

I find more and more delight in the cultivation of flowers, and comfort myself with the thought of devoting myself entirely to this occupation when my powers of composition begin to decay. (50.)

He was always fond of moving about. He could not remain long in one spot. But this was chiefly because it always seemed to him that "Every place is better than the one in which we are." Paris, Kamenka, Clarens, Rome, Brailov, Simaki, Tiflis—all in turn were his favorite resorts, which he was delighted to visit and equally pleased to quit. But apart from the ultimate goal, traveling in itself was an enjoyment rather than a dread to Tchaikovsky. (Biog. 52.)

No sooner had he reached home again than he began planning yet another tour. It seemed as though he had become the victim of some blind force which drove him hither and thither at will. This power was not merely complaisance to the demands of others, nor his old passion for traveling, nor the fulfillment of a duty, nor yet the pursuit of applause; still less was it the outcome of a desire for material gain. This mysterious force had its source in an inexplicable, restless, despondent condition of mind, which sought appeasement in any kind of distraction. I cannot explain it as a premonition of his approaching death; there are no grounds whatever for such a supposition. Nor will I, in any case, take upon myself to solve the problem of my brother's last psychological development. (Biog. 52.)

All day long I wander in the forest and bring home quantities of mushrooms. (53.)

Many of his works were planned and his themes invented in these long rambles across country. (Mason.)

Without the key supplied by the oculist, any reader of the Life and Letters of Tchaikovsky must be as unable, as was his biographer, to explain the apparently insatiable necessity for country life, journeys, concert tours, and travel over all the countries of Europe, with one trip to the United States. If, at least earlier in his life, he had made a trip to the United States solely to get a scientific pair of spectacles, I scarcely doubt that he might be living to-day. It was certainly not the love of music that caused us to send for him, nor that motivated his own coming. The sorry account of his visit here would be ludicrous if it were not underlaid with tragedy for the composer, and shame for us. To those who have not learned that personal happiness depends upon the little and overlooked blunder or habit, it will appear ludicrous to say that the one thing which all Europe could not have given him, and which we alone were capable of giving him, would have been of infinitely more value to him than all the money, huzzas, interviewings, and advertising with which we prided ourselves in cursing him.

But resistance, reaction, recuperability, under long-continued "insults," and after unheeded warnings, are finally lost. This loss, as we have so often seen, is likely to fall in the period of presbyopia, when eyestrain is doubled, and the two misfortunes unite to bring about the final catastrophe. Without needless repetition and emphasis, it is particularly noteworthy that Tchaikovsky's maladies increased in intensity as he entered upon the presbyopic period, and

they became more and more unendurable as he advanced in it. There is nothing more pathetic than the added poignancy of his cries with each year from thirty-eight to fifty, and it is most pitiable that when reaction is no more possible the old relief and happiness, once so evident, from country-life and journeying, no more returns:

I will not conceal it: all the poetry of country life and solitude has vanished. I do not know why. *Nowhere do I feel so miserable as at home.* If I do not work, I torment myself, am afraid of the future, etc. Is solitude really necessary to me? When I am in town, country life seems a paradise; when I am here, I feel no delight whatever. To-day, in particular, I am quite out of tune.

I am passing through a very enigmatical stage on my road to the grave. Something strange, which I cannot understand, is going on within me. A kind of life-weariness has come over me. Sometimes I feel an insane anguish, but not that kind of anguish which is the herald of a new tide of love for life, rather something hopeless, final, and—like every *finale*—a little commonplace. Simultaneously a passionate desire to create. The devil knows what it is. In fact, sometimes I feel my song is sung, and then again an unconquerable impulse, either to give it fresh life, or to start a new song. . . . As I have said, I do not know what has come to me. For instance, there was a time when I loved Italy and Florence. Now I have to make a great effort to emerge from my shell. When I do go out, I feel no pleasure whatever, either in the blue sky of Italy, in the sun that shines from it, in the architectural beauties I see around me, or in the teeming life of the streets. Formerly all this enchanted me, and quickened my imagination. Perhaps my trouble actually lies in those fifty years to which I shall attain two months hence, and my imagination will no longer take color from its surroundings. But enough of this! I am working hard. Whether what I am doing is really good is a question to which only posterity can give the answer. (50.)

This thought and experience gives significance to the awful and hopeless beauty of the Pathetic Symphony, the last and greatest of the composer's works. Mason asks:

. . . Has not disease, as well as health, its relations to our fortunes? . . . His mental temper, never bright, was shadowed with a pathological gloom throughout his life.

(To be continued.)

THE TREATMENT OF UNUNITED FRACTURES OF THE NECK OF THE FEMUR BY OPERATION, WITH REPORT OF A CASE.

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THE obtaining of bony union in unimpacted, intracapsular fractures of the neck of the femur, those fractures which lie wholly within the capsule of the joint, is rare under any form of treatment by apparatus alone. This is so not only because of the meager blood supply to the head of the femur, emphasized by some writers, but chiefly because of the difficulty of securing accurate fixation of the parts in firm apposition.

The various methods of extension apparatus, with straps or swathes around the pelvis, or of plaster of Paris spica bandages with the lower extremity in abduction, with or without screw pressure over the trochanter, are all uncertain and tedious procedures, which in the majority of cases will fail to cause union. These methods require long periods of confinement in bed and make large drafts upon the strength of the patient, and in cases advanced in years are not infrequently the cause of death.

The only certain method is that of pegging or nailing the fragments together in their proper relation, as was done in the case reported below. In fresh fractures, especially in cases of advanced age, or feeble condition, the question should be raised as to whether or not the method of direct nailing without an open incision should be adopted, as has been done most brilliantly in many cases by Nicolaysen¹ of Christiana. Later in this paper this very important work of Nicolaysen will be described; it is worthy of marked consideration. In those cases in which several weeks or months have elapsed since the injury, the method of nailing after the fragments have been examined and scraped through an anterior incision is doubtless preferable. It is the opinion of the writer that the method adopted in the case to be reported is the simplest and gives the best opportunity of examining the surfaces of the fragments and of placing the nail with accuracy.

It is surprising how few of these operations for ununited intracapsular fractures of the neck of the femur have been reported. Freeman² could find reports of but thirteen cases up to 1904 beside his own. In addition to these the writer has been able to find reports of six additional cases operated upon in this country and England: the cases of Morris,³ Thompson⁴ (2), Guthrie,⁵ Cheyne,⁶ and Peckham.⁷ So far as is known, the twenty-one cases of direct nailing without open incision reported by Nicolaysen have never before been included in any paper.

Report of the writer's case:

J. H., eighteen years old, was admitted to the south surgical service of the Massachusetts General Hospital in July, 1902. Through the kindness of Dr. H. H. A. Beach, the senior surgeon of the service, the writer, his assistant surgeon, was given charge of the case. The boy had been sent to the hospital with a diagnosis of dislocation of the hip, which diagnosis was found to be in error, especially after the x-ray plates were seen. Nine weeks before entrance, while crossing the street, he fell injuring his right hip; total disability and loss of motion with much pain in the hip followed. As long as he could remember his right leg had been shorter than the other, the result of some children's disease, yet he could always walk upon it with but slight limping and could run and play as well as the other boys. He evidently had had for years a somewhat shortened and atrophied leg, the result of infantile paralysis. He had been confined to bed since the injury.

Examination.—A fairly well nourished and developed boy; nothing abnormal aside from the condition of the right lower extremity found. The right thigh

and calf showed more muscular atrophy than could be accounted for by the comparatively recent injury. The right extremity was three inches shorter than the left. There was some flattening of the right buttock and some tilting of the pelvis. The top of the trochanter could be felt three inches above Nelaton's line; this upward displacement of the shaft of the femur could not be reduced. The x-ray plates showed an intracapsular fracture of the neck of the femur, with much upward displacement of the shaft. A small amount of callous formation was seen to have taken place.

The patient was operated upon by the writer July 31, 1902. With the patient lying upon his back, an incision down the front of the thigh, from the anterior-superior spine of the ilium was made. By blunt dissection between the tensor vaginae femoris, sartorius, and rectus extensor muscles, the capsule of the hip joint was exposed. It was not found necessary to cut any muscle fibres, and by using strong retractors to pull the sartorius and rectus muscles inward a good exposure of the anterior surface of the capsule of the joint was made. The capsule was opened by an incision parallel with the fibres of the "Y" ligament, upon which the diagnosis of ununited intracapsular fracture was found to be correct.

With a chisel and curette the surfaces of the fragments were scraped and a slight amount of loose callus and some fibrous tissue was removed. By extension and traction on the foot, with some abduction, the trochanter was brought down so that the neck came in proper relation to the head of the bone, which was in the acetabulum. While the extremity was held in this position, an incision was made in the outer part of the thigh, directly over the external surface of the trochanter, and a long steel wire nail, freshly polished, was driven through the trochanter and neck of the femur into the head of the bone in its socket. The anterior wound gave full opportunity to guide the nail with the finger, so that one could make sure of its direction and proper fixation in the head of the bone; this is one of the most important parts of the operation. After driving the nail, the capsule was closed with two catgut stitches and the muscles and fascia approximated as carefully as possible. The anterior skin incision was closed without drainage with silkworm gut stitches, and the external incision, which was made to take the nail, was closed over the head of it. This was done to prevent any possibility of infection traveling down the nail shaft. The extremity was put up in a plaster of Paris spica bandage from the waist to the toes, great care being taken to hold the limb rigid and fixed in position during the application.

There was almost no reaction from the operation and no sign of wound infection. On the tenth day after operation, windows in the plaster were cut over the lines of incision and the stitches removed from both wounds, which were found to have healed by first intention. The plaster bandage was then reinforced. On Sept. 12, six weeks after the operation, the plaster of Paris bandage was taken off and the nail removed after cutting down upon and exposing it under cocaine anesthesia. It was pulled out with little difficulty. The union appeared to be firm at this time, but the plaster of Paris spica was re-applied. On the 28th of September, two months after operation, the plaster of Paris spica was removed finally and the patient allowed to lie in bed without any dressing. At this time the fracture had united firmly and there was motion in the hip joint, half flexion and some rotation, but abduction was slight. On the 1st of October he was up and about on crutches. On the

20th of October, less than three months after the operation, he was able to walk about as much as he pleased with his shoe built up somewhat.

It has been previously stated that before the injury his right leg was shorter and smaller than the other. The result of the operation has been that there is somewhat more shortening in the extremity than before the injury, and examination showed that union had taken place with the top of the trochanter higher than it was supposed to be when the fracture was put in accurate position and the nail driven. This may have been the fault of the technique at the time of operation, either in driving the nail or in holding the extremity in position while the plaster of Paris bandage was being applied. In this connection, however, Nicolaysen, whose experience in nailing this form of fracture is larger than that of any other man, although he does not use an open incision, has called attention to the fact that this recoil of the shaft is to be expected in nearly all nailing operations, because of the early absorption of the cancellous bone around the nail.

This young man obtained, however, perfectly solid union and a useful hip joint. The writer has had the opportunity to examine this case from time to time since the operation. When last seen, three years after operation, the result was very satisfactory. The patient thought that his leg was but slightly shorter than before the injury and that he had just as useful a limb.

The main points in the technique of the operation are as follows: Scrupulous preparation of the skin for a period of two days, if possible, before the operation, inasmuch as the anterior incision is near the fold of the groin; blunt dissection, with division of the capsule parallel to the fibers of the "Y" ligament; clearing of the fragments from callus and fibrous tissue; careful placing of the nail and suturing of the skin over the head of it; this is of the greatest importance to prevent infection and suppuration along the nail track; and the application of a strong and close-fitting plaster of Paris spica bandage while the extremity is held by a skilled assistant with a view to preventing any displacement. It has been found that an ordinary round wire nail with three-cornered point is superior to any form of ivory peg or screw.

As was stated at the beginning of this paper, the operation of pegging or nailing fractures of the hip is an uncommon one, but in most cases is a necessary procedure to secure union. The operation in this country has been done seldom in fresh fractures; surgeons have preferred in most instances to await the result of treatment by apparatus, and have chosen to operate only in cases in which such treatment was unsuccessful. The difficulty of determining whether or not a fracture is entirely intracapsular may have had something to do with this. The form of fracture in which union is least likely without such an operation is the complete intracapsular variety.

There has been much difference of opinion as to whether true bony union in unimpacted intracapsular fracture of the neck of the femur ever takes place without operation. Senn⁸ has written much to prove that such true union can take place. He collected fifty-four cases up to 1883 in which he thought that bony union could be proved. There is no doubt but that bony union has occurred and can occur, but the opinion of Kocher⁹ in regard to the subject is in all probability the most accurate. He thinks that pure intracapsular fractures are very rare, and that many of the cases that have been called such in the past are real intertrochanteric fractures which are partially extra- and partially intra-capsular, with more or less tearing of the capsule. He states that he had only seen ten cases in his experience up to 1895 in which a diagnosis of complete intracapsular fracture could be made. He admits that true bony union may take place, however, but very seldom. He regards most of the fifty-four cases reported by Senn as mixed fractures.

In all probability, the cases reported in which union resulted from treatment by position and bandages were cases of intertrochanteric fractures and not true intracapsular fractures. Since the days of the x-ray obviously there has been a chance to form more accurate opinions as to the location of the fracture and the comparative value of treatment. It seems rational to begin a fresh study of this subject with the aid of x-ray photography. The old difficulties of accurate localization of the fracture and uncertain proof of the kind of union in living cases no longer exist; the old figures as to the relative frequency of extra- or intra-capsular fractures are of comparatively little value to-day. It can be stated positively that true intracapsular fractures are very rare.

The first operation was done by von Langenbeck in 1858 with fatal result. Sir William MacCormac,¹⁰ speaking of this operation, stated that he had used pointed iron nails with good results; that Lister had had a similar case in which he was not successful in securing union; that König had repeated von Langenbeck's operation, using a silver screw with a successful result in every way. The method of these earlier operations was to make a small incision down to the trochanter and to drill more or less at haphazard through the neck of the femur, drilling and driving the nail or screw without the guidance of the eye or finger. The difficulty in this procedure is the uncertainty of getting the nail or drill into proper position and into the small and unsteady fragment of the head of the bone. The head is very difficult to keep steady during the boring or nailing, and to pierce it at the proper spot from without inwards, in the experience of the writer, is far from easy. The first operation in this country was done by Willy Meyer,¹¹ of New York, December, 1892. He used the von Langenbeck incision and used two nails; the operation resulted in union and a useful limb. The operation performed as outlined in the writer's case,

and the operation of choice by most surgeons, was suggested by Trendelenburg.¹²

Dr. A. J. Gillette¹³ has reported three cases in which this form of fracture was treated by the use of ivory pegs instead of nails, and with a different incision than the one adopted by the writer, namely, making a horseshoe-shaped incision, beginning it an inch below and an inch posterior to the anterior-superior spine of the ilium, carrying it down two inches below the trochanter major and bringing it up the buttock to about the centre of the gluteus maximus muscle; the skin, superficial and deep fascia are dissected *en masse*. A chain saw is then passed between the posterior border of the tensor vaginæ femoris muscle and the gluteus medius, hugging the neck of the femur and the base of the trochanter major, and is brought out between the posterior surface of the gluteus medius and anterior surface of gluteus maximus, thus sawing off the trochanter major and its muscular attachments, which are then turned back, making an exposure of the capsule of the joint; the line of the fracture through the neck of the femur can be easily seen. The surfaces of the fractured ends are denuded and a bone peg driven through the neck of the femur, thus holding the ends together. The capsule is then stitched with catgut, the trochanter major nailed with a small bone peg back to its original position, the skin and fascia flap is then sutured and a silicate spica applied. There can be no advantage from this incision; on the other hand it must be decidedly disadvantageous and dangerous to divide so many muscular attachments and to separate temporarily the trochanter from the rest of the femur; the simple anterior operation is all that is necessary.

Sayre, of New York, in discussing Gillette's paper and this radical incision, stated that he had made an anterior incision, freshened the ends of the bone, then pinned them together with a gimlet and two nuts. Parkhill¹⁴ suggested a modification of his well-known fracture clamps, but so far as can be ascertained these clamps have never been used. Davis,¹⁵ of Philadelphia, has used substantially the same method adopted by the writer in two cases with good results. Freeman reports a successful case and discusses the possibility of using clamps; he used a steel screw instead of a nail.

The work of Nicolaysen, in Norway, has been very successful and demands recognition. So far as known, the results of his work have not as yet been published in English. A study of his cases and results leads one to believe that his methods are deserving of frequent use in fresh cases of unimpacted intracapsular fracture. The method is specially noteworthy as applicable to fractures in individuals of advanced age. Nicolaysen has practiced this form of treatment at the state hospital in Christiana since 1894. He has reported, up to 1900, 21 cases, 8 males, whose ages ranged from thirty-nine to seventy-eight years, and 13 female patients, whose ages ranged from fifty to eighty-two years. The

results in all cases were satisfactory, a firm union and useful joint resulted. Nicolaysen states that the functional ability at the time of discharge from the hospital was so nearly normal in some cases that it was impossible to notice from the walk that there had ever been a fracture of the hip. Nicolaysen recommends this method as routine treatment in fresh cases because of the uncertainty of obtaining union by any other method and because of the length of time and suffering, especially to those past middle age, from treatment by apparatus. In most of his cases Nicolaysen used no anesthetic. It would seem as if the employment of anesthesia in these cases would facilitate the correction of deformity and permit easier handling of the limb by overcoming all muscular resistance. Nicolaysen's method is as follows:

After a thorough cleaning of the trochanteric region of the injured side, the patient is placed on the uninjured hip and a competent assistant, by manipulation and traction, draws the trochanter down into place. The operator directs this procedure until Burow's angle has been enlarged to a right angle. When this position of the trochanter by extension and abduction has been secured, a pointed steel wire nail about 15 cm. in length, starting from $4\frac{1}{2}$ to 5 cm. below the top of the trochanter, is hammered through the neck and through the head of the femur into the acetabulum. Nicolaysen states that there never has been any difficulty in pounding the nail in, and that a characteristic sound is elicited when the nail reaches the acetabulum. The end of the wire nail is covered with antiseptic gauze and a plaster of Paris spica bandage is applied from the toes to above the crest of the ilium. After three or four weeks a hole is cut in the plaster bandages over the wire nail and the nail is removed. It is stated that the nail was invariably found loose at this time. The plaster bandage is removed at the end of eight or ten weeks, but the patient is allowed to be up on crutches for some time previous. Burow's angle, which Nicolaysen refers to frequently and depends so much upon, is a special method of measuring used by him and also by Professor Heirberg of Christiana. By it, as Nicolaysen admits, no more information in regard to the position of the trochanter is obtained than by the application of the well-known Nelaton-Roser line and Bryant's ileo-femoral triangle. He believes it just as accurate, however, and much more readily applied and with much less disturbance to the patient. The angle under discussion is an angle formed at the top of the trochanter by a line from the anterior-superior spine of the ilium and a line from the middle of the crest of the ilium. With the trochanter in normal position, this angle should be a right angle.

A study of Nicolaysen's reported cases shows very successful results with no fatalities. It is noteworthy that the majority of his cases were advanced in years, most of them over sixty and a number between seventy and eighty years of age.

The following conclusions in regard to this form of fracture and its treatment can be made:

1. Fractures entirely intracapsular are very rare.

2. When they do occur and are unimpacted, the obtaining of union by any form of fixation apparatus is exceedingly doubtful.

3. The operation of nailing the fracture with or without open incision is to be adopted whenever possible.

4. In the young and middle-aged, when no contra-indications to operation are present, such as obesity, general debility, marked arteriosclerosis or complicating disease, the method with open incision is more accurate and preferable.

5. In persons of advanced age and those with definite contra-indications to surgical interference, the direct method without incision, as practiced by Nicolaysen, should be used in all cases if seen sufficiently early.

6. In employing the method of Nicolaysen, a general anesthetic should be given.

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A DIETETIC STUDY.

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THE statement has been so generally made that Americans eat too much, that most of us have resigned ourselves to whatever odium is connected with it and have ceased to try to be abstemious. Some dietetic studies of patients

who have declared that their dietary was about the same as in health and observations of healthy persons, have convinced the writer that this sweeping condemnation is scarcely deserved and that many persons in good circumstances and in fairly good health really ingest considerably less than the older standard ration.

Partly as a matter of convenience and partly because each one of us ought to make practical application of his theoretic knowledge of hygiene, the writer has made an approximate but sufficiently accurate estimate of his own dietary. It may be said that this dietary has been selected from a liberal though not elaborate bill of fare presented at a family hotel; that various circumstances, including a good cook and a good appetite, have tempted to overeating, and that the diet commonly followed was not influenced by scientific knowledge; and that, indeed, until the study was begun, the writer could not have guessed within a 50% error of the weights of the various viands eaten. This diet represents a slight restriction from previous habits of eating, on account of moderate increase of weight, and the only rule followed was the utterly unscientific and even unhygienic one of eating small quantities of plain foods that did not appeal particularly to the palate so as to allow freer indulgence in desserts, etc. It may also be said that, previously to the arithmetical computation, the writer had no idea as to how closely the diet followed the standards, either of the total number of calories or of the proportionate amounts of proteid, fat and carbohydrate.

BREAKFAST.

	Proteid.	Fat.	Carbo- hydrate.
1 shredded wheat biscuit,	3.	1.8	19.2
100 cc. cream,	3.5	20	3.5
Fruit, usually amounting to about 10 gm. fruit sugar and negligible amounts of proteid and fat. About twice a week, 1 banana about 40-45 gm. or 6 gm. proteid and 10 of carbohydrate,	1		10
2 cups weak coffee, including 100 cc. cream and 6 lumps of sugar, weighing, on the average 6 gm. each,	3.5	20	39.5
Approximate totals for breakfast,	11	42	72

LUNCHEON.

	Proteid.	Fat.	Carbo- hydrate.
Meat, 30 gm.	6	0.3	0.3
Bread, muffins, etc., about 40 gm. (1 ordinary slice bread equals 30 gm. Half of hard roll the same),	3.2	0.6	20
Butter (ordinarily, about 10% of bread),		10	
Potato (not always taken, sometimes exchanged for dumpling or additional bread. Counted as equivalent of small boiled potato, actual weight 50 gm.),	1		10
Fruit, 50 gm. about 20% sugar, in preserves, etc., or when sugar is added to taste,			10
Cake, pudding, etc. (counted as bread plus 10% sugar. Only rich cake eaten and this only occasionally),	3.5	1	30
Cocoa, 200 cc., corresponding to about 100 cc. milk and 18 of sugar,	4	4	22
Approximate totals for luncheon,	18	16	92

DINNER.

	Proteid.	Fat.	Carbo- hydrate.
Soup (difficult to estimate, broths, bouillon, etc., containing little nutriment, thick soups considerable),	2	2	10
Fish, 25 gm., meat, 25 gm. Both or only one used according to taste. Fat meat not used,	10	0.5	0.5
Potato, 50 gm.,	1		10
Peas, corn, string beans, egg plant, etc., about 30,	1	0.3	4