

# A History of Manipulative Therapy

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**Abstract:** Manipulative therapy has known a parallel development throughout many parts of the world. The earliest historical reference to the practice of manipulative therapy in Europe dates back to 400 BCE. Over the centuries, manipulative interventions have fallen in and out of favor with the medical profession. Manipulative therapy also was initially the mainstay of the two leading alternative health care systems, osteopathy and chiropractic, both founded in the latter part of the 19<sup>th</sup> century in response to shortcomings in allopathic medicine. With medical and osteopathic physicians initially instrumental in introducing manipulative therapy to the profession of physical therapy, physical therapists have since then provided strong contributions to the field, thereby solidifying the profession's claim to have manipulative therapy within its legally regulated scope of practice.

**Key Words:** Manipulative Therapy, Physical Therapy, Chiropractic, Osteopathy, Medicine, History

Historically, manipulation can trace its origins from parallel developments in many parts of the world where it was used to treat a variety of musculoskeletal conditions, including spinal disorders<sup>1</sup>. It is acknowledged that spinal manipulation is and was widely practised in many cultures and often in remote world communities such as by the Balinese<sup>2</sup> of Indonesia, the Lomi-Lomi of Hawaii<sup>3-5</sup>, in areas of Japan, China and India<sup>3</sup>, by the shamans of Central Asia<sup>6</sup>, by sabodors in Mexico<sup>7</sup>, by bone setters of Nepal<sup>8,9</sup> as well as by bone setters in Russia and Norway<sup>10</sup>.

With respect to manipulation in ancient Western civilizations, those areas around the Mediterranean provide the most logical basis for the practice to exist. However, there is no direct evidence of such practice in any documents of communities such as Babylon, Mesopotamia, Assyria, and even Egypt<sup>11</sup>. Historical reference to Greece provides the first direct evidence of the practice of spinal manipulation. The de-

tail in which this is described suggests that the practice of manipulation was well established and predated the 400 BCE reference<sup>11</sup>.

In his books on joints, Hippocrates (460–385 BCE), who is often referred to as the father of medicine, was the first physician to describe spinal manipulative techniques using gravity, for the treatment of scoliosis. In this case, the patient was tied to a ladder and inverted<sup>12</sup>. The second technique he described involved the use of a table with various straps, wheels, and axles enabling traction to be applied. The hand, foot, seated body weight, or a wooden lever could then be used to impart spinal pressure or thrust to treat a “gibbus” or prominent vertebra. Hippocrates noted that this treatment should be followed by exercises.

Claudius Galen (131–202 CE), a noted Roman surgeon, provided evidence of manipulation including the acts of standing or walking on the dysfunctional spinal region<sup>1</sup>. In 18 of his 97 surviving treatises, Galen commented on the works of Hippocrates, with many illustrations of his manipulative techniques, which, even today, are frequently seen in medical texts<sup>13</sup>. The design of the treatment table used by Hippocrates and his methods of manipulation survived for more than 1600 years.

Avicenna (also known as the doctor of doctors) from Baghdad (980–1037 CE) included descriptions of Hippocrates' techniques in his medical text *The Book of Healing*. A Latin translation of this book was published in Europe influencing future scholars such as Leonardo Da Vinci and

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contributing greatly to the emergence of Western medicine at the end of the Middle Ages<sup>14</sup>.

While nobody questions these early origins of manipulative therapy, it is from the 19<sup>th</sup> century onwards that manipulative therapy has at times become an area of contention between the various professions involved in its practice. To truly understand the role manipulative interventions play within the professions of medicine, chiropractic, osteopathy, and most notably physical therapy, knowledge of the history of manipulative therapy within these various professions is required. Therefore, the goal of this paper is to introduce the reader to the history of manipulative therapy within the various professions with the intent of fostering increased inter-professional understanding and hopefully decreasing the current controversy as to which professions can justifiably lay claim to the practice of manipulative therapy based on historical arguments.

## Modern Medicine and Spinal Manipulation

The renaissance in medicine began with Andreas Vesalius, who in 1543 described the detailed anatomy of the human body<sup>15</sup>. Hippocrates' manipulative procedures again appeared in the 16<sup>th</sup>-century writings of Guido Guidi and Ambrose Pare. In 1580 Pare, the famous French military surgeon who served four successive kings of France, advised the use of manipulation in the treatment of spinal curvature<sup>16,17</sup>. In 1656, Friar Thomas, in his book *The Complete Bone Setter*, described manipulative techniques for the extremities and in 1674 (with a Latin version in 1693) Johannes Scultetus included descriptions of Hippocrates' manipulative methods in *The Surgeon's Storehouse*<sup>18</sup>.

It would appear that physicians and surgeons tended to abandon the general acceptance of spinal manipulation by the 18<sup>th</sup> century. The reason for this is not completely clear but may have been the ineffectiveness of indiscriminate use or the danger involved in manipulating a spine weakened through tuberculosis, a disease of epidemic proportions in certain locations at this time<sup>19-21</sup>. Thus, manipulation once again tended to become the domain of the village healers in various areas of Europe and Asia. These bonesetters had undoubtedly passed on the traditional healing arts since time immemorial, long before formal recognition of the medical profession, but now they were far more visible within society.

By the 19<sup>th</sup> century, a clinical paradox was developing. A significant portion of the established medical profession expressed disdain for the bonesetters and their practices and did their best to run them out of business<sup>1</sup>. At the same time, however, they had to recognize just how popular these bonesetters had become to the general populace. It was suggested by James Paget, one of the most famous surgeons of the time, that doctors would do well to observe bonesetters and

learn from them what is good but, at the same time, avoid what is bad. However, it appears that the medical community still did not appreciate the benefits of joint manipulation<sup>22</sup>. Even Paget himself often attributed the bonesetters' successes more to luck than skill and frequently referred to them as "enemies"<sup>23</sup>.

A notable exception of the time was a physician named Wharton Hood who, under the guidance of a bonesetter, became skilled in the practice of manipulation and concluded that it was both beneficial and safe. In 1871, he published a technical manual on manipulation of the extremities in the *Lancet* itself<sup>24,25</sup>.

By 1882, manipulation was again evident in medicine. It was the topic of meetings and papers, and the first book had been written on the subject<sup>16</sup>. Bonesetting was the main topic at the annual meeting of the British Medical Association's section on surgery. March<sup>26</sup> and Fox<sup>27</sup> both viewed manipulation favorably but continued to refer to it as bonesetting. Perhaps the greatest change in views by the medical establishment at this time was that manipulation could actually be consistently effective. Robert Jones, the founder of British Orthopaedics, wrote, "We should mend our ways rather than abuse the unqualified. Dramatic success in their hands should cause us to enquire as to the reason. It is not wise or dignified to waste time denouncing their mistakes, for we cannot hide the fact that their successes are our failures"<sup>15</sup>.

Despite such supportive rhetoric at the turn of the 20<sup>th</sup> century, medical literature on manipulation was minimal and in 1910 came the following observation: "It is very remarkable that the medical profession for so long has neglected a wide field of therapeutics"<sup>1</sup>. And so it seemed that without a suitable champion within the medical profession, spinal and peripheral joint manipulation would forever remain the domain of the bonesetters. However, by the end of the 19<sup>th</sup> century, certain events unfolded that would irrevocably change the way manipulation was viewed and practised around the world.

## Chaos within Allopathic Medicine: A Breeding Ground for Alternative Philosophies

To fully understand how modern manual medicine arose, one must view the status of medicine in North America at the turn of, and during, the 19<sup>th</sup> century. In spite of huge strides forward in scientific investigation, medicine had changed little. Hippocrates and Galen would have applauded the philosophy and logic of this time, i.e., observe and use what helps, avoid what does harm. However, it must be remembered that this logic was based on symptoms. Using such logic, Benjamin Rush, in 1796 America's most prominent physician, con-

cluded that the practice of “bleeding” (phlebotomy) a patient was the most logical approach for the treatment of fever<sup>28</sup>. After all, the patient went from being hot, flushed, and delirious to being cold, pallid, and euphoric, in the eyes of physicians of that time clearly the first step to a cure. His approach was lauded throughout the Americas and Europe to the point where the instrument used to perform bleeding i.e., the lancet, was to give its name to one of the world’s most prestigious and still existing medical journals. At the same time, while being a modernistic technique, it also satisfied the Hippocratic-Galenic view that disease was caused by internal imbalances of the *humors and bodily fluids*<sup>29</sup>.

In 1800, the profession of medicine was justifiably called “the withered arm of science”<sup>30</sup>. Thanks to the writings of Hippocrates, physicians of the day were discouraged from embracing the study of mathematics to objectively quantify medical data. In fact, although science had discovered methods of measuring temperature and blood pressure in the early 1700s, medicine would not utilize such techniques until 1820, some 100 years later. Around the same time, the stethoscope would be discovered and the hitherto taboo practice of human dissection was to ascertain that the body was made up of several discrete types of *tissues*. Physics, chemistry, mathematics, and other disciplines were about to pull the medical profession out of the “Dark Ages” and place it into the realm of modern science. But before that renaissance would occur, the medical profession in North America was to endure an ignominious reputation among the general populace<sup>31,32</sup>. Worse still, the oftentimes harmful and ineffective results of their treatments made many physicians doubt their own purpose<sup>32,33</sup>.

As might be expected, the brutal experience of the American Civil War (1861–1865) led to advances in surgical technique. However, what was perhaps the greatest discovery in medicine, Louis Pasteur’s “germ theory of disease” came too late (1865) for thousands of soldiers who would succumb to a lack of aseptic conditions and sterilization techniques.

Unlike their European counterparts, American universities provided a poor environment in which to produce well-trained physicians. The admission requirement was most often the student’s ability to pay the tuition fee. The course often consisted of two 4-month semesters and, even at Harvard, a student could fail 40% of his courses and still graduate<sup>34</sup>. In 1869, Harvard President Charles Eliot chastised American medical schools by stating in his inaugural address that “the ignorance and general incompetence of the average graduate . . . is something horrible to contemplate.” When attempting to upgrade the standard by introducing written examinations, Professor of Surgery Henry Bigelow protested the unfairness of such a move since over half of the Harvard medical students could barely write<sup>32</sup>. Following graduation, most educated physicians interested in further education were forced to travel to Europe (especially Germany) to study in an environment where the evolution of

scientific medicine was truly underway. The real advancement of North American medicine was primarily due to these motivated individuals who returned home to begin the daunting task of replacing the prejudices of theology<sup>35</sup> with the discipline of scientific enquiry. In 19<sup>th</sup>-century North America, the profession of medicine was clearly in disarray and disrepute. It is from this backdrop that one can clearly see how alternative philosophies to the classic medical model could not only germinate but also justifiably gain public trust and support.

## Andrew Taylor Still

Born in 1828, Andrew Taylor Still was the son of a physician who was also a Methodist minister. He was influenced by his father to go into medicine. In the mid-1800s, a physician could be “apprenticed,” and Still probably only attended one seminar of formal medical education. He felt the education to be boring and uninspiring and he seemed well aware that the medical approach of the day (e.g., blood-letting, poultices) could inflict more harm on patients than if they were left alone<sup>36</sup>.

With this backdrop to his medical experiences, it was no surprise that when three of his children died in a single episode to the ‘plague,’ Still was not only devastated but also totally disillusioned with the medical profession. Interestingly, although Edward Jenner had introduced inoculation to the world in 1797, it would be another 40 years before it gained general acceptance, even in Britain. It is believed that Still’s children had contracted spinal meningitis. His children almost certainly had very little chance of survival but he did not know that, neither did he accept it. This tragic event was the final straw that would divorce him from standardized medicine. Although he maintained his licence to practise medicine, it was only to facilitate the development of his new ideology<sup>36</sup>.

As a child, Still had suffered from chronic headaches. He had noted one day, while falling asleep with his neck wedged between the roots of an oak tree, that his headaches were completely relieved. Using this and other experiences, he began to slowly conceive of a theory whereby health could only be maintained and, therefore, disease defeated, by maintaining normal function of the musculoskeletal system. Apart from manipulative techniques, he also incorporated the idea of magnetism. Unlike the magnetic therapies of today, this magnetism was thought to come from within the therapist’s body, a concept primarily derived from the Austrian physician Franz Anton Mesmer, the man who was incorrectly given credit for the introduction of hypnotic therapy, or mesmerism. Mesmer definitely saw the potential of using the human spirit to treat patients and if there were anything that would stimulate a religious healer like Andrew Still, this was it. Not surprisingly, many of Still’s earlier papers related to a

primal religious study between God and the Devil. Of course, this would do little to encourage acceptance from the established medical community.

From 1874, while working on his new anatomically and biomechanically based theories, Still referred to himself, in what was a very successful clinical practice, as “the Lightning Bone Setter.” Still was openly critical of the medical profession and its methods. This, coupled with his unpopular belief that manipulation could cure disease, would ensure that he was denied access to established medical schools to teach his philosophies and techniques. However, his drugless, non-surgical approach to the treatment of disease rapidly gained acceptance among the general public. He soon found that he was unable to treat the growing numbers of patients and decided he would have to train others to help him in his work. In 1892, he was confident enough in his beliefs that he established the American Osteopathic College in Kirksville, Missouri. He based his theories of disease and dysfunction on the “disturbed artery” in which obstructed blood flow could lead to disease or deformity. This would become known in Osteopathy as the Law of the Artery. As Still’s methods continued to grow in popularity, more colleges were opened and by the time of his death in 1917, 3,000 Doctors of Osteopathy had been graduated. Today, 20 colleges of osteopathic medicine boast an enrolment of nearly 10,000 students<sup>36</sup>.

As osteopathy evolved, much of the growing body of scientific knowledge being embraced by the rapidly changing medical profession was also taught in osteopathic colleges. This parallel growth has led to osteopathic physicians enjoying equivalent legal and professional practice rights as medical physicians, at least in the United States. However, there was, and perhaps still is, a philosophical chasm between the two professions. In 1908, Still detailed in his autobiography<sup>37</sup> how manipulation could cure disease. In one chapter, he described how cervical spine manipulation could cure, among other things, scarlet fever, croup, diphtheria, and whooping cough. How many of today’s osteopaths continue to adhere to such claims is not known, but instructional manuals in the teaching of cranio-sacral therapy and visceral manipulation suggest that the number may be significant. Interestingly, it would be an osteopath who would ultimately influence the British medical system and indirectly establish physical therapy there within the arena of manipulative therapy.

## Daniel David Palmer

Unlike Still, Daniel David Palmer’s entry into the field of healthcare was not born of privilege or family. Born in Canada in 1845, Palmer had parents who were forced to immigrate to the United States in search of work. Palmer and his younger brother remained in Canada as factory workers until 1865 when they rejoined their family. Palmer was well ed-

ucated and an avid reader of all things scientific (unlike many physicians of the day), especially with regard to the healing arts. After working for 20 years as a horticulturist, schoolteacher, and farmer, he turned his energies to becoming a “natural healer.” His influences in this regard are sketchy but it would seem reasonable to assume that Mesmer was one of them since Palmer began his remarkable journey as a magnetic healer. However, the celebrated event that would launch chiropractic suggests that he must have had exposure to spinal manipulation.

A physician, Johannes Hieronymi, in his published dissertation of 1746<sup>38</sup>, appears to have been the first person to use the term “subluxation” with regard to spinal dysfunction. In 1820–1821, the publications of medical physicians William and Daniel Griffen and Edward Harrison<sup>38</sup> not only used the word “subluxation” but also described the use of spinous and transverse processes as levers to adjust subluxations. This would seem to contradict Palmer’s claim to being the first practitioner to perform such a technique<sup>39</sup>. Also, Palmer stated in his book, *Chiropractic Adjustor*<sup>39</sup>, that he learned about manipulation from the work of a medical practitioner named Jim Atkinson, whose work 50 years earlier propounded similar, if not the same, principles as the new healing art of chiropractic<sup>39</sup>. It is also reasonable to assume that Palmer, with his thirst for increasing knowledge, would have had communication with Andrew Taylor Still, whose practice was but one day’s drive away in Kirksville, Missouri.

Ten years after starting his healing practice, in 1895 in the building where Palmer worked, a janitor named Harvey Lillard mentioned to Palmer that while lifting a heavy object 17 years before, he had strained his back and heard a distinctive “pop.” He said he had been deaf ever since. On manual assessment Palmer noticed a vertebral spinous process that appeared to be “out of alignment.” He thrust on the vertebra, reportedly immediately improving Lillard’s hearing. Thus, the seed of the chiropractic profession was sown. Palmer began to reason that when a vertebra was out of alignment, it caused pressure on nerves. He further reasoned that decreasing nerve impulses would surely affect visceral function leading to disease (the Law of the Nerve).

As occurred earlier with Still, Palmer’s views brought the wrath and disdain of the medical community. Undaunted, he continued to develop his innovative approach in both theory and practice. One of his patients, a minister, is credited with providing his newly formed philosophy with a name. It was derived from the Greek words ‘cheiros’ (hand) and ‘praktos’ (done by). In 1897, in Davenport, Iowa, Palmer opened his first college, The Palmer College of Cure, now known as the Palmer College of Chiropractic. By 1902, 15 people had been graduated. In 1907, one the graduates was Palmer’s son Bartlett Joshua or B. J. Palmer. A year before his graduation, B. J. Palmer would see his father, and hundreds of other chiropractors, prosecuted for practising medicine without a licence. In fact, D. D. Palmer served 23 days in

prison and was fined \$350. A year later one of Palmer's graduates was charged with practicing medicine and osteopathy without a license in Wisconsin. In a landmark decision, the jury found that Shegataro Morikubo, DC, was innocent on the basis that he was not practicing medicine, surgery, or osteopathy. He was practicing the distinct healing art of chiropractic.

While his father began an educational tour of the West Coast, B. J. Palmer began to administrate more and more of the college's financial and educational activities. In 1910, he introduced the use of X-rays into Chiropractic and in 1924, the neurocalometer, a device that could ostensibly find "out-of-position" vertebrae. During the 1920s, B. J. Palmer intelligently used the mass media of the day, i.e., radio, to further the chiropractic cause. This would only intensify medical opposition and by all accounts it was the younger Palmer's resourcefulness that enabled the profession to survive into the 20<sup>th</sup> century.

The G. I. Bill at the end of World War II enabled thousands of returning soldiers to bolster the ranks of the chiropractic profession. This influx seemed to provide an impetus that would propel the chiropractic profession to today's status where it boasts 35 schools and colleges worldwide and, in the Western world at least, it is second only to the medical profession as a primary care healthcare provider.

Unlike osteopathy, however, chiropractic had its own demons to deal with. Almost from its inception, the profession seemed fraught with internal strife. One of the original and documented divisions began between D.D. Palmer and one of his first students, Willard Carver<sup>40</sup>. Arguing about which vertebra(e) to adjust for which disease or dysfunction seems to have continued to this day, which only leads us to question how exact the science behind chiropractic is. Further, chiropractic has been embroiled in the argument as to whether the profession is best served following D.D. Palmer's original philosophies (the "Straights") or by incorporating other approaches, notably physical modalities (the "Mixers"). This has led to a conundrum in chiropractic called the "technique wars"<sup>41</sup>.

In 1947 Janse, Houser, and Wells would reaffirm and define the theoretical principles of chiropractic<sup>42</sup>. Of note, in the 23-page index of this relatively modern yet classic chiropractic text, the word "manipulation" does not appear anywhere<sup>15</sup>.

In 1958 the *National News*, a publication of the National Chiropractic Association, warned its members that "the rising numbers of physical therapists trained in manipulative procedures, and the medical investigation of manipulative therapy, has posed a real threat to the continued advancement, perhaps even the future existence, of the chiropractic profession"<sup>43</sup>. Such rhetoric does not seem intended to enhance inter-professional cooperation. Since that time, the chiropractic profession has embarked on an obvious campaign to remove physical therapy from the "manipulative

arena." This sad state of affairs is made sadder considering the chiropractic struggle to survive the medical profession's attempt to "contain and eliminate" them from healthcare<sup>44</sup>.

What is also of interest is that even in 1958, physical therapy manipulators were obviously numerous enough, and well trained enough, to pose such a distinct threat. Such professional organization reinforces the assertion that physical therapists were being taught, and were practicing, spinal manipulation from the earliest part of the 20<sup>th</sup> century.

## Medical Endorsement

Two of Still's original students, William Smith and J. Martin Littlejohn, were medical physicians from Scotland. Smith struck a deal with Still that if Still taught him osteopathy, he would teach Still's students anatomy, greatly enhancing the scientific validity of this emerging profession.

Littlejohn would become the first dean of the College of Osteopathy in Kirksville. He would then go on to found the Chicago College of Osteopathy before returning to Britain and becoming the founder of the British College of Osteopathy in London in 1917.

Despite many frustrating attempts, Littlejohn could never get the English legislature to give osteopathy the same parity with medicine that was enjoyed by his American colleagues. Ironically, instead of behaving antagonistically, he chose to begin educating his fellow physicians *and physical therapists* in the art and science of spinal manipulation as of 1920. Although this move met with considerable opposition from both professions, it was eagerly endorsed by the medical physician James Beaver Mennell (1880–1957) and a physical therapist named Edgar Ferdinand Cyriax (1874–1955).

## James Mennell and Edgar Cyriax

Between 1912 and 1935, Mennell served as the medical officer lecturing on massage therapy at the Training School of St Thomas's Hospital. Undoubtedly influenced by his medical predecessors Paget, Hood, and Jones, Mennell was engrossed in the use of physical means, including manual therapy, in the treatment of musculoskeletal dysfunctions. In 1917, the same year Littlejohn was opening the British School of Osteopathy, Mennell published his text *Physical Treatment by Movement, Manipulation and Massage*. It seems more than likely that the therapists under his tutelage would have been instructed in his methods even prior to the text's publication.

Assisting him in his courses at St Thomas's was a physiotherapist named Edgar Cyriax. Cyriax was of Swedish origin and had studied under his (future) father-in-law Henrik Kellgren, a major figure in the Institute of Swedish Remedial Gymnastics and Massage. Cyriax himself, lectured at the

Central Institute for Swedish Gymnastics in London. He would later go on to obtain his medical degree from Edinburgh University. It is obvious from his collection of documents that Cyriax also studied and practised manipulative therapy<sup>45</sup>. In 1903 he published his own text on manual therapy, based primarily on his father-in-law's philosophies<sup>45</sup>. With such a familial background, it is easy to imagine that a young man like James Cyriax, while studying to be a physician, would be heavily influenced by similar philosophies.

In what was his last published text<sup>46</sup>, Mennell clearly detailed how symptoms of thoracic spinal origin can closely mimic true visceral symptoms. He thus cautioned against accepting the relief of pain through spinal manipulation as being equated with a cure of organic disease. He clearly advocated the use of spinal manipulation only following a thorough examination (including medical diagnostic and laboratory tests if necessary) that differentiated visceral from spinal symptoms. This emphasis on differential diagnosis was to significantly influence his own son (John McMillan Mennell) and James Cyriax. Employing differential diagnosis techniques to indicate the use of spinal manipulation would become a common denominator in both clinical practice and the teaching philosophy of the younger Mennell and the younger Cyriax.

## John McMillan Mennell

Like his father before him, John Mennell set about trying to educate as many physicians as possible in the art and science of orthopaedic-based spinal manipulative therapy. His professional zeal, however, was not confined to medical practitioners. Having been instrumental in founding the North American Academy of Manipulative Medicine, he campaigned successfully to allow osteopathic physicians admittance to the academy in 1977. Three years later, he would offer crucial testimony in the famous anti-trust court proceedings against the American Medical Association (AMA) to help end the AMA campaign to “contain and eliminate . . . the chiropractic threat”<sup>43</sup>.

A true measure of his professional altruism is that his teaching was never confined to any one profession but to all who had the education and training to learn effective and safe manipulative technique. Many of today's “legends” of physical therapy will attest to this man's influence in their own journeys of discovery within orthopaedic manipulative therapy. His invaluable contribution to this field is available in his text *“The Musculoskeletal System: Differential Diagnosis from Symptoms and Physical Signs”*<sup>47</sup>.

## James Henry Cyriax

James Cyriax qualified in medicine at St Thomas's in 1929, becoming a specialist (member of the Royal College of Physi-

cians, MRCP) in 1954. That he was passionate about his chosen field was obvious. When asked once if he was religious he replied, “I believe in Orthopaedic Medicine.”

No doubt influenced by his parents, Cyriax believed that because of their training and their close educational and clinical ties with medicine, physical therapists were the most apt professionals to learn manipulative techniques. He was openly critical of those practitioners outside of the “medical umbrella,” referring to them as “lay manipulators.”

Cyriax clearly dedicated his professional life to improving not only his own skills but also those of “indifferent” physical therapists and medical physicians. His greatest gift to both professions is found in his classic book *Textbook of Orthopaedic Medicine, Volume I*, originally published in 1954<sup>48</sup>. In this book he laid out the foundation of a method of logical, clinically reasoned, differential diagnosis, which he called “*selective tissue tension testing*.” This clinical philosophy was to irrevocably change the way orthopaedic manual physical therapists thought, taught, and practised.

A close colleague (personal communication Ann Porter Hoke, 2006) of both this author and James Cyriax reported that, shortly before his death in 1985, Cyriax said, “If I am remembered for anything, I hope that it will be my contribution in orthopaedic differential diagnosis through selective tissue tension testing.” He will obviously be remembered for far more than that. Unfortunately, the author's clinical experience suggests that while physical therapy (at least our specialized branch of it) has readily embraced this logical paradigm, other professions, including the medical profession, have not. It is this author's opinion that we as physical therapists, at least, should never forget the contribution made and the support given by this great man.

## Development of Physical Therapy

As indicated in the introduction, the use of manual techniques in healing dates back through the millennia. Massage was probably the earliest and most widely used manual intervention. As early as 1584 at Cambridge University in England, Dr Timothy Bright lectured on the use of hydrotherapy, exercise, and massage<sup>49</sup>. However, it would be over 200 years before such therapies would have a scientific champion in the person of Per Henrik Ling (1776–1837). Ling was a Swedish physiologist, gymnastics instructor, and expert fencer. Physiology was a rapidly growing science and Ling was able to show how exercise, passive and active, could have a beneficial, therapeutic effect. He is correctly credited with starting the Swedish Gymnastic Movement System but incorrectly credited with creating the system of Swedish massage. While giving the therapy scientific validity, the massage strokes that compose the Swedish Massage (or more correctly “classic” massage) system were never actually practised by Ling. Rather, it was a Dutch medical physician and gymnastics teacher, Johan Mezger (1838–1909), who adopted the French

terms of effleurage, petrissage, tapotement, and friction that we associate with the classic massage of today<sup>50</sup>.

At the middle of the 19<sup>th</sup> century (1854–1856), the Crimean war erupted. In Britain it would become synonymous with ineptitude and the squandering of human life. When *The Times* reported that typhus, cholera, and dysentery were killing more soldiers than the Russian enemy (war wounds only accounted for one death in six), the government responded by sending a professional assessor, well trained in mathematics and statistics, to Turkey. The assessor had a bent towards nursing and went into this human abyss with an accompanying team of 38 nurses. Her name was Florence Nightingale (1820–1910). Before her death, she would be credited as the first woman to found a training school for nurses and the first woman to be elected as a Fellow in The Statistical Society of Great Britain. Many dying and injured British soldiers would know her simply as “the lady (angel) with the lamp.” No one seems to have recognised her as the real Mother of Physiotherapy but it must surely have been the professional progeny of her nursing team (most of whom suffered life-long post-traumatic stress syndrome) who were pushed to develop rudimentary methods of physical rehabilitation.

In support of this hypothesis, the latter half of the 19<sup>th</sup> century found massage and remedial exercise growing in popularity with English nurses, especially those involved in the musculoskeletal rehabilitation for the seemingly never-ending supply of injured British soldiers. As demand for massage therapy grew in other areas of medicine, more nurses took the specialized training to become a masseuse. However, in the early 1890s, the *British Medical Journal* warned its readers against the use of massage “because of the number of unscrupulous persons involved in it.”

Four nurses would take on the challenge of protecting the reputation of this fledgling profession. After much careful preparation, in 1894 Lucy Robinson, Rosalind Paget, Elizabeth Manley, and Margaret Palmer founded the Society of Trained Masseuses. This later became the Chartered Society of Massage and Medical Gymnastics (1920) and finally the Chartered Society of Physiotherapy (1944).

Even in its formative years, students would come from all over the world for training in this new profession. Some would return to their own country to start up the profession there. The most notable, in North America at least, was a young American named Mary McMillan. Strongly influenced in her post-graduate work by a leading English orthopaedic surgeon, Sir Robert Jones, she returned to the United States to become the chief “reconstruction aide” at Walter Reid Army Hospital. Between 1921 and 1925, she was the Director of Physiotherapy at Harvard Medical School. American therapists affectionately know her as the Mother of Physical Therapy.

It is evident that physiotherapists have been taught and have practised spinal manipulation since at least the early part of the 20<sup>th</sup> century. In 1920 Littlejohn delivered lectures to the Chartered Society of Massage and Medical Gymnastics

in London. By 1926, a number of members of the Society had completed his intensive two-year course to become manipulative specialists<sup>51</sup>. While some medical physicians, most notably Edgar Cyriax and James Mennell, welcomed these manipulative physical therapists, there were still obvious objections to the acceptance of osteopathic technique. In 1928 the Society’s President, Sir Thomas Horder, resigned rather than take part in the Ninth Members’ Congress in which the medical physician George MacDonald delivered a talk entitled “*Osteopathy: Its Place in the Healing World.*”

As is now evident, physical therapy emerged and grew alongside osteopathy, chiropractic, and the evolving “scientific” medical profession. However, over the next 100 years, physical therapy, osteopathy, and chiropractic were destined to travel very different paths. In its country of origin, osteopathy would coalesce with the medical profession. Chiropractic would remain autonomous from, and highly competitive with, medicine. Physical therapy, whose roots lay in working alongside and cooperating with medical physicians, continues to do so.

By the 1950s, physical therapists from around the world were beginning to research, develop, and organize. Freddy Kaltenborn from Norway and Stanley Paris from New Zealand were already lecturing on manual therapy. In 1954, a young physiotherapist named Robin McKenzie was to “accidentally” cure one of his chronic patients, the famous Mr. Smith<sup>52</sup>. Within a few years, McKenzie would be teaching his methods and philosophy worldwide. Few therapists, chiropractors, and doctors, who qualified in the last half century (and who will qualify in the next half century) will not know of this man and his great contribution to the safe and effective treatment of low back dysfunction. Despite McKenzie’s divorce from manual and manipulative therapy, we must thank him for two things. First, he showed us that manual techniques are often not the only, or even the most appropriate, approaches to correct a lumbar dysfunction. Second, he defined one of the major contra-indications to manipulation of the lumbar spine, i.e., deviation with neurological signs<sup>53</sup>.

In 1961, Geoff Maitland from Australia was awarded his association’s first Special Studies Fund. This enabled him to travel overseas, during which time he studied with and learned techniques from doctors of physical medicine, osteopathy, chiropractic, and from bonesetters. Mennell, Cyriax, and Stoddard particularly influenced him. In 1965, Maitland was invited to Britain to teach his manipulative techniques. He took the opportunity to introduce his ideas on how gentle oscillatory movements could be used prior to manipulation to more accurately attain the motion barrier. He also indicated that these techniques were, in many cases, superior to thrust techniques. The use of these gentle, safe mobilizations was to become an integral part of training in orthopaedic manual therapy in Britain and around the world. With the assistance of Jenny Hickling, who was one of James Cyriax’s more senior therapists, the use of movement diagrams was introduced to quantify the concept of motion barriers.

Associated with Maitland at this time was Gregory Grieve from the UK, a therapist who had worked with and received extensive manipulative training from James Cyriax. For this author, Grieve will always be the unsung hero of manual therapy. Far more interested in working behind the scenes to get things done than in having his name attributed to those things that were done, Grieve had a meticulous scientific mind. It is highly likely that Maitland returned home to Australia the richer for having been exposed to this mind. Of course, I'm sure Grieve would have reminded us all that the reverse was true. Professionally enriched by his association with Maitland, he continued to teach mobilization and manipulation courses for the next 10 years and, in the meantime, set up the Manipulative Association of Chartered Physiotherapists. In 1973 he was invited to speak, along with Alan Stoddard and James Cyriax, about the use of spinal manipulation in rehabilitation to an audience of the British Orthopaedic Association<sup>54</sup>. While taken for granted these days, a physical therapist being asked to speak at a physician's conference was then a landmark event.

At the same time that Maitland was developing his system of oscillatory mobilizations, Kaltenborn was advancing a different style of assessment and mobilization techniques. Based on the emergent biomechanics of MacConaill<sup>55-58</sup>, Kaltenborn envisaged regaining motion through focusing on motion at the joint surfaces, i.e., with distraction, compression, glides, and conjunct rotation. With his close friend and colleague Olaf Evjenth, the Kaltenborn/Evjenth System would promote the use of arthrokinematics and osteokinematics in both assessment and treatment of articular motion dysfunctions. This starkly mechanical approach would compete for many years with Maitland's use of tissue tension and reaction.

This author recalls with some amusement the "friendly rivalry" between these two philosophies. It still exists to some degree but the eclectic evolution of Orthopaedic Manual Therapy (OMT) allows more than enough room to accommodate both. In time, in terms of their utilization to relieve pain and regain motion, both systems would find vindication in Wyke's work on articular receptors<sup>59</sup>. The differences are irrelevant historically. What is important is that together, they underscore the essence of physical therapy's role in the advancement of joint manipulation. In the technically skilled hands of a physical therapist, advancements in medical science are translated into safer, more effective manipulative techniques.

Following his move to the United States, Paris continued teaching OMT. Some (future) prestigious names, e.g.,

Brian Mulligan, would credit Paris for introducing them to manual therapy. However, from the author's perspective, Paris's role in OMT was more significant than that of an accomplished teacher. As a gifted orator, he became the heart and voice of a rapidly emerging physical therapy specialization. His achievements in athletics, education, and political organization will be an inspiration to all manual therapists and a reminder that if you put enough energy into a project, it will succeed.

As OMT grew around the world, it became obvious that some central organization would be essential. During the World Confederation of Physical Therapy (WCPT) conference in Denmark in 1970, a group of therapists was given the task of working with the WCPT to create its first sub-group, the International Federation for Orthopaedic Manual Therapy (IFOMT). The committee and consultants included McKenzie, Paris, Kaltenborn, Maitland, and Grieve, together with a Danish therapist named Hanne Thorsen. Thorsen became an accomplished physician in Copenhagen and has written numerous articles on public health issues. This core group of therapists would go on to encourage, through the recommendation of standards and the setting of examinations, an expansion of IFOMT's influence, and thereby the influence of OMT throughout the world. Since the 1970s, large numbers of physical therapists from clinical, educational, and research backgrounds have diligently worked to establish clinically reasoned and evidence-based programs of education and standards of practice. As we move towards a more scientific and research-dependent era of our evolution, let us not forget those practitioners of the past, from all professions and doctrines, who have given so much throughout the centuries of history in manipulative therapy. I think it is appropriate to close with a quote that I used at the commencement of the very first Upper Quadrant Course in Richmond, British Columbia, in 1980:

*"If I have seen further it is by standing  
on the shoulders of giants."*

ISAAC NEWTON, FEBRUARY 5, 1675

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