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**THE HISTORY OF
MEDICINE IN FINLAND**

1828-1918

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The History of Learning and Science in Finland 1828—1918

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military targets, including Sveaborg outside Helsingfors. The town of Helsingfors was not damaged. Certain precautionary measures had been taken, however. It may be mentioned that the collections of the University, including the anatomical collections, had been taken to a safe place in the countryside. Åland was occupied by the allies. Considerable Russian military forces, comprising in the end 68,000 men, were concentrated in Finland. The wounded and sick were mainly taken care of by Russian military medical officers, but some were treated at Finnish hospitals. The head surgeon of the Russian medical services was J. F. Heyfelder, former professor of surgery at the University of Erlangen. He had been relieved of office after serious conflicts with the University. Heyfelder was an experienced surgeon and a remarkable person, but he was inconsiderate and unpopular. He had good contacts with his Finnish colleagues in Helsingfors, however, and he took an active part in the meetings of the medical society. After the war the Russian authorities would have liked to see him offered a chair at the University, but this was successfully averted. Instead, those in power saw to it that J. v. Szymanovski from the University of Dorpat received an associate professorship for the surgical training of military medical officers. v. Szymanovski held this chair between 1858—1861 and then moved to Kiev, after which the professorship was withdrawn.

Among the Finnish military medical officers, mention must be made of the surgeon L. Krohn. He functioned as medical observer during the war between Prussia and Austria in 1866, and during the Franco-German war of 1870—1871 he worked at a German field hospital near Strasbourg. In an interesting letter³⁴⁵ to Estlander he reported his immediate impressions from this observation point. He was impressed by the German sanitary system; the French system was poorly organized. The French officers were flippant, the victorious German officers were conceited. The French were ignorant of the Red Cross sign and the Geneva convention, etc. Between 1882—1883 Krohn made a long journey abroad in order to study military hygiene.

The Finnish Guards fought with distinction in the war of 1877—1878 between Russia and Turkey. The sanitary conditions during the campaign were described by Winter³⁴⁶ and Wahlberg³⁴⁴. The Finnish unit suffered considerable losses in both fallen and injured, particularly in the bloody battle at Plevna. The morbidity was also relatively high, and after their return to Finland the Guards were struck by an epidemic of relapsing fever. A Finnish Red Cross association had been founded in 1877. As a first measure a field hospital was set up and sent to the frontier in the Caucasus, which was relatively quiet, however. The head of the field hospital, L. Krohn, was assisted by three young medical students: P. A. Bäckwall, F. Runeberg and E. E. Sundvik.

During the war between Greece and Turkey in 1897, the Red Cross sent a group of medical personnel to Athens, comprising, among others,

Hjalmar v. Bonsdorff and R. Faltin. The war came to an end, however, before this group had any opportunity to start functioning.

A medical unit fitted out by the Red Cross during the Russo-Japanese war of 1904—1905 ran a field hospital with 100 beds in Manchuria. The post as its head was first held by Lönnqvist³⁷⁴, then by Faltin^{145, 148}. Both have reported their experiences during the war. From a surgical point of view, the effects of the new small-bore guns and shells, wound infections and shots in the abdomen, etc., attracted special interest. A two-wheeled horse-drawn ambulance cart constructed in Finland (v. Wahlberg's carriage) was highly praised; it had previously been awarded prizes at international exhibitions in Moscow and St. Petersburg. About 600 such carts were in use in the Russian army in Manchuria.

During the First World War two Finnish Red Cross field hospitals were stationed at the front in Russia. One of these field hospitals had Faltin as head, while A. F. Hornborg was head of the other. The cost of maintaining this latter hospital had been defrayed by the Finnish industry. Hornborg³⁸⁸ published a report on his experiences of shot fractures in the femur and their treatment. Faltin devoted special interest to shots in the face and the treatment of fractures. These publications will be dealt with at greater length in the chapter on surgery. While working for three years in Lithuania, Faltin gained experience which made him Finland's greatest expert on war surgery.

The medical services during the civil war of 1918, principally those of the «white» army, were described by Hjalmar v. Bonsdorff.³⁷ Experiences of war surgery were reported by A. J. Palmén⁴²³, who worked as a medical officer at one of the Red Cross hospitals set up at Tammerfors, on the «red» side of the front.

Finally, a curious episode with a happy end, narrated by M. Schroderus⁴²¹, may be cited. In 1918 a man and his 28-year-old pregnant wife were walking in Viborg, which was then in the hands of the «reds». A shot was fired at them by a «red» guard. The bullet hit the husband, who was not severely injured, however, and passed through him into the wife, slitting the abdomen and the uterus so that amniotic fluid escaped. The couple was hastily transported to a hospital, where the «Caesarean section» was completed. Both the parents and the new-born mature fetus were saved. The condition of the mother was critical owing to peritonitis, but she pulled through with, among other things, the aid of four bottles of champagne.

while Runeberg, for instance, was of the opinion that an operation was indicated only if recurrent severe attacks, infection or other complications had occurred. At that time it was usual to show large gallstones to colleagues.

In 1906 Krogius³³ gave vent to his concern, because surgery for gallstones was so slow in getting a real start in this country — a fact probably to a great extent attributable to poor diagnostics. On this occasion Krogius advocated radical cholecystectomy and reported four cases which he, himself, had treated by this method during the period 1905–1906. This question was also dealt with in a survey by Ollonqvist (1907). In 1916 Hjalmar v. Bonsdorff³⁴ surveyed 100 cases. Different operative techniques had been used, depending on the circumstances. The number of cholecystectomies was 63; the first one was performed in 1900. In 11 of these cases cholecystectomy was combined with choledochotomy and drainage of the common bile duct. Of the cholecystostomies all but two were performed before 1905. The operative results were good, but of course not comparable with the results obtained today. The cases were often severe, and complications were common. Postoperative dilatation of the stomach, infections and cardiac failure were mentioned among the causes of death. Of the cholecystectomized patients, six died. Attention was also directed to the occurrence of chronic cholecystitis without the formation of stones. In 1917 v. Bonsdorff reported cases of biliary peritonitis without any perforation of the gallbladder and cases of gallstone ileus.

Urology

The urethra. Theses on urethral stricture were published by G. J. Ahlqvist (1840), L. B. Olsoni (1859) and J. A. Estlander (1859). In a survey J. G. Hård (1869) spoke of «the ingenuity of the surgeons» which had resulted in such a variety of treatment methods. K. F. v. Willebrand had been an advocate of treatment by galvanism in the 1840's, and this method was subsequently «re-discovered» in France. Pippingsköld (1874) and Saltzman (1875) reported their results with more modern methods. Einar Therman (1902) wrote on resection of urethral strictures.

Reconstruction of the urethra after traumatic injury was described by Pippingsköld (1884) and Saltzman (1890).

Prolapse of the mucous membrane of the female urethra was described by Engström (1888), Heinrichius (1888) and W. Sipilä (1898). E. Sandelin (1898) wrote on cancer of the urethra.

Atresia of the urethra and the treatment of this condition were surveyed by Gratschoff (1899) and Boije (1917). Some reports on various urethral disorders were published by the venereologists Hjelmman and Karvonen.

Plastic operations for urinary incontinence caused by dilatation of the urethra were described by Engström (1886). B. A. Henricsson³⁵ injected

80 ml paraffin into the tissues surrounding the urethra of a woman suffering from total urinary incontinence (1907).

The prostate. An excellent paper on the prostate and hypertrophy of this organ, based in part on his own observations, was published by F. Nylander (1853). Estlander demonstrated a case of markedly enlarged prostate with consecutive changes of the urogenital apparatus (1874). Some years later (1878) he recommended massage therapeutically in cases of chronic prostatitis. Otherwise the treatment of patients with prostatic complaints consisted of catheterization and, sometimes, suprapubic drainage; the inevitable outcome was sepsis or uraemia. In 1893, castration was suggested by Ramm and vasectomy by Mears. af Schultén published his experiences of these methods in 1897. His series consisted of 14 cases of bilateral castration and three cases of bilateral vasectomy. Although the effect was favourable in many cases, the operations were considered only palliative. The first total extirpation of the prostate via the perineum was performed in September 1902 by K. V. Nyberg⁴⁰¹ in Åbo. A larger material of prostatectomies was reported by Faltin⁴⁰⁶. Between 1903—1909 he performed 17 such operations, usually under lumbar anaesthesia. In 12 cases the approach was transvesical, in five perineal. The introduction of prostatectomy naturally considerably improved the prognosis of patients with hypertrophy of the prostate.

The urinary bladder and the ureters. Malformations and tumours of the bladder were mentioned by Homén, Estlander, Lindén, Boije, Engström, and others. By means of three plastic operations, Saltzman (1884) succeeded in reconstructing the wall of the bladder and, in part, the urethra in a 3-year-old boy with epispadias and ectopia of the bladder. Extirpation of cancer of the bladder was performed by Lindén (1888) and Saltzman (1890) with good primary results.

Diverticula of the urinary bladder and their treatment were described by Krogius (1912). He was also interested in surgery of the ureters and introduced (1902) a method for the treatment of ureteral strictures by resection and subsequent implantation of the ureter into the renal pelvis.³²⁴ In a later paper (1906) Krogius again discussed the method, the purpose of which was to avoid nephrectomy. Implantation of an injured ureter into the bladder or the colon was mentioned by Engström⁴¹⁰ (1914).

Desormeaux's endoscope, a precursor of M. Nitze's cystoscope of 1877, was demonstrated by Saltzman in 1866. The first ureteral catheterizations were performed by Faltin.

Injuries incurred during play, fight, work or copulation, sometimes under the influence of alcohol, were recorded. Hjelt & Runeberg (1881) reported on rupture of the urinary bladder in a 30-year-old woman who had one night had sexual intercourse with a gang of Russian soldiers. A case erroneously diagnosed *intra vitam* occasioned Faltin to survey the literature on ruptures of the bladder (1900).

pointed out that cystitis occurred without any catheter having been introduced into the bladder.

Lundström (1890) discussed the role played by microbes in the decomposition of urica and the development of cystitis.

In 1889 and 1890 Krogius studied urology at the department of Guyon and bacteriology at the department of Straus in Paris. His brilliant career as a urologist began by a description of the bacteria occurring in the urine²¹⁷ (1891, thesis 1892). He proved that the polymorphous bacterium called *Bacterium pyogenes*, which French authors (Clado, Albarran, Hallé) had demonstrated in the urine, was identical with *Bacterium coli commune*, described by Escherich and constantly occurring in the intestine. Krogius's priority to this discovery is indisputable. He identified also other bacteria in urinary samples: *Proteus vulgaris*, staphylococci, gonococci, etc. In 1894 Krogius²¹⁸ described the clinical picture of »bacteriuria» on the basis of eight cases, including one reported by Runeberg & Lundström (1891). *Escherichia coli* was encountered in the urine in all these cases. Krogius emphasized the characteristic, though not readily described, odour of the urine. He suggested that substances might be absorbed from infected urine which influenced the general condition and caused nausea, fever, etc. In the above-mentioned case report Runeberg had expressed his surprise over the patient's high fever. Two thoroughly studied cases of infection of the urinary tract by *Escherichia coli* were published by Rosqvist (1901), who also emphasized the fever and the generally deteriorated condition. »Bacteriuria» in children was first described by Clopatt and Lindholm (1896), later by Mellin (1902). At the time in question a distinction was made between »bacteriuria» — a term introduced by Roberts in 1881 — and »true» inflammation (cystitis or pyelonephritis). In a case of typhoid fever, *Salmonella typhi* was isolated from the urine by Krogius (1893).

Krogius's theories were opposed by the Danish surgeon Th. Rovsing. The differences of opinion culminated in a heated academic polemic of the unpleasant type in which the parties accuse one another of not being able to read (1899).

Faltin, also, devoted himself to the question of urinary tract infection. He spent some time studying at Kocher's department in Bern and at Guyon's department in Paris. During this period he prepared his thesis (1896), which implied an experimental approach to the question of whether *E. coli* could migrate directly from the rectum into the urinary tract. In his eccentric autobiography Faltin gave an account of the difficulties encountered during this work and of his own deep dissatisfaction with the result. He later returned to the same problem (1901, 1902). The question of the elimination of bacteria through the kidneys was experimentally elucidated by Streng (1902).

Initially, the treatment of urinary tract infections was based on irrigation of the bladder with antiseptic solutions. The most popular solution was

certainly not many who took an interest in and were skilled in fracture treatment. The situation was particularly precarious in the case of complicated fractures. It may be assumed that these usually resulted in osteomyelitis or septicaemia, for which amputation was performed. An exceptional case was described in a thesis by L. I. Ahlstubbe (1840): a complicated injury to the humerus healed after resection of the destroyed head of the humerus, performed by L. H. Törnroth.

As a result of the inadequate fracture treatment, pseudarthroses were frequent. Estlander (1872) reported a case in which he had inserted Dieffenbach's ivory wedges into the false joint. Hjalmar v. Bonsdorff (1895) described a similar operation: the pseudarthrosis was resected and an ivory cone was introduced into the marrow cavity; the result was favourable. Sixteen cases of pseudarthrosis of the long bones, treated at the Surgical Department between 1859—1893, were published by Faltin¹⁴¹ (1894), who also laid down the principles of treatment.

About 1910 fracture treatment began to attract the interest of surgeons all over the world. This was commented upon by Faltin (1911) as follows:

«It is a remarkable sign of our day that fractures, which were seriously neglected during the years when abdominal surgery made its most rapid advances, have lately attracted steadily increasing attention . . . This seems to be attributable in the first place to Röntgen's discovery, and to accident insurance . . . Moreover, doctors . . . can never hope to be spared the treatment of fractures, for as long as the world stands and the force of gravity prevails, mankind will go on breaking their arms and legs. This contrasts to the situation prevailing with regard to, for instance, inflammatory diseases and malignant tumours, for which, at least, a theoretical possibility exists that they once and for all will cease to be the concern of surgery.»

Faltin was an eminent advocate of improved fracture treatment. He pointed out that the people sustaining fractures were mostly young and needed sound limbs during the time in store for them. In 1913 Faltin gave an account of the results of fracture treatment in the light of statistics obtained from the insurance companies; the law defining the responsibility of employers for physical injury sustained by employees had come into force in the beginning of 1898. Compared to the reports published in international medical literature the results were very favourable. It may be mentioned that Finland was one of the first countries introducing compulsory accident insurance. The start was made in Germany (1884), Austria followed next (1887), and then Norway (1894). Finland came fourth, having the Act in question ratified in 1895.

Fractures were treated by the application of splints and supporting bandages of various kinds. The plaster bandage was demonstrated by v. Willebrand in 1854; it had been introduced by A. Mathijssen and van der Loo in 1851 and was improved by N. Pirogoff, who used it extensively during the Crimean War. Treatment by traction as described by B. Bardenheuer was adopted in the beginning of this century. Moreover, increasing use was made of osteosynthesis. This was the theme of a paper by Wetter-

strand¹⁴⁸ (1914), based on experiences of the method tried at the Maria Hospital and on radiographic evidence. Ollonqvist¹⁴⁹ (1914) described plaster splints and their application.

Working as the head of a field hospital on the eastern front during the First World War, Faltin had ample opportunities for developing his technique of fracture treatment. He introduced cardboard splints, which proved useful not only as first-aid bandages but also for more permanent use, especially in the form of abduction splints for the upper arm; for these, the soldier humour coined the name of «aeroplane», which has been used ever since.¹⁴⁹ These splints were also useful in the postoperative treatment of breasts. Krogius (1918) described a splint bent at an angle for the knee, intended for the treatment of femoral fractures.

Fractures of the skull attracted attention relatively early. Several complicated cases were published by af Schultén between 1887—1891. The fractures were reduced with good results and wound healing was uneventful. Saltzman also contributed two cases. K. Edgren (1896) described a successfully treated case in which the fracture had caused a rupture of the middle meningeal artery. A thesis by Artur v. Bonsdorff (1906) dealt with fractures at the base of the skull.

Krogius¹⁵⁰ (1907) described an ingenious method to elucidate the rather intricate mechanism of skull fractures: he demonstrated the course with the aid of a nut and nut-crackers.

A fractured cervical vertebra healed and the partial paralysis caused by this lesion subsided after traction treatment in a case reported by Lindén (1897).

The treatment of fractures of the jaws was a particular problem. Estlander (1873) reduced a mandibular fracture after tenotomy of certain muscles with a mandibular insertion (the genioglossus muscle and the geniohyoid muscle). A soldier wounded during the Russian-Turkish war received a caoutchouc prosthesis constructed by the dentist S. C. Bensow (1878). Later, prostheses for the treatment of fractures of the jaw were constructed by the dentists T. Weber (1882), M. Åyräpää (1890), G. Hahl (1898) and Hjalmar Avellan (1917). Faltin was very interested in surgery of the jaws and in 1915 and 1916 reported on cases of shot fracture of the mandible treated by an extension bandage and temporary prostheses.^{150 151} These experiences proved to be of essential importance for the future development in this field.

Osteomyelitis. The younger generations of doctors hardly know the concept of osteomyelitis, but formerly this disease was a serious problem, not least in the sector of war surgery. The first bacteriologically examined cases in Finland were published by af Forselles in 1894.

af Schultén^{152 153} developed a method of osteoplasty which attracted much attention: the cavities remaining after the removal of sequestra and necrotic masses were filled with bone-periosteum-skin grafts (in the tibia) or muscle-periosteum grafts (in the humerus and femur). About 155 such

operations were performed between 1893—1898. The methods of primary operative treatment of osteomyelitis were gradually improved, and the need of extensive, complicated plastic operations was thus reduced.

A case of «osteomyelitis epiphysaria multiplex acuta» with shedding of numerous epiphyses, pyaemia and a fatal outcome was published by af Schultén (1877).

Osseous tumours. A number of not very interesting case histories dealt with osseous tumours (osteoma, osteosarcoma, cysts). Osteitis fibrosa was described by Krogius (1913) and Langenskiöld (1918). The parathyroid etiology of this disease was not yet known at the time in question.

Arthropathy. On the whole, joint diseases were poorly understood before 1918, which is in part explained by the lack of adequate roentgen-diagnostic methods. The nomenclature was confusing: it varied from country to country. Cases which today would be diagnosed as ankylosing spondylitis were published under a variety of names (by Holsti, Homén, Sivén, and others). The same was true for cases of juvenile arthropathy, which were described by Runeberg, G. Schnitt, and others. A patient evidently suffering from Still's disease was described by Pipping (1902); the generalized enlargement of the lymph nodes caused great amazement.

An exhaustive investigation on ankylosis of the jaw joint and the treatment of this condition was published by af Schultén¹²² (1878). A case of bony ankylosis of the jaw joint was operated for the first time in 1902 by Sandelin, using Helferich's method of inserting a graft from the temporal muscle. Operative mobilization of ankylosed joints was adopted by Falin in 1914 and somewhat later by Kalima.¹²³

Tuberculous arthropathies were common, of course. A plaster corset for the treatment of tuberculous spondylitis was introduced by Sayre in 1877; a modification of this, which could be removed, for example, at night, was proposed by E. A. Hillbom (1886). A modification of Phelps's «wooden cuirass» was mentioned by Saltzman¹²⁴ (1888). The treatment of tuberculous spondylitis by protracted immobilization in a plaster bed was described by A. F. Hornborg (1904).

A thesis by Hjalmar v. Bonsdorff (1888) dealt with tuberculous coxitis. In an introductory paper read at a congress of surgeons in 1909, v. Bonsdorff laid down the principles for the surgical treatment of this disease. For the treatment of tuberculosis of the ankle, af Schultén (1897) recommended radical resection of the tuberculous focus without amputation.

Dislocations. A paper by Kocher (1877) on luxations of the shoulder and hip joints apparently became normative for the treatment of these lesions. During the subsequent years numerous case reports on unusual types of luxation of different joints were published. Today they are no longer of any particular interest.

A thought provoking report was on the other hand published by Krogius¹²⁵ (1904), describing a method he had developed for the treatment of habitual patellar dislocation. This method was adopted in many parts of

the world. A technique for the treatment of habitual luxation of the shoulder joint was developed by A. J. Palmén⁴²¹ (1917).

Kalima⁴²² recommended the reduction of dislocated joints as well as of fractures to be performed under local anaesthesia (1914, 1916).

Joint mouse. Formerly, arthrotomy for joint mouse in the knee joint was considered a highly dangerous operation. There was a mortality of about 20 per cent due to infection of the joint cavity followed by septicaemia. Many surgeons preferred amputation to arthrotomy in the treatment of this relatively innocent disorder. Saltzman (1885) reported two and af Schultén (1887) three successfully operated cases. Anaesthesia was considered contraindicated because it was believed that the location of the joint mouse could be altered during the «phase of excitement». However, Saltzman applied «pulverized ether» locally and af Schultén used cocaine, which had only recently been introduced, and light chloroform anaesthesia. Conservative treatment of dislocated menisci was mentioned by Saltzman (1882) and af Schultén (1883).

Amputation. Joint resection. Exarticulation. Chronic suppurative arthropathies, probably in most cases tuberculous and resistant to any kind of treatment, often forced the surgeons of these early times to perform extensive, mutilating operations. Resection of the distal portion of the tibia and exarticulation of an upper extremity were demonstrated by Törnroth as far back as 1847. Theses on amputations were published by K. F. v. Willebrand (1840) and S. T. Hällström (1853), dissertations on joint resections by v. Becker (1859), G. W. Strengell (1860) and Saltzman (1870). Estlander (1875) mentioned the resection of a knee joint, which appears to have been the first operation of this kind performed in Finland. During the Crimean War, J. F. Heyfelder carried out amputations and exarticulations on wounded Russian soldiers with a rashness that took the breath away from his Finnish colleagues. In the winter of 1881 Estlander and af Schultén resected eight hip joints for suppurative coxitis. They recommended surgery at an early stage of the disease. One of their patients died of amyloidosis and another showed severe proteinuria. In connection with the resection of an ankle joint reported in 1889, Saltzman discussed the longitudinal growth of the extremities. K. O. Bonde mentioned in a letter from Germany, written in 1894, that the resection of joints was criticized by many German surgeons. However, this method of treatment was apparently not abandoned.

Orthopaedic procedures. In an article of 1903 Faltin⁴²³ wrote on orthopaedics in the same spirit as he did when he passed the comments on fracture treatment cited above:

«In Finland, just as in other places reached by the waves of civilization, light has been shed in turn on all kinds of ovarian cysts, uterine myomata, hernias, chronic appendicitis, etc., and these disorders have been prosecuted with great zest. It seems to me that it is now high time to think also of all the lame and disabled in this country.»

However, the «lame and disabled» had not been entirely neglected before. Saltzman took an interest in orthopaedic cases and, in 1881, wrote on the treatment of congenital pes equinovarus by excision of a wedge of tissue from the tarsus. In 1889 he reported on a case of severe injury to the foot, in which a good result was obtained by Wladimiroff-Mikulicz's osteoplastic operation (a modification of Pirogoff's osteoplasty). In the same year af Schultén published a series of reports on cases in which he had performed osteotomies, wedge resections, etc., for deformities of various kinds, arthrodeses for paralysis of the lower extremities (probably resulting from poliomyelitis), operations for hallux valgus, arthrectomies, etc. The majority of the patients were children or adolescents. Congenital dislocation of the hip joint was treated for the first time operatively in 1900 and conservatively in 1904.¹⁵² The paper by Faltin¹⁴⁹ cited in the beginning of this section dealt with the transplantation of tendons (and with plastic tendon operations on the whole); its purpose was to stimulate medical colleagues to refer patients for treatment in whom this kind of rehabilitation had a chance of success.

The first autoplasmic bone transplantation in Finland was performed by Hjalmar v. Bonsdorff in 1914. The basal phalanx of a thumb destroyed by tuberculous osteitis was replaced by the basal phalanx of the second toe. The operative result was illustrated by excellent roentgenograms.

In 1890 a society for the aid of the disabled was founded by private initiative; among other things the society maintained a school for disabled children. The board of the society counted Hjalmar v. Bonsdorff and his brother-in-law Sievers among its medical members. An outpatient clinic was established in 1900. The orthopaedic treatment of its patients was given mainly by v. Bonsdorff at the Deaconess Hospital. During the period 1904—1915 Hornborg was in charge of the society's activities, and the care of the disabled derived great benefit from his arduous work. The patients represented mainly the following groups: congenital malformations, accidents, tuberculosis, poliomyelitis, and cerebral lesions. Hornborg published a paper on the treatment of coxa vara in adolescents. Furthermore, it may be mentioned that about 1910 J. Grönberg was in charge of an orthopaedic outpatient clinic for children of school age in Viborg; on a limited scale, this also was a pioneering contribution. Scoliosis and sequelae of rickets proved to be particularly common. At an examination performed in a school, Grönberg found that 48 per cent of the pupils had postural defects (thesis 1906).

Since those days there has been a very remarkable development. Orthopaedics has become a medical speciality and orthopaedic care is today of great social importance.

Plastic surgery

An exhaustive survey of the history of plastic surgery in Finland was published by Faltin¹⁵² (1935, 1937). It also comprised a survey of the

development of orthopaedics. As a medical student Faltin had already been struck by the fact that when the name of a compatriot was occasionally mentioned in a textbook on surgery, it was only in connection with two plastic operations: Estlander's thoracoplasty, mentioned in the foregoing, and his cheiloplasty. af Schultén's name has also been handed down to posterity in connection with certain operations (cf. below). Faltin, who regarded himself as a pupil of af Schultén's, mentioned that the latter was highly admired by his colleagues for the ease and dexterity with which he solved problems of plastic surgery.

In the following only plastic operations on the face as well as skin transplantations will be dealt with. Even during the preantiseptic era operations on the face were performed in spite of the primitive conditions prevailing. The chances of success were not too bad owing to the rich vascularization of the face, which reduced the risk of infection. Moreover, this kind of surgery was in many instances urgently required: faces disfigured by cancerous ulcers, syphilis, tuberculosis or noma were common at the time in question. It was important to do all that could be done to facilitate the social adaptation of these unfortunate people.

Cheiloplasty. As far back as 1835, when the Surgical Department had recently been opened, a cheiloplasty was performed for cancer and another for harelip. By 1875, 98 cheiloplasties had been performed; of these, 68 were performed during Estlander's time. The principle of his method¹²⁷, described in 1872 and 1874, was to compensate for the defect in one lip with material from the other. This operation was also described by A. Hårdh (thesis 1872, 1882). A method for the treatment of severe defects was developed by af Schultén¹²⁸ (1893); the margin of the lower lip, which had been restored in one way or another, was covered with a bridge-shaped graft of mucosa from the upper lip. The result was often both cosmetically and functionally excellent. Sandelin¹²⁹ improved the method further (1901—1904) by combining it with Morgan's «visorplasty». Other techniques were also tried, for example by Faltin.

Cheiloschisis. Palatoschisis. By 1917, about 500 patients, both children and adults, had been operated upon for these malformations. A staphylorrhaphy was performed by L. H. Törnroth as early as 1852. In the 1860's Malgaigne's method was adopted. Later, Mirault-Langenbeck's technique was employed, and after 1896 Hagedorn's operation was performed, usually in two successive operations. The first complete operation (lip and palate) was carried out by Estlander in 1866. In 1902 Sandelin operated on a child aged 1 1/2 years in one session, which was considered very bold. Syphilitic defects of the palate were also corrected. Some kind of prosthesis for such a defect in an 18-year-old girl was mentioned as far back as 1839. Later, Åyräpää — and before him the dentists Bensow and Weber — devoted themselves to prosthetic treatment.

Rhinoplasty. A paper on rhinoplasty was published by the Frenchman Labat in 1834. His methods were widely used in Finland. The first rhino-

plasty in Helsingfors was performed in 1837, probably by C. D. v. Haartman. Another four rhinoplasties were performed during Törnroth's time, and during Estlander's time, up to 1875, 12 such operations were performed. The most usual indication was destruction of the nose by syphilis, lupus or rodent ulcer. A nose reconstructed by Estlander in 1873 in a case of lupus was demonstrated by Krogius in 1906. A remarkable contribution in this field was made by Åyräpää. He usually worked with prostheses, but he also reconstructed saddle noses by operation. In a monograph (1906) Åyräpää⁸ discussed both operative rhinoplasty and the treatment by internal and external prostheses, paraffin injections, etc. Cases of lupus of the nose were treated by total extirpation, abrasion or cauterization with Paquelin's thermocauter, after which reconstruction of the nose was attempted, or the defect was as far as possible covered with Thiersch's grafts. Recurrences were common, however, as appears, for instance, from a follow-up investigation performed by O. Tawaststjerna (1898). Krogius (1911) attempted to reconstruct a nose with a chip of bone obtained from the sternum. Later, the so-called Italian rhinoplasty was adopted, for example by Faltn, who devoted great interest to this question.

Skin transplantation. Disfiguring scars, neglected burns, varicose ulcers, etc., called for attempts to undertake autografting of skin. The first operation of this kind was performed by Törnroth, in 1839. Cases in which the upper arm had been fused to the trunk as a result of an extensive burn were typical. During Estlander's time skin grafting was carried out by Reverdin's method, which was introduced in 1869. Saltzman adopted Thiersch's method in 1887, one year after it had been published. The first 24 cases treated by this method were published by v. Bonsdorff in 1890. Eklund (1911) recommended fixation of Thiersch grafts by means of a wide-meshed fishing-net steeped in celluloid solution. Åyräpää (1891) made the unusual attempt of covering skin defects with frog's skin. Skin grafting as described by Krause-Wolfe was adopted in 1896. A survey of the results in cases of varicose ulcers treated by transplantation by the «Italian method», by Thiersch's method and by Krause's method, respectively, was published by Tallqvist (1897).

Miscellaneous. A case of microgenia, treated by v. Eiselsberg's method, was demonstrated by Hjalmar v. Bonsdorff (1908).

Blepharoplasties were performed as early as the 1830's. Operations for severe cicatricial shrivelling were described by v. Weymarn (1895), Silfvast (1905) and Jusélius (1906, 1907). Jusélius recommended a method introduced by Snellen and modified by Wahlfors.

Neurosurgery

During the time covered by this history no regular neurosurgical service existed. Operations were performed when the need arose. In 1894 a case of sensory aphasia following a trauma was treated by Krogius with remark-