walking, pain would come on so suddenly that I would seek the nearest store or step, remove my shoe, manipulate the foot, and gradually the pain would subside, leaving the foot, however, very sensitive. Pressure of a slipper, stocking, or even the bedclothes, at times has been sufficient to bring on an attack. There has never been any swelling or redness in the foot."

The head of the fourth metatarsal bone and base of the associated phalanx were found to

be in a very painful condition. In all respects the case was similar to those already observed; the patient otherwise enjoyed excellent health.

The operation of excision, as previously described, was performed; the wound quickly closed up, with the toe shortened half an inch. An ordinary shoe has since been worn with entire comfort, and there has been no recurrence of pain.

Dr. T. M. Woodson, of Gallatin, Tennessee, wrote as follows :

“ I have read with much interest your article describing a peculiar and painful affection of the fourth metatarsal phalangeal articulation. Since then I have met with a case which in every particular coincides with your description. It certainly can be nothing else, for there is no local evidence of any disease.

“ The patient, a well-to-do and very intelligent farmer, aged 36, rather small in stature, weight one hundred and thirty pounds, has suffered from the pain in the locality described for eleven years. He does not recollect or know of any strain or injury. Suffers most on active exercise, so much so as to rob him of all rest night and day. There are occasionally times when the pain is slight, especially on rest and in wearing loose shoes, but the affection incapacitates him from attending to his farm-duties. I showed him your article and explained his trouble, and he now insists on my performing the operation described by you. Have you any new suggestions to offer? Do you still advise an operation in suitable cases? Would it not be better to remove the toe of the fourth metatarsal? Would this weaken the foot?

“ The gentleman mentioned is exceedingly anxious for relief by the operation, and, as

my information is solely obtained from your article, I take the liberty of addressing you on the subject."

W. R., aged 46, from Ohio, consulted me September 29. On entering a meeting-room on a winter night, some twelve years since, he stamped violently to remove some snow which covered his boots; the latter were new and fitted tightly. He experienced sudden intense pain in his left foot, and has not been free from it since. Even in bed, occasionally, the pressure of the clothes is sufficient to bring on an attack.

Mrs. R. W., daughter of the above, aged 22, has been suffering for six years. She attributes her malady to a pair of tight, narrow-toed shoes, with high heels. Always, in the house, wears slippers; constantly is obliged to remove the shoe when walking, and generally avoids buttoning the shoe. No redness or swelling has ever been noticed.

Mrs. M. L. M., of Germantown, writes me that she has suffered paroxysms of intense suffering in the right foot. The pain, which has always been confined to the joint of the fourth toe, seems to be always brought on by the pressure of a new shoe, and relieved when this is removed.

The following graphic description is from a medical friend who has himself suffered from the more severe form of this neuralgia :

“ PHILADELPHIA, January 1, 1877.

“ I have read with pleasure and profit your paper on a ‘ Peculiar and Painful Affection of the Foot.’ Thinking it might be interesting to you, I send you an account of my own case.

“ I have suffered intensely at intervals from this affection for many years, and in all this

time have never found medical man or layman who understood what I meant when I complained of it or alluded to it. It has been pronounced by surgeons who have examined my foot to be a subluxation or a malformation of the articular surface of the first phalanx of the fourth toe, where it articulates with the fourth metatarsal bone, the concavity not being sufficiently concave. This I have long been convinced is an error. By other eminent authorities I have been conveniently 'pooh-pooh-ed.' By persons out of the medical profession I have been in my agony comforted by an 'Oh, tight boots.' I had at last despaired of making anybody understand my ailment, summoned all my patience, and suffered in silence.

"My own sensations have convinced me that the pain is caused by pressure upon a nerve, but what pressed upon the nerve I was unable to tell. The immediate necessity of removing the boot and the relief afforded by manipulating the foot in a manner learned by experience pointed to a dislocation; but the reduction of the displacement was never sufficiently sudden and marked to confirm the belief that there had been a dislocation.

"Now, after living for more than half a century, practised my profession for over thirty years, and suffered half my life with an affection not understood and ranked with a disease so trifling as a corn, I find myself enlightened and the mystery cleared up by your valuable paper on the subject.

"The first paroxysm occurred in my boyhood, and was produced by tight lacing of skate-straps. On unbuckling the straps, the 'cramp,' as I called it, was at first soon relieved and thought nothing of; but a continuance of this system of squeezing by tight straps and tight boots, and riding for hours

on horseback with the flexors of the leg and foot in violent action and the toes turned in, the attacks became more frequent, more painful, and the abnormal condition of the parts became chronic. These were in my case undoubtedly the causes predisposing. The causes determining the accession of a paroxysm are the wearing of a badly-fitting boot, especially if the sole be narrow; a long and fatiguing walk, particularly on a hot day over a hot pavement; a long ride on horseback; a wet boot sticking to the sock; a wet sock sticking to the toes; long-continued flexion of the knee-joint, as in a railroad-car, carriage, or lecture-room; treading on an uneven surface, as a cobblestone pavement; and, should the nervous system be depressed from any cause, these exciting causes will act more powerfully.

“The symptoms of an attack in my case are most intense pain, ‘cutting to the heart,’ sickening, a feeling that it is unendurable, faintness, cold sweat, total incapacity for the time of directing the mind or will to any other subject, a horrible increase of torture on the use of the boot-jack; and all this with no redness, no swelling, no abrasion of the skin, no callosity, no visible displacement of bones, at least after removal of the boot.

“The suddenness of the attack is noteworthy. I have been obliged to drop everything and remove my boot, sometimes in company, sometimes in my carriage. I have even been obliged to sit down on the curbstone and remove the boot. I have dismounted from my horse and sent home for slippers before I could proceed. I have tied my horse to a tree and lain on the ground, unable to ride farther.

“I have spoken of a tight boot and of removing the boot, but I have had tight boots

which were great favorites, because they would not 'let my toe out of joint.'

"The remedies from which I have obtained relief are removal of the boot and then manipulating the toes, straightening them out. When inconvenient to take off the boot, I have found that grasping the foot tightly round the metatarsal region will answer; and I have sometimes worn a cirlet of india-rubber band, binding the foot round the instep. Putting on a dry boot and dry stocking is of great benefit, and the boot should be well sprinkled with powdered soapstone before putting it on. Frequently an attack has been relieved completely without other means than rest and a cup of strong tea."

My friend and colleague, Dr. John H. Packard, sent me the following account of his own case:

"For several years previous to 1864, I had been subject to occasional dislocations of a relaxed joint in the fourth toe of my right foot. They had always occurred in walking, and the symptoms were perfectly distinct; the reduction, which was usually effected without difficulty, by simply 'working' the toe, was equally unmistakable.

"In the summer of that year I was climbing a mountain, when the joint became displaced; and, as it would speedily have slipped out again if reduced, I allowed it to remain luxated until I had finished the ascent and returned to the base; when the pain was so great as to make it necessary for me to ride home. After several hours of suffering, the joint gradually resumed its normal state.

"Since that time I do not remember that the luxation has ever taken place; but I have had many attacks of neuralgic pain in the part, coming on generally after exercise, but sometimes after sitting in one position, as in

my carriage. Often exercise does not induce it. Heat, as from the pavements or the sand in summer, is a much more frequent cause. It begins gradually, and sometimes wears away in the same manner, but sometimes vanishes suddenly, as if by magic, without the use of any means of relief. The pressure of a boot always aggravates it, but it has attacked me while in bed at night. Diversion of the mind will often allay it, but it sometimes comes on again afterwards with far greater severity.

“In 1869, while spending most of the summer at Atlantic City, I suffered more from this trouble than ever before or since. It would then often come on at night, after a day in town; and once or twice the attacks lasted more than twenty-four hours. So great was the annoyance from it, that I proposed amputation of the toe to a surgical friend, but he advised me against it. Since then it has been much less troublesome, though I have sometimes had it more or less every day for a week.

“Deep pressure over the metatarso-phalangeal joint is painful, but does not bring on an attack unless long continued. Cold has given me more effectual relief than any other remedy I have tried.”

The dislocation referred to is not a true dislocation, but is simply a twist of the toe, and a violent spasmodic condition of the muscles of the toe incident to the intense pain simulating a dislocation, which when the toe is compressed laterally and in its rolling between the third and fifth suddenly presses upon and pinches the underlying plantar-nerve branch.

These clinical notes of cases might be very greatly extended, but the above will

suffice to show the disabling and painful character of this affection and the propriety of the means adopted for its relief.*

Painful affections of the feet have long been known as a cause of disability among soldiers, but, so far as I can learn, the peculiar disorder under consideration has not been described as a cause of tender feet.

In order to satisfy my mind, I addressed a query upon this point to Surgeon J. S. Billings, of the Surgeon-General's Office, U.S.A., Washington, who replied under date of September 4, 1886, as follows: "I do not think there are any records of the special conditions which you describe as occurring among soldiers. Cases of excuse from duty on account of painful feet are occasionally reported, but these seem to be mostly of a temporary character, and are not described with sufficient fulness to make it certain what part of the foot is affected."

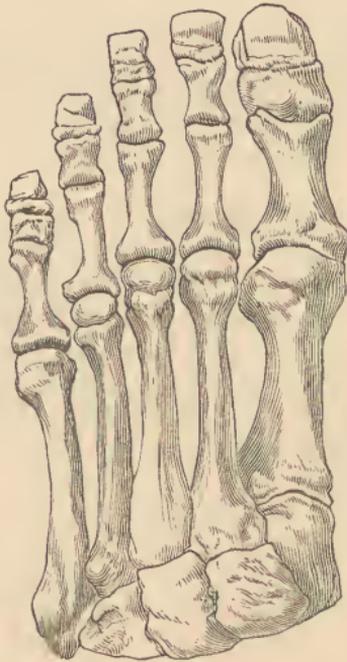
With regard to the etiology of this disease, I think that the explanation I have already given in a former paper has been supported by subsequent observation.

The occurrence of neuralgia may be understood by a reference to the anatomy of the parts. The metatarso-phalangeal joints of the first, second, and third toes are found on almost a direct line with each other, while the head of the fourth meta-

* Feeling convinced that this is a comparatively common affection, Dr. Morton would be obliged to his readers if they will send him brief clinical notes of cases coming under their observation.

tarsal is from one-eighth to one-fourth of an inch behind the head of the third, and the head of the fifth is from three-eighths to half an inch behind the head of the fourth: the joint of the third, therefore, is slightly in advance of the joint of the fourth, and the joint of the fifth is considerably behind the joint of the fourth.

The fifth metatarsal joint is so much posterior to the fourth that the base of the first phalanx of the little toe is brought on a line with the head and neck of the fourth metatarsal, the head of the fifth metatarsal being opposed to the neck of the fourth (see illustration).



On account of the character of the peculiar tarsal articulation, there is very slight lateral motion in the first three metatarsal bones. The fourth has greater mobility, the fifth still more than the fourth, and in this respect it resembles the fifth metacarpal. Lateral pressure brings the head of the fifth metatarsal and the phalanx of the little toe into direct contact with the *head and neck of the fourth metatarsal*, and to some extent the extremity of the fifth metatarsal rolls above and under the fourth metatarsal.

The mechanism of the affection now becomes apparent when we consider the nerve-supply of the parts. The branches of the external plantar nerve are fully distributed to the little toe and to the outer side of the fourth; there are also numerous branches of this nerve deeply lodged in between these toes, and they are liable not only to be unduly compressed, but pinched by a sudden twist of the anterior part of the foot. Any foot-movement which suddenly may displace the toes, when confined in a shoe, may induce an attack of this neuralgia. In some cases no abnormality or other specific cause for the disease has been detected.

Treatment.—The question of treatment may be dismissed in a few words. In acute cases of this disease, where it has evidently been induced by an injury, the treatment should be by local depletion, anodyne applications, and rest, and, as in those less severe cases which do not seem to demand

operative treatment, a suitable, broad-soled shoe should be worn, which should lace up in front.

The greatest comfort and often entire relief is afforded by the use of a narrow, fine flannel bandage, which should cover the anterior part of the foot moderately firmly, so as to give absolute steadiness to all the toes, and tight enough to prevent any rolling or movement of the joints or toes upon each other. In very many cases this simple treatment has, with a properly-constructed shoe, given entire relief. Even in the most severe cases this treatment should be fairly tried before an operation is decided upon.

In some cases, however, no treatment except excision of the irritable part will be of any service, and the excision of the joint of the toe, which is readily performed and quickly recovered from, will insure a complete and permanently good result.

