

Erik Moberg

1905–1993

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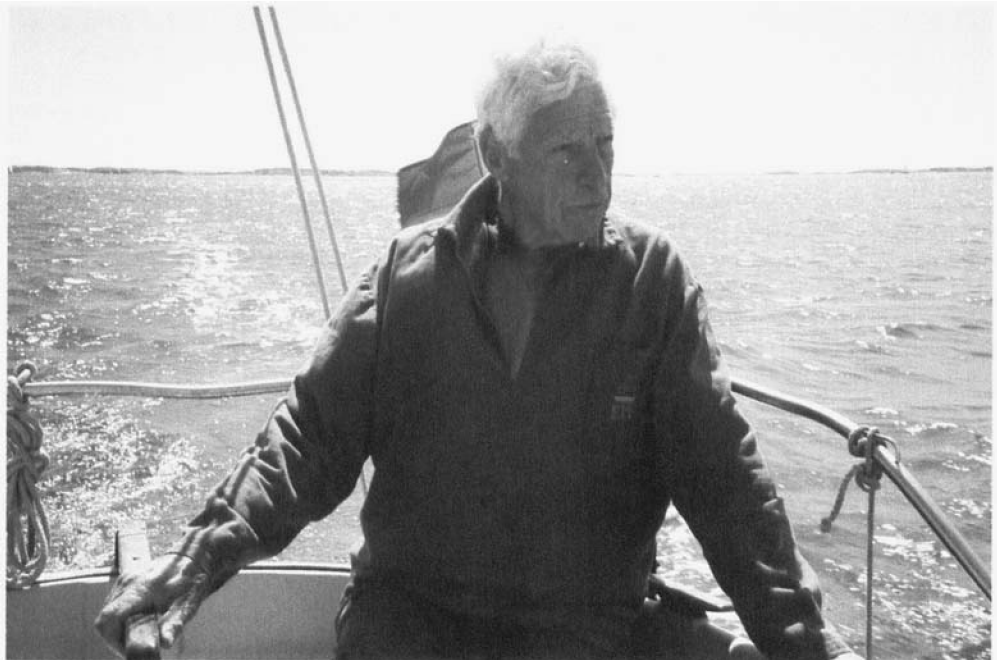


Figure 1. Erik Moberg sailing at age 85. Photography by Carl-Göran Hagert.

On February 14, 1993 Erik Moberg, Göteborg, Sweden, passed away at the age of 88. He was born on January 5, 1905, in the old university town Lund, where his father was Professor in semitic languages and for 10 years the Dean of the University as well. Erik Moberg graduated from the Faculty of Medicine, University of Lund, in 1932 and had his first position as doctor 1932–33 in Persia. There he met a young Swedish nurse, Märta Jenner, and back to Sweden they got married in 1934. After his dissertation on kidney function experiments at the University of Lund in 1936, he began training in general and orthopedic surgery at the University Hospital. In 1942 he moved to the Department of Surgery at the Sahlgren Hospital in Göteborg. Here he came to lead the development of, particularly, hand surgery but also fracture surgery in general.

For all time Erik Moberg will be associated with the establishment of hand surgery in Sweden and in Scandinavia. The American surgeon Sterling Bunnell (1882–1957), the father of hand surgery, promoted the idea that hand and arm injuries instead of being split between orthopedic, plastic and neurological services should be assigned to surgeons, who would care for the whole problem and treat the patient, regardless of which anatomic structure had been severed. Through this concept, hand surgery became a new discipline in America in the early 1940s. Erik Moberg began to treat hand injuries early on according to the new rules, which today are still valid—bloodless field, atraumatic technique for meticulous mechanical wound debridement and repair, irrigation, adequate immobilization and prevention of postoperative edema. In April 1946, he could present a consecutive series of hand injuries,

which had all healed primarily without infection. This was a remarkable breakthrough. In 1947, Erik Moberg spent several months with Sterling Bunnell and other hand surgeons in U.S.A., and back at the Sahlgren Hospital he established the first hand surgical ward in Scandinavia. On June 30, 1951 he formed the Nordic Hand Club, which today is the Scandinavian Society for Surgery of the Hand—the first hand society to follow the American Society for Surgery of the Hand, which had been initiated by Bunnell in 1946. In 1968 the International Federation of Societies for Surgery of the Hand, IFSSH, was formed, and Erik Moberg was elected the first president. He also delivered the first Sterling Bunnell Lecture to the American Society for Surgery of the Hand when this series was instituted in 1962. In 1969, Sweden was the first country in the world to have hand surgery recognized as a separate specialty. At the Third Congress of the IFSSH in Tokyo in 1986, Erik Moberg was named Pioneer in Hand Surgery.

Moberg expressed an early interest in fracture surgery. When he began his work in Göteborg, all fracture cases were treated by the general surgeons as elsewhere in the country and mixed in the wards with patients having all kinds of surgical diseases, even infected cases. As over the years he gained confidence as a hand surgeon, he also gained confidence in the idea of having the fracture cases treated in a separate ward, in order to reduce the risk of infection and to train some surgeons specifically in fracture surgery. Eventually, in 1956, he obtained his own department with a personal professorship in Extremity Surgery, and in 1958 in Hand Surgery. In October 1959, the Department of Extremity Surgery became fully established at the Sahlgren Hospital with 90 beds in 4 wards, 4 theaters in a separate operating ward, a separate out-patient clinic and a staff of 8 surgeons. All fracture cases from Göteborg, with surroundings were treated at this department, along with all hand cases from the city as well as from the whole western part of Sweden. Fracture surgery and hand surgery grew up under the leadership of Erik Moberg.

Hand surgery had a great impact on fracture surgery as a whole. Moberg strongly emphasized the importance of recognizing the soft tissue injuries along with the fractures. Nerve function, circulation, muscle crush, skin condition—all of this should be thoroughly assessed and recorded in the chart. A full and detailed examination should always precede the radiographic examination. He always pointed out the multiplicity of traumas with the constant remark to us young doctors *Don't stop examining the patient until you have at least 5 diagnoses!* Open reduction should be done with a minimum of surgical exploration, using the

atraumatic hand surgical technique, the internal fixation should be performed with an absolute minimum of osteosynthetic material, mainly aiming to preserve the exact reduction while the definite fixation was accomplished by a plaster cast. All casts were applied by the surgeon himself and were carefully controlled by Moberg every ward round. The postoperative physiotherapy followed strict and simple rules, mainly aiming to prevent edema. The physiotherapists always took part in the ward rounds.

In the early 1960s, when Carl Hirsch became the head of the Department of Orthopedics at the Sahlgren Hospital, no acute fracture surgery was carried out in that department. Some people certainly feared upcoming conflicts. However, based on mutual respect, Hirsch and Moberg reached a close and fruitful collaboration. The Department of Orthopedics under Hirsch was now more and more involved in trauma, and finally, in 1969, two new orthopedic departments of modern design were formed: Departments of Orthopedic Surgery I and II with the trauma cases distributed equally. Moberg became Ordinary Professor in Orthopedic and Hand Surgery at the University of Göteborg. What had just been a dream 20 years earlier was now accomplished, and today no one would even think of an orthopedic department without full responsibility for trauma and fracture surgery. Moberg played, beyond a doubt, a significant role in this development.

Moberg was an excellent clinician and we, his disciples, can testify to his great concern and devotion. He had a most impressive examination technique based on the functional anatomy, whether he examined the shoulder-arm-hand or the hip-leg-foot. Moberg was a great anatomist. He ultimately relied on his clinical observations, and requested radiographic and laboratory investigations quite often just to confirm his diagnosis. At surgery, he solved the problems in a rational way and he was highly devoted to the postoperative care. He could spend a long time with the patient demonstrating how the hand, for instance, should be trained and, while talking and teaching, he himself manufactured the necessary training devices out of the cheapest material available—plaster of Paris, rubber bands, tape, and paperclips.

Moberg published books and articles over a period of more than 60 years. His contribution to hand surgery is immense and only some parts can be mentioned. Stiffness of the hand is a feared complication following hand injuries as well as elective hand surgery. In 1951, Moberg coined the term shoulder-hand-finger syndrome for this condition, and in 1955 he stated that it has 2 components—a shoulder component and a hand-finger component. In his opinion the central feature in the pathogenesis is a disturbed

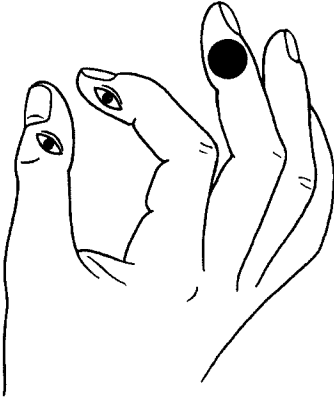


Figure 2. *The seeing fingers*. First published in Moberg's Swedish textbook *Akut handkirurgi*, reprinted in J Edward Flynn's *Hand Surgery*, 2nd ed, The Williams and Wilkins Company, Baltimore, 1975.

pumping mechanism in the arm. An immediate promotion of the circulation would therefore diminish the risk of stiffness of the hand. This concept was convincingly proved by Frykman in his thesis in 1967. Since then all patients, who are up for hand surgery, are given careful instructions both pre- and postoperatively as to how the full shoulder elevation and the finger motions should be performed.

The sensory function of the hand interested Moberg all his active life, and he will for ever be considered the great pioneer in this field. His favorite picture showed a hand, with one eye on each finger pulp (Figure 2), he emphasized that *a finger without sensibility is functionally amputated*. He worked extensively on how to examine and evaluate sensory function, and his 2-point discrimination test is used today world-wide. He recognized that the hand is not only a mechanical organ but, in particular, a sensory organ through which we express our emotions and create contact with other people. He also studied what role the sensibility of the skin plays in the postural sensibility. He emphasized that it is the afferents that initiate and regulate the efferents, in other words guide the grip.

In 1971, when newly retired, Moberg started to work on the surgical rehabilitation of patients with tetraplegia. This was a most remarkable effort, and it came to last for the remaining 21 years of his life. With the exception of the last couple of years, he regularly took an active part in the ward rounds and conferences at the Neurorehabilitation Clinic as well as in the operating room at the Hand Surgery Division at the Sahlgren Hospital. He specifically trained 2 hand surgeons in Sweden to specialize in this branch of sur-

gery, and he helped them establish the 2 centers Sweden has today, namely in Göteborg and Umeå. On his initiative, an international society for tetraplegic surgery was formed, where he participated actively in all conferences. He lectured—literally speaking—all over the world on this subject. His extensive monography (1978) on tetraplegic surgery is today considered a bible and, in addition, he published a large number of articles, the last one as late as 1992. He had a classification system worked out, defined the indications and described different surgical techniques—like restoration of elbow extension and the key grip. He used to quote his own teacher in hand surgery, Sterling Bunnell: *For those who have nothing, a little is a lot*.

Erik Moberg was a talented teacher, who could in a simple way explain even the most complicated things. More than one thousand medical students have listened to him, and hundreds of young surgeons have carried his little book, *Emergency Hand Surgery*, in their pocket while serving in the emergency room. Over the years, he trained many orthopedic surgeons and hand surgeons from Sweden as well as from other countries, primarily the United States. A large group of well known and highly respected American hand surgeons today consider Moberg their mentor, and they have established the Moberg Hand Club in order to get together.

Erik Moberg had many interests besides medicine. He had a good knowledge of archeology and ancient cultures, and he was an expert on butterflies. He was a devoted sailor who, unlike most other sailors, loved to sail late in the fall or even in the middle of the winter. His ketch *Gefjon*, originally an old fishing boat built 1918, became famous among hand surgeons and orthopedic surgeons from all over the world and carried many distinguished guests for informal meetings.

A presentation of Erik Moberg and his exceptionally rich and productive life would just be half without mentioning his Märta. She faithfully stayed at his side for 53 years. She passed away in 1987. She was a warm and empathetic person of high integrity. Beyond a doubt she mentored more to her husband than can be properly understood by anyone. She kept the family of one daughter and two sons together as well as she opened the home for an innumerable number of visitors. We, doctors at the clinic, no matter we were newcomers or more senior, and our wives were regularly invited to the Mobergs once or twice a year. Märta was not then just an excellent hostess, she became a "mother" for us and she particularly cared of our wives. Thanks to Märta the staff became a family. She accompanied her husband as much as possible when he travelled, and particularly in the later days Erik and Märta were

inseparable. Their names became synonymous with unity.

We, his disciples, will always remember an outstanding teacher. More than so, however, we will also together with so many people from so many different countries remember Erik and Märta as our good friends who cared for us—our work, our projects and our families.

Bibliography

- Moberg E. Anzahl und Grösse der Glomeruli renales beim Menschen nebst Methoden, diese zahlenmässig festzustellen. *Zeitschrift für mikroskopisch-anatomische Forschung* 1929; 18 (3/4): 271-310.
- Moberg E. Experimentelle Untersuchungen zum Problem des Schlafes. *Acta Psych Neurol* 1929; 4 (1): 1-46.
- Moberg E. Eine Methode zur unblutigen Bestimmung des Blutdruckes bei der Ratte. *Scand Archiv Physiol* 1934; 64: 218-26.
- Moberg E. Kemoterapien vid malaria och erfarenheter med de syntetiska antimalariamedlen plasmochin och atabrin. *Hygiea* 1934; 96 (20): 44.
- Moberg E. Über die sog. kompensatorische Nierenhypertrophie nebst Studien zur bestimmung der Leistungsfähigkeit der Niere. Experimentelle Untersuchungen an der Ratte. Lund 1936. Håkan Ohlsson Buchdruckerei. Doctoral Thesis.
- Moberg E. Två fall av vänstersidig appendicit vid situs inversus totalis. *Nord Med* 1939; 1:58
- Moberg E. Synpunkter beträffande malaria av praktiskt intresse för de nordiska länderna. *Nord Med* 1939; 2: 1727.
- Moberg E. En enkel bordskonstruktion för den extraartikulära osteosyntesen av de mediala collumfrakturerna. *Nord Med* 1940; 8: 2317.
- Moberg E. Eine einfache Tischkonstruktion zur extraartikulären Osteosynthese der medialen Schenkelhalsbrüche. Fortschritte auf dem Gebiete der Röntgenstrahlen 1941; 63 (4): 225-28.
- Moberg E. Krigskirurgiska erfarenheter från en Tysklandsresa september-oktober 1940. (Lecture presented at the Lunds Läkaresällskap Nov 26, 1940). *Nord Med* 1941; 9: 786-99.
- Moberg E. Zur Frage der Wundheilung bei komplizierten Frakturen der langen Röhrenknochen. *Acta Chir Scand* 1942; 86: 43-66.
- Moberg E. Die Corticalisosteoiden, ein differentialdiagnostisch interessanter Typus von lokalisierter Skelettveränderung. *Arch Clin Chir* 1941; 202 (3): 553-79.
- Moberg E. Beträffande tillsatsbord för spikning av collumfrakturer. *Svenska Läkartidningen* 1943; 25: 1-4.
- Moberg E. En översikt av tryckluftverktygens och likartade maskiners betydelse för uppkomsten av sjukdomstillstånd i extremiteterna. *Svenska Läkartidningen* 1943; 26: 1-13.
- Moberg E. Något om njurfunktionen ur kirurgisk synpunkt och möjligheter att bestämma njurarnas reservkapacitet. *Svenska Läkartidningen* 1943; 33:1-11.
- Moberg E. Kirurgiska synpunkter på njurarnas reservkapacitet. *Nord Med* 1943; 20:1965.
- Moberg E. On the operative therapy and prognosis in fracture of the patella. *Acta Chir Scand* 1944; 90: 295-316.
- Moberg E. Prognos och terapi vid patellarfrakturer. *Nord Med* 1943; 20: 1975.
- Moberg E. Vätskebalans, urinkontroll och de odelade lasaretten. *Nord Med* 1944; 21: 412.
- Moberg E. Praktiska synpunkter beträffande malaria. Internationellt Hjälparbete (utgiven av SLIH. Svenska Läkarens Förening för Internationellt Hjälparbete och SISU. Samfundet för Internationell Samhällsstudium och Uppbyggnadsarbete) 1944; 1 (2): 1-19.
- Moberg E. Några synpunkter på senkirurgi i handen. *Nord Med* 1945; 25: 535.
- Moberg E. Subcutaneous rupture of the tendon of the tibialis anterior muscle. *Acta Chir Scand* 1947; 95: 455-60.
- Moberg E. Om principerna för akut handkirurgi. *Nord Med* 1947; 34: 1132.
- Moberg E. Tre böcker om handens kirurgi. *Svenska Läkartidningen* 1947; 12: 693-98.
- Moberg E. Nå de skandinaviska gradualavhandlingarna sin tilltänkta läsekrets? *Svenska Läkartidningen* 1947; 25: 1377-80.
- Moberg E. Några kliniska synpunkter på vätskebalanskontroll. *Suppl. Kliniska laborationsmetoder, Astra* 1948. Esselte Stockholm.
- Moberg E. Några kliniska synpunkter på vätskebalanskontroll inom kirurgien. *Kliniska laborationsmetoder, del II* 1953. Esselte Stockholm.
- Moberg E. Akut Handkirurgi. CWK Gleerups Förlag, Lund 1948.
- Moberg E. Några handkirurgiska hjälpmedel. *Nord Med* 1948; 40: 2328.
- Lindqvist T, Moberg E. Spontaneous hypoliquorrhea. *Acta Med Scand* 1948; 132: 556-61.
- Moberg E. Extensionsbehandling vid fingerfrakturer. *Nord Med* 1948; 38: 1539.
- Moberg E. Radikaloperation av s.k. kronisk osteomyelit. *Svensk Kirurgisk Förenings förhandlingar* 1948; 7: 46.
- Moberg E. The use of traction treatment for fractures of phalanges and metacarpals. *Acta Chir Scand* 1949; 99: 341-52.
- Moberg E. Varför böra i fingerområdet avskurna flexorsenor ej sutureras? *Svenska Läkartidningen* 1949; 10: 1-5.
- Moberg, E. Handens kirurgi. *Medicinska Framsteg. Berlinska Boktryckeriet, Lund* 1949; 191-204.
- Moberg E. On the technique and possibilities of reconstructive hand surgery. *Acta Orthop Scand* 1949; 19: 159-63.
- Moberg E. Dupuytren's kontraktur. *Nord Med* 1949; 42: 1346-48.
- Moberg E. Framsteg inom handkirurgien och vården av händernas olycksfallsskador. *Svenska Läkartidningen* 1949; 46:2 593-602.
- Moberg E. Kirurgiska möjligheter att återgiva handen förlorad funktion. (Lunds Läkaresällskap March 30, 1948). *Nord Med* 1949; 42: 1585-86.
- Moberg E. Sängskena för handpatienter. *Nord Med* 1950; 43: 715-16.

- Moberg E. Resultat av rekonstruktiv handkirurgi. Demonstration av en serie patienter. Nord Med 1950; 44: 1219.
- Moberg E, Stener B. Handens ligamentskador, diagnos, prognos och terapi. Nord Med 1950; 44: 1219.
- Moberg E. Äro amerikanska sjukhusfarenheter av värde för oss? Sjukhuset, October 1950; 147-50.
- Moberg E. Experience with Bunnell's pull-out wire sutures. Acta Orthop Scand 1950; 19 (4): 558-59.
- Moberg E. Experiences with Bunnell's pull-out wire sutures. Br J Plast Surg 1951; 3: 249-51.
- Moberg E. Surgery of the hand. Trans Northern Surg Ass 25th meeting. Munksgaard, Copenhagen 1951; 33-98.
- Moberg E. The natural course of osteoid osteoma. J Bone Joint Surg (Am) 1951; 33 (1): 166-70.
- Moberg E, Dhunér K-G. Brachial plexus block analgesia with xylocaine. J Bone Joint Surg (Am) 1951; 33 (4): 884-88.
- Moberg E. Akut handkirurgi. CWK Gleerups Förlag, Lund 1952, 2 uppl.
- Moberg E. Further observations on 'corticalisosteoid' or 'osteoid osteoma'. Acta Radiologica 1952; 38 (4): 279-93.
- Moberg E. Breddökning av patella—ett tidigt tecken på kroniskt retningsstillstånd i knäleden. Nord Med 1952; 47: 751.
- Moberg E. Handchirurgie. Zentralblat für Chirurgie 1951; 14: 595.
- Moberg E. Comminuted fractures of the calcaneus with joint injuries. Cinquième Congrès de la Société Internationale de Chirurgie Orthopédique et de Traumatologie. Stockholm, May 21-25, 1951; 632-37.
- Moberg E. Operativ behandling av Bennettfrakturen. Nord Med 1952; 47: 751.
- Gedda K-O, Moberg E. Open reduction and osteosynthesis of the so-called Bennett's fracture in the carpometacarpal joint of the thumb. Acta Orthop Scand 1953; 22 (3): 249-57.
- Moberg E. Fri hudtransplantation i två seancer; demonstration av patienter. Nord Med 1953; 49: 150.
- Moberg E, Erfors C-G. Primär terapi vid grava intraartikulära kalkaneusfrakturer (publ. SICOT Stockholm 1951). Nord Med 1953; 49: 150.
- Moberg E. Hand surgery in the light of a series from the years 1947-1952. Transactions of Scandinavian Surgical Society, Göteborg 1953.
- Moberg E. Reconstruction of gliding surfaces with polyethylene membrane in extremal injuries. Transactions of Scandinavian Surgical Society, Göteborg 1953: 145-147.
- Moberg E, Stener B. Injuries to the ligaments of the thumb and fingers. Diagnosis, treatment and prognosis. Acta Chir Scand 1953; 106 (2-3): 166-86.
- Moberg E. Akute Handchirurgie. CWK Gleerup, Lund 1953.
- Moberg E. On the operative treatment of Dupuytren's contracture, followed by a film. Acta Orthop Scand 1953; 22 (4): 351.
- Moberg E, Oljelund O. Om de svenska handelsfartygens utrustning med instrument och förbandsartiklar. Svenska Läkartidningen 1954; 51: 185-87.
- Moberg E. Om några atypiska ingrepp inom tumörkirurgien och deras värde. Kirurgiska miniatyrer tillägnade Gustaf Petré. Hemmets Journals Tryckeri 1954: 3-8.
- Moberg E. Behandlung frischer und veralteter Beugesehnenverletzungen in der Hand. In: Wiederherstellungschirurgie und Traumatologie, Jahrbuch, vol II. (Ed. Lange M) S. Karger, Basel, New York 1954.
- Moberg E. Övre extremitetens kirurgiska sjukdomar. In: Nordisk Laerebog i Kirurgi. Munksgaard, Copenhagen 1954: 781-808.
- Dhunér K-G, Moberg E, Örne L. Paresis of the phrenic nerve during brachial plexus block analgesia and its importance. Acta Chir Scand 1955; 109 (1): 53-57.
- Moberg E. Om sensibilitetsskador i handen och nya synpunkter på diagnos och terapi. Nord Med 1955; 54: 1229.
- Moberg E. The shoulder-hand-finger syndrome as a whole. Acta Chir Scand 1955; 109 (3-4): 284-92.
- Moberg E. Zur Unfallchirurgie der Hand. Vortrag auf der Unfallchirurgischen Tagung in Heidelberg 7. und 8. Januar 1955; 3-7.
- Moberg E. Sur la technique de greffes tendineuses à la main. Soc Intern de Chirurgie Orthopédique 1955; 376.
- Sawyer C D (moderator), Kennedy R H, Ernest W L, Moberg E, Medl W T, Littler J W. Hand injuries: Primary care. Panel discussion. New York State J Med 1955; 55 (12): 1728-45.
- Moberg E. Hemipelvektomi vid malign tumör. Nord Med 1955; 54: 1365.
- Moberg E. Discussion of Brooks D "The place of nerve-grafting in orthopedic surgery". J Bone Joint Surg (Am) 1955; 37 (2): 305-26.
- Bjerner H, Bjerner B, Moberg E. A simple method for elastic splinting of the thumb web. J Bone Joint Surg (Am) 1956; 38 (4): 910.
- Moberg E. Kan postoperativ ruptur av laparatomisår förebyggas? Nord Med 1957; 58: 1555.
- Moberg E. Objective methods for determining the functional value of sensibility in the hand. J Bone Joint Surg (Br) 1958; 40 (3): 454-76.
- Moberg E. Specialisering av extremitets- och handkirurgi. Nord Med 1958; 59: 589-95.
- Moberg E. Objektiv metodik för sensibilitetsbedömning i handen och dess praktiska användning. Presented at the Svenska Läkaresällskapet, Stockholm, February 25, 1958. Nord Med 1958.
- Moberg E. Aktuella problem inom frakturkirurgien. In: Medicinsk Årbog. Ejnar Munksgaard, Copenhagen 1958-59: 115-22.
- Moberg E. Objective method of evaluating hand sensation and its use in reconstructive surgery. J Bone Joint Surg (Am) 1959; 41 (4): 777.
- Moberg E. Underarm och hand. In: Nordisk lärobok i ortopedi. Svenska Bokförlaget, Stockholm 1960.
- Moberg E. Fractures and ligamentous injuries to the thumb and fingers. Surg Clin North Am 1960; 40 (2): 297-309.
- Moberg E. Evaluation of sensibility in the hand. Surg Clin North Am 1960; 40 (2): 357-61.
- Moberg E. The shoulder-hand-finger syndrome. Surg Clin North Am 1960; 40 (2): 367-73.
- Moberg E. Arthrodesis of finger joints. Surg Clin North Am 1960; 40 (2): 465-70.
- Moberg E. Sven Christian Johansson. Nord Med 1960; 63: 397-405.

- Moberg E. Handskador. In: Krigssjukvård 1960; 417-420.
- Moberg E, Henrikson B. Technique for digital arthrodesis. A study of 150 cases. *Acta Chir Scand* 1959/1960; 118: 331-338.
- Moberg E. Examination of sensory loss by the ninhydrin printing test in Volkmann's contracture. *Bull Hosp Joint Dis* 1960; 21 (2): 296-303.
- Howard F, Lindahl O, Moberg E. Hudtäckningsproblem vid akuta skador. *Nord Med* 1960; 63 (21).
- Moberg E. Peripheral nerves and hand function. Editorials and annotations. *J Bone Joint Surg (Br)* 1961; 43 (3): 423-24.
- Moberg E. Extremitetskirurgin ur socialmedicinsk synvinkel. In: Vågar till hälsa. *Folksam's Hälsoråd*, Stockholm 1961: 245-52.
- Edshage S, Moberg E. Kosmetik und Sensibilität des Hautersatzes an der Hand. *Aesthetische Medizin* 1961; 10 (11): 329-36.
- Moberg E. Grip reconstruction of the hand with transfer of small neurovascular island flaps. *Acta Orthop Scand* 1961; 31 (3): 241.
- Moberg E. Hur göra ljusbilder tillgängliga? *Svenska Läkartidningen* 1961; (47): 3476-78.
- Moberg E. Övre extremiteten. In: *Nordisk Laerebog i Kirurgi*. Munksgaard, Copenhagen, 1961: 899-926.
- Moberg E. Metal plate without screws for fixation of shaft fractures of the forearm. *Acta Orthop Scand* 1961; 31 (3): 229-30.
- Moberg E. Discussion: The position of orthopedics in modern medicine (Bauer G). *Acta Orthop Scand* 1961; 31 (3): 244-45.
- Aschan W, Moberg E. The ninhydrin finger-printing test used to map out partial lesions to hand nerves. *Acta Chir Scand* 1962; 123: 365-70.
- Moberg E. Die Versorgung frischer Handverletzungen. *Der Chirurg* 1962; 33 (4): 172-174.
- Moberg E. Criticism and study of methods for examining sensibility in the hand. *Neurology* 1962; 12 (1): 8-19.
- Moberg E. Shoulder-hand-finger syndrome, reflex dystrophia, causalgia. *Acta Chir Scand* 1963; 125: 523-24.
- Moberg E. Nya metoder för undersökning och bedömning av handens sensibilitet. *Svenska Läkartidningen* 1963; 60 (16): 1-15.
- Stener B, Moberg E, Strandqvist M. Mjukdelstumörer. *Almqvist & Wiksell* 1963; 180-188.
- Moberg E. Aspects of sensation in reconstructive surgery of the upper extremity (the First Annual Sterling Bunnell Memorial Lecture presented in San Francisco May 14, 1962). *J Bone Joint Surg (Am)* 1964; 46 (4): 817-25.
- Moberg E. Handchirurgie. *Klinische Chirurgie*, Bd IV: 1150-84.
- Moberg E. Diskussion: Om malignitet. *Nord Med* 1964; 72: 1084-85.
- Moberg E. Technical aspects of the transfer of neurovascular flaps. *J Bone Joint Surg (Br)* 1964; 46: 359.
- Moberg E. Dressings, splints and postoperative care in hand surgery. *Surg Clin North Am* 1964; 44 (4): 941-49.
- Moberg E. Evaluation and management of nerve injuries in the hand. *Surg Clin North Am* 1964; 44 (4): 1019-29.
- Moberg E. The Treatment of mutilating injuries of the upper limb. *Surg Clin North Am* 1964; 44 (4): 1107-13.
- Moberg E, Dhunér K G. Ninhydrin finger printing test. *Rundqvist Boktryckeri Göteborg* 1964; 1-5.
- Moberg E. *Dringliche Handchirurgie*. Georg Thieme Verlag, Stuttgart 1964.
- Moberg E, Edshage S. *Reparative Chirurgie der kongenitale Handmissbildungen*. *Annales de Chirurgie Plastique* 1965; 10 (1): 49-51.
- Moberg E. The treatment of shaft fractures of the forearm. *Acta Chir Scand (Suppl 332)* 1965: 172-173.
- Moberg E. Reimplantation av den totalt avskilda handen. *Läkartidningen* 1965; (15): 1142-46.
- Moberg E. Relation of touch and deep sensation to hand reconstruction. *Am J Surg* 1965; 109 (3): 353-55.
- Moberg E. Tendon grafting and tendon suture in rheumatoid arthritis. *Am J Surg* 1965; 109 (3): 375-76.
- Moberg E. Methods for examining sensibility of the hand. In: *Hand Surgery* (Ed. Flynn J E). The Williams & Wilkins Company, Baltimore 1966: 435-49.
- Moberg E, Nachemson A. Operativ behandling av skador på handens extensorapparat. *Nord Med* 1966; 75: 749.
- Moberg E. Handskador. In: *Krigssjukvård* 1966; 407-11.
- Moberg E, Wassen E, Kjellberg S R, Zettergren L, Scheller S, Aschan W. The early pathologic changes in rheumatoid arthritis. *Acta Chir Scand (Suppl 357)* 1966: 142-47.
- Moberg E. Methods of assessment of motor and sensory function of the hand. *SCIOT, X:e Congès Paris* 1966: 746.
- Moberg E. Utvecklingslinjerna inom området ortopedi - extremitetskirurgi. In: *Svenska Sjukhusföreningens Årsbok* 1966: 203-13.
- Moberg E. Peritendinitis. *Medicinsk Årsbog*. Munksgaard, Copenhagen 1967: 303-10.
- Moberg E. Aseptische Knochennekrosen. *Langenbecks Archiv Klin Chir* 1967; 319: 429-33.
- Moberg E, Nachemson A. Tendon transfers for defective long extensors of the wrist and fingers. *Acta Chir Scand* 1967; 133: 31-4.
- Moberg E. Emergency surgery of the hand. E & S Livingstone Ltd, Edinburgh and London 1967.
- Dencker H, Moberg E. Diagnosis of soft-tissue interposition in shaft fractures of the humerus and femur by measuring the conduction and vibrations across the fracture. *Acta Chir Scand* 1968; 134: 540-42.
- Moberg E, Aschan W. Results of early synovectomies in the rheumatoid hand 1958-1965. Presented at the Lausanne Symposium May 1967.
- Moberg E. Nerve repair in hand surgery—an analysis. *Surg Clin North Am* 1968; 48 (5): 985-91.
- Moberg E. Reumatoid artrit och kirurgi. *Nord Med* 1968; 79: 559.
- Moberg E. Emergency surgery of the hand. *Churchill Livingstone*, Edinburgh 1968.
- Moberg E. *Dringliche Handchirurgie*, 2., überarbeitete Auflage. Georg Thieme Verlag, Stuttgart 1968.
- Moberg E. *Akut Handkirurgi*, 4th ed. CWK Gleerup, Lund 1969.
- Moberg E. *Chirurgia d'Urgenza Della Mano*. Piccin Editore, Padova 1969.

- Moberg E. Cartilage lesions. *Excerpta Medica* 1969; 173-77.
- Moberg E. Övre extremiteten. In: *Nordisk Laerebog i Kirurgi*, 9th ed. Munksgaard, Copenhagen 1969; 863-907.
- Moberg E. Somatiska komplikationer vid narkotikamissbruk. *Läkartidningen* 1969; 66 (19): 1975-91.
- Moberg E. Armbågsled, underarm och hand. In: *Nordisk Lärobok i Ortopedisk Kirurgi* (Ed. Friberg S). Scandinavian University Books, Läromedelsförlagen, Stockholm-Göteborg-Lund 1969; 196-21.
- Moberg E. Kirurgi vid reumatoid artrit. En fråga inför "super"-specialiseringen. *Läkartidningen* 1969; 66 (35): 3477-84.
- Moberg E. Allgemeine Massnahmen vor Eingriffen and der Hand. In: *Operationslehre Hand* (Ed. Wachsmuth). 1969; 3-11.
- Moberg E. Why synovectomy in rheumatoid arthritis? *Acta Orthop Scand* 1969; 40 (5): 683-4.
- Goldie I, Rosengren B, Moberg E, Hedelin E. Värdet av röntgenbehandling vid smärtsamma led- och muskelfeffektioner. *Nord Med* 1970; 83: 758-60.
- Goldie I, Rosengren B, Moberg E, Hedelin E. Evaluation of radiation treatment of painful conditions of the locomotor system. *Acta Radiol* 1970; 9 (4): 311-21.
- Moberg E. Useful surgical arrangement of skin with normal sensibility to mutilated hands. In: *Accident surgery and medicine* (Ed. London P S). Butterworth 1970; 143.
- Eicher E, Moberg E. Möglichkeiten zur Vermeidung von Amputationen bei schwere Dupuytren'scher Kontraktur. *Handchirurgie* 1979; 2 (2): 56-60.
- Edshage S, Moberg E. Ischemic pressure necrosis in unconscious patients. *Annales de Chirurgie Plastique* 1970; 15 (2): 134-41.
- Moberg E. Blodfritt fält. Kirurgens situation inför akuta sårskador på hand och fot. *Läkartidningen* 1971; 68 (26): 3015-18.
- Moberg E. The accident service in Göteborg, Sweden. *Injury* 1972; 4 (1): 5-7.
- Moberg E. Fingers were made before forks. *Hand* 1972; 4 (3): 201-6.
- Moberg E. Ersatzoperationen bei Sensibilitätsverlust. In: *Operationslehre Hand* (Ed. Wachsmuth) 1972; 528-35.
- Moberg E. Dringliche Handchirurgie, 3e überarbeitete und erweiterte Auflage. Georg Thieme Verlag, Stuttgart 1972.
- Moberg E. Biological problems in the evolution of hand prostheses. *Orthop Clin North Am* 1973; 4 (4): 1161-5.
- Moberg E, Edeland H G, Wiklund L G. Prognostic evaluation of finger joint bony lesions in rheumatoid arthritis. *Scand J Rheumatol* 1973; 2 (3): 139-41.
- Moberg E. Three useful ways to avoid amputation in advanced Dupuytren's contracture. *Orthop Clin North Am* 1973; 4 (4): 1001-5.
- Moberg E. Surgical treatment for absent single-hand grip and elbow extension in quadriplegia. Principles and preliminary experience. *J Bone Joint Surg (Am)* 1975; 57 (2): 196-206.
- Moberg E. Funderingar om intygsskrivning och annat. *Läkartidningen* 1975; 72 (1-2): 15.
- Moberg E. Methods for examining sensibility of the hand. In: *Hand surgery*, 2nd edition. (Ed. Flynn J E). The Williams & Wilkins Company, Baltimore 1975; 295-304.
- Moberg E. Hand Surgery and the development of hand prostheses. *Scand J Plast Reconstr Surg* 1975; 9 (3): 227-30.
- Moberg E. Futures hopes for the surgical management of peripheral nerve lesions. In: *Traumatic nerve lesions of the upper limb*. Ed. Michon J, Moberg E. Groupe d'Étude de la Main, Monograph 2. Churchill Livingstone, Edinburgh 1975.
- Moberg E, Michon J. Traumatic nerve lesions of the upper limb. Churchill Livingstone, New York 1975.
- Moberg E. Reconstructive hand surgery in tetraplegia, stroke and cerebral palsy: some basic concepts in physiology and neurology. *J Hand Surg (Am)* 1976; 1 (1): 29-34.
- Moberg E. Handchirurgie einst, jetzt und in der Zukunft. *Handchirurgie* 1976; 8 (2): 105-8.
- Moberg E. Sensibility in reconstructive limb surgery. In: *Symposium on the neurologic aspects of plastic surgery*. Ed. Fredericks S, Brody G S. Mosby, St Louis 1976.
- Moberg E. Upper limb surgery in tetraplegia (editorial). *Hand* 1977; 9 (3): 205-6.
- Moberg E. The upper limb in tetraplegia: a new approach to surgical rehabilitation. Georg Thieme Verlag, Stuttgart 1978.
- Moberg E. A simple operation for hallux rigidus. *Clin Orthop* 1979; 142: 55-6.
- McDowell C L, Moberg E, Smith A G. International conference on surgical rehabilitation of the upper limb in tetraplegia. *J Hand Surg (Am)* 1979; 4 (4): 387-90.
- Moberg E, Nigst H. Kongressbericht: Internationale Arbeitstagung in Edinburgh über chirurgische Rehabilitation der oberen Extremitäten der Tetraplegie. *Handchirurgie* 1979; 11: 255.
- Moberg E. Chirurgische Rehabilitation der oberen Extremität von Tetraplegikern. *Handchirurgie* 1980; 12 (3-4): 151-3.
- Moberg E, Lamb D W. Surgical rehabilitation of the upper limb in tetraplegia. *Hand* 1980; 12: 209.
- Moberg E. Traumatic injuries to the brachial plexus. *Surg Clin North Am* 1981; 61 (2): 341-51.
- Moberg E. A report from the Committee on Spinal Cord Injuries, International Federation of Societies for Surgery of the Hand 1980. *Paraplegia* 1981; 19: 386-88.
- Moberg E. Foreword to A L Dellon: Evaluation of sensibility and re-education of sensation in the hand. William and Wilkins, Baltimore 1981; vii.
- Moberg E, Freehafer A A, Lamb D W, Leffert R D, Nigst H, Zancolli E. A report from the Committee on Spinal Injuries, International Federation of Societies for Surgery of the Hand 1980. *Scand J Rehabil Med* 1982; 14: 3-5.
- Moberg E. The role of cutaneous afferents in position sense, kinaesthesia and motor function of the hand. *Brain* 1983; 106 (Pt 1): 1-19.
- Moberg E. The outrigger problem in hand splinting. *Scand J Rehabil Med (Suppl)* 1983; 9: 136-8.
- Moberg E. Upper limb surgical rehabilitation in tetraplegia. In: *Surgery of the musculoskeletal system* (Ed. McCollister-Evarts C). Churchill Livingstone Inc, New York 1983; 471.
- Aschan W, Moberg E. A long-term study of the effect of early synovectomy in rheumatoid arthritis. *Bull Hosp Jt Dis Orthop Inst* 1984; 44 (2): 106-21.

- Moberg E, Hagert C G, Nordenskiöld U, Traneus M, Svens B. Splinting in hand therapy. Thieme-Stratton Inc, New York 1984: 1-88.
- Moberg E. New facts about hand control-kinaesthesia. *Ann Chir Main* 1985; 4 (1): 64-6.
- McDowell C L, Moberg E A, House J H. The Second International Conference on Surgical Rehabilitation of the Upper Limb in Tetraplegia (Quadriplegia). *J Hand Surg (Am)* 1986; 11 (4): 604-8.
- Moberg E, Hagert C G, Nordenskiöld U, Traneus-Nillius M. *Ortoser i handterapi*, 2nd ed. Almqvist & Wiksell, Stockholm 1986; 1-114.
- Moberg E. The present stage of surgical rehabilitation of the upper limb in tetraplegia. *Paraplegia* 1987; 25 (4): 351-6.
- Moberg E. Current treatment program using tendon surgery in tetraplegia. In: *Hand tendon surgery* (Eds. Hunter J M, Schneider L H, Mackin E J). The C V Mosby Company, St Louis 1987.
- Moberg E. The new surgical rehabilitation of arm-hand function in the tetraplegic patient. *Scand J Rehabil Med (Suppl)* 1988; 17: 131-2.
- Moberg E, McDowell C L, House J H. Third International Conference on Surgical Rehabilitation of the Upper Limb in Tetraplegia (quadriplegia). *J Hand Surg (Am)* 1989; 14 (6): 1064-6.
- Moberg E. Surgical rehabilitation of the upper limb in tetraplegia. *Paraplegia* 1990; 28 (5): 330-4.
- Moberg E. Two-point discrimination test. A valuable part of hand surgical rehabilitation, e.g., in tetraplegia. *Scand J Rehabil Med* 1990; 22 (3): 127-34.
- Moberg E. Helpful upper limb surgery in tetraplegia. In: *Rehabilitation of the hand: surgery and therapy*, 3rd edition dedicated to E Moberg (Eds. Hunter J M, Schneider L H, Mackin E J, Callahan A D). The C V Mosby Company St Louis, Baltimore, Philadelphia, Toronto, 1990: 964-71.
- Moberg E A. Upper limb surgical rehabilitation in tetraplegia. In: *Surgery of the musculoskeletal system*, 2nd edition (Ed. McCollister-Evarts C). Churchill Livingstone, New York 1990; 915-941.
- Moberg E. The unsolved problem—how to test functional value of hand sensibility. Guest Editorial. *J Hand Therapy* 1991; July-September: 105-10.
- Moberg E. Fingertip function and evaluation of its sensibility. In: *The hand and upper limb*, Vol. 7: Fingertip and nailbed injuries (Ed. Foucher G). Churchill Livingstone, Edinburgh, London, Melbourne, New York and Tokyo 1991; 10-6.
- Moberg E. Foreword to Zancolli E A, Cozzi E P: *Atlas of surgical anatomy of the hand*. Churchill Livingstone, New York, Edinburgh, London, Melbourne, Tokyo 1992: VII-VIII.
- Treanor W J, Moberg E, Buncke H J. The hyperflexed seemingly useless tetraplegic hand: a method of surgical amelioration. *Paraplegia* 1992; 30 (7): 457-66.
- Moberg E. Rehabilitation and surgical reconstruction of the upper limb in tetraplegia: an update. *J Hand Surg (Am)* 1992; 17 (5): 964-7.

Dedications

- Rehabilitation of the hand: surgery and therapy*. Ed. Hunter J M, Schneider L H, Mackin E J, Callahan A D. The C V Mosby Company, St Louis, Baltimore, Philadelphia, Toronto 1990, 3rd edition.
- Erik Moberg Birtday Number. *J Hand Surg (Br)* 1990; 15 (1): 1-134.
- Carstam N, Stack G. Editorial. Erik Moberg. *J Hand Surg (Br)* 1990; 15 (1): 3-4.
- Dellon A L. The sensational contributions of Erik Moberg. *J Hand Surg (Br)* 1990; 15 (1): 14-24.